MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS S.p.A.

IT COOLING

PRODUCT GUIDE

- CLOSE CONTROL AIR CONDITIONERS
- EVAPORATIVE COOLING SYSTEMS
- AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS
- DATA CENTER INFRASTRUCTURE
- CHILLERS
- UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER
- TELECOM SOLUTIONS
- CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS
- ANCILLARY PRODUCTS

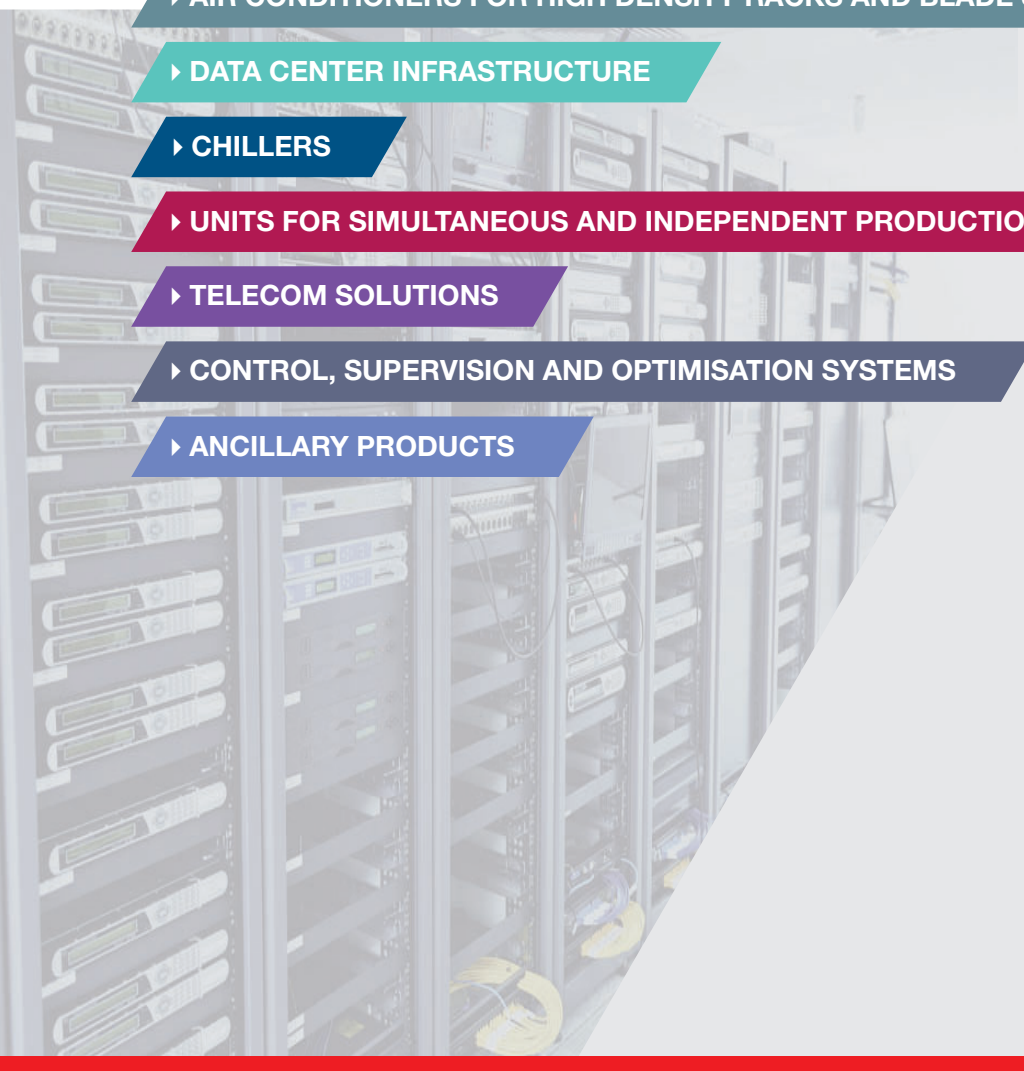


rcitcooling.com

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FOR IT COOLING APPLICATIONS

With over 50 years experience in the HVAC industry, RC has been a major player widely recognized for its leadership in IT Cooling solutions. Building on this strong legacy, Mitsubishi Electric Hydronics & IT Cooling Systems SpA has decided to turn RC into the Group's specialized brand for data center cooling, merging the experience of RC with Climaveneta's in this segment.

The result is a brand new business organisation providing the most complete product range, which combines the best technologies, solutions and innovations from RC and Climaveneta.
This is enhanced by both brands' extensive experience, and by the advantages of integrated R&D, operations and central functions.

Over 50 years of experience

Dedicated products & specialized solutions

12 specialized manufacturing hubs

7 R&D and testing labs in Italy, China and India

Vast portfolio of proprietary & patented technologies

Worldwide distribution and service network



- Sales network
- Manufacturing hubs or R&D labs

COUNTLESS SUCCESSFUL PROJECTS WORLDWIDE



- **Wiit Spa** - Milano, Italy
  Tier IV certified
- **Fastweb** - Milano, Italy
  Tier IV certified
- **ANZ Bank Server Room**
  Auckland – New Zealand
- **Data Center proRZ**
  Munich, Germany
- **China Construction Bank Data Center** - Bejing China
- **SKY Studios**
  Unterfoehring - Germany

RC IT COOLING has developed a large array of solutions and systems for the highest efficiency, scalability and continuity of operation in data center cooling projects, based on an extensive experience with a wide portfolio of diverse technologies:

- CLOSE CONTROL AIR CONDITIONERS



- REMOTE CONDENSERS AND DRY COOLERS
- CHILLERS



- AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS



- EVAPORATIVE COOLING SYSTEMS



- DATA CENTER INFRASTRUCTURE



- UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER



- TELECOM SOLUTION



- CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS



- ANCILLARY PRODUCTS



RC IT COOLING leading-edge cooling technologies and solutions for IT applications are designed to provide even the most challenging Data Center and Telecom projects with:

Smart integration of the most advanced technologies

Building on the experience of RC Group and Climaveneta both on HPAC and on chillers, RC IT Cooling solutions offer the smartest combination of the most advanced technologies such as: full inverter concept, free cooling, heat recovery management, adiabatic cooling.

Reduced operating costs

In infrastructures working 24 hours per day, 365 days per year, over an average of 10 years, every energy improvement allows for a significant reduction in OPEX (operating costs).

Complete reliability and extended lifetime

The uptime of server infrastructure and hence of most critical services in modern society, is tightly related to the reliability of the IT cooling system, which must guarantee Tier IV uptime standards over its whole lifetime.

Widest use of the available power capacity

In all installations were power feeds are at capacity, the key option to expand data center facilities is to significantly improve the energy performance of the whole data center.

Optimised footprint

A green, high efficiency approach to data centers is key also to enable a more effective use of available space thus delaying the need of building new rooms.

Increased sustainability

Intelligent energy management is crucial also for sustainability, considering the growing impact of data center industry in terms of total CO_2 emissions.

OPERATIONS

The excellence of our solutions is the result of a leading-edge organisation, structured on specialized manufacturing hubs and laboratories, applying lean manufacturing and continuous improvement principles together with an integrated approach to quality, environment and health and safety, consistently with Mitsubishi Electric's guiding principles.



LABORATORIES

ML12
Belluno
Italy

Total surface area: 4,000 m²



PATENT PENDING
MITSUBISHI ELECTRIC
PATENT PENDING

NEW TESTING CENTRE

Chillers, Heat Pumps, 4-pipe units, rooftop units, AHUs, IT cooling systems

- Up to 4800 kW
- From -20°C to +55°C
- Up to 100.000 m³/h
- Combined Testing of IT Cooling package (Chillers + HPAC units)
- UNI 14511
- ISO 9614-2

ML14
Treviso
Italy



Terminal Units, small chillers & Heat Pumps
- UNI 14511
- ISO 9614-2

ML21
Valle Salimbene
Italy



Chillers & Heat Pumps up to 1600 kW, Telecom solutions
- UNI 14511
- ISO 9614-2

ML24
Valle Salimbene
Italy



Close control air conditioners, Rack cooling units
- EUROVENT 6/6
- ANSI-ASHRAE 2016

ML91
Shanghai
China



Terminal units
- GB/T 19232-2003
- GB/T 7725-2016

ML92
Shanghai
China



Chillers & Heat Pumps
- GB/T 10870-2014

ML93
Shanghai
China



Close control air conditioners
- GB/T 17758-2010

12 Manufacturing hubs and 7 R&D and testing laboratories in Italy and worldwide

MANUFACTURING HUBS



M11
Bassano
Italy

Productive area:
12,500 m²

- Scroll compressor chillers
- Scroll compressor reversible chillers
- Heat pumps up to 700 kW
- ISO 9001/ ISO 14001/ OHSAS18001



M12
Belluno
Italy

Productive area:
25,000 m²

- Screw and oil-free compressor chillers
- Screw and oil-free compressor reversible chillers / Heat pumps
- Shell&tube evaporators
- ISO 9001/ ISO 14001/ OHSAS18001



M13
Belluno
Italy

Productive area:
7,000 m²

- MEHITS Training Centre



M14
Treviso
Italy

Productive area:
10,000 m²

- Residential chillers
- Heat pumps up to 50kW
- OHSAS18001
- ISO 9001/ ISO 14001



M21
Valle Salimbene
Italy

Productive area:
36,500 m²

- Telecom solutions
- Rack cooling air conditioners
- Splitted air systems
- ISO 9001/ ISO 14001/ OHSAS18001



M22
Valle Salimbene
Italy

Productive area:
2,300 m²

- Scroll compressor chillers and heat pumps up to 200 kW
- ISO 9001/ ISO 14001/ OHSAS18001



M23
Zeccone
Italy

Productive area:
7,500 m²

- Close control air conditioners
- Telecom solutions
- ISO 9001/ ISO 14001/ OHSAS18001



M91
Shanghai
China

Productive area:
15,000 m²

- Liquid chillers
- Reversible chillers for the Chinese and SEA market
- ISO 9001, ISO 14001, OHSAS18001



M92
Shanghai
China

Productive area:
2,500 m²

- HPAC units for the Chinese and SEA market
- ISO 9001, ISO 14001, OHSAS18001



M93
Shanghai
China

Productive area:
3,000 m²

- AHU units
- Fan coil units
- Aluminium fin and copper tube coils
- ISO 9001, ISO 14001, OHSAS18001



M94
Shanghai
China

Productive area:
2,000 m²

- Shell & tube Heat Exchangers
- Condensers and evaporators
- ISO 9001, ISO 14001, OHSAS18001



M81
Bangalore
India

Productive area:
2,500 m²

- HPAC units
- Screw compressor chillers
- ISO 9001

QUALITY, ENVIRONMENT, SAFETY

In consistency with Mitsubishi Electric's 7 guiding principles, Mitsubishi Electric Hydronics & IT Cooling Systems SpA aims at making a positive difference towards a more sustainable HVAC industry.

We do this by responsibly managing the environmental, social, and economical impacts of our activities and solutions. This is a key element of RC and Climaveneta's value proposition and the best guarantee to deliver sustainable value to our customers, employees, and all of our stakeholders.



QUALITY

Following Mitsubishi Electric's principles, satisfying and exceeding customers' and stakeholders' expectations are core elements of Climaveneta and RC's approach.
Company and product certifications play a crucial role within our approach to Quality, enhancing our care to comply with the regulations of the countries and markets where we operate.







SAFETY

For Mitsubishi Electric Hydronic & IT Cooling Systems SpA, safety is a core element of the organizational culture, proven by the OHSAS 18001 certification obtained in June 2015 and by the BBS - Behaviour Based Safety – project, gradually extended to all our establishments.





ENVIRONMENT

Comfort and sustainability are key elements of our mission, to be pursued in all company choices, from product development to operations management.

This approach reflects a company strategy based on a business model focused on the highest sustainability, extending from the traditional attention to energy efficiency and reduced environmental impact of the product, to the whole manufacturing process.
From this perspective ISO 14001 certification means, above all, systematic implementation of explicit projects to reduce the environmental impact of the company globally. At the same time Mitsubishi Electric Hydronics & IT Cooling Systems as a leading company in sustainable HVAC solutions, recognizes and supports the diffusion of building performance rating systems and green certification protocols.





NEW REFRIGERANT TRENDS

Mitsubishi Electric Hydronics & IT Cooling Systems is fully committed to supporting the creation of a greener tomorrow by adopting forward-looking refrigerants able to combine both high efficiency standards with a sustainable approach.

THE CALL FOR CLIMATE ACTION

Based on the specific characteristics of each plant and segment, and according to performance levels, operational reliability and costs, Mitsubishi Electric Hydronics & IT Cooling Systems introduces the new G04 and G05 series optimized for the HFO 1234ze and R513a eco-friendly refrigerants.

r1234ze r R513A

r1234ze G04 SERIES

PRODUCT RANGE WITH HFO 1234ze REFRIGERANT.

The G04 series with HFO 1234ze refrigerant is the greenest eco-friendly alternative to traditional refrigerants and the perfect solution for HVAC plants where environmental issue is a key priority. Featuring GWP values almost 0, the G04 series maintain very high efficiency values and operating performance similar to the R134a products.

0 Ozone Depletion Potential

NEGLIGIBLE GWP
Global Warming Potential
$GWP_{100\ year} < 1$

COMPATIBLE WITH COMMON CONSTRUCTION MATERIALS

- No special components
- No extra cost

IN-LINE WITH ENVIRONMENTAL REGULATION OBJECTIVES

- No future retrofit required

RAPID MOLECULE DISINTEGRATION IN THE ATMOSPHERE

- HFO 1234ze = 2 weeks (R134a = 14 years)

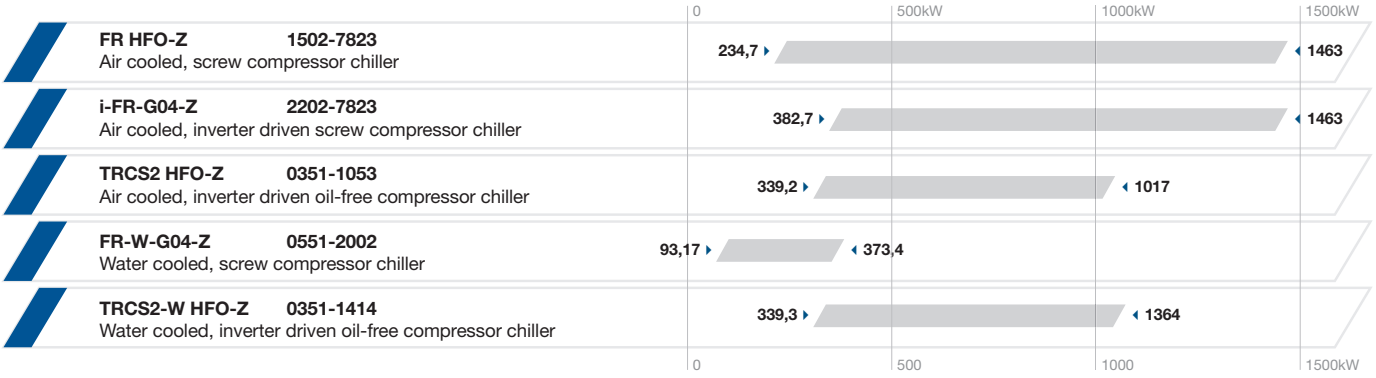
APPROVED BY INTERNATIONAL STANDARDS

- ASHRAE 34, ISO 817:
- A2L classification (non toxic, midly flammable)

CHILLERS



R HFO1234ze



G05 SERIES with R513a

The green alternative to R134a

Among the alternative refrigerants available on the market, the R513a of the G05 series features very low GWP values and 0 depletion potential.

-56% GWP COMPARED TO R134A

NON-FLAMMABLE Safety Class A1

R513A

REDUCED GWP

- R513A $GWP_{100\ year}$=572
- R134a $GWP_{100\ year}$=1300
- GWP values according to IPCC AR5

NON-TOXIC, NON-FLAMMABLE

- ASHRAE 34, ISO817: A1class

FAVORABLE PHYSICAL PROPERTIES

- Same cooling capacity delivered as R134a
- Same operating preasures as R134a

IN-LINE WITH STANDARD BUILDING CODES

- No special equipment
- No need for flammable risk assesment
- No extra costs

COMPLIANT WITH ECO REGULATION OBJECTIVES

- No future retofit required
- Reduced price volatility

CHILLERS



R HFC R513A

		0	500kW	1000kW	1500kW	2000kW	2500kW
FR-G05-Z Air cooled, screw compressor chiller	**0751-1801**	140,1	395,7				
FR-G05-Z Air cooled, screw compressor chiller	**1502-7223**	288,5				1710	
i-FR-G05-Z Air cooled, inverter driven screw compressor chiller	**2202-7223**	478,6			1697		
TRCS2-G05-Z Air cooled, oil-free compressor chiller	**0211-1154**	217,9	1313				
FR-W-G05-Z Water cooled, screw compressor chiller	**0551-1752**	124,3			400,6		
FRCS2-W-G05-Z Water cooled, screw compressor chiller	**1301-9604**	306				2416	
FRCS3-W-G05-Z Water cooled, screw compressor chiller	**0551-4752**	188,2				1693	
i-FR-W (1+i)-G05-Z Water cooled, inverter driven and fixed speed screw compressor chiller	**1402-4652**	532,3			1784		
TR-W-G05-Z Water cooled, oil-free compressor chiller	**1A00-6D00**	248				4466	
TRCS-FC-G05-Z Air cooled, oil-free compressor chiller with free-cooling technology	**0211-1204**	299,2			1671		

HEAT PUMPS



R HFC R513A

		0	500kW	1000kW	1500kW	2000kW	2500kW
FRCS-N-G05-Z Air cooled, screw compressor heat pump	**2022-4822**	440,7		1162			
FRCS2-W-Z /H Water cooled, screw compressor heat pump	**1301-9604**	306				2416	
i-FR-W (1+i)-G05-Z /H Water cooled, inverter driven and fixed speed screw compressor heat pump	**1402-4652**	532,3			1784		

UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER



R HFC R513A

		0	500kW	1000kW	1500kW	2000kW	2500kW
ERRCS2-Q-G05-Z Air cooled, screw compressor 4-pipe heat pump	**1062-3222**	199,5		825,6			
i-FR-Q2-G05-Z Air cooled, full inverter screw compressor 4-pipe heat pump	**0502-1102**	442,9		1125			
ERRCS2-WQ-G05-Z Water cooled, screw compressor 4-pipe heat pump	**0802-1502**	189,4	363,4				

Key to symbols and notes

Functions

- COOLING — Cooling
- FREE COOLING — Free Cooling
- RE-HEATING — Re Heating
- HUMIDIFICATION — Humidification
- DEUMIDIFICATION — Deumidification
- 4 PIPE SYSTEM — Combined production of heating and cooling
- EVAPOR. FREE COOLING — Evaporative free cooling

Fan

- CENTRIFUGAL — Centrifugal fan
- PLUG FAN — Plug fan
- AXIAL — Axial fan
- EC AXIAL — EC axial fan
- EC FAN — EC Fan

Refrigerant

- R HFC R-134a — R-134a
- R HFC R-407C — R-407C
- R HFC R-410A — R-410A
- R HFO1234ze — HFO-1234ze
- R R513A — R513A

Compressors

- SCROLL — Scroll compressor
- SCREW — Screw compressor
- CENTRIFUGAL — Centrifugal compressor

Exchangers

- P PLATES — Plates heat exchanger
- T SHELL & TUBES — Shell & Tubes
- FL FLOODED — Flooded evaporator

Int. sect.

- CENTRIFUGAL — Centrifugal fan
- PLUG FAN — Plug fan
- EC FAN — EC Fan

Out. sect.

- AXIAL — Axial fan

Other features right position

- A ENERGY CLASS — Energy Class A

Other features

- EUROVENT CERTIFIED PERFORMANCE — Eurovent
- AHRI CERTIFIED — AHRI - Water-Cooled Water Chilling and Heat Pump Water-Heating Packages
- AHRI CERTIFIED — AHRI - Air-Cooled Water Chilling Packages
- FULL FLOATING — Full Floating
- INVERTER DRIVEN COMPRESSOR — Inverter Driven Compressor
- VPF VARIABLE PRIMARY FLOW — VPF
- VSPEED VARIABLE SPEED DRIVE — VSpeed
- EEV ELECTRONIC EXPANSION VALVE — Electronic Expansion Valve
- VAIR VARIABLE AIR FLOW — VAir

Index

CLOSE CONTROL AIR CONDITIONERS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan
DIRECT EXPANSION AIR CONDITIONING UNITS, AIR COOLED						
20	i-NEXT DX 012 M1 S - 150 M4 D	10,4-135 kW	COOLING	HFC R-410A	SCROLL	EC FAN
24	b-NEXT DX 007 P1 S - 146 P4 D	6,37-147 kW	COOLING	HFC R-410A	SCROLL	AXIAL
28	t-NEXT DX 007 P1 S - 146 P4 D	6,59-149 kW	COOLING	HFC R-410A	SCROLL	EC FAN
AIR CONDITIONING UNIT DUAL FLUID, AIR COOLED DIRECT EXPANSION						
32	i-NEXT DF DX 012 M1 S - 150 M4 D	12,3-142 kW	COOLING	HFC R-410A	SCROLL	EC FAN
36	t-NEXT DF DX 011 P1 S - 146 P4 D	12,2-136 kW	COOLING	HFC R-410A	SCROLL	EC FAN
DIRECT EXPANSION PRECISION AIR CONDITIONING UNITS, WATER COOLED						
40	i-NEXT DW 012 M1 S - 150 M4 D	11,0-140 kW	COOLING	HFC R-410A	SCROLL	EC FAN
44	b-NEXT DW 007 P1 S - 146 P4 D	8,50-155 kW	COOLING	HFC R-410A	SCROLL	AXIAL
48	t-NEXT DW 007 P1 S - 146 P4 D	7,89-156 kW	COOLING	HFC R-410A	SCROLL	EC FAN
CLOSE CONTROL UNIT DUAL FLUID, WATER COOLED DIRECT EXPANSION						
52	i-NEXT DF DW 012 M1 S - 150 M4 D	12,3-147 kW	COOLING	HFC R-410A	SCROLL	EC FAN
56	t-NEXT DF DW 007 P1 S - 146 P4 D	11,2-145 kW	COOLING	HFC R-410A	SCROLL	EC FAN
CHILLED WATER DIRECT EXPANSION AIR CONDITIONERS, FREE-COOLING						
62	i-NEXT FC DW 012 M1 S - 150 M4 D	11,0-140 kW	COOLING FREE COOLING	HFC R-410A	SCROLL	EC FAN
66	t-NEXT FC DW 007 P1 S - 146 P4 D	7,88-157 kW	COOLING FREE COOLING	HFC R-410A	SCROLL	EC FAN
CHILLED WATER PRECISION AIR CONDITIONERS						
72	w-NEXT S 007 - 215	7,03-234 kW	COOLING			EC FAN
76	w-NEXT DF 013 - 160	13,6-140 kW	COOLING			EC FAN
80	w-NEXT HD S 015 - 146	15,4-148 kW	COOLING			EC FAN
82	w-NEXT HD K 015 - 170	14,3-183 kW	COOLING			EC FAN

CLOSE CONTROL AIR CONDITIONERS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan
CHILLED WATER PRECISION AIR CONDITIONERS - 2 SECTIONS						
86	w-NEXT2 S 065 - 226	58,2-227 kW	COOLING			EC FAN
88	w-NEXT2 K 080 - 280	57,8-225 kW	COOLING			EC FAN
90	w-NEXT2 DF 065 - 226	58,2-227 kW	COOLING			EC FAN
CHILLED WATER PRECISION AIR CONDITIONERS - HIGH TEMPERATURE, HIGH DELTA T						
92	NEXT-X-TYPE T1 S - T4 S	49,3-173 kW	COOLING			EC FAN
PRECISION AIR CONDITIONERS FOR INSTALLATION IN METROLOGY LABS						
94	i-NEXT MTRPRECISE DX 12 - 18	11,1-16,6 kW	COOLING	HFC R-410A	SCROLL	EC FAN
96	i-NEXT MTRPRECISE DW 12 - 18	11,7-18,6 kW	COOLING	HFC R-410A	SCROLL	EC FAN
PRECISION AIR CONDITIONERS WITH DISPLACEMENT AIR DELIVERY						
98	i-NEXT DL DX 018 M1 S - 047 M1 S	21,7-53,0 kW	COOLING	HFC R-410A	SCROLL	EC FAN
100	t-NEXT DL DX 007 P1 - 041 P1	7,63-42,6 kW	COOLING	HFC R-410A	SCROLL	EC FAN
102	w-NEXT DL 012 - 042	11,6-41,3 kW	COOLING			EC FAN

EVAPORATIVE COOLING SYSTEM

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors
ADIABATIC COOLING SYSTEM					
106	SIVIS -		COOLING	HFC R-410A	SCROLL

AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan
RACK COOLING HIGH DENSITY AND BLADE SERVERS						
110	COOLSIDE CW 0020 - 0060	16,1-74,7 kW	COOLING			EC AXIAL EC FAN
112	COOLSIDE DOOR 0030R - 0036T	26,6-39,1 kW	COOLING	HFC R-410A	SCROLL	AXIAL EC AXIAL

AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan
RACK COOLING - SPLIT SYSTEM						
114	COOLSIDE DX 0021 - 0251	8,81-68,4 kW	COOLING	HFC R-410A	SCROLL	EC FAN
118	COOLSIDE DF 0051 - 0071	9,53-17,7 kW	COOLING	HFC R-410A	SCROLL	EC FAN
122	COOLSIDE FC 0051 - 0071	11,1-14,6 kW	COOLING FREE COOLING	HFC R-410A	SCROLL	EC AXIAL EC FAN
RACK COOLING – REMOTE CONDENSER						
126	COOLSIDE ROW DX 25 B6 - 40 B6	19,2-30,0 kW	COOLING	HFC R-410A	SCROLL	EC FAN
128	COOLSIDE ROW DF DX 25 B6 - 40 B6	28,3-29,9 kW		HFC R-410A	SCROLL	

DATACENTER INFRASTRACTURES

Pag.	Product	Capacity kW
RAISED FLOOR		
132	RC FLOOR 600x600 - 600x600	
CABINETS FOR THE PROTECTION AND HOUSING OF SERVERS		
134	RC RACK 42U_60X100 - 47U_80X80	
AISLE CONTAINMENT		
136	RC AISLE CONTAINMENT L1000 - L180047U	
POWER DISTRIBUTION UNIT		
138	RC PDU 48VDC - SWITCHED	

CHILLERS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan	Exchangers
AIR COOLED CHILLERS							
142	i-NR-Z 0151P - 0502P	43,88-129,3 kW	COOLING	HFC R-410A	SCROLL	AXIAL	PLATES
146	NR-Z 0152P - 0812P	39,24-227,1 kW	COOLING	HFC R-410A	SCROLL	AXIAL	PLATES
160	NR-Z 0614P - 1214P	159,0-326,7 kW	COOLING	HFC R-410A	SCROLL	AXIAL	PLATES
164	NRCS-Z 0202T - 0612T	50,65-158,6 kW	COOLING	HFC R-410A	SCROLL	AXIAL	SHELL & TUBES
168	NR-Z 0614T - 1214T	159,0-352,0 kW	COOLING	HFC R-410A	SCROLL	AXIAL	SHELL & TUBES
176	NRCS-Z 1314 - 3218	333,6-884,7 kW	COOLING	HFC R-410A	SCROLL	AXIAL	SHELL & TUBES
184	FR-Z 0751 - 1801	140,1-395,7 kW	COOLING	HFC R-134a	SCREW	AXIAL	PLATES SHELL & TUBES
190	FR-Z 1502 - 7223	288,5-1710 kW	COOLING	HFC R-134a	SCREW	AXIAL	SHELL & TUBES
208	FR-G05-Z 0751 - 1801	140,1-395,7 kW	COOLING	R513A	SCREW	AXIAL	PLATES SHELL & TUBES
214	FR-G05-Z 1502 - 7223	288,5-1710 kW	COOLING	R513A	SCREW	AXIAL	SHELL & TUBES
232	FR HFO-Z 1502 - 7823	234,7-1463 kW	COOLING	HFO1234ze	SCREW	AXIAL	SHELL & TUBES
238	i-FR-G01-Z 2202 - 7223	477,0-1697 kW	COOLING	HFC R-134a	SCREW	AXIAL EC FAN	SHELL & TUBES
250	i-FR-G04-Z 2202 - 7823	382,7-1463 kW	COOLING	HFO1234ze	SCREW	EC FAN	SHELL & TUBES
256	i-FR-G05-Z 2202 - 7223	477,0-1697 kW	COOLING	R513A	SCREW	AXIAL EC FAN	SHELL & TUBES
268	i-FR (1+i)-Z 2602 - 5403	567,5-1273 kW	COOLING	HFC R-134a	SCREW	AXIAL	SHELL & TUBES
274	TRCS2-Z 0211 - 1154	220,1-1324 kW	COOLING	HFC R-134a	CENTRIFUGAL	AXIAL EC FAN	FLOODED
282	TRCS2-G05-Z 0211 - 1154	217,9-1313 kW	COOLING	R513A	CENTRIFUGAL	AXIAL EC FAN	FLOODED
290	TRCS2 HFO-Z 0351 - 1053	339,2-1017 kW	COOLING	HFO1234ze	CENTRIFUGAL	EC FAN	FLOODED
292	NR-C-Z 0072 - 1204	17,43-291,1 kW	COOLING	HFC R-410A	SCROLL		PLATES
WATER COOLED CHILLERS							
302	NR-W-Z 0122 - 1204	38,14-397,8 kW	COOLING	HFC R-410A	SCROLL		PLATES
306	FR-W-Z 0551 - 1752	124,3-400,6 kW	COOLING	HFC R-134a	SCREW		SHELL & TUBES
310	FRCS3-W-Z 0551 - 4752	188,2-1693 kW	COOLING	HFC R-134a	SCREW		FLOODED
314	FR-W-G04-Z 0551 - 2002	93,17-373,4 kW	COOLING	HFO1234ze	SCREW		SHELL & TUBES
318	FR-W-G05-Z 0551 - 1752	124,3-400,6 kW	COOLING	R513A	SCREW		SHELL & TUBES
322	FRCS3-W-G05-Z 0551 - 4752	188,2-1693 kW	COOLING	R513A	SCREW		FLOODED
326	i-FR-W (1+i)-Z 1402 - 4252	532,3-1607 kW	COOLING	HFC R-134a	SCREW		FLOODED
328	i-FR-W (1+i)-G05-Z 1402 - 4252	532,3-1607 kW	COOLING	R513A	SCREW		FLOODED
330	TRCS2-W HFO-Z 0351 - 1414	339,6-1364 kW	COOLING	HFO1234ze	CENTRIFUGAL		FLOODED
332	TR-W-Z 1A00 - 6D00	246-4549 kW	COOLING	HFC R-134a	CENTRIFUGAL		FLOODED
340	TR-W-G05-Z 1A00 - 6D00	248-4466 kW	COOLING	R513A	CENTRIFUGAL		FLOODED

CHILLERS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan	Exchangers
CONDENSERLESS CHILLERS							
348	HR-Z 0011 - 0121	4,700-32,40 kW	COOLING	HFC R-407C	SCROLL		PLATES
352	NRCS-ME-Z 0152 - 1604	39,51-431,6 kW	COOLING	HFC R-410A	SCROLL		PLATES
356	FRCS-ME-Z 0401 - 1902	79,23-410,4 kW	COOLING	HFC R-134a	SCREW		SHELL & TUBES
360	FRCS-ME-Z 1001 - 9604	218,9-2240 kW	COOLING	HFC R-134a	SCREW		SHELL & TUBES
AIR COOLED CHILLERS - FREECOOLING							
364	NRCS-FC-Z 0152 - 1604	41,50-477,1 kW	COOLING FREE COOLING	HFC R-410A	SCROLL	AXIAL	PLATES
376	NR-FC-Z 0384 - 0926	364,5-977,7 kW	COOLING FREE COOLING	HFC R-410A	SCROLL	AXIAL EC FAN	SHELL & TUBES
394	FR-FC-Z 1502 - 6002	331,7-1450 kW	COOLING FREE COOLING	HFC R-134a	SCREW	AXIAL	SHELL & TUBES
404	FR-FC-G05-Z 1502 - 6002	331,7-1450 kW	COOLING FREE COOLING	R513A	SCREW	AXIAL	SHELL & TUBES
414	TRCS-FC-Z 0211 - 1204	302,2-1693 kW	COOLING FREE COOLING	HFC R-134a	CENTRIFUGAL	EC FAN	FLOODED
422	TRCS-FC-G05-Z 0211 - 1204	299,2-1671 kW	COOLING FREE COOLING	R513A	CENTRIFUGAL	EC FAN	FLOODED
AIR COOLED CHILLERS - EVAPORATIVE FREECOOLING							
430	FR-EFC-Z 1502 - 6002	329,5-1441 kW	COOLING FREE COOLING	HFC R-134a	SCREW	AXIAL	SHELL & TUBES
436	TRCS-EFC-Z 0211 - 1204	300,2-1682 kW	COOLING EVAPOR. FREE COOLING	HFC R-134a	CENTRIFUGAL	EC AXIAL	FLOODED

UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan	Exchangers
MULTIFUNCTION UNITS AIR SOURCE							
446	NR-Q-Z 0152P - 0602P	43,90-168,6 kW	4 PIPE SYSTEM	HFC R-410A	SCROLL	AXIAL	PLATES
450	NRCS-Q-Z 0604 - 1204	142,0-310,8 kW	4 PIPE SYSTEM	HFC R-410A	SCROLL	AXIAL	PLATES
456	NRCS-Q-Z 1314 - 2818	332,0-756,7 kW	4 PIPE SYSTEM	HFC R-410A	SCROLL	AXIAL	SHELL & TUBES
462	ERRCS2-Q-Z 1062 - 3222	199,5-825,6 kW	4 PIPE SYSTEM	HFC R-134a	SCREW	AXIAL EC FAN	SHELL & TUBES
472	ERRCS2-Q-G05-Z 1062 - 3222	199,5-825,6 kW	4 PIPE SYSTEM	R513A	SCREW	AXIAL EC FAN	SHELL & TUBES
482	i-FR-Q2-Z 0502 - 1002	442,9-985,3 kW	4 PIPE SYSTEM	HFC R-134a	SCREW	EC FAN	SHELL & TUBES
488	i-FR-Q2-G05-Z 0502 - 1002	442,9-985,3 kW	4 PIPE SYSTEM	R513A	SCREW	EC FAN	SHELL & TUBES
MULTIFUNCTION UNITS WATER SOURCE							
494	NRCS-WQ-Z 0152 - 0904	48,38-283,9 kW	4 PIPE SYSTEM	HFC R-410A	SCROLL		PLATES
498	ERRCS2-WQ-Z 0802 - 1302	189,4-317,9 kW	4 PIPE SYSTEM	HFC R-134a	SCREW		SHELL & TUBES
502	ERRCS2-WQ-G05-Z 0802 - 1302	189,4-317,9 kW	4 PIPE SYSTEM	R513A	SCREW		SHELL & TUBES

TELECOM SOLUTIONS

Pag.	Product	Capacity kW	Functions	Refrigerant	Compressors	Fan
OUTDOOR PACKAGED UNIT FOR TELECOMMUNICATION SHELTERS						
508	MINIPAC EVO INV 0031 - 0071	8,56-17,6 kW	COOLING DEUMIDIFICATION RE-HEATING	HFC R-410A	SCROLL	CENTRIFUGAL EC FAN
510	MINIPAC EVO 0001 - 0091	1,95-20,6 kW	COOLING DEUMIDIFICATION RE-HEATING	HFC R-410A	SCROLL	CENTRIFUGAL EC FAN
INDOOR PACKAGED UNIT FOR TELECOMMUNICATION SHELTERS						
514	ENERTEL EVO INV 0031 - 0061	8,51-18,1 kW	COOLING DEUMIDIFICATION RE-HEATING	HFC R-410A	SCROLL	CENTRIFUGAL EC FAN
516	ENERTEL EVO 0001 - 0061	1,95-14,8 kW	COOLING DEUMIDIFICATION RE-HEATING	HFC R-410A	SCROLL	CENTRIFUGAL EC FAN
INDOOR SPLIT SYSTEM UNITS FOR TELECOMMUNICATION SHELTERS						
520	SPLIT EVO INV in 0031 - 0071	8,64-17,3 kW	COOLING DEUMIDIFICATION RE-HEATING	HFC R-410A		CENTRIFUGAL EC FAN
522	SPLIT EVO in 0011 - 0061	4,94-16,8 kW	COOLING DEUMIDIFICATION RE-HEATING	HFC R-410A		CENTRIFUGAL EC FAN

CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS

Pag.	Product	Capacity kW
GROUP DEVICES		
526	ClimaPRO DCO -	
528	DATACENTER MANAGER - - -	

ANCILLARY PRODUCTS

Pag.	Product	Capacity kW	Functions	Refrigerant	Fan
REMOTE CONDENSERS					
532	NHCR 0011-21 - 0121	7,90-40,1 kW	COOLING	HFC R-407C	AXIAL
534	NCE 118A - 528B	45,0-566 kW	COOLING	HFC R-410A	AXIAL
538	FCE 218A - 828C	83,0-929 kW	COOLING	HFC R-134a	AXIAL

ANCILLARY PRODUCTS

Pag.	Product	Capacity kW	Functions	Refrigerant	Fan
REMOTE CONDENSERS AND DRY COOLERS FOR PRECISION AIR CONDITIONING UNITS					
542	T-MATE DX-A M 11 - T 280	9,50-302 kW	COOLING	HFC R-410A	AXIAL
546	T-MATE DX-E M 11 - T 280	9,50-302 kW	COOLING	HFC R-410A	EC AXIAL
550	T-MATE DX-PF-E T 11 - T 144	9,90-156 kW	COOLING	HFC R-410A	CENTRIFUGAL
554	T-MATE DC-A M 20 - T 280	9,00-172 kW	COOLING	HFC R-410A	AXIAL
558	GR-Z A 010 - 164	9,41-156 kW	COOLING	HFC R-410A	AXIAL
562	GR-Z E 010 - 164	8,30-156 kW	COOLING	HFC R-410A	EC AXIAL
566	i-BRRE 014m - 190b	13,4-187 kW	COOLING	HFC R-410A	EC AXIAL
570	BRRE 007m - 190b	6,93-187 kW	COOLING	HFC R-410A	AXIAL
574	i-BRDC 013m - 210m	14,0-210 kW	COOLING	HFC R-410A	AXIAL
578	BRDC 008m - 210m	7,50-210 kW	COOLING	HFC R-410A	AXIAL

CLOSE CONTROL AIR CONDITIONERS

i-NEXT DX	012 M1 S - 150 M4 D
b-NEXT DX	007 P1 S - 146 P4 D
t-NEXT DX	007 P1 S - 146 P4 D
i-NEXT DF DX	012 M1 S - 150 M4 D
t-NEXT DF DX	011 P1 S - 146 P4 D
i-NEXT DW	012 M1 S - 150 M4 D
b-NEXT DW	007 P1 S - 146 P4 D
t-NEXT DW	007 P1 S - 146 P4 D
i-NEXT DF DW	012 M1 S - 150 M4 D
t-NEXT DF DW	007 P1 S - 146 P4 D
i-NEXT FC DW	012 M1 S - 150 M4 D
t-NEXT FC DW	007 P1 S - 146 P4 D
w-NEXT S	007 - 215
w-NEXT DF	013 - 160
w-NEXT HD S	015 - 146
w-NEXT HD K	015 - 170
w-NEXT2 S	065 - 226
w-NEXT2 K	080 - 280
w-NEXT2 DF	065 - 226
NEXT-X-TYPE	T1 S - T4 S
i-NEXT MTRPRECISE DX	12 - 18
i-NEXT MTRPRECISE DW	12 - 18
i-NEXT DL DX	018 M1 S - 047 M1 S
t-NEXT DL DX	007 P1 - 041 P1
w-NEXT DL	012 - 042

CLOSE CONTROL AIR CONDITIONERS

i-NEXT DX

012 M1 S - 150 M4 D 10,4-135 kW

Close control unit, INVERTER direct expansion air cooled



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifer and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the stating current. Units fitted with electronic expansion valve and EC INVERTER fans, upflow or downflow.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply

OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.

Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.

Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.

The filter is self-extinguishing.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.

NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.

The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Switchboard to IEC 204-1/EN60204-1

Refrigerant circuit consisting of electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions, on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.

Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

i-NEXT DX-OVER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D	047 M1 S	068 M2 D	094 M2 D
Frame			E1	E2	E3	E4	E5	E5	E7	E8
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	9,12	17,8	22,2	30,7	43,8	48,2	68,6	93,9
Sensible cooling capacity gross	(1)	kW	9,12	17,7	22,2	30,7	43,8	48,2	68,6	93,9
Total power input (Comp.+fans)	(1)	kW	2,12	4,81	6,01	7,73	11,7	12,9	17,7	25,1
EER (Indoor unit)	(1)	kW/kW	4,30	3,70	3,69	3,97	3,74	3,74	3,88	3,74
SHR	(2)		1,00	0,99	1,00	1,00	1,00	1,00	1,00	1,00
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	1	2	2
No. Circuits		N°	1	1	1	1	2	1	2	2
Refrigerant charge		kg	3,24	3,60	4,30	6,10	8,60	9,20	12,2	18,4
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(3)	m³/h	2700	4100	5000	7500	12000	12000	17500	22000
NOISE LEVEL										
Sound Power		dB(A)	57	64	61	68	75	77	72	79
Sound Pressure	(4)	dB(A)	41	48	45	51	58	60	55	61
SIZE AND WEIGHT										
A	(3)	mm	650	785	1085	1305	1630	1630	2175	2499
B	(3)	mm	675	675	775	930	930	930	930	930
H	(3)	mm	1925	1925	1925	1980	1980	1980	1980	1980
Weight	(3)	kg	210	240	320	430	565	480	650	805

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DX-UNDER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D
Frame			E1	E2	E3	E4	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	9,12	17,8	22,2	30,7	43,8
Sensible cooling capacity gross	(1)	kW	9,12	17,7	22,2	30,7	43,8
Total power input (Comp.+fans)	(1)	kW	2,12	4,81	6,01	7,73	11,7
EER (Indoor unit)	(1)	kW/kW	4,30	3,70	3,69	3,97	3,74
SHR	(2)		1,00	0,99	1,00	1,00	1,00
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	2
No. Circuits		N°	1	1	1	1	2
Refrigerant charge		kg	3,24	3,60	4,30	6,10	8,60
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(3)	m³/h	2700	4100	5000	7500	12000
NOISE LEVEL							
Sound Power		dB(A)	57	64	61	68	75
Sound Pressure	(4)	dB(A)	41	48	45	51	58
SIZE AND WEIGHT							
A	(3)	mm	650	785	1085	1305	1630
B	(3)	mm	675	675	775	930	930
H	(3)	mm	1925	1925	1925	1980	1980
Weight	(3)	kg	220	250	330	440	575

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DX

012 M1 S - 150 M4 D 10,4-135 kW

Close control unit, INVERTER direct expansion air cooled

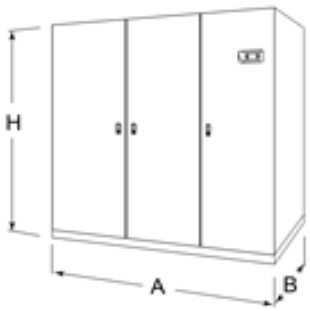
i-NEXT DX-UNDER			047 M1 S	068 M2 D	094 M2 D	120 M4 D	150 M4 D
Frame			E5	E7	E8	E9	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	48,2	68,6	93,9	100	129
Sensible cooling capacity gross	(1)	kW	48,2	68,6	93,9	100	129
Total power input (Comp.+fans)	(1)	kW	12,9	17,7	25,1	28,3	38,7
EER (Indoor unit)	(1)	kW/kW	3,74	3,88	3,74	3,53	3,33
SHR	(2)		1,00	1,00	1,00	1,00	1,00
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	2	2	4	4
No. Circuits		N°	1	2	2	2	2
Refrigerant charge		kg	9,20	12,2	18,4	20,8	20,8
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3
Air flow	(3)	m³/h	12000	17500	22000	28000	32000
NOISE LEVEL							
Sound Power		dB(A)	77	72	79	77	80
Sound Pressure	(4)	dB(A)	60	55	61	59	62
SIZE AND WEIGHT							
A	(3)	mm	1630	2175	2499	2899	2899
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	490	705	865	985	1010

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

b-NEXT DX

007 P1 S - 146 P4 D 6,37-147 kW

Close control unit, air cooled, direct expansion



Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with Plug fan AC type fans, upflow or downflow. External air condenser.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply

OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.

NEW generation fan section type Plug fan AC including centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings, directly coupled to external rotor electric motor AC type with fixed speed.

Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.

The filter is self-extinguishing.

The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Switchboard to IEC 204-1/EN60204-1

Refrigerant circuit consisting of mechanical expansion valve, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.

Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

b-NEXT-UNDER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S
Frame			E0	E0	E1	E2	E2	E3	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	6,37	7,73	11,0	14,0	15,0	20,6	22,5	26,3
Sensible cooling capacity gross	(1)	kW	6,29	7,05	10,1	14,0	15,0	20,6	22,5	25,8
Total power input (Comp.+fans)	(1)	kW	1,65	2,02	2,74	3,45	3,84	5,15	5,94	7,03
EER (Indoor unit)	(1)	kW/kW	3,86	3,83	4,01	4,06	3,91	4,00	3,79	3,74
SHR	(2)		0,99	0,91	0,92	1,00	1,00	1,00	1,00	0,98
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	2,30	2,30	3,20	3,40	3,40	4,00	4,00	4,00
FANS										
Fans type			PLUG FAN	PLUG FAN	AC RADIAL	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	1	1
Air flow	(3)	m³/h	1660	1660	3120	4340	4340	6650	6650	6650
NOISE LEVEL										
Sound Power		dB(A)	57	57	57	66	66	67	67	67
Sound Pressure	(4)	dB(A)	42	42	41	50	50	51	51	51
SIZE AND WEIGHT										
A	(3)	mm	655	655	650	785	785	1085	1085	1085
B	(3)	mm	445	445	675	675	675	775	775	775
H	(3)	mm	1680	1680	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	160	160	238	270	275	320	325	325

b-NEXT-UNDER			032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4	E4	E4	E4	E5	E5	E6	E6
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	31,8	36,4	40,9	44,8	36,9	47,7	56,5	63,2
Sensible cooling capacity gross	(1)	kW	31,7	34,2	39,3	41,6	35,3	44,4	53,6	58,7
Total power input (Comp.+fans)	(1)	kW	7,48	8,43	9,86	10,9	8,69	11,8	13,9	15,1
EER (Indoor unit)	(1)	kW/kW	4,25	4,32	4,15	4,11	4,25	4,04	4,06	4,19
SHR	(2)		1,00	0,94	0,96	0,93	0,96	0,93	0,95	0,93
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2	2
Refrigerant charge		kg	5,70	5,70	8,60	8,60	9,00	9,00	9,80	9,80
FANS										
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(3)	m³/h	8150	8150	9800	9800	8450	10350	15200	15200
NOISE LEVEL										
Sound Power		dB(A)	71	71	75	75	72	76	73	73
Sound Pressure	(4)	dB(A)	54	54	58	58	55	59	56	56
SIZE AND WEIGHT										
A	(3)	mm	1305	1305	1305	1305	1630	1630	1875	1875
B	(3)	mm	930	930	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	420	425	437	445	530	540	620	640

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

b-NEXT DX

Close control unit, air cooled, direct expansion

007 P1 S - 146 P4 D 6,37-147 kW

b-NEXT-UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7	E7	E8	E8	E9	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	74,7	82,0	91,1	103	119	147
Sensible cooling capacity gross	(1)	kW	74,1	78,1	85,2	91,5	115	134
Total power input (Comp.+fans)	(1)	kW	17,9	19,8	21,6	25,4	30,0	37,6
EER (Indoor unit)	(1)	kW/kW	4,17	4,14	4,22	4,06	3,97	3,91
SHR	(2)		0,99	0,95	0,94	0,89	0,97	0,91
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	16,2	16,2	17,4	17,4	21,6	21,6
FANS								
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(3)	m³/h	19200	19200	20350	20350	29400	29400
NOISE LEVEL								
Sound Power		dB(A)	78	78	80	80	81	81
Sound Pressure	(4)	dB(A)	61	61	62	62	63	63
SIZE AND WEIGHT								
A	(3)	mm	2175	2175	2499	2499	2899	2899
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	745	750	845	845	1020	1080

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

b-NEXT-OVER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S
Frame			E0	E0	E1	E2	E2	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	6,37	7,73	11,0	14,0	15,0	20,6	22,5
Sensible cooling capacity gross	(1)	kW	6,29	7,05	10,1	14,0	15,0	20,6	22,5
Total power input (Comp.+fans)	(1)	kW	1,65	2,02	2,74	3,45	3,84	5,15	5,94
EER (Indoor unit)	(1)	kW/kW	3,86	3,83	4,01	4,06	3,91	4,00	3,79
SHR	(2)		0,99	0,91	0,92	1,00	1,00	1,00	1,00
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	2,30	2,30	3,20	3,40	3,40	4,00	4,00
FANS									
Fans type			PLUG FAN	PLUG FAN	AC RADIAL	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	1660	1660	3120	4340	4340	6650	6650
NOISE LEVEL									
Sound Power		dB(A)	66	66	66	72	72	73	73
Sound Pressure	(4)	dB(A)	51	51	50	56	56	57	57
SIZE AND WEIGHT									
A	(3)	mm	655	655	650	785	785	1085	1085
B	(3)	mm	445	445	675	675	675	775	775
H	(3)	mm	1680	1680	1925	1925	1925	1925	1925
Weight	(3)	kg	160	160	228	260	265	300	305

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

b-NEXT-OVER			026 P1 S	032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D
Frame			E3	E4	E4	E4	E4	E5	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	26,3	31,8	36,4	40,9	44,8	36,9	47,7
Sensible cooling capacity gross	(1)	kW	25,8	31,7	34,2	39,3	41,6	35,3	44,4
Total power input (Comp.+fans)	(1)	kW	7,03	7,48	8,43	9,86	10,9	8,69	11,8
EER (Indoor unit)	(1)	kW/kW	3,74	4,25	4,32	4,15	4,11	4,25	4,04
SHR	(2)		0,98	1,00	0,94	0,96	0,93	0,96	0,93
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	2
No. Circuits		N°	1	1	1	1	1	2	2
Refrigerant charge		kg	4,00	5,70	5,70	8,60	8,60	9,00	9,00
FANS									
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	6650	8150	8150	9800	9800	8450	10350
NOISE LEVEL									
Sound Power		dB(A)	73	77	77	80	80	78	81
Sound Pressure	(4)	dB(A)	57	60	60	63	63	61	64
SIZE AND WEIGHT									
A	(3)	mm	1085	1305	1305	1305	1305	1630	1630
B	(3)	mm	775	930	930	930	930	930	930
H	(3)	mm	1925	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	305	410	415	427	435	520	530

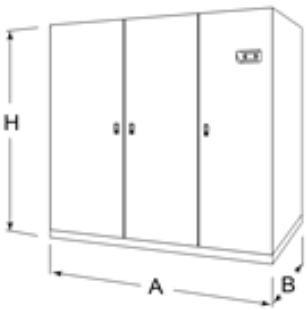
b-NEXT-OVER			055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E6	E6	E7	E7	E8	E8
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	56,5	63,2	74,7	82,0	91,1	103
Sensible cooling capacity gross	(1)	kW	53,6	58,7	74,1	78,1	85,2	91,5
Total power input (Comp.+fans)	(1)	kW	13,9	15,1	17,9	19,8	21,6	25,4
EER (Indoor unit)	(1)	kW/kW	4,06	4,19	4,17	4,14	4,22	4,06
SHR	(2)		0,95	0,93	0,99	0,95	0,94	0,89
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	9,80	9,80	16,2	16,2	17,4	17,4
FANS								
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	2	2	2	2	2	2
Air flow	(3)	m³/h	15200	15200	19200	19200	20350	20350
NOISE LEVEL								
Sound Power		dB(A)	79	79	83	83	85	85
Sound Pressure	(4)	dB(A)	62	62	66	66	67	67
SIZE AND WEIGHT								
A	(3)	mm	1875	1875	2175	2175	2499	2499
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	610	630	688	695	785	785

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

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Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

t-NEXT DX

007 P1 S - 146 P4 D 6,59-149 kW

Close control unit, air cooled, direct expansion



Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with EC INVERTER fans, upflow or downflow. External air condenser.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Refrigerant circuit consisting of an electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure; sight glass; filter dryer on liquid line; pressure transducers with indication, control and protection functions, on low and high refrigerant pressure; high pressure safety switch with manual reset; liquid receiver with accessories.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

t-NEXT DX-OVER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S
Frame			E0	E0	E1	E2	E2	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	6,59	7,73	10,3	13,8	16,0	20,3	22,1
Sensible cooling capacity gross	(1)	kW	6,29	7,05	10,2	13,8	14,8	20,3	22,1
Total power input (Comp.+fans)	(1)	kW	1,62	1,99	2,57	3,26	3,71	4,52	5,47
EER (Indoor unit)	(1)	kW/kW	4,07	3,88	4,01	4,23	4,31	4,49	4,04
SHR	(2)		0,95	0,91	0,99	1,00	0,92	1,00	1,00
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	3,20	3,20	3,20	3,40	3,40	4,00	4,00
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	1660	1660	2800	4000	4200	5700	6100
NOISE LEVEL									
Sound Power		dB(A)	58	58	58	63	64	63	65
Sound Pressure	(4)	dB(A)	43	43	42	47	48	47	49
SIZE AND WEIGHT									
A	(3)	mm	655	655	650	785	785	1085	1085
B	(3)	mm	445	445	675	675	675	775	775
H	(3)	mm	1680	1680	1925	1925	1925	1925	1925
Weight	(3)	kg	160	160	228	260	265	300	305

t-NEXT DX-OVER			026 P1 S	032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D
Frame			E3	E4	E4	E4	E4	E5	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	26,2	32,5	37,6	41,4	45,4	38,1	48,6
Sensible cooling capacity gross	(1)	kW	25,3	32,5	37,6	41,2	43,4	38,1	47,4
Total power input (Comp.+fans)	(1)	kW	6,71	7,59	9,22	10,1	11,2	9,19	12,4
EER (Indoor unit)	(1)	kW/kW	3,90	4,28	4,08	4,10	4,05	4,15	3,92
SHR	(2)		0,97	1,00	1,00	1,00	0,96	1,00	0,98
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	2
No. Circuits		N°	1	1	1	1	1	2	2
Refrigerant charge		kg	4,00	5,70	5,70	8,60	8,60	9,00	9,00
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	6400	8700	10000	10800	10800	10000	12000
NOISE LEVEL									
Sound Power		dB(A)	64	71	74	74	74	75	76
Sound Pressure	(4)	dB(A)	48	54	57	57	57	58	59
SIZE AND WEIGHT									
A	(3)	mm	1085	1305	1305	1305	1305	1630	1630
B	(3)	mm	775	930	930	930	930	930	930
H	(3)	mm	1925	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	305	410	415	427	435	520	530

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DX-OVER			055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E6	E6	E7	E7	E8	E8
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	55,1	61,9	75,4	82,5	92,0	104
Sensible cooling capacity gross	(1)	kW	55,1	60,6	75,4	79,5	88,1	94,9
Total power input (Comp.+fans)	(1)	kW	13,5	15,0	17,8	19,7	22,0	25,7
EER (Indoor unit)	(1)	kW/kW	4,08	4,13	4,24	4,19	4,18	4,05
SHR	(2)		1,00	0,98	1,00	0,96	0,96	0,91
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	9,80	9,80	16,2	16,2	17,4	17,4
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	2	2
Air flow	(3)	m³/h	15000	15600	20000	20000	22000	22000
NOISE LEVEL								
Sound Power		dB(A)	71	73	75	75	78	78
Sound Pressure	(4)	dB(A)	54	56	58	58	60	60
SIZE AND WEIGHT								
A	(3)	mm	1875	1875	2175	2175	2499	2499
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	610	630	688	695	785	785

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DX-UNDER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S
Frame			E0	E0	E1	E2	E2	E3	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	6,59	7,73	10,3	13,8	16,0	20,3	22,1	26,2
Sensible cooling capacity gross	(1)	kW	6,29	7,05	10,2	13,8	14,8	20,3	22,1	25,3
Total power input (Comp.+fans)	(1)	kW	1,62	1,99	2,57	3,26	3,71	4,52	5,47	6,71
EER (Indoor unit)	(1)	kW/kW	4,07	3,88	4,01	4,23	4,31	4,49	4,04	3,90
SHR	(2)		0,95	0,91	0,99	1,00	0,92	1,00	1,00	0,97
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,20	3,20	3,20	3,40	3,40	4,00	4,00	4,00
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1	1
Air flow	(3)	m³/h	1660	1660	2800	4000	4200	5700	6100	6400
NOISE LEVEL										
Sound Power		dB(A)	58	58	58	64	65	64	66	66
Sound Pressure	(4)	dB(A)	43	43	42	48	49	48	50	50
SIZE AND WEIGHT										
A	(3)	mm	655	655	650	785	785	1085	1085	1085
B	(3)	mm	445	445	675	675	675	775	775	775
H	(3)	mm	1680	1680	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	160	160	238	270	275	320	325	325

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DX-UNDER			032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4	E4	E4	E4	E5	E5	E6	E6
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	32,5	37,6	41,4	45,4	38,1	48,6	55,1	61,9
Sensible cooling capacity gross	(1)	kW	32,5	37,6	41,2	43,4	38,1	47,4	55,1	60,6
Total power input (Comp.+fans)	(1)	kW	7,59	9,22	10,1	11,2	9,19	12,4	13,5	15,0
EER (Indoor unit)	(1)	kW/kW	4,28	4,08	4,10	4,05	4,15	3,92	4,08	4,13
SHR	(2)		1,00	1,00	1,00	0,96	1,00	0,98	1,00	0,98
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2	2
Refrigerant charge		kg	5,70	5,70	8,60	8,60	9,00	9,00	9,80	9,80
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(3)	m³/h	8700	10000	10800	10800	10000	12000	15000	15600
NOISE LEVEL										
Sound Power		dB(A)	72	75	74	74	75	77	72	73
Sound Pressure	(4)	dB(A)	55	58	57	57	58	60	55	56
SIZE AND WEIGHT										
A	(3)	mm	1305	1305	1305	1305	1630	1630	1875	1875
B	(3)	mm	930	930	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	420	425	437	445	530	540	620	640

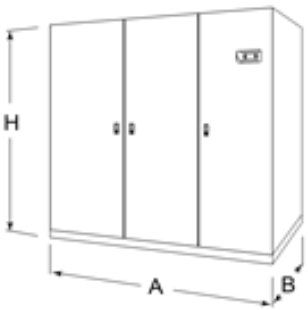
t-NEXT DX-UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7	E7	E8	E8	E9	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	75,4	82,5	92,0	104	121	149
Sensible cooling capacity gross	(1)	kW	75,4	79,5	88,1	94,9	119	139
Total power input (Comp.+fans)	(1)	kW	17,8	19,7	22,0	25,7	30,4	38,0
EER (Indoor unit)	(1)	kW/kW	4,24	4,19	4,18	4,05	3,98	3,92
SHR	(2)		1,00	0,96	0,96	0,91	0,98	0,93
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	16,2	16,2	17,4	17,4	21,6	21,6
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(3)	m³/h	20000	20000	22000	22000	32000	32000
NOISE LEVEL								
Sound Power		dB(A)	75	75	79	79	80	80
Sound Pressure	(4)	dB(A)	58	58	61	61	62	62
SIZE AND WEIGHT								
A	(3)	mm	2175	2175	2499	2499	2899	2899
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	745	750	845	845	1020	1080

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT DF DX

012 M1 S - 150 M4 D 12,3-142 kW

Close control unit dual fluid INVERTER, air cooled direct expansion



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. DUAL FLUID unit has to be connected to an external chiller for PRIMARY circuit. The direct expansion circuit with INVERTER compressor, secondary or BACK-UP circuit, is air cooled and has to be connected with a remote condenser. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the starting current. Units fitted with electronic expansion valve and Plug-Fan EC INVERTER fans, upflow or downflow.

Refrigerant

R410A

Versions

UNDER Downflow air supply

OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.

Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.

NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.

The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.

Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.

The filter is self-extinguishing.

The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Switchboard to IEC 204-1/EN60204-1

Refrigerant circuit consisting of electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions, on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.

Capillary Pre and After sales service.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

i-NEXT DF DX-OVER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D	047 M1 S	068 M2 D	094 M2 D
Frame			E1	E2	E3	E4	E5	E5	E7	E8
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	10,4	21,8	23,9	39,3	49,2	54,0	78,9	105
Sensible cooling capacity gross	(1)	kW	10,4	20,2	23,9	39,3	49,2	53,1	78,9	100
Total power input (Comp.+fans)	(1)	kW	2,85	6,52	6,76	11,4	14,0	15,7	22,2	30,6
EER (Indoor unit)	(1)	kW/kW	3,65	3,34	3,54	3,45	3,51	3,44	3,55	3,43
SHR	(2)		1,00	0,93	1,00	1,00	1,00	0,98	1,00	0,95
CHILLED WATER										
Total cooling capacity gross	(3)	kW	12,3	18,0	24,6	43,7	55,6	55,6	98,5	114
Sensible cooling capacity gross	(3)	kW	12,2	17,8	24,3	43,2	54,9	54,9	93,6	106
SHR	(2)		0,99	0,99	0,99	0,99	0,99	0,99	0,95	0,93
Fluid flow	(3)	l/s	0,59	0,86	1,17	2,09	2,66	2,66	4,71	5,45
Total pressure drop (Coil + Valve)	(3)	kPa	16,9	37,0	25,2	18,3	35,7	35,7	38,7	57,4
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	1	2	2
No. Circuits		N°	1	1	1	1	2	1	2	2
Refrigerant charge		kg								
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(4)	m³/h	2800	4100	5500	10000	12000	12000	20000	22000
NOISE LEVEL										
Sound Power		dB(A)	69	63	65	75	81	81	79	83
Sound Pressure	(5)	dB(A)	53	47	49	58	64	64	62	65
SIZE AND WEIGHT										
A	(4)	mm	650	785	1085	1305	1630	1630	2175	2499
B	(4)	mm	675	675	775	930	930	930	930	930
H	(4)	mm	1925	1925	1925	1980	1980	1980	1980	1980
Weight	(4)	kg	230	263	353	473	629	532	724	894

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DF DX - UNDER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D
Frame			E1	E2	E3	E4	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
DIRECT EXPANSION							
Total cooling capacity gross	(1)	kW	10,4	21,8	23,9	39,3	49,2
Sensible cooling capacity gross	(1)	kW	10,4	20,2	23,9	39,3	49,2
Total power input (Comp.+fans)	(1)	kW	2,85	6,52	6,76	11,4	14,0
EER (Indoor unit)	(1)	kW/kW	3,65	3,34	3,54	3,45	3,51
SHR	(2)		1,00	0,93	1,00	1,00	1,00
CHILLED WATER							
Total cooling capacity gross	(3)	kW	12,3	18,0	24,6	43,7	55,6
Sensible cooling capacity gross	(3)	kW	12,2	17,8	24,3	43,2	54,9
SHR	(2)		0,99	0,99	0,99	0,99	0,99
Fluid flow	(3)	l/s	0,59	0,86	1,17	2,09	2,66
Total pressure drop (Coil + Valve)	(3)	kPa	16,9	37,0	25,2	18,3	35,7
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	2
No. Circuits		N°	1	1	1	1	2
Refrigerant charge		kg					
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(4)	m³/h	2800	4100	5500	10000	12000
NOISE LEVEL							
Sound Power		dB(A)	63	64	62	74	76
Sound Pressure	(5)	dB(A)	47	48	46	57	59
SIZE AND WEIGHT							
A	(4)	mm	650	785	1085	1305	1630
B	(4)	mm	675	675	775	930	930
H	(4)	mm	1925	1925	1925	1980	1980
Weight	(4)	kg	240	273	363	483	639

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DF DX

Close control unit dual fluid INVERTER, air cooled direct expansion

012 M1 S - 150 M4 D 12,3-142 kW

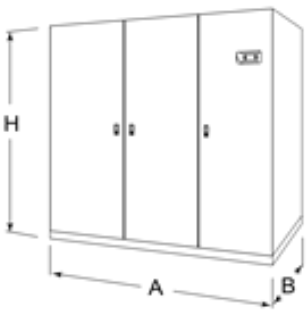
i-NEXT DF DX - UNDER			047 M1 S	068 M2 D	094 M2 D	120 M4 D	150 M4 D
Frame			E5	E7	E8	E9	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
DIRECT EXPANSION							
Total cooling capacity gross	(1)	kW	54,0	78,9	105	111	135
Sensible cooling capacity gross	(1)	kW	53,1	78,9	100	111	135
Total power input (Comp.+fans)	(1)	kW	15,7	22,2	30,6	31,5	41,5
EER (Indoor unit)	(1)	kW/kW	3,44	3,55	3,43	3,52	3,25
SHR	(2)		0,98	1,00	0,95	1,00	1,00
CHILLED WATER							
Total cooling capacity gross	(3)	kW	55,6	98,5	114	130	142
Sensible cooling capacity gross	(3)	kW	54,9	93,6	106	130	142
SHR	(2)		0,99	0,95	0,93	1,00	1,00
Fluid flow	(3)	l/s	2,66	4,71	5,45	6,23	6,77
Total pressure drop (Coil + Valve)	(3)	kPa	35,7	38,7	57,4	36,3	41,9
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	2	2	4	4
No. Circuits		N°	1	2	2	2	2
Refrigerant charge		kg					
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3
Air flow	(4)	m³/h	12000	20000	22000	28000	32000
NOISE LEVEL							
Sound Power		dB(A)	76	75	78	80	80
Sound Pressure	(5)	dB(A)	59	58	60	62	62
SIZE AND WEIGHT							
A	(4)	mm	1630	2175	2499	2899	2899
B	(4)	mm	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980
Weight	(4)	kg	542	779	954	1110	1135

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

t-NEXT DF DX

Close control unit dual fluid, air cooled direct expansion

011 P1 S - 146 P4 D 12,2-136 kW



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control.
Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.
Units fitted with EC INVERTER fans, upflow or downflow.
DUAL FLUID unit has to be connected to an external chiller for PRIMARY circuit.
The direct expansion circuit, secondary or BACK-UP circuit, is air cooled and has to be connected with a remote condenser.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

t-NEXT DF DX-OVER			011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S	032 P1 S	037 P1 S	041 P1 S
Frame			E1	E2	E2	E3	E3	E3	E4	E4	E4
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
DIRECT EXPANSION											
Total cooling capacity gross	(1)	kW	10,3	13,8	16,0	20,3	22,1	26,2	32,5	37,6	41,4
Sensible cooling capacity gross	(1)	kW	10,2	13,8	14,8	20,3	22,1	25,3	32,5	37,6	41,2
Total power input (Comp.+fans)	(1)	kW	2,64	3,27	3,73	4,54	5,50	6,74	7,62	9,25	10,2
EER (Indoor unit)	(1)	kW/kW	3,90	4,22	4,29	4,47	4,02	3,89	4,27	4,06	4,06
SHR	(2)		0,99	1,00	0,92	1,00	1,00	0,97	1,00	1,00	1,00
CHILLED WATER											
Total cooling capacity gross	(3)	kW	12,2	17,8	18,4	25,4	26,5	27,4	39,0	43,4	46,0
Sensible cooling capacity gross	(3)	kW	11,8	17,2	18,0	24,6	25,6	26,8	38,3	42,0	44,9
SHR	(2)		0,97	0,97	0,98	0,97	0,97	0,98	0,98	0,97	0,98
Fluid flow	(3)	l/s	0,59	0,85	0,88	1,21	1,27	1,31	1,86	2,07	2,20
Total pressure drop (Coil + Valve)	(3)	kPa	15,0	33,5	35,6	24,7	26,6	28,3	14,2	17,1	19,0
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg									
FANS											
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1	1	1
Air flow	(4)	m³/h	2800	4000	4200	5700	6100	6400	8700	10000	10800
NOISE LEVEL											
Sound Power		dB(A)	68	70	71	71	75	73	78	80	79
Sound Pressure	(5)	dB(A)	52	54	55	55	59	57	61	63	62
SIZE AND WEIGHT											
A	(4)	mm	650	785	785	1085	1085	1085	1305	1305	1305
B	(4)	mm	675	675	675	775	775	775	930	930	930
H	(4)	mm	1925	1925	1925	1925	1925	1925	1980	1980	1980
Weight	(4)	kg	248	283	288	333	338	338	462	467	479

t-NEXT DF DX-OVER			045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E4	E5	E5	E6	E6	E7	E7	E8	E8
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
DIRECT EXPANSION											
Total cooling capacity gross	(1)	kW	45,4	38,1	48,6	55,1	61,9	75,4	82,5	92,0	104
Sensible cooling capacity gross	(1)	kW	43,4	38,1	47,4	55,1	60,6	75,4	79,5	88,1	94,9
Total power input (Comp.+fans)	(1)	kW	11,2	9,21	12,5	13,5	15,1	17,9	19,8	22,6	26,4
EER (Indoor unit)	(1)	kW/kW	4,05	4,14	3,89	4,08	4,10	4,21	4,17	4,07	3,94
SHR	(2)		0,96	1,00	0,98	1,00	0,98	1,00	0,96	0,96	0,91
CHILLED WATER											
Total cooling capacity gross	(3)	kW	46,0	48,8	55,5	65,3	67,3	101	101	116	116
Sensible cooling capacity gross	(3)	kW	44,9	48,8	55,2	63,2	65,4	95,3	95,3	108	108
SHR	(2)		0,98	1,00	0,99	0,97	0,97	0,94	0,94	0,93	0,93
Fluid flow	(3)	l/s	2,20	2,33	2,65	3,12	3,22	4,84	4,84	5,53	5,53
Total pressure drop (Coil + Valve)	(3)	kPa	19,0	26,3	33,1	15,7	16,6	38,8	38,8	49,3	49,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	2	2	2	2	2	2	2	2
No. Circuits		N°	1	2	2	2	2	2	2	2	2
Refrigerant charge		kg									
FANS											
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	2	2	2	2	2	2
Air flow	(4)	m³/h	10800	10000	12000	15000	15600	20000	20000	22000	22000
NOISE LEVEL											
Sound Power		dB(A)	79	80	81	78	79	81	81	84	85
Sound Pressure	(5)	dB(A)	62	63	64	61	62	64	64	66	67
SIZE AND WEIGHT											
A	(4)	mm	1305	1630	1630	1875	1875	2175	2175	2499	2499
B	(4)	mm	930	930	930	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	487	584	594	684	704	777	784	886	886

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DF DX

Close control unit dual fluid, air cooled direct expansion

011 P1 S - 146 P4 D 12,2-136 kW

t-NEXT DF DX-UNDER			011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S	032 P1 S
Frame			E1	E2	E2	E3	E3	E3	E4
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
DIRECT EXPANSION									
Total cooling capacity gross	(1)	kW	10,3	13,8	16,0	20,3	22,1	26,2	32,5
Sensible cooling capacity gross	(1)	kW	10,2	13,8	14,8	20,3	22,1	25,3	32,5
Total power input (Comp.+fans)	(1)	kW	2,64	3,27	3,74	4,54	5,50	6,74	7,62
EER (Indoor unit)	(1)	kW/kW	3,90	4,22	4,28	4,47	4,02	3,89	4,27
SHR	(2)		0,99	1,00	0,92	1,00	1,00	0,97	1,00
CHILLED WATER									
Total cooling capacity gross	(3)	kW	12,2	17,8	18,4	25,4	26,5	27,4	39,0
Sensible cooling capacity gross	(3)	kW	11,8	17,2	18,0	24,6	25,6	26,8	38,3
SHR	(2)		0,97	0,97	0,98	0,97	0,97	0,98	0,98
Fluid flow	(3)	l/s	0,59	0,85	0,88	1,21	1,27	1,31	1,86
Total pressure drop (Coil + Valve)	(3)	kPa	15,0	33,5	35,6	24,7	26,6	28,3	14,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg							
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(4)	m³/h	2800	4000	4200	5700	6100	6400	8700
NOISE LEVEL									
Sound Power		dB(A)	63	64	65	64	66	66	72
Sound Pressure	(5)	dB(A)	47	48	49	48	50	50	55
SIZE AND WEIGHT									
A	(4)	mm	650	785	785	1085	1085	1085	1305
B	(4)	mm	675	675	675	775	775	775	930
H	(4)	mm	1925	1925	1925	1925	1925	1925	1980
Weight	(4)	kg	258	293	298	353	358	358	472

t-NEXT DF DX-UNDER			037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4	E4	E4	E5	E5	E6	E6
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
DIRECT EXPANSION									
Total cooling capacity gross	(1)	kW	37,6	41,4	45,4	38,1	48,6	55,1	61,9
Sensible cooling capacity gross	(1)	kW	37,6	41,2	43,4	38,1	47,4	55,1	60,6
Total power input (Comp.+fans)	(1)	kW	9,25	10,2	11,2	9,21	12,5	13,5	15,1
EER (Indoor unit)	(1)	kW/kW	4,06	4,06	4,05	4,14	3,89	4,08	4,10
SHR	(2)		1,00	1,00	0,96	1,00	0,98	1,00	0,98
CHILLED WATER									
Total cooling capacity gross	(3)	kW	43,4	46,0	46,0	48,8	55,5	65,3	67,3
Sensible cooling capacity gross	(3)	kW	42,0	44,9	44,9	48,8	55,2	63,2	65,4
SHR	(2)		0,97	0,98	0,98	1,00	0,99	0,97	0,97
Fluid flow	(3)	l/s	2,07	2,20	2,20	2,33	2,65	3,12	3,22
Total pressure drop (Coil + Valve)	(3)	kPa	17,1	19,0	19,0	26,3	33,1	15,7	16,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	2	2	2	2
Refrigerant charge		kg							
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	2	2
Air flow	(4)	m³/h	10000	10800	10800	10000	12000	15000	15600
NOISE LEVEL									
Sound Power		dB(A)	75	74	74	75	77	72	73
Sound Pressure	(5)	dB(A)	58	57	57	58	60	55	56
SIZE AND WEIGHT									
A	(4)	mm	1305	1305	1305	1630	1630	1875	1875
B	(4)	mm	930	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	477	489	497	594	604	694	714

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

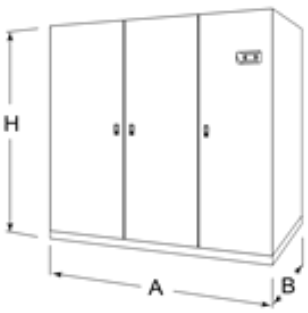
t-NEXT DF DX-UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7	E7	E8	E8	E9	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
DIRECT EXPANSION								
Total cooling capacity gross	(1)	kW	75,4	82,5	92,0	104	122	147
Sensible cooling capacity gross	(1)	kW	75,4	79,5	88,1	94,9	122	140
Total power input (Comp.+fans)	(1)	kW	17,9	19,8	22,6	26,4	31,5	39,0
EER (Indoor unit)	(1)	kW/kW	4,21	4,17	4,07	3,94	3,87	3,77
SHR	(2)		1,00	0,96	0,96	0,91	1,00	0,95
CHILLED WATER								
Total cooling capacity gross	(3)	kW	101	101	116	116	136	136
Sensible cooling capacity gross	(3)	kW	95,3	95,3	108	108	136	136
SHR	(2)		0,94	0,94	0,93	0,93	1,00	1,00
Fluid flow	(3)	l/s	4,84	4,84	5,53	5,53	6,51	6,51
Total pressure drop (Coil + Valve)	(3)	kPa	38,8	38,8	49,3	49,3	39,9	39,9
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg						
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(4)	m³/h	20000	20000	22000	22000	32000	32000
NOISE LEVEL								
Sound Power		dB(A)	75	75	79	79	80	80
Sound Pressure	(5)	dB(A)	58	58	61	61	62	62
SIZE AND WEIGHT								
A	(4)	mm	2175	2175	2499	2499	2899	2899
B	(4)	mm	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	834	839	946	946	1150	1210

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT DW

012 M1 S - 150 M4 D 11,0-140 kW

Close control unit, INVERTER direct expansion water cooled



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifer and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the stating current. Units fitted with electronic expansion valve and EC INVERTER fans, upflow or downflow.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply

OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.

Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.

NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.

The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.

Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.

The filter is self-extinguishing.

The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Switchboard to IEC 204-1/EN60204-1

Refrigerant circuit consisting of electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions, on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.

Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

i-NEXT DW-OVER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D	047 M1 S	068 M2 D	094 M2 D
Frame			E1	E2	E3	E4L	E5L	E5L	E7L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	9,73	19,2	23,9	32,6	46,2	50,9	72,3	99,5
Sensible cooling capacity gross	(1)	kW	9,72	17,8	22,3	31,2	45,1	48,0	69,8	92,6
Total power input (Comp.+fans)	(1)	kW	1,77	4,24	5,32	6,77	10,6	11,7	15,7	22,3
EER (Indoor unit)	(1)	kW/kW	5,50	4,53	4,49	4,82	4,36	4,35	4,61	4,46
SHR	(2)		1,00	0,93	0,93	0,96	0,98	0,94	0,97	0,93
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,54	1,10	1,38	1,85	2,63	2,90	4,12	5,68
Pressure drop	(1)	kPa	21,0	30,9	29,4	17,2	18,0	40,5	22,2	26,4
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	1	2	2
No. Circuits		N°	1	1	1	1	2	1	1	2
Refrigerant charge		kg	3,20	3,80	4,60	6,80	9,40	9,90	13,8	20,2
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(3)	m³/h	2700	4100	5100	7500	12000	12000	17500	22000
NOISE LEVEL										
Sound Power		dB(A)	57	63	61	67	76	76	72	78
Sound Pressure	(4)	dB(A)	41	47	45	50	59	59	54	60
SIZE AND WEIGHT										
A	(3)	mm	650	785	1085	1630	1955	1955	2499	2899
B	(3)	mm	675	675	775	930	930	930	930	930
H	(3)	mm	1925	1925	1925	1980	1980	1980	1980	1980
Weight	(3)	kg	230	280	325	480	610	580	730	900

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DW-UNDER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D
Frame			E1	E2	E3	E4L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	9,73	19,2	23,9	32,6	46,2
Sensible cooling capacity gross	(1)	kW	9,72	17,8	22,3	31,2	45,1
Total power input (Comp.+fans)	(1)	kW	1,77	4,24	5,32	6,77	10,6
EER (Indoor unit)	(1)	kW/kW	5,50	4,53	4,49	4,82	4,36
SHR	(2)		1,00	0,93	0,93	0,96	0,98
PLATE CAPACITOR							
Capacitors nr.		N°	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,54	1,10	1,38	1,85	2,63
Pressure drop	(1)	kPa	21,0	30,9	29,4	17,2	18,0
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	2
No. Circuits		N°	1	1	1	1	2
Refrigerant charge		kg	3,20	3,80	4,60	6,80	9,40
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(3)	m³/h	2700	4100	5100	7500	12000
NOISE LEVEL							
Sound Power		dB(A)	57	64	62	68	74
Sound Pressure	(4)	dB(A)	41	48	46	51	57
SIZE AND WEIGHT							
A	(3)	mm	650	785	1085	1630	1955
B	(3)	mm	675	675	775	930	930
H	(3)	mm	1925	1925	1925	1980	1980
Weight	(3)	kg	240	290	345	490	620

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DW

012 M1 S - 150 M4 D 11,0-140 kW

Close control unit, INVERTER direct expansion water cooled

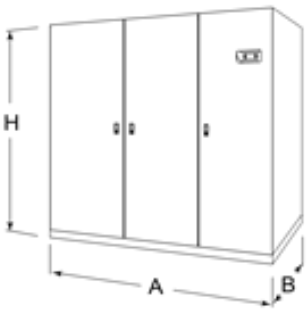
i-NEXT DW-UNDER			047 M1 S	068 M2 D	094 M2 D	120 M4 D	150 M4 D
Frame			E5L	E7L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	50,9	72,3	99,5	117	141
Sensible cooling capacity gross	(1)	kW	48,0	69,8	92,6	114	133
Total power input (Comp.+fans)	(1)	kW	11,7	15,7	22,3	27,2	32,8
EER (Indoor unit)	(1)	kW/kW	4,35	4,61	4,46	4,30	4,30
SHR	(2)		0,94	0,97	0,93	0,97	0,94
PLATE CAPACITOR							
Capacitors nr.		N°	1	1	1	1	1
Condenser fluid flow	(1)	l/s	2,90	4,12	5,68	6,64	8,09
Pressure drop	(1)	kPa	40,5	22,2	26,4	29,6	42,9
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	2	2	4	4
No. Circuits		N°	1	2	2	2	2
Refrigerant charge		kg	9,90	13,8	20,2	21,6	21,6
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3
Air flow	(3)	m³/h	12000	17500	22000	32000	32000
NOISE LEVEL							
Sound Power		dB(A)	77	72	78	80	80
Sound Pressure	(4)	dB(A)	60	54	60	62	62
SIZE AND WEIGHT							
A	(3)	mm	1955	2499	2899	3299	3299
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	590	785	960	1100	1125

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

b-NEXT DW

007 P1 S - 146 P4 D 8,50-155 kW

Close control unit, direct expansion water cooled



Ducted close-control air-conditioners for vertical installation and cooling only, with optional reheating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with AC Plug fans, upflow or downflow, and incorporated water-cooled condenser. External Dry Cooler.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
NEW generation fan section type Plug fan AC including centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings, directly coupled to external rotor electric motor AC type with fixed speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Refrigerant circuit consisting of mechanical expansion valve, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

b-NEXT DW UNDER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	8,50	10,1	11,6	15,4	16,4	21,9	23,9	28,6
Sensible cooling capacity gross	(1)	kW	7,96	9,35	10,6	14,3	15,1	21,4	23,0	26,4
Total power input (Comp.+fans)	(1)	kW	1,71	2,06	2,49	3,07	3,43	4,66	5,38	6,31
EER (Indoor unit)	(1)	kW/kW	4,97	4,90	4,66	5,02	4,78	4,70	4,44	4,53
SHR	(2)		0,94	0,93	0,91	0,93	0,92	0,98	0,96	0,92
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,47	0,56	0,66	0,86	0,92	1,21	1,34	1,61
Pressure drop	(1)	kPa	25,1	34,8	27,9	22,5	25,6	22,3	26,6	19,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,30	3,30	3,30	3,40	3,40	4,40	4,40	4,50
FANS										
Fans type			AC RADIAL	AC RADIAL	AC RADIAL	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	1	1
Air flow	(3)	m³/h	3120	3120	3120	4340	4340	6650	6650	6650
NOISE LEVEL										
Sound Power		dB(A)	68	68	57	65	65	67	67	67
Sound Pressure	(4)	dB(A)	52	52	41	49	49	51	51	51
SIZE AND WEIGHT										
A	(3)	mm	650	650	650	785	785	1085	1085	1085
B	(3)	mm	675	675	675	675	675	775	775	775
H	(3)	mm	1925	1925	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	245	247	250	285	290	340	345	345

b-NEXT DW UNDER			032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4L	E4L	E4L	E4L	E5L	E5L	E6L	E6L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	34,3	39,0	44,3	47,3	39,7	49,3	59,3	66,4
Sensible cooling capacity gross	(1)	kW	32,3	35,1	40,4	42,8	35,9	42,2	56,3	60,9
Total power input (Comp.+fans)	(1)	kW	6,70	7,57	8,76	9,70	7,73	10,4	12,4	13,6
EER (Indoor unit)	(1)	kW/kW	5,12	5,15	5,06	4,88	5,14	4,74	4,78	4,88
SHR	(2)		0,94	0,90	0,91	0,90	0,90	0,86	0,95	0,92
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,91	2,18	2,47	2,66	2,22	2,81	3,32	3,72
Pressure drop	(1)	kPa	27,3	34,6	27,8	31,7	27,4	42,0	23,3	28,5
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2	2
Refrigerant charge		kg	6,20	6,20	9,30	9,30	9,70	9,70	9,80	9,80
FANS										
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(3)	m³/h	8150	8150	9800	9800	8450	8798	15200	15200
NOISE LEVEL										
Sound Power		dB(A)	71	71	75	75	72	72	73	73
Sound Pressure	(4)	dB(A)	54	54	58	58	55	55	56	56
SIZE AND WEIGHT										
A	(3)	mm	1630	1630	1630	1630	1955	1955	2198	2198
B	(3)	mm	930	930	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	510	510	515	515	645	645	710	710

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

b-NEXT DW

Close control unit, direct expansion water cooled

007 P1 S - 146 P4 D 8,50-155 kW

b-NEXT DW UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7L	E7L	E8L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	80,5	88,4	98,3	110	125	155
Sensible cooling capacity gross	(1)	kW	74,7	80,0	88,4	94,9	120	139
Total power input (Comp.+fans)	(1)	kW	15,9	17,7	19,4	22,6	27,0	33,9
EER (Indoor unit)	(1)	kW/kW	5,06	4,99	5,07	4,87	4,63	4,57
SHR	(2)		0,93	0,90	0,90	0,86	0,96	0,90
PLATE CAPACITOR								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	4,47	4,94	5,50	6,22	7,08	8,82
Pressure drop	(1)	kPa	24,1	28,9	22,9	28,9	33,6	50,5
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	16,2	16,2	17,4	17,4	21,6	21,6
FANS								
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(3)	m³/h	19200	19200	20350	20350	29400	29400
NOISE LEVEL								
Sound Power		dB(A)	73	78	80	80	81	81
Sound Pressure	(4)	dB(A)	55	60	62	62	63	63
SIZE AND WEIGHT								
A	(3)	mm	2499	2499	2899	2899	3299	3299
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	775	775	990	990	1140	1190

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

b-NEXT DW-OVER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	8,50	10,1	11,6	15,4	16,4	21,9	23,9
Sensible cooling capacity gross	(1)	kW	7,96	9,35	10,6	14,3	15,1	21,4	23,0
Total power input (Comp.+fans)	(1)	kW	1,65	2,00	2,43	3,07	3,43	4,66	5,38
EER (Indoor unit)	(1)	kW/kW	5,15	5,05	4,77	5,02	4,78	4,70	4,44
SHR	(2)		0,94	0,93	0,91	0,93	0,92	0,98	0,96
PLATE CAPACITOR									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,47	0,56	0,66	0,86	0,92	1,21	1,34
Pressure drop	(1)	kPa	25,0	34,5	27,9	22,5	25,6	22,3	26,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	3,30	3,30	3,20	3,60	3,60	4,40	4,40
FANS									
Fans type			AC RADIAL	AC RADIAL	AC RADIAL	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	3120	3120	3120	4340	4340	6650	6650
NOISE LEVEL									
Sound Power		dB(A)	69	69	56	66	66	67	67
Sound Pressure	(4)	dB(A)	53	53	40	50	50	51	51
SIZE AND WEIGHT									
A	(3)	mm	650	650	650	785	785	1085	1085
B	(3)	mm	675	675	675	675	675	775	775
H	(3)	mm	1925	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	235	237	240	275	280	320	325

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

b-NEXT DW-OVER			026 P1 S	032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D
Frame			E3	E4L	E4L	E4L	E4L	E5L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	28,6	34,3	39,0	44,3	47,3	39,7	49,3
Sensible cooling capacity gross	(1)	kW	26,4	32,3	35,1	40,4	42,8	35,9	42,2
Total power input (Comp.+fans)	(1)	kW	6,31	6,70	7,57	8,76	9,70	7,73	10,4
EER (Indoor unit)	(1)	kW/kW	4,53	5,12	5,15	5,06	4,88	5,14	4,74
SHR	(2)		0,92	0,94	0,90	0,91	0,90	0,90	0,86
PLATE CAPACITOR									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,61	1,91	2,18	2,47	2,66	2,22	2,81
Pressure drop	(1)	kPa	19,7	27,3	34,6	27,8	31,7	27,4	42,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	2
No. Circuits		N°	1	1	1	1	1	2	2
Refrigerant charge		kg	4,50	6,20	6,20	9,30	9,30	9,70	9,70
FANS									
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	6650	8150	8150	9800	9800	8450	8798
NOISE LEVEL									
Sound Power		dB(A)	67	71	71	75	75	71	72
Sound Pressure	(4)	dB(A)	51	54	54	58	58	54	55
SIZE AND WEIGHT									
A	(3)	mm	1085	1630	1630	1630	1630	1955	1955
B	(3)	mm	775	930	930	930	930	930	930
H	(3)	mm	1925	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	325	500	500	505	505	635	635

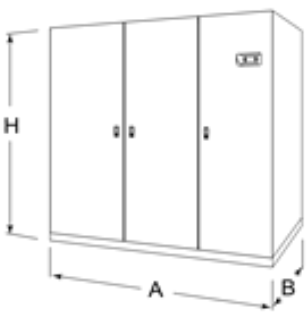
b-NEXT DW-OVER			055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E6L	E6L	E7L	E7L	E8L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	59,3	66,4	80,5	88,4	98,3	110
Sensible cooling capacity gross	(1)	kW	56,3	60,9	74,7	80,0	88,4	94,9
Total power input (Comp.+fans)	(1)	kW	12,4	13,6	15,9	17,7	19,4	22,6
EER (Indoor unit)	(1)	kW/kW	4,78	4,88	5,06	4,99	5,07	4,87
SHR	(2)		0,95	0,92	0,93	0,90	0,90	0,86
PLATE CAPACITOR								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	3,32	3,72	4,47	4,94	5,50	6,22
Pressure drop	(1)	kPa	23,3	28,5	24,1	28,9	22,9	28,9
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	9,80	9,80	16,2	16,2	17,4	17,4
FANS								
Fans type			PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN	PLUG FAN
Quantity		N°	2	2	2	2	2	2
Air flow	(3)	m³/h	15200	15200	19200	19200	20350	20350
NOISE LEVEL								
Sound Power		dB(A)	75	75	78	78	80	80
Sound Pressure	(4)	dB(A)	58	58	60	60	62	62
SIZE AND WEIGHT								
A	(3)	mm	2198	2198	2499	2499	2899	2899
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	690	690	725	725	930	930

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

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Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

t-NEXT DW

007 P1 S - 146 P4 D 7,89-156 kW

Close control unit, direct expansion water cooled



Ducted close-control air-conditioners for vertical installation and cooling only, with optional reheating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for air-conditioning technological, server and CED rooms and all technological applications in general. Units fitted with EC INVERTER fans, upflow or downflow, and incorporated water-cooled condenser. External Dry Cooler.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Refrigerant circuit consisting of an electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure; sight glass; filter dryer on liquid line; pressure transducers with indication, control and protection functions, on low and high refrigerant pressure; high pressure safety switch with manual reset; liquid receiver with accessories.
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

t-NEXT DW-OVER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	7,89	9,39	11,0	14,5	15,5	21,2	23,0
Sensible cooling capacity gross	(1)	kW	7,89	9,39	10,5	14,5	15,5	21,2	23,0
Total power input (Comp.+fans)	(1)	kW	1,42	1,77	2,28	2,87	3,30	4,00	4,86
EER (Indoor unit)	(1)	kW/kW	5,56	5,31	4,82	5,05	4,70	5,30	4,73
SHR	(2)		1,00	1,00	0,95	1,00	1,00	1,00	1,00
PLATE CAPACITOR									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,44	0,53	0,62	0,81	0,88	1,17	1,29
Pressure drop	(1)	kPa	22,1	30,9	25,5	20,4	23,4	20,8	24,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	3,30	3,30	3,30	3,60	3,60	4,40	4,40
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	2500	2700	2800	4000	4200	5700	6100
NOISE LEVEL									
Sound Power		dB(A)	60	62	58	63	64	63	65
Sound Pressure	(4)	dB(A)	44	46	42	47	48	47	49
SIZE AND WEIGHT									
A	(3)	mm	650	650	650	785	785	1085	1085
B	(3)	mm	675	675	675	675	675	775	775
H	(3)	mm	1925	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	235	237	240	275	280	320	325

t-NEXT DW-OVER			026 P1 S	032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D
Frame			E3	E4L	E4L	E4L	E4L	E5L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	27,8	34,4	39,5	44,1	48,0	39,8	50,3
Sensible cooling capacity gross	(1)	kW	26,5	34,4	39,5	42,6	44,8	39,2	46,0
Total power input (Comp.+fans)	(1)	kW	5,97	6,71	8,20	8,85	9,87	8,23	11,2
EER (Indoor unit)	(1)	kW/kW	4,66	5,13	4,82	4,98	4,86	4,84	4,49
SHR	(2)		0,95	1,00	1,00	0,97	0,93	0,98	0,91
PLATE CAPACITOR									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,57	1,91	2,20	2,46	2,70	2,23	2,86
Pressure drop	(1)	kPa	18,9	27,3	35,4	27,5	32,5	27,5	43,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	2
No. Circuits		N°	1	1	1	1	1	2	2
Refrigerant charge		kg	4,50	5,70	5,70	8,60	8,60	9,00	9,00
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(3)	m³/h	6400	8700	10000	10800	10800	10000	12000
NOISE LEVEL									
Sound Power		dB(A)	64	71	74	75	75	75	77
Sound Pressure	(4)	dB(A)	48	54	57	58	58	58	60
SIZE AND WEIGHT									
A	(3)	mm	1085	1630	1630	1630	1630	1955	1955
B	(3)	mm	775	930	930	930	930	930	930
H	(3)	mm	1925	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	325	500	500	505	505	635	635

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DW

007 P1 S - 146 P4 D 7,89-156 kW

Close control unit, direct expansion water cooled

t-NEXT DW-OVER			055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E6L	E6L	E7L	E7L	E8L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	57,7	65,2	79,4	87,2	97,5	109
Sensible cooling capacity gross	(1)	kW	57,5	62,5	77,7	82,1	91,0	97,2
Total power input (Comp.+fans)	(1)	kW	12,0	13,3	15,7	17,5	19,5	22,8
EER (Indoor unit)	(1)	kW/kW	4,81	4,90	5,06	4,98	5,00	4,78
SHR	(2)		1,00	0,96	0,98	0,94	0,93	0,89
PLATE CAPACITOR								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	3,25	3,66	4,41	4,88	5,46	6,18
Pressure drop	(1)	kPa	22,1	27,6	23,5	28,2	22,6	28,5
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	9,80	9,80	16,2	16,2	17,4	17,4
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	2	2
Air flow	(3)	m³/h	15000	15600	20000	20000	22000	22000
NOISE LEVEL								
Sound Power		dB(A)	71	73	75	75	79	79
Sound Pressure	(4)	dB(A)	54	56	57	57	61	61
SIZE AND WEIGHT								
A	(3)	mm	2198	2198	2499	2499	2899	2899
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	690	725	725	725	930	930

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DW-UNDER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	7,89	9,39	11,0	14,5	16,3	21,2	23,0	27,8
Sensible cooling capacity gross	(1)	kW	7,89	9,39	10,5	14,5	14,8	21,2	23,0	26,5
Total power input (Comp.+fans)	(1)	kW	1,42	1,77	2,28	2,87	3,31	4,00	4,86	5,97
EER (Indoor unit)	(1)	kW/kW	5,56	5,31	4,82	5,05	4,92	5,30	4,73	4,66
SHR	(2)		1,00	1,00	0,95	1,00	0,91	1,00	1,00	0,95
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,44	0,53	0,62	0,81	0,91	1,17	1,29	1,57
Pressure drop	(1)	kPa	22,1	30,9	25,5	20,4	25,4	20,8	24,6	18,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,30	3,30	3,30	3,60	3,60	4,40	4,40	4,50
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1	1
Air flow	(3)	m³/h	2500	2700	2800	4000	4200	5700	6100	6400
NOISE LEVEL										
Sound Power		dB(A)	60	62	58	64	65	64	66	66
Sound Pressure	(4)	dB(A)	44	46	42	48	49	48	50	50
SIZE AND WEIGHT										
A	(3)	mm	650	650	650	785	785	1085	1085	1085
B	(3)	mm	675	675	675	675	675	775	775	775
H	(3)	mm	1925	1925	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	245	247	250	285	290	340	345	345

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DW-UNDER			032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4L	E4L	E4L	E4L	E5L	E5L	E6L	E6L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
Total cooling capacity gross	(1)	kW	34,4	39,5	44,1	48,0	39,8	50,3	57,7	65,2
Sensible cooling capacity gross	(1)	kW	34,4	39,5	42,6	44,8	39,2	46,0	57,5	62,5
Total power input (Comp.+fans)	(1)	kW	6,71	8,20	8,85	9,87	8,23	11,2	12,0	13,3
EER (Indoor unit)	(1)	kW/kW	5,13	4,82	4,98	4,86	4,84	4,49	4,81	4,90
SHR	(2)		1,00	1,00	0,97	0,93	0,98	0,91	1,00	0,96
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,91	2,20	2,46	2,70	2,23	2,86	3,25	3,66
Pressure drop	(1)	kPa	27,3	35,4	27,5	32,5	27,5	43,7	22,1	27,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2	2
Refrigerant charge		kg	6,20	6,20	9,30	9,30	9,00	9,00	9,80	9,80
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(3)	m³/h	8700	10000	10800	10800	10000	12000	15000	15600
NOISE LEVEL										
Sound Power		dB(A)	72	75	75	75	75	78	72	73
Sound Pressure	(4)	dB(A)	55	58	58	58	58	61	55	56
SIZE AND WEIGHT										
A	(3)	mm	1630	1630	1630	1630	1955	1955	2198	2198
B	(3)	mm	930	930	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	420	425	437	435	645	645	710	710

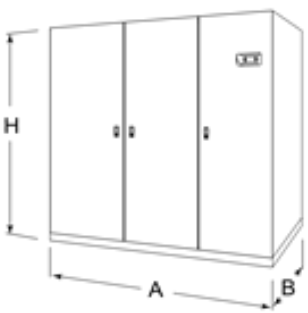
t-NEXT DW-UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7L	E7L	E8L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	79,4	87,2	97,5	109	126	156
Sensible cooling capacity gross	(1)	kW	77,7	82,1	91,0	97,2	126	144
Total power input (Comp.+fans)	(1)	kW	15,7	17,5	19,5	22,8	27,7	34,7
EER (Indoor unit)	(1)	kW/kW	5,06	4,98	5,00	4,78	4,55	4,50
SHR	(2)		0,98	0,94	0,93	0,89	1,00	0,92
PLATE CAPACITOR								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	4,41	4,88	5,46	6,18	7,10	8,87
Pressure drop	(1)	kPa	23,5	28,2	22,6	28,5	33,8	51,2
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	16,2	16,2	17,4	17,4	21,6	21,6
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(3)	m³/h	20000	20000	22000	22000	33100	33100
NOISE LEVEL								
Sound Power		dB(A)	75	75	80	80	81	81
Sound Pressure	(4)	dB(A)	57	57	62	62	63	63
SIZE AND WEIGHT								
A	(3)	mm	2499	2499	2899	2899	3299	3299
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	775	775	990	990	1140	1190

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT DF DW

012 M1 S - 150 M4 D 12,3-147 kW

Close control unit dual fluid INVERTER, water cooled direct expansion.



Close control unit dual fluid INVERTER, water cooled direct expansion.
Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control. Particularly suitable for air conditioning technological, servers and IT rooms and all technological applications in general. DUAL FLUID unit has to be connected to an external chiller for PRIMARY circuit. The direct expansion circuit with INVERTER compressor, secondary or BACK-UP circuit, is water cooled and has to be connected with a remote dry cooler or to city water net. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the starting current. Units fitted with electronic expansion valve and Plug-Fan EC INVERTER fans, upflow or downflow.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Refrigerant circuit consisting of electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions, on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

i-NEXT DF DW OVER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D	047 M1 S	068 M2 D	094 M2 D
Frame			E1	E2	E3	E4L	E5L	E5L	E7L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	11,0	23,0	25,4	41,3	51,8	56,2	82,5	110
Sensible cooling capacity gross	(1)	kW	11,0	20,8	24,8	41,3	51,7	54,3	82,4	103
Total power input (Comp.+fans)	(1)	kW	2,32	5,95	5,91	10,1	12,8	14,2	19,8	28,0
EER (Indoor unit)	(1)	kW/kW	4,74	3,87	4,30	4,09	4,05	3,96	4,17	3,93
SHR	(2)		1,00	0,90	0,98	1,00	1,00	0,97	1,00	0,94
CHILLED WATER										
Total cooling capacity gross	(3)	kW	12,3	18,0	24,5	43,5	56,2	56,2	99,8	115
Sensible cooling capacity gross	(3)	kW	12,3	18,0	24,5	43,5	56,2	56,2	95,0	108
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	0,95	0,94
Fluid flow	(3)	l/s	0,59	0,86	1,17	2,08	2,69	2,69	4,77	5,52
Total pressure drop (Coil + Valve)	(3)	kPa	16,9	36,8	25,4	18,5	36,2	36,2	39,7	58,4
EXCHANGERS										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,63	1,36	1,47	2,38	2,99	3,27	4,76	6,42
Pressure drop	(1)	kPa	27,9	45,5	33,2	27,5	23,1	50,7	28,9	33,1
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	1	2	2
No. Circuits		N°	1	1	1	1	2	1	1	2
Refrigerant charge		kg								
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(4)	m³/h	2800	4100	5500	10000	12000	12000	20000	22000
NOISE LEVEL										
Sound Power		dB(A)	69	63	65	75	81	81	80	83
Sound Pressure	(5)	dB(A)	53	47	49	58	64	64	62	65
SIZE AND WEIGHT										
A	(4)	mm	650	785	1085	1630	1955	1955	2499	2899
B	(4)	mm	675	675	775	930	930	930	930	930
H	(4)	mm	1925	1925	1925	1980	1980	1980	1980	1980
Weight	(4)	kg	230	280	325	480	610	580	730	900

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT DF DW

Close control unit dual fluid INVERTER, water cooled direct expansion.

012 M1 S - 150 M4 D 12,3-147 kW

i-NEXT DF DW UNDER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D
Frame			E1	E2	E3	E4L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
DIRECT EXPANSION							
Total cooling capacity gross	(1)	kW	11,0	23,0	25,4	41,3	51,8
Sensible cooling capacity gross	(1)	kW	11,0	20,8	24,8	41,3	51,7
Total power input (Comp.+fans)	(1)	kW	2,32	5,95	5,91	10,1	12,8
EER (Indoor unit)	(1)	kW/kW	4,74	3,87	4,30	4,09	4,05
SHR	(2)		1,00	0,90	0,98	1,00	1,00
CHILLED WATER							
Total cooling capacity gross	(3)	kW	12,3	18,0	24,5	43,5	56,2
Sensible cooling capacity gross	(3)	kW	12,3	18,0	24,5	43,5	56,2
SHR	(2)		1,00	1,00	1,00	1,00	1,00
Fluid flow	(3)	l/s	0,59	0,86	1,17	2,08	2,69
Total pressure drop (Coil + Valve)	(3)	kPa	16,9	36,8	25,4	18,5	36,2
EXCHANGERS							
Capacitors nr.		N°	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,63	1,36	1,47	2,38	2,99
Pressure drop	(1)	kPa	27,9	45,5	33,2	27,5	23,1
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	2
No. Circuits		N°	1	1	1	1	2
Refrigerant charge		kg					
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(4)	m³/h	2800	4100	5500	10000	12000
NOISE LEVEL							
Sound Power		dB(A)	63	64	62	74	76
Sound Pressure	(5)	dB(A)	47	48	46	57	59
SIZE AND WEIGHT							
A	(4)	mm	650	785	1085	1630	1955
B	(4)	mm	675	675	775	930	930
H	(4)	mm	1925	1925	1925	1980	1980
Weight	(4)	kg	240	290	345	490	620

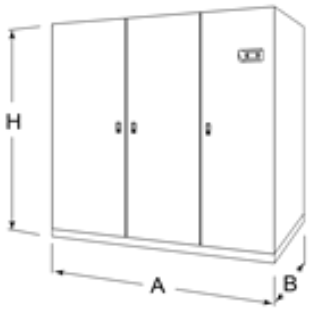
i-NEXT DF DW UNDER			047 M1 S	068 M2 D	094 M2 D	120 M4 D	150 M4 D
Frame			E5L	E7L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
DIRECT EXPANSION							
Total cooling capacity gross	(1)	kW	56,2	82,5	110	116	140
Sensible cooling capacity gross	(1)	kW	54,3	82,4	103	116	140
Total power input (Comp.+fans)	(1)	kW	14,2	19,8	28,0	28,1	37,8
EER (Indoor unit)	(1)	kW/kW	3,96	4,17	3,93	4,13	3,70
SHR	(2)		0,97	1,00	0,94	1,00	1,00
CHILLED WATER							
Total cooling capacity gross	(3)	kW	56,2	99,8	115	135	147
Sensible cooling capacity gross	(3)	kW	56,2	95,0	108	135	147
SHR	(2)		1,00	0,95	0,94	1,00	1,00
Fluid flow	(3)	l/s	2,69	4,77	5,52	6,44	7,04
Total pressure drop (Coil + Valve)	(3)	kPa	36,2	39,7	58,4	38,5	44,8
EXCHANGERS							
Capacitors nr.		N°	1	1	1	1	1
Condenser fluid flow	(1)	l/s	3,27	4,76	6,42	6,74	8,28
Pressure drop	(1)	kPa	50,7	28,9	33,1	32,3	49,8
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	2	2	4	4
No. Circuits		N°	1	2	2	2	2
Refrigerant charge		kg					
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3
Air flow	(4)	m³/h	12000	20000	22000	28000	32000
NOISE LEVEL							
Sound Power		dB(A)	76	76	78	80	80
Sound Pressure	(5)	dB(A)	59	58	60	62	62
SIZE AND WEIGHT							
A	(4)	mm	1955	2499	2899	3299	3299
B	(4)	mm	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980
Weight	(4)	kg	590	785	960	1100	1125

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

t-NEXT DF DW

007 P1 S - 146 P4 D 11,2-145 kW

Close control unit dual fluid, water cooled direct expansion



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control.
Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.
Units fitted with EC INVERTER fans, upflow or downflow.
DUAL FLUID unit has to be connected to an external chiller for PRIMARY circuit.
The direct expansion circuit, secondary or BACK-UP circuit, is water cooled and has to be connected with a remote dry cooler or to city water net.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

t-NEXT DF DW-OVER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
DIRECT EXPANSION									
Total cooling capacity gross	(1)	kW	8,18	9,79	11,4	15,2	16,3	21,4	23,5
Sensible cooling capacity gross	(1)	kW	7,56	8,95	10,3	13,9	14,8	20,5	22,2
Total power input (Comp.+fans)	(1)	kW	1,48	1,86	2,37	3,00	3,44	4,15	5,07
EER (Indoor unit)	(1)	kW/kW	5,53	5,26	4,81	5,07	4,74	5,16	4,64
SHR	(2)		0,92	0,91	0,90	0,91	0,91	0,96	0,94
CHILLED WATER									
Total cooling capacity gross	(3)	kW	11,2	11,8	12,2	17,6	18,3	25,4	26,5
Sensible cooling capacity gross	(3)	kW	11,2	11,8	12,2	17,6	18,3	24,6	25,6
SHR	(2)		1,00	1,00	1,00	1,00	1,00	0,97	0,97
Fluid flow	(3)	l/s	0,54	0,57	0,58	0,84	0,88	1,21	1,27
Total pressure drop (Coil + Valve)	(3)	kPa	12,8	14,1	14,9	32,9	35,2	24,7	26,6
EXCHANGERS									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,46	0,55	0,64	0,85	0,91	1,18	1,32
Pressure drop	(1)	kPa	23,6	33,3	27,2	22,0	25,5	21,3	25,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg							
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(4)	m³/h	2500	2700	2800	4000	4200	5700	6100
NOISE LEVEL									
Sound Power		dB(A)	66	66	68	70	71	71	75
Sound Pressure	(5)	dB(A)	50	50	52	54	55	55	59
SIZE AND WEIGHT									
A	(4)	mm	650	650	650	785	785	1085	1085
B	(4)	mm	675	675	675	675	675	775	775
H	(4)	mm	1925	1925	1925	1925	1925	1925	1925
Weight	(4)	kg	280	282	285	328	333	393	398

t-NEXT DF DW-OVER			026 P1 S	032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D
Frame			E3	E4L	E4L	E4L	E4L	E5L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
DIRECT EXPANSION									
Total cooling capacity gross	(1)	kW	28,4	34,7	40,1	44,9	48,9	40,8	51,7
Sensible cooling capacity gross	(1)	kW	26,0	32,9	37,9	41,8	44,6	38,0	47,5
Total power input (Comp.+fans)	(1)	kW	6,18	6,92	8,52	9,20	10,3	8,35	11,6
EER (Indoor unit)	(1)	kW/kW	4,60	5,01	4,71	4,88	4,75	4,89	4,46
SHR	(2)		0,92	0,95	0,95	0,93	0,91	0,93	0,92
CHILLED WATER									
Total cooling capacity gross	(3)	kW	27,4	39,0	43,4	45,6	46,0	49,9	55,5
Sensible cooling capacity gross	(3)	kW	26,8	38,3	42,0	45,6	44,9	48,2	55,2
SHR	(2)		0,98	0,98	0,97	1,00	0,98	0,97	0,99
Fluid flow	(3)	l/s	1,31	1,86	2,07	2,18	2,20	2,39	2,65
Total pressure drop (Coil + Valve)	(3)	kPa	28,3	14,2	17,1	18,7	19,0	27,4	33,1
EXCHANGERS									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,60	1,93	2,23	2,50	2,74	2,27	2,93
Pressure drop	(1)	kPa	19,6	27,8	36,5	28,6	33,6	28,7	45,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	2
No. Circuits		N°	1	1	1	1	1	2	2
Refrigerant charge		kg							
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(4)	m³/h	6400	8700	10000	10800	10800	10000	12000
NOISE LEVEL									
Sound Power		dB(A)	73	78	80	79	79	80	81
Sound Pressure	(5)	dB(A)	57	61	63	62	62	63	64
SIZE AND WEIGHT									
A	(4)	mm	1085	1630	1630	1630	1630	1955	1955
B	(4)	mm	775	930	930	930	930	930	930
H	(4)	mm	1925	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	398	612	612	617	617	769	769

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DF DW

Close control unit dual fluid, water cooled direct expansion

007 P1 S - 146 P4 D 11,2-145 kW

t-NEXT DF DW-OVER			055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E6L	E6L	E7L	E7L	E8L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
DIRECT EXPANSION								
Total cooling capacity gross	(1)	kW	59,2	66,6	80,8	88,8	99,7	112
Sensible cooling capacity gross	(1)	kW	56,1	61,3	75,7	81,1	90,9	97,9
Total power input (Comp.+fans)	(1)	kW	12,3	13,8	16,3	18,1	20,2	23,4
EER (Indoor unit)	(1)	kW/kW	4,81	4,83	4,96	4,91	4,94	4,79
SHR	(2)		0,95	0,92	0,94	0,91	0,91	0,87
CHILLED WATER								
Total cooling capacity gross	(3)	kW	65,3	67,3	101	101	116	116
Sensible cooling capacity gross	(3)	kW	63,2	65,4	95,3	95,3	108	108
SHR	(2)		0,97	0,97	0,94	0,94	0,93	0,93
Fluid flow	(3)	l/s	3,12	3,22	4,84	4,84	5,53	5,53
Total pressure drop (Coil + Valve)	(3)	kPa	15,7	16,6	38,8	38,8	49,3	49,3
EXCHANGERS								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	3,32	3,73	4,48	4,96	5,57	6,30
Pressure drop	(1)	kPa	23,1	28,7	24,3	29,2	23,5	29,6
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg						
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	2	2
Air flow	(4)	m³/h	15000	15600	20000	20000	22000	22000
NOISE LEVEL								
Sound Power		dB(A)	78	79	82	82	84	85
Sound Pressure	(5)	dB(A)	61	62	64	64	66	67
SIZE AND WEIGHT								
A	(4)	mm	2198	2198	2499	2499	2899	2899
B	(4)	mm	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	844	844	906	906	1137	1137

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DF DW-UNDER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	8,18	9,79	11,4	15,2	16,3	21,4	23,5	28,4
Sensible cooling capacity gross	(1)	kW	7,56	8,95	10,3	13,9	14,8	20,5	22,2	26,0
Total power input (Comp.+fans)	(1)	kW	1,48	1,86	2,37	3,00	3,44	4,15	5,07	6,18
EER (Indoor unit)	(1)	kW/kW	5,53	5,26	4,81	5,07	4,74	5,16	4,64	4,60
SHR	(2)		0,92	0,91	0,90	0,91	0,91	0,96	0,94	0,92
CHILLED WATER										
Total cooling capacity gross	(3)	kW	11,2	11,8	12,2	17,6	18,3	25,4	26,5	27,4
Sensible cooling capacity gross	(3)	kW	11,2	11,8	12,2	17,6	18,3	24,6	25,6	26,8
SHR	(2)		1,00	1,00	1,00	1,00	1,00	0,97	0,97	0,98
Fluid flow	(3)	l/s	0,54	0,57	0,58	0,84	0,88	1,21	1,27	1,31
Total pressure drop (Coil + Valve)	(3)	kPa	12,8	14,1	14,9	32,9	35,2	24,7	26,6	28,3
EXCHANGERS										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,46	0,55	0,64	0,85	0,91	1,18	1,32	1,60
Pressure drop	(1)	kPa	23,6	33,3	27,2	22,0	25,5	21,3	25,7	19,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg								
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1	1
Air flow	(4)	m³/h	2500	2700	2800	4000	4200	5700	6100	6400
NOISE LEVEL										
Sound Power		dB(A)	60	62	63	64	65	64	66	66
Sound Pressure	(5)	dB(A)	44	46	47	48	49	48	50	50
SIZE AND WEIGHT										
A	(4)	mm	650	650	650	785	785	1085	1085	1085
B	(4)	mm	675	675	675	675	675	775	775	775
H	(4)	mm	1925	1925	1925	1925	1925	1925	1925	1925
Weight	(4)	kg	290	292	295	338	343	413	418	418

t-NEXT DF DW-UNDER			032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4L	E4L	E4L	E4L	E5L	E5L	E6L	E6L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	34,7	40,1	44,9	48,9	40,8	51,7	59,2	66,6
Sensible cooling capacity gross	(1)	kW	32,9	37,9	41,8	44,6	38,0	47,5	56,1	61,3
Total power input (Comp.+fans)	(1)	kW	6,92	8,52	9,20	10,3	8,35	11,6	12,3	13,8
EER (Indoor unit)	(1)	kW/kW	5,01	4,71	4,88	4,75	4,89	4,46	4,81	4,83
SHR	(2)		0,95	0,95	0,93	0,91	0,93	0,92	0,95	0,92
CHILLED WATER										
Total cooling capacity gross	(3)	kW	39,0	43,4	45,6	46,0	49,9	55,5	65,3	67,3
Sensible cooling capacity gross	(3)	kW	38,3	42,0	45,6	44,9	48,2	55,2	63,2	65,4
SHR	(2)		0,98	0,97	1,00	0,98	0,97	0,99	0,97	0,97
Fluid flow	(3)	l/s	1,86	2,07	2,18	2,20	2,39	2,65	3,12	3,22
Total pressure drop (Coil + Valve)	(3)	kPa	14,2	17,1	18,7	19,0	27,4	33,1	15,7	16,6
EXCHANGERS										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,93	2,23	2,50	2,74	2,27	2,93	3,32	3,73
Pressure drop	(1)	kPa	27,8	36,5	28,6	33,6	28,7	45,7	23,1	28,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2	2
Refrigerant charge		kg								
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(4)	m³/h	8700	10000	10800	10800	10000	12000	15000	15600
NOISE LEVEL										
Sound Power		dB(A)	72	75	74	74	75	77	72	73
Sound Pressure	(5)	dB(A)	55	58	57	57	58	60	55	56
SIZE AND WEIGHT										
A	(4)	mm	1630	1630	1630	1630	1955	1955	2198	2198
B	(4)	mm	930	930	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	622	622	627	627	779	779	864	864

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT DF DW

Close control unit dual fluid, water cooled direct expansion

007 P1 S - 146 P4 D 11,2-145 kW

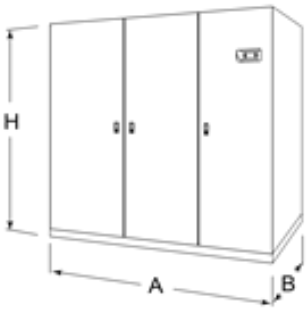
t-NEXT DF DW-UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7L	E7L	E8L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
DIRECT EXPANSION								
Total cooling capacity gross	(1)	kW	80,8	88,8	99,7	112	127	158
Sensible cooling capacity gross	(1)	kW	75,7	81,1	90,9	97,9	125	145
Total power input (Comp.+fans)	(1)	kW	16,3	18,1	20,2	23,4	28,8	35,8
EER (Indoor unit)	(1)	kW/kW	4,96	4,91	4,94	4,79	4,41	4,41
SHR	(2)		0,94	0,91	0,91	0,87	0,98	0,92
CHILLED WATER								
Total cooling capacity gross	(3)	kW	101	101	116	116	145	145
Sensible cooling capacity gross	(3)	kW	95,3	95,3	108	108	145	145
SHR	(2)		0,94	0,94	0,93	0,93	1,00	1,00
Fluid flow	(3)	l/s	4,84	4,84	5,53	5,53	6,95	6,95
Total pressure drop (Coil + Valve)	(3)	kPa	38,8	38,8	49,3	49,3	42,4	42,4
EXCHANGERS								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	4,48	4,96	5,57	6,30	7,18	8,97
Pressure drop	(1)	kPa	24,3	29,2	23,5	29,6	34,6	52,4
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg						
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(4)	m³/h	20000	20000	22000	22000	33100	33100
NOISE LEVEL								
Sound Power		dB(A)	76	76	79	79	80	80
Sound Pressure	(5)	dB(A)	58	58	61	61	62	62
SIZE AND WEIGHT								
A	(4)	mm	2499	2499	2899	2899	3299	3299
B	(4)	mm	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	956	956	1197	1197	1395	1445

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT FC DW

012 M1 S - 150 M4 D 11,0-140 kW

Close control unit free-cooling INVERTER, water cooled direct expansion



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Direct expansion FREE-COOLING unit with INVERTER compressor is water cooled and it has to be connected to a remote dry cooler. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads and optimizing the power absorbed and eliminating the start current. Units fitted with electronic expansion valve and EC INVERTER fans, upflow or downflow.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

OVER Upflow air supply

UNDER Downflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.

Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.

NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.

The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.

Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.

The filter is self-extinguishing.

The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Switchboard to IEC 204-1/EN60204-1

Refrigerant circuit consisting of electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure; sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions, on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.

Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Sound absorber plenum
- Air distribution plenum
- Interface electronic board
- Vibration isolation frame with rubber mountings
- Remote user terminal
- Humidifier

i-NEXT FC DW- OVER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D	047 M1 S	068 M2 D	094 M2 D
Frame			E1	E2	E3	E4L	E5L	E5L	E7L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	11,0	23,0	25,4	41,3	51,8	56,2	82,5	110
Sensible cooling capacity gross	(1)	kW	11,0	20,8	24,8	41,3	51,7	54,3	82,4	103
Total power input (Comp.+fans)	(1)	kW	2,37	5,82	5,89	10,0	12,7	14,1	19,8	27,4
EER (Indoor unit)	(1)	kW/kW	4,64	3,95	4,31	4,13	4,08	3,99	4,17	4,01
SHR	(2)		1,00	0,90	0,98	1,00	1,00	0,97	1,00	0,94
FREECOOLING										
FC total capacity	(3)	kW	10,4	15,9	21,1	37,2	46,9	47,4	81,7	94,0
FC sensible capacity	(3)	kW	10,4	15,9	21,1	37,2	46,9	47,4	81,7	94,0
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,63	1,36	1,47	2,38	2,99	3,27	4,76	6,42
Pressure drop	(1)	kPa	27,9	45,5	33,2	27,5	23,1	50,7	28,9	33,1
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	1	3	2
No. Circuits		N°	1	1	1	1	2	1	1	2
Refrigerant charge		kg	3,20	3,80	4,60	6,80	9,40	9,90	13,8	20,2
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(4)	m³/h	2800	4100	5500	10000	12000	12000	20000	22000
NOISE LEVEL										
Sound Power		dB(A)	70	63	66	74	81	81	83	83
Sound Pressure	(5)	dB(A)	54	47	50	57	64	64	65	65
SIZE AND WEIGHT										
A	(4)	mm	650	785	1085	1630	1955	1955	2499	2899
B	(4)	mm	675	675	775	930	930	930	930	930
H	(4)	mm	1925	1925	1925	1980	1980	1980	1980	1980
Weight	(4)	kg	250	293	358	523	674	632	805	979
COUPLING UNIT EXTERNAL										
Standard dry cooler linked			T-MATE DC-A /STD /M 20	T-MATE DC-A /STD /M 35	T-MATE DC-A /STD /M 45	T-MATE DC-A /STD /M 70	T-MATE DC-A /STD /M 110	T-MATE DC-A /STD /M 110	T-MATE DC-A /STD /M 140	T-MATE DC-A /STD /T 210
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50
Quantity		N°	1	1	1	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-NEXT FC DW

Close control unit free-cooling INVERTER, water cooled direct expansion

012 M1 S - 150 M4 D 11,0-140 kW

i-NEXT FC DW-UNDER			012 M1 S	018 M1 S	022 M1 S	030 M1 S	042 M2 D
Frame			E1	E2	E3	E4L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
DIRECT EXPANSION							
Total cooling capacity gross	(1)	kW	11,0	23,0	25,4	41,3	51,8
Sensible cooling capacity gross	(1)	kW	11,0	20,8	24,8	41,3	51,7
Total power input (Comp.+fans)	(1)	kW	2,37	5,82	5,89	10,0	12,7
EER (Indoor unit)	(1)	kW/kW	4,64	3,95	4,31	4,13	4,08
SHR	(2)		1,00	0,90	0,98	1,00	1,00
FREECOOLING							
FC total capacity	(3)	kW	10,4	15,9	21,1	37,2	46,9
FC sensible capacity	(3)	kW	10,4	15,9	21,1	37,2	46,9
SHR	(2)		1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR							
Capacitors nr.		N°	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,63	1,36	1,47	2,38	2,99
Pressure drop	(1)	kPa	27,9	45,5	33,2	27,5	23,1
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	2
No. Circuits		N°	1	1	1	1	2
Refrigerant charge		kg	3,20	3,80	4,60	6,80	9,40
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(4)	m³/h	2800	4100	5500	10000	12000
NOISE LEVEL							
Sound Power		dB(A)	64	64	63	75	76
Sound Pressure	(5)	dB(A)	48	48	47	58	59
SIZE AND WEIGHT							
A	(4)	mm	650	785	1085	1630	1955
B	(4)	mm	675	675	775	930	930
H	(4)	mm	1925	1925	1925	1980	1980
Weight	(4)	kg	260	313	378	533	684
COUPLING UNIT EXTERNAL							
Standard dry cooler linked			T-MATE DC-A /STD /M 20	T-MATE DC-A /STD /M 35	T-MATE DC-A /STD /M 45	T-MATE DC-A /STD /M 70	T-MATE DC-A /STD /M 110
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Quantity		N°	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
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5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

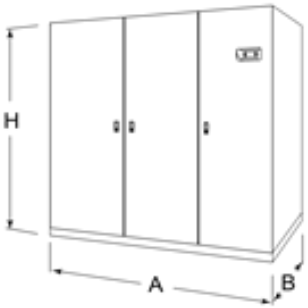
i-NEXT FC DW-UNDER			047 M1 S	068 M2 D	094 M2 D	120 M4 D	150 M4 D
Frame			E5L	E7L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
DIRECT EXPANSION							
Total cooling capacity gross	(1)	kW	56,2	82,5	110	116	140
Sensible cooling capacity gross	(1)	kW	54,3	82,4	103	116	140
Total power input (Comp.+fans)	(1)	kW	14,1	19,8	27,4	28,2	37,8
EER (Indoor unit)	(1)	kW/kW	3,99	4,17	4,01	4,11	3,70
SHR	(2)		0,97	1,00	0,94	1,00	1,00
FREECOOLING							
FC total capacity	(3)	kW	47,4	81,7	94,0	105	118
FC sensible capacity	(3)	kW	47,4	81,7	94,0	105	118
SHR	(2)		1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR							
Capacitors nr.		N°	1	1	1	1	1
Condenser fluid flow	(1)	l/s	3,27	4,76	6,42	6,74	8,28
Pressure drop	(1)	kPa	50,7	28,9	33,1	32,3	49,8
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	2	2	4	4
No. Circuits		N°	1	2	2	2	2
Refrigerant charge		kg	9,90	13,8	20,2	21,6	21,6
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3
Air flow	(4)	m³/h	12000	20000	22000	28000	32000
NOISE LEVEL							
Sound Power		dB(A)	76	79	78	77	80
Sound Pressure	(5)	dB(A)	59	61	60	59	62
SIZE AND WEIGHT							
A	(4)	mm	1955	2499	2899	3299	3299
B	(4)	mm	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980
Weight	(4)	kg	642	859	1049	1225	1250
COUPLING UNIT EXTERNAL							
Standard dry cooler linked			T-MATE DC-A /STD /M 110	T-MATE DC-A /STD /M 140	T-MATE DC-A /STD /T 210	T-MATE DC-A /STD /T 210	T-MATE DC-A /STD /T 280
Voltage		V/ph/Hz	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50
Quantity		N°	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

t-NEXT FC DW

007 P1 S - 146 P4 D 7,88-157 kW

Close control unit free-cooling source, water cooled direct expansion



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control.
Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.
Units fitted with EC INVERTER fans, upflow or downflow.
FREE-COOLING unit water cooled has to be connected with a remote dry cooler or an external chiller.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

t-NEXT FC DW-OVER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
DIRECT EXPANSION									
Total cooling capacity gross	(1)	kW	7,88	9,79	11,4	15,2	15,4	21,2	23,5
Sensible cooling capacity gross	(1)	kW	7,88	8,95	10,3	13,9	15,4	21,2	22,2
Total power input (Comp.+fans)	(1)	kW	1,44	1,82	2,20	2,90	3,32	4,02	4,93
EER (Indoor unit)	(1)	kW/kW	5,47	5,38	5,18	5,24	4,64	5,27	4,77
SHR	(2)		1,00	0,91	0,90	0,91	1,00	1,00	0,94
FREECOOLING									
FC total capacity	(3)	kW	9,20	10,1	10,6	15,1	15,7	21,4	22,5
FC sensible capacity	(3)	kW	9,20	10,1	10,6	15,1	15,7	21,4	22,5
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,44	0,55	0,64	0,85	0,88	1,17	1,32
Pressure drop	(1)	kPa	22,1	33,2	27,2	21,9	23,4	20,9	25,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	3,30	3,30	3,30	3,60	3,60	4,40	4,40
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(4)	m³/h	2500	2700	2800	4000	4200	5700	6100
NOISE LEVEL									
Sound Power		dB(A)	61	62	57	63	64	63	65
Sound Pressure	(5)	dB(A)	45	46	41	47	48	47	49
SIZE AND WEIGHT									
A	(4)	mm	650	650	650	785	785	1085	1085
B	(4)	mm	675	675	675	675	675	775	775
H	(4)	mm	1925	1925	1925	1925	1925	1925	1925
Weight	(4)	kg	280	282	285	328	333	393	398
COUPLING UNIT EXTERNAL									
Standard dry cooler linked			M 20	M 20	M 35	M 35	M 35	M 35	M 45
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Quantity		N°	1	1	1	1	1	1	1

t-NEXT FC DW-OVER			026 P1 S	032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D
Frame			E3	E4L	E4L	E4L	E4L	E5L	E5L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
DIRECT EXPANSION									
Total cooling capacity gross	(1)	kW	27,9	34,0	39,4	44,1	48,0	40,8	51,1
Sensible cooling capacity gross	(1)	kW	26,3	33,8	38,9	42,6	44,8	38,0	46,1
Total power input (Comp.+fans)	(1)	kW	6,00	6,73	8,23	8,89	9,92	8,22	10,9
EER (Indoor unit)	(1)	kW/kW	4,65	5,05	4,79	4,96	4,84	4,96	4,69
SHR	(2)		0,94	0,99	0,99	0,97	0,93	0,93	0,90
FREECOOLING									
FC total capacity	(3)	kW	24,2	33,2	37,5	40,1	40,3	40,5	44,8
FC sensible capacity	(3)	kW	24,2	33,2	37,5	40,1	40,3	40,5	44,8
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR									
Capacitors nr.		N°	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,57	1,89	2,20	2,46	2,70	2,27	2,90
Pressure drop	(1)	kPa	18,9	26,7	35,1	27,5	32,5	28,7	44,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	2
No. Circuits		N°	1	1	1	1	1	2	2
Refrigerant charge		kg	4,50	6,20	6,20	9,30	9,30	9,70	9,70
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1
Air flow	(4)	m³/h	6400	8700	10000	10800	10800	10000	11000
NOISE LEVEL									
Sound Power		dB(A)	64	71	74	75	75	75	75
Sound Pressure	(5)	dB(A)	48	54	57	58	58	58	58
SIZE AND WEIGHT									
A	(4)	mm	1085	1630	1630	1630	1630	1955	1955
B	(4)	mm	775	930	930	930	930	930	930
H	(4)	mm	1925	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	398	612	612	617	617	769	769
COUPLING UNIT EXTERNAL									
Standard dry cooler linked			M 60	M 70	M 70	M 110	M 110	M 110	M 110
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Quantity		N°	1	1	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT FC DW

Close control unit free-cooling source, water cooled direct expansion

007 P1 S - 146 P4 D 7,88-157 kW

t-NEXT FC DW-OVER			055 P2 D	062 P2 D	075 P2 D	082 P2 D	092 P2 D	102 P2 D
Frame			E6L	E6L	E7L	E7L	E8L	E8L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
DIRECT EXPANSION								
Total cooling capacity gross	(1)	kW	59,2	65,2	79,4	87,2	99,7	112
Sensible cooling capacity gross	(1)	kW	56,1	62,5	77,7	82,1	90,9	97,9
Total power input (Comp.+fans)	(1)	kW	12,0	13,4	15,8	17,5	19,7	22,9
EER (Indoor unit)	(1)	kW/kW	4,93	4,87	5,03	4,98	5,06	4,89
SHR	(2)		0,95	0,96	0,98	0,94	0,91	0,87
FREECOOLING								
FC total capacity	(3)	kW	56,4	58,8	79,2	80,3	90,6	92,0
FC sensible capacity	(3)	kW	56,4	58,8	79,2	80,3	90,6	92,0
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	3,32	3,66	4,41	4,88	5,57	6,30
Pressure drop	(1)	kPa	23,2	27,6	23,5	28,2	23,5	29,6
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	11,0	11,4	17,8	17,8	19,1	19,1
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	2	2
Air flow	(4)	m³/h	15000	15600	20000	20000	22000	22000
NOISE LEVEL								
Sound Power		dB(A)	71	73	75	75	78	78
Sound Pressure	(5)	dB(A)	54	56	57	57	60	60
SIZE AND WEIGHT								
A	(4)	mm	2198	2198	2499	2499	2899	2899
B	(4)	mm	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	844	844	906	906	1137	1137
COUPLING UNIT EXTERNAL								
Standard dry cooler linked			M 110	M 140	M 140	T 210	T 210	T 210
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50+N
Quantity		N°	1	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT FC DW-UNDER			007 P1 S	009 P1 S	011 P1 S	014 P1 S	016 P1 S	020 P1 S	022 P1 S	026 P1 S
Frame			E1	E1	E1	E2	E2	E3	E3	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	7,88	9,79	11,4	15,2	15,4	21,2	23,5	27,9
Sensible cooling capacity gross	(1)	kW	7,88	8,95	10,3	13,9	15,4	21,2	22,2	26,3
Total power input (Comp.+fans)	(1)	kW	1,44	1,82	2,34	2,90	3,32	4,02	4,93	6,00
EER (Indoor unit)	(1)	kW/kW	5,47	5,38	4,87	5,24	4,64	5,27	4,77	4,65
SHR	(2)		1,00	0,91	0,90	0,91	1,00	1,00	0,94	0,94
FREECOOLING										
FC total capacity	(3)	kW	9,20	10,1	10,6	15,1	15,7	21,4	22,5	24,2
FC sensible capacity	(3)	kW	9,20	10,1	10,6	15,1	15,7	21,4	22,5	24,2
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	0,44	0,55	0,64	0,85	0,88	1,17	1,32	1,57
Pressure drop	(1)	kPa	22,1	33,2	27,2	21,9	23,4	20,9	25,7	18,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,30	3,30	3,30	3,60	3,60	4,40	4,40	4,50
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	1	1
Air flow	(4)	m³/h	2500	2700	2800	4000	4200	5700	6100	6400
NOISE LEVEL										
Sound Power		dB(A)	61	62	58	64	65	64	66	66
Sound Pressure	(5)	dB(A)	45	46	42	48	49	48	50	50
SIZE AND WEIGHT										
A	(4)	mm	650	650	650	785	785	1085	1085	1085
B	(4)	mm	675	675	675	675	675	775	775	775
H	(4)	mm	1925	1925	1925	1925	1925	1925	1925	1925
Weight	(4)	kg	290	292	295	338	343	413	418	418
COUPLING UNIT EXTERNAL										
Standard dry cooler linked			M 20	M 20	M 35	M 35	M 35	M 35	M 45	M 60
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Quantity		N°	1	1	1	1	1	1	1	1

t-NEXT FC DW-UNDER			032 P1 S	037 P1 S	041 P1 S	045 P1 S	039 P2 D	048 P2 D	055 P2 D	062 P2 D
Frame			E4L	E4L	E4L	E4L	E5L	E5L	E6L	E6L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
DIRECT EXPANSION										
Total cooling capacity gross	(1)	kW	34,0	39,4	44,1	48,0	40,8	51,1	59,2	65,2
Sensible cooling capacity gross	(1)	kW	33,8	38,9	42,6	44,8	38,0	46,1	56,1	62,5
Total power input (Comp.+fans)	(1)	kW	6,73	8,23	8,89	9,92	8,22	10,9	12,0	13,4
EER (Indoor unit)	(1)	kW/kW	5,05	4,79	4,96	4,84	4,96	4,69	4,93	4,87
SHR	(2)		0,99	0,99	0,97	0,93	0,93	0,90	0,95	0,96
FREECOOLING										
FC total capacity	(3)	kW	33,2	37,5	40,1	40,3	40,5	44,8	56,4	58,8
FC sensible capacity	(3)	kW	33,2	37,5	40,1	40,3	40,5	44,8	56,4	58,8
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR										
Capacitors nr.		N°	1	1	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	1,89	2,20	2,46	2,70	2,27	2,90	3,32	3,66
Pressure drop	(1)	kPa	26,7	35,1	27,5	32,5	28,7	45,1	23,2	27,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2	2
Refrigerant charge		kg	6,20	6,20	9,30	9,30	9,70	9,70	11,0	11,4
FANS										
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2	2
Air flow	(4)	m³/h	8700	10000	10800	10800	10000	11000	15000	15600
NOISE LEVEL										
Sound Power		dB(A)	72	75	75	75	75	76	72	73
Sound Pressure	(5)	dB(A)	55	58	58	58	58	59	55	56
SIZE AND WEIGHT										
A	(4)	mm	1630	1630	1630	1630	1955	1955	2198	2198
B	(4)	mm	930	930	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	622	622	627	627	779	779	864	864
COUPLING UNIT EXTERNAL										
Standard dry cooler linked			M 70	M 70	M 110	M 110	M 110	M 110	M 110	M 140
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Quantity		N°	1	1	1	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

t-NEXT FC DW

007 P1 S - 146 P4 D 7,88-157 kW

Close control unit free-cooling source, water cooled direct expansion

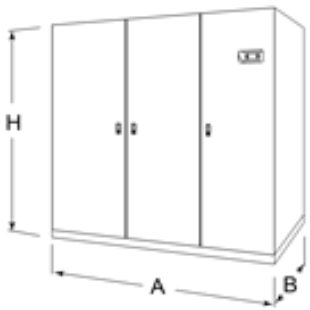
t-NEXT FC DW-UNDER			075 P2 D	082 P2 D	092 P2 D	102 P2 D	117 P4 D	146 P4 D
Frame			E7L	E7L	E8L	E8L	E9L	E9L
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
DIRECT EXPANSION								
Total cooling capacity gross	(1)	kW	79,4	87,2	99,7	112	127	157
Sensible cooling capacity gross	(1)	kW	77,7	82,1	90,9	97,9	123	143
Total power input (Comp.+fans)	(1)	kW	15,8	17,5	19,7	22,9	28,0	34,9
EER (Indoor unit)	(1)	kW/kW	5,03	4,98	5,06	4,89	4,54	4,50
SHR	(2)		0,98	0,94	0,91	0,87	0,97	0,91
FREECOOLING								
FC total capacity	(3)	kW	79,2	80,3	90,6	92,0	124	128
FC sensible capacity	(3)	kW	79,2	80,3	90,6	92,0	124	128
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00
PLATE CAPACITOR								
Capacitors nr.		N°	1	1	1	1	1	1
Condenser fluid flow	(1)	l/s	4,41	4,88	5,57	6,30	7,16	8,93
Pressure drop	(1)	kPa	23,5	28,2	23,5	29,6	34,4	51,9
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	16,2	16,2	19,1	19,1	21,6	21,6
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	2	3	3
Air flow	(4)	m³/h	20000	20000	22000	22000	33100	33100
NOISE LEVEL								
Sound Power		dB(A)	75	75	79	79	81	81
Sound Pressure	(5)	dB(A)	57	57	61	61	63	63
SIZE AND WEIGHT								
A	(4)	mm	2499	2499	2899	2899	3299	3299
B	(4)	mm	930	930	930	930	930	930
H	(4)	mm	1980	1980	1980	1980	1980	1980
Weight	(4)	kg	956	956	1197	1197	1395	1445
COUPLING UNIT EXTERNAL								
Standard dry cooler linked			M 140	T 210	T 210	T 210	T 280	T 280
Voltage		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N
Quantity		N°	1	1	1	1	1	1

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor air (in) 26°C - R.H. 40%; Water (in) 10°C and water flow of DX mode; ESP = 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT S

007 - 215 7,03-234 kW

Close control unit chilled water



Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control.
Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.
Units fitted withEC INVERTER fans, upflow or downflow.
These units are provided with 2 way modulating valve and servomotor.Unit has to be connected with an external chiller.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Sound absorber plenum
- Air distribution plenum
- Interface electronic board

w-NEXT-OVER			007 E0	013 E1	021 E2	032 E3	045 E3P	053 E4
Frame			E0	E1	E2	E3	E3P	E4
Power supply		V/ph/Hz	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	7,03	13,6	21,4	32,1	45,5	53,5
Sensible cooling capacity gross	(1)	kW	5,82	11,9	19,4	29,9	42,1	49,8
Fans power input	(1)	kW	0,12	0,29	0,88	1,66	2,20	2,15
SHR	(2)		0,83	0,88	0,91	0,93	0,93	0,93
Fluid flow	(1)	l/s	0,34	0,65	1,02	1,54	2,18	2,56
Total pressure drop (Coil + Valve)	(1)	kPa	29,4	23,3	57,3	49,3	41,5	45,6
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1
Air flow	(3)	m³/h	1800	2900	4920	7800	10800	13100
NOISE LEVEL								
Sound Power		dB(A)	78	82	91	92	95	96
Sound Pressure	(4)	dB(A)	59	62	71	72	75	76
SIZE AND WEIGHT								
A	(3)	mm	655	650	785	1085	1085	1305
B	(3)	mm	445	675	675	775	930	930
H	(3)	mm	1680	1925	1925	1925	1925	1980
Weight	(3)	kg	150	203	239	302	321	345

w-NEXT-OVER			072 E5	081 E6	100 E7	120 E8	138 E9
Frame			E5	E6	E7	E8	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	78,8	81,7	101	128	140
Sensible cooling capacity gross	(1)	kW	67,7	76,1	94,0	114	130
Fans power input	(1)	kW	2,90	3,47	3,98	6,22	6,42
SHR	(2)		0,86	0,93	0,93	0,89	0,93
Fluid flow	(1)	l/s	3,77	3,91	4,84	6,10	6,68
Total pressure drop (Coil + Valve)	(1)	kPa	59,6	43,4	38,1	62,6	56,9
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	3	3
Air flow	(3)	m³/h	16350	20000	24200	28300	33100
NOISE LEVEL							
Sound Power		dB(A)	97	97	98	102	99
Sound Pressure	(4)	dB(A)	77	76	77	81	78
SIZE AND WEIGHT							
A	(3)	mm	1630	1875	2175	2499	2899
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	428	483	535	598	679

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

w-NEXT-UNDER			007 E0	013 E1	021 E2	032 E3	045 E3P	053 E4	072 E5
Frame			E0	E1	E2	E3	E3P	E4	E5
Power supply		V/ph/Hz	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	7,03	13,6	21,4	32,1	45,5	53,5	78,8
Sensible cooling capacity gross	(1)	kW	5,82	11,9	19,4	29,9	42,1	49,8	67,7
Fans power input	(1)	kW	0,12	0,29	0,88	1,66	2,20	2,15	2,90
SHR	(2)		0,83	0,88	0,91	0,93	0,93	0,93	0,86
Fluid flow	(1)	l/s	0,34	0,65	1,02	1,54	2,18	2,56	3,77
Total pressure drop (Coil + Valve)	(1)	kPa	29,4	23,3	57,3	49,3	41,5	45,6	59,6
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1	2
Air flow	(3)	m³/h	1800	2900	4920	7800	10800	13100	16350
NOISE LEVEL									
Sound Power		dB(A)	78	82	91	92	95	96	97
Sound Pressure	(4)	dB(A)	59	62	71	72	75	76	77
SIZE AND WEIGHT									
A	(3)	mm	655	650	785	1085	1085	1305	1630
B	(3)	mm	445	675	675	775	930	930	930
H	(3)	mm	1680	1925	1925	1925	1925	1980	1980
Weight	(3)	kg	150	216	257	325	329	379	470

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

w-NEXT S

007 - 215 7,03-234 kW

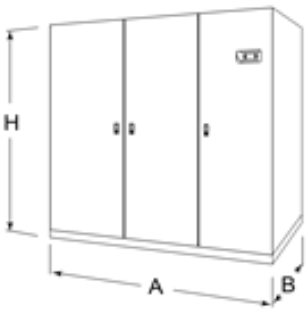
Close control unit chilled water

w-NEXT-UNDER			081 E6	100 E7	120 E8	138 E9	160 E10	215 E10
Frame			E6	E7	E8	E9	E10	E10
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	81,7	101	128	140	171	234
Sensible cooling capacity gross	(1)	kW	76,1	94,0	114	130	151	177
Fans power input	(1)	kW	3,47	3,98	6,22	6,42	6,44	6,44
SHR	(2)		0,93	0,93	0,89	0,93	0,88	0,76
Fluid flow	(1)	l/s	3,91	4,84	6,10	6,68	8,19	11,2
Total pressure drop (Coil + Valve)	(1)	kPa	43,4	38,1	62,6	56,9	89,1	79,7
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	3	3	3	3
Air flow	(3)	m³/h	20000	24200	28300	33100	37150	37150
NOISE LEVEL								
Sound Power		dB(A)	97	98	102	102	101	101
Sound Pressure	(4)	dB(A)	76	77	81	81	80	80
SIZE AND WEIGHT								
A	(3)	mm	1875	2175	2499	2899	3510	3510
B	(3)	mm	930	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980	1980
Weight	(3)	kg	531	589	660	753	900	970

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT DF

013 - 160 13,6-140 kW

DUAL COIL close control unit, chilled water type



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating elements, optional humidifer and dehumidifier for precise temperature and humidity control.
Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.
Units fitted with EC INVERTER fans, upflow or downflow.
These units are provided with two indipendent chilled water circuits, each one with 2 way modulating valve and servomotor. Units has to be connected to 2 complete independent circuit each one in back-up to the other one.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

OVER Upflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

w-NEXT DF-OVER			013 E1	021 E2	032 E3	045 E3P	053 E4
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	13,6	21,4	32,1	45,5	53,5
Sensible cooling capacity gross	(1)	kW	11,9	19,4	29,9	42,1	49,8
Fans power input	(1)	kW	0,32	0,99	1,81	2,14	2,56
SHR	(2)		0,88	0,91	0,93	0,93	0,93
Fluid flow	(1)	l/s	0,65	1,02	1,54	2,18	2,56
Total pressure drop (Coil + Valve)	(1)	kPa	9,45	23,1	18,7	17,5	12,5
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(3)	m³/h	2900	4920	7800	10800	13100
NOISE LEVEL							
Sound Power		dB(A)	82	90	92	95	96
Sound Pressure	(4)	dB(A)	62	70	72	75	76
SIZE AND WEIGHT							
A	(3)	mm	650	785	1085	1085	1305
B	(3)	mm	675	675	775	930	930
H	(3)	mm	1925	1925	1925	1925	1980
Weight	(3)	kg	223	262	335	364	397

w-NEXT DF-OVER			072 E5	081 E6	100 E7	120 E8	138 E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	78,8	81,7	101	128	140
Sensible cooling capacity gross	(1)	kW	67,7	76,1	94,0	114	130
Fans power input	(1)	kW	3,10	3,74	4,82	6,72	6,91
SHR	(2)		0,86	0,93	0,93	0,89	0,93
Fluid flow	(1)	l/s	3,77	3,91	4,84	6,10	6,68
Total pressure drop (Coil + Valve)	(1)	kPa	30,2	11,8	19,1	32,5	20,7
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	3	3
Air flow	(3)	m³/h	16350	20000	24200	28300	33100
NOISE LEVEL							
Sound Power		dB(A)	97	97	98	102	99
Sound Pressure	(4)	dB(A)	77	76	77	81	78
SIZE AND WEIGHT							
A	(3)	mm	1630	1875	2175	2499	2899
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	492	557	624	699	805

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

w-NEXT DF-UNDER			013 E1	021 E2	032 E3	045 E3P	053 E4	072 E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	13,6	21,4	32,1	45,5	53,5	78,8
Sensible cooling capacity gross	(1)	kW	11,9	19,4	29,9	42,1	49,8	67,7
Fans power input	(1)	kW	0,32	0,99	1,81	2,14	2,56	3,10
SHR	(2)		0,88	0,91	0,93	0,93	0,93	0,86
Fluid flow	(1)	l/s	0,65	1,02	1,54	2,18	2,56	3,77
Total pressure drop (Coil + Valve)	(1)	kPa	9,45	23,1	18,7	17,5	12,5	30,2
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	2
Air flow	(3)	m³/h	2900	4920	7800	10800	13100	16350
NOISE LEVEL								
Sound Power		dB(A)	82	90	92	95	96	97
Sound Pressure	(4)	dB(A)	62	70	72	75	76	77
SIZE AND WEIGHT								
A	(3)	mm	650	785	1085	1085	1305	1630
B	(3)	mm	675	675	775	930	930	930
H	(3)	mm	1925	1925	1925	1925	1980	1980
Weight	(3)	kg	236	280	358	372	431	534

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

w-NEXT DF

DUAL COIL close control unit, chilled water type

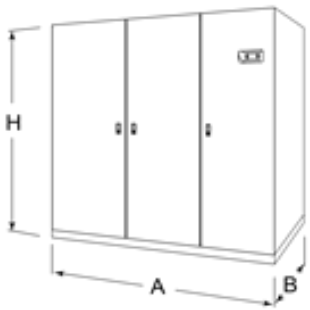
013 - 160 13,6-140 kW

w-NEXT DF-UNDER			081 E6	100 E7	120 E8	138 E9	160 E10
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	81,7	101	128	140	171
Sensible cooling capacity gross	(1)	kW	76,1	94,0	114	130	151
Fans power input	(1)	kW	3,74	4,82	6,72	7,14	7,66
SHR	(2)		0,93	0,93	0,89	0,93	0,88
Fluid flow	(1)	l/s	3,91	4,84	6,10	6,68	8,19
Total pressure drop (Coil + Valve)	(1)	kPa	11,8	19,1	32,5	20,7	34,8
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	3	3	3
Air flow	(3)	m³/h	20000	24200	28300	33100	37150
NOISE LEVEL							
Sound Power		dB(A)	97	98	102	102	102
Sound Pressure	(4)	dB(A)	76	77	81	81	81
SIZE AND WEIGHT							
A	(3)	mm	1875	2175	2499	2899	3510
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	605	678	671	879	1052

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT HD S

HIGH DENSITY chilled water close control unit

015 - 146 15,4-148 kW



Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with EC INVERTER fans, downflow. These units are provided with 2 way modulating valve and servomotor. Unit has to be connected with an external chiller.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.

NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.

The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.

The filter is self-extinguishing.

Switchboard to IEC 204-1/EN60204-1

Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

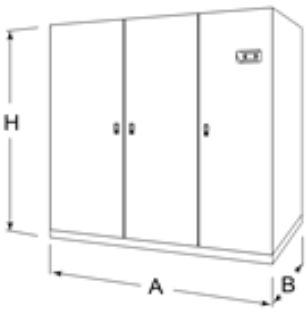
w-NEXT HD S-UNDER			015	024	041	048	060
Frame			E1	E2	E3	E3P	E4
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	15,4	25,0	39,4	48,5	61,6
Sensible cooling capacity gross	(1)	kW	12,7	21,1	32,7	40,8	52,0
Fans power input	(1)	kW	0,33	0,89	1,43	1,80	2,23
SHR	(2)		0,82	0,84	0,83	0,84	0,84
Fluid flow	(1)	l/s	0,74	1,20	1,88	2,32	2,95
Total pressure drop (Coil + Valve)	(1)	kPa	29,3	66,0	75,3	59,2	70,8
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(3)	m³/h	3250	5560	8300	10500	13600
NOISE LEVEL							
Sound Power		dB(A)	83	93	93	94	97
Sound Pressure	(4)	dB(A)	63	73	73	74	77
SIZE AND WEIGHT							
A	(3)	mm	650	785	1085	1085	1305
B	(3)	mm	675	675	775	930	930
H	(3)	mm	1925	1925	1925	1925	1980
Weight	(3)	kg	216	257	325	329	379

w-NEXT HD S-UNDER			072	090	110	122	146
Frame			E5	E6	E7	E8	E9
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	74,0	92,6	114	128	148
Sensible cooling capacity gross	(1)	kW	62,6	78,1	95,2	106	124
Fans power input	(1)	kW	2,96	3,64	3,81	4,88	5,67
SHR	(2)		0,85	0,84	0,84	0,83	0,84
Fluid flow	(1)	l/s	3,54	4,43	5,44	6,11	7,10
Total pressure drop (Coil + Valve)	(1)	kPa	40,7	65,2	102	85,1	78,8
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	2	3	3
Air flow	(3)	m³/h	16800	20500	24300	26500	31500
NOISE LEVEL							
Sound Power		dB(A)	97	98	98	101	101
Sound Pressure	(4)	dB(A)	77	77	77	80	80
SIZE AND WEIGHT							
A	(3)	mm	1630	1875	2175	2499	2899
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	470	531	589	660	753

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT HD K

HIGH DENSITY chilled water close control unit

015 - 170 14,3-183 kW



HIGH DENSITY chilled water close control unit
Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with EC INVERTER fans, downflow. These units are provided with 2 way modulating valve and servomotor. Unit has to be connected with an external chiller.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard COARSE 60% (ISO EN 16890) filtering section, Optional ePM10 50% (ISO EN 16890) - ePM1 85% (ISO EN 16890) , to CEN-EN 779 with average degree of separation 90.1% ASHRAE.
The filter is self-extinguishing.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Air distribution plenum
- Sound absorber plenum
- Interface electronic board

APPLICATION HIGH CW

w-NEXT HD K-UNDER			015	024	041	048	060	072
Frame			E1	E2	E3	E3P	E4	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	14,3	23,2	35,9	44,9	57,8	71,7
Sensible cooling capacity gross	(1)	kW	14,3	23,2	35,9	44,9	57,8	71,7
Fans power input	(1)	kW	0,31	0,91	1,46	1,88	2,35	3,11
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,43	0,70	1,08	1,35	1,73	2,15
Total pressure drop (Coil + Valve)	(1)	kPa	19,0	11,5	15,8	20,0	16,6	17,9
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	2
Air flow	(3)	m³/h	3150	5500	8300	10500	13600	16800
NOISE LEVEL								
Sound Power		dB(A)	83	92	93	94	97	97
Sound Pressure	(4)	dB(A)	63	72	73	74	77	77
SIZE AND WEIGHT								
A	(3)	mm	650	785	1085	1085	1305	1630
B	(3)	mm	675	675	775	930	930	930
H	(3)	mm	1925	1925	1925	1925	1980	1980
Weight	(3)	kg	220	261	332	330	385	478

APPLICATION HIGH CW

w-NEXT HD K-UNDER			090	110	122	146	170
Frame			E6	E7	E8	E9	E10
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	87,9	102	113	133	169
Sensible cooling capacity gross	(1)	kW	87,9	102	113	133	169
Fans power input	(1)	kW	3,68	4,03	5,04	5,90	6,93
SHR	(2)		1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	2,63	3,07	3,40	3,99	5,08
Total pressure drop (Coil + Valve)	(1)	kPa	19,4	14,3	18,4	19,1	32,4
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	3	3	3
Air flow	(3)	m³/h	20500	24300	26500	31500	39600
NOISE LEVEL							
Sound Power		dB(A)	98	98	101	101	102
Sound Pressure	(4)	dB(A)	77	77	80	80	81
SIZE AND WEIGHT							
A	(3)	mm	1875	2175	2499	2899	3510
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	540	598	669	764	930

Notes

1 Indoor conditions (in) 35°C - R.H. 30%; Water temperature (in/out) 18°C/26°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

APPLICATION MEDIUM CW

w-NEXT HD K-UNDER			015	024	041	048	060	072
Frame			E1	E2	E3	E3P	E4	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	15,3	24,8	38,6	48,2	62,1	76,8
Sensible cooling capacity gross	(1)	kW	15,3	24,8	38,6	48,2	62,1	76,8
Fans power input	(1)	kW	0,31	0,91	1,46	1,88	2,35	3,11
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,73	1,19	1,85	2,31	2,97	3,68
Total pressure drop (Coil + Valve)	(1)	kPa	51,4	31,8	43,2	55,4	45,5	49,8
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	2
Air flow	(3)	m³/h	3150	5500	8300	10500	13600	16800
NOISE LEVEL								
Sound Power		dB(A)	83	92	93	94	97	97
Sound Pressure	(4)	dB(A)	67	76	77	78	80	80
SIZE AND WEIGHT								
A	(3)	mm	650	785	1085	1085	1305	1630
B	(3)	mm	675	675	775	930	930	930
H	(3)	mm	1925	1925	1925	1925	1980	1980
Weight	(3)	kg	220	261	332	330	385	478

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 10°C/15°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

w-NEXT HD K

HIGH DENSITY chilled water close control unit

015 - 170 14,3-183 kW

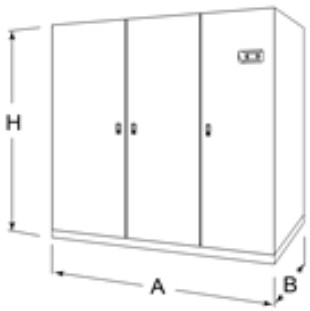
APPLICATION MEDIUM CW

w-NEXT HD K-UNDER			090	110	122	146	170
Frame			E6	E7	E8	E9	E10
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	94,7	111	122	144	183
Sensible cooling capacity gross	(1)	kW	94,7	111	122	144	183
Fans power input	(1)	kW	3,68	4,03	5,04	5,90	6,93
SHR	(2)		1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	4,53	5,30	5,84	6,89	8,74
Total pressure drop (Coil + Valve)	(1)	kPa	52,7	40,5	51,3	54,9	92,1
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	3	3	3
Air flow	(3)	m³/h	20500	24300	26500	31500	39600
NOISE LEVEL							
Sound Power		dB(A)	98	98	101	101	102
Sound Pressure	(4)	dB(A)	81	81	83	83	84
SIZE AND WEIGHT							
A	(3)	mm	1875	2175	2499	2899	3510
B	(3)	mm	930	930	930	930	930
H	(3)	mm	1980	1980	1980	1980	1980
Weight	(3)	kg	540	598	669	764	930

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 10°C/15°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT2 S

065 - 226 58,2-227 kW

Close control unit chilled water



Close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units consist of two modules: the first housing the heat exchanger, usually placed over the floor, the second where EC inverter fans are fitted. Downflow air supply. These units are provided with modulating 2 way valve and servomotor. Unit has to be connected with an external chiller.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard G4 filtering section, M5, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Interface electronic board

w-NEXT2 S-UNDER			065	088	096	127	148	173	226
Frame			E4	E5	E6	E7	E8	E9	E10
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	58,2	89,2	97,9	127	149	175	227
Sensible cooling capacity gross	(1)	kW	47,8	69,9	78,8	104	121	144	182
Fans power input	(1)	kW	2,40	4,50	4,80	6,60	6,30	7,00	8,70
SHR	(2)		0,82	0,78	0,80	0,82	0,81	0,82	0,80
Fluid flow	(1)	l/s	2,78	4,27	4,68	6,07	7,15	8,37	10,9
Total pressure drop (Coil + Valve)	(1)	kPa	56,0	85,2	65,2	65,3	95,3	94,3	84,5
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3	3	4
Air flow	(3)	m³/h	13950	19700	23000	30000	34000	41000	52000
NOISE LEVEL									
Sound Power		dB(A)	85	87	88	89	90	90	90
Sound Pressure	(4)	dB(A)	64	66	67	68	69	68	68
SIZE AND WEIGHT									
A	(3)	mm	1305	1630	1875	2175	2499	2899	3510
B	(3)	mm	930	930	930	930	930	930	930
H	(3)	mm	2580	2580	2580	2580	2580	2580	2580
Weight	(3)	kg	410	520	595	695	795	910	1103

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT2 K

Close control unit chilled water

080 - 280 57,8-225 kW



Close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units consist of two modules: the first housing the heat exchanger, usually placed over the floor, the second where EC inverter fans are fitted. Downflow air supply. These units are provided with modulating 2 way valve and servomotor. Unit has to be connected with an external chiller.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard G4 filtering section, M5, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Interface electronic board

w-NEXT2 K-UNDER			080	108	128	154	180	210	280
Frame			E4	E5	E6	E7	E8	E9	E10
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	57,8	86,8	103	125	146	173	225
Sensible cooling capacity gross	(1)	kW	57,8	86,8	103	125	146	173	225
Fans power input	(1)	kW	2,40	4,50	4,80	6,60	6,30	7,00	8,70
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	2,76	4,15	4,92	5,97	6,97	8,27	10,8
Total pressure drop (Coil + Valve)	(1)	kPa	46,5	35,1	52,2	45,6	64,4	26,7	49,1
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3	3	4
Air flow	(3)	m³/h	13800	19700	23000	29000	33300	40100	51700
NOISE LEVEL									
Sound Power		dB(A)	85	80	78	82	80	85	85
Sound Pressure	(4)	dB(A)	68	62	60	64	62	67	66
SIZE AND WEIGHT									
A	(3)	mm	1305	1630	1875	2175	2499	2899	3510
B	(3)	mm	930	930	930	930	930	930	930
H	(3)	mm	2580	2580	2580	2580	2580	2580	2580
Weight	(3)	kg	435	585	635	750	850	975	1103

Notes

1 Indoor conditions (in) 26°C - R.H. 40%; Water temperature (in/out) 10°C/15°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT2 DF

DUAL COIL close control unit, chilled water type

065 - 226 58,2-227 kW



Close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units consist of two modules: a first one that contains the heat exchanger, usually placed over the floor, and a second one where EC inverter fans are placed. Downflow air supply.
These units are provided with two indipendent chilled water circuits, each one with 2 way modulating valve and servomotor. Units has to be connected to 2 complete independent circuit each one in back-up to the other one.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

Features

Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions.
The fan section includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard G4 filtering section, M5, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Interface electronic board

w-NEXT2 DF-UNDER			065	088	096	127	148	173	226
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	58,2	89,2	97,9	127	149	175	227
Sensible cooling capacity gross	(1)	kW	47,8	69,9	78,8	104	121	144	182
Fans power input	(1)	kW	2,13	5,18	4,80	7,72	7,32	8,43	10,1
SHR	(2)		0,82	0,78	0,80	0,82	0,81	0,82	0,80
Fluid flow	(1)	l/s	2,78	4,27	4,68	6,07	7,15	8,37	10,9
Total pressure drop (Coil + Valve)	(1)	kPa	16,8	47,5	19,7	35,4	53,9	37,6	69,1
FANS									
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	2	3	3	3	4
Air flow	(3)	m³/h	13950	19700	23000	30000	34000	41000	52000
NOISE LEVEL									
Sound Power		dB(A)	86	87	88	89	89	89	90
Sound Pressure	(4)	dB(A)	65	66	67	68	68	67	68
SIZE AND WEIGHT									
A	(3)	mm	1305	1630	1875	2175	2499	2899	3510
B	(3)	mm	930	930	930	930	930	930	930
H	(3)	mm	2580	2580	2580	2580	2580	2580	2580
Weight	(3)	kg	487	584	669	784	896	1036	1253

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 7°C/12°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

NEXT-X-TYPE

Close control unit chilled water

T1 S - T4 S 49,3-173 kW



Air conditioners for IT Cooling for chilled water feeding with supply fans section for installation in underfloor.
The system meets all the quality requirements in modern data centers as: flexible and modular system integration, absolute reliability, very low maintenance cost, energy monitoring and management integrated in the system, no water consumption and related treatment.
The machines are characterized by the combined system of water flow and air flow variables.
This series is offered in 4 models, all available in downflow version with air intake from the top.
The machines is provided in separate sections to be assembled during installation.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

UNDER Downflow air supply

Features

The machines is provided in separate sections to be assembled during installation.
SUPPLY FAN SECTION
The section is divided into several boxes each containing its own fan with safety net. The boxes are to be installed and assembled on site in the void of the raised floor, creating the foundation on which will be based the air handling section.
Centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed.
The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the signal coming from the microprocessor control.
AIR HANDLING SECTION
Packaged section that includes the heat exchanger, the electric panel and water flow control valves.
The section is longer than the underlying fan section to allow the transit of the hydraulic pipes and electric cables for power and control without impact on the fan section.
“X” type heat exchanger coil with 2 cooling stage with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower air side and water side pressure drops.
Compartment for hydraulic section on the right side of the unit and containing 2-way motorized valve for water flow regulation with 0÷10 VDC control actuator and emergency manual control.
Electrical panel in accordance with EN60204-1 norms, suitable for indoor installation, complete with: Power supply 400/3/50+N.
FILTERS SECTION
The section is divided into several boxes, each containing two disposable bag filters with G4 efficiency, with cells in synthetic fibre and metallic frame (EN 779-2002). The boxes are to be installed and assembled on site over the air handling section.
The constructive solutions and the internal lay-out allow high application flexibility and the frontal access to the main components for the inspection and routine maintenance.
Capillary Pre and After sales service.
Switchboard to IEC 204-1/EN60204-1

Accessories

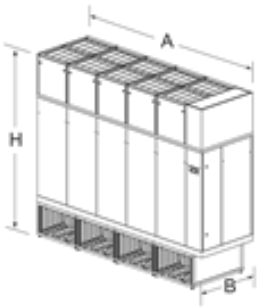
- Pressure independent 2-way motorized valve with 0÷10 VDC control actuator and emergency manual control.
- Double power supply with automatic change-over.
- Unit floor stand with height adjusting rubber holders.
- Sandwich panels with interposed mattress in soundproof material.
- Disposable bag air filters with M5 efficiency.
  Disposable bag air filters with M6 efficiency.
  Disposable bag air filters with F7 efficiency.
- Non-return air damper driven by electric servomotor installed inside the unit.

NEXT-X-TYPE			T1 S	T2 S	T3 S	T4 S
Frame			T1	T2	T3	T4
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE						
Total cooling capacity gross	(1)	kW	49,3	93,3	133	173
Sensible cooling capacity gross	(1)	kW	49,3	93,3	133	173
Fans power input	(1)	kW	1,21	2,92	4,54	6,22
SHR	(2)		1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	1,18	2,24	3,20	4,16
Total pressure drop (Coil + Valve)	(1)	kPa	21,6	43,5	33,6	31,0
FANS						
Fans type			EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	2	3	4
Air flow	(3)	m³/h	11000	21200	30600	40000
NOISE LEVEL						
Sound Power		dB(A)	74	77	79	81
Sound Pressure	(4)	dB(A)	56	59	60	62
SIZE AND WEIGHT						
A	(3)	mm	1620	2260	2900	3540
B	(3)	mm	1100	1100	1100	1100
H	(3)	mm	2900	2900	2900	2900
Weight	(3)	kg	494	765	1042	1330

Notes

1 Indoor conditions (in) 35°C - R.H. 30%; Water temperature (in/out) 18°C/28°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT MTRPRECISE DX

12 - 18 11,1-16,6 kW

Close control unit PRECISE INVERTER, direct expansion air cooled



Ductable close-control units air conditioners for vertical installation for metrology rooms.
Particularly suitable for the conditioning of metrology rooms, laboratories, technological archives, museums and for textile, paper and tobacco.
Unit equipped with modulating hot gas reheating that together with the use of the INVERTER compressor and the ability to humidify and dehumidify, allows an extremely precise control conditions of temperature and humidity particularly efficient especially at low loads.
In addition to the compressor inverter, the unit is equipped with electronic expansion valve and EC Plug fans with upflow or downflow air delivery.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

BASIC	With condensation control, for coupled remote condenser	LT	Low temperature with condensation control for coupled remote condenser
MOD	With condensation control, for coupled remote condenser		

Features

Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.
Reheating HOT GAS modulating consisting of finned heat exchanger properly designed that, together with the compressor inverter, guarantees a modulation of the cooling capacity from 0 to 100%.
Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions; avaiable BASIC or HIGH PRESSURE version.
Standard G4 filtering section, F5-F8 optional, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Refrigerant circuit consisting in the standard version of a electronic expansion valve, liquid solenoid valve, high/low pressure switch, sight glass liquid indicator, drier filter and oil separator in order to guarantee the right lubrification of the compressor at the low speed.
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Humidifier
- Remote user terminal
- Interface electronic board
- Air distribution plenum
- Vibration isolation frame with rubber mountings

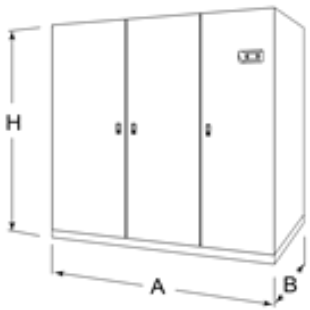
i-NEXT MTRPRECISE DX BASIC / MOD.A / LT			12	18
Frame			F02	F02
Air flow	(3)	m³/h	3500	4900
Power supply		V/ph/Hz	230/1/50	400/3+N/50
PERFORMANCE				
DIRECT EXPANSION				
PERFORMANCE MAX				
Total cooling capacity gross	(1)	kW	11,1	16,6
Sensible cooling capacity gross	(1)	kW	10,6	16,6
SHR	(2)		0,95	1,00
Total power input (Comp.+fans)	(1)	kW	2,94	5,05
EER (Indoor unit)	(1)	kW/kW	3,78	3,29
MODULATING HOT GAS COIL				
Reheating capacity		kW	10,6	16,6
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg		
FANS				
Fans type			EC FAN	EC FAN
Quantity		N°	2	2
HUMIDIFIER				
Capacity		kg/h	0,00	0,00
Power input		kW	0,00	0,00
NOISE LEVEL				
Sound Power		dB(A)	69	73
Sound Pressure	(4)	dB(A)	49	53
SIZE AND WEIGHT				
A	(3)	mm	1000	1000
B	(3)	mm	500	500
H	(3)	mm	1980	1980
Weight	(3)	kg	262	262
COUPLING UNIT EXTERNAL				
Standard remote condenser linked			i-BRRE 014m	i-BRRE 027m

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT MTRPRECISE DW

12 - 18 11,7-18,6 kW

Close control unit PRECISE INVERTER, direct expansion water cooled



Ductable close-control units air conditioners for vertical installation for metrology rooms.
Particularly suitable for the conditioning of metrology rooms, laboratories, technological archives, museums and for textile, paper and tobacco.
Unit equipped with modulating hot gas reheating that together with the use of the INVERTER compressor and the ability to humidify and dehumidify, allows an extremely precise control conditions of temperature and humidity particularly efficient especially at low loads.
In addition to the compressor inverter, the unit is equipped with electronic expansion valve and EC Plug fans with upflow or downflow air delivery.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

BASIC	With condensation control, for coupled dry cooler	MOD_B	With cond. control by pressostatic valve, for open circuit
MOD_A	With condensation control, for coupled dry cooler		

Features

Reheating HOT GAS modulating consisting of finned heat exchanger properly designed that, together with the compressor inverter, guarantees a modulation of the cooling capacity from 0 to 100%.
Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.
NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions; avaiable BASIC or HIGH PRESSURE version.
Unit for installing inside or outside the room to be air-conditioned.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
Standard G4 filtering section, F5-F8 optional, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Switchboard to IEC 204-1/EN60204-1
Refrigerant circuit consisting in the standard version of a electronic expansion valve, liquid solenoid valve, high/low pressure switch, sight glass liquid indicator, drier filter and oil separator in order to guarantee the right lubrification of the compressor at the low speed.
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Humidifier
- Remote user terminal
- Interface electronic board
- Air distribution plenum
- Vibration isolation frame with rubber mountings

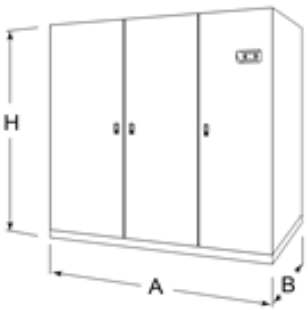
i-NEXT MTRPRECISE DW STANDARD/MOD A/MOD B			12	18
Frame			F02	F02
Air flow	(3)	m³/h	3500	4900
Power supply		V/ph/Hz	230/1/50	400/3+N/50
PERFORMANCE				
DIRECT EXPANSION				
PERFORMANCE MAX				
Total cooling capacity gross	(1)	kW	11,7	17,4
Sensible cooling capacity gross	(1)	kW	10,9	17,0
SHR	(2)		0,93	0,98
Total power input (Comp.+fans)	(1)	kW	2,52	4,64
EER (Indoor unit)	(1)	kW/kW	4,64	3,75
MODULATING HOT GAS COIL				
Reheating capacity		kW	10,9	17,0
PLATE CAPACITOR				
Capacitors nr.		N°	1	1
Condenser fluid flow		l/s	0,67	1,01
Pressure drop		kPa	0,00	0,00
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg		
FANS				
Fans type			EC FAN	EC FAN
Quantity		N°	2	2
HUMIDIFIER				
Capacity		kg/h		
Power input		kW		
NOISE LEVEL				
Sound Power		dB(A)	69	73
Sound Pressure	(4)	dB(A)	49	53
SIZE AND WEIGHT				
A	(3)	mm	1000	1000
B	(3)	mm	500	500
H	(3)	mm	1980	1980
Weight	(3)	kg	263	263
COUPLING UNIT EXTERNAL				
Standard dry cooler linked			i-BDC 030m BASIC	i-BDC 030m BASIC

Notes

1 Indoor conditions (in) 24°C - R.H. 50%; Water temperature (in/out) 30°C/35°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

i-NEXT DL DX

Close control unit, INVERTER direct expansion air cooled

018 M1 S - 047 M1 S 21,7-53,0 kW



Ductable close control units air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifer and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads and optimizing the power absorbed and eliminating the stating current. Units fitted with electronic expansion valve and EC INVERTER fans with displacement air delivery.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

- DISPLACEMENT AIR DELIVERY

Features

Unit for indoor installation with displacement air delivery.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.

Standard G4 filtering section, M5 optional, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.

NEW EC INVERTER fans in order to maximize the energy saving and reducing the noise emissions. The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external EC rotor electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Switchboard to IEC 204-1/EN60204-1

Refrigerant circuit consisting of electronic expansion valve that allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.

Last generation of scroll or rotary BLDC INVERTER compressor, for high efficiency.

Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Interface electronic board

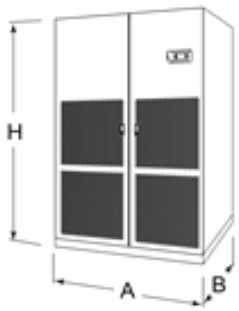
i-NEXT DL DX			018 M1 S	022 M1 S	030 M1 S	047 M1 S
Frame			E2	E3	E4	E5
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE						
Total cooling capacity gross	(1)	kW	16,2	16,8	27,4	40,5
Sensible cooling capacity gross	(1)	kW	16,2	16,8	27,4	40,5
Total power input (Comp.+fans)	(1)	kW	3,96	3,88	6,46	9,51
EER (Indoor unit)	(1)	kW/kW	4,09	4,33	4,24	4,26
SHR	(2)		1,00	1,00	1,00	1,00
REFRIGERANT CIRCUIT						
Compressors nr.		N°	1	1	1	1
No. Circuits		N°	1	1	1	1
Refrigerant charge		kg	3,60	4,30	6,10	9,20
FANS						
Fans type			EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1
Air flow	(3)	m³/h	2880	2880	5200	8400
NOISE LEVEL						
Sound Power		dB(A)	61	53	67	78
Sound Pressure	(4)	dB(A)	45	37	50	61
SIZE AND WEIGHT						
A	(3)	mm	785	1085	1305	1630
B	(3)	mm	675	775	930	930
H	(3)	mm	1925	1925	2165	2165
Weight	(3)	kg	240	320	430	560

Notes

1 Indoor conditions (in) 30°C - R.H. 30%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

t-NEXT DL DX

Close control unit, air cooled, direct expansion

007 P1 - 041 P1 7,63-42,6 kW



Close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control.
Particularly suitable for for precision air conditioning in servers and IT rooms and all technological applications in general.
Units fitted with EC INVERTER fans and displacement air delivery. External air condenser.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

- DISPLACEMENT AIR DELIVERY

Features

Unit for indoor installation with displacement air delivery.
Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the compressor and all the other parts are guaranteed by partners who are world leaders in their sector.
NEW EC INVERTER fans in order to maximize the energy saving and reducing the noise emissions. The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external EC rotor electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard G4 filtering section, M5 optional, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.
The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
Refrigerant circuit consisting of mechanical expansion valve, sight glass, filter dryer on liquid line, pressure transducers with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories.
Switchboard to IEC 204-1/EN60204-1
Capillary Pre and After sales service.

Accessories

- Remote user terminal
- Electric heating coil
- Humidifier
- Interface electronic board

t-NEXT DL DX			007 P1	009 P1	011 P1	014 P1	016 P1	020 P1
Frame			E1	E1	E1	E2	E2	E3
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	7,63	9,18	10,6	14,1	15,1	20,5
Sensible cooling capacity gross	(1)	kW	7,54	9,02	10,3	13,8	14,8	20,5
Total power input (Comp.+fans)	(1)	kW	1,59	1,98	2,43	3,01	3,42	4,02
EER (Indoor unit)	(1)	kW/kW	4,80	4,64	4,36	4,68	4,42	5,10
SHR	(2)		0,99	0,98	0,97	0,98	0,98	1,00
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	3,20	3,20	3,20	3,40	3,40	4,00
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1	1
Air flow	(3)	m³/h	2000	2160	2240	3200	3360	4560
NOISE LEVEL								
Sound Power		dB(A)	46	50	50	60	60	58
Sound Pressure	(4)	dB(A)	30	34	34	44	44	42
SIZE AND WEIGHT								
A	(3)	mm	650	650	650	785	785	1085
B	(3)	mm	675	675	675	675	675	775
H	(3)	mm	1925	1925	1925	1925	1925	1925
Weight	(3)	kg	220	221	225	260	263	320

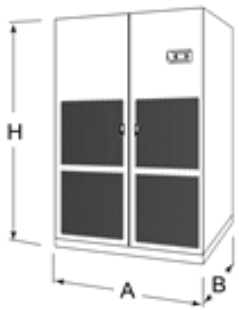
t-NEXT DL DX			022 P1	026 P1	032 P1	037 P1	041 P1
Frame			E3	E3	E4	E4	E4
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	22,4	26,7	34,6	38,5	42,6
Sensible cooling capacity gross	(1)	kW	22,3	26,0	33,0	38,0	41,8
Total power input (Comp.+fans)	(1)	kW	4,85	5,99	6,89	8,14	8,96
EER (Indoor unit)	(1)	kW/kW	4,62	4,46	5,02	4,73	4,75
SHR	(2)		1,00	0,97	0,95	0,99	0,98
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	4,00	4,00	5,70	5,70	8,60
FANS							
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1	1
Air flow	(3)	m³/h	4880	5120	6960	8000	8640
NOISE LEVEL							
Sound Power		dB(A)	58	62	74	77	75
Sound Pressure	(4)	dB(A)	42	46	57	60	58
SIZE AND WEIGHT							
A	(3)	mm	1085	1085	1305	1305	1305
B	(3)	mm	775	775	930	930	930
H	(3)	mm	1925	1925	2165	2165	2165
Weight	(3)	kg	320	322	420	425	440

Notes

1 Indoor conditions (in) 30°C - R.H. 30%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 1m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CLOSE CONTROL AIR CONDITIONERS

w-NEXT DL

012 - 042 11,6-41,3 kW

Close control unit chilled water



Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with EC INVERTER fans and displacement air delivery. These units are provided with modulating 2 way valve and servomotor. Unit has to be connected with an external chiller.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

- DISPLACEMENT AIR DELIVERY

Features

Unit for indoor installation with displacement air delivery.

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.

The panels are lined with sound-insulating material to limit noise levels.

The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.

NEW EC INVERTER fans in order to maximize the energy saving and reducing the noise emissions. The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external EC rotor electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.

Standard G4 filtering section, M5 optional, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing.

Switchboard to IEC 204-1/EN60204-1

Capillary Pre and After sales service.

Accessories

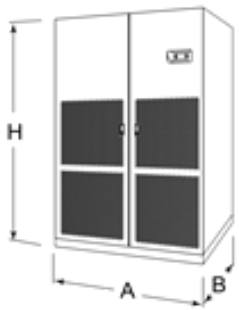
- Remote user terminal
- Electric heating coil
- Humidifier
- Interface electronic board

w-NEXT DL			012 E1	022 E2	030 E3	042 E3P
Frame			E1	E2	E3	E3P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE						
Total cooling capacity gross	(1)	kW	11,6	18,9	29,4	41,3
Sensible cooling capacity gross	(1)	kW	11,6	18,9	29,4	41,3
Fans power input	(1)	kW	0,17	0,42	0,81	1,50
SHR	(2)		1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,55	0,91	1,41	1,98
Total pressure drop (Coil + Valve)	(1)	kPa	12,9	35,3	30,3	27,9
FANS						
Fans type			EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	1	1	1	1
Air flow	(3)	m³/h	2320	3936	6240	8640
NOISE LEVEL						
Sound Power		dB(A)	53	65	65	73
Sound Pressure	(4)	dB(A)	33	45	45	53
SIZE AND WEIGHT						
A	(3)	mm	720	855	1155	1155
B	(3)	mm	675	675	775	930
H	(3)	mm	1925	1925	1925	2110
Weight	(3)	kg	196	230	290	320

Notes

1 Indoor conditions (in) 30°C - R.H. 30%; Water temperature (in/out) 10°C/15°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



EVAPORATIVE COOLING SYSTEM

SIVIS -

SIVIS

-

2 STAGE INDIRECT ADIABATIC COOLING SYSTEM FOR LARGE DATA CENTER



INDIRECT ADIABATIC COOLING SYSTEM FOR LARGE DATA CENTERS

This is a smart cooling system, able to guarantee high energy savings in order to meet the requests to achieve the lowest pPUE.
This system provides 3 types of operation conditions: Total Free-cooling, Free-cooling + adiabatic cooling, or Free-cooling + adiabatic cooling + mechanical cooling.

Features

ZERO FOOTPRINT IN THE DATA CENTER
One-piece unit for quick installation on the external perimeter of the building or on the roof, to reduce or eliminate the space occupied around the building.
The unit is ready for use since all its control systems are incorporated and no additional components are required.
The only work to be done on site consists of connecting the electrical connections and fitting the air delivery and return ducts.

MODULAR UNITS
The units were designed to permit side by side installation of multiple units to reduce the footprint.

CORROSION
Fully recyclable product. The unit is all in aluminium and the entire structure comes with a guarantee against corrosion.
Aluminium is a type of material that can be recycled an infinite number of times. It also does not require a protective coat or painting, it offers exceptional resistance to corrosion, and is 2.8 times lighter than steel.

AUXILIARY COOLING SYSTEM
The auxiliary systems available with the product are: a chilled water system or a direct expansion system.
In the case of a chilled water system, the cooling effect is obtained with the evaporation of water that passes from its liquid state to a vapour state with the nebulization of millions of tiny droplets that evaporate spontaneously in air, extracting heat from the it.
The humidification system does not provide for water recirculation. In the case of the direct expansion system, a mechanical cooling circuit performs the cooling function.

EFFICIENCY
Reducing consumption and maximizing the system efficiency is achieved through the use of the most advanced technologies, which leads to energy efficiency on an annual basis up to 38.9 kW/kW and also contributes to the achievement of a pPue index (Partial Power Usage Effectivness) as low as 1.025 kW/h.

OPERATING PRINCIPLE
The unit has two cooling sections, each with a filtering section, air/air heat exchanger and variable flow fan for the delivery/return of the air of the Data Center.
Each cooling section is designed to handle 50% of the total air flow of the system, and the cooling effect is obtained in the air/air heat exchangers with a cross-flow system, where the outside air flow for cooling and the air flow in the Data Center never come into direct contact, guaranteeing purity of the air handled.
Designated variable flow fans control the flow of air from outside while a filtering system on the suction line guarantees the quality of air.
There are also two auxiliary cooling systems: the first is a water-based adiabatic system, while the second is a mechanical direct expansion system.

AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

<<< BACK INDEX

COOLSIDE CW	0020 - 0060
COOLSIDE DOOR	0030R - 0036T
COOLSIDE DX	0021 - 0251
COOLSIDE DF	0051 - 0071
COOLSIDE FC	0051 - 0071
COOLSIDE ROW DX	25 B6 - 40 B6
COOLSIDE ROW DF DX	25 B6 - 40 B6

AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE CW

Chilled Water Rack Cooler unit

0020 - 0060 16,1-74,7 kW



The indoor vertical air conditioning units RACK COOLER is an effective management system of the Hot Spots in the data center, ensuring low energy consumption and usage possibilities even under extremely high loads for HIGH DENSITY rack ´up and over 40 kW/m2 rack.
In hydronic version where the cooling is ensured by the use of an external chiller.
The use of EC fan systems, featuring last-generation electronic-switching brushless motors, assures excellent performance and low consumption. Available as standard with the dynamic management of N +1 EC fans to optimize consumption and redundancy of the cooling system.
These individual units to be positioned between the racks in the row so as to act locally in order to dissipate the load of servers.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

IN-ROW	Basic, IN-ROW air flow configuration
ENCLOSURE	Basic, ENCLOSURE air flow configuration

Features

EFFICIENCY
The unit combines the efficiency of a hydronic system for the extraction of heat with the use of last generation fans EC electronic commuteted , to obtain values of EER more than 100. The reduction of the temperature of the air exhausted allows the use of water very high cooling 14-20° C by the Rack Cooler that, if on the one hand prevents unpleasant phenomena of condensation (SHR = 1), will allow the other use of only the external system in chillers Frecooling Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A.

FLEXIBILITY
The InRow and Enclosure versions are both arranged with hydraulics connections and electric supply from top or bottom side, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.

IDM - INTEGRATED DYNAMIC MANAGEMENT OF TEMPERATURE
The units are supplied with a new management algorithm called IDM-INTEGRAL DYNAMIC MANAGEMENT able to prevent stratification of temperature within the rack through the use of 4 sensors (2 on the suction and 2 on the outlet) integrated and independent on the basis the real load in the single stratified BLADE work to optimize the ventilation only when required so as to maximize energy benefits. The IDM also provides the optimal management of the outlet temperatures of the treated integrating the various resources in a DYNAMIC and INTELLIGENT way.

REDUNDANCY
Both the Enclosure and InRow are developed to ensure maximum RELIABILITY 'the system by total REDUNDANCY cooling system guaranteed by the new version DUAL COIL dual power supply, dual battery raffreddamenmto and double regulating valve completely independent to ensure 100 % back up in the air conditioning system.
This allows you to connect your new versionbe DUAL COIL from one side to the primary system FREECOOLING (Circuit 1) and the other to a chiller chilled water in total Back up.

MODULARITY
These units, with their characteristics of dimensional standardization based on the rack, are ideal for all those datacentres where SCALABILITY of the system is a strategic factor.

COMPARTIZATION
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

INTEGRATION
INTEGRATION with all the HYDRONIC products in the Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. range via supervision software.

COOLSIDE CW / IN-ROW			0020	0025	0035	0038	0036	0040	0050	0060	0055
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
Total cooling capacity gross	(1)	kW	16,1	20,5	24,6	38,5	21,0	43,4	46,9	58,2	47,1
Sensible cooling capacity gross	(1)	kW	16,1	20,5	24,6	38,5	21,0	43,4	46,9	58,2	47,1
Fans power input	(1)	kW	0,52	0,69	0,86	1,70	0,86	2,85	2,17	2,66	2,66
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,77	0,98	1,18	1,84	1,00	2,08	2,24	2,79	2,25
Total pressure drop (Coil + Valve)	(1)	kPa	13,5	20,9	29,1	93,4	55,2	85,3	37,7	56,4	60,7
FANS											
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	3	4	5	5	5	2	2	3	3
Air flow	(3)	m³/h	2520	3360	4200	6500	4200	9500	8800	12000	10500
NOISE LEVEL											
Sound Power		dB(A)	84	85	86	82	86	88	84	82	82
Sound Pressure	(4)	dB(A)	64	65	66	62	66	68	64	62	62
SIZE AND WEIGHT											
A	(3)	mm	300	300	300	300	300	600	600	600	600
B	(3)	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
H	(3)	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	190	192	195	195	205	235	240	247	255

Notes

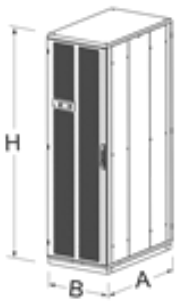
1 Indoor conditions (in) 35°C - R.H. 27%; Water temperature (in/out) 10°C/15°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

COOLSIDE CW / ENCLOSURE			0020	0025	0035	0038	0036	0040	0050	0060	0055
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
Total cooling capacity gross	(1)	kW	20,4	26,1	31,2	48,8	26,8	55,7	60,0	74,7	60,7
Sensible cooling capacity gross	(1)	kW	20,4	26,1	31,2	48,8	26,8	55,7	60,0	74,7	60,7
Fans power input	(1)	kW	0,53	0,69	0,87	1,70	0,87	2,87	2,18	2,68	2,67
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,82	1,04	1,25	1,95	1,07	2,22	2,40	2,98	2,42
Total pressure drop (Coil + Valve)	(1)	kPa	14,3	22,5	31,5	101	60,4	94,4	41,5	62,5	69,0
FANS											
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	3	4	5	5	5	2	2	3	3
Air flow	(3)	m³/h	2520	3360	4200	6500	4200	9500	8800	12000	10500
NOISE LEVEL											
Sound Power		dB(A)	84	85	86	82	86	87	84	82	82
Sound Pressure	(4)	dB(A)	64	65	66	62	66	67	64	62	62
SIZE AND WEIGHT											
A	(3)	mm	300	300	300	300	300	600	600	600	600
B	(3)	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200
H	(3)	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	200	202	205	205	215	260	265	272	280

Notes

1 Indoor conditions (in) 46°C - R.H. 16%; Water temperature (in/out) 14°C/20°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

Dimensional drawing



AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE DOOR

Chilled Water Cooling Door unit

0030R - 0036T 26,6-39,1 kW



This unit is the most innovative and efficient system for managing Hot spots inside data centers, in other words, HIGH DENSITY racks up to and over 40 kW/m2 per rack. The Cooling door unit is housed at the rear of the rack and is managed by a DYNAMIC system, especially designed to handle the rack exhaust air, which SELF-ADAPTS to rack requirements. MAIN CARATTERISTICS - New generationEC fans - 42U / 48U racks adapdability - Can be supplied with with rack - Dinamic control of Air stratification - Configuration R (N+1) and T - Integration into DUAL CIRCUIT, FREECOOLING + BACK UP system - Dehumidification Less Management.
WORKING MODE This unit is to be considered both as a stand alone cooling unit for the exhaust air of the single rack in the small data center as a system for managing Hot spots in large data center for integration of hot and cold aisle or compartization structures. While the cooling of RACK is delegated to the perimetral conditioning units that provide cold air 18-20° C in the cold aisle, this cooling door handles rack at higher thermal load (called HOT SPOTS) generally due to the use of modern blade servers.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

STD Single chilled water coil

DUAL Double chilled water coil

Features

EFFICIENCY
This unit combines the efficiency of a hydronic heat extraction system with the use of last-generation electronic-switching EC fans in order to achieve EER values of over 100. The reduction in the temperature of the exhaust air allows the unit to use cooling water with higher temperatures (14-20°C). This feature prevents unwanted condensation phenomena (SHR=1) whilst allowing just the Freecooling system to be used on external Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. chillers.

FLEXIBILITY
To assure quick and easy installation, the unit is fitted with flexible steel connectors on the water side and the electrical power input at the bottom. This allows the unit to be comfortably opened and closed like a normal door for access to the rack at any time and without any difficulties in wiring, servicing and expanding the servers.

FOR EVERY KIND OF RACK
Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. can supply the unit complete with Rack or just the unit for installation in different types of rack using a “surround” which self-adapts to every kind of rack.

REDUNDANCY
The unit is designed to ensure maximum reliability ´of the system through full redundancy of the cooling system guaranteed by the new DUAL version with dual power feed, dual battery and dual valve, which are completely independent; the result is the 100% back-up in conditioning system. This allows you to connect the new DUAL version from one side to a primary FREECOOLING system (Circuit 1) and the other to a chiller in total back up.

MINIMUN FLOORSPACE OCCUPANCY
The great advantage of the unit lies in the fact that it is installed at the back of the RACK (hot island) without occupying space that can be used for the racks, unlike other solutions which, instead, reduce the number of racks per row.

DYNAMIC RACK CONTROL
Optimal control of temperature stratification depending on the load of individual BLADES using 4 independent temperature probes connected to the 4 fans operating in the MODULATING and INDEPENDENT modes.

MODULARITY
As these units must ONLY cater for the T° GRADIENT, they are required to dissipate much less heat than local conditioning units (in the row) and therefore, unlike the latter, they never risk having a limited cooling capacity.

COMPARTIZATION
Perfect integration with compartization systems as, being installed on the hot island, they do not require an entrance in the cold corridor for maintenance.

INTEGRATION
INTEGRATION with all the HYDRONIC products in the Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. range via supervision software.

COOLSIDE DOOR / BASIC			0030R	0030T	0035R	0035T
Frame						
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE						
Total cooling capacity gross	(1)	kW	26,6	31,8	32,2	39,1
Sensible cooling capacity gross	(1)	kW	26,6	31,8	32,2	39,1
Fans power input	(1)	kW	0,17	0,30	0,18	0,30
SHR	(2)		1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	1,06	1,27	1,28	1,56
Total pressure drop (Coil + Valve)	(1)	kPa	58,5	80,3	44,3	63,1
FANS						
Fans type			AXIAL	AXIAL	AXIAL	AXIAL
Quantity		N°	4	4	4	4
Air flow	(3)	m³/h	5040	6520	4790	6200
NOISE LEVEL						
Sound Power		dB(A)	65	70	65	69
Sound Pressure	(4)	dB(A)	45	50	45	49
SIZE AND WEIGHT						
A	(3)	mm	600	600	600	600
B	(3)	mm	260	260	260	260
H	(3)	mm	2020	2020	2020	2020
Weight	(3)	kg	79	79	84	84

Notes

1 Indoor conditions (in) 46°C - R.H. 16%; Water temperature (in/out) 14°C/20°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

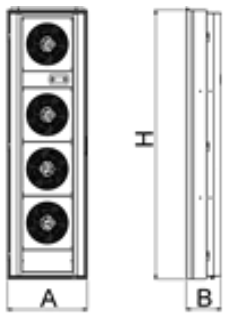
COOLSIDE DOOR / DUAL			0036R	0036T
Frame				
Power supply		V/ph/Hz	230/1/50	230/1/50
PERFORMANCE				
Total cooling capacity gross	(1)	kW	29,1	35,8
Sensible cooling capacity gross	(1)	kW	29,1	35,8
Fans power input	(1)	kW	0,17	0,30
SHR	(2)		1,00	1,00
Fluid flow	(1)	l/s	1,16	1,43
Total pressure drop (Coil + Valve)	(1)	kPa	41,6	60,4
FANS				
Fans type			AXIAL	AXIAL
Quantity		N°	4	4
Air flow	(3)	m³/h	4140	5520
NOISE LEVEL				
Sound Power		dB(A)	67	70
Sound Pressure	(4)	dB(A)	47	50
SIZE AND WEIGHT				
A	(3)	mm	600	600
B	(3)	mm	330	330
H	(3)	mm	2020	2020
Weight	(3)	kg	95	95

Notes

1 Indoor conditions (in) 46°C - R.H. 16%; Water temperature (in/out) 14°C/20°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE DX

Direct expansion Rack Cooler unit

0021 - 0251 8,81-68,4 kW



The indoor vertical air conditioning unit RACK COOLER is an effective management system of the Hot Spots in the data center, ensuring low energy consumption and usage possibilities even under extremely high loads for HIGH DENSITY rack ´up and over 40 kW/m2 rack.
The use of EC fan systems, featuring last-generation electronic-switching brushless motors, assures excellent performance and low consumption. Available as standard with the dynamic management of N +1 EC fans to optimize consumption and redundancy of the cooling system.
Coupled with outdoor condensing unit air-cooled type with axial-flow fans, fitted with INVERTER-DRIVEN HERMETIC SCROLL compressor for operation on R410A refrigerant, available on versions BASIC ans d LT for low external temperature.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

ENCLOSURE	Basic, ENCLOSURE air flow configuration	IN-ROW	Basic, IN-ROW air flow configuration

Features

EFFICIENCY
The unit combines the efficiency of use of last EC fans generation and a direct expansion system with inverter compressor (fitted in condensing unit) allowing a great EER value. Thanks to the adoption of inverter DC brushless compressors, these units can reduce by 50% consumptions at part load, if compared to a traditional ON/OFF compressor. This is made possible also thanks to the advantages of variable air flow enabled by EC fans.

FLEXIBILITY
The InRow and Enclosure are both equipped with predisposition for passing refrigerant connections and power supply from both above and below, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.

IDM - INTEGRATED DYNAMIC MANAGEMENT OF TEMPERATURE
The units are supplied with a new management algorithm called IDM-INTEGRAL DYNAMIC MANAGEMENT able to prevent stratification of temperature within the rack through the use of 4 sensors (2 on the suction and 2 on the outlet) integrated and independent on the basis the real load in the single stratified BLADE work to optimize the ventilation only when required so as to maximize energy benefits. The IDM also provides the optimal management of the outlet temperatures of the treated integrating the various resources in a DYNAMIC and INTELLIGENT way.

MODULARITY
These units, with their characteristics of dimensional standardization based on the rack, are ideal for all those datacentres where SCALABILITY of the system is a strategic factor.

COMPARTIZATION
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

COOLSIDE DX - DX Rack Cooler / IN-ROW			0021	0051	0071	0121	0151	0251
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	8,81	10,6	16,6	28,6	37,2	57,5
Sensible cooling capacity gross	(1)	kW	8,81	9,61	15,7	27,4	37,2	57,5
Total power input (Comp.+fans)	(1)	kW	2,87	3,05	5,47	9,25	11,9	18,9
EER (Indoor unit)	(1)	kW/kW						
SHR	(2)		1,00	0,91	0,95	0,96	1,00	1,00
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	4	5	2	3
Air flow	(3)	m³/h	1500	1500	2700	4200	7000	12000
NOISE LEVEL								
Sound Power		dB(A)	79	79	80	86	78	82
Sound Pressure	(4)	dB(A)	59	59	60	66	58	62
SIZE AND WEIGHT								
A	(3)	mm	300	300	300	300	600	600
B	(3)	mm	1000	1000	1000	1000	1000	1000
H	(3)	mm	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	185	175	190	193	220	232
COUPLING UNIT EXTERNAL								
Power supply		V/ph/Hz	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	1
Compressors power absorption		kW	2,58	2,63	4,56	7,19	9,50	14,4
Refrigerant charge		kg	3,00	3,00	6,00	11,0		
FANS								
Quantity		N°	1	2	1	2	4	6
Air flow for fan		m³/h	3200	6400	8640	15768	13932	20920
Fans power input		W	130	130	600	600	300	300
SIZE AND WEIGHT								
Dimension A		mm	900	900	1450	1450	1825	2395
Dimension B		mm	370	420	550	550	1195	1195
Dimension H		mm	990	1240	1200	1700	1865	1865
Weight		kg	100	108	182	247	440	500

Notes

1 Indoor conditions (in) 35°C - R.H. 27%; Outdoor air temperature 35°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

COOLSIDE DX - DX Rack Cooler / ENCLOSURE			0021	0051	0071	0121	0151	0251
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	10,7	11,8	18,7	33,0	44,1	68,4
Sensible cooling capacity gross	(1)	kW	10,7	11,8	18,7	33,0	44,1	68,4
Total power input (Comp.+fans)	(1)	kW	3,04	3,11	5,56	9,47	12,2	19,4
EER (Indoor unit)	(1)	kW/kW						
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00
FANS								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	4	5	2	3
Air flow	(3)	m³/h	1500	1500	2700	4200	7000	12000
NOISE LEVEL								
Sound Power		dB(A)	79	79	80	86	78	82
Sound Pressure	(4)	dB(A)	59	59	60	66	58	62
SIZE AND WEIGHT								
A	(3)	mm	300	300	300	300	600	600
B	(3)	mm	1200	1200	1200	1200	1200	1200
H	(3)	mm	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	185	185	200	203	245	257
COUPLING UNIT EXTERNAL								
Power supply		V/ph/Hz	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	1
Compressors power absorption		kW	2,75	2,68	4,65	7,40	9,80	14,9
Refrigerant charge		kg	3,00	3,00	6,00	11,0		
FANS								
Quantity		N°	1	2	1	2	4	6
Air flow for fan		m³/h	3200	6400	8640	15768	13832	20920
Fans power input		W	130	130	600	600	300	300
SIZE AND WEIGHT								
Dimension A		mm	900	900	1450	1450	1825	2395
Dimension B		mm	370	420	550	550	1195	1195
Dimension H		mm	990	1240	1200	1700	1865	1865
Weight		kg	100	108	182	247	440	500

Notes

1 Indoor conditions (in) 46°C - R.H. 16%; Outdoor air temperature 35°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

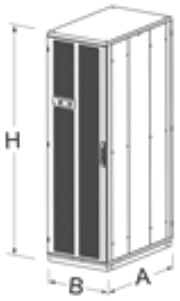
The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

COOLSIDE DX

Direct expansion Rack Cooler unit

0021 - 0251 8,81-68,4 kW

Dimensional drawing



AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE DF

Rack Cooler units direct expansion Dual Fluid

0051 - 0071 9,53-17,7 kW



The indoor vertical air conditioning units RACK COOLER is an effective management system of the Hot Spots in the data center, ensuring low energy consumption and usage possibilities even under extremely high loads for HIGH DENSITY rack ´up and over 40 kW/m2 rack.
The use of EC fan systems, featuring last-generation electronic-switching brushless motors, assures excellent performance and low consumption.
The Rack Cooler Dual Fluid unit provides redundancy in cooling capacity also in emergency situations: to be connected to an external chiller for primary chilled water circuit, and to condensing unit i-HCAT for the secondary or back up circuit in direct expansion type.
The condensing unit air-cooled type with axial-flow fans, fitted with INVERTER-DRIVEN HERMETIC SCROLL compressor for operation on R410A refrigerant, mounted on rubber vibration dampers, complete with oil charge, supplied with oil separator to ensure correct lubrication even at minimum speed, and fitted with thermal protector; available on BASIC versions and LT for low external temperature.

Control



EVOLUTION+
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

ENCLOSURE	Basic, ENCLOSURE air flow configuration	IN-ROW	Basic, IN-ROW air flow configuration

Features

EFFICIENCY
The unit combines the efficiency of use of last EC fans generation and a direct expansion system with inverter compressor (fitted in condensing unit) allowing a great EER value. Thanks to the adoption of inverter DC brushless compressors, these units can reduce by 50% consumptions at part load, if compared to a traditional ON/OFF compressor. This is made possible also thanks to the advantages of variable air flow enabled by EC fans.

FLEXIBILITY
The InRow and Enclosure versions are both arranged with hydraulic/refrigerant connections and electric supply from top or bottom side, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.

IDM - INTEGRATED DYNAMIC MANAGEMENT OF TEMPERATURE
The units are supplied with a new management algorithm called IDM-INTEGRAL DYNAMIC MANAGEMENT able to prevent stratification of temperature within the rack through the use of 4 sensors (2 on the suction and 2 on the outlet) integrated and independent on the basis the real load in the single stratified BLADE work to optimize the ventilation only when required so as to maximize energy benefits. The IDM also provides the optimal management of the outlet temperatures of the treated integrating the various resources in a DYNAMIC and INTELLIGENT way.

MODULARITY
These units, with their characteristics of dimensional standardization based on the rack, are ideal for all those datacentres where SCALABILITY of the system is a strategic factor.

COMPARTIZATION
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

COOLSIDE DF-I			0051	0071
Power supply		V/ph/Hz	230/1/50	230/1/50
Refrigerant				
No. Circuits		N°		
PERFORMANCE				
Total cooling capacity gross	(1)	kW	10,9	14,0
Sensible cooling capacity gross	(1)	kW	10,2	14,0
SHR			0,94	1,00
EER (total)		kW/kW	4,13	3,91
PERFORMANCE (CW)				
Total cooling capacity gross	(2)	kW	9,53	17,7
Sensible cooling capacity gross	(2)	kW	9,53	17,7
Condenser fluid flow		l/s		
Pressure drop		kPa		
FANS				
Air flow		m³/h	1500	3360
Power Input		kW	0,32	0,69
Quantity		N°	2	4
Sound Pressure	(3)	dB(A)	58	64
SIZE AND WEIGHT				
A	(4)	mm	300	300
B	(4)	mm	1000	1000
H	(4)	mm	2085	2085
COUPLING UNIT EXTERNAL				
Power supply		V/ph/Hz	230/1/50	400/3+N/50
Power input (OI)		W	2900	4180
REFRIGERANT CIRCUIT				
Compressors nr.		N°		
Compressors power absorption		kW		
Refrigerant charge		kg		
FANS				
Air flow for fan		m³/h	6400	8640
Fans power input		W	130	600
Quantity		N°	2	1
Sound Pressure	(3)	dB(A)		
SIZE AND WEIGHT				
Dimension A	(4)	mm	900	1450
Dimension B	(4)	mm	420	550
Dimension H	(4)	mm	1240	1200

Notes

1 Indoor conditions (in) 35 °C U.R. 27%; Outdoor air temperature 35 °C.
2 Indoor conditions (in) 35 °C U.R. 27%; Water temperature (in/out) 10/15 °C.
3 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
4 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

COOLSIDE DF

Rack Cooler units direct expansion Dual Fluid

0051 - 0071 9,53-17,7 kW

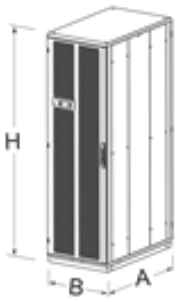
COOLSIDE DF-E			0051	0071
Power supply		V/ph/Hz	230/1/50	230/1/50
Refrigerant				
No. Circuits		N°		
PERFORMANCE				
Total cooling capacity gross	(1)	kW	12,7	16,7
Sensible cooling capacity gross	(1)	kW	12,7	16,7
SHR			1,00	1,00
EER (total)		kW/kW	4,69	4,58
PERFORMANCE (CW)				
Total cooling capacity gross	(2)	kW	12,1	22,6
Sensible cooling capacity gross	(2)	kW	12,1	22,6
Condenser fluid flow		l/s		
Pressure drop		kPa		
FANS				
Air flow		m³/h	1500	3360
Power Input		kW	0,33	0,69
Quantity		N°	2	4
Sound Pressure	(3)	dB(A)	58	64
SIZE AND WEIGHT				
A	(4)	mm	300	300
B	(4)	mm	1200	1200
H	(4)	mm	2085	2085
COUPLING UNIT EXTERNAL				
Power supply		V/ph/Hz	230/1/50	400/3+N/50
Power input (OI)		W	2970	4250
REFRIGERANT CIRCUIT				
Compressors nr.		N°		
Compressors power absorption		kW		
Refrigerant charge		kg		
FANS				
Air flow for fan		m³/h	6400	8640
Fans power input		W	130	600
Quantity		N°	2	1
Sound Pressure	(3)	dB(A)		
SIZE AND WEIGHT				
Dimension A	(4)	mm	900	1450
Dimension B	(4)	mm	420	550
Dimension H	(4)	mm	1240	1200

Notes

1 Indoor conditions (in) 46 °C U.R. 16%; Outdoor air temperature 35 °C.
2 Indoor conditions (in) 46 °C U.R. 16%; Water temperature (in/out) 14/20 °C.
3 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
4 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE FC

Rack Cooler units direct expansion with Indirect FreeCooling

0051 - 0071 11,1-14,6 kW



The indoor vertical air conditioning units RACK COOLER is an effective management system of the Hot Spots in the data center, ensuring low energy consumption and usage possibilities even under extremely high loads for HIGH DENSITY rack up and over 40 kW/m2 rack.The use of EC fan systems, featuring last-generation electronic-switching brushless motors, assures excellent performance and low consumption. The Rack Cooler, coupled with the condensig water unit, combines the direct expansion system with the use of indirect free cooling water to ensure the cooling capacity required by the server with the maximum energy savings. The works in free cooling mode when the outside temperature permits using outdoor air as a source of indirect cooling, allowing the simultaneous operation between direct expansion system and water to maximize efficiency. For an easy integration in the plant, the water condensing unit fitted with plate heat exchanger, is equipped with dry cooler axial fans, circulation pump and expansion vessel. Fitted with INVERTER-DRIVEN HERMETIC SCROLL compressor for operation on R410A refrigerant, mounted on rubber vibration dampers, complete with oil charge, supplied with oil separator to ensure correct lubrication even at minimum speed, and fitted with thermal protector.

Control



EVOLUTION+

Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Versions

ENCLOSURE	Basic, ENCLOSURE air flow configuration	IN-ROW	Basic, IN-ROW air flow configuration

Features

EFFICIENCY

The unit combines the efficiency of use of last EC fans generation and a direct expansion system with inverter compressor (fitted in water condensing unit) and the integration of indirect freecooling allowing a great EER value. Thanks to the adoption of inverter DC brushless compressors and the the advantages of variable air flow enabled by EC fans, these units, compared to a traditional ON/OFF compressor, can reduce by 50% consumptions at part load, and more than 60% with indirect freecooling use.

FLEXIBILITY

The InRow and Enclosure versions are both arranged with hydraulic/refrigerant connections and electric supply from top or bottom side, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.

IDM - INTEGRATED DYNAMIC MANAGEMENT OF TEMPERATURE

The units are supplied with a new management algorithm called IDM-INTEGRAL DYNAMIC MANAGEMENT able to prevent stratification of temperature within the rack through the use of 4 sensors (2 on the suction and 2 on the outlet) integrated and independent on the basis the real load in the single stratified BLADE work to optimize the ventilation only when required so as to maximize energy benefits. The IDM also provides the optimal management of the outlet temperatures of the treated integrating the various resources in a DYNAMIC and INTELLIGENT way.

MODULARITY

These units, with their characteristics of dimensional standardization based on the rack, are ideal for all those datacentres where SCALABILITY of the system is a strategic factor.

COMPARTIZATION

Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

COOLSIDE FC-I			0051	0071
Power supply		V/ph/Hz	230/1/50	230/1/50
Refrigerant			R410A	R410A
No. Circuits		N°	1	1
PERFORMANCE				
Total cooling capacity gross	(1)	kW	11,1	14,6
Sensible cooling capacity gross	(1)	kW	10,3	14,6
SHR			0,93	1,00
EER (total)		kW/kW	4,35	4,69
FREECOOLING				
FC total capacity		kW	9,80	17,7
FC sensible capacity		kW	9,80	17,7
FC Coil's fluid flow		l/s	0,66	0,85
FANS				
Air flow		m³/h	1500	3360
Power Input		kW	0,32	0,69
Quantity		N°	2	4
Sound Pressure	(3)	dB(A)	59	64
SIZE AND WEIGHT				
A	(4)	mm	300	300
B	(4)	mm	1000	1000
H	(4)	mm	2085	2085
COUPLING UNIT EXTERNAL				
Power supply		V/ph/Hz	230/1/50	400/3+N/50
Compressors power absorption	(1)	kW	2,55	3,11
Pump power input	(1)	W		
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
Compressors power absorption	(1)	kW	2,55	3,11
Refrigerant charge		kg		
FANS				
Air flow for fan		m³/h	8640	15768
Fans power input		W	690	690
Quantity		N°	1	2
Sound Pressure	(3)	dB(A)		
SIZE AND WEIGHT				
Dimension A	(4)	mm	1450	1450
Dimension B	(4)	mm	550	550
Dimension H	(4)	mm	1200	1700

Notes

1 Indoor conditions (in) 35 °C U.R. 27%; Condensing water 30/35 °C.
2 Indoor conditions (in) 35 °C U.R. 27%; Input water FC 10 °C.
3 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
4 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

COOLSIDE FC

Rack Cooler units direct expansion with Indirect FreeCooling

0051 - 0071 11,1-14,6 kW

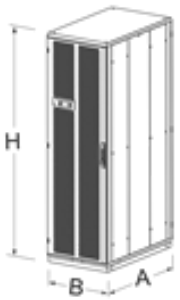
COOLSIDE FC-E			0051	0071
Power supply		V/ph/Hz	230/1/50	230/1/50
Refrigerant			R410A	R410A
No. Circuits		N°	1	1
PERFORMANCE				
Total cooling capacity gross	(1)	kW	12,8	17,4
Sensible cooling capacity gross	(1)	kW	12,8	17,4
SHR			1,00	1,00
EER (total)		kW/kW	4,74	5,45
FREECOOLING				
FC total capacity		kW	12,5	22,8
FC sensible capacity		kW	12,5	22,8
FC Coil's fluid flow		l/s	0,74	1,10
FANS				
Air flow		m³/h	1500	3360
Power Input		kW	0,33	0,69
Quantity		N°	2	4
Sound Pressure	(3)	dB(A)	58	64
SIZE AND WEIGHT				
A	(4)	mm	300	300
B	(4)	mm	1200	1200
H	(4)	mm	2085	2085
COUPLING UNIT EXTERNAL				
Power supply		V/ph/Hz	230/1/50	400/3+N/50
Compressors power absorption	(1)	kW	2,70	3,19
Pump power input	(1)	W		
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
Compressors power absorption	(1)	kW	2,70	3,19
Refrigerant charge		kg		
FANS				
Air flow for fan		m³/h	8640	15768
Fans power input		W	690	690
Quantity		N°	1	2
Sound Pressure	(3)	dB(A)		
SIZE AND WEIGHT				
Dimension A	(4)	mm	1450	1450
Dimension B	(4)	mm	550	550
Dimension H	(4)	mm	1200	1700

Notes

1 Indoor conditions (in) 46 °C U.R. 16%; Condensing water 30/35 °C.
2 Indoor conditions (in) 46 °C U.R. 16%; Input water FC 14 °C.
3 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
4 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE ROW DX

Direct expansion Rack Cooler unit

25 B6 - 40 B6 19,2-30,0 kW



FULL INVERTER direct expansion Air Conditioners for IT Cooling designed to be coupled with a remote condenser. The machines are made for indoor installation. The series is suitable for application in modern IT infrastructure, all characterized by high thermal loads. The range is particularly suitable for high density racks and blade server cooling in Data Center with hot spots. It is able to cope the high density of the thermal load with small footprint. The installation foresees the direct insertion within the rows of racks to cool the localized heat sources (hot spot). The unit easily adapts to the real thermal load of the server; it is an easy to install solution for modular cooling systems and rapid upgrade of the data center capacity. BLDC hermetic inverter compressor installed in the unit for optimizing the performances and increasing the overall efficiency of the system in any condition; new plug fans with EC electric motors and impeller in composite material, which guarantees a reduction of power consumption.
The units is available with horizontal air flow for IN ROW cooling system application (for rows of racks). Air intake from the back side and frontal air delivery through honeycomb type grilles.

Control



CONTROL
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

BF Frontal air supply, back return air

BT Side supply air, back return air

Features

EFFICIENCY
The unit combines the efficiency of use of last EC fans generation and a direct expansion system with inverter compressor fitted in the unit allowing a great EER value. Thanks to the adoption of inverter DC brushless compressors, these units can reduce by 50% consumptions at part load, if compared to a traditional ON/OFF compressor. This is made possible also thanks to the advantages of variable air flow enabled by EC fans.
FLEXIBILITY
The units are predisposed for refrigerant connections and power supply passage from both above and below, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.
MODULARITY
The units, with their characteristics of dimensional standardization based on the rack, are ideal for all those datacentres where SCALABILITY of the system is a strategic factor.
COMPARTIZATION
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

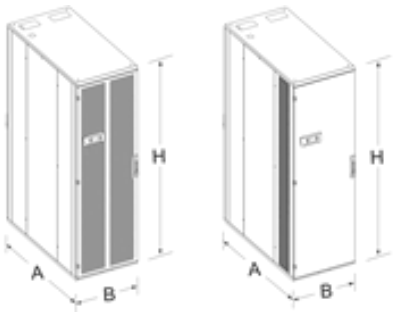
COOLSIDE ROW DX			25 B6	40 B6
Frame				
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50
PERFORMANCE				
Total cooling capacity gross	(1)	kW	19,2	30,0
Sensible cooling capacity gross	(1)	kW	19,2	30,0
Total power input (Comp.+fans)	(1)	kW	7,24	15,0
EER (Indoor unit)	(1)	kW/kW	2,65	2,00
SHR	(2)		1,00	1,00
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	4,50	4,60
FANS				
Fans type			EC RADIAL	EC RADIAL
Quantity		N°	4	4
Air flow	(3)	m³/h	5800	9400
NOISE LEVEL				
Sound Power		dB(A)	64	76
Sound Pressure	(4)	dB(A)	44	56
SIZE AND WEIGHT				
A	(3)	mm	1200	1200
B	(3)	mm	600	600
H	(3)	mm	2000	2000
Weight	(3)	kg	290	290

Notes

1 Indoor conditions (in) 35°C - R.H. 27%; Condensing temperature 45°C; ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Unit in standard configuration/execution, without optional accessories.
4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

COOLSIDE ROW DF DX

Rack Cooler units direct expansion Dual Fluid

25 B6 - 40 B6 28,3-29,9 kW



DUAL FLUID FULL INVERTER direct expansion Air Conditioners for IT Cooling designed to be coupled with a remote condenser. The units provide redundancy in cooling capacity also in emergency situations; to be connected to an external chiller for primary chilled water circuit, and to a remote condenser for the secondary or back up direct expansion circuit. The machines are suitable for indoor installation in modern IT infrastructures with high density racks / blade servers and in Data Center with hot spots, dissipating an high thermal load with small footprint. The installation foresees the direct insertion within the rows of racks to cool the localized heat sources (hot spot). The unit easily adapts to the real thermal load of the server; it is an easy to install solution for modular cooling systems and fast upgrade of the data center capacity. BLDC hermetic inverter compressor installed in the unit for optimizing the performances and increasing the overall efficiency of the system in any condition; new plug fans with EC electric motors and impeller in composite material, which guarantees a reduction of power consumption.
The units is available with horizontal air flow for IN ROW cooling system application. Air intake from the back side and frontal air delivery through honeycomb type grilles.

Control



CONTROL
Semi-graphic display 132 x 64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function.

Refrigerant

R410A

Versions

BF Frontal air supply, back return air

BT Side supply air, back return air

Features

EFFICIENCY
The unit combines the efficiency of use of last EC fans generation and a direct expansion system with inverter compressor fitted in the unit allowing a great EER value. Thanks to the adoption of inverter DC brushless compressors, these units can reduce by 50% consumptions at part load, if compared to a traditional ON/OFF compressor. This is made possible also thanks to the advantages of variable air flow enabled by EC fans.
FLEXIBILITY
The units are predisposed for refrigerant connections and power supply passage from both above and below, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.
MODULARITY
The units, with their characteristics of dimensional standardization based on the rack, are ideal for all those datacentres where SCALABILITY of the system is a strategic factor.
COMPARTIZATION
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

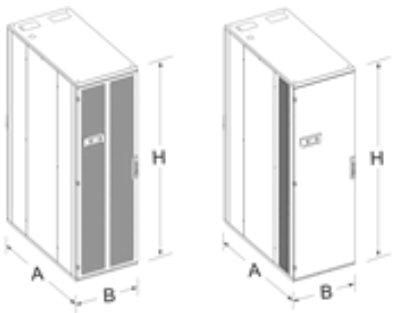
COOLSIDE ROW DF DX			25 B6	40 B6
Frame				
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50
PERFORMANCE				
DIRECT EXPANSION				
Total cooling capacity gross	(1)	kW	19,2	30,0
Sensible cooling capacity gross	(1)	kW	19,2	30,0
Total power input (Comp.+fans)	(1)	kW	7,34	15,2
EER (Indoor unit)	(1)	kW/kW	2,62	1,97
SHR	(2)		1,00	1,00
CHILLED WATER				
Total cooling capacity gross	(3)	kW	29,9	28,3
Sensible cooling capacity gross	(3)	kW	29,3	28,3
SHR	(2)		0,98	1,00
Fluid flow	(3)	l/s	1,43	1,36
Total pressure drop (Coil + Valve)	(3)	kPa	9,32	8,64
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg		
FANS				
Fans type			EC RADIAL	EC RADIAL
Quantity		N°	4	4
Air flow	(4)	m³/h	5800	9400
NOISE LEVEL				
Sound Power		dB(A)	64	75
Sound Pressure	(5)	dB(A)	44	55
SIZE AND WEIGHT				
A	(4)	mm	1200	1200
B	(4)	mm	600	600
H	(4)	mm	2000	2000
Weight	(4)	kg	290	290
COUPLING UNIT EXTERNAL				
Standard remote condenser linked			T-MATE DX-A /STD /M 35	T-MATE DX-A /STD /M 45
Voltage			230/1/50	230/1/50
Quantity		N°	1	1

Notes

1 Indoor conditions (in) 35°C - R.H. 27%; Condensing temperature 45°C; ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Indoor conditions (in) 35°C - R.H. 27%; Water temperature (in/out) 10°C/15°C; ESP= 20Pa.
4 Unit in standard configuration/execution, without optional accessories.
5 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



DATACENTER INFRASTRACTURES

<<< BACK INDEX

RC FLOOR

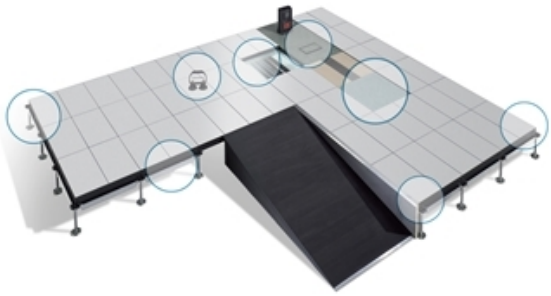
RC RACK

RC AISLE CONTAINMENT

RC PDU 48VDC - SWITCHED

RC FLOOR

Raised floor for data center



Features

- SUBSTRUCTURE. Two types are available:
STF Kit floor substructure zink whisker free, including screws, adjustable pedestals, MEDIUM stringers H30 and pedestal head gaskets.
EXTRA Kit floor substructure zink whisker free, including screws, adjustable pedestals, HEAVY stringers 25x25 and pedestal head gaskets
- FLOOR. Available with high density core made with chipboard (720 kg/m3) or calcium sulphate (1500 kg/ m3). Bottom made of no-scratch and no-rip aluminium foil (BASIC version) or steel tray 0,5 mm thickness (HEAVY version). Top covering made with HPL laminated Abet walkprint 577 or Vynil Tarkett Vylon Plus (color 535)

The raised floor is designed to easily adapt to future evolutions of IT spaces, avoiding expensive building work and it is the product to fulfill the need for versatile design of data centers.
Advantages:
ADAPTABILITY - The panels easily adapt to all different kinds of data centers. Thanks to a great variety of modules and materials, it can be further customized according to specific design requirements.
PERFECT AIR DISTRIBUTION - The raised floor configuration utilises the underfloor spaces to channel outlet air released from the perimeter air conditioners. The underfloor spaces are kept in pressure and the air inside the environment remains homogeneous.
STABILITY AND HIGH LOAD RESISTANCE - Advanced steel frame and diagonal stringers are fixed in a way to notably increase the system's solidity, ensuring an improved static and dynamic load resistance.
MODULARITY AND FLEXIBILITY - The raised floor has been designed for quick and easy installation and removal of the panels, simplifying the access to the equipment and future plant design changes to the IT environment.
SAFETY AND RELIABILITY - It has been designed to keep the electrical cables perfectly separate from the air or water flows released from the units, thus avoiding any risk of leakages or malfunctioning
PERFECT ACOUSTIC COMFORT - The raised floor panels utilise soundproof materials like calcium sulphate or wood chipboard, both good at minimizing sound emissions, thus ensuring the perfect noise comfort inside the environment.

Options

Aluminium air grille 150x600mm or 600x600mm	opt
Perforated panel made of zionc-coated steel with 1296 holes and laminated or vynil top covering	opt
SOFT LAY - Anti vibration system to reduce noise transmitted to the rooms under the installed floor	opt
Tie bar for substructure, to contrast horizontal forces	opt
Double cup for lifting panels	opt
Adhesive for fixing the pedestal on floor underneath	opt

DATACENTER INFRASTRACTURES

RC RACK

High quality cabinets for the protection and housing of servers



Versions

GLASS	Cabinet with front door with tempered GLASS 4mm rounded, complete with handle with key lock quarter turn with 4 locking points. Possibility of reversing the direction of the door opening. BLIND double swing rear door with lock quarter-turn and three locking points.	HYBRID	Cabinet with front door with tempered GLASS 4mm rounded full handle with key lock quarter turn with 4 locking points. Possibility of reversing the direction of the door opening. Rear door ventilated (GRILL) double doors with lock quarter-turn and three locking points.
GRILLE	Cabinet with front door ventilated (GRILLE) and rounded complete with handle with key lock quarter turn with 4 locking points. Possibility of reversing the direction of the door opening. Rear door double doors ventilated (GRILLE) with quarter-turn lock and three locking points.		

Features

- Glass frontal door or with perforated mesh (drilled more than 80%)
- Rear double doors with perforated mesh (drilled more than 80%) or blind
- Side panels and bottom are not included, see options
- Painted with black epoxy powders (RAL 9005)
- Capacity 2000 kg
- 20 / 10 supporting sheet thickness
- 4 adjustable feet
- 4 swivel castors integrated
- IP20 protection rating
- Complete with two front and two rear uprights
- Earthing-ready
- Doors with locked handles

DIMENSIONS:
- Depth 800 mm or 1000 mm or 1200 mm
- Width 600 mm or 800 mm
- Height 42U (2100 mm) or 47U (2300 mm)

The units are floor-standing cabinets suitable for the housing of the server.
The supporting structure is made of sheet steel with a thickness of 20/10 and can reach a capacity of 2000 kg.
The cabinet is fully inspected and adaptable to all environments. Equipped with 4 wheels for easy handling and adjustable feet.

ADVANTAGES:
- Strong and sturdy
- Can be dismantled in a few minutes
- Suitable for different kinds of servers
- Easily access to cables

Options

Modular roof for the insertion of fan groups	opt
Side Wire duct kit	opt
Joining racks plate kit	opt
Grounding with copper bar kit	opt
Anti-Rollover plate	opt
Closure plate bottom	opt
Closure plate Bottom Rack with brushes	opt
Side panel double level	opt
Floor fixing bracket	opt

DATACENTER INFRASTRACTURES

RC AISLE CONTAINMENT

Aisle Containment solution for high density applications



Features

Available for corridors:
- Width 1000
- Width 1200
- Width 1500
- Width 1800
- 42U height
- 47U height

This mix results in airflow with an uncontrolled temperature that reduces the performance of the Data Center. Therefore, it is necessary to provide the physical separation of the hot and cold air streams.
This is achieved by using the 'Aisle Containment System', a simple system of modular and scalable panels that prevent hot and cold air mixing. It is a simple and effective solution that guarantees the servers will be fed with cold air and the cooling system to be more efficient.
In "Cold Aisle" cold air is confined within the closed structure, this architecture provides the desired temperature constant at all heights, on the face of the various rack.
The hot air is extracted from the fans inside the server, it is placed in the external environment and from there recovered, cooled and fed into the corridor.
The Aisle Containment System is now available with the dual purpose of containement the hot thermal island(hot aisle containment) and the cold island (cold aisle containment) as well.

Options

Sliding doors for aisle	opt
Closure aisle panel	opt
Bridge cable duct for aisle	opt
Polycarbonate bridge cable duct for aisle	opt
Roof cable module for rack	opt
Anti-mixing frontal/back panel for rack	opt
Anti-mixing side panel for rack	opt
Bend cables module for roof	opt

RC PDU

Power Distribution Unit

48VDC - SWITCHED



Versions

BASIC	Basic product that only provide power distributions
METERED	PDUs that provide power distributions plus power reading on a built in Display
SMART	Intelliget PDUs with network interface via Web Browser or SNMP-based, with PIPS (Power Input) and as optinal POPS (Power Output) measurement. Temperature and humidity sensor capable.
SWITCHED	Intelliget PDUs with network interface via Web Browser or SNMP-based. Possibility of Swithiong ON/OFF every single servers's power supply. With PIPS (Power Input) and as optinal POPS (Power Output) measurement. Temperature and humidity sensor capable.
48 VDC	PDUs for telecommunication shelters. Each low and high current output are individually protected by their own fuse, dual DC power input feeds, Web interface.
FAIL SAFE TRANSFER SWITCH	Features two input power feeds, providing redundancy for single-supply equipment
POWER MONITOR	Allows the ability to easily add input current load and power monitoring to any existing cabinet

Power distribution units (PDUs) manage power usage for servers, storage and network equipment. Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. range includes an extensive selection of PDUs, with the highest reliability, in different versions to fulfill different market requests. PDUs are available with single phase or three phase power supply, max current across 16A or 32 A. There are also PDUs for telecommunication shelters (48 VDC versions). A wide accessories range completes Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. offer, such as accessories to fix the PDU into the rack and environmental sensors.

CHILLERS

i-NR-Z	0151P - 0502P
NR-Z	0152P - 0812P
NR-Z	0614P - 1214P
NRCS-Z	0202T - 0612T
NR-Z	0614T - 1214T
NRCS-Z	1314 - 3218
FR-Z	0751 - 1801
FR-Z	1502 - 7223
FR-G05-Z	0751 - 1801
FR-G05-Z	1502 - 7223
FR HFO-Z	1502 - 7823
i-FR-G01-Z	2202 - 7223
i-FR-G04-Z	2202 - 7823
i-FR-G05-Z	2202 - 7223
i-FR (1+i)-Z	2602 - 5403
TRCS2-Z	0211 - 1154
TRCS2-G05-Z	0211 - 1154
TRCS2 HFO-Z	0351 - 1053
NR-C-Z	0072 - 1204
NR-W-Z	0122 - 1204
FR-W-Z	0551 - 1752
FRCS3-W-Z	0551 - 4752
FR-W-G04-Z	0551 - 2002
FR-W-G05-Z	0551 - 1752
FRCS3-W-G05-Z	0551 - 4752
i-FR-W (1+i)-Z	1402 - 4252
i-FR-W (1+i)-G05-Z	1402 - 4252
TRCS2-W HFO-Z	0351 - 1414
TR-W-Z	1A00 - 6D00
TR-W-G05-Z	1A00 - 6D00
HR-Z	0011 - 0121
NRCS-ME-Z	0152 - 1604
FRCS-ME-Z	0401 - 1902
FRCS-ME-Z	1001 - 9604
NRCS-FC-Z	0152 - 1604
NR-FC-Z	0384 - 0926
FR-FC-Z	1502 - 6002
FR-FC-G05-Z	1502 - 6002
TRCS-FC-Z	0211 - 1204
TRCS-FC-G05-Z	0211 - 1204
FR-EFC-Z	1502 - 6002
TRCS-EFC-Z	0211 - 1204

CHILLERS

i-NR-Z

0151P - 0502P 43,88-129,3 kW

Chiller, air source for outdoor installation



Outdoor unit for the production of chilled water with fixed speed and variable speed (Inverter Driven) Scroll compressors, optimized for R410A in a single-circuit configuration, axial-flow fans, micro-channel full-aluminum air coils and electronic expansion valve as standard equipment.
Flexible and reliable unit; it easily adapts itself to different IT Cooling applications thanks to the precise temperature control together with the use of inverter technology. The high performance's level, both full and partial load, is achieved thanks to the accurate unit's design and to the use of fixed speed motor together with variable speed (inverter) motor.

Refrigerant

R410A

Versions

- Basic
- SL Super-low noise version

Configurations

- Basic function
- D Partial condensing heat recovery function

Features

HIGH EFFICIENCY
Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

ErP READY
The highest level of efficiency at part load, thanks to the inverter technology, can meet and exceed the minimum seasonal energy performance ratio, SEPR, in accordance with the eco-sustainable design requirements for all products using energy. The units already comply with the minimum seasonal energy efficiency requirements that will start from 2021. For this reason, the unit represents the best choice for all the IT Cooling installations.

VARIBLE PRIMARY FLOW (OPTION)
Energy saving due to variable pump speed management based on load demand and the variable flow assures the functioning of the units also with critical working conditions.

INTEGRATED HYDRONIC MODULE
The built-in hydronic module already contains the main water circuit components; it is available as option with single or twin in-line pump, for achieving low or high head, fixed or variable speed and buffer tank.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
This new range of chiller uses aluminum micro-channel condensers that ensure a premium level of efficiency. This solution also allows to reduce the refrigerant charge with respect to traditional copper/aluminium coils and to reduce the weight of the unit.

WIDE OPERATING RANGE
Full load operation is ensured with outdoor air temperature up to 48°C during summer. Dedicated accessories allow the unit operation down to -20°C of outdoor air temperature during winter.
Production of evaporator leaving water temperature up to 20°C.

Control



Electronic control W3000TE
The brand new W3000TE controller offers advanced functions and algorithms. The keypad W3000 Compact, as standard equipment, features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language. In addition to or as an alternative, the KIPlink is available - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the refrigerant circuits, the compressors, the fans and the pumps (if present) and display and reset the possible alarms. The regulation features the continuous modulation of capacity, based on sequential adjustment + DIP referring to the leaving water temperature (neutral zone adjustment + DIP on outlet temperature probe, for the 0151 size). Diagnostics include complete alarm management, with "blackbox" functions (via PC) and alarm log (display or PC) for best analysis of unit be haviour. The built-in clock can be used to create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production. Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision is available with different options, using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols. A dedicated wall-mounted keypad can be used for remote control of all the functions. Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

Accessories

- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Compressor power factor correction
- Soft start
- Hydronic kit available in different configurations with 1 or 2 pumps fixed speed or variable speed and buffer tank
- VPF (Variable Primary Flow) system
- EC fans with electronic DC brushless motor
- LOW NOISE KIT (only on no silenced versions)
- User Limit Control (U.L.C.) allows the safe startup of the unit in critical conditions of water and air temperature.
- Night mode is a system setting to limit maximum noise level of the unit.
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.

i-NR-Z			0151P	0182P	0202P	0262P	0302P	0352P	0402P	0502P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	43,88	52,86	63,14	72,07	83,83	100,9	119,7	129,3
Total power input	(1)	kW	15,72	18,79	21,36	24,95	29,15	35,20	41,92	46,84
EER	(1)	kW/kW	2,796	2,814	2,949	2,884	2,870	2,866	2,857	2,763
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	43,60	52,60	62,70	71,70	83,40	100,4	119,1	128,7
EER	(1)(2)	kW/kW	2,730	2,750	2,880	2,820	2,820	2,810	2,800	2,720
Cooling energy class			C	C	C	C	C	C	C	C
SEPR	(3)(4)		5,21	5,13	5,29	5,36	5,38	5,40	5,26	5,21
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	47,57	57,40	68,67	78,19	90,91	109,5	129,9	140,1
Total power input	(5)	kW	16,15	19,28	21,90	25,63	29,96	36,10	42,96	48,09
EER	(5)	kW/kW	2,938	2,974	3,137	3,055	3,030	3,033	3,021	2,913
23°C/15°C										
Cooling capacity	(6)	kW	53,60	64,90	77,81	88,26	102,6	123,7	146,7	157,9
Total power input	(6)	kW	16,79	20,00	22,68	26,60	31,14	37,38	44,44	49,90
EER	(6)	kW/kW	3,190	3,245	3,427	3,320	3,299	3,307	3,304	3,164
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	2,098	2,528	3,020	3,446	4,009	4,824	5,726	6,181
Pressure drop	(1)(2)	kPa	37,2	41,2	42,3	39,4	35,0	36,2	42,9	38,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	7,00	7,20	8,90	9,40	9,50	12,5	12,9	13,5
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	51	52	53	53	54	55	57	57
Sound power level in cooling	(8)(9)	dB(A)	83	84	85	85	86	87	89	89
SIZE AND WEIGHT										
A	(10)	mm	2000	2000	2625	2625	2625	3250	3250	3250
B	(10)	mm	1350	1350	1350	1350	1350	1350	1350	1350
H	(10)	mm	2070	2070	2070	2070	2070	2170	2170	2170
Operating weight	(10)	kg	600	660	750	780	810	1060	1070	1080

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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i-NR-Z

Chiller, air source for outdoor installation

0151P - 0502P 43,88-129,3 kW

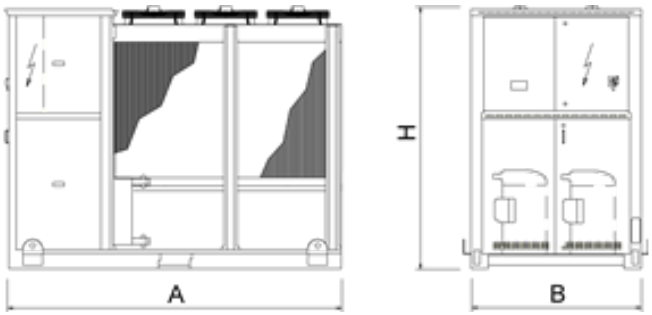
i-NR-Z / SL			0151P	0182P	0202P	0262P	0302P	0352P	0402P	0502P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	42,60	51,20	60,09	68,07	81,23	96,66	115,1	124,3
Total power input	(1)	kW	14,40	17,78	20,91	24,45	28,26	33,95	39,27	44,30
EER	(1)	kW/kW	2,958	2,876	2,876	2,780	2,869	2,853	2,929	2,806
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	42,30	50,90	59,80	67,70	80,80	96,30	114,6	123,8
EER	(1)(2)	kW/kW	2,890	2,810	2,820	2,730	2,820	2,810	2,880	2,760
Cooling energy class			C	C	C	C	C	C	C	C
SEPR	(3)(4)		5,34	5,42	5,40	5,41	5,33	5,50	5,69	5,50
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	46,29	55,64	65,28	73,76	88,11	104,9	124,8	134,7
Total power input	(5)	kW	14,78	18,26	21,47	25,16	29,05	34,83	40,30	45,55
EER	(5)	kW/kW	3,128	3,038	3,037	2,929	3,027	3,014	3,097	2,954
23°C/15°C										
Cooling capacity	(6)	kW	52,38	62,96	73,83	83,08	99,40	118,5	140,8	151,7
Total power input	(6)	kW	15,33	18,94	22,28	26,19	30,22	36,10	41,79	47,38
EER	(6)	kW/kW	3,425	3,333	3,309	3,172	3,291	3,283	3,368	3,200
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	2,037	2,449	2,874	3,255	3,885	4,622	5,504	5,946
Pressure drop	(1)(2)	kPa	35,1	38,7	38,3	35,2	32,9	33,2	39,6	36,0
REFRIGERANT CIRCUIT										
Compressors nr.		N°	1	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	8,10	8,30	8,70	9,20	11,8	12,3	14,7	15,2
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	45	45	46	46	47	48	50	50
Sound power level in cooling	(8)(9)	dB(A)	77	77	78	78	79	80	82	82
SIZE AND WEIGHT										
A	(10)	mm	2625	2625	2625	2625	3250	3250	3875	3875
B	(10)	mm	1350	1350	1350	1350	1350	1350	1350	1350
H	(10)	mm	2070	2070	2070	2070	2170	2170	2170	2170
Operating weight	(10)	kg	700	760	790	820	980	1090	1180	1200

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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Dimensional drawing



CHILLERS

NR-Z

Chiller, air source for outdoor installation

0152P - 0812P 39,24-227,1 kW



Outdoor unit for the production of chilled water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, plate heat exchanger, micro-channel full-aluminum air coils and thermostatic or electronic expansion valve, according to the model. The range is composed by units equipped with two compressors in a single-circuit configuration.

Control



Electronic control W3000 / W3000TE

The controller is available in two different versions according to the unit's model:

W3000 : electronic controller with Compact keyboard. It features an easy-to-use interface and a complete LCD display that allows consulting and intervening on the unit by means of a multi-lenguage menu, available in three languages: Italian, English and a further language among French, Spanish, German, Russian and Swedish. The alarm history display function can be enable by installing a real-time clock (optional).

W3000TE : electronic controller with Compact keyboard. It features an easy-to-use interface and a complete LCD display that allows consulting and intervening on the unit by means of a multi-language menu (19 languages are available). The diagnostics includes a complete alarm management, with the "black-box" and the alarm history display for enhanced analysis of the unit operation.

Both the controllers offer advanced functions and algorithms.

The regulation is based on the patented "Quickmind" water temperature regulation logic uses self-adapting control to maintain flow temperatures and optimise performance even in low water content scenarios. As an alternative, the proportional or proportional-integral regulations are also available.

Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well.

Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with the remote keyboard (up to 8 units).

The defrosting (reversible unit only) follows a proprietary self-adaptive logic, which features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

K	Key efficiency, compact version	CA	Class A of efficiency
LN-K	Low Noise, Key efficiency and compact version	LN-CA	Low Noise, Class A of efficiency
SL-K	Super Low noise, Key efficiency and compact version	SL-CA	Super Low noise version, Class A of efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features

CLASS A EFFICIENCY

The full range is available with the Class A efficiency rating. Thanks to the generous sizing of the heat exchangers and an accurate control of the fan speed, the CA versions grant a premium level efficiency in every noise configuration.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS

The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of different external conditions. It has been introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions. The electronic expansion valve comes standard in the high-efficieny CA version, optional for the compact K versions.

WIDE OPERATING RANGE

Full load operation is ensured with outdoor air temperature up to 46°C, partial load operation is possible up to or even beyond 50°C. Dedicated accessories allow the unit operation down to -20°C of outdoor air temperature.

INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

Accessories

- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Copper-Copper heat exchanger coils
- Compressor power factor correction
- Soft start
- Compressor suction and discharge valves
- High and low pressure gauges
- DVVF and DVV2F devices for low air temperature operation
- Hydronic module with 1 or 2 pumps, high or low head. Buffer tank available.
- Anti-intrusion grills

NR-Z / K			0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	39,24	44,25	51,91	58,87	64,99	77,62	88,53
Total power input	(1)	kW	13,50	15,59	18,08	20,51	23,46	26,76	31,34
EER	(1)	kW/kW	2,904	2,840	2,867	2,873	2,766	2,896	2,827
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	39,00	44,00	51,60	58,60	64,70	77,20	87,90
EER	(1)(2)	kW/kW	2,850	2,780	2,800	2,820	2,720	2,840	2,760
Cooling energy class			C	C	C	C	C	C	C
SEPR	(3)(4)		5,39	5,41	5,37	5,32	5,29	5,19	5,12
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	42,74	48,16	56,48	63,83	70,27	84,12	96,18
Total power input	(5)	kW	13,79	16,06	18,52	20,93	24,14	27,47	32,34
EER	(5)	kW/kW	3,094	2,994	3,054	3,053	2,917	3,058	2,978
23°C/15°C									
Cooling capacity	(6)	kW	48,50	54,64	64,01	71,81	78,82	94,74	108,9
Total power input	(6)	kW	14,20	16,80	19,16	21,50	25,12	28,51	33,86
EER	(6)	kW/kW	3,415	3,250	3,333	3,340	3,139	3,323	3,212
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,876	2,116	2,483	2,815	3,108	3,712	4,233
Pressure drop	(1)(2)	kPa	36,3	34,1	36,3	33,4	33,2	33,9	54,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	5,70	6,00	6,20	8,00	8,10	9,60	10,2
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	51	51	52	52	52	53	54
Sound power level in cooling	(8)(9)	dB(A)	83	83	84	84	84	85	86
SIZE AND WEIGHT									
A	(10)	mm	1825	1825	1825	2395	2395	2395	2395
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1865	1865	1865	1865	1865	1865	1865
Operating weight	(10)	kg	470	480	490	540	550	570	660

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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3 Seasonal energy efficiency ratio
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5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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NR-Z / K			0402P	0452P	0502P	0552P	0602P	0702P	0802P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	102,0	114,5	127,4	144,3	165,7	189,5	206,6
Total power input	(1)	kW	35,36	40,15	44,91	52,28	57,66	67,88	77,89
EER	(1)	kW/kW	2,881	2,855	2,837	2,759	2,872	2,791	2,652
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	101,4	113,9	126,7	143,5	164,9	188,6	205,5
EER	(1)(2)	kW/kW	2,820	2,800	2,780	2,700	2,820	2,740	2,600
Cooling energy class			C	C	C	C	C	C	D
SEPR	(3)(4)		4,88	4,90	5,00	4,94	4,96	4,85	4,60
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	111,3	124,5	138,2	156,3	180,2	205,4	223,3
Total power input	(5)	kW	36,33	41,23	46,05	53,76	59,16	69,73	80,14
EER	(5)	kW/kW	3,066	3,022	2,998	2,905	3,044	2,947	2,788
23°C/15°C									
Cooling capacity	(6)	kW	126,8	141,2	155,8	176,0	204,2	231,6	250,6
Total power input	(6)	kW	37,83	42,83	47,67	55,98	61,48	72,53	83,54
EER	(6)	kW/kW	3,354	3,299	3,266	3,143	3,320	3,194	3,001
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	4,876	5,474	6,094	6,899	7,922	9,060	9,879
Pressure drop	(1)(2)	kPa	49,9	51,3	49,1	52,1	49,3	49,8	59,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	12,2	13,5	13,8	15,4	17,7	17,8	17,9
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	56	57	58	58	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	88	89	90	90	91
SIZE AND WEIGHT									
A	(10)	mm	2825	2825	2825	3360	3980	3980	3980
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1980	1980	1980	1980	1980	1980	1980
Operating weight	(10)	kg	830	870	900	980	1130	1110	1140

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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NR-Z / LN-K			0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	39,26	44,35	51,70	58,76	65,52	74,65	89,94
Total power input	(1)	kW	13,62	15,78	18,51	20,36	23,15	28,31	31,06
EER	(1)	kW/kW	2,890	2,804	2,795	2,882	2,823	2,640	2,891
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	39,10	44,00	51,40	58,50	65,20	74,40	89,30
EER	(1)(2)	kW/kW	2,830	2,740	2,730	2,830	2,770	2,600	2,820
Cooling energy class			C	C	C	C	C	D	C
SEPR	(3)(4)		5,50	5,47	5,41	5,29	5,34	5,18	5,02
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	42,71	48,29	56,18	63,75	70,89	80,58	97,80
Total power input	(5)	kW	13,93	16,27	18,99	20,77	23,82	29,16	31,98
EER	(5)	kW/kW	3,072	2,963	2,958	3,062	2,979	2,760	3,056
23°C/15°C									
Cooling capacity	(6)	kW	48,35	54,85	63,56	71,82	79,59	90,07	110,8
Total power input	(6)	kW	14,36	17,07	19,70	21,32	24,77	30,41	33,36
EER	(6)	kW/kW	3,354	3,205	3,228	3,371	3,210	2,964	3,317
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,878	2,121	2,472	2,810	3,133	3,570	4,301
Pressure drop	(1)(2)	kPa	36,3	34,2	36,0	33,3	33,7	31,4	55,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	5,80	5,80	6,80	8,30	8,40	9,20	10,9
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	47	47	47	48	48	48	51
Sound power level in cooling	(8)(9)	dB(A)	79	79	79	80	80	80	83
SIZE AND WEIGHT									
A	(10)	mm	1825	1825	2395	2395	2395	2395	2825
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1865	1865	1865	1865	1865	1865	1980
Operating weight	(10)	kg	480	500	540	570	570	580	780

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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NR-Z / LN-K			0402P	0452P	0502P	0552P	0602P	0702P	0802P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	99,41	112,9	125,2	139,9	162,8	179,4	194,1
Total power input	(1)	kW	35,95	39,26	44,20	52,95	58,07	70,29	81,91
EER	(1)	kW/kW	2,769	2,873	2,833	2,645	2,802	2,552	2,370
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	98,80	112,3	124,5	139,2	162,0	178,6	193,2
EER	(1)(2)	kW/kW	2,710	2,810	2,770	2,600	2,750	2,510	2,330
Cooling energy class			C	C	C	D	C	D	E
SEPR	(3)(4)		5,01	5,10	5,23	5,05	5,14	4,79	4,58
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	108,4	122,7	135,6	151,2	176,5	193,8	223,3
Total power input	(5)	kW	37,18	40,39	45,39	54,57	59,83	72,55	80,14
EER	(5)	kW/kW	2,914	3,037	2,987	2,769	2,952	2,669	2,788
23°C/15°C									
Cooling capacity	(6)	kW	123,5	139,0	152,6	180,0	199,0	231,6	250,6
Total power input	(6)	kW	39,13	42,08	47,07	54,58	62,57	72,47	83,54
EER	(6)	kW/kW	3,159	3,302	3,240	3,297	3,179	3,194	3,001
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	4,754	5,397	5,989	6,689	7,785	8,580	9,282
Pressure drop	(1)(2)	kPa	47,4	49,8	47,4	49,0	47,6	44,7	52,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	12,1	14,0	15,1	15,3	16,7	17,1	17,2
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	51	52	52	52	53	53	53
Sound power level in cooling	(8)(9)	dB(A)	83	84	84	84	85	85	85
SIZE AND WEIGHT									
A	(10)	mm	2825	3360	3360	3360	3980	3980	3980
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1980	1980	1980	1980	1980	1980	1980
Operating weight	(10)	kg	880	1000	1030	1060	1180	1150	1180

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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9 Sound power level in cooling, outdoors.
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NR-Z / SL-K			0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	39,41	44,60	52,28	58,89	65,87	77,75	88,50
Total power input	(1)	kW	13,89	16,07	18,18	20,27	22,88	27,39	30,52
EER	(1)	kW/kW	2,835	2,770	2,874	2,901	2,878	2,836	2,902
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	39,20	44,30	52,00	58,60	65,60	77,30	87,90
EER	(1)(2)	kW/kW	2,780	2,710	2,810	2,840	2,830	2,780	2,830
Cooling energy class			C	C	C	C	C	C	C
SEPR	(3)(4)		5,28	5,32	5,48	5,07	5,17	5,27	5,14
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	42,88	48,56	56,84	64,07	71,42	84,12	96,24
Total power input	(5)	kW	14,19	16,56	18,64	20,64	23,48	28,16	31,42
EER	(5)	kW/kW	3,021	2,928	3,054	3,112	3,038	2,982	3,064
23°C/15°C									
Cooling capacity	(6)	kW	48,55	55,14	64,37	72,59	80,50	94,44	109,1
Total power input	(6)	kW	14,62	17,35	19,31	21,12	24,35	29,27	32,79
EER	(6)	kW/kW	3,329	3,185	3,337	3,441	3,313	3,222	3,326
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,884	2,133	2,500	2,816	3,150	3,718	4,232
Pressure drop	(1)(2)	kPa	36,6	34,6	36,8	33,4	34,1	34,0	54,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	6,00	6,90	7,80	8,10	9,50	11,1	11,4
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	44	45	45	46	46	46	47
Sound power level in cooling	(8)(9)	dB(A)	76	77	77	78	78	78	79
SIZE AND WEIGHT									
A	(10)	mm	2395	2395	2395	2825	2825	2825	3360
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1865	1865	1865	1980	1980	1980	1980
Operating weight	(10)	kg	540	550	560	670	680	680	860

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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NR-Z / SL-K			0402P	0452P	0502P	0552P	0602P	0702P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	100,0	113,4	124,3	140,5	153,0	175,4
Total power input	(1)	kW	35,09	39,30	44,76	52,47	61,73	72,08
EER	(1)	kW/kW	2,849	2,885	2,775	2,676	2,480	2,433
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	99,40	112,8	123,7	139,8	152,3	174,6
EER	(1)(2)	kW/kW	2,780	2,830	2,720	2,630	2,440	2,400
Cooling energy class			C	C	C	D	E	E
SEPR	(3)(4)		5,31	5,18	5,24	5,02	5,03	4,66
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	109,0	123,3	134,5	152,0	176,5	205,4
Total power input	(5)	kW	36,30	40,46	45,97	54,04	59,83	69,73
EER	(5)	kW/kW	3,003	3,044	2,924	2,815	2,952	2,947
23°C/15°C								
Cooling capacity	(6)	kW	124,2	139,6	151,2	181,8	199,0	231,6
Total power input	(6)	kW	38,20	42,19	47,70	53,23	62,57	72,53
EER	(6)	kW/kW	3,251	3,308	3,170	3,417	3,179	3,194
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	4,782	5,424	5,946	6,717	7,316	8,387
Pressure drop	(1)(2)	kPa	48,0	50,3	46,7	49,4	42,0	42,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	13,6	15,6	16,7	16,8	17,1	17,2
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	48	49	49	50	50	51
Sound power level in cooling	(8)(9)	dB(A)	80	81	81	82	82	83
SIZE AND WEIGHT								
A	(10)	mm	3360	3980	3980	3980	3980	3980
B	(10)	mm	1195	1195	1195	1195	1195	1195
H	(10)	mm	1980	1980	1980	1980	1980	1980
Operating weight	(10)	kg	960	1070	1080	1110	1180	1150

Notes

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NR-Z / CA			0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	41,69	47,43	55,00	62,45	69,59	85,05	96,60
Total power input	(1)	kW	12,85	14,50	16,73	19,28	21,80	26,49	30,18
EER	(1)	kW/kW	3,258	3,269	3,293	3,238	3,193	3,208	3,199
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	41,40	47,10	54,70	62,20	69,20	84,50	95,90
EER	(1)(2)	kW/kW	3,170	3,180	3,220	3,170	3,120	3,140	3,100
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,58	5,81	5,50	5,44	5,47	5,24	5,18
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	45,53	51,60	60,01	68,07	75,56	92,56	105,3
Total power input	(5)	kW	13,10	14,85	17,04	19,61	22,34	27,02	30,88
EER	(5)	kW/kW	3,473	3,463	3,529	3,474	3,390	3,430	3,408
23°C/15°C									
Cooling capacity	(6)	kW	51,90	58,48	68,33	77,38	85,40	105,0	119,8
Total power input	(6)	kW	13,44	15,39	17,46	20,03	23,11	27,77	31,90
EER	(6)	kW/kW	3,873	3,799	3,903	3,870	3,697	3,777	3,755
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,994	2,268	2,630	2,987	3,328	4,067	4,619
Pressure drop	(1)(2)	kPa	40,9	39,1	40,7	37,6	38,0	40,7	64,4
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	6,40	7,90	8,10	8,80	8,90	10,3	13,8
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	52	52	53	53	54	56	56
Sound power level in cooling	(8)(9)	dB(A)	84	84	85	85	86	88	88
SIZE AND WEIGHT									
A	(10)	mm	1825	2395	2395	2395	2395	2825	3360
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1865	1865	1865	1865	1865	1980	1980
Operating weight	(10)	kg	480	540	550	560	570	680	830

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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NR-Z / CA			0402P	0452P	0502P	0562P	0612P	0712P	0812P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	108,0	121,9	137,8	160,3	178,4	201,2	227,1
Total power input	(1)	kW	33,64	38,25	42,64	48,87	55,44	63,47	70,52
EER	(1)	kW/kW	3,214	3,183	3,235	3,278	3,220	3,169	3,221
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	107,3	121,2	137,0	159,3	177,5	200,2	225,7
EER	(1)(2)	kW/kW	3,130	3,110	3,160	3,190	3,150	3,100	3,140
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,30	5,35	5,22	5,11	5,24	5,12	4,82
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	117,9	132,8	150,1	175,0	194,6	218,8	246,7
Total power input	(5)	kW	34,51	39,23	43,54	49,83	56,65	64,86	71,83
EER	(5)	kW/kW	3,417	3,388	3,451	3,514	3,438	3,371	3,436
23°C/15°C									
Cooling capacity	(6)	kW	134,4	150,9	170,7	199,5	221,7	248,1	279,5
Total power input	(6)	kW	35,84	40,68	44,82	51,24	58,46	66,90	73,64
EER	(6)	kW/kW	3,754	3,708	3,810	3,896	3,790	3,709	3,798
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	5,163	5,831	6,589	7,668	8,532	9,622	10,86
Pressure drop	(1)(2)	kPa	56,0	58,2	57,4	64,4	57,2	56,2	71,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	13,9	14,3	19,4	22,0	22,5	23,1	25,6
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	58	58	58	59	59	60	61
Sound power level in cooling	(8)(9)	dB(A)	90	90	90	91	91	92	93
SIZE AND WEIGHT									
A	(10)	mm	3360	3360	3980	3160	3160	3160	4335
B	(10)	mm	1195	1195	1195	2250	2250	2250	2250
H	(10)	mm	1980	1980	1980	2170	2170	2170	2170
Operating weight	(10)	kg	960	1000	1080	1510	1550	1570	1810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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NR-Z / LN-CA			0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	41,48	46,98	55,01	63,49	70,68	82,66	94,43
Total power input	(1)	kW	12,57	14,40	17,20	19,48	21,88	25,96	29,34
EER	(1)	kW/kW	3,294	3,264	3,198	3,256	3,228	3,181	3,222
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	41,20	46,70	54,70	63,10	70,30	82,30	93,80
EER	(1)(2)	kW/kW	3,200	3,180	3,130	3,180	3,150	3,120	3,140
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,57	5,78	5,75	5,28	5,33	5,42	5,37
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	45,35	51,12	59,92	69,29	76,84	89,76	102,8
Total power input	(5)	kW	12,80	14,74	17,59	19,78	22,38	26,58	30,11
EER	(5)	kW/kW	3,539	3,476	3,403	3,500	3,429	3,376	3,415
23°C/15°C									
Cooling capacity	(6)	kW	51,79	57,93	68,03	78,95	87,02	101,5	116,8
Total power input	(6)	kW	13,12	15,26	18,15	20,17	23,09	27,48	31,25
EER	(6)	kW/kW	3,954	3,784	3,757	3,906	3,766	3,691	3,732
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,984	2,247	2,631	3,036	3,380	3,953	4,516
Pressure drop	(1)(2)	kPa	40,5	38,4	40,7	38,8	39,2	38,5	61,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	6,70	7,90	8,00	8,90	11,4	11,5	12,6
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	48	48	48	49	49	50	52
Sound power level in cooling	(8)(9)	dB(A)	80	80	80	81	81	82	84
SIZE AND WEIGHT									
A	(10)	mm	2395	2395	2395	2825	2825	3360	3360
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1865	1865	1865	1980	1980	1980	1980
Operating weight	(10)	kg	550	560	560	670	680	750	870

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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9 Sound power level in cooling, outdoors.
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NR-Z / LN-CA			0402P	0452P	0502P	0562P	0612P	0712P	0812P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	107,4	120,6	134,2	153,9	172,8	198,4	221,2
Total power input	(1)	kW	33,27	37,89	42,25	47,07	54,45	60,76	67,49
EER	(1)	kW/kW	3,225	3,182	3,180	3,268	3,176	3,263	3,277
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	106,7	119,9	133,4	153,0	171,9	197,4	219,9
EER	(1)(2)	kW/kW	3,140	3,110	3,100	3,190	3,110	3,190	3,200
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,25	5,27	5,30	5,44	5,46	5,40	5,07
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	117,3	131,4	145,9	167,6	187,9	215,6	240,2
Total power input	(5)	kW	34,15	38,87	43,27	48,22	55,91	62,21	68,91
EER	(5)	kW/kW	3,440	3,378	3,370	3,477	3,361	3,466	3,486
23°C/15°C									
Cooling capacity	(6)	kW	133,8	149,3	165,3	190,3	213,1	244,3	271,8
Total power input	(6)	kW	35,47	40,31	44,72	49,92	58,16	64,33	70,91
EER	(6)	kW/kW	3,769	3,705	3,698	3,814	3,662	3,799	3,834
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	5,137	5,769	6,417	7,361	8,261	9,486	10,58
Pressure drop	(1)(2)	kPa	55,4	56,9	54,4	59,3	53,6	54,6	67,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	14,5	14,5	15,7	26,2	26,3	26,4	28,5
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	52	52	53	54	54	55	56
Sound power level in cooling	(8)(9)	dB(A)	84	84	85	86	86	87	88
SIZE AND WEIGHT									
A	(10)	mm	3980	3980	3980	3160	3160	4335	4335
B	(10)	mm	1195	1195	1195	2250	2250	2250	2250
H	(10)	mm	1980	1980	1980	2170	2170	2170	2170
Operating weight	(10)	kg	1050	1080	1090	1510	1550	1810	1870

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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NR-Z / SL-CA			0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	41,88	47,52	55,33	62,21	69,20	81,95	94,49
Total power input	(1)	kW	12,75	14,49	17,10	18,96	21,35	25,52	29,59
EER	(1)	kW/kW	3,273	3,276	3,234	3,274	3,234	3,212	3,193
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	41,60	47,20	55,00	61,90	68,80	81,50	93,90
EER	(1)(2)	kW/kW	3,180	3,190	3,160	3,210	3,160	3,150	3,110
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,30	5,58	5,58	5,41	5,44	5,61	5,38
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	45,82	51,72	60,33	67,90	75,24	88,96	102,9
Total power input	(5)	kW	12,96	14,80	17,44	19,25	21,85	26,16	30,38
EER	(5)	kW/kW	3,523	3,493	3,466	3,518	3,434	3,397	3,385
23°C/15°C									
Cooling capacity	(6)	kW	52,41	58,65	68,62	77,39	85,24	100,5	116,8
Total power input	(6)	kW	13,25	15,25	17,91	19,63	22,56	27,07	31,57
EER	(6)	kW/kW	3,970	3,855	3,832	3,949	3,770	3,708	3,696
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	2,003	2,272	2,646	2,975	3,309	3,919	4,519
Pressure drop	(1)(2)	kPa	41,3	39,3	41,2	37,3	37,6	37,8	61,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	7,30	8,30	8,50	10,0	10,8	10,9	13,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	45	46	46	47	47	47	48
Sound power level in cooling	(8)(9)	dB(A)	77	78	78	79	79	79	80
SIZE AND WEIGHT									
A	(10)	mm	2825	2825	2825	3360	3360	3360	3980
B	(10)	mm	1195	1195	1195	1195	1195	1195	1195
H	(10)	mm	1980	1980	1980	1980	1980	1980	1980
Operating weight	(10)	kg	650	660	670	760	770	780	940

Notes

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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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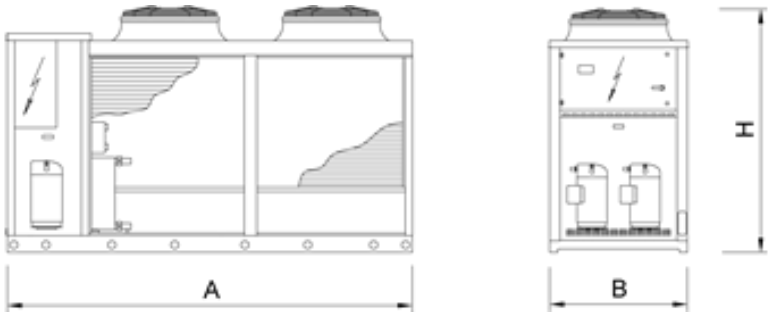
NR-Z / SL-CA			0412P	0462P	0512P	0562P	0612P	0712P	0812P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	106,0	118,7	133,0	151,6	172,3	194,9	217,6
Total power input	(1)	kW	32,38	36,91	41,85	47,29	52,84	61,59	68,21
EER	(1)	kW/kW	3,272	3,217	3,174	3,205	3,263	3,164	3,191
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	105,4	118,0	132,3	150,8	171,4	194,0	216,4
EER	(1)(2)	kW/kW	3,190	3,140	3,110	3,140	3,190	3,100	3,120
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,52	5,46	5,63	5,51	5,61	5,49	5,17
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	115,7	129,2	144,4	164,9	187,6	211,4	235,9
Total power input	(5)	kW	33,28	37,91	42,94	48,54	54,23	63,25	69,91
EER	(5)	kW/kW	3,474	3,409	3,366	3,400	3,461	3,345	3,375
23°C/15°C									
Cooling capacity	(6)	kW	132,0	146,7	163,2	186,8	213,0	238,9	266,0
Total power input	(6)	kW	34,65	39,39	44,48	50,39	56,36	65,74	72,39
EER	(6)	kW/kW	3,815	3,723	3,667	3,706	3,777	3,636	3,674
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	5,070	5,674	6,361	7,252	8,240	9,318	10,40
Pressure drop	(1)(2)	kPa	54,0	55,1	53,5	57,6	53,3	52,7	65,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	15,8	16,6	19,3	24,0	26,1	26,2	30,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	49	50	50	51	52	53	54
Sound power level in cooling	(8)(9)	dB(A)	81	82	82	83	84	85	86
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	3160	4335	4335	4335	5510
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1410	1450	1480	1740	1820	1850	2130

Notes

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Dimensional drawing



CHILLERS

NR-Z

Chiller, air source for outdoor installation

0614P - 1214P 159,0-326,7 kW



Outdoor unit for the production of chilled water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, braze-welded plate-type heat exchanger, micro-channel full-aluminum air coils and thermostatic expansion valve. The range is composed by units equipped with four compressors in tandem configuration on two independent refrigeration circuits.

Control



Electronic control W3000TE

The W3000TE controller offers advanced functions and algorithms.
The Compact keypad features an easy-to-use interface and a complete LCD display that allows consulting and intervening on the unit by means of a multi-language menu (19 languages are available).
The regulation is based on the patented “Quickmind” water temperature regulation logic uses self-adapting control to maintain flow temperatures and optimise performance even in low water content scenarios. As an alternative, the proportional or proportional-integral regulations are also available.
The diagnostics comprises a complete alarm management system, with the “black-box” (via PC) and the alarm history display (via display or also PC) for enhanced analysis of the unit operation
Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well.
Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with the remote keyboard (up to 8 units).
The defrosting (air source reversible unit only) follows a proprietary self-adaptive logic, which features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

K	Key efficiency, compact version
LN-K	Low Noise, Key efficiency and compact version
SL-K	Super Low noise, Key efficiency and compact version

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features

MAXIMUM COMPACTNESS

This new range is available in the K version, that integrates the maximum compactness with a qualifying unit’s efficiency. This allow to achieve a very high flexibility in the design process as well as during the on-site installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS

The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

WIDE OPERATING RANGE

Full load operation is ensured with outdoor air temperature up to 46°C, partial load operation is possible up to or even beyond 50°C. Dedicated accessories allow the unit operation down to -20°C of outdoor air temperature.

INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

Accessories

- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Copper-Copper heat exchanger coils
- Electronic expansion valve
- Compressor power factor correction
- Soft start
- Compressor suction and discharge valves
- High and low pressure gauges
- DVVF and DVV2F devices for low air temperature operation
- Hydronic module with 1 or 2 pumps, high or low head. Buffer tank available.
- Anti-intrusion grills

NR-Z / K			0614P	0714P	0814P	0914P	1014P	1114P	1214P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	164,7	194,1	217,8	248,2	289,2	308,4	326,7
Total power input	(1)	kW	58,31	66,73	78,90	88,61	98,95	108,4	118,2
EER	(1)	kW/kW	2,825	2,910	2,760	2,801	2,921	2,845	2,764
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	163,9	193,2	216,8	247,1	287,9	307,2	325,3
EER	(1)(2)	kW/kW	2,770	2,860	2,710	2,750	2,870	2,800	2,720
Cooling energy class			C	C	C	C	C	C	C
SEPR	(3)(4)		4,78	5,17	5,20	5,21	5,01	5,02	5,02
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	178,8	211,5	236,7	269,7	314,8	335,1	354,3
Total power input	(5)	kW	59,82	68,12	80,77	90,66	100,9	110,9	121,1
EER	(5)	kW/kW	2,990	3,106	2,929	2,974	3,120	3,022	2,926
23°C/15°C									
Cooling capacity	(6)	kW	202,0	240,5	267,9	305,1	357,2	379,1	399,8
Total power input	(6)	kW	62,04	70,08	83,43	93,56	103,6	114,3	125,2
EER	(6)	kW/kW	3,258	3,431	3,212	3,260	3,448	3,317	3,193
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,875	9,282	10,41	11,87	13,83	14,75	15,62
Pressure drop	(1)(2)	kPa	45,0	47,1	47,8	50,4	54,8	46,8	52,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	18,5	20,5	26,8	26,9	30,4	35,2	35,3
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	60	61	62	63	63	63
Sound power level in cooling	(8)(9)	dB(A)	92	92	93	94	95	95	95
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	3160	3160	4335	4335	4335
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1510	1680	1690	1830	2250	2300	2330

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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NR-Z / LN-K			0614P	0714P	0814P	0914P	1014P	1114P	1214P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	159,8	185,5	208,2	235,0	274,0	290,4	320,3
Total power input	(1)	kW	58,13	68,57	79,63	92,21	101,0	111,6	118,5
EER	(1)	kW/kW	2,750	2,704	2,616	2,549	2,713	2,602	2,703
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	159,1	184,7	207,3	234,0	272,8	289,3	318,9
EER	(1)(2)	kW/kW	2,710	2,660	2,580	2,510	2,670	2,570	2,660
Cooling energy class			C	D	D	D	D	D	D
SEPR	(3)(4)		4,98	5,29	5,33	5,20	5,09	5,05	5,27
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	172,9	201,5	225,8	254,4	297,2	314,2	346,5
Total power input	(5)	kW	59,86	70,32	81,78	94,73	103,5	114,6	121,7
EER	(5)	kW/kW	2,886	2,866	2,760	2,686	2,871	2,742	2,847
23°C/15°C									
Cooling capacity	(6)	kW	194,2	227,7	254,6	286,0	335,1	353,0	389,2
Total power input	(6)	kW	62,43	72,88	84,90	98,39	107,0	118,9	126,5
EER	(6)	kW/kW	3,112	3,123	2,999	2,907	3,132	2,969	3,077
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,641	8,870	9,958	11,24	13,10	13,89	15,32
Pressure drop	(1)(2)	kPa	42,4	43,0	43,7	45,2	49,2	41,5	50,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	18,5	20,5	26,8	26,9	30,4	35,2	35,3
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	54	54	55	56	57	57	58
Sound power level in cooling	(8)(9)	dB(A)	86	86	87	88	89	89	90
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	3160	3160	4335	4335	4335
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1550	1730	1740	1870	2300	2350	2370

Notes

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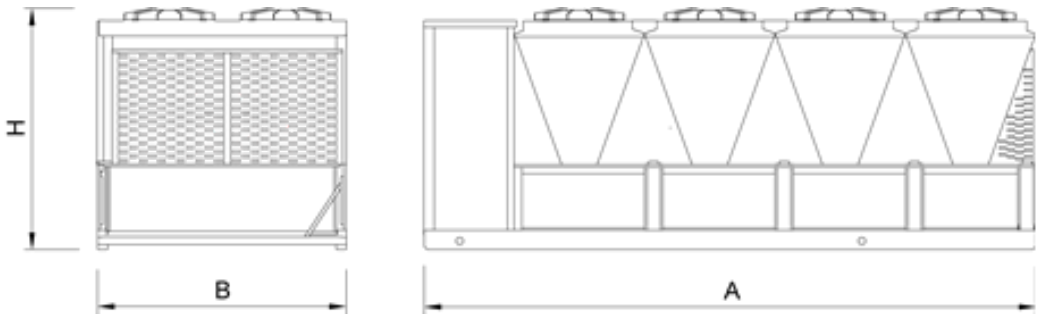
NR-Z / SL-K			0614P	0714P	0814P	0914P	1014P	1114P	1214P
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	159,0	179,9	214,3	241,3	264,0	296,0	312,2
Total power input	(1)	kW	56,28	70,71	77,80	89,35	103,7	109,1	119,6
EER	(1)	kW/kW	2,824	2,545	2,754	2,702	2,546	2,713	2,610
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	158,3	179,2	213,4	240,3	262,9	294,9	310,9
EER	(1)(2)	kW/kW	2,780	2,510	2,710	2,660	2,510	2,680	2,570
Cooling energy class			C	D	C	D	D	D	D
SEPR	(3)(4)		5,20	5,30	5,41	5,31	5,12	5,17	5,15
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	172,1	195,0	232,7	261,7	285,6	320,8	337,6
Total power input	(5)	kW	57,96	72,69	79,78	91,65	106,5	111,9	122,9
EER	(5)	kW/kW	2,967	2,682	2,916	2,854	2,682	2,867	2,747
23°C/15°C									
Cooling capacity	(6)	kW	193,6	235,4	263,0	295,1	344,9	361,2	378,8
Total power input	(6)	kW	60,46	70,24	82,62	94,95	103,4	116,0	127,8
EER	(6)	kW/kW	3,200	3,353	3,184	3,110	3,336	3,114	2,964
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,602	8,604	10,25	11,54	12,63	14,16	14,93
Pressure drop	(1)(2)	kPa	41,9	40,5	46,3	47,6	45,7	43,1	48,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	17,2	21,2	28,6	30,3	30,4	40,3	40,4
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	50	51	51	52	52	54	54
Sound power level in cooling	(8)(9)	dB(A)	82	83	83	84	84	86	86
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	4335	4335	4335	5510	5510
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1550	1730	2030	2170	2300	2700	2730

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

NRCS-Z

0202T - 0612T 50,65-158,6 kW

Chiller, air source for outdoor installation



Outdoor unit for the production of chilled water with hermetic rotary Scroll compressors, axialflow fans, shell and tubes exchanger and thermostatic expansion valve. External panels in Peraluman and structure in aluminium sections. The range is equipped with two compressors on two independent refrigerant circuits.

Control



Electronic control W3000

The W3000 controller offers advanced functions and algorithms.

The Base keyboard features an easy-to-use interface that allows consulting and intervening on the unit by means of a multi-level menu.

The Compact keyboard (optional) has a complete LCD display with an interface available in three languages: Italian, English and a further language among French, Spanish, German, Russian and Swedish. The alarm history display function can be enable by installing a real-time clock (optional) (only with Compact keyboard).

The regulation is based on the patented “Quickmind” water temperature regulation logic uses self-adapting control to maintain flow temperatures and optimise performance even in low water content scenarios. As an alternative, the proportional or proportional-integral regulations are also available.

Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well.

Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, LonWorks.

Compatibility with the remote keyboard (up to 8 units) (only with Compact keyboard).

The defrosting (air source reversible unit only) follows a proprietary self-adaptive logic, which features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

B	Basic
LN	Low noise
SL	Super-low noise version
HT	High efficiency, high outdoor temperature version

Configurations

- Basic function

Features

EXCHANGER

The shell and tube exchanger allows to achieve the highest flexibility on the unit’s installation, keeping on the hydronic side the pressure drops at the minimum level, thus representing the best choice for all the hydronic applications on the IT Cooling market.

MAXIMUM RELIABILITY

Unit with two independent refrigerant circuit, designed to ensure maximum efficiency at full load, ensuring uninterrupted operation even in the event of temporary stop of one of the two circuits.

INTEGRATED HYDRONIC GROUP

The built-in hydronic module includes the main water circuit components; it is available in various configurations with one or two pumps with high or low head.

Accessories

- Traditional coils available with prepainted fins or Fin Guard Silver protective treatment.
- Copper-Copper heat exchanger coils
- Compressor power factor correction
- Soft start
- Compressor suction and discharge valves
- High and low pressure gauges
- Compact keyboard with LCD display and multi-language user interface (referred to the shown picture)
- Hydronic group

NRCS-Z / B			0202T	0252T	0302T	0352T	0412T	0452T	0512T	0552T	0612T
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	53,03	58,14	76,00	86,81	96,90	112,3	126,6	144,9	158,6
Total power input	(1)	kW	18,29	21,51	27,85	31,90	36,31	39,67	43,73	50,17	58,64
EER	(1)	kW/kW	2,896	2,702	2,734	2,721	2,669	2,829	2,897	2,886	2,706
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	52,90	58,00	75,80	86,50	96,70	112,0	126,3	144,5	158,1
EER	(1)(2)	kW/kW	2,880	2,690	2,710	2,690	2,650	2,800	2,870	2,860	2,680
Cooling energy class			C	D	C	D	D	C	C	C	D
SEPR	(3)(4)		5,01	4,61	4,65	4,60	4,56	4,73	4,80	4,82	4,56
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	57,70	62,99	82,50	94,40	105,5	122,0	137,2	157,1	171,7
Total power input	(5)	kW	18,70	21,94	28,62	32,91	37,59	40,84	44,86	51,56	60,45
EER	(5)	kW/kW	3,086	2,877	2,885	2,869	2,806	2,990	3,056	3,045	2,843
23°C/15°C											
Cooling capacity	(6)	kW	65,40	70,80	93,40	107,1	120,0	137,9	154,7	177,2	193,2
Total power input	(6)	kW	19,29	22,52	29,70	34,43	39,61	42,58	46,48	53,65	63,27
EER	(6)	kW/kW	3,389	3,147	3,145	3,113	3,030	3,237	3,327	3,300	3,052
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	2,536	2,780	3,634	4,151	4,634	5,372	6,055	6,929	7,584
Pressure drop	(1)(2)	kPa	6,25	7,64	13,1	17,2	12,8	17,2	15,7	21,7	25,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	9,50	10,2	12,6	13,3	16,0	17,3	21,8	24,0	24,1
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	53	53	53	54	54	54	55	55	55
Sound power level in cooling	(8)(9)	dB(A)	85	85	85	86	86	86	87	87	87
SIZE AND WEIGHT											
A	(10)	mm	2195	2195	2195	2195	2745	2745	3245	3245	3245
B	(10)	mm	1120	1120	1120	1120	1120	1120	1120	1120	1120
H	(10)	mm	1465	1465	1465	1465	1465	1465	1665	1665	1665
Operating weight	(10)	kg	625	625	665	765	920	990	1135	1180	1155

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NRCS-Z

Chiller, air source for outdoor installation

0202T - 0612T 50,65-158,6 kW

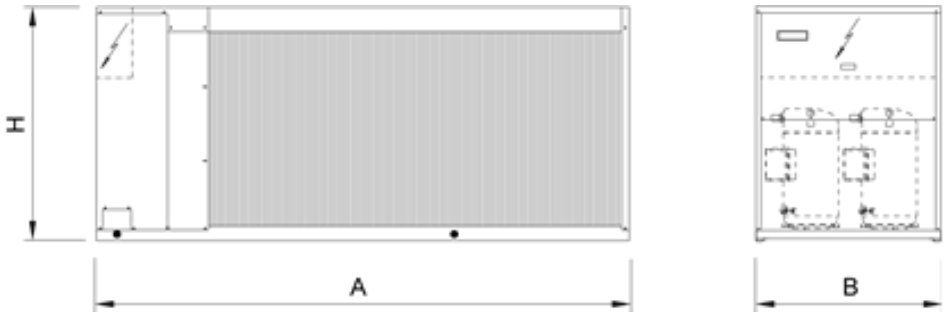
NRCS-Z / LN			0202T	0252T	0302T	0412T	0452T	0512T	0552T
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	50,65	57,60	74,19	96,38	108,8	122,0	138,8
Total power input	(1)	kW	18,92	21,23	28,60	37,07	41,41	45,91	53,09
EER	(1)	kW/kW	2,683	2,717	2,594	2,598	2,628	2,658	2,614
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	50,60	57,50	74,00	96,20	108,5	121,7	138,4
EER	(1)(2)	kW/kW	2,660	2,700	2,570	2,580	2,600	2,630	2,590
Cooling energy class			D	C	D	D	D	D	D
SEPR	(3)(4)		4,78	4,72	4,51	4,52	4,51	4,50	4,51
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	55,00	62,35	80,55	104,9	117,9	131,9	157,1
Total power input	(5)	kW	19,42	21,68	29,44	38,38	42,69	47,15	51,56
EER	(5)	kW/kW	2,835	2,876	2,738	2,732	2,761	2,800	3,045
23°C/15°C									
Cooling capacity	(6)	kW	62,13	69,96	91,25	123,8	139,4	154,7	177,2
Total power input	(6)	kW	20,14	22,28	30,64	38,17	41,95	46,48	53,65
EER	(6)	kW/kW	3,090	3,139	2,984	3,241	3,327	3,327	3,300
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	2,422	2,755	3,548	4,609	5,201	5,834	6,637
Pressure drop	(1)(2)	kPa	5,70	7,50	12,5	12,7	16,2	14,6	19,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	9,50	10,2	12,6	16,0	17,3	21,8	24,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	48	48	49	51	51	52	52
Sound power level in cooling	(8)(9)	dB(A)	80	80	81	83	83	84	84
SIZE AND WEIGHT									
A	(10)	mm	2195	2195	2745	2745	2745	3245	3245
B	(10)	mm	1120	1120	1120	1120	1120	1120	1120
H	(10)	mm	1465	1465	1465	1665	1665	1665	1665
Operating weight	(10)	kg	625	650	715	965	1025	1135	1180

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing



CHILLERS

NR-Z

Chiller, air source for outdoor installation

0614T - 1214T 159,0-352,0 kW



Outdoor unit for the production of chilled water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, shell and tubes heat exchanger, micro-channel full-aluminum air coils and thermostatic or electronic expansion valve, according to the model. The range is composed by units equipped with four compressors in tandem configuration on two independent refrigeration circuits.

Control



Electronic control W3000TE

The W3000TE controller offers advanced functions and algorithms.
The Compact keypad features an easy-to-use interface and a complete LCD display that allows consulting and intervening on the unit by means of a multi-language menu (19 languages are available).
The regulation is based on the patented “Quickmind” water temperature regulation logic uses self-adapting control to maintain flow temperatures and optimise performance even in low water content scenarios. As an alternative, the proportional or proportional-integral regulations are also available.
The diagnostics comprises a complete alarm management system, with the “black-box” (via PC) and the alarm history display (via display or also PC) for enhanced analysis of the unit operation
Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well.
Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with the remote keyboard (up to 8 units).
The defrosting (air source reversible unit only) follows a proprietary self-adaptive logic, which features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

K	Key efficiency, compact version	CA	Class A of efficiency
LN-K	Low Noise, Key efficiency and compact version	LN-CA	Low Noise, Class A of efficiency
SL-K	Super Low noise, Key efficiency and compact version	SL-CA	Super Low noise version, Class A of efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features

CLASS A EFFICIENCY

The full range is available with the Class A efficiency rating. Thanks to the generous sizing of the heat exchangers and an accurate control of the fan speed, the CA versions grant a premium level efficiency in every noise configuration.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS

The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of different external conditions. It has been introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions. The electronic expansion valve comes standard in the high-efficieny CA version, optional for the compact K versions.

WIDE OPERATING RANGE

Full load operation is ensured with outdoor air temperature up to 46°C, partial load operation is possible up to or even beyond 50°C. Dedicated accessories allow the unit operation down to -20°C of outdoor air temperature.

EXCHANGER

The shell and tube exchanger allows to achieve the highest flexibility on the unit’s installation, keeping on the hydronic side the pressure drops at the minimum level, thus representing the best choice for all the hydronic applications on the IT Cooling market.

INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

Accessories

- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Copper-Copper heat exchanger coils
- Compressor power factor correction
- Soft start
- Compressor suction and discharge valves
- High and low pressure gauges
- DVVF and DVV2F devices for low air temperature operation
- Hydronic module with 1 or 2 pumps, high or low head. Buffer tank available.
- Anti-intrusion grills

NR-Z / K			0614T	0714T	0814T	0914T	1014T	1114T	1214T
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	164,7	194,1	217,8	248,2	289,2	308,4	326,7
Total power input	(1)	kW	58,31	66,73	78,90	88,61	98,95	108,4	118,2
EER	(1)	kW/kW	2,825	2,910	2,760	2,801	2,921	2,845	2,764
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	164,2	193,4	216,8	247,2	287,7	307,4	325,5
EER	(1)(2)	kW/kW	2,790	2,870	2,710	2,760	2,860	2,810	2,730
Cooling energy class			C	C	C	C	C	C	C
SEPR	(3)(4)		4,84	5,21	5,20	5,22	4,99	5,04	5,04
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	178,8	211,5	236,7	269,7	314,8	335,1	354,3
Total power input	(5)	kW	59,82	68,12	80,77	90,66	100,9	110,9	121,1
EER	(5)	kW/kW	2,990	3,106	2,929	2,974	3,120	3,022	2,926
23°C/15°C									
Cooling capacity	(6)	kW	202,0	240,5	267,9	305,1	357,2	379,1	399,8
Total power input	(6)	kW	62,04	70,08	83,43	93,56	103,6	114,3	125,2
EER	(6)	kW/kW	3,258	3,431	3,212	3,260	3,448	3,317	3,193
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,875	9,282	10,41	11,87	13,83	14,75	15,62
Pressure drop	(1)(2)	kPa	23,3	32,4	50,9	45,5	61,7	38,0	42,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	22,5	26,6	27,7	27,8	33,6	36,3	36,9
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	60	61	62	63	63	63
Sound power level in cooling	(8)(9)	dB(A)	92	92	93	94	95	95	95
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	3160	3160	4335	4335	4335
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1650	1810	1820	1950	2340	2530	2550

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NR-Z

Chiller, air source for outdoor installation

0614T - 1214T 159,0-352,0 kW

NR-Z / LN-K			0614T	0714T	0814T	0914T	1014T	1114T	1214T
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	159,8	185,5	208,2	235,0	274,0	290,4	320,3
Total power input	(1)	kW	58,13	68,57	79,63	92,21	101,0	111,6	118,5
EER	(1)	kW/kW	2,750	2,704	2,616	2,549	2,713	2,602	2,703
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	159,3	184,9	207,3	234,1	272,7	289,5	319,2
EER	(1)(2)	kW/kW	2,720	2,670	2,580	2,510	2,670	2,570	2,670
Cooling energy class			C	D	D	D	D	D	D
SEPR	(3)(4)		5,03	5,33	5,33	5,22	5,08	5,08	5,31
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	172,9	201,5	225,8	254,4	297,2	314,2	346,5
Total power input	(5)	kW	59,86	70,32	81,78	94,73	103,5	114,6	121,7
EER	(5)	kW/kW	2,886	2,866	2,760	2,686	2,871	2,742	2,847
23°C/15°C									
Cooling capacity	(6)	kW	194,2	227,7	254,6	286,0	335,1	353,0	389,2
Total power input	(6)	kW	62,43	72,88	84,90	98,39	107,0	118,9	126,5
EER	(6)	kW/kW	3,112	3,123	2,999	2,907	3,132	2,969	3,077
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,641	8,870	9,958	11,24	13,10	13,89	15,32
Pressure drop	(1)(2)	kPa	21,9	29,6	46,5	40,7	55,4	33,7	41,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	22,5	26,6	27,7	27,8	33,6	36,3	36,9
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	54	54	55	56	57	57	58
Sound power level in cooling	(8)(9)	dB(A)	86	86	87	88	89	89	90
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	3160	3160	4335	4335	4335
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1700	1860	1870	1990	2380	2580	2600

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NR-Z / SL-K			0614T	0714T	0814T	0914T	1014T	1114T	1214T
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	159,0	179,9	214,3	241,3	264,0	296,0	312,2
Total power input	(1)	kW	56,28	70,71	77,80	89,35	103,7	109,1	119,6
EER	(1)	kW/kW	2,824	2,545	2,754	2,702	2,546	2,713	2,610
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	158,5	179,3	213,4	240,3	262,8	295,0	311,1
EER	(1)(2)	kW/kW	2,790	2,510	2,710	2,660	2,510	2,680	2,580
Cooling energy class			C	D	C	D	D	D	D
SEPR	(3)(4)		5,25	5,32	5,41	5,31	5,11	5,19	5,17
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	172,1	195,0	232,7	261,7	285,6	320,8	337,6
Total power input	(5)	kW	57,96	72,69	79,78	91,65	106,5	111,9	122,9
EER	(5)	kW/kW	2,967	2,682	2,916	2,854	2,682	2,867	2,747
23°C/15°C									
Cooling capacity	(6)	kW	193,6	235,4	263,0	295,1	344,9	361,2	378,8
Total power input	(6)	kW	60,46	70,24	82,62	94,95	103,4	116,0	127,8
EER	(6)	kW/kW	3,200	3,353	3,184	3,110	3,336	3,114	2,964
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,602	8,604	10,25	11,54	12,63	14,16	14,93
Pressure drop	(1)(2)	kPa	21,7	27,8	49,3	43,0	51,4	35,1	39,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	22,5	26,6	30,2	41,2	41,3	41,4	41,4
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	50	51	51	52	52	54	54
Sound power level in cooling	(8)(9)	dB(A)	82	83	83	84	84	86	86
SIZE AND WEIGHT									
A	(10)	mm	3160	3160	4335	4335	4335	5510	5510
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1700	1860	2160	2290	2380	2930	2950

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NR-Z / CA			0614T	0714T	0814T	0914T	1014T	1114T	1214T
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	174,1	205,2	235,4	266,4	301,9	330,0	352,0
Total power input	(1)	kW	54,38	65,00	72,87	84,11	95,76	102,8	111,0
EER	(1)	kW/kW	3,200	3,157	3,229	3,168	3,151	3,210	3,171
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	173,6	204,4	234,2	265,2	300,9	328,8	350,6
EER	(1)(2)	kW/kW	3,160	3,110	3,160	3,110	3,110	3,160	3,120
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,19	5,06	5,28	5,25	5,27	5,13	5,22
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	189,7	224,4	257,2	290,8	329,1	360,2	383,7
Total power input	(5)	kW	55,58	65,96	74,01	85,52	97,49	104,5	113,1
EER	(5)	kW/kW	3,412	3,400	3,476	3,401	3,375	3,447	3,393
23°C/15°C									
Cooling capacity	(6)	kW	215,8	256,8	293,7	331,4	374,5	410,7	436,7
Total power input	(6)	kW	57,30	67,24	75,52	87,37	99,77	106,7	115,9
EER	(6)	kW/kW	3,766	3,821	3,890	3,792	3,753	3,849	3,768
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	8,326	9,814	11,26	12,74	14,44	15,78	16,83
Pressure drop	(1)(2)	kPa	26,1	36,2	59,5	52,4	36,5	43,6	49,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	24,3	31,0	36,8	39,7	39,8	44,5	46,1
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	61	62	63	63	64	65
Sound power level in cooling	(8)(9)	dB(A)	92	93	94	95	95	96	97
SIZE AND WEIGHT									
A	(10)	mm	3160	4335	4335	4335	4335	5510	5510
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1700	2150	2160	2290	2550	2930	2950

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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NR-Z / LN-CA			0614T	0714T	0814T	0914T	1014T	1114T	1214T
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	167,5	198,4	227,4	262,1	294,5	318,0	344,4
Total power input	(1)	kW	52,84	61,62	70,49	82,78	93,23	99,58	108,7
EER	(1)	kW/kW	3,172	3,221	3,226	3,165	3,160	3,193	3,168
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	167,0	197,7	226,3	261,0	293,6	316,9	343,0
EER	(1)(2)	kW/kW	3,130	3,170	3,160	3,110	3,120	3,150	3,120
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,54	5,68	5,76	5,76	5,51	5,58	5,68
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	182,1	216,6	247,9	285,3	320,8	346,3	374,4
Total power input	(5)	kW	54,26	62,81	71,93	84,58	95,12	101,7	111,2
EER	(5)	kW/kW	3,354	3,449	3,448	3,372	3,373	3,405	3,367
23°C/15°C									
Cooling capacity	(6)	kW	206,1	247,0	282,1	323,8	364,4	393,2	424,2
Total power input	(6)	kW	56,34	64,45	73,90	87,05	97,67	104,6	114,8
EER	(6)	kW/kW	3,661	3,829	3,817	3,718	3,730	3,759	3,695
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	8,011	9,488	10,87	12,53	14,08	15,21	16,47
Pressure drop	(1)(2)	kPa	24,1	33,8	55,5	50,7	34,7	40,5	47,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	24,3	31,0	36,8	39,7	41,0	44,5	46,1
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	54	55	56	57	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	86	87	88	89	90	91	91
SIZE AND WEIGHT									
A	(10)	mm	3160	4335	4335	4335	5510	5510	5510
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1700	2150	2160	2290	2880	2900	2930

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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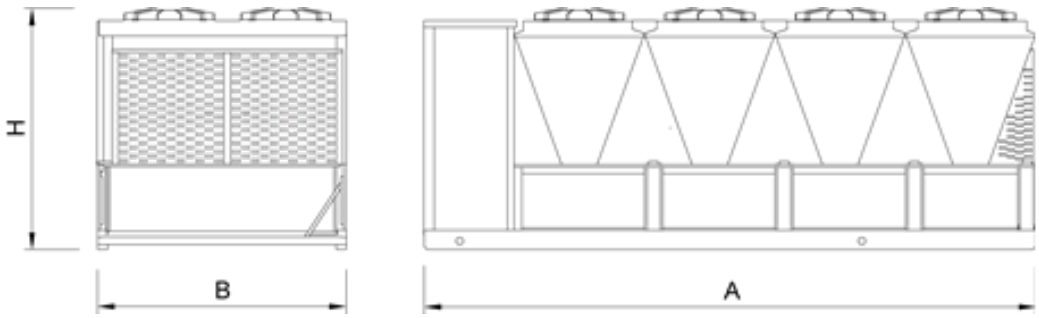
NR-Z / SL-CA			0614T	0714T	0814T	0914T	1014T	1114T	1214T
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	167,3	194,9	224,2	259,3	291,8	316,6	343,6
Total power input	(1)	kW	52,28	61,03	69,89	82,01	92,62	99,59	108,8
EER	(1)	kW/kW	3,199	3,195	3,207	3,162	3,151	3,179	3,158
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	166,8	194,2	223,1	258,2	290,9	315,5	342,2
EER	(1)(2)	kW/kW	3,160	3,150	3,140	3,110	3,110	3,130	3,110
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,67	5,80	5,69	5,73	5,67	5,62	5,73
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	181,8	212,7	244,6	282,4	317,6	344,6	373,5
Total power input	(5)	kW	53,71	62,28	71,28	83,75	94,61	101,7	111,4
EER	(5)	kW/kW	3,385	3,414	3,431	3,370	3,357	3,388	3,353
23°C/15°C									
Cooling capacity	(6)	kW	205,8	242,3	278,5	320,8	360,4	391,1	422,8
Total power input	(6)	kW	55,80	64,02	73,18	86,14	97,31	104,7	115,0
EER	(6)	kW/kW	3,688	3,786	3,805	3,726	3,704	3,735	3,677
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	8,000	9,322	10,72	12,40	13,95	15,14	16,43
Pressure drop	(1)(2)	kPa	24,1	32,7	53,9	49,6	34,1	40,1	47,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	28,4	31,0	36,8	39,7	41,0	44,5	46,1
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	51	51	52	53	54	55	55
Sound power level in cooling	(8)(9)	dB(A)	83	83	84	85	86	87	87
SIZE AND WEIGHT									
A	(10)	mm	4335	4335	5510	5510	5510	5510	5510
B	(10)	mm	2250	2250	2250	2250	2250	2250	2250
H	(10)	mm	2170	2170	2170	2170	2170	2170	2170
Operating weight	(10)	kg	1980	2150	2490	2610	2880	2900	2930

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Dimensional drawing



CHILLERS

NRCS-Z

1314 - 3218 333,6-884,7 kW

Chiller, air source for outdoor installation



Outdoor unit for the production of chilled water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, shell and tubes exchanger and electronic expansion valve. The range is composed by units equipped with four, six and eight compressors in multi-circuit configuration.

Control



W3000SE Compact

W3000SE Compact controller offers advanced functions and algorithms. The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.

Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional-integral regulations are also available.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.

- Compatibility with the remote keyboard managing up to 10 units.

Refrigerant

R410A

Versions

B	Basic
SL	Super-low noise version
CA	High efficiency version
SL-CA	Super-low noise, high efficiency version

Configurations

-	Basic function
D	Partial condensing heat recovery function
R	Total condensing heat recovery function

Features

REFRIGERANT GAS R410A

The use of R410A allowed to achive better energy efficiencies with environment full respect (ODP = 0)

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS

This new range of chiller uses aluminum micro-channel condensers that ensure a premium level of efficiency. This solution also allows to reduce the refrigerant charge with respect to traditional copper/aluminum coils, assuring the minimum allowable ratio between the refrigerant volume and the power capacity thus making this product range unique in the market, also improving the resistance against corrosion in saline or corrosive atmospheres.

EXCHANGER

The shell and tube exchanger allows to achieve the highest flexibility on the unit's installation, keeping on the hydronic side the pressure drops at the minimum level, thus representing the best choice for all the hydronic applications on the IT Cooling market.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of different external conditions. It was introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions

INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

Accessories

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)
- Soft starters

NRCS-Z / B			1314	1414
Power supply		V/ph/Hz	400/3/50	400/3/50
PERFORMANCE				
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	354,3	378,8
Total power input	(1)	kW	124,4	130,2
EER	(1)	kW/kW	2,848	2,909
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2)	kW	352,7	377,4
EER	(1)(2)	kW/kW	2,800	2,870
Cooling energy class			C	C
SEPR	(3)(4)		4,86	4,86
COOLING ONLY (GROSS VALUE)				
16°C/10°C				
Cooling capacity	(5)	kW	383,9	410,3
Total power input	(5)	kW	127,8	133,6
EER	(5)	kW/kW	3,004	3,071
23°C/15°C				
Cooling capacity	(6)	kW	432,6	462,1
Total power input	(6)	kW	133,1	138,8
EER	(6)	kW/kW	3,250	3,329
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN REFRIGERATION				
Water flow	(1)	l/s	16,94	18,12
Pressure drop	(1)(2)	kPa	54,0	43,8
REFRIGERANT CIRCUIT				
Compressors nr.		N°	4	4
No. Circuits		N°	2	2
Refrigerant charge		kg	40,1	45,2
NOISE LEVEL				
Sound Pressure	(7)	dB(A)	64	64
Sound power level in cooling	(8)(9)	dB(A)	96	96
SIZE AND WEIGHT				
A	(10)	mm	3905	3905
B	(10)	mm	2260	2260
H	(10)	mm	2450	2450
Operating weight	(10)	kg	2730	2770

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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NRCS-Z

1314 - 3218 333,6-884,7 kW

Chiller, air source for outdoor installation

NRCS-Z / SL			1314	1414	1614	1715	1816	2015	2116
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	333,6	358,1	397,4	431,5	465,0	497,6	532,3
Total power input	(1)	kW	129,2	137,3	153,1	168,1	182,7	191,6	206,0
EER	(1)	kW/kW	2,582	2,608	2,596	2,567	2,545	2,597	2,584
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	332,3	356,9	395,8	430,0	463,2	496,2	530,6
EER	(1)(2)	kW/kW	2,550	2,580	2,560	2,540	2,510	2,570	2,550
Cooling energy class			D	D	D	D	D	D	D
SEPR	(3)(4)		5,14	5,04	5,02	5,03	5,11	5,00	5,05
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	360,1	386,6	428,3	465,5	502,2	536,3	574,2
Total power input	(5)	kW	133,4	141,6	158,1	173,6	188,6	197,8	212,7
EER	(5)	kW/kW	2,699	2,730	2,709	2,681	2,663	2,711	2,700
23°C/15°C									
Cooling capacity	(6)	kW	427,4	432,8	510,2	552,3	596,6	639,1	679,7
Total power input	(6)	kW	131,5	148,3	153,3	170,9	186,7	191,7	209,7
EER	(6)	kW/kW	3,250	2,918	3,328	3,232	3,196	3,334	3,241
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	15,95	17,13	19,01	20,63	22,24	23,80	25,46
Pressure drop	(1)(2)	kPa	47,8	39,2	48,2	43,0	50,0	35,2	40,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	5	6	5	6
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	41,0	47,0	50,0	57,0	57,0	66,0	79,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	54	54	54	54	54	54	54
Sound power level in cooling	(8)(9)	dB(A)	86	86	86	87	87	87	87
SIZE AND WEIGHT									
A	(10)	mm	5080	5080	5080	6255	6255	6255	7430
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(10)	kg	3060	3160	3200	3900	4110	4190	4640

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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8 Sound power on the basis of measurements made in compliance with ISO 9614.
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Certified data in EUROVENT

NRCS-Z / SL			2316	2416	2418	2618	2818	3018	3218
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	579,3	595,9	615,8	666,4	717,7	757,8	794,6
Total power input	(1)	kW	220,0	229,7	244,6	258,3	274,8	288,4	306,2
EER	(1)	kW/kW	2,633	2,594	2,518	2,580	2,612	2,628	2,595
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	577,4	593,9	613,8	664,0	715,6	755,4	791,9
EER	(1)(2)	kW/kW	2,600	2,560	2,490	2,550	2,580	2,600	2,560
Cooling energy class			D	D	E	D	D	D	D
SEPR	(3)(4)		5,01	5,01	5,20	5,20	5,12	5,05	5,03
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	624,8	642,1	664,7	719,4	774,7	817,4	856,2
Total power input	(5)	kW	227,0	237,1	252,7	266,6	283,5	297,5	316,1
EER	(5)	kW/kW	2,752	2,708	2,630	2,698	2,733	2,748	2,709
23°C/15°C									
Cooling capacity	(6)	kW	740,5	764,9	799,0	853,9	867,5	964,6	1020
Total power input	(6)	kW	222,1	229,8	246,4	262,9	297,0	293,3	306,5
EER	(6)	kW/kW	3,334	3,329	3,243	3,248	2,921	3,289	3,328
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	27,70	28,49	29,45	31,87	34,32	36,24	38,00
Pressure drop	(1)(2)	kPa	40,8	43,1	41,6	48,7	38,2	42,6	46,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	6	6	8	8	8	8	8
No. Circuits		N°	3	2	4	4	4	4	4
Refrigerant charge		kg	79,0	83,0	89,0	112	112	112	112
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	55	55	55	56	57	57	57
Sound power level in cooling	(8)(9)	dB(A)	88	88	88	89	90	90	90
SIZE AND WEIGHT									
A	(10)	mm	7430	7430	7430	8605	9780	9780	9780
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(10)	kg	4730	4790	5410	5810	6160	6200	6250

Notes

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3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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9 Sound power level in cooling, outdoors.
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NRCS-Z

1314 - 3218 333,6-884,7 kW

Chiller, air source for outdoor installation

NRCS-Z / CA			1314	1414	1614	1715	1816	2015	2116
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	370,4	391,4	438,4	481,1	517,5	549,2	591,4
Total power input	(1)	kW	119,6	125,1	141,5	154,0	166,3	177,0	189,4
EER	(1)	kW/kW	3,097	3,129	3,098	3,124	3,112	3,103	3,122
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	368,7	389,9	436,4	479,1	515,1	547,3	589,2
EER	(1)(2)	kW/kW	3,040	3,080	3,040	3,070	3,050	3,060	3,080
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		5,17	5,10	5,02	5,38	5,36	5,15	5,24
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	402,7	425,1	475,0	522,4	563,1	595,1	642,0
Total power input	(5)	kW	122,2	127,8	144,7	157,5	170,3	180,9	193,7
EER	(5)	kW/kW	3,295	3,326	3,283	3,317	3,307	3,290	3,314
23°C/15°C									
Cooling capacity	(6)	kW	456,4	481,2	535,5	591,0	638,8	670,9	725,8
Total power input	(6)	kW	126,2	131,7	149,2	162,7	176,3	186,6	200,1
EER	(6)	kW/kW	3,616	3,654	3,589	3,632	3,623	3,595	3,627
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	17,72	18,72	20,97	23,01	24,75	26,26	28,28
Pressure drop	(1)(2)	kPa	59,0	46,8	58,7	53,5	61,9	42,9	49,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	5	6	5	6
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	47,0	51,0	54,0	67,0	67,0	70,0	77,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	65	65	65	64	65	65	65
Sound power level in cooling	(8)(9)	dB(A)	97	97	97	97	98	98	98
SIZE AND WEIGHT									
A	(10)	mm	5080	5080	5080	6255	6255	6255	7430
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(10)	kg	3060	3100	3130	3800	4050	4090	4540

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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NRCS-Z / CA			2316	2416	2418	2618	2818	3018	3218
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	632,7	657,3	701,5	740,0	784,6	830,6	884,7
Total power input	(1)	kW	204,0	212,3	225,3	239,0	250,4	266,5	283,0
EER	(1)	kW/kW	3,101	3,096	3,114	3,096	3,133	3,117	3,126
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	630,4	654,7	698,7	736,8	781,9	827,5	881,1
EER	(1)(2)	kW/kW	3,060	3,050	3,060	3,040	3,090	3,070	3,070
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		5,11	5,06	5,10	5,10	5,07	5,01	5,01
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	686,1	712,1	763,6	804,4	852,4	901,1	958,5
Total power input	(5)	kW	208,4	217,0	230,5	244,4	255,7	272,3	289,3
EER	(5)	kW/kW	3,292	3,282	3,313	3,291	3,334	3,309	3,313
23°C/15°C									
Cooling capacity	(6)	kW	774,5	802,7	866,8	911,5	965,1	1018	1080
Total power input	(6)	kW	214,8	223,7	238,3	252,3	263,5	280,6	298,3
EER	(6)	kW/kW	3,606	3,588	3,637	3,613	3,663	3,628	3,621
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	30,26	31,43	33,55	35,39	37,52	39,72	42,31
Pressure drop	(1)(2)	kPa	48,6	52,5	54,0	60,0	45,6	51,1	58,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	6	6	8	8	8	8	8
No. Circuits		N°	3	2	4	4	4	4	4
Refrigerant charge		kg	81,0	86,0	89,0	112	112	112	112
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	66	66	66	66	67	67	67
Sound power level in cooling	(8)(9)	dB(A)	99	99	99	99	100	100	100
SIZE AND WEIGHT									
A	(10)	mm	7430	7430	9780	9780	9780	9780	9780
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(10)	kg	4630	4690	5930	5970	6040	6070	6110

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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9 Sound power level in cooling, outdoors.
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NRCS-Z

1314 - 3218 333,6-884,7 kW

Chiller, air source for outdoor installation

NRCS-Z / SL-CA			1314	1414	1614	1715	1816
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	370,5	394,3	440,1	480,8	521,5
Total power input	(1)	kW	119,1	126,3	141,6	154,3	167,1
EER	(1)	kW/kW	3,111	3,122	3,108	3,116	3,121
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	369,2	393,1	438,5	479,5	519,9
EER	(1)(2)	kW/kW	3,070	3,080	3,060	3,080	3,080
Cooling energy class			B	B	B	B	B
SEPR	(3)(4)		5,52	5,43	5,17	5,45	5,61
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	402,8	428,3	477,3	522,5	567,7
Total power input	(5)	kW	122,3	129,5	145,1	158,4	171,7
EER	(5)	kW/kW	3,294	3,307	3,289	3,299	3,306
23°C/15°C							
Cooling capacity	(6)	kW	456,4	484,7	538,8	591,5	644,3
Total power input	(6)	kW	127,2	134,4	150,3	164,6	178,9
EER	(6)	kW/kW	3,588	3,606	3,585	3,594	3,601
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	17,72	18,85	21,05	22,99	24,94
Pressure drop	(1)(2)	kPa	41,9	35,9	44,8	32,9	38,7
REFRIGERANT CIRCUIT							
Compressors nr.		N°	4	4	4	5	6
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	53,0	67,0	72,0	77,0	77,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	53	53	53	54	54
Sound power level in cooling	(8)(9)	dB(A)	86	86	86	87	87
SIZE AND WEIGHT							
A	(10)	mm	6255	6255	6255	7430	7430
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2450	2450	2450	2450	2450
Operating weight	(10)	kg	3490	3700	3730	4400	4650

Notes

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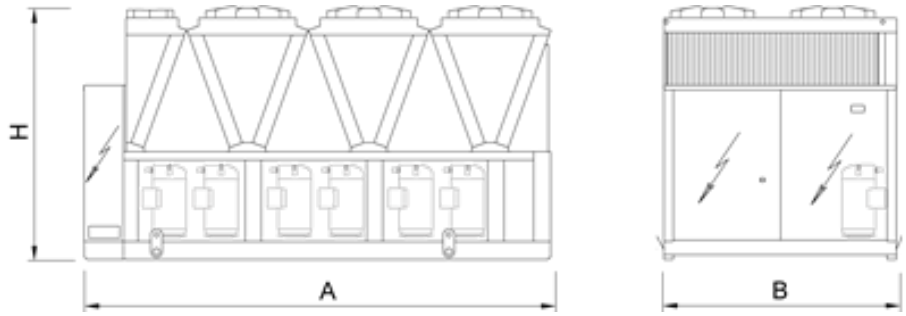
NRCS-Z / SL-CA			2015	2116	2316	2416	2418
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	550,4	591,6	638,3	662,5	695,3
Total power input	(1)	kW	176,7	189,3	204,3	213,3	222,8
EER	(1)	kW/kW	3,115	3,125	3,124	3,106	3,121
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	548,8	589,6	636,1	660,1	693,4
EER	(1)(2)	kW/kW	3,080	3,080	3,080	3,060	3,090
Cooling energy class			B	B	B	B	B
SEPR	(3)(4)		5,28	5,46	5,28	5,30	5,55
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	596,6	642,3	692,3	717,9	756,9
Total power input	(5)	kW	181,3	194,4	209,6	219,0	229,0
EER	(5)	kW/kW	3,291	3,304	3,303	3,278	3,305
23°C/15°C							
Cooling capacity	(6)	kW	672,8	726,2	781,4	809,1	859,0
Total power input	(6)	kW	188,0	202,1	217,5	227,3	238,5
EER	(6)	kW/kW	3,579	3,593	3,593	3,560	3,602
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	26,32	28,29	30,52	31,68	33,25
Pressure drop	(1)(2)	kPa	36,8	42,5	44,7	48,1	35,8
REFRIGERANT CIRCUIT							
Compressors nr.		N°	5	6	6	6	8
No. Circuits		N°	2	2	3	2	4
Refrigerant charge		kg	79,0	91,0	96,0	96,0	97,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	54	54	55	55	55
Sound power level in cooling	(8)(9)	dB(A)	87	87	88	88	88
SIZE AND WEIGHT							
A	(10)	mm	7430	8605	8605	8605	9780
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2450	2450	2450	2450	2450
Operating weight	(10)	kg	4510	4990	5360	5360	6100

Notes

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Dimensional drawing



CHILLERS

FR-Z

Chiller, air source for outdoor installation

0751 - 1801 140,1-395,7 kW



Outdoor unit for the production of chilled water with semi-hermetic screw compressor optimized for R134a, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. (brazed plate evaporator for sizes 0751 and 0851) and electronic expansion valve. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation and the accurate sizing of all internal components. The compressors feature an enhanced lubrication system, an innovative internal geometry and a different control of capacity steps. Innovations that grant a remarkable performance improvement especially at partial loads.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R134a

Versions

K Standard efficiency

SL-K Super low noise, standard efficiency

Configurations

- Basic function

D Partial condensing heat recovery function

R Total condensing heat recovery function

Features

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

COMPACTNESS
Compactness in terms of overall size and weight, helping installation and working on site

EXTREMELY SILENT OPERATION
As the result of a systematic design oriented to minimize the noise level, the silenced version units give the best combination of quietness and efficiency on the market.

FLEXIBILITY
Flexibility in the applications thanks to the many configurations and versions available.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C (-20°C with accessories) to 46°C (50°C with accessories) of outdoor air temperature and from -8°C to 18°C (20°C with accessories) of evaporator leaving water temperature.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. It is available with 1 or 2 pumps, fixed or variable speed, high or low head to satisfy all the different industrial and comfort application requirements.

AHRI CERTIFICATION
Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Compressor enclosure (standard on silenced versions)
- Leak detector
- Kit HT to increase the unit operating range
- Compressor power factor correction
- Soft start
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

FR-Z /K			0751	0851	0951	0961	1101
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	145,5	160,1	202,8	221,9	238,0
Total power input	(1)	kW	50,04	58,63	63,66	73,33	85,18
EER	(1)	kW/kW	2,910	2,732	3,184	3,027	2,793
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	145,1	159,7	202,1	221,1	237,1
EER	(1)(2)	kW/kW	2,880	2,710	3,140	2,980	2,750
Cooling energy class			C	C	A	B	C
SEPR	(3)(4)		5,10	5,40	5,11	5,00	5,41
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	159,1	174,6	222,8	241,5	259,6
Total power input	(5)	kW	52,23	61,31	66,34	76,38	89,17
EER	(5)	kW/kW	3,048	2,848	3,360	3,161	2,910
23°C/15°C							
Cooling capacity	(6)	kW	182,0	198,8	256,6	274,0	295,3
Total power input	(6)	kW	55,70	65,57	70,58	81,13	95,69
EER	(6)	kW/kW	3,268	3,030	3,635	3,379	3,086
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	6,957	7,654	9,696	10,61	11,38
Pressure drop	(1)(2)	kPa	20,6	20,1	30,2	36,2	41,6
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	20,0	22,0	28,0	31,0	33,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	62	62	62	62	64
Sound power level in cooling	(8)(9)	dB(A)	94	94	94	94	96
SIZE AND WEIGHT							
A	(10)	mm	1500	1500	2750	2750	2750
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	1480	1510	2100	2130	2460

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-Z

Chiller, air source for outdoor installation

0751 - 1801 140,1-395,7 kW

FR-Z /K			1301	1401	1421	1431	1801
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	274,7	299,1	329,0	347,7	395,7
Total power input	(1)	kW	87,99	102,6	118,7	111,6	135,2
EER	(1)	kW/kW	3,122	2,915	2,772	3,116	2,927
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	273,7	297,8	327,7	346,8	394,4
EER	(1)(2)	kW/kW	3,080	2,870	2,730	3,080	2,890
Cooling energy class			B	C	C	B	C
SEPR	(3)(4)		5,03	5,17	5,10	5,02	5,29
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	301,4	327,3	357,6	379,3	431,3
Total power input	(5)	kW	91,75	107,2	124,3	116,2	140,9
EER	(5)	kW/kW	3,287	3,053	2,877	3,264	3,061
23°C/15°C							
Cooling capacity	(6)	kW	346,5	374,7	380,7	431,9	490,1
Total power input	(6)	kW	97,83	114,8	115,7	123,5	150,1
EER	(6)	kW/kW	3,543	3,264	3,290	3,497	3,265
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	13,14	14,30	15,73	16,63	18,92
Pressure drop	(1)(2)	kPa	42,5	50,4	44,9	29,5	38,2
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	38,0	42,0	46,0	49,0	55,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	64	65	66	66	66
Sound power level in cooling	(8)(9)	dB(A)	96	97	98	98	98
SIZE AND WEIGHT							
A	(10)	mm	2750	2750	2750	4000	4000
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	2510	2540	2580	3110	3540

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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FR-Z /SL-K			0751	0851	0951	0961	1101
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	140,1	169,5	195,5	214,7	245,9
Total power input	(1)	kW	50,40	53,88	64,25	74,84	80,11
EER	(1)	kW/kW	2,780	3,145	3,040	2,870	3,070
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	139,7	169,0	194,9	214,0	244,9
EER	(1)(2)	kW/kW	2,750	3,110	3,000	2,830	3,020
Cooling energy class			C	A	B	C	B
SEPR	(3)(4)		5,09	5,84	5,14	5,04	5,57
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	153,0	186,0	214,5	233,3	269,3
Total power input	(5)	kW	52,69	56,08	67,09	78,13	83,53
EER	(5)	kW/kW	2,903	3,316	3,197	2,987	3,225
23°C/15°C							
Cooling capacity	(6)	kW	174,6	213,9	246,6	263,7	308,6
Total power input	(6)	kW	56,33	59,54	71,58	83,26	89,08
EER	(6)	kW/kW	3,101	3,595	3,444	3,166	3,464
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	6,698	8,107	9,351	10,27	11,76
Pressure drop	(1)(2)	kPa	19,1	22,6	28,1	33,9	44,4
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	21,0	25,0	29,0	32,0	37,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	52	52	53	53	55
Sound power level in cooling	(8)(9)	dB(A)	84	84	85	85	87
SIZE AND WEIGHT							
A	(10)	mm	1500	2750	2750	2750	2750
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	1640	2050	2270	2290	2770

Notes

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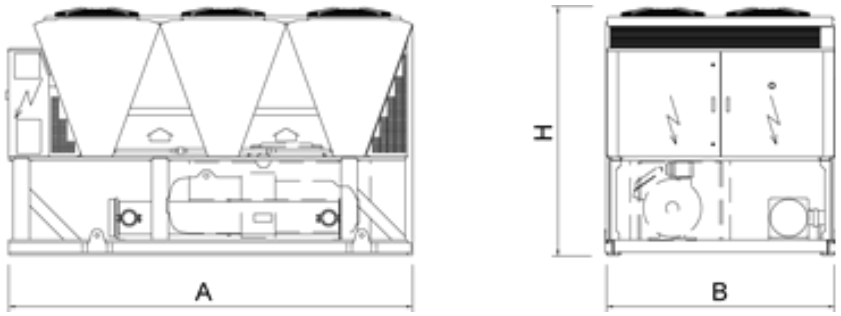
FR-Z /SL-K			1301	1401	1421	1431	1801
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	265,0	287,8	331,8	346,5	395,0
Total power input	(1)	kW	89,07	104,5	112,5	107,8	130,0
EER	(1)	kW/kW	2,974	2,754	2,949	3,214	3,038
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	264,1	286,6	330,5	345,6	393,7
EER	(1)(2)	kW/kW	2,930	2,710	2,900	3,180	3,000
Cooling energy class			B	C	B	A	B
SEPR	(3)(4)		5,02	5,19	5,35	5,55	5,38
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	290,4	314,5	361,3	378,3	431,8
Total power input	(5)	kW	93,09	109,5	117,4	112,0	135,4
EER	(5)	kW/kW	3,119	2,872	3,078	3,378	3,189
23°C/15°C							
Cooling capacity	(6)	kW	333,2	367,9	410,3	431,6	493,0
Total power input	(6)	kW	99,63	115,9	125,3	118,7	144,0
EER	(6)	kW/kW	3,345	3,174	3,275	3,636	3,424
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	12,67	13,76	15,86	16,57	18,89
Pressure drop	(1)(2)	kPa	39,5	46,6	45,7	29,3	38,1
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	40,0	43,0	50,0	52,0	59,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	55	56	57	57	57
Sound power level in cooling	(8)(9)	dB(A)	87	88	89	89	89
SIZE AND WEIGHT							
A	(10)	mm	2750	2750	4000	4000	4000
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	2770	2790	3250	3410	3880

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing



CHILLERS

FR-Z

Chiller, air source for outdoor installation

1502 - 7223 288,5-1710 kW



Outdoor unit for the production of chilled water with semi-hermetic screw compressors optimized for R134a, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation and the accurate sizing of all internal components. The compressors feature an enhanced lubrication system, an innovative internal geometry and a different control of capacity steps. Innovations that grant a remarkable performance improvement especially at partial loads.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R134a

Versions

K	Standard efficiency
SL-K	Super low noise, standard efficiency
CA	High efficiency
SL-CA	Super low noise, high efficiency
E	Very high efficiency
SL-E	Super low noise, very high efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function
R	Total condensing heat recovery function

Features

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

EXTREMELY SILENT OPERATION
As the result of a systematic design oriented to minimize the noise level, the silenced version units give the best combination of quietness and efficiency on the market.

FLEXIBILITY
Flexibility in the applications thanks to the many configurations and versions available.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C (-20°C with accessories) to 50°C (54°C with accessories) of outdoor air temperature and up to 18°C (20°C with accessories) of evaporator leaving water temperature.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

AHRI CERTIFICATION
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Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Microchannel coils with e-coating protection
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- Compressor enclosure (standard on silenced versions)
- Leak detector
- Kit HT to increase the unit operating range
- Compressor power factor correction
- Soft start
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

FR-Z /K			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	299,6	325,8	383,2	432,0	480,6	533,4	558,7	600,7	658,3
Total power input	(1)	kW	100,6	117,0	130,7	143,5	169,3	185,1	193,9	203,6	234,8
EER	(1)	kW/kW	2,978	2,785	2,932	3,010	2,839	2,882	2,881	2,950	2,804
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	298,9	324,9	382,1	430,5	479,3	531,7	557,1	598,8	656,3
EER	(1)(2)	kW/kW	2,950	2,760	2,900	2,970	2,810	2,850	2,850	2,910	2,770
Cooling energy class			B	C	B	B	C	C	C	B	C
SEPR	(3)(4)		5,23	5,46	5,34	5,24	5,43	5,39	5,36	5,33	5,19
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	328,2	355,7	417,7	470,0	524,5	582,9	611,1	657,6	715,5
Total power input	(5)	kW	105,0	122,4	136,3	149,3	177,2	193,4	202,9	212,7	245,6
EER	(5)	kW/kW	3,126	2,906	3,065	3,148	2,960	3,014	3,012	3,092	2,913
23°C/15°C											
Cooling capacity	(6)	kW	376,3	405,7	475,1	532,8	597,3	665,5	698,8	753,1	762,6
Total power input	(6)	kW	112,0	130,9	145,2	158,4	190,1	207,0	217,6	227,5	229,0
EER	(6)	kW/kW	3,360	3,099	3,272	3,364	3,142	3,215	3,211	3,310	3,330
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	14,33	15,58	18,32	20,66	22,98	25,51	26,72	28,73	31,48
Pressure drop	(1)(2)	kPa	23,9	28,3	33,6	42,7	32,3	39,8	34,9	40,3	38,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	44,0	47,0	55,0	63,0	69,0	76,0	80,0	88,0	94,0
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	67	67	67	68	68	68	68	68	70
Sound power level in cooling	(8)(9)	dB(A)	99	99	99	100	100	100	100	100	102
SIZE AND WEIGHT											
A	(10)	mm	2750	2750	4000	4000	4000	5250	5250	5250	5250
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3160	3170	3720	3810	4610	5060	5060	5130	5520

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-Z /K			3152	3602	3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	725,4	802,7	871,9	926,5	982,4	1021	1059	1146	1176
Total power input	(1)	kW	249,9	267,4	289,7	309,8	336,9	362,5	347,9	389,1	415,5
EER	(1)	kW/kW	2,903	3,002	3,010	2,991	2,916	2,817	3,044	2,945	2,830
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	722,9	800,2	869,2	923,3	979,4	1018	1055	1142	1172
EER	(1)(2)	kW/kW	2,860	2,960	2,970	2,950	2,880	2,780	3,000	2,900	2,800
Cooling energy class			C	B	B	B	C	C	B	B	C
SEPR	(3)(4)		5,30	5,40	5,39	5,37	5,39	5,39	5,40	5,32	5,40
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	789,7	875,3	952,3	1013	1073	1114	1158	1247	1282
Total power input	(5)	kW	260,8	278,6	302,0	322,9	351,9	379,1	362,4	406,3	434,2
EER	(5)	kW/kW	3,028	3,142	3,153	3,137	3,049	2,939	3,195	3,069	2,953
23°C/15°C											
Cooling capacity	(6)	kW	895,8	995,2	1087	1157	1225	1269	1324	1353	1428
Total power input	(6)	kW	278,3	296,4	321,7	343,9	376,0	405,8	385,6	389,7	441,6
EER	(6)	kW/kW	3,219	3,358	3,379	3,364	3,258	3,127	3,434	3,472	3,234
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	34,69	38,39	41,70	44,31	46,98	48,82	50,65	54,81	56,25
Pressure drop	(1)(2)	kPa	46,8	40,9	42,6	48,1	41,8	45,1	48,5	53,3	42,2
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	104	117	127	135	140	146	151	164	168
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	69	69	70	70	71	71	71	71	72
Sound power level in cooling	(8)(9)	dB(A)	102	102	103	103	104	104	104	104	105
SIZE AND WEIGHT											
A	(10)	mm	6500	6500	7750	7750	7750	7750	9000	9000	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	6450	6940	7440	7560	7790	7820	8250	8370	8660

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
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FR-Z /K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1239	1303	1401	1481	1547	1654	1710
Total power input	(1)	kW	426,0	466,1	466,4	513,5	546,6	569,8	594,2
EER	(1)	kW/kW	2,908	2,796	3,004	2,884	2,830	2,903	2,878
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1235	1298	1397	1476	1543	1649	1704
EER	(1)(2)	kW/kW	2,870	2,760	2,970	2,850	2,800	2,870	2,840
Cooling energy class			C	C	B	C	C	C	C
SEPR	(3)(4)		5,43	5,31	5,34	5,37	5,42	5,29	5,29
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1355	1417	1532	1616	1689	1801	1860
Total power input	(5)	kW	444,3	487,1	486,4	536,4	571,9	595,2	621,5
EER	(5)	kW/kW	3,050	2,909	3,150	3,013	2,953	3,026	2,993
23°C/15°C									
Cooling capacity	(6)	kW	1550	1550	1752	1843	1925	1985	2015
Total power input	(6)	kW	474,0	474,0	518,2	573,2	612,6	590,8	595,3
EER	(6)	kW/kW	3,270	3,270	3,381	3,215	3,142	3,360	3,385
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	59,26	62,29	67,01	70,81	74,00	79,11	81,79
Pressure drop	(1)(2)	kPa	46,9	51,8	45,4	50,7	39,0	44,6	51,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	181	186	205	212	221	237	250
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	73	73	73	73	73	73	73
Sound power level in cooling	(8)(9)	dB(A)	106	106	106	106	106	106	106
SIZE AND WEIGHT									
A	(10)	mm	10400	10400	11650	11650	11650	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9200	9310	11880	11940	11950	12490	12570

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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8 Sound power on the basis of measurements made in compliance with ISO 9614.
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FR-Z /SL-K			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	288,5	333,4	381,6	418,7	476,0	518,6	556,0	578,5	663,2
Total power input	(1)	kW	101,2	113,0	125,9	146,1	161,4	174,6	191,8	207,2	222,7
EER	(1)	kW/kW	2,851	2,950	3,031	2,866	2,949	2,970	2,899	2,792	2,978
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	287,8	332,5	380,5	417,3	474,7	517,0	554,4	576,8	661,2
EER	(1)(2)	kW/kW	2,820	2,920	3,000	2,830	2,920	2,930	2,870	2,760	2,940
Cooling energy class			C	B	B	C	B	B	C	C	B
SEPR	(3)(4)		5,23	5,32	5,45	5,27	5,25	5,20	5,27	5,33	5,27
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	315,6	365,0	418,2	454,8	519,7	567,8	608,7	632,5	722,4
Total power input	(5)	kW	105,8	118,0	131,3	152,4	168,5	182,3	200,6	217,0	232,3
EER	(5)	kW/kW	2,983	3,093	3,185	2,984	3,084	3,115	3,034	2,915	3,110
23°C/15°C											
Cooling capacity	(6)	kW	360,9	418,1	480,0	514,2	592,7	650,6	697,2	739,4	820,5
Total power input	(6)	kW	113,2	125,9	139,9	162,2	179,8	194,6	214,9	229,7	247,5
EER	(6)	kW/kW	3,188	3,321	3,431	3,170	3,296	3,343	3,244	3,219	3,315
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	13,80	15,94	18,25	20,02	22,76	24,80	26,59	27,66	31,72
Pressure drop	(1)(2)	kPa	22,2	29,6	33,3	40,1	31,7	37,6	34,5	37,4	39,1
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	44,0	51,0	58,0	63,0	72,0	79,0	84,0	88,0	101
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	55	55	56	56	57	57	57	57	57
Sound power level in cooling	(8)(9)	dB(A)	87	87	88	88	89	89	89	89	90
SIZE AND WEIGHT											
A	(10)	mm	2750	4000	4000	4000	5250	5250	5250	5250	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3420	4160	4230	4230	5200	5560	5580	5620	6610

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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FR-Z /SL-K			3152	3602	3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	716,6	770,8	838,7	892,9	964,9	1021	1052	1137	1169
Total power input	(1)	kW	246,8	271,7	294,5	315,0	335,4	353,2	341,0	380,8	407,3
EER	(1)	kW/kW	2,904	2,837	2,848	2,835	2,877	2,891	3,085	2,986	2,870
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	714,1	768,6	836,2	890,0	962,1	1018	1048	1133	1166
EER	(1)(2)	kW/kW	2,860	2,810	2,820	2,800	2,840	2,860	3,040	2,940	2,840
Cooling energy class			C	C	C	C	C	C	B	B	C
SEPR	(3)(4)		5,32	5,41	5,42	5,40	5,39	5,38	5,36	5,30	5,35
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	780,6	838,5	914,5	974,8	1054	1116	1151	1238	1275
Total power input	(5)	kW	257,6	283,6	307,7	329,2	350,5	369,0	355,1	397,2	425,4
EER	(5)	kW/kW	3,030	2,957	2,972	2,961	3,007	3,024	3,241	3,117	2,997
23°C/15°C											
Cooling capacity	(6)	kW	886,4	977,1	1067	1136	1229	1300	1317	1405	1452
Total power input	(6)	kW	274,9	299,2	324,7	347,2	369,8	389,3	377,5	423,2	428,9
EER	(6)	kW/kW	3,224	3,266	3,286	3,272	3,323	3,339	3,489	3,320	3,385
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	34,27	36,86	40,11	42,70	46,14	48,85	50,30	54,38	55,91
Pressure drop	(1)(2)	kPa	45,7	37,7	39,4	44,7	40,3	45,2	47,9	52,5	41,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	109	117	127	135	146	155	159	172	177
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	58	58	59	59	60	60	61	61	61
Sound power level in cooling	(8)(9)	dB(A)	91	91	92	92	93	93	94	94	94
SIZE AND WEIGHT											
A	(10)	mm	6500	6500	7750	7750	9000	9000	10250	10250	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7080	7550	8090	8200	9000	8870	9360	9470	9780

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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FR-Z /SL-K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1194	1289	1350	1463	1530	1595	1649
Total power input	(1)	kW	432,8	459,1	474,3	509,9	540,4	582,7	609,3
EER	(1)	kW/kW	2,759	2,808	2,846	2,869	2,831	2,737	2,706
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1190	1285	1346	1458	1526	1590	1644
EER	(1)(2)	kW/kW	2,730	2,770	2,810	2,830	2,800	2,710	2,680
Cooling energy class			C	C	C	C	C	C	D
SEPR	(3)(4)		5,43	5,36	5,38	5,37	5,40	5,34	5,31
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1305	1403	1474	1598	1671	1735	1729
Total power input	(5)	kW	452,2	479,6	495,9	532,6	565,3	610,5	562,8
EER	(5)	kW/kW	2,886	2,925	2,972	3,000	2,956	2,842	3,072
23°C/15°C									
Cooling capacity	(6)	kW	1522	1593	1720	1861	1949	1949	1978
Total power input	(6)	kW	478,5	513,1	523,1	561,8	596,4	596,4	600,9
EER	(6)	kW/kW	3,181	3,105	3,288	3,313	3,268	3,268	3,292
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	57,11	61,64	64,56	69,97	73,16	76,27	78,86
Pressure drop	(1)(2)	kPa	43,5	50,7	42,1	49,5	38,2	41,5	47,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	181	195	205	222	232	242	250
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	61	61	61	61	61	61	62
Sound power level in cooling	(8)(9)	dB(A)	94	94	94	94	94	94	95
SIZE AND WEIGHT									
A	(10)	mm	10400	11650	11650	12900	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9860	10420	12810	13340	13340	13420	13500

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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FR-Z /CA			1502	1702	1902	1922	2202	2602	2652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	302,4	349,6	395,0	461,7	513,2	551,4	590,7
Total power input	(1)	kW	95,40	108,6	124,9	143,9	159,8	174,8	184,4
EER	(1)	kW/kW	3,170	3,219	3,163	3,208	3,212	3,154	3,203
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	301,6	348,6	393,8	460,5	511,7	549,9	588,9
EER	(1)(2)	kW/kW	3,140	3,180	3,120	3,170	3,170	3,120	3,160
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,42	5,52	5,56	5,56	5,53	5,38	5,42
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	332,6	384,3	433,5	507,0	563,0	605,2	648,4
Total power input	(5)	kW	99,21	112,8	130,0	149,8	166,2	182,2	191,9
EER	(5)	kW/kW	3,353	3,407	3,335	3,385	3,387	3,322	3,379
23°C/15°C									
Cooling capacity	(6)	kW	384,0	443,3	498,5	583,7	647,2	696,0	746,1
Total power input	(6)	kW	105,3	119,4	138,2	159,3	176,5	194,1	204,1
EER	(6)	kW/kW	3,647	3,713	3,607	3,664	3,667	3,586	3,656
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	14,46	16,72	18,89	22,08	24,54	26,37	28,25
Pressure drop	(1)(2)	kPa	24,4	32,6	35,7	29,8	36,8	34,0	39,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	48,0	54,0	58,0	68,0	79,0	81,0	87,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	66	66	67	67	68	68	68
Sound power level in cooling	(8)(9)	dB(A)	98	98	99	99	100	100	101
SIZE AND WEIGHT									
A	(10)	mm	4000	4000	4000	5250	5250	5250	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3660	3720	3760	4660	5040	5090	5830

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-Z /CA			2702	2722	3152	3602	3902	4202	4502
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	628,7	683,7	766,2	837,8	904,7	956,0	1031
Total power input	(1)	kW	195,9	217,5	241,6	260,1	279,6	299,5	319,9
EER	(1)	kW/kW	3,209	3,143	3,171	3,221	3,236	3,192	3,223
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	626,6	681,5	764,0	835,0	901,7	952,5	1028
EER	(1)(2)	kW/kW	3,160	3,100	3,130	3,180	3,190	3,140	3,180
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,43	5,34	5,42	5,49	5,48	5,46	5,47
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	690,2	745,3	837,7	917,2	991,0	1047	1129
Total power input	(5)	kW	203,7	226,2	251,1	270,2	290,5	311,1	332,4
EER	(5)	kW/kW	3,388	3,295	3,336	3,395	3,411	3,365	3,397
23°C/15°C									
Cooling capacity	(6)	kW	794,3	847,9	957,4	1051	1136	1200	1295
Total power input	(6)	kW	216,2	240,0	266,4	286,1	307,7	329,4	352,1
EER	(6)	kW/kW	3,674	3,533	3,594	3,674	3,692	3,643	3,678
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	30,07	32,70	36,64	40,06	43,26	45,72	49,29
Pressure drop	(1)(2)	kPa	44,2	41,6	37,2	44,5	45,8	51,2	46,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	92,0	100	113	123	133	141	151
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	68	68	68	69	69	70	70
Sound power level in cooling	(8)(9)	dB(A)	101	101	101	102	102	103	103
SIZE AND WEIGHT									
A	(10)	mm	6500	6500	7750	7750	9000	9000	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5690	6110	6970	7440	7890	8000	8700

Notes

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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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FR-Z /CA			4802	4822	5412	5703	6303	6603
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	1098	1177	1236	1342	1460	1521
Total power input	(1)	kW	339,5	374,9	390,8	414,5	458,8	484,7
EER	(1)	kW/kW	3,234	3,140	3,163	3,238	3,182	3,138
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	1094	1173	1232	1338	1456	1517
EER	(1)(2)	kW/kW	3,190	3,100	3,120	3,200	3,150	3,100
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		5,48	5,46	5,49	5,47	5,46	5,47
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	1203	1283	1352	1471	1600	1666
Total power input	(5)	kW	352,7	389,9	406,2	430,8	477,6	505,1
EER	(5)	kW/kW	3,411	3,291	3,328	3,415	3,350	3,298
23°C/15°C								
Cooling capacity	(6)	kW	1381	1458	1545	1687	1836	1911
Total power input	(6)	kW	373,7	413,4	430,5	456,7	507,3	537,7
EER	(6)	kW/kW	3,695	3,527	3,589	3,694	3,619	3,554
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	52,53	56,31	59,13	64,17	69,81	72,73
Pressure drop	(1)(2)	kPa	50,1	42,3	46,7	41,6	34,7	37,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	3	3	3
No. Circuits		N°	2	2	2	3	3	3
Refrigerant charge		kg	161	173	182	197	226	224
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	70	70	71	71	71	71
Sound power level in cooling	(8)(9)	dB(A)	103	103	104	104	104	104
SIZE AND WEIGHT								
A	(10)	mm	10400	10400	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	8780	9040	10120	12160	12330	12640

Notes

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FR-Z

Chiller, air source for outdoor installation

1502 - 7223 288,5-1710 kW

FR-Z /SL-CA			1502	1702	1902	1922	2202	2602	2652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	304,2	344,9	394,3	450,1	500,7	560,7	582,8
Total power input	(1)	kW	94,73	107,7	121,8	143,7	159,4	178,3	181,6
EER	(1)	kW/kW	3,212	3,202	3,237	3,132	3,141	3,145	3,209
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	303,4	343,9	393,1	449,0	499,3	559,1	581,0
EER	(1)(2)	kW/kW	3,180	3,160	3,200	3,100	3,110	3,110	3,170
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,51	5,58	5,52	5,58	5,53	5,49	5,41
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	334,3	378,7	431,6	493,7	548,6	615,1	640,0
Total power input	(5)	kW	98,71	112,1	126,6	149,9	166,2	185,9	189,1
EER	(5)	kW/kW	3,387	3,378	3,409	3,294	3,301	3,309	3,384
23°C/15°C									
Cooling capacity	(6)	kW	385,3	436,1	494,5	567,1	629,3	706,9	736,8
Total power input	(6)	kW	105,1	119,0	134,0	159,9	177,1	198,3	201,1
EER	(6)	kW/kW	3,666	3,665	3,690	3,547	3,553	3,565	3,664
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	14,55	16,49	18,85	21,53	23,94	26,81	27,87
Pressure drop	(1)(2)	kPa	24,7	31,7	35,6	28,3	35,1	35,1	38,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	48,0	54,0	62,0	71,0	79,0	88,0	92,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	55	56	56	57	57	57	58
Sound power level in cooling	(8)(9)	dB(A)	87	88	88	89	89	90	91
SIZE AND WEIGHT									
A	(10)	mm	4000	4000	5250	5250	5250	6500	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	4130	4190	4680	5140	5520	6140	6390

Notes

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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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FR-Z /SL-CA			2702	2722	3152	3602	3902	4202	4502
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	615,6	680,7	754,1	819,3	899,1	947,9	1020
Total power input	(1)	kW	196,2	212,3	236,9	252,1	273,7	293,5	314,1
EER	(1)	kW/kW	3,138	3,206	3,183	3,250	3,285	3,230	3,247
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	613,9	678,5	752,0	816,7	896,1	944,5	1017
EER	(1)(2)	kW/kW	3,100	3,160	3,150	3,210	3,240	3,180	3,200
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,45	5,34	5,40	5,50	5,50	5,46	5,47
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	675,5	742,7	824,6	898,2	985,7	1038	1118
Total power input	(5)	kW	204,6	220,3	246,4	261,6	284,2	304,8	326,2
EER	(5)	kW/kW	3,302	3,371	3,347	3,433	3,468	3,406	3,427
23°C/15°C									
Cooling capacity	(6)	kW	776,9	846,4	942,6	1031	1132	1191	1284
Total power input	(6)	kW	218,2	233,0	261,6	276,9	300,8	322,4	345,4
EER	(6)	kW/kW	3,560	3,633	3,603	3,723	3,763	3,694	3,717
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	29,44	32,55	36,06	39,18	43,00	45,33	48,80
Pressure drop	(1)(2)	kPa	33,7	41,2	36,1	42,6	45,3	50,3	45,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	97,0	107	118	129	141	149	160
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	58	59	59	59	59	60	60
Sound power level in cooling	(8)(9)	dB(A)	91	92	92	92	92	93	93
SIZE AND WEIGHT									
A	(10)	mm	6500	7750	7750	9000	10250	10250	11650
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	6520	7150	7610	8500	8990	9280	9810

Notes

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9 Sound power level in cooling, outdoors.
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FR-Z /SL-CA			4802	4822	5412	5703	6303
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	1086	1163	1219	1310	1442
Total power input	(1)	kW	333,8	369,1	385,3	409,5	460,0
EER	(1)	kW/kW	3,253	3,151	3,164	3,199	3,135
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	1082	1160	1215	1306	1439
EER	(1)(2)	kW/kW	3,210	3,110	3,120	3,160	3,100
Cooling energy class			A	A	A	A	A
SEPR	(3)(4)		5,50	5,47	5,50	5,48	5,52
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	1190	1268	1333	1435	1579
Total power input	(5)	kW	346,8	383,7	400,5	426,1	480,0
EER	(5)	kW/kW	3,431	3,305	3,328	3,368	3,290
23°C/15°C							
Cooling capacity	(6)	kW	1367	1442	1525	1645	1809
Total power input	(6)	kW	367,2	406,6	424,6	452,6	512,0
EER	(6)	kW/kW	3,723	3,546	3,592	3,635	3,533
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	51,94	55,63	58,31	62,64	68,95
Pressure drop	(1)(2)	kPa	48,9	41,3	45,4	39,7	33,9
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	3	3
No. Circuits		N°	2	2	2	3	3
Refrigerant charge		kg	171	183	191	206	226
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	60	60	62	62	62
Sound power level in cooling	(8)(9)	dB(A)	93	93	95	95	95
SIZE AND WEIGHT							
A	(10)	mm	11650	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9890	10230	10760	13130	13260

Notes

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FR-Z /E			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	316,5	362,6	413,8	451,2	530,5	575,8	612,9	649,8	703,3
Total power input	(1)	kW	94,57	108,4	123,1	136,8	156,4	170,7	181,3	192,0	213,3
EER	(1)	kW/kW	3,346	3,345	3,361	3,298	3,392	3,373	3,381	3,384	3,297
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	315,8	361,6	412,9	450,1	529,0	574,4	611,2	647,9	701,5
EER	(1)(2)	kW/kW	3,310	3,310	3,330	3,260	3,350	3,340	3,340	3,340	3,260
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,45	5,55	5,57	5,59	5,55	5,41	5,44	5,45	5,42
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	348,8	400,0	456,5	493,5	584,4	633,9	674,6	715,0	768,4
Total power input	(5)	kW	98,19	112,2	127,8	141,7	162,1	177,2	188,1	199,0	220,9
EER	(5)	kW/kW	3,552	3,565	3,572	3,483	3,605	3,577	3,586	3,593	3,478
23°C/15°C											
Cooling capacity	(6)	kW	403,8	464,0	529,5	564,5	676,2	732,8	779,7	826,2	877,3
Total power input	(6)	kW	104,0	118,1	135,1	149,2	171,2	187,7	199,0	210,3	232,8
EER	(6)	kW/kW	3,883	3,929	3,919	3,784	3,950	3,904	3,918	3,929	3,768
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	15,14	17,34	19,79	21,58	25,37	27,54	29,31	31,07	33,63
Pressure drop	(1)(2)	kPa	22,9	30,1	24,0	28,5	35,8	29,5	33,4	37,5	31,4
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	49,0	56,0	64,0	71,0	82,0	89,0	95,0	101	109
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	66	67	67	67	67	67	68	68	68
Sound power level in cooling	(8)(9)	dB(A)	98	99	99	99	100	100	101	101	101
SIZE AND WEIGHT											
A	(10)	mm	4000	5250	5250	5250	6500	6500	7750	7750	7750
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3720	4240	4360	4420	5590	5920	6400	6490	6600

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-Z

Chiller, air source for outdoor installation

1502 - 7223 288,5-1710 kW

FR-Z /E			3152	3602	3902	4202	4502	4802	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	785,8	854,0	931,3	986,6	1054	1123	1219	1277
Total power input	(1)	kW	236,1	256,1	277,1	297,5	317,3	337,2	373,1	391,5
EER	(1)	kW/kW	3,328	3,335	3,361	3,316	3,322	3,330	3,267	3,262
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	783,7	851,4	927,8	983,6	1051	1119	1216	1274
EER	(1)(2)	kW/kW	3,290	3,290	3,310	3,270	3,280	3,280	3,230	3,230
Cooling energy class			A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,47	5,51	5,50	5,49	5,52	5,52	5,51	5,53
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	861,8	938,3	1023	1083	1156	1232	1332	1399
Total power input	(5)	kW	244,8	265,4	287,2	308,3	328,9	349,6	387,1	406,4
EER	(5)	kW/kW	3,520	3,535	3,562	3,513	3,515	3,524	3,441	3,442
23°C/15°C										
Cooling capacity	(6)	kW	989,9	1081	1178	1246	1330	1418	1519	1606
Total power input	(6)	kW	258,5	280,3	303,2	325,2	347,0	369,1	408,9	430,0
EER	(6)	kW/kW	3,829	3,857	3,885	3,831	3,833	3,842	3,715	3,735
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	37,58	40,84	44,54	47,18	50,39	53,70	58,31	61,05
Pressure drop	(1)(2)	kPa	34,6	40,9	53,0	42,1	46,1	51,2	34,4	37,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	122	132	144	153	163	174	189	198
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	68	69	69	70	70	70	70	71
Sound power level in cooling	(8)(9)	dB(A)	101	102	102	103	103	103	103	104
SIZE AND WEIGHT										
A	(10)	mm	9000	9000	10250	10250	11650	11650	11650	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7400	7880	8420	8660	9190	9270	10330	11170

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-Z /SL-E			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	312,8	359,1	409,0	447,3	524,1	568,3	605,2	641,9	696,6
Total power input	(1)	kW	93,22	106,0	121,2	135,8	154,2	169,0	179,3	189,5	212,1
EER	(1)	kW/kW	3,356	3,388	3,375	3,294	3,399	3,363	3,375	3,387	3,284
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	312,1	358,1	408,1	446,2	522,6	566,9	603,6	640,0	694,9
EER	(1)(2)	kW/kW	3,320	3,350	3,340	3,260	3,360	3,330	3,340	3,340	3,250
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,56	5,66	5,67	5,68	5,62	5,50	5,55	5,56	5,55
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	344,4	395,9	450,8	488,8	576,7	625,1	665,7	705,9	760,6
Total power input	(5)	kW	96,98	109,9	126,0	141,0	160,2	175,9	186,4	196,9	220,3
EER	(5)	kW/kW	3,551	3,602	3,578	3,467	3,600	3,554	3,571	3,585	3,453
23°C/15°C											
Cooling capacity	(6)	kW	398,2	458,8	522,1	558,3	666,3	721,6	768,3	814,6	867,4
Total power input	(6)	kW	103,0	116,1	133,6	149,0	169,8	186,9	197,8	208,8	233,1
EER	(6)	kW/kW	3,866	3,952	3,908	3,747	3,924	3,861	3,884	3,901	3,721
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	14,96	17,17	19,56	21,39	25,06	27,18	28,94	30,70	33,31
Pressure drop	(1)(2)	kPa	22,4	29,5	23,4	28,0	34,9	28,7	32,6	36,6	30,8
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	49,0	56,0	64,0	71,0	82,0	89,0	95,0	101	109
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	56	57	57	57	57	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	89	89	89	90	91	91	92	92
SIZE AND WEIGHT											
A	(10)	mm	4000	5250	5250	5250	6500	6500	7750	7750	7750
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3960	4460	4620	4680	6120	6460	6940	7040	7140

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-Z

Chiller, air source for outdoor installation

1502 - 7223 288,5-1710 kW

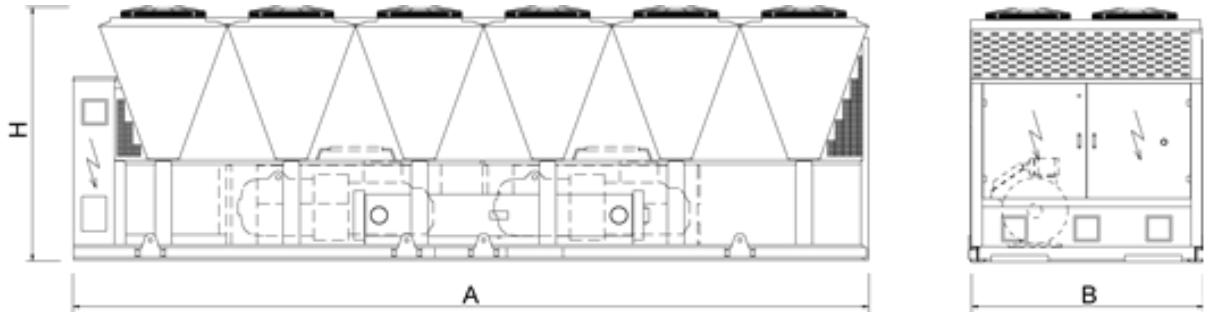
FR-Z /SL-E			3152	3602	3902	4202	4502	4802	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	776,1	841,9	918,4	973,5	1040	1108	1205	1260
Total power input	(1)	kW	234,5	253,8	275,0	295,6	315,3	335,2	373,3	389,9
EER	(1)	kW/kW	3,310	3,317	3,340	3,293	3,298	3,305	3,228	3,232
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	774,1	839,4	915,0	970,6	1037	1104	1202	1257
EER	(1)(2)	kW/kW	3,270	3,280	3,290	3,250	3,250	3,260	3,200	3,200
Cooling energy class			A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,56	5,56	5,56	5,56	5,60	5,59	5,58	5,60
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	850,2	923,7	1008	1067	1140	1215	1315	1380
Total power input	(5)	kW	243,6	263,6	285,7	307,1	327,6	348,4	388,4	405,7
EER	(5)	kW/kW	3,490	3,504	3,528	3,474	3,480	3,487	3,386	3,402
23°C/15°C										
Cooling capacity	(6)	kW	974,9	1062	1158	1227	1310	1396	1499	1582
Total power input	(6)	kW	258,2	279,2	302,6	325,1	346,9	369,1	412,2	430,9
EER	(6)	kW/kW	3,776	3,804	3,827	3,774	3,776	3,782	3,637	3,671
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	37,11	40,26	43,92	46,55	49,72	52,98	57,62	60,28
Pressure drop	(1)(2)	kPa	33,7	39,7	51,5	41,0	44,9	49,8	33,6	36,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	122	132	144	153	163	174	189	198
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	59	59	59	60	60	60	60	62
Sound power level in cooling	(8)(9)	dB(A)	92	92	92	93	93	93	93	95
SIZE AND WEIGHT										
A	(10)	mm	9000	9000	10250	10250	11650	11650	11650	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7990	8500	8990	9290	9830	9910	10900	11530

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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Certified data in EUROVENT

Dimensional drawing



CHILLERS

FR-G05-Z

0751 - 1801 140,1-395,7 kW

Chiller, air source for outdoor installation



Outdoor unit for the production of chilled water with semi-hermetic screw compressor optimized for R513A, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. (brazed plate evaporator for sizes 0751 and 0851) and electronic expansion valve. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation and the accurate sizing of all internal components. The compressors feature an enhanced lubrication system, an innovative internal geometry and a different control of capacity steps. Innovations that grant a remarkable performance improvement especially at partial loads.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R513A

Versions

K Standard efficiency

SL-K Super low noise, standard efficiency

Configurations

- Basic function

D Partial condensing heat recovery function

R Total condensing heat recovery function

Features

LOW GWP REFRIGERANT
New generation refrigerant R513A, with reduced greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of R513A = 572, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer. Not flammable (ASHRAE 34, ISO 817: class A1).

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

COMPACTNESS
Compactness in terms of overall size and weight, helping installation and working on site

EXTREMELY SILENT OPERATION
As the result of a systematic design oriented to minimize the noise level, the silenced version units give the best combination of quietness and efficiency on the market.

FLEXIBILITY
Flexibility in the applications thanks to the many configurations and versions available.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C (-20°C with accessories) to 46°C (50°C with accessories) of outdoor air temperature and from -8°C to 18°C (20°C with accessories) of evaporator leaving water temperature.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. It is available with 1 or 2 pumps, fixed or variable speed, high or low head to satisfy all the different industrial and comfort application requirements.

Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Compressor enclosure (standard on silenced versions)
- Leak detector
- Kit HT to increase the unit operating range
- Compressor power factor correction
- Soft start
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

FR-G05-Z /K			0751	0851	0951	0961	1101
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	145,5	160,1	202,8	221,9	238,0
Total power input	(1)	kW	52,12	61,09	66,27	76,37	88,76
EER	(1)	kW/kW	2,793	2,620	3,059	2,904	2,680
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	145,1	159,7	202,1	221,1	237,1
EER	(1)(2)	kW/kW	2,760	2,600	3,020	2,860	2,640
Cooling energy class			C	D	B	C	D
SEPR	(3)(4)		5,00	5,24	5,01	5,00	5,25
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	159,1	174,6	222,8	241,5	259,6
Total power input	(5)	kW	54,41	63,90	69,07	79,56	92,93
EER	(5)	kW/kW	2,925	2,732	3,224	3,034	2,794
23°C/15°C							
Cooling capacity	(6)	kW	182,0	198,8	256,6	274,0	295,3
Total power input	(6)	kW	58,04	68,35	73,50	84,53	99,74
EER	(6)	kW/kW	3,138	2,911	3,491	3,243	2,962
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	6,957	7,654	9,696	10,61	11,38
Pressure drop	(1)(2)	kPa	20,6	20,1	30,2	36,2	41,6
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	23,0	25,0	32,0	36,0	38,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	62	62	62	62	64
Sound power level in cooling	(8)(9)	dB(A)	94	94	94	94	96
SIZE AND WEIGHT							
A	(10)	mm	1500	1500	2750	2750	2750
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	1480	1510	2100	2130	2460

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-G05-Z

0751 - 1801 140,1-395,7 kW

Chiller, air source for outdoor installation

FR-G05-Z /K			1301	1401	1421	1431	1801
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	274,7	299,1	329,0	347,7	395,7
Total power input	(1)	kW	91,61	106,9	123,7	116,2	140,9
EER	(1)	kW/kW	2,999	2,798	2,660	2,992	2,808
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	273,7	297,8	327,7	346,8	394,4
EER	(1)(2)	kW/kW	2,960	2,750	2,620	2,960	2,770
Cooling energy class			B	C	D	B	C
SEPR	(3)(4)		5,00	5,01	5,00	5,00	5,14
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	301,4	327,3	357,6	379,3	431,3
Total power input	(5)	kW	95,53	111,7	129,5	121,0	146,8
EER	(5)	kW/kW	3,156	2,930	2,761	3,135	2,938
23°C/15°C							
Cooling capacity	(6)	kW	346,5	374,7	380,7	431,9	490,1
Total power input	(6)	kW	101,9	119,6	120,6	128,6	156,4
EER	(6)	kW/kW	3,400	3,133	3,157	3,358	3,134
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	13,14	14,30	15,73	16,63	18,92
Pressure drop	(1)(2)	kPa	42,5	50,4	44,9	29,5	38,2
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	44,0	48,0	53,0	56,0	63,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	64	65	66	66	66
Sound power level in cooling	(8)(9)	dB(A)	96	97	98	98	98
SIZE AND WEIGHT							
A	(10)	mm	2750	2750	2750	4000	4000
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	2510	2540	2580	3110	3540

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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Certified data in EUROVENT

FR-G05-Z /SL-K			0751	0851	0951	0961	1101
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	140,1	169,5	195,5	214,7	245,9
Total power input	(1)	kW	52,54	56,12	66,96	78,02	83,46
EER	(1)	kW/kW	2,669	3,021	2,918	2,753	2,945
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	139,7	169,0	194,9	214,0	244,9
EER	(1)(2)	kW/kW	2,640	2,990	2,880	2,720	2,900
Cooling energy class			D	B	C	C	B
SEPR	(3)(4)		5,06	5,68	5,04	5,01	5,40
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	153,0	186,0	214,5	233,3	269,3
Total power input	(5)	kW	54,93	58,41	69,92	81,45	87,04
EER	(5)	kW/kW	2,787	3,185	3,069	2,863	3,095
23°C/15°C							
Cooling capacity	(6)	kW	174,6	213,9	246,6	263,7	308,6
Total power input	(6)	kW	58,74	62,03	74,61	86,81	92,84
EER	(6)	kW/kW	2,974	3,450	3,306	3,038	3,325
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	6,698	8,107	9,351	10,27	11,76
Pressure drop	(1)(2)	kPa	19,1	22,6	28,1	33,9	44,4
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	24,0	29,0	33,0	37,0	43,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	52	52	53	53	55
Sound power level in cooling	(8)(9)	dB(A)	84	84	85	85	87
SIZE AND WEIGHT							
A	(10)	mm	1500	2750	2750	2750	2750
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	1640	2050	2270	2290	2770

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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FR-G05-Z

0751 - 1801 140,1-395,7 kW

Chiller, air source for outdoor installation

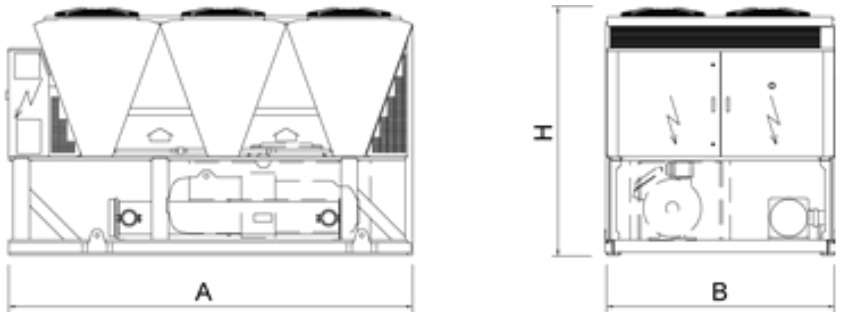
FR-G05-Z /SL-K			1301	1401	1421	1431	1801
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	265,0	287,8	331,8	346,5	395,0
Total power input	(1)	kW	92,83	109,0	117,3	112,3	135,5
EER	(1)	kW/kW	2,856	2,640	2,829	3,085	2,915
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	264,1	286,6	330,5	345,6	393,7
EER	(1)(2)	kW/kW	2,820	2,600	2,790	3,050	2,880
Cooling energy class			C	D	C	B	C
SEPR	(3)(4)		5,00	5,04	5,19	5,38	5,22
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	290,4	314,5	361,3	378,3	431,8
Total power input	(5)	kW	97,03	114,2	122,4	116,7	141,1
EER	(5)	kW/kW	2,994	2,754	2,952	3,242	3,060
23°C/15°C							
Cooling capacity	(6)	kW	333,2	367,9	410,3	431,6	493,0
Total power input	(6)	kW	103,9	120,7	130,6	123,7	150,1
EER	(6)	kW/kW	3,207	3,048	3,142	3,489	3,284
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	12,67	13,76	15,86	16,57	18,89
Pressure drop	(1)(2)	kPa	39,5	46,6	45,7	29,3	38,1
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	46,0	49,0	58,0	60,0	68,0
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	55	56	57	57	57
Sound power level in cooling	(8)(9)	dB(A)	87	88	89	89	89
SIZE AND WEIGHT							
A	(10)	mm	2750	2750	4000	4000	4000
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	2770	2790	3250	3410	3880

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
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Dimensional drawing



CHILLERS

FR-G05-Z

Chiller, air source for outdoor installation

1502 - 7223 288,5-1710 kW



Outdoor unit for the production of chilled water with semi-hermetic screw compressors optimized for R513A, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation and the accurate sizing of all internal components.
The compressors feature an enhanced lubrication system, an innovative internal geometry and a different control of capacity steps. Innovations that grant a remarkable performance improvement especially at partial loads.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R513A

Versions

K	Standard efficiency
SL-K	Super low noise, standard efficiency
CA	High efficiency
SL-CA	Super low noise, high efficiency
E	Very high efficiency
SL-E	Super low noise, very high efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function
R	Total condensing heat recovery function

Features

LOW GWP REFRIGERANT
New generation refrigerant R513A, with reduced greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of R513A = 572, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer. Not flammable (ASHRAE 34, ISO 817: class A1).

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

EXTREMELY SILENT OPERATION
As the result of a systematic design oriented to minimize the noise level, the silenced version units give the best combination of quietness and efficiency on the market.

FLEXIBILITY
Flexibility in the applications thanks to the many configurations and versions available.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C (-20°C with accessories) to 50°C (54°C with accessories) of outdoor air temperature and from -8°C to 18°C (20°C with accessories) of evaporator leaving water temperature.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Compressor enclosure (standard on silenced versions)
- Leak detector
- Kit HT to increase the unit operating range
- Compressor power factor correction
- Soft start
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

FR-G05-Z /K			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	299,6	325,8	383,2	432,0	480,6	533,4	558,7	600,7	658,3
Total power input	(1)	kW	104,7	122,0	136,1	149,4	176,5	192,9	202,0	212,1	244,6
EER	(1)	kW/kW	2,862	2,670	2,816	2,892	2,723	2,765	2,766	2,832	2,691
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	298,9	324,9	382,1	430,5	479,3	531,7	557,1	598,8	656,3
EER	(1)(2)	kW/kW	2,840	2,640	2,780	2,850	2,700	2,730	2,740	2,800	2,660
Cooling energy class			C	D	C	C	C	C	C	C	D
SEPR	(3)(4)		5,08	5,30	5,18	5,09	5,27	5,28	5,27	5,17	5,03
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	328,2	355,7	417,7	470,0	524,5	582,9	611,1	657,6	715,5
Total power input	(5)	kW	109,4	127,6	142,0	155,5	184,7	201,5	211,5	221,6	256,0
EER	(5)	kW/kW	3,000	2,788	2,942	3,023	2,840	2,893	2,889	2,968	2,795
23°C/15°C											
Cooling capacity	(6)	kW	376,3	405,7	475,1	532,8	597,3	665,5	698,8	753,1	762,6
Total power input	(6)	kW	116,7	136,4	151,3	165,0	198,2	215,7	226,8	237,1	238,6
EER	(6)	kW/kW	3,225	2,974	3,140	3,229	3,014	3,085	3,081	3,176	3,196
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	14,33	15,58	18,32	20,66	22,98	25,51	26,72	28,73	31,48
Pressure drop	(1)(2)	kPa	23,9	28,3	33,6	42,7	32,3	39,8	34,9	40,3	38,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	51,0	54,0	63,0	72,0	79,0	87,0	92,0	101	108
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	67	67	67	68	68	68	68	68	70
Sound power level in cooling	(8)(9)	dB(A)	99	99	99	100	100	100	100	100	102
SIZE AND WEIGHT											
A	(10)	mm	2750	2750	4000	4000	4000	5250	5250	5250	5250
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3160	3170	3720	3810	4610	5060	5060	5130	5520

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /K			3152	3602	3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	725,4	802,7	871,9	926,5	982,4	1021	1059	1146	1176
Total power input	(1)	kW	260,4	278,6	301,8	322,7	351,1	377,8	362,3	405,4	433,0
EER	(1)	kW/kW	2,786	2,881	2,889	2,871	2,798	2,702	2,923	2,827	2,716
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	722,9	800,2	869,2	923,3	979,4	1018	1055	1142	1172
EER	(1)(2)	kW/kW	2,750	2,850	2,850	2,830	2,770	2,670	2,880	2,790	2,680
Cooling energy class			C	C	C	C	C	D	C	C	D
SEPR	(3)(4)		5,14	5,24	5,23	5,21	5,24	5,23	5,24	5,15	5,25
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	789,7	875,3	952,3	1013	1073	1114	1158	1247	1282
Total power input	(5)	kW	271,8	290,3	314,7	336,4	366,7	395,2	377,6	423,3	452,6
EER	(5)	kW/kW	2,905	3,015	3,026	3,011	2,926	2,819	3,067	2,946	2,833
23°C/15°C											
Cooling capacity	(6)	kW	895,8	995,2	1087	1157	1225	1269	1324	1353	1428
Total power input	(6)	kW	290,0	308,9	335,2	358,4	391,9	423,1	401,8	406,1	460,3
EER	(6)	kW/kW	3,089	3,222	3,243	3,228	3,126	2,999	3,295	3,332	3,102
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	34,69	38,39	41,70	44,31	46,98	48,82	50,65	54,81	56,25
Pressure drop	(1)(2)	kPa	46,8	40,9	42,6	48,1	41,8	45,1	48,5	53,3	42,2
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	120	135	146	155	161	168	174	189	193
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	69	69	70	70	71	71	71	71	72
Sound power level in cooling	(8)(9)	dB(A)	102	102	103	103	104	104	104	104	105
SIZE AND WEIGHT											
A	(10)	mm	6500	6500	7750	7750	7750	7750	9000	9000	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	6450	6940	7440	7560	7790	7820	8250	8370	8660

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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FR-G05-Z /K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1239	1303	1401	1481	1547	1654	1710
Total power input	(1)	kW	443,8	485,7	485,8	535,1	569,7	593,7	619,2
EER	(1)	kW/kW	2,792	2,683	2,884	2,768	2,715	2,786	2,762
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1235	1298	1397	1476	1543	1649	1704
EER	(1)(2)	kW/kW	2,760	2,650	2,850	2,730	2,690	2,750	2,730
Cooling energy class			C	D	C	C	D	C	C
SEPR	(3)(4)		5,27	5,15	5,19	5,20	5,26	5,14	5,13
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1355	1417	1532	1616	1689	1801	1860
Total power input	(5)	kW	462,9	507,6	506,7	559,0	596,1	620,3	647,8
EER	(5)	kW/kW	2,927	2,792	3,023	2,891	2,833	2,903	2,871
23°C/15°C									
Cooling capacity	(6)	kW	1550	1550	1752	1843	1925	1985	2015
Total power input	(6)	kW	494,0	494,0	540,0	597,4	638,6	615,7	620,3
EER	(6)	kW/kW	3,138	3,138	3,244	3,085	3,014	3,224	3,248
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	59,26	62,29	67,01	70,81	74,00	79,11	81,79
Pressure drop	(1)(2)	kPa	46,9	51,8	45,4	50,7	39,0	44,6	51,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	208	214	236	244	254	273	288
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	73	73	73	73	73	73	73
Sound power level in cooling	(8)(9)	dB(A)	106	106	106	106	106	106	106
SIZE AND WEIGHT									
A	(10)	mm	10400	10400	11650	11650	11650	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9200	9310	11880	11940	11950	12490	12570

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /SL-K			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	288,5	333,4	381,6	418,7	476,0	518,6	556,0	578,5	663,2
Total power input	(1)	kW	105,5	117,7	131,2	152,3	168,2	182,0	199,9	216,1	232,1
EER	(1)	kW/kW	2,735	2,833	2,909	2,749	2,830	2,849	2,781	2,677	2,857
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	287,8	332,5	380,5	417,3	474,7	517,0	554,4	576,8	661,2
EER	(1)(2)	kW/kW	2,710	2,800	2,880	2,720	2,800	2,820	2,750	2,650	2,820
Cooling energy class			C	C	C	C	C	C	C	D	C
SEPR	(3)(4)		5,07	5,17	5,29	5,11	5,09	5,11	5,16	5,23	5,11
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	315,6	365,0	418,2	454,8	519,7	567,8	608,7	632,5	722,4
Total power input	(5)	kW	110,3	123,0	136,9	158,9	175,6	190,0	209,1	226,3	242,1
EER	(5)	kW/kW	2,861	2,967	3,055	2,862	2,960	2,988	2,911	2,795	2,984
23°C/15°C											
Cooling capacity	(6)	kW	360,9	418,1	480,0	514,2	592,7	650,6	697,2	739,4	820,5
Total power input	(6)	kW	118,0	131,2	145,8	169,1	187,4	202,9	224,1	239,3	258,0
EER	(6)	kW/kW	3,058	3,187	3,292	3,041	3,163	3,207	3,111	3,090	3,180
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	13,80	15,94	18,25	20,02	22,76	24,80	26,59	27,66	31,72
Pressure drop	(1)(2)	kPa	22,2	29,6	33,3	40,1	31,7	37,6	34,5	37,4	39,1
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	51,0	59,0	67,0	72,0	83,0	91,0	97,0	101	116
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	55	55	56	56	57	57	57	57	57
Sound power level in cooling	(8)(9)	dB(A)	87	87	88	88	89	89	89	89	90
SIZE AND WEIGHT											
A	(10)	mm	2750	4000	4000	4000	5250	5250	5250	5250	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3420	4160	4230	4230	5200	5560	5580	5620	6610

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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FR-G05-Z /SL-K			3152	3602	3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	716,6	770,8	838,7	892,9	964,9	1021	1052	1137	1169
Total power input	(1)	kW	257,3	283,3	307,1	328,4	349,6	368,2	355,4	396,9	424,6
EER	(1)	kW/kW	2,785	2,721	2,731	2,719	2,760	2,773	2,960	2,865	2,753
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	714,1	768,6	836,2	890,0	962,1	1018	1048	1133	1166
EER	(1)(2)	kW/kW	2,750	2,690	2,700	2,690	2,730	2,740	2,920	2,830	2,720
Cooling energy class			C	D	C	D	C	C	B	C	C
SEPR	(3)(4)		5,16	5,25	5,26	5,24	5,23	5,22	5,21	5,14	5,19
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	780,6	838,5	914,5	974,8	1054	1116	1151	1238	1275
Total power input	(5)	kW	268,6	295,7	320,9	343,3	365,5	384,7	370,1	414,1	443,5
EER	(5)	kW/kW	2,906	2,836	2,850	2,839	2,884	2,901	3,110	2,990	2,875
23°C/15°C											
Cooling capacity	(6)	kW	886,4	977,1	1067	1136	1229	1300	1317	1405	1452
Total power input	(6)	kW	286,6	311,8	338,4	361,8	385,4	405,6	393,4	441,2	446,8
EER	(6)	kW/kW	3,093	3,134	3,153	3,140	3,189	3,205	3,348	3,184	3,250
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	34,27	36,86	40,11	42,70	46,14	48,85	50,30	54,38	55,91
Pressure drop	(1)(2)	kPa	45,7	37,7	39,4	44,7	40,3	45,2	47,9	52,5	41,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	125	135	146	155	168	178	183	198	204
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	58	58	59	59	60	60	61	61	61
Sound power level in cooling	(8)(9)	dB(A)	91	91	92	92	93	93	94	94	94
SIZE AND WEIGHT											
A	(10)	mm	6500	6500	7750	7750	9000	9000	10250	10250	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7080	7550	8090	8200	9000	8870	9360	9470	9780

Notes

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FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /SL-K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1194	1289	1350	1463	1530	1595	1649
Total power input	(1)	kW	451,2	478,6	494,5	531,6	563,4	607,6	635,5
EER	(1)	kW/kW	2,646	2,693	2,730	2,752	2,716	2,625	2,595
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1190	1285	1346	1458	1526	1590	1644
EER	(1)(2)	kW/kW	2,620	2,660	2,700	2,720	2,690	2,600	2,570
Cooling energy class			D	D	C	C	D	D	D
SEPR	(3)(4)		5,27	5,20	5,22	5,21	5,24	5,17	5,15
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1305	1403	1474	1598	1671	1735	1729
Total power input	(5)	kW	471,6	500,0	517,1	555,3	589,5	636,7	586,5
EER	(5)	kW/kW	2,767	2,806	2,851	2,878	2,835	2,725	2,948
23°C/15°C									
Cooling capacity	(6)	kW	1522	1593	1720	1861	1949	1949	1978
Total power input	(6)	kW	498,7	535,1	545,1	585,4	621,5	621,5	626,2
EER	(6)	kW/kW	3,052	2,977	3,155	3,179	3,136	3,136	3,159
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	57,11	61,64	64,56	69,97	73,16	76,27	78,86
Pressure drop	(1)(2)	kPa	43,5	50,7	42,1	49,5	38,2	41,5	47,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	208	224	236	255	267	278	288
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	61	61	61	61	61	61	62
Sound power level in cooling	(8)(9)	dB(A)	94	94	94	94	94	94	95
SIZE AND WEIGHT									
A	(10)	mm	10400	11650	11650	12900	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9860	10420	12810	13340	13340	13420	13500

Notes

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FR-G05-Z /CA			1502	1702	1902	1922	2202	2602	2652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	302,4	349,6	395,0	461,7	513,2	551,4	590,7
Total power input	(1)	kW	99,27	112,9	130,0	149,8	166,3	182,0	191,9
EER	(1)	kW/kW	3,045	3,097	3,038	3,082	3,086	3,030	3,078
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	301,6	348,6	393,8	460,5	511,7	549,9	588,9
EER	(1)(2)	kW/kW	3,010	3,060	3,000	3,050	3,050	3,000	3,040
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		5,27	5,36	5,40	5,40	5,37	5,22	5,26
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	332,6	384,3	433,5	507,0	563,0	605,2	648,4
Total power input	(5)	kW	103,2	117,3	135,4	156,0	173,0	189,7	199,8
EER	(5)	kW/kW	3,223	3,276	3,202	3,250	3,254	3,190	3,245
23°C/15°C									
Cooling capacity	(6)	kW	384,0	443,3	498,5	583,7	647,2	696,0	746,1
Total power input	(6)	kW	109,6	124,3	143,9	165,9	183,8	202,2	212,5
EER	(6)	kW/kW	3,504	3,566	3,464	3,518	3,521	3,442	3,511
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	14,46	16,72	18,89	22,08	24,54	26,37	28,25
Pressure drop	(1)(2)	kPa	24,4	32,6	35,7	29,8	36,8	34,0	39,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	55,0	62,0	67,0	78,0	91,0	93,0	100
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	66	66	67	67	68	68	68
Sound power level in cooling	(8)(9)	dB(A)	98	98	99	99	100	100	101
SIZE AND WEIGHT									
A	(10)	mm	4000	4000	4000	5250	5250	5250	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3660	3720	3760	4660	5040	5090	5830

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /CA			2702	2722	3152	3602	3902	4202	4502
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	628,7	683,7	766,2	837,8	904,7	956,0	1031
Total power input	(1)	kW	203,9	226,5	251,5	270,8	291,1	311,7	333,0
EER	(1)	kW/kW	3,083	3,019	3,047	3,094	3,108	3,067	3,096
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	626,6	681,5	764,0	835,0	901,7	952,5	1028
EER	(1)(2)	kW/kW	3,040	2,980	3,010	3,050	3,070	3,020	3,060
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		5,27	5,18	5,26	5,34	5,32	5,31	5,32
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	690,2	745,3	837,7	917,2	991,0	1047	1129
Total power input	(5)	kW	212,0	235,5	261,5	281,3	302,4	323,9	346,1
EER	(5)	kW/kW	3,256	3,165	3,203	3,261	3,277	3,232	3,262
23°C/15°C									
Cooling capacity	(6)	kW	794,3	847,9	957,4	1051	1136	1200	1295
Total power input	(6)	kW	225,1	249,9	277,4	298,0	320,5	343,0	366,6
EER	(6)	kW/kW	3,529	3,393	3,451	3,527	3,544	3,499	3,532
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	30,07	32,70	36,64	40,06	43,26	45,72	49,29
Pressure drop	(1)(2)	kPa	44,2	41,6	37,2	44,5	45,8	51,2	46,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	106	115	130	141	153	162	174
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	68	68	68	69	69	70	70
Sound power level in cooling	(8)(9)	dB(A)	101	101	101	102	102	103	103
SIZE AND WEIGHT									
A	(10)	mm	6500	6500	7750	7750	9000	9000	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5690	6110	6970	7440	7890	8000	8700

Notes

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5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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FR-G05-Z /CA			4802	4822	5412	5703	6303	6603
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	1098	1177	1236	1342	1460	1521
Total power input	(1)	kW	353,4	390,4	406,9	431,5	477,7	504,8
EER	(1)	kW/kW	3,107	3,015	3,038	3,110	3,056	3,013
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	1094	1173	1232	1338	1456	1517
EER	(1)(2)	kW/kW	3,060	2,980	3,000	3,070	3,030	2,980
Cooling energy class			B	B	B	B	B	B
SEPR	(3)(4)		5,32	5,30	5,33	5,31	5,30	5,30
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	1203	1283	1352	1471	1600	1666
Total power input	(5)	kW	367,2	406,0	422,9	448,6	497,3	526,2
EER	(5)	kW/kW	3,276	3,160	3,197	3,279	3,217	3,166
23°C/15°C								
Cooling capacity	(6)	kW	1381	1458	1545	1687	1836	1911
Total power input	(6)	kW	389,1	430,7	448,4	475,7	528,4	560,2
EER	(6)	kW/kW	3,549	3,385	3,446	3,546	3,475	3,411
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	52,53	56,31	59,13	64,17	69,81	72,73
Pressure drop	(1)(2)	kPa	50,1	42,3	46,7	41,6	34,7	37,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	3	3	3
No. Circuits		N°	2	2	2	3	3	3
Refrigerant charge		kg	185	199	209	227	260	258
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	70	70	71	71	71	71
Sound power level in cooling	(8)(9)	dB(A)	103	103	104	104	104	104
SIZE AND WEIGHT								
A	(10)	mm	10400	10400	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	8780	9040	10120	12160	12330	12640

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /SL-CA			1502	1702	1902	1922	2202	2602	2652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	304,2	344,9	394,3	450,1	500,7	560,7	582,8
Total power input	(1)	kW	98,67	112,2	126,9	149,7	166,1	185,7	189,1
EER	(1)	kW/kW	3,082	3,074	3,107	3,007	3,014	3,019	3,082
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	303,4	343,9	393,1	449,0	499,3	559,1	581,0
EER	(1)(2)	kW/kW	3,050	3,040	3,070	2,980	2,980	2,990	3,040
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		5,35	5,42	5,35	5,41	5,36	5,33	5,25
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	334,3	378,7	431,6	493,7	548,6	615,1	640,0
Total power input	(5)	kW	102,8	116,8	131,8	156,2	173,1	193,7	196,9
EER	(5)	kW/kW	3,252	3,242	3,275	3,161	3,169	3,176	3,250
23°C/15°C									
Cooling capacity	(6)	kW	385,3	436,1	494,5	567,1	629,3	706,9	736,8
Total power input	(6)	kW	109,5	124,0	139,6	166,7	184,6	206,6	209,5
EER	(6)	kW/kW	3,519	3,517	3,542	3,402	3,409	3,422	3,517
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	14,55	16,49	18,85	21,53	23,94	26,81	27,87
Pressure drop	(1)(2)	kPa	24,7	31,7	35,6	28,3	35,1	35,1	38,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	55,0	62,0	71,0	82,0	91,0	101	106
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	55	56	56	57	57	57	58
Sound power level in cooling	(8)(9)	dB(A)	87	88	88	89	89	90	91
SIZE AND WEIGHT									
A	(10)	mm	4000	4000	5250	5250	5250	6500	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	4130	4190	4680	5140	5520	6140	6390

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-G05-Z /SL-CA			2702	2722	3152	3602	3902	4202	4502
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	615,6	680,7	754,1	819,3	899,1	947,9	1020
Total power input	(1)	kW	204,4	221,1	246,8	262,5	285,1	305,7	327,1
EER	(1)	kW/kW	3,012	3,079	3,056	3,121	3,154	3,101	3,118
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	613,9	678,5	752,0	816,7	896,1	944,5	1017
EER	(1)(2)	kW/kW	2,980	3,040	3,020	3,080	3,110	3,060	3,080
Cooling energy class			B	B	B	B	A	B	B
SEPR	(3)(4)		5,29	5,17	5,24	5,34	5,34	5,31	5,31
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	675,5	742,7	824,6	898,2	985,7	1038	1118
Total power input	(5)	kW	213,2	229,5	256,7	272,5	296,1	317,5	339,8
EER	(5)	kW/kW	3,168	3,236	3,212	3,296	3,329	3,269	3,290
23°C/15°C									
Cooling capacity	(6)	kW	776,9	846,4	942,6	1031	1132	1191	1284
Total power input	(6)	kW	227,4	242,8	272,6	288,4	313,4	335,9	359,8
EER	(6)	kW/kW	3,416	3,486	3,458	3,575	3,612	3,546	3,569
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	29,44	32,55	36,06	39,18	43,00	45,33	48,80
Pressure drop	(1)(2)	kPa	33,7	41,2	36,1	42,6	45,3	50,3	45,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	112	123	136	148	162	171	184
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	58	59	59	59	59	60	60
Sound power level in cooling	(8)(9)	dB(A)	91	92	92	92	92	93	93
SIZE AND WEIGHT									
A	(10)	mm	6500	7750	7750	9000	10250	10250	11650
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	6520	7150	7610	8500	8990	9280	9810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /SL-CA			4802	4822	5412	5703	6303
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	1086	1163	1219	1310	1442
Total power input	(1)	kW	347,6	384,6	401,4	426,7	479,4
EER	(1)	kW/kW	3,124	3,024	3,037	3,070	3,008
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	1082	1160	1215	1306	1439
EER	(1)(2)	kW/kW	3,080	2,990	3,000	3,030	2,980
Cooling energy class			B	B	B	B	B
SEPR	(3)(4)		5,34	5,30	5,33	5,31	5,36
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	1190	1268	1333	1435	1579
Total power input	(5)	kW	361,2	399,9	417,2	444,1	500,4
EER	(5)	kW/kW	3,295	3,171	3,195	3,231	3,155
23°C/15°C							
Cooling capacity	(6)	kW	1367	1442	1525	1645	1809
Total power input	(6)	kW	382,6	423,7	442,4	471,7	533,7
EER	(6)	kW/kW	3,573	3,403	3,447	3,487	3,390
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	51,94	55,63	58,31	62,64	68,95
Pressure drop	(1)(2)	kPa	48,9	41,3	45,4	39,7	33,9
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	3	3
No. Circuits		N°	2	2	2	3	3
Refrigerant charge		kg	197	210	220	237	260
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	60	60	62	62	62
Sound power level in cooling	(8)(9)	dB(A)	93	93	95	95	95
SIZE AND WEIGHT							
A	(10)	mm	11650	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9890	10230	10760	13130	13260

Notes

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FR-G05-Z /E			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	316,5	362,6	413,8	451,2	530,5	575,8	612,9	649,8	703,3
Total power input	(1)	kW	98,32	112,6	128,0	142,3	162,6	177,5	188,6	199,6	221,8
EER	(1)	kW/kW	3,220	3,220	3,233	3,171	3,263	3,244	3,250	3,256	3,171
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	315,8	361,6	412,9	450,1	529,0	574,4	611,2	647,9	701,5
EER	(1)(2)	kW/kW	3,190	3,180	3,200	3,140	3,220	3,210	3,210	3,220	3,140
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,29	5,40	5,41	5,43	5,39	5,25	5,28	5,29	5,26
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	348,8	400,0	456,5	493,5	584,4	633,9	674,6	715,0	768,4
Total power input	(5)	kW	102,1	116,6	132,8	147,4	168,6	184,3	195,6	206,9	229,8
EER	(5)	kW/kW	3,416	3,431	3,438	3,348	3,466	3,440	3,449	3,456	3,344
23°C/15°C											
Cooling capacity	(6)	kW	403,8	464,0	529,5	564,5	676,2	732,8	779,7	826,2	877,3
Total power input	(6)	kW	108,2	122,8	140,5	155,2	178,1	195,3	207,0	218,7	242,3
EER	(6)	kW/kW	3,732	3,779	3,769	3,637	3,797	3,752	3,767	3,778	3,621
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	15,14	17,34	19,79	21,58	25,37	27,54	29,31	31,07	33,63
Pressure drop	(1)(2)	kPa	22,9	30,1	24,0	28,5	35,8	29,5	33,4	37,5	31,4
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	56,0	64,0	74,0	82,0	94,0	102	109	116	125
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	66	67	67	67	67	67	68	68	68
Sound power level in cooling	(8)(9)	dB(A)	98	99	99	99	100	100	101	101	101
SIZE AND WEIGHT											
A	(10)	mm	4000	5250	5250	5250	6500	6500	7750	7750	7750
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3720	4240	4360	4420	5590	5920	6400	6490	6600

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

FR-G05-Z /E			3152	3602	3902	4202	4502	4802	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	785,8	854,0	931,3	986,6	1054	1123	1219	1277
Total power input	(1)	kW	245,6	266,4	288,3	309,5	330,1	350,9	388,4	407,4
EER	(1)	kW/kW	3,200	3,206	3,230	3,188	3,193	3,200	3,139	3,135
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	783,7	851,4	927,8	983,6	1051	1119	1216	1274
EER	(1)(2)	kW/kW	3,160	3,170	3,180	3,150	3,150	3,150	3,110	3,100
Cooling energy class			A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,32	5,35	5,34	5,33	5,36	5,36	5,35	5,37
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	861,8	938,3	1023	1083	1156	1232	1332	1399
Total power input	(5)	kW	254,7	276,2	298,9	320,8	342,2	363,8	403,0	423,0
EER	(5)	kW/kW	3,384	3,397	3,423	3,376	3,378	3,386	3,305	3,307
23°C/15°C										
Cooling capacity	(6)	kW	989,9	1081	1178	1246	1330	1418	1519	1606
Total power input	(6)	kW	269,0	291,7	315,5	338,5	361,1	384,1	425,7	447,6
EER	(6)	kW/kW	3,680	3,706	3,734	3,681	3,683	3,692	3,568	3,588
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	37,58	40,84	44,54	47,18	50,39	53,70	58,31	61,05
Pressure drop	(1)(2)	kPa	34,6	40,9	53,0	42,1	46,1	51,2	34,4	37,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	140	152	166	176	187	200	217	228
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	68	69	69	70	70	70	70	71
Sound power level in cooling	(8)(9)	dB(A)	101	102	102	103	103	103	103	104
SIZE AND WEIGHT										
A	(10)	mm	9000	9000	10250	10250	11650	11650	11650	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7400	7880	8420	8660	9190	9270	10330	11170

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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9 Sound power level in cooling, outdoors.
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FR-G05-Z /SL-E			1502	1702	1902	1922	2202	2602	2652	2702	2722
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	312,8	359,1	409,0	447,3	524,1	568,3	605,2	641,9	696,6
Total power input	(1)	kW	97,03	110,3	126,2	141,4	160,5	176,0	186,6	197,3	220,9
EER	(1)	kW/kW	3,225	3,256	3,241	3,163	3,265	3,229	3,243	3,253	3,153
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	312,1	358,1	408,1	446,2	522,6	566,9	603,6	640,0	694,9
EER	(1)(2)	kW/kW	3,190	3,220	3,210	3,130	3,230	3,200	3,210	3,210	3,120
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,39	5,50	5,51	5,50	5,50	5,51	5,50	5,50	5,50
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	344,4	395,9	450,8	488,8	576,7	625,1	665,7	705,9	760,6
Total power input	(5)	kW	101,0	114,3	131,2	146,8	166,8	183,2	194,1	205,0	229,4
EER	(5)	kW/kW	3,410	3,464	3,436	3,330	3,457	3,412	3,430	3,443	3,316
23°C/15°C											
Cooling capacity	(6)	kW	398,2	458,8	522,1	558,3	666,3	721,6	768,3	814,6	867,4
Total power input	(6)	kW	107,3	120,8	139,1	155,2	176,8	194,7	206,0	217,4	242,9
EER	(6)	kW/kW	3,711	3,798	3,753	3,597	3,769	3,706	3,730	3,747	3,571
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	14,96	17,17	19,56	21,39	25,06	27,18	28,94	30,70	33,31
Pressure drop	(1)(2)	kPa	22,4	29,5	23,4	28,0	34,9	28,7	32,6	36,6	30,8
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	56,0	64,0	74,0	82,0	94,0	102	109	116	125
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	56	57	57	57	57	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	89	89	89	90	91	91	92	92
SIZE AND WEIGHT											
A	(10)	mm	4000	5250	5250	5250	6500	6500	7750	7750	7750
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3960	4460	4620	4680	6120	6460	6940	7040	7140

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

FR-G05-Z

1502 - 7223 288,5-1710 kW

Chiller, air source for outdoor installation

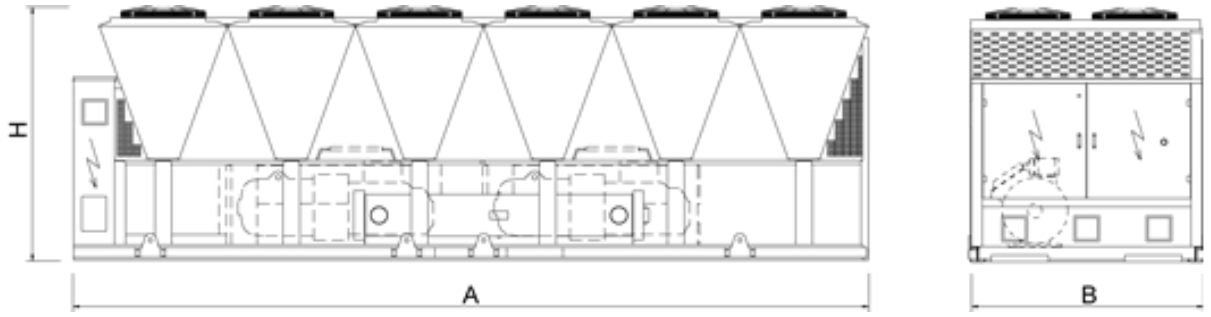
FR-G05-Z /SL-E			3152	3602	3902	4202	4502	4802	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	776,1	841,9	918,4	973,5	1040	1108	1205	1260
Total power input	(1)	kW	244,2	264,3	286,4	307,9	328,4	349,1	389,0	406,2
EER	(1)	kW/kW	3,178	3,185	3,207	3,162	3,167	3,174	3,098	3,102
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	774,1	839,4	915,0	970,6	1037	1104	1202	1257
EER	(1)(2)	kW/kW	3,140	3,150	3,160	3,120	3,130	3,130	3,070	3,070
Cooling energy class			A	A	A	A	A	A	B	B
SEPR	(3)(4)		5,50	5,50	5,51	5,50	5,50	5,51	5,51	5,51
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	850,2	923,7	1008	1067	1140	1215	1315	1380
Total power input	(5)	kW	253,8	274,6	297,6	319,9	341,2	362,9	404,8	422,7
EER	(5)	kW/kW	3,350	3,364	3,387	3,335	3,341	3,348	3,249	3,265
23°C/15°C										
Cooling capacity	(6)	kW	974,9	1062	1158	1227	1310	1396	1499	1582
Total power input	(6)	kW	269,0	290,9	315,3	338,7	361,5	384,6	429,6	449,1
EER	(6)	kW/kW	3,624	3,651	3,673	3,623	3,624	3,630	3,489	3,523
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	37,11	40,26	43,92	46,55	49,72	52,98	57,62	60,28
Pressure drop	(1)(2)	kPa	33,7	39,7	51,5	41,0	44,9	49,8	33,6	36,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	140	152	166	176	187	200	217	228
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	59	59	59	60	60	60	60	62
Sound power level in cooling	(8)(9)	dB(A)	92	92	92	93	93	93	93	95
SIZE AND WEIGHT										
A	(10)	mm	9000	9000	10250	10250	11650	11650	11650	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7990	8500	8990	9290	9830	9910	10900	11530

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

FR HFO-Z

1502 - 7823 234,7-1463 kW

Chiller, air source for outdoor installation



Outdoor unit for the production of chilled water with semi-hermetic screw compressors optimized for HFO refrigerant R1234ze, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation and the accurate sizing of all internal components. The compressors feature an enhanced lubrication system, an innovative internal geometry and a different control of capacity steps. Innovations that grant a remarkable performance improvement especially at partial loads.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R1234ze

Versions

A High efficiency

SL-A Super low noise, high efficiency

Configurations

- Basic function

D Partial condensing heat recovery function

Features

HFO REFRIGERANT
4th generation refrigerant HFO 1234ze, with negligible greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of HFO 1234ze < 1, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer.

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

EXTREMELY SILENT OPERATION
As the result of a systematic design oriented to minimize the noise level, the silenced version units give the best combination of quietness and efficiency on the market.

FLEXIBILITY
Flexibility in the applications thanks to the many configurations and versions available.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C (-15°C with accessories) to 48°C (52°C with accessories) of outdoor air temperature and up to 18°C (20°C with accessories) of evaporator leaving water temperature.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Compressor enclosure (standard on silenced versions)
- Leak detector
- Kit HT to increase the unit operating range
- Compressor power factor correction
- Soft start
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

FR HFO-Z /A			1502	1702	1802	1922	2202	2602	2702	2722	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	237,5	269,7	293,1	339,6	377,1	414,8	483,4	533,4	631,7
Total power input	(1)	kW	74,04	84,99	91,95	103,9	118,5	131,7	152,7	167,7	199,3
EER	(1)	kW/kW	3,209	3,173	3,186	3,269	3,182	3,150	3,166	3,181	3,170
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	236,7	268,9	292,4	338,7	376,0	413,4	482,2	531,8	629,5
EER	(1)(2)	kW/kW	3,160	3,130	3,150	3,230	3,140	3,110	3,130	3,140	3,120
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,18	5,34	5,48	5,23	5,29	5,17	5,34	5,17	5,43
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	262,4	297,1	322,8	371,1	414,1	455,1	531,4	582,2	693,8
Total power input	(5)	kW	76,66	88,28	95,68	107,4	122,7	136,1	158,1	173,1	205,9
EER	(5)	kW/kW	3,421	3,365	3,373	3,455	3,375	3,344	3,361	3,363	3,370
23°C/15°C											
Cooling capacity	(6)	kW	305,2	343,9	373,5	424,0	476,8	523,5	612,9	664,2	799,3
Total power input	(6)	kW	80,86	93,58	101,7	112,8	129,5	143,2	166,7	181,4	216,1
EER	(6)	kW/kW	3,773	3,674	3,673	3,759	3,682	3,656	3,677	3,662	3,699
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	11,36	12,90	14,02	16,24	18,04	19,84	23,12	25,51	30,21
Pressure drop	(1)(2)	kPa	33,0	31,4	20,7	27,8	34,3	41,5	29,7	36,2	44,6
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	43,0	47,0	51,0	58,0	63,0	70,0	81,0	86,0	108
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	66	67	67	68	68	68	68	70	69
Sound power level in cooling	(8)(9)	dB(A)	98	99	99	100	100	100	100	102	102
SIZE AND WEIGHT											
A	(10)	mm	4000	4000	4000	4000	4000	5250	5250	5250	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3640	3665	3740	3980	4610	5060	5120	5120	6760

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

FR HFO-Z

1502 - 7823 234,7-1463 kW

Chiller, air source for outdoor installation

FR HFO-Z /A			4202	4802	4822	6002	6022	6603	7203	7223	7823
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	727,1	840,5	900,3	983,8	1065	1152	1271	1384	1452
Total power input	(1)	kW	229,4	268,6	279,6	311,3	334,5	363,3	404,7	434,4	460,7
EER	(1)	kW/kW	3,170	3,129	3,220	3,160	3,184	3,171	3,141	3,186	3,152
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	724,5	838,5	897,3	980,8	1062	1149	1267	1379	1447
EER	(1)(2)	kW/kW	3,120	3,100	3,180	3,120	3,140	3,130	3,100	3,140	3,110
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,17	5,30	5,05	5,49	5,34	5,23	5,28	5,13	5,20
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	797,8	922,7	981,8	1081	1164	1265	1396	1509	1584
Total power input	(5)	kW	236,9	278,5	288,1	322,1	345,6	375,6	419,7	448,9	476,5
EER	(5)	kW/kW	3,368	3,313	3,408	3,356	3,368	3,368	3,326	3,362	3,324
23°C/15°C											
Cooling capacity	(6)	kW	917,9	1062	1118	1245	1329	1456	1609	1717	1802
Total power input	(6)	kW	248,4	293,9	300,5	339,3	363,0	394,7	443,0	470,6	500,7
EER	(6)	kW/kW	3,695	3,613	3,720	3,669	3,661	3,689	3,632	3,649	3,599
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	34,77	40,19	43,05	47,05	50,95	55,11	60,78	66,17	69,44
Pressure drop	(1)(2)	kPa	47,0	30,6	45,4	41,9	46,1	40,5	40,2	47,7	52,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	3	3	3	3
No. Circuits		N°	2	2	2	2	2	3	3	3	3
Refrigerant charge		kg	124	134	139	167	171	189	195	203	218
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	70	71	71	73	73	73	73	73	73
Sound power level in cooling	(8)(9)	dB(A)	103	104	104	106	106	106	106	106	106
SIZE AND WEIGHT											
A	(10)	mm	7750	7750	9000	10400	10400	11650	11650	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7535	7820	8145	9040	9044	11932	11950	12600	12750

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR HFO-Z /SL-A			1502	1702	1802	1922	2202	2602	2702	2722	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	234,7	266,2	289,0	336,9	371,6	414,6	476,6	528,1	622,8
Total power input	(1)	kW	72,69	84,06	91,27	103,3	118,0	129,0	151,9	168,2	198,4
EER	(1)	kW/kW	3,228	3,165	3,165	3,261	3,149	3,214	3,138	3,140	3,139
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	233,9	265,4	288,4	336,0	370,5	413,2	475,4	526,6	620,7
EER	(1)(2)	kW/kW	3,180	3,130	3,140	3,220	3,110	3,170	3,110	3,100	3,100
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,31	5,45	5,59	5,37	5,35	5,27	5,42	5,27	5,49
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	259,2	293,1	318,0	367,9	407,6	455,1	523,6	576,2	683,6
Total power input	(5)	kW	75,44	87,54	95,23	107,0	122,5	133,3	157,6	174,2	205,3
EER	(5)	kW/kW	3,438	3,350	3,340	3,438	3,327	3,414	3,322	3,308	3,330
23°C/15°C											
Cooling capacity	(6)	kW	301,1	338,8	367,4	419,8	468,7	523,9	603,2	657,1	786,5
Total power input	(6)	kW	79,89	93,17	101,6	112,8	129,9	140,1	166,8	183,4	216,1
EER	(6)	kW/kW	3,768	3,635	3,616	3,722	3,608	3,739	3,616	3,583	3,640
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	11,22	12,73	13,82	16,11	17,77	19,83	22,79	25,25	29,78
Pressure drop	(1)(2)	kPa	32,2	30,6	20,1	27,4	33,3	41,5	28,9	35,5	43,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	43,0	47,0	51,0	58,0	63,0	73,0	81,0	86,0	108
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	55	55	55	56	57	57	57	58	58
Sound power level in cooling	(8)(9)	dB(A)	87	87	87	88	89	89	89	90	91
SIZE AND WEIGHT											
A	(10)	mm	4000	4000	4000	4000	4000	5250	5250	5250	6500
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	3640	3665	3740	3980	4610	5050	5120	5120	6760

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

FR HFO-Z

Chiller, air source for outdoor installation

1502 - 7823 234,7-1463 kW

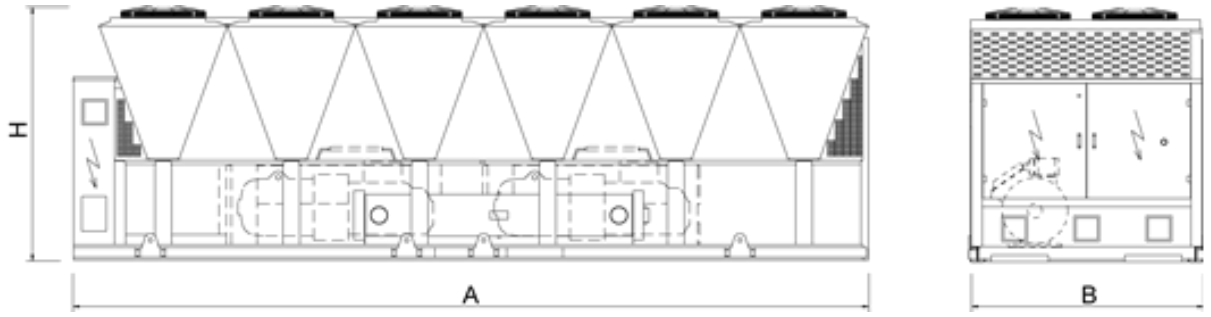
FR HFO-Z /SL-A			4202	4802	4822	6002	6022	6603	7203	7223	7823
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	717,9	831,0	892,1	971,0	1054	1137	1261	1379	1463
Total power input	(1)	kW	228,4	258,0	280,1	309,7	335,0	362,7	400,3	430,7	466,7
EER	(1)	kW/kW	3,143	3,221	3,185	3,135	3,146	3,135	3,150	3,202	3,135
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	715,4	828,6	889,2	968,1	1051	1134	1257	1375	1460
EER	(1)(2)	kW/kW	3,100	3,180	3,140	3,100	3,110	3,100	3,110	3,160	3,110
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,25	5,37	5,14	5,56	5,42	5,29	5,38	5,23	5,35
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	787,2	912,1	972,0	1066	1150	1247	1385	1503	1594
Total power input	(5)	kW	236,5	267,1	289,3	321,2	347,0	376,0	415,6	445,8	484,2
EER	(5)	kW/kW	3,329	3,415	3,360	3,319	3,314	3,316	3,333	3,371	3,292
23°C/15°C											
Cooling capacity	(6)	kW	904,7	1050	1105	1226	1310	1433	1595	1708	1809
Total power input	(6)	kW	249,0	281,0	303,2	339,6	365,9	396,7	439,6	468,3	511,1
EER	(6)	kW/kW	3,633	3,737	3,644	3,610	3,580	3,612	3,628	3,647	3,539
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	34,33	39,74	42,66	46,44	50,42	54,36	60,32	65,92	69,95
Pressure drop	(1)(2)	kPa	45,8	38,7	44,6	40,8	45,1	39,4	39,6	47,3	31,1
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	3	3	3	3
No. Circuits		N°	2	2	2	2	2	3	3	3	3
Refrigerant charge		kg	124	134	139	167	171	189	204	213	223
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	59	60	61	61	61	61	61	62	62
Sound power level in cooling	(8)(9)	dB(A)	92	93	94	94	94	94	94	95	95
SIZE AND WEIGHT											
A	(10)	mm	7750	9000	9000	10400	10400	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7535	8100	8145	9040	9044	11932	12500	12700	12800

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

i-FR-G01-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW



Outdoor unit for the production of chilled water with semi-hermetic variable-speed screw compressors optimized for R134a, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
The screw compressors feature the variable speed technology thanks to the integrated refrigerant cooled inverter, for the maximum compactness and operating flexibility. Moreover, they feature the Variable Vi (compression ratio) technology, to change the internal geometry according to the operating conditions.
Thanks to the accurate sizing of all internal components and the use of variable speed technology, the unit ensures flexibility, reliability and maximum efficiency in every operating condition.

Control

W3000TE

W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R134a

Versions

K	Standard efficiency
SL-K	Super low noise, standard efficiency
A	High efficiency
SL-A	Super low noise, high efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function
R	Total condensing heat recovery function

Features

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

ErP COMPLIANT 2021
Thanks to the inverter technology and the accurate design, the units already comply and exceed the minimum seasonal energy efficiency requirements that will start from 2021, imposed by the eco-sustainable design Directive 2009/125/EC.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model), the availability of devoted kits and smart control logics allow unit's operation from -20°C up to 55°C of outdoor air temperature and from -8°C to 20°C of evaporator leaving water temperature.

REDUCED FOOTPRINT
These new units have a reduced footprint, making them the best solution both for new plants (thanks to high efficiency) and for the replacement of obsolete units in existing plants, offering a very high efficiency increase with same dimensions and cooling capacity.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

ADAPTABILITY
Adaptability at the building's heating request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

HARMONY BETWEEN UNIT AND PLANT
Low inrush current and power factor higher than similar fixed speed units, permit an easy electrical installation which is not stressed during start-up and with no need of extra devices for power factor correction. The use of VSD technology allows the unit to partialize in a stepless way, with consequent lower fluctuations of leaving water temperature.

Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor (for K versions)
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Leak detector
- Kit HT to increase the unit operating range
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Mitsubishi M-Net, Echelon, Bacnet, Bacnet over-IP.

i-FR-G01-Z/K			2202	2602	2652	2702	2722	3152	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	478,6	531,1	561,2	598,1	656,7	720,7	801,4
Total power input	(1)	kW	165,1	181,6	190,6	200,8	227,7	252,4	278,6
EER	(1)	kW/kW	2,899	2,925	2,944	2,979	2,884	2,855	2,877
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	477,3	529,4	559,6	596,2	654,7	718,2	798,9
EER	(1)(2)	kW/kW	2,870	2,890	2,910	2,940	2,850	2,820	2,840
Cooling energy class			C	C	B	B	C	C	C
SEPR	(3)(4)		5,69	5,63	5,61	5,63	5,55	5,60	5,66
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	523,5	580,9	614,5	655,2	718,8	788,5	877,1
Total power input	(5)	kW	171,6	188,9	198,4	208,9	237,7	264,9	293,8
EER	(5)	kW/kW	3,051	3,075	3,097	3,136	3,024	2,977	2,985
23°C/15°C									
Cooling capacity	(6)	kW	599,1	665,1	704,8	752,0	824,0	903,3	1005
Total power input	(6)	kW	181,2	199,9	210,1	221,5	253,5	285,7	319,8
EER	(6)	kW/kW	3,306	3,327	3,355	3,395	3,250	3,162	3,143
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	22,89	25,40	26,84	28,60	31,40	34,47	38,33
Pressure drop	(1)(2)	kPa	32,0	39,5	35,2	40,0	38,3	46,2	40,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	69,0	76,0	80,0	88,0	94,0	104	117
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	67	68	68	68	69	68	68
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	100	101	101	101
SIZE AND WEIGHT									
A	(10)	mm	4150	5400	5400	5400	5400	6650	6650
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	4790	5360	5360	5420	5730	6150	6240

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G01-Z/K			3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	874,1	932,0	990,3	1029	1054	1128	1169
Total power input	(1)	kW	299,6	317,8	343,7	368,3	352,1	389,0	413,1
EER	(1)	kW/kW	2,918	2,933	2,881	2,794	2,993	2,900	2,830
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	871,3	928,7	987,3	1026	1050	1124	1166
EER	(1)(2)	kW/kW	2,880	2,890	2,850	2,760	2,950	2,860	2,800
Cooling energy class			C	C	C	C	B	C	C
SEPR	(3)(4)		5,54	5,55	5,74	5,73	5,61	5,52	5,79
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	954,6	1015	1080	1123	1153	1233	1276
Total power input	(5)	kW	315,2	333,7	360,2	385,9	367,3	406,6	431,8
EER	(5)	kW/kW	3,029	3,042	2,998	2,910	3,139	3,032	2,955
23°C/15°C									
Cooling capacity	(6)	kW	1062	1098	1203	1279	1318	1409	1455
Total power input	(6)	kW	326,1	329,4	371,1	414,7	391,7	435,2	462,1
EER	(6)	kW/kW	3,257	3,333	3,242	3,084	3,365	3,238	3,149
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	41,80	44,57	47,36	49,20	50,41	53,94	55,90
Pressure drop	(1)(2)	kPa	42,8	48,7	42,4	45,8	48,1	51,7	41,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	127	135	140	146	151	164	168
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	69	70	70	71	71	72	72
Sound power level in cooling	(8)(9)	dB(A)	102	103	103	104	104	105	105
SIZE AND WEIGHT									
A	(10)	mm	7900	7900	7900	7900	9150	9150	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	6730	6810	7410	7760	8360	8470	8560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z/K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1242	1302	1409	1493	1559	1649	1697
Total power input	(1)	kW	421,2	457,9	478,8	522,8	555,4	572,1	593,5
EER	(1)	kW/kW	2,949	2,843	2,943	2,856	2,807	2,882	2,859
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1238	1297	1405	1488	1555	1644	1691
EER	(1)(2)	kW/kW	2,910	2,800	2,910	2,820	2,780	2,850	2,820
Cooling energy class			B	C	B	C	C	C	C
SEPR	(3)(4)		5,82	5,68	5,54	5,58	5,63	5,53	5,54
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1357	1420	1536	1628	1702	1801	1854
Total power input	(5)	kW	438,8	477,1	502,9	547,5	582,2	598,4	621,4
EER	(5)	kW/kW	3,093	2,976	3,054	2,974	2,923	3,010	2,984
23°C/15°C									
Cooling capacity	(6)	kW	1550	1618	1661	1827	1941	2056	2117
Total power input	(6)	kW	466,9	507,9	497,0	571,6	626,2	641,1	666,9
EER	(6)	kW/kW	3,320	3,186	3,342	3,196	3,100	3,207	3,174
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	59,42	62,28	67,38	71,40	74,58	78,86	81,17
Pressure drop	(1)(2)	kPa	47,1	51,8	45,9	51,5	39,6	44,3	50,4
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	181	186	205	212	221	237	250
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	72	72	72	72	72	73	73
Sound power level in cooling	(8)(9)	dB(A)	105	105	105	105	105	106	106
SIZE AND WEIGHT									
A	(10)	mm	10400	10400	11650	11650	11650	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9030	9060	10880	11620	11940	12420	12440

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G01-Z/SL-K			2202	2602	2652	2702	2722	3152	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	477,0	516,7	554,6	578,0	662,9	711,3	774,2
Total power input	(1)	kW	161,3	169,9	187,5	203,5	219,1	249,6	283,5
EER	(1)	kW/kW	2,957	3,041	2,958	2,840	3,026	2,850	2,731
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	475,7	515,1	553,0	576,3	660,9	708,9	772,0
EER	(1)(2)	kW/kW	2,930	3,000	2,920	2,810	2,990	2,810	2,700
Cooling energy class			B	B	B	C	B	C	C
SEPR	(3)(4)		5,86	5,80	5,81	5,61	5,65	5,72	5,75
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	522,0	565,5	607,6	632,9	726,3	778,4	846,7
Total power input	(5)	kW	167,6	176,5	195,1	212,1	228,5	262,0	299,6
EER	(5)	kW/kW	3,115	3,204	3,114	2,984	3,179	2,971	2,826
23°C/15°C									
Cooling capacity	(6)	kW	598,1	647,9	697,4	725,8	833,9	892,0	987,2
Total power input	(6)	kW	177,1	186,3	206,7	225,1	243,5	282,7	322,8
EER	(6)	kW/kW	3,377	3,478	3,374	3,224	3,425	3,155	3,058
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	22,81	24,71	26,52	27,64	31,70	34,02	37,02
Pressure drop	(1)(2)	kPa	31,8	37,4	34,4	37,3	39,1	45,0	38,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	72,0	79,0	84,0	88,0	101	109	117
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	61	61	61	61	61	61
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94	94
SIZE AND WEIGHT									
A	(10)	mm	5400	5400	5400	5400	6650	6650	6650
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5510	5680	5700	5720	6480	6510	6550

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z/SL-K			3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	845,6	903,1	972,7	1028	1046	1120	1162
Total power input	(1)	kW	304,7	323,1	342,2	358,3	344,9	381,1	404,9
EER	(1)	kW/kW	2,775	2,795	2,842	2,869	3,033	2,939	2,870
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	843,1	900,1	969,8	1025	1042	1116	1159
EER	(1)(2)	kW/kW	2,740	2,760	2,810	2,830	2,990	2,900	2,840
Cooling energy class			C	C	C	C	B	B	C
SEPR	(3)(4)		5,62	5,57	5,78	5,77	5,75	5,67	5,79
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	922,6	982,7	1061	1123	1144	1225	1270
Total power input	(5)	kW	321,0	339,5	358,9	374,8	359,4	397,9	422,9
EER	(5)	kW/kW	2,874	2,895	2,956	2,996	3,183	3,079	3,003
23°C/15°C									
Cooling capacity	(6)	kW	1043	1078	1203	1306	1310	1402	1478
Total power input	(6)	kW	329,2	332,5	365,3	395,4	382,7	425,2	446,1
EER	(6)	kW/kW	3,168	3,242	3,293	3,303	3,423	3,297	3,313
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	40,44	43,19	46,52	49,15	50,01	53,58	55,57
Pressure drop	(1)(2)	kPa	40,1	45,7	40,9	45,7	47,3	51,0	41,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	127	135	146	155	159	172	177
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	62	63	63	63	63	63	63
Sound power level in cooling	(8)(9)	dB(A)	95	96	96	96	96	96	96
SIZE AND WEIGHT									
A	(10)	mm	7900	7900	9150	9150	10400	10400	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7070	7150	8290	8670	9110	9110	9360

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-G01-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G01-Z/SL-K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1199	1290	1365	1474	1541	1590	1635
Total power input	(1)	kW	428,2	451,3	486,9	519,0	548,8	584,9	607,6
EER	(1)	kW/kW	2,800	2,858	2,803	2,840	2,808	2,718	2,691
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1195	1286	1361	1469	1537	1586	1630
EER	(1)(2)	kW/kW	2,770	2,820	2,770	2,800	2,780	2,690	2,660
Cooling energy class			C	C	C	C	C	D	D
SEPR	(3)(4)		5,89	5,77	5,83	5,97	5,89	5,78	5,74
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1308	1408	1486	1608	1683	1734	1821
Total power input	(5)	kW	447,2	470,2	511,6	543,7	575,2	613,5	627,3
EER	(5)	kW/kW	2,925	2,994	2,905	2,958	2,926	2,826	2,903
23°C/15°C									
Cooling capacity	(6)	kW	1522	1605	1631	1839	1961	2019	2079
Total power input	(6)	kW	471,3	500,2	501,6	559,8	607,1	647,2	673,3
EER	(6)	kW/kW	3,229	3,209	3,252	3,285	3,230	3,120	3,088
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	57,32	61,67	65,28	70,50	73,70	76,02	78,18
Pressure drop	(1)(2)	kPa	43,9	50,8	43,1	50,2	38,7	41,2	46,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	181	195	205	222	232	242	250
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	63	63	63	63	63	64	64
Sound power level in cooling	(8)(9)	dB(A)	96	96	96	96	96	97	97
SIZE AND WEIGHT									
A	(10)	mm	10400	11650	11650	12900	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9370	9780	11350	12550	12870	12890	12910

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z/A			2202	2602	2652	2702	2722	3152	3602	3902
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	510,2	551,9	590,0	626,9	684,3	767,2	839,9	899,4
Total power input	(1)	kW	157,1	170,7	181,9	195,0	213,4	246,9	274,6	291,3
EER	(1)	kW/kW	3,248	3,233	3,244	3,215	3,207	3,107	3,059	3,088
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	508,7	550,4	588,2	624,8	682,1	765,0	837,1	896,4
EER	(1)(2)	kW/kW	3,210	3,200	3,200	3,170	3,160	3,070	3,020	3,050
Cooling energy class			A	A	A	A	A	B	B	B
SEPR	(3)(4)		6,16	6,07	6,05	6,10	5,94	6,05	6,06	5,84
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	559,2	605,1	647,1	687,6	750,2	841,2	920,2	983,7
Total power input	(5)	kW	162,8	177,2	188,9	202,5	222,3	258,7	288,8	306,2
EER	(5)	kW/kW	3,435	3,415	3,426	3,396	3,375	3,252	3,186	3,213
23°C/15°C										
Cooling capacity	(6)	kW	642,0	695,3	743,9	790,9	862,1	966,8	1057	1098
Total power input	(6)	kW	171,2	186,9	199,6	214,4	236,5	278,4	313,2	316,4
EER	(6)	kW/kW	3,750	3,720	3,727	3,689	3,645	3,473	3,375	3,470
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	24,40	26,39	28,22	29,98	32,73	36,69	40,16	43,01
Pressure drop	(1)(2)	kPa	36,4	34,0	38,9	43,9	41,6	37,3	44,7	45,3
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	79,0	81,0	87,0	92,0	100	113	123	133
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	67	68	67	67	68	68	68	69
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	100	101	101	101	102
SIZE AND WEIGHT										
A	(10)	mm	5400	5400	6650	6650	6650	7900	7900	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5270	5330	5730	5800	6130	6610	6670	7130

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G01-Z/A			4202	4502	4802	4822	5412	5703	6303	6603
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	959,4	1028	1099	1162	1230	1334	1467	1520
Total power input	(1)	kW	307,8	326,5	343,9	373,0	385,1	434,5	473,6	498,0
EER	(1)	kW/kW	3,117	3,149	3,196	3,115	3,194	3,070	3,098	3,052
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	955,9	1025	1095	1159	1226	1330	1463	1516
EER	(1)(2)	kW/kW	3,070	3,110	3,150	3,080	3,150	3,030	3,070	3,020
Cooling energy class			B	A	A	B	A	B	B	B
SEPR	(3)(4)		5,77	5,90	5,98	5,92	5,88	5,88	5,81	5,79
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	1047	1124	1203	1273	1347	1461	1602	1661
Total power input	(5)	kW	323,2	341,2	357,7	388,6	400,1	457,2	498,2	522,6
EER	(5)	kW/kW	3,239	3,294	3,363	3,276	3,367	3,196	3,216	3,178
23°C/15°C										
Cooling capacity	(6)	kW	1137	1259	1381	1459	1545	1648	1742	1843
Total power input	(6)	kW	319,3	349,7	379,7	413,6	423,9	480,6	493,5	531,3
EER	(6)	kW/kW	3,561	3,600	3,637	3,528	3,645	3,429	3,530	3,469
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	45,88	49,16	52,54	55,59	58,81	63,78	70,16	72,70
Pressure drop	(1)(2)	kPa	51,6	45,7	50,1	41,2	46,2	41,1	35,1	37,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	3	3	3
No. Circuits		N°	2	2	2	2	2	3	3	3
Refrigerant charge		kg	141	151	161	173	182	197	226	224
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	70	70	71	72	72	72	72	72
Sound power level in cooling	(8)(9)	dB(A)	103	103	104	105	105	105	105	105
SIZE AND WEIGHT										
A	(10)	mm	9150	10400	10400	10400	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7150	8270	8750	8850	9390	11000	11150	11500

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z/SL-A			2202	2602	2652	2702	2722	3152	3602	3902
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	498,8	559,5	581,8	615,1	682,8	751,6	811,9	891,5
Total power input	(1)	kW	155,7	175,2	178,0	194,0	208,0	240,9	264,1	283,2
EER	(1)	kW/kW	3,204	3,193	3,269	3,171	3,283	3,120	3,074	3,148
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	497,4	557,9	580,0	613,4	680,6	749,5	809,4	888,6
EER	(1)(2)	kW/kW	3,170	3,160	3,230	3,130	3,240	3,080	3,040	3,110
Cooling energy class			A	A	A	A	A	B	B	A
SEPR	(3)(4)		6,28	6,17	6,11	6,13	5,98	6,09	6,16	6,08
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	546,3	613,6	638,1	674,9	749,0	824,1	890,1	975,7
Total power input	(5)	kW	161,6	182,2	184,9	201,9	216,6	252,6	277,6	297,8
EER	(5)	kW/kW	3,381	3,368	3,451	3,343	3,458	3,262	3,206	3,276
23°C/15°C										
Cooling capacity	(6)	kW	626,7	705,4	733,8	776,4	861,6	947,2	1023	1091
Total power input	(6)	kW	170,5	192,9	195,6	214,3	230,4	272,2	301,0	307,8
EER	(6)	kW/kW	3,676	3,657	3,752	3,623	3,740	3,480	3,399	3,545
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	23,85	26,76	27,82	29,42	32,65	35,94	38,83	42,63
Pressure drop	(1)(2)	kPa	34,8	35,0	37,8	33,6	41,5	35,8	41,8	44,5
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	79,0	88,0	92,0	97,0	107	118	129	141
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	60	60	60	60	61	61	61	62
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94	94	95
SIZE AND WEIGHT										
A	(10)	mm	5400	6650	6650	6650	7900	7900	9150	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5590	6030	6070	6400	6930	6970	7460	8000

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G01-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

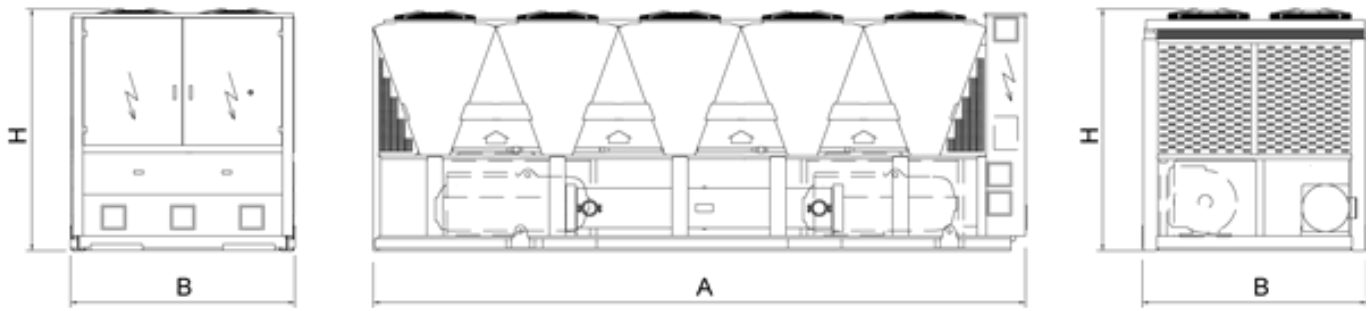
i-FR-G01-Z/SL-A			4202	4502	4802	4822	5412	5703	6303
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	942,8	1016	1086	1149	1213	1332	1462
Total power input	(1)	kW	299,7	318,3	335,7	364,6	377,2	438,1	473,2
EER	(1)	kW/kW	3,146	3,192	3,235	3,151	3,216	3,040	3,090
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	939,4	1013	1082	1146	1209	1328	1458
EER	(1)(2)	kW/kW	3,100	3,150	3,190	3,110	3,170	3,010	3,060
Cooling energy class			A	A	A	A	A	B	B
SEPR	(3)(4)		6,04	6,14	6,08	6,00	6,08	6,17	6,11
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1029	1112	1190	1259	1329	1458	1594
Total power input	(5)	kW	314,9	332,7	349,2	379,8	392,0	462,1	498,5
EER	(5)	kW/kW	3,268	3,342	3,408	3,315	3,390	3,155	3,198
23°C/15°C									
Cooling capacity	(6)	kW	1120	1247	1366	1444	1524	1644	1730
Total power input	(6)	kW	311,1	340,9	370,5	404,1	415,4	487,4	493,7
EER	(6)	kW/kW	3,600	3,658	3,687	3,573	3,669	3,373	3,504
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	45,09	48,60	51,92	54,96	58,00	63,72	69,92
Pressure drop	(1)(2)	kPa	49,8	44,7	48,9	40,3	44,9	41,0	34,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	3	3
No. Circuits		N°	2	2	2	2	2	3	3
Refrigerant charge		kg	149	160	171	183	191	206	226
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	63	63	63	63	63	63	63
Sound power level in cooling	(8)(9)	dB(A)	96	96	96	96	96	96	96
SIZE AND WEIGHT									
A	(10)	mm	10400	11650	11650	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	8070	9050	9450	9630	10030	11520	11520

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

i-FR-G04-Z

Chiller, air source for outdoor installation

2202 - 7823 382,7-1463 kW



Outdoor unit for the production of chilled water with semi-hermetic variable-speed screw compressors optimized for HFO R1234ze refrigerant, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
The screw compressors feature the variable speed technology thanks to the integrated refrigerant cooled inverter, for the maximum compactness and operating flexibility. Moreover, they feature the Variable Vi (compression ratio) technology, to change the internal geometry according to the operating conditions.
Thanks to the accurate sizing of all internal components and the use of variable speed technology, the unit ensures flexibility, reliability and maximum efficiency in every operating condition.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R1234ze

Versions

A High efficiency
SL-A Super low noise, high efficiency

Configurations

- Basic function
D Partial condensing heat recovery function

Features

HFO REFRIGERANT
4th generation refrigerant HFO 1234ze, with negligible greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of HFO 1234ze < 1, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer.

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

ErP COMPLIANT 2021
Thanks to the inverter technology and the accurate design, the units already comply and exceed the minimum seasonal energy efficiency requirements that will start from 2021, imposed by the eco-sustainable design Directive 2009/125/EC.

REFRIGERANT LEAK DETECTOR
It is supplied factory mounted inside each compressor enclosure and wired in the electrical board. In case of leak detection it will raise an alarm.

WIDE OPERATING RANGE
The accurate condensation control (EC fans as standard on every model), the availability of devoted kits and smart control logics allow unit's operation from -15°C up to 55°C of outdoor air temperature and up to 20°C of evaporator leaving water temperature.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

ADAPTABILITY
Adaptability at the building's heating request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

HARMONY BETWEEN UNIT AND PLANT
Low inrush current and power factor higher than similar fixed speed units, permit an easy electrical installation which is not stressed during start-up and with no need of extra devices for power factor correction. The use of VSD technology allows the unit to partialize in a stepless way, with consequent lower fluctuations of leaving water temperature.

Accessories

- Noise reducer (only on not silenced versions)
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Kit HT to increase the unit operating range
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Mitsubishi M-Net, Echelon, Bacnet, Bacnet over-IP.

i-FR-G04-Z /A			2202	2602	2702	2722	3602	4202	4802
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	382,7	417,9	486,9	534,8	642,0	725,9	843,1
Total power input	(1)	kW	117,7	130,2	147,7	168,4	211,1	237,1	281,3
EER	(1)	kW/kW	3,251	3,210	3,297	3,176	3,041	3,062	2,997
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	381,5	416,4	485,7	533,2	639,7	723,4	841,1
EER	(1)(2)	kW/kW	3,210	3,160	3,260	3,140	3,000	3,020	2,970
Cooling energy class			A	A	A	A	B	B	B
SEPR	(3)(4)		5,87	5,83	6,01	5,74	5,93	6,39	5,85
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	420,4	458,8	536,3	587,8	707,3	797,1	929,5
Total power input	(5)	kW	122,5	135,3	153,6	175,3	218,7	243,9	287,2
EER	(5)	kW/kW	3,432	3,391	3,492	3,353	3,234	3,268	3,236
23°C/15°C									
Cooling capacity	(6)	kW	484,3	528,2	620,4	677,5	818,9	917,8	1077
Total power input	(6)	kW	130,0	143,1	162,8	186,3	231,1	254,4	294,4
EER	(6)	kW/kW	3,725	3,691	3,811	3,637	3,543	3,608	3,658
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	18,30	19,98	23,29	25,58	30,70	34,71	40,32
Pressure drop	(1)(2)	kPa	35,3	42,1	30,1	36,4	46,1	46,8	30,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	63,0	70,0	81,0	86,0	108	124	134
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	67	68	68	69	68	70	72
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	101	101	103	105
SIZE AND WEIGHT									
A	(10)	mm	4150	5400	5400	5400	6650	7900	7900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	4780	5220	5360	5430	6060	6820	7810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-G04-Z

Chiller, air source for outdoor installation

2202 - 7823 382,7-1463 kW

i-FR-G04-Z /A			4822	6002	6022	6603	7203	7223	7823
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	915,7	994,1	1038	1146	1280	1399	1463
Total power input	(1)	kW	305,7	322,1	340,6	379,0	423,0	471,2	499,3
EER	(1)	kW/kW	2,995	3,086	3,048	3,024	3,026	2,969	2,930
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	912,6	991,0	1035	1143	1276	1394	1458
EER	(1)(2)	kW/kW	2,960	3,050	3,010	2,990	2,990	2,930	2,890
Cooling energy class			B	B	B	B	B	B	C
SEPR	(3)(4)		5,71	5,80	5,78	5,88	5,86	5,75	5,65
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1007	1095	1143	1263	1412	1539	1609
Total power input	(5)	kW	311,4	327,5	346,7	386,4	431,8	480,7	509,5
EER	(5)	kW/kW	3,234	3,344	3,297	3,269	3,270	3,202	3,158
23°C/15°C									
Cooling capacity	(6)	kW	1162	1267	1322	1464	1638	1774	1855
Total power input	(6)	kW	317,6	333,3	353,4	395,4	442,5	491,6	521,2
EER	(6)	kW/kW	3,659	3,801	3,741	3,703	3,702	3,609	3,559
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	43,79	47,54	49,65	54,79	61,21	66,89	69,95
Pressure drop	(1)(2)	kPa	47,0	42,8	43,8	40,1	40,8	48,7	53,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	3	3	3	3
No. Circuits		N°	2	2	2	3	3	3	3
Refrigerant charge		kg	139	167	171	189	195	203	218
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	72	72	72	72	72	73	73
Sound power level in cooling	(8)(9)	dB(A)	105	105	105	105	105	106	106
SIZE AND WEIGHT									
A	(10)	mm	9150	10400	10400	11650	11650	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	8240	8780	8880	11170	11800	12430	12390

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-G04-Z /SL-A			2202	2602	2702	2722	3602	4202	4802
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	377,2	421,3	480,7	527,2	633,2	718,2	832,9
Total power input	(1)	kW	116,8	125,4	145,9	167,1	207,2	234,4	269,9
EER	(1)	kW/kW	3,229	3,360	3,295	3,155	3,056	3,064	3,086
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	376,1	419,8	479,5	525,7	631,0	715,7	830,5
EER	(1)(2)	kW/kW	3,190	3,310	3,260	3,120	3,010	3,020	3,050
Cooling energy class			A	A	A	A	B	B	B
SEPR	(3)(4)		5,99	6,05	6,17	5,93	5,99	6,43	6,02
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	414,0	462,9	528,9	578,7	696,8	787,9	918,3
Total power input	(5)	kW	121,9	130,2	152,2	174,4	215,3	241,7	275,3
EER	(5)	kW/kW	3,396	3,555	3,475	3,318	3,236	3,260	3,336
23°C/15°C									
Cooling capacity	(6)	kW	476,2	533,3	610,8	665,7	805,3	905,5	1065
Total power input	(6)	kW	130,1	137,6	162,2	186,1	228,4	252,9	281,7
EER	(6)	kW/kW	3,660	3,876	3,766	3,577	3,526	3,580	3,781
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	18,04	20,15	22,99	25,21	30,28	34,34	39,83
Pressure drop	(1)(2)	kPa	34,3	42,8	29,4	35,3	44,8	45,9	38,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	63,0	73,0	81,0	86,0	108	124	134
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	61	61	62	61	63	63
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	94	94	96	96
SIZE AND WEIGHT									
A	(10)	mm	4150	5400	5400	5400	6650	7900	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5020	5600	5680	5760	6390	7160	8400

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G04-Z

Chiller, air source for outdoor installation

2202 - 7823 382,7-1463 kW

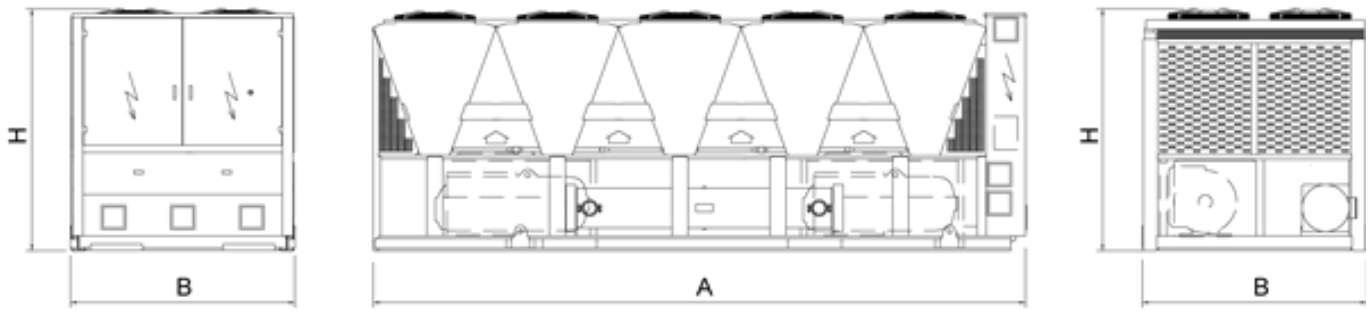
i-FR-G04-Z /SL-A			4822	6002	6022	6603	7203	7223	7823
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	902,8	972,2	1024	1141	1262	1391	1458
Total power input	(1)	kW	303,4	318,4	337,4	376,1	416,2	468,8	499,7
EER	(1)	kW/kW	2,976	3,053	3,035	3,034	3,032	2,967	2,918
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	899,8	969,3	1021	1138	1258	1386	1455
EER	(1)(2)	kW/kW	2,940	3,020	3,000	3,000	3,000	2,930	2,890
Cooling energy class			B	B	B	B	B	B	C
SEPR	(3)(4)		5,76	5,85	5,85	5,94	5,99	5,85	5,73
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	992,0	1070	1126	1257	1392	1529	1602
Total power input	(5)	kW	309,6	324,4	344,1	384,4	425,3	478,8	510,8
EER	(5)	kW/kW	3,204	3,298	3,272	3,270	3,273	3,193	3,136
23°C/15°C									
Cooling capacity	(6)	kW	1143	1236	1300	1454	1614	1762	1845
Total power input	(6)	kW	316,8	331,1	351,8	394,7	436,4	490,4	523,8
EER	(6)	kW/kW	3,608	3,733	3,695	3,684	3,698	3,593	3,522
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	43,17	46,49	48,96	54,56	60,35	66,50	69,70
Pressure drop	(1)(2)	kPa	45,7	40,9	42,6	39,7	39,7	48,1	30,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	3	3	3	3
No. Circuits		N°	2	2	2	3	3	3	0
Refrigerant charge		kg	139	167	171	189	204	213	223
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	63	63	63	63	63	64	64
Sound power level in cooling	(8)(9)	dB(A)	96	96	96	96	96	97	97
SIZE AND WEIGHT									
A	(10)	mm	9150	10400	10400	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	8550	9090	9180	11620	12660	12950	12890

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing



CHILLERS

i-FR-G05-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW



Outdoor unit for the production of chilled water with semi-hermetic variable-speed screw compressors optimized for R513A, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification.
The screw compressors feature the variable speed technology thanks to the integrated refrigerant cooled inverter, for the maximum compactness and operating flexibility. Moreover, they feature the Variable Vi (compression ratio) technology, to change the internal geometry according to the operating conditions.
Thanks to the accurate sizing of all internal components and the use of variable speed technology, the unit ensures flexibility, reliability and maximum efficiency in every operating condition.

Control

W3000TE
W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions.
Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

Refrigerant

R513A

Versions

K	Standard efficiency
SL-K	Super low noise, standard efficiency
A	High efficiency
SL-A	Super low noise, high efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function
R	Total condensing heat recovery function

Features

LOW GWP REFRIGERANT
New generation refrigerant R513A, with reduced greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of R513A = 572, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer. Not flammable (ASHRAE 34, ISO 817: class A1).

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

ErP COMPLIANT 2021
Thanks to the inverter technology and the accurate design, the units already comply and exceed the minimum seasonal energy efficiency requirements that will start from 2021, imposed by the eco-sustainable design Directive 2009/125/EC.

WIDE OPERATING RANGE
The accurate condensation control (variable fan speed regulation as per standard on every model), the availability of devoted kits and smart control logics allow unit's operation from -20°C up to 55°C of outdoor air temperature and from -8°C to 20°C of evaporator leaving water temperature.

REDUCED FOOTPRINT
These new units have a reduced footprint, making them the best solution both for new plants (thanks to high efficiency) and for the replacement of obsolete units in existing plants, offering a very high efficiency increase with same dimensions and cooling capacity.

ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS
The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head.

HARMONY BETWEEN UNIT AND PLANT
Low inrush current and power factor higher than similar fixed speed units, permit an easy electrical installation which is not stressed during start-up and with no need of extra devices for power factor correction. The use of VSD technology allows the unit to partialize in a stepless way, with consequent lower fluctuations of leaving water temperature.

Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor (for K versions)
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and alluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.
- Leak detector
- Kit HT to increase the unit operating range
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Mitsubishi M-Net, Echelon, Bacnet, Bacnet over-IP.

i-FR-G05-Z/K			2202	2602	2652	2702	2722	3152	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	478,6	531,1	561,2	598,1	656,7	720,7	801,4
Total power input	(1)	kW	172,0	189,2	198,6	209,1	237,2	263,0	290,3
EER	(1)	kW/kW	2,783	2,807	2,826	2,860	2,769	2,740	2,761
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	477,3	529,4	559,6	596,2	654,7	718,2	798,9
EER	(1)(2)	kW/kW	2,750	2,770	2,800	2,830	2,740	2,710	2,730
Cooling energy class			C	C	C	C	C	C	C
SEPR	(3)(4)		5,56	5,51	5,51	5,51	5,50	5,51	5,54
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	523,5	580,9	614,5	655,2	718,8	788,5	877,1
Total power input	(5)	kW	178,8	196,8	206,7	217,7	247,7	276,0	306,1
EER	(5)	kW/kW	2,928	2,952	2,973	3,010	2,902	2,857	2,865
23°C/15°C									
Cooling capacity	(6)	kW	599,1	665,1	704,8	752,0	824,0	903,3	1005
Total power input	(6)	kW	188,9	208,3	219,0	230,8	264,2	297,7	333,3
EER	(6)	kW/kW	3,172	3,193	3,218	3,258	3,119	3,034	3,015
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	22,89	25,40	26,84	28,60	31,40	34,47	38,33
Pressure drop	(1)(2)	kPa	32,0	39,5	35,2	40,0	38,3	46,2	40,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	79,0	87,0	92,0	101	108	120	135
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	67	68	68	68	69	68	68
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	100	101	101	101
SIZE AND WEIGHT									
A	(10)	mm	4150	5400	5400	5400	5400	6650	6650
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	4790	5360	5360	5420	5730	6150	6240

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G05-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G05-Z/K			3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	874,1	932,0	990,3	1029	1054	1128	1169
Total power input	(1)	kW	312,1	331,0	358,1	383,8	366,8	405,3	430,5
EER	(1)	kW/kW	2,801	2,816	2,765	2,681	2,874	2,783	2,715
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	871,3	928,7	987,3	1026	1050	1124	1166
EER	(1)(2)	kW/kW	2,770	2,780	2,730	2,650	2,830	2,750	2,690
Cooling energy class			C	C	C	D	C	C	D
SEPR	(3)(4)		5,50	5,50	5,61	5,60	5,50	5,50	5,67
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	954,6	1015	1080	1123	1153	1233	1276
Total power input	(5)	kW	328,5	347,6	375,4	402,2	382,6	423,7	450,0
EER	(5)	kW/kW	2,906	2,920	2,877	2,792	3,014	2,910	2,836
23°C/15°C									
Cooling capacity	(6)	kW	1062	1098	1203	1279	1318	1409	1455
Total power input	(6)	kW	339,8	343,2	386,8	432,3	408,1	453,6	481,7
EER	(6)	kW/kW	3,125	3,199	3,110	2,959	3,230	3,106	3,021
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	41,80	44,57	47,36	49,20	50,41	53,94	55,90
Pressure drop	(1)(2)	kPa	42,8	48,7	42,4	45,8	48,1	51,7	41,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	146	155	161	168	174	189	193
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	69	70	70	71	71	72	72
Sound power level in cooling	(8)(9)	dB(A)	102	103	103	104	104	105	105
SIZE AND WEIGHT									
A	(10)	mm	7900	7900	7900	7900	9150	9150	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	6730	6810	7410	7760	8360	8470	8560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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i-FR-G05-Z/K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1242	1302	1409	1493	1559	1649	1697
Total power input	(1)	kW	438,8	477,1	498,8	544,8	578,9	596,2	618,5
EER	(1)	kW/kW	2,830	2,729	2,825	2,740	2,693	2,766	2,744
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1238	1297	1405	1488	1555	1644	1691
EER	(1)(2)	kW/kW	2,800	2,690	2,790	2,710	2,670	2,730	2,710
Cooling energy class			C	D	C	C	D	C	C
SEPR	(3)(4)		5,70	5,56	5,51	5,51	5,51	5,50	5,50
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1357	1420	1536	1628	1702	1801	1854
Total power input	(5)	kW	457,2	497,2	524,0	570,6	606,9	623,6	647,7
EER	(5)	kW/kW	2,968	2,856	2,931	2,853	2,804	2,888	2,862
23°C/15°C									
Cooling capacity	(6)	kW	1550	1618	1661	1827	1941	2056	2117
Total power input	(6)	kW	486,6	529,4	517,8	595,7	652,8	668,3	695,2
EER	(6)	kW/kW	3,185	3,056	3,208	3,067	2,973	3,076	3,045
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	59,42	62,28	67,38	71,40	74,58	78,86	81,17
Pressure drop	(1)(2)	kPa	47,1	51,8	45,9	51,5	39,6	44,3	50,4
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	208	214	236	244	254	273	288
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	72	72	72	72	72	73	73
Sound power level in cooling	(8)(9)	dB(A)	105	105	105	105	105	106	106
SIZE AND WEIGHT									
A	(10)	mm	10400	10400	11650	11650	11650	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9030	9060	10880	11620	11940	12420	12440

Notes

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8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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i-FR-G05-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G05-Z/SL-K			2202	2602	2652	2702	2722	3152	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	477,0	516,7	554,6	578,0	662,9	711,3	774,2
Total power input	(1)	kW	168,1	177,0	195,5	212,2	228,3	260,2	295,6
EER	(1)	kW/kW	2,838	2,919	2,837	2,724	2,904	2,734	2,619
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	475,7	515,1	553,0	576,3	660,9	708,9	772,0
EER	(1)(2)	kW/kW	2,810	2,880	2,810	2,690	2,870	2,700	2,590
Cooling energy class			C	C	C	D	C	C	D
SEPR	(3)(4)		5,73	5,68	5,68	5,50	5,52	5,60	5,63
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	522,0	565,5	607,6	632,9	726,3	778,4	846,7
Total power input	(5)	kW	174,7	183,9	203,4	221,1	238,2	273,2	312,4
EER	(5)	kW/kW	2,988	3,075	2,987	2,863	3,049	2,849	2,710
23°C/15°C									
Cooling capacity	(6)	kW	598,1	647,9	697,4	725,8	833,9	892,0	987,2
Total power input	(6)	kW	184,6	194,2	215,5	234,7	253,9	294,8	336,5
EER	(6)	kW/kW	3,240	3,336	3,236	3,092	3,284	3,026	2,934
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	22,81	24,71	26,52	27,64	31,70	34,02	37,02
Pressure drop	(1)(2)	kPa	31,8	37,4	34,4	37,3	39,1	45,0	38,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	83,0	91,0	97,0	101	116	125	135
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	61	61	61	61	61	61
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94	94
SIZE AND WEIGHT									
A	(10)	mm	5400	5400	5400	5400	6650	6650	6650
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5510	5680	5700	5720	6480	6510	6550

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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i-FR-G05-Z/SL-K			3902	4202	4502	4802	4812	4822	5412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	845,6	903,1	972,7	1028	1046	1120	1162
Total power input	(1)	kW	317,7	336,9	356,8	373,5	359,4	397,2	422,1
EER	(1)	kW/kW	2,662	2,681	2,726	2,752	2,910	2,820	2,753
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	843,1	900,1	969,8	1025	1042	1116	1159
EER	(1)(2)	kW/kW	2,630	2,650	2,700	2,720	2,870	2,780	2,720
Cooling energy class			D	D	C	C	C	C	C
SEPR	(3)(4)		5,50	5,50	5,66	5,64	5,63	5,55	5,67
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	922,6	982,7	1061	1123	1144	1225	1270
Total power input	(5)	kW	334,8	354,0	374,2	390,7	374,6	414,8	440,9
EER	(5)	kW/kW	2,756	2,776	2,835	2,874	3,054	2,953	2,880
23°C/15°C									
Cooling capacity	(6)	kW	1043	1078	1203	1306	1310	1402	1478
Total power input	(6)	kW	343,1	346,4	380,6	412,0	399,0	443,3	464,8
EER	(6)	kW/kW	3,040	3,112	3,161	3,170	3,283	3,163	3,180
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	40,44	43,19	46,52	49,15	50,01	53,58	55,57
Pressure drop	(1)(2)	kPa	40,1	45,7	40,9	45,7	47,3	51,0	41,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	146	155	168	178	183	198	204
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	62	63	63	63	63	63	63
Sound power level in cooling	(8)(9)	dB(A)	95	96	96	96	96	96	96
SIZE AND WEIGHT									
A	(10)	mm	7900	7900	9150	9150	10400	10400	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7070	7150	8290	8670	9110	9110	9360

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G05-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G05-Z/SL-K			6002	6022	6303	6903	7203	7213	7223
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1199	1290	1365	1474	1541	1590	1635
Total power input	(1)	kW	446,5	470,5	507,7	541,1	572,2	610,0	633,6
EER	(1)	kW/kW	2,685	2,742	2,689	2,724	2,693	2,607	2,580
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1195	1286	1361	1469	1537	1586	1630
EER	(1)(2)	kW/kW	2,650	2,710	2,660	2,690	2,670	2,580	2,550
Cooling energy class			D	C	D	D	D	D	D
SEPR	(3)(4)		5,76	5,65	5,70	5,84	5,76	5,66	5,61
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1308	1408	1486	1608	1683	1734	1821
Total power input	(5)	kW	466,4	490,2	533,5	566,9	599,8	639,9	653,8
EER	(5)	kW/kW	2,804	2,872	2,785	2,836	2,806	2,710	2,785
23°C/15°C									
Cooling capacity	(6)	kW	1522	1605	1631	1839	1961	2019	2079
Total power input	(6)	kW	491,2	521,6	522,7	583,3	632,7	674,6	701,8
EER	(6)	kW/kW	3,099	3,077	3,120	3,153	3,099	2,993	2,962
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	57,32	61,67	65,28	70,50	73,70	76,02	78,18
Pressure drop	(1)(2)	kPa	43,9	50,8	43,1	50,2	38,7	41,2	46,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	3	3	3	3	3
No. Circuits		N°	2	2	3	3	3	3	3
Refrigerant charge		kg	208	224	236	255	267	278	288
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	63	63	63	63	63	64	64
Sound power level in cooling	(8)(9)	dB(A)	96	96	96	96	96	97	97
SIZE AND WEIGHT									
A	(10)	mm	10400	11650	11650	12900	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	9370	9780	11350	12550	12870	12890	12910

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G05-Z/A			2202	2602	2652	2702	2722	3152	3602	3902
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	510,2	551,9	590,0	626,9	684,3	767,2	839,9	899,4
Total power input	(1)	kW	163,5	177,8	189,4	203,0	222,2	257,2	286,0	303,4
EER	(1)	kW/kW	3,120	3,104	3,115	3,088	3,080	2,983	2,937	2,964
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	508,7	550,4	588,2	624,8	682,1	765,0	837,1	896,4
EER	(1)(2)	kW/kW	3,080	3,070	3,080	3,050	3,040	2,950	2,900	2,930
Cooling energy class			B	B	B	B	B	B	B	B
SEPR	(3)(4)		5,98	5,89	5,87	5,92	5,77	5,87	5,88	5,67
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	559,2	605,1	647,1	687,6	750,2	841,2	920,2	983,7
Total power input	(5)	kW	169,5	184,6	196,7	210,9	231,6	269,5	300,8	319,0
EER	(5)	kW/kW	3,299	3,278	3,290	3,260	3,239	3,121	3,059	3,084
23°C/15°C										
Cooling capacity	(6)	kW	642,0	695,3	743,9	790,9	862,1	966,8	1057	1098
Total power input	(6)	kW	178,3	194,7	207,9	223,2	246,4	290,1	326,4	329,7
EER	(6)	kW/kW	3,601	3,571	3,578	3,543	3,499	3,333	3,238	3,330
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	24,40	26,39	28,22	29,98	32,73	36,69	40,16	43,01
Pressure drop	(1)(2)	kPa	36,4	34,0	38,9	43,9	41,6	37,3	44,7	45,3
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	91,0	93,0	100	106	115	130	141	153
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	67	68	67	67	68	68	68	69
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	100	101	101	101	102
SIZE AND WEIGHT										
A	(10)	mm	5400	5400	6650	6650	6650	7900	7900	9150
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5270	5330	5730	5800	6130	6610	6670	7130

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-G05-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

i-FR-G05-Z/A			4202	4502	4802	4822	5412	5703	6303	6603
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	959,4	1028	1099	1162	1230	1334	1467	1520
Total power input	(1)	kW	320,6	340,0	358,2	388,6	401,1	452,6	493,4	518,9
EER	(1)	kW/kW	2,993	3,024	3,068	2,990	3,067	2,947	2,973	2,929
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	955,9	1025	1095	1159	1226	1330	1463	1516
EER	(1)(2)	kW/kW	2,950	2,980	3,020	2,960	3,030	2,910	2,940	2,900
Cooling energy class			B	B	B	B	B	B	B	B
SEPR	(3)(4)		5,60	5,73	5,80	5,75	5,71	5,71	5,64	5,61
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	1047	1124	1203	1273	1347	1461	1602	1661
Total power input	(5)	kW	336,7	355,4	372,6	404,9	416,7	476,4	519,1	544,6
EER	(5)	kW/kW	3,110	3,163	3,229	3,144	3,233	3,067	3,086	3,050
23°C/15°C										
Cooling capacity	(6)	kW	1137	1259	1381	1459	1545	1648	1742	1843
Total power input	(6)	kW	332,6	364,3	395,6	431,0	441,6	500,8	514,2	553,7
EER	(6)	kW/kW	3,419	3,456	3,491	3,385	3,499	3,291	3,388	3,329
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	45,88	49,16	52,54	55,59	58,81	63,78	70,16	72,70
Pressure drop	(1)(2)	kPa	51,6	45,7	50,1	41,2	46,2	41,1	35,1	37,7
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	3	3	3
No. Circuits		N°	2	2	2	2	2	3	3	3
Refrigerant charge		kg	162	174	185	199	209	227	260	258
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	70	70	71	72	72	72	72	72
Sound power level in cooling	(8)(9)	dB(A)	103	103	104	105	105	105	105	105
SIZE AND WEIGHT										
A	(10)	mm	9150	10400	10400	10400	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	7150	8270	8750	8850	9390	11000	11150	11500

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G05-Z/SL-A			2202	2602	2652	2702	2722	3152	3602	3902
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	498,8	559,5	581,8	615,1	682,8	751,6	811,9	891,5
Total power input	(1)	kW	162,3	182,7	185,5	202,2	216,8	251,1	275,3	295,2
EER	(1)	kW/kW	3,073	3,062	3,136	3,042	3,149	2,993	2,949	3,020
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	497,4	557,9	580,0	613,4	680,6	749,5	809,4	888,6
EER	(1)(2)	kW/kW	3,040	3,030	3,100	3,010	3,110	2,960	2,910	2,980
Cooling energy class			B	B	A	B	A	B	B	B
SEPR	(3)(4)		6,10	5,98	5,93	5,94	5,80	5,92	5,98	5,90
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	546,3	613,6	638,1	674,9	749,0	824,1	890,1	975,7
Total power input	(5)	kW	168,5	190,0	192,8	210,5	225,8	263,4	289,5	310,5
EER	(5)	kW/kW	3,242	3,229	3,310	3,206	3,317	3,129	3,075	3,142
23°C/15°C										
Cooling capacity	(6)	kW	626,7	705,4	733,8	776,4	861,6	947,2	1023	1117
Total power input	(6)	kW	177,8	201,1	203,9	223,5	240,2	283,9	313,9	336,9
EER	(6)	kW/kW	3,525	3,508	3,599	3,474	3,587	3,336	3,259	3,316
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	23,85	26,76	27,82	29,42	32,65	35,94	38,83	42,63
Pressure drop	(1)(2)	kPa	34,8	35,0	37,8	33,6	41,5	35,8	41,8	44,5
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	91,0	101	106	112	123	136	148	162
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	60	60	60	60	61	61	61	62
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94	94	95
SIZE AND WEIGHT										
A	(10)	mm	5400	6650	6650	6650	7900	7900	9150	10400
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	5590	6030	6070	6400	6930	6970	7460	8000

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-G05-Z

Chiller, air source for outdoor installation

2202 - 7223 477,0-1697 kW

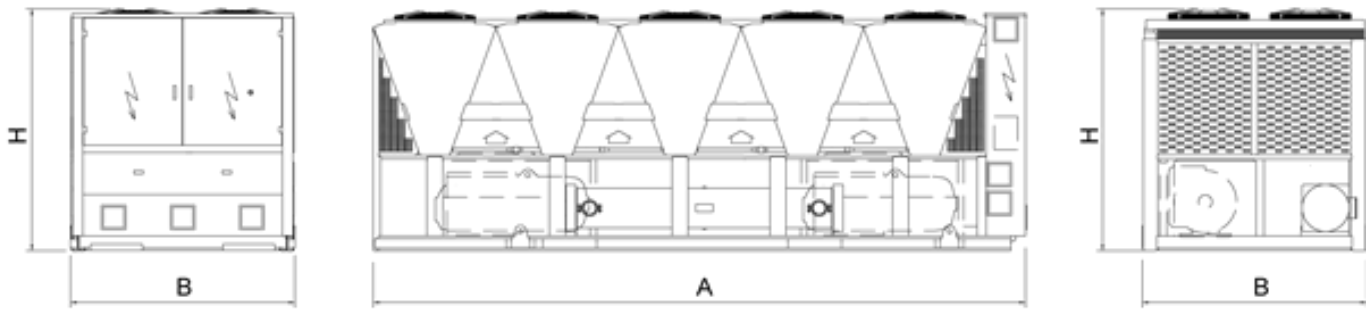
i-FR-G05-Z/SL-A			4202	4502	4802	4822	5412	5703	6303
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	942,8	1016	1086	1149	1213	1332	1462
Total power input	(1)	kW	312,4	331,8	350,0	380,1	393,2	456,9	493,5
EER	(1)	kW/kW	3,018	3,062	3,103	3,023	3,085	2,915	2,963
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	939,4	1013	1082	1146	1209	1328	1458
EER	(1)(2)	kW/kW	2,970	3,020	3,060	2,990	3,050	2,880	2,930
Cooling energy class			B	B	B	B	B	C	B
SEPR	(3)(4)		5,85	5,96	5,90	5,83	5,89	5,98	5,93
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1029	1112	1190	1259	1329	1458	1594
Total power input	(5)	kW	328,3	346,8	364,0	396,0	408,6	481,9	519,9
EER	(5)	kW/kW	3,134	3,206	3,269	3,179	3,253	3,026	3,066
23°C/15°C									
Cooling capacity	(6)	kW	1120	1247	1366	1444	1524	1644	1730
Total power input	(6)	kW	324,3	355,4	386,3	421,4	433,1	508,4	514,9
EER	(6)	kW/kW	3,454	3,509	3,536	3,427	3,519	3,234	3,360
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	45,09	48,60	51,92	54,96	58,00	63,72	69,92
Pressure drop	(1)(2)	kPa	49,8	44,7	48,9	40,3	44,9	41,0	34,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	3	3
No. Circuits		N°	2	2	2	2	2	3	3
Refrigerant charge		kg	171	184	197	210	220	237	260
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	63	63	63	63	63	63	63
Sound power level in cooling	(8)(9)	dB(A)	96	96	96	96	96	96	96
SIZE AND WEIGHT									
A	(10)	mm	10400	11650	11650	11650	12900	12900	12900
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2500	2500	2500	2500	2500	2500	2500
Operating weight	(10)	kg	8070	9050	9450	9630	10030	11520	11520

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

i-FR (1+i)-Z

2602 - 5403 567,5-1273 kW

High efficiency chiller, air source for outdoor installation



Outdoor unit for the production of chilled water with fixed speed and variable speed (Inverter Driven) screw compressors optimized for R134a, axial-flow fans, condensing coil with copper tubes and aluminium fins, shell and tube single pass evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.
Eurovent certification for all the sizes.
Base and supporting structure and panels are of galvanized epoxy powder coated steel.
Flexible and reliable unit thanks to the precise temperature control together with the use of inverter technology. The high performance's level, both at full and partial load, is achieved thanks to the accurate unit's design and to the use of fixed speed motor together with variable speed (inverter) motor.

Control



W3000TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R134a

Versions

CA Class A of efficiency

SL Super-low noise version

Configurations

- \- Basic function
- D Partial condensing heat recovery function
- R Total condensing heat recovery function

Features

WIDE RANGE
Extended capacity range.

HIGH EFFICIENCY
Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

EXTREMELY SILENT OPERATION
Extremely silent operation together with high efficiency, tank to dedicated acoustic devices and a precise design for the choice of the components.

GREEN RELEVANT PRODUCT
These units comply with the minimum efficiency requirements of air cooled chillers defined in ASHRAE 90.1-2013 "Energy Standard for buildings except LowRise Residential Building", included the higher values required from January 2015.

Accessories

- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Axial fans with External Static Pressure (ESP) up to 130 Pa.
- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus/Echelon protocol cards

i-FR (1+i)-Z /CA			2602	2662	2722	3152	3602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	567,5	631,0	700,2	785,2	858,0
Total power input	(1)	kW	181,1	201,2	223,7	249,0	273,4
EER	(1)	kW/kW	3,134	3,136	3,130	3,153	3,138
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	565,9	629,2	698,5	783,1	855,4
EER	(1)(2)	kW/kW	3,100	3,100	3,100	3,120	3,100
Cooling energy class			A	A	A	A	A
SEPR	(3)(4)		5,74	5,72	5,59	5,63	5,52
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	622,9	691,2	767,6	862,4	941,7
Total power input	(5)	kW	188,0	208,2	231,7	258,4	284,4
EER	(5)	kW/kW	3,313	3,320	3,313	3,337	3,311
23°C/15°C							
Cooling capacity	(6)	kW	716,8	792,8	881,6	993,2	1083
Total power input	(6)	kW	199,1	219,2	244,3	273,4	302,5
EER	(6)	kW/kW	3,600	3,617	3,609	3,633	3,580
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	27,14	30,17	33,48	37,55	41,03
Pressure drop	(1)(2)	kPa	36,0	35,4	31,1	34,5	41,2
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	143	188	200	214	225
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	67	68	68	68	69
Sound power level in cooling	(8)(9)	dB(A)	100	101	101	101	102
SIZE AND WEIGHT							
A	(10)	mm	7000	7900	7900	7900	9860
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2530	2530	2530	2530	2530
Operating weight	(10)	kg	6130	7170	7460	7970	9110

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR (1+i)-Z

2602 - 5403 567,5-1273 kW

High efficiency chiller, air source for outdoor installation

i-FR (1+i)-Z /CA			3902	4212	4513	4953	5403
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	951,2	1045	1127	1196	1273
Total power input	(1)	kW	302,0	333,1	358,7	380,1	404,9
EER	(1)	kW/kW	3,150	3,137	3,142	3,147	3,144
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	948,6	1042	1123	1192	1269
EER	(1)(2)	kW/kW	3,110	3,100	3,100	3,110	3,100
Cooling energy class			A	A	A	A	A
SEPR	(3)(4)		5,53	5,66	5,64	5,84	5,73
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	1045	1147	1234	1311	1395
Total power input	(5)	kW	313,4	345,3	371,4	393,8	420,0
EER	(5)	kW/kW	3,334	3,322	3,323	3,329	3,321
23°C/15°C							
Cooling capacity	(6)	kW	1205	1303	1414	1505	1602
Total power input	(6)	kW	331,8	349,9	391,6	415,8	444,4
EER	(6)	kW/kW	3,632	3,724	3,611	3,620	3,605
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	45,49	49,96	53,90	57,18	60,88
Pressure drop	(1)(2)	kPa	36,7	44,3	51,6	43,6	49,5
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	3	3	3
No. Circuits		N°	2	2	3	3	3
Refrigerant charge		kg	242	256	269	282	293
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	70	71	72	72	72
Sound power level in cooling	(8)(9)	dB(A)	103	104	105	105	105
SIZE AND WEIGHT							
A	(10)	mm	10790	11720	12630	12630	12630
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2530	2530	2530	2530	2530
Operating weight	(10)	kg	10080	10140	11640	12570	12950

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR (1+i)-Z /SL			2602	2662	2722	3152	3903
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	543,7	611,1	678,8	752,3	804,7
Total power input	(1)	kW	180,5	200,7	221,8	248,5	267,7
EER	(1)	kW/kW	3,012	3,045	3,060	3,027	3,006
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	542,2	609,5	677,2	750,4	802,5
EER	(1)(2)	kW/kW	2,980	3,010	3,030	3,000	2,970
Cooling energy class			B	B	B	B	B
SEPR	(3)(4)		5,89	5,86	5,71	5,83	5,81
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	595,0	668,0	742,6	823,5	880,0
Total power input	(5)	kW	188,6	209,2	231,3	259,2	279,3
EER	(5)	kW/kW	3,155	3,193	3,211	3,177	3,151
23°C/15°C							
Cooling capacity	(6)	kW	681,0	763,4	849,9	943,1	1006
Total power input	(6)	kW	201,6	222,6	246,5	276,4	298,0
EER	(6)	kW/kW	3,378	3,429	3,448	3,412	3,376
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	26,00	29,22	32,46	35,97	38,48
Pressure drop	(1)(2)	kPa	33,0	33,2	29,2	31,7	36,3
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	2	3
No. Circuits		N°	2	2	2	2	3
Refrigerant charge		kg	143	188	200	214	225
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	58	59	60	60	60
Sound power level in cooling	(8)(9)	dB(A)	91	92	93	93	93
SIZE AND WEIGHT							
A	(10)	mm	7000	7900	7900	7900	9900
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2530	2530	2530	2530	2530
Operating weight	(10)	kg	6410	7400	7690	8370	9570

Notes

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6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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i-FR (1+i)-Z

2602 - 5403 567,5-1273 kW

High efficiency chiller, air source for outdoor installation

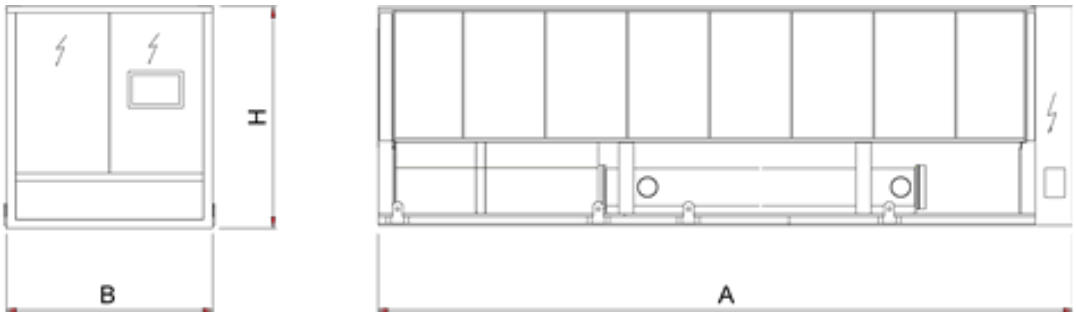
i-FR (1+i)-Z /SL			3953	4013	4063	4953	5403
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	880,2	946,3	1018	1143	1209
Total power input	(1)	kW	295,3	311,2	334,9	380,0	411,4
EER	(1)	kW/kW	2,981	3,041	3,040	3,008	2,939
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	878,1	943,7	1015	1140	1205
EER	(1)(2)	kW/kW	2,950	3,010	3,000	2,970	2,900
Cooling energy class			B	B	B	B	B
SEPR	(3)(4)		5,70	5,61	5,79	5,95	5,84
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	963,5	1034	1112	1249	1322
Total power input	(5)	kW	308,6	323,8	348,8	395,7	429,3
EER	(5)	kW/kW	3,122	3,193	3,188	3,156	3,079
23°C/15°C							
Cooling capacity	(6)	kW	1103	1180	1270	1426	1509
Total power input	(6)	kW	330,1	343,6	370,9	420,7	458,2
EER	(6)	kW/kW	3,341	3,434	3,424	3,390	3,293
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	42,09	45,25	48,67	54,66	57,83
Pressure drop	(1)(2)	kPa	31,5	36,4	42,1	39,9	44,6
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	3	3
No. Circuits		N°	3	3	3	3	3
Refrigerant charge		kg	242	256	269	282	293
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	60	60	61	61	64
Sound power level in cooling	(8)(9)	dB(A)	93	93	94	94	97
SIZE AND WEIGHT							
A	(10)	mm	10800	10800	11700	11700	12630
B	(10)	mm	2260	2260	2260	2260	2260
H	(10)	mm	2530	2530	2530	2530	2530
Operating weight	(10)	kg	10080	10650	11090	12600	13530

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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Dimensional drawing



CHILLERS

TRCS2-Z

0211 - 1154 220,1-1324 kW

High efficiency chiller, air source for outdoor installation



Outdoor unit for the production of chilled water featuring oil-free centrifugal compressor, with R134a, axial-flow fans, condensing coil with copper tubes and aluminium fins, shell and tube flooded evaporator and electronic regulation valve. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Flexible and reliable unit thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

Control



W3000TE

The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.
For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.
Compatibility with the remote keyboard managing up to 8 units.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R134a

Versions

SL-CA	Super Low noise version, Class A of efficiency
XL-CA	eXtra Low noise version, Class A of efficiency
SL-CA-E	Super Low noise version, Premium efficiency, Class A enhanced

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features

VERY HIGH EFFICIENCY
Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

VERSION ´CA-E´ AVAILABLE
The version ´CA-E´ is characterized by efficiency beyond the ´Class A´ for Eurovent. The technological choices adopted assure the minimization of operating costs and therefore a quick payback time.

EXTREMELY SILENT OPERATION
As result of a sistematic design oriented to minimize the noise level, XL version´s units give the best compromise between silence and efficiency on the market.

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

Accessories

- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Hydronic group
- EC fans with electronic DC brushless motor
- Set-up for remote connectivity with ModBus/Echelon protocol cards

TRCS2-Z / SL-CA			0211	0251	0351	0452	0512	0552	0652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	232,7	257,7	345,7	442,3	508,6	573,7	649,6
Total power input	(1)	kW	70,53	81,12	110,4	138,4	161,0	173,7	207,6
EER	(1)	kW/kW	3,301	3,178	3,131	3,196	3,159	3,303	3,129
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	231,9	257,0	344,8	441,2	507,4	572,1	648,4
EER	(1)(2)	kW/kW	3,250	3,140	3,100	3,160	3,130	3,260	3,110
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,87	5,90	6,06	5,95	6,07	5,73	6,20
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	257,5	284,6	379,5	488,3	561,2	656,3	746,5
Total power input	(5)	kW	70,73	81,47	113,8	138,7	161,7	187,1	213,2
EER	(5)	kW/kW	3,642	3,492	3,335	3,521	3,471	3,508	3,501
23°C/15°C									
Cooling capacity	(6)	kW	299,3	332,6	456,1	570,7	657,6	718,7	858,3
Total power input	(6)	kW	70,18	81,58	116,6	138,3	162,3	193,7	217,8
EER	(6)	kW/kW	4,264	4,076	3,912	4,127	4,052	3,710	3,941
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	11,13	12,33	16,53	21,15	24,32	27,43	31,07
Pressure drop	(1)(2)	kPa	36,4	27,4	28,5	27,6	27,7	35,2	21,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	120	210	180	210	240
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	58	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	90	90	90	91	92
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	4900	5800	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2320	2370	3050	4000	4240	4530	5800

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-Z

0211 - 1154 220,1-1324 kW

High efficiency chiller, air source for outdoor installation

TRCS2-Z / SL-CA			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	742,2	848,1	903,5	977,3	1065	1183
Total power input	(1)	kW	225,2	269,3	286,5	309,9	336,1	373,7
EER	(1)	kW/kW	3,296	3,149	3,154	3,154	3,169	3,166
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	740,5	846,0	901,1	975,1	1062	1180
EER	(1)(2)	kW/kW	3,260	3,120	3,120	3,120	3,130	3,130
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		6,12	6,03	6,07	6,15	5,92	6,14
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	832,3	931,0	991,6	1074	1176	1297
Total power input	(5)	kW	233,0	273,0	292,1	318,4	337,6	380,1
EER	(5)	kW/kW	3,572	3,410	3,395	3,373	3,483	3,412
23°C/15°C								
Cooling capacity	(6)	kW	940,0	1134	1197	1289	1375	1574
Total power input	(6)	kW	242,0	278,4	298,2	325,1	338,3	387,3
EER	(6)	kW/kW	3,884	4,073	4,014	3,965	4,064	4,064
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	35,49	40,56	43,20	46,74	50,93	56,59
Pressure drop	(1)(2)	kPa	27,6	31,8	36,0	29,7	35,3	37,3
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	280	340	430	490	480	520
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	59	60	60	60	61	61
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94
SIZE AND WEIGHT								
A	(10)	mm	7000	8500	9700	10600	11200	11500
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6150	6940	7370	8150	8700	9020

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-Z / XL-CA			0211	0251	0351	0452	0512	0552	0652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	220,1	254,2	341,0	435,3	525,5	579,4	640,4
Total power input	(1)	kW	68,52	79,84	109,4	136,5	165,6	171,2	206,2
EER	(1)	kW/kW	3,213	3,185	3,117	3,189	3,173	3,384	3,106
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	219,4	253,5	340,1	434,3	524,2	577,7	639,3
EER	(1)(2)	kW/kW	3,170	3,150	3,080	3,160	3,140	3,340	3,080
Cooling energy class			A	A	B	A	A	A	B
SEPR	(3)(4)		6,01	6,15	6,30	6,18	6,17	5,97	6,43
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	243,1	280,5	389,8	480,2	580,1	655,2	733,5
Total power input	(5)	kW	68,71	80,20	110,4	136,9	166,4	179,6	206,8
EER	(5)	kW/kW	3,539	3,498	3,531	3,508	3,486	3,648	3,547
23°C/15°C									
Cooling capacity	(6)	kW	284,1	328,6	448,6	562,7	679,7	748,4	844,4
Total power input	(6)	kW	68,51	80,51	114,0	136,9	167,2	187,8	213,3
EER	(6)	kW/kW	4,147	4,082	3,935	4,110	4,065	3,985	3,959
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,53	12,16	16,31	20,82	25,13	27,71	30,62
Pressure drop	(1)(2)	kPa	32,6	26,7	27,7	26,7	29,5	35,9	20,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	130	220	220	240	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	50	50	51	51	52	52	52
Sound power level in cooling	(8)(9)	dB(A)	82	82	83	83	84	85	85
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	5800	7000	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2370	2420	3200	4240	4690	5350	6150

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

TRCS2-Z

0211 - 1154 220,1-1324 kW

High efficiency chiller, air source for outdoor installation

TRCS2-Z / XL-CA			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	738,9	873,7	899,7	971,8	1049	1174
Total power input	(1)	kW	226,2	278,7	289,5	311,8	331,2	377,3
EER	(1)	kW/kW	3,267	3,135	3,108	3,117	3,167	3,112
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	737,3	871,5	897,3	969,6	1046	1171
EER	(1)(2)	kW/kW	3,240	3,100	3,070	3,090	3,130	3,080
Cooling energy class			A	A	B	B	A	B
SEPR	(3)(4)		6,25	6,20	6,27	6,36	6,16	6,33
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	827,4	959,0	1033	1112	1158	1350
Total power input	(5)	kW	229,0	282,4	290,7	313,5	332,8	377,8
EER	(5)	kW/kW	3,613	3,396	3,553	3,547	3,480	3,573
23°C/15°C								
Cooling capacity	(6)	kW	953,2	1163	1191	1280	1357	1557
Total power input	(6)	kW	236,3	282,9	297,1	323,2	334,4	383,2
EER	(6)	kW/kW	4,034	4,111	4,009	3,960	4,058	4,063
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	35,33	41,78	43,03	46,47	50,15	56,14
Pressure drop	(1)(2)	kPa	27,3	33,7	35,7	29,4	34,2	36,8
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	310	410	450	520	500	580
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	53	53	53	54	54	55
Sound power level in cooling	(8)(9)	dB(A)	86	86	86	87	87	88
SIZE AND WEIGHT								
A	(10)	mm	7900	9400	9700	10600	11200	12400
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6650	7520	7770	8650	9150	9960

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-Z / SL-CA-E			0211	0251	0351	0452	0512	0552	0652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	228,7	284,8	384,5	455,1	526,8	590,0	702,8
Total power input	(1)	kW	67,10	81,34	113,1	133,6	154,3	168,5	203,8
EER	(1)	kW/kW	3,408	3,503	3,400	3,406	3,414	3,501	3,448
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	227,9	283,9	383,3	454,0	525,5	588,2	701,4
EER	(1)(2)	kW/kW	3,360	3,450	3,350	3,370	3,380	3,450	3,420
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		6,41	6,26	6,45	6,60	6,36	6,28	6,74
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	253,0	310,5	417,8	503,2	601,8	643,1	764,4
Total power input	(5)	kW	67,22	85,79	117,6	133,9	167,5	177,9	210,3
EER	(5)	kW/kW	3,765	3,619	3,553	3,758	3,593	3,615	3,635
23°C/15°C									
Cooling capacity	(6)	kW	293,7	357,1	484,6	584,9	659,0	737,1	886,1
Total power input	(6)	kW	66,51	91,49	123,4	132,7	172,8	189,9	219,4
EER	(6)	kW/kW	4,417	3,903	3,927	4,408	3,814	3,882	4,039
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,93	13,62	18,39	21,76	25,19	28,21	33,61
Pressure drop	(1)(2)	kPa	35,2	33,5	35,2	29,2	29,7	37,2	24,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	130	220	220	240	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	58	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	90	90	90	91	92
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	4900	5800	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2270	2350	3130	4070	4230	4570	6040

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-Z

0211 - 1154 220,1-1324 kW

High efficiency chiller, air source for outdoor installation

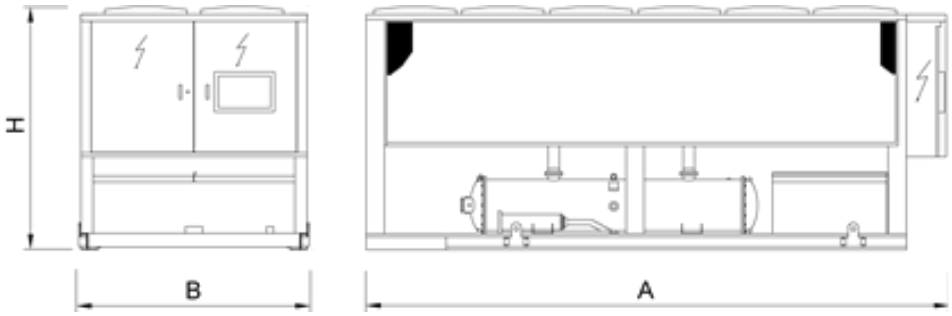
TRCS2-Z / SL-CA-E			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	795,7	902,1	969,3	1086	1177	1324
Total power input	(1)	kW	233,5	262,8	278,7	317,1	336,5	382,9
EER	(1)	kW/kW	3,408	3,433	3,478	3,425	3,498	3,458
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	793,7	899,7	966,4	1083	1173	1320
EER	(1)(2)	kW/kW	3,370	3,390	3,430	3,380	3,450	3,410
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		6,50	6,42	6,61	6,59	6,23	6,48
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	864,6	1021	1056	1180	1284	1441
Total power input	(5)	kW	243,2	282,1	289,1	328,1	355,4	400,5
EER	(5)	kW/kW	3,555	3,619	3,653	3,596	3,613	3,598
23°C/15°C								
Cooling capacity	(6)	kW	999,0	1138	1222	1369	1472	1666
Total power input	(6)	kW	255,8	291,3	303,8	343,7	379,8	423,1
EER	(6)	kW/kW	3,905	3,907	4,022	3,983	3,876	3,938
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	38,05	43,14	46,35	51,91	56,30	63,34
Pressure drop	(1)(2)	kPa	31,7	35,9	41,5	36,7	43,1	46,8
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	310	410	450	520	500	580
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	59	60	60	60	61	62
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	95
SIZE AND WEIGHT								
A	(10)	mm	7900	8500	9700	10600	11200	12400
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6450	7020	7610	8510	8660	9720

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Dimensional drawing



CHILLERS

TRCS2-G05-Z

High efficiency chiller, air source for outdoor installation

0211 - 1154 217,9-1313 kW



Outdoor unit for the production of chilled water featuring oil-free centrifugal compressor, with R513A, axial-flow fans, condensing coil with copper tubes and aluminium fins, shell and tube flooded evaporator and electronic regulation valve. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

Control



Electronic control W3000 TE

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R513A

Versions

SL-CA	Super Low noise version, Class A of efficiency
XL-CA	eXtra Low noise version, Class A of efficiency
SL-CA-E	Super Low noise version, Premium efficiency, Class A enhanced

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features

VERY HIGH EFFICIENCY
Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

VERSION ´CA-E´ AVAILABLE
The version ´CA-E´ is characterized by efficiency beyond the ´Class A´ for Eurovent. The technological choices adopted assure the minimization of operating costs and therefore a quick payback time.

EXTREMELY SILENT OPERATION
As result of a sistematic design oriented to minimize the noise level, XL version´s units give the best compromise between silence and efficiency on the market.

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

Accessories

- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Hydronic group
- EC fans with electronic DC brushless motor
- Set-up for remote connectivity with ModBus/Echelon protocol cards

TRCS2-G05-Z/SL-CA			0211	0251	0351	0452	0512	0552	0652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	230,4	255,9	343,3	437,9	502,5	567,3	643,1
Total power input	(1)	kW	70,85	80,82	110,0	137,7	160,7	173,5	207,2
EER	(1)	kW/kW	3,254	3,167	3,121	3,180	3,127	3,270	3,104
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	229,6	255,2	342,4	436,9	501,3	565,7	641,9
EER	(1)(2)	kW/kW	3,210	3,130	3,090	3,150	3,100	3,230	3,080
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		5,80	5,87	6,04	5,92	6,00	5,68	6,15
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	254,9	282,6	376,8	483,5	554,5	649,1	739,0
Total power input	(5)	kW	71,05	81,17	113,4	138,1	161,4	186,9	212,8
EER	(5)	kW/kW	3,590	3,480	3,323	3,501	3,436	3,473	3,473
23°C/15°C									
Cooling capacity	(6)	kW	296,3	330,2	453,0	565,0	649,7	710,8	849,7
Total power input	(6)	kW	70,49	81,28	116,2	137,7	162,0	193,5	217,5
EER	(6)	kW/kW	4,203	4,062	3,898	4,103	4,010	3,673	3,907
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	11,02	12,24	16,42	20,94	24,03	27,13	30,76
Pressure drop	(1)(2)	kPa	35,7	27,0	28,1	27,0	27,0	34,4	20,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	120	210	180	210	240
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	58	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	90	90	90	91	92
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	4900	5800	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2320	2370	3050	4000	4240	4530	5800

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-G05-Z

High efficiency chiller, air source for outdoor installation

0211 - 1154 217,9-1313 kW

TRCS2-G05-Z/SL-CA			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	733,3	840,5	891,7	964,6	1056	1173
Total power input	(1)	kW	225,0	269,6	287,3	309,1	335,2	373,3
EER	(1)	kW/kW	3,259	3,118	3,104	3,121	3,150	3,142
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	731,7	838,5	889,3	962,5	1053	1170
EER	(1)(2)	kW/kW	3,230	3,090	3,070	3,090	3,120	3,110
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		6,06	5,98	5,98	6,09	5,89	6,09
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	822,3	922,7	978,7	1060	1167	1286
Total power input	(5)	kW	232,8	273,3	292,9	317,5	336,7	379,7
EER	(5)	kW/kW	3,532	3,376	3,341	3,339	3,466	3,387
23°C/15°C								
Cooling capacity	(6)	kW	928,7	1124	1181	1272	1364	1560
Total power input	(6)	kW	241,8	278,7	299,0	324,3	337,4	386,9
EER	(6)	kW/kW	3,841	4,033	3,950	3,922	4,043	4,032
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	35,07	40,19	42,64	46,13	50,52	56,08
Pressure drop	(1)(2)	kPa	26,9	31,2	35,1	29,0	34,7	36,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	280	340	430	490	480	520
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	59	60	60	60	61	61
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	94
SIZE AND WEIGHT								
A	(10)	mm	7000	8500	9700	10600	11200	11500
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6150	6940	7370	8150	8700	9020

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-G05-Z/XL-CA			0211	0251	0351	0452	0512	0552	0652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	217,9	252,4	338,6	431,0	519,2	573,0	634,0
Total power input	(1)	kW	68,84	79,54	109,0	135,9	165,3	171,1	205,8
EER	(1)	kW/kW	3,167	3,175	3,106	3,171	3,141	3,349	3,081
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	217,2	251,7	337,7	430,0	517,9	571,4	632,9
EER	(1)(2)	kW/kW	3,130	3,140	3,070	3,140	3,110	3,310	3,060
Cooling energy class			A	A	B	A	A	A	B
SEPR	(3)(4)		5,93	6,13	6,28	6,14	6,10	5,92	6,38
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	240,7	278,6	387,1	475,4	573,1	647,9	726,1
Total power input	(5)	kW	69,03	79,90	110,0	136,3	166,1	179,5	206,5
EER	(5)	kW/kW	3,488	3,487	3,519	3,488	3,450	3,609	3,516
23°C/15°C									
Cooling capacity	(6)	kW	281,3	326,3	445,4	557,1	671,5	740,2	836,0
Total power input	(6)	kW	68,83	80,21	113,6	136,2	166,9	187,6	212,9
EER	(6)	kW/kW	4,089	4,069	3,921	4,090	4,023	3,946	3,927
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,42	12,07	16,19	20,61	24,83	27,40	30,32
Pressure drop	(1)(2)	kPa	32,0	26,3	27,3	26,2	28,8	35,1	20,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	130	220	220	240	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	50	50	51	51	52	52	52
Sound power level in cooling	(8)(9)	dB(A)	82	82	83	83	84	85	85
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	5800	7000	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2370	2420	3200	4240	4690	5350	6150

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

TRCS2-G05-Z

High efficiency chiller, air source for outdoor installation

0211 - 1154 217,9-1313 kW

TRCS2-G05-Z/XL-CA			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	730,0	865,8	888,0	959,1	1040	1163
Total power input	(1)	kW	226,0	279,0	290,4	311,0	330,3	376,9
EER	(1)	kW/kW	3,230	3,103	3,058	3,084	3,149	3,086
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	728,4	863,6	885,7	957,0	1037	1160
EER	(1)(2)	kW/kW	3,200	3,070	3,030	3,060	3,120	3,050
Cooling energy class			A	A	B	B	A	B
SEPR	(3)(4)		6,18	6,13	6,18	6,30	6,13	6,28
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	817,5	950,3	1020	1097	1149	1338
Total power input	(5)	kW	228,8	282,7	291,5	312,6	331,8	377,4
EER	(5)	kW/kW	3,573	3,362	3,499	3,509	3,463	3,545
23°C/15°C								
Cooling capacity	(6)	kW	941,8	1152	1175	1263	1346	1543
Total power input	(6)	kW	236,1	283,2	297,9	322,3	333,4	382,8
EER	(6)	kW/kW	3,989	4,068	3,944	3,919	4,037	4,031
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	34,91	41,40	42,47	45,87	49,75	55,63
Pressure drop	(1)(2)	kPa	26,7	33,1	34,8	28,6	33,7	36,1
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	310	410	450	520	500	580
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	53	53	53	54	54	55
Sound power level in cooling	(8)(9)	dB(A)	86	86	86	87	87	88
SIZE AND WEIGHT								
A	(10)	mm	7900	9400	9700	10600	11200	12400
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6650	7520	7770	8650	9150	9960

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

TRCS2-G05-Z/SL-CA-E			0211	0251	0351	0452	0512	0552	0652
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	226,4	282,8	381,9	450,5	520,5	583,5	695,8
Total power input	(1)	kW	67,41	81,04	112,7	133,0	154,1	168,3	203,5
EER	(1)	kW/kW	3,359	3,491	3,389	3,387	3,378	3,467	3,419
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	225,6	281,9	380,8	449,4	519,2	581,8	694,4
EER	(1)(2)	kW/kW	3,310	3,440	3,350	3,350	3,340	3,420	3,390
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		6,32	6,24	6,45	6,56	6,29	6,23	6,68
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	250,5	308,4	414,8	498,1	594,6	636,1	756,7
Total power input	(5)	kW	67,53	85,47	117,1	133,3	167,2	177,7	209,9
EER	(5)	kW/kW	3,711	3,607	3,542	3,737	3,556	3,580	3,605
23°C/15°C									
Cooling capacity	(6)	kW	290,7	354,6	481,2	579,1	651,1	728,9	877,2
Total power input	(6)	kW	66,82	91,17	123,0	132,1	172,5	189,8	219,0
EER	(6)	kW/kW	4,352	3,888	3,912	4,384	3,774	3,840	4,005
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,83	13,52	18,26	21,55	24,89	27,90	33,27
Pressure drop	(1)(2)	kPa	34,5	33,0	34,7	28,6	29,0	36,4	24,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	100	100	130	220	220	240	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	56	56	58	58	58	59	59
Sound power level in cooling	(8)(9)	dB(A)	88	88	90	90	90	91	92
SIZE AND WEIGHT									
A	(10)	mm	3100	3100	4000	4900	4900	5800	7000
B	(10)	mm	2260	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	2270	2350	3130	4070	4230	4570	6040

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TRCS2-G05-Z

High efficiency chiller, air source for outdoor installation

0211 - 1154 217,9-1313 kW

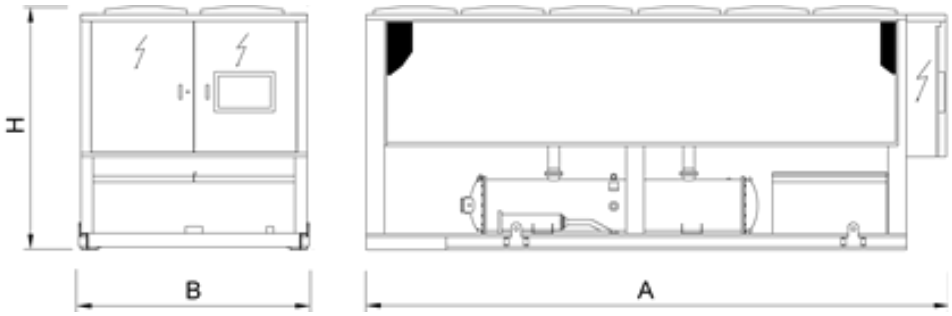
TRCS2-G05-Z/SL-CA-E			0712	0853	0913	1013	1054	1154
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	786,2	894,0	956,7	1071	1168	1313
Total power input	(1)	kW	233,3	263,0	279,5	316,2	335,5	382,5
EER	(1)	kW/kW	3,370	3,399	3,423	3,387	3,481	3,433
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	784,3	891,6	953,9	1068	1164	1309
EER	(1)(2)	kW/kW	3,330	3,360	3,380	3,350	3,430	3,390
Cooling energy class			A	A	A	A	A	A
SEPR	(3)(4)		6,44	6,36	6,51	6,53	6,20	6,43
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	854,3	1012	1043	1165	1274	1428
Total power input	(5)	kW	243,0	282,4	289,9	327,2	354,3	400,1
EER	(5)	kW/kW	3,516	3,584	3,598	3,561	3,596	3,569
23°C/15°C								
Cooling capacity	(6)	kW	987,0	1128	1206	1352	1460	1651
Total power input	(6)	kW	255,5	291,6	304,6	342,8	378,8	422,8
EER	(6)	kW/kW	3,863	3,868	3,959	3,944	3,854	3,905
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	37,60	42,75	45,75	51,24	55,85	62,77
Pressure drop	(1)(2)	kPa	31,0	35,3	40,4	35,7	42,4	46,0
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	3	3	3	4	4
No. Circuits		N°	1	2	2	2	2	2
Refrigerant charge		kg	310	410	450	520	500	580
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	59	60	60	60	61	62
Sound power level in cooling	(8)(9)	dB(A)	92	93	93	93	94	95
SIZE AND WEIGHT								
A	(10)	mm	7900	8500	9700	10600	11200	12400
B	(10)	mm	2260	2260	2260	2260	2260	2260
H	(10)	mm	2430	2430	2430	2430	2430	2430
Operating weight	(10)	kg	6450	7020	7610	8510	8660	9720

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

TRCS2 HFO-Z

High efficiency chiller, air source for outdoor installation

0351 - 1053 339,2-1017 kW



Outdoor unit for the production of chilled water featuring oil-free centrifugal compressor, with refrigerant HFO (1234-ze), axial-flow fans, condensing coil with copper tubes and aluminium fins, shell and tube flooded evaporator and electronic regulation valve. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Flexible and reliable unit thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

Control



W3000TE

The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.
For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.
Compatibility with the remote keyboard managing up to 8 units.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

r1234ze

Versions

SL-CA-E Super Low noise version, Premium efficiency, Class A enhanced (based on Eurovent classification)

Configurations

- Basic function

Features

HFO REFRIGERANT

4th generation refrigerant HFO 1234ze, with negligible greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of HFO 1234ze < 1, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer.

VERY HIGH EFFICIENCY

Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

EXTREMELY SILENT OPERATION

The best compromise between silence and efficiency, as result of a sistematic design oriented to minimize the noise level.

LOW INRUSH CURRENTS

Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

Accessories

- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Hydronic group
- Set-up for remote connectivity with ModBus/Echelon protocol cards

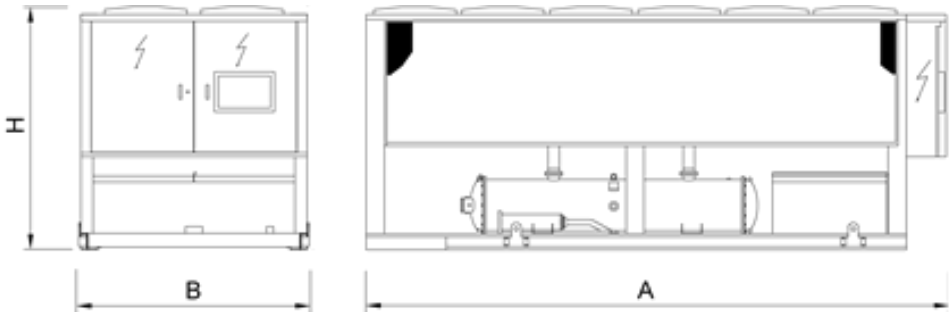
TRCS2 HFO-Z / SL-CA-E			0351	0702	1053
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50
PERFORMANCE					
COOLING ONLY (GROSS VALUE)					
Cooling capacity	(1)	kW	339,2	678,5	1017
Total power input	(1)	kW	96,26	192,4	282,4
EER	(1)	kW/kW	3,522	3,527	3,601
COOLING ONLY (EN14511 VALUE)					
Cooling capacity	(1)(2)	kW	338,3	677,2	1014
EER	(1)(2)	kW/kW	3,480	3,500	3,550
Cooling energy class			A	A	A
SEPR	(3)(4)		6,97	7,15	6,82
COOLING ONLY (GROSS VALUE)					
16°C/10°C					
Cooling capacity	(5)	kW	368,5	737,3	1109
Total power input	(5)	kW	100,0	200,3	293,0
EER	(5)	kW/kW	3,685	3,681	3,785
23°C/15°C					
Cooling capacity	(6)	kW	427,5	851,8	1283
Total power input	(6)	kW	106,3	213,7	307,7
EER	(6)	kW/kW	4,022	3,986	4,170
EXCHANGERS					
HEAT EXCHANGER USER SIDE IN REFRIGERATION					
Water flow	(1)	l/s	16,22	32,45	48,66
Pressure drop	(1)(2)	kPa	27,4	23,1	45,7
REFRIGERANT CIRCUIT					
Compressors nr.		N°	1	2	3
No. Circuits		N°	1	1	2
Refrigerant charge		kg	130	310	450
NOISE LEVEL					
Sound Pressure	(7)	dB(A)	58	59	60
Sound power level in cooling	(8)(9)	dB(A)	90	92	93
SIZE AND WEIGHT					
A	(10)	mm	4000	7900	9700
B	(10)	mm	2260	2260	2260
H	(10)	mm	2430	2430	2430
Operating weight	(10)	kg	3130	6450	7610

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

NR-C-Z

Chiller, air source for indoor installation

0072 - 1204 17,43-291,1 kW



Unit for indoor installation to produce chilled water with hermetic rotary Scroll compressors, centrifugal plug fans with EC motor, braze-welded plate-type exchanger and thermal expansion valve.
Structure and the external panelling made of hot-galvanised metal plate and painted with epoxy powder coat RAL 7035. The panels are easily removable for a quick and easy access to the inside components on either side of the unit.
The range includes the single-circuit two-compressor versions and the dual circuit four-compressor versions.

Control



Electronic control W3000TE
The keypad W3000 Compact, as standard equipment, features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language. In alternative or in addition to Compact keyboard, the innovative user interface KIPlink allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the refrigerant circuits, the compressors, the fans and the pumps (if present) and display and reset the possible alarms.
The regulation is based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. Alternatively, the proportional or proportional-integral regulations are also available.
Complete alarm management system is available, with the “black-box” and the alarm history display functions. For multiple units’ systems, the regulation of the resources can be implemented via optional proprietary devices. Energy metering, for both consumption and capacity, can also be developed.
The built-in clock can create an operating profile up to 4 typical days and 10 time bands.
Supervision is available either using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
A dedicated wall-mounted keypad can be used for remote control of all the functions.
Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

Refrigerant

R410A

Versions

K	Standard efficiency
SL-K	Super low noise, standard efficiency
A	High efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

ErP READY
The highest level of efficiency at part load can meet and exceed the minimum seasonal energy performance ration, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

PLUG FUN WITH EC MOTOR
More air flow by smaller diameter.
Energy cost saving by highest efficiency at the operating point.
Fan is directly coupling with motor, no energy lost due to the transmission (belts and pulleys). External rotor fitted with permanent magnets. Outstanding efficiency even at partial load range, due to the lack of brushes and lower consumption in every working condition in order to achieve a better seasonal efficiency in accordance with ErP Directive.

TOTAL VERSATILITY
Horizontal or vertical air flow.

INTEGRATED HYDRONIC MODULE
The built-in hydronic module already contains the main water circuit components; it is available as option with single or twin in-line pump, for achieving low or high head, fixed or variable speed.

Accessories

- Soft starters
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Outside air temperature probe for plant water set point compensation.
- Horizontal or vertical air outflow
- Hydronic module available in different configurations with 1 or 2 pumps fixed speed or variable speed, for achieving both low or high head.
- VPF (Variable Primary Flow) system
- Electronic expansion valve

NR-C-Z / K			0072	0092	0102	0122	0152	0182	0202	0232	0272
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	17,76	22,48	26,53	30,29	38,46	45,45	51,78	58,09	66,80
Total power input	(1)	kW	6,230	8,289	9,536	11,33	12,88	14,85	17,72	20,49	23,63
EER	(1)	kW/kW	2,857	2,714	2,778	2,681	2,984	3,054	2,927	2,834	2,831
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	17,70	22,40	26,40	30,10	38,30	45,30	51,60	57,80	66,50
EER	(1)(2)	kW/kW	2,850	2,710	2,780	2,680	2,990	3,060	2,930	2,830	2,830
Cooling energy class			A	B	A	B	A	A	A	A	A
SEPR	(3)(4)		5,37	5,23	5,41	4,95	5,34	5,23	5,12	4,92	4,92
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	19,57	24,78	29,12	33,20	42,13	49,81	56,66	63,39	72,99
Total power input	(5)	kW	6,286	8,457	9,708	11,59	13,11	15,12	18,09	20,97	24,14
EER	(5)	kW/kW	3,116	2,931	2,997	2,862	3,214	3,298	3,133	3,019	3,029
23°C/15°C											
Cooling capacity	(6)	kW	22,80	28,89	33,75	38,40	48,69	57,64	65,46	72,82	84,05
Total power input	(6)	kW	6,396	8,779	10,04	12,08	13,51	15,63	18,80	21,85	25,06
EER	(6)	kW/kW	3,562	3,292	3,370	3,174	3,607	3,692	3,484	3,339	3,347
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	0,849	1,075	1,269	1,449	1,839	2,173	2,476	2,778	3,194
Pressure drop	(1)(2)	kPa	24,8	24,4	25,1	25,5	27,3	24,9	25,3	25,6	25,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,50	3,70	4,10	4,20	7,30	8,30	9,20	9,40	10,7
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	48	46	49	48	45	48	49	50	50
Sound power level in cooling	(8)(9)	dB(A)	80	78	81	80	77	80	81	82	82
SIZE AND WEIGHT											
A	(10)	mm	1500	1500	1500	1500	2480	2480	2480	2480	2480
B	(10)	mm	900	900	900	900	1100	1100	1100	1100	1100
H	(10)	mm	1910	1910	1910	1910	2100	2100	2100	2100	2100
Operating weight	(10)	kg	380	380	400	410	680	710	720	740	800

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NR-C-Z

0072 - 1204 17,43-291,1 kW

Chiller, air source for indoor installation

NR-C-Z / K			0302	0352	0402	0452	0502	0552	0602	0702	0524
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	75,49	85,51	97,63	110,0	125,0	140,2	155,7	178,1	127,2
Total power input	(1)	kW	27,14	32,07	35,51	40,87	44,75	52,93	59,88	66,85	47,73
EER	(1)	kW/kW	2,786	2,664	2,749	2,689	2,790	2,650	2,599	2,662	2,667
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	75,20	85,20	97,20	109,6	124,6	139,7	155,2	177,5	126,8
EER	(1)(2)	kW/kW	2,800	2,670	2,750	2,690	2,800	2,660	2,610	2,670	2,680
Cooling energy class			A	B	A	B	A	B	B	B	B
SEPR	(3)(4)		4,87	4,60	4,78	4,61	4,81	4,54	4,64	4,63	4,77
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	82,35	93,39	106,9	120,1	136,3	152,9	169,9	194,2	138,6
Total power input	(5)	kW	27,78	32,90	36,44	41,97	45,92	54,33	61,49	68,77	48,90
EER	(5)	kW/kW	2,964	2,839	2,937	2,860	2,969	2,816	2,763	2,823	2,834
23°C/15°C											
Cooling capacity	(6)	kW	94,64	107,5	123,5	138,1	156,5	175,6	195,3	223,0	158,9
Total power input	(6)	kW	28,93	34,44	38,17	44,01	48,09	56,96	64,55	72,33	51,04
EER	(6)	kW/kW	3,273	3,125	3,233	3,139	3,254	3,081	3,023	3,084	3,116
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	3,610	4,089	4,669	5,262	5,978	6,705	7,445	8,518	6,080
Pressure drop	(1)(2)	kPa	25,9	25,7	25,3	25,4	25,4	25,8	25,6	26,3	25,6
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	1	2
Refrigerant charge		kg	11,1	12,0	14,1	14,8	18,6	19,2	20,0	23,5	21,0
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	50	52	55	48	55	56	57	62	56
Sound power level in cooling	(8)(9)	dB(A)	82	84	87	80	87	88	89	94	88
SIZE AND WEIGHT											
A	(10)	mm	2480	2480	2980	2980	3970	3970	3970	4670	3970
B	(10)	mm	1100	1100	1260	1260	1260	1260	1260	1260	1260
H	(10)	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	820	890	1080	1110	1290	1310	1380	1560	1250

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
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NR-C-Z / K			0604	0704	0804	0904	1004	1104	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	148,4	171,2	191,2	220,1	245,7	281,7	291,1
Total power input	(1)	kW	56,57	64,19	74,66	81,94	93,40	107,6	121,1
EER	(1)	kW/kW	2,622	2,667	2,560	2,687	2,631	2,618	2,404
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	147,9	170,7	190,6	219,5	245,0	281,0	290,3
EER	(1)(2)	kW/kW	2,630	2,680	2,570	2,700	2,640	2,630	2,410
Cooling energy class			B	B	B	B	B	B	C
SEPR	(3)(4)		4,63	4,57	4,55	4,58	4,61	4,50	-
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	161,8	187,0	209,0	240,4	267,7	307,4	318,1
Total power input	(5)	kW	57,94	65,86	76,76	84,12	95,87	110,4	124,3
EER	(5)	kW/kW	2,794	2,838	2,721	2,859	2,791	2,784	2,559
23°C/15°C									
Cooling capacity	(6)	kW	185,6	215,3	240,8	276,5	306,9	353,2	366,1
Total power input	(6)	kW	60,42	68,94	80,66	88,17	100,5	115,6	130,5
EER	(6)	kW/kW	3,073	3,125	2,984	3,135	3,054	3,055	2,805
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,098	8,188	9,143	10,52	11,75	13,47	13,92
Pressure drop	(1)(2)	kPa	27,0	25,7	26,1	26,1	26,1	23,5	25,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	3
Refrigerant charge		kg	22,3	26,3	28,4	32,3	34,6	86,0	86,0
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	58	63	65	59	61	62	62
Sound power level in cooling	(8)(9)	dB(A)	90	95	97	91	93	94	94
SIZE AND WEIGHT									
A	(10)	mm	3970	4670	4670	5670	5670	5670	5670
B	(10)	mm	1260	1260	1260	1260	1260	1260	1260
H	(10)	mm	2100	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	1350	1640	1780	2060	2140	2530	2580

Notes

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4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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9 Sound power level in cooling, outdoors.
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Certified data in EUROVENT

NR-C-Z

0072 - 1204 17,43-291,1 kW

Chiller, air source for indoor installation

NR-C-Z / SL-K			0072	0092	0102	0122	0152	0182	0202	0232
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	17,43	21,89	25,62	29,28	37,48	44,40	51,20	56,83
Total power input	(1)	kW	6,087	8,016	9,112	10,83	12,64	14,49	17,34	20,02
EER	(1)	kW/kW	2,857	2,731	2,810	2,713	2,976	3,062	2,960	2,840
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	17,30	21,80	25,50	29,10	37,30	44,20	51,00	56,60
EER	(1)(2)	kW/kW	2,870	2,720	2,830	2,720	2,960	3,070	2,970	2,840
Cooling energy class			A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,53	5,38	5,61	5,28	5,34	5,37	5,25	5,09
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	19,19	24,08	28,05	32,02	40,97	48,57	55,92	61,91
Total power input	(5)	kW	6,158	8,215	9,334	11,15	12,92	14,81	17,76	20,55
EER	(5)	kW/kW	3,117	2,932	3,012	2,883	3,178	3,284	3,140	3,005
23°C/15°C										
Cooling capacity	(6)	kW	22,31	27,97	32,38	36,90	47,19	56,02	64,35	70,92
Total power input	(6)	kW	6,297	8,594	9,759	11,74	13,42	15,40	18,55	21,52
EER	(6)	kW/kW	3,540	3,260	3,320	3,154	3,522	3,636	3,462	3,298
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	0,834	1,047	1,225	1,400	1,792	2,123	2,448	2,718
Pressure drop	(1)(2)	kPa	23,9	23,1	23,5	23,9	25,9	23,8	24,8	24,5
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,50	3,70	6,80	7,00	7,30	8,30	9,20	9,40
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	36	38	38	40	38	44	41	42
Sound power level in cooling	(8)(9)	dB(A)	68	70	70	72	70	76	73	74
SIZE AND WEIGHT										
A	(10)	mm	1500	1500	2480	2480	2480	2480	2480	2480
B	(10)	mm	900	900	1100	1100	1100	1100	1100	1100
H	(10)	mm	1910	1910	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	450	450	690	700	730	790	790	810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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NR-C-Z / SL-K			0272	0302	0352	0402	0452	0502	0552	0602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	65,37	73,49	82,99	94,78	106,9	122,4	136,4	150,5
Total power input	(1)	kW	22,77	26,43	31,05	34,34	39,50	43,82	51,51	57,78
EER	(1)	kW/kW	2,868	2,784	2,669	2,764	2,706	2,795	2,649	2,604
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	65,10	73,20	82,70	94,50	106,5	122,0	136,0	150,0
EER	(1)(2)	kW/kW	2,870	2,780	2,670	2,770	2,710	2,800	2,660	2,610
Cooling energy class			A	A	B	A	A	A	B	B
SEPR	(3)(4)		5,18	4,92	4,76	4,90	4,81	4,87	4,69	4,66
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	71,31	80,01	90,46	103,5	116,4	133,3	148,5	163,8
Total power input	(5)	kW	23,33	27,15	32,00	35,43	40,75	45,09	53,07	59,65
EER	(5)	kW/kW	3,060	2,952	2,828	2,924	2,860	2,956	2,797	2,748
23°C/15°C										
Cooling capacity	(6)	kW	81,90	91,62	103,7	119,1	133,4	152,6	169,9	187,4
Total power input	(6)	kW	24,36	28,44	33,73	37,45	43,06	47,43	56,01	63,18
EER	(6)	kW/kW	3,357	3,225	3,077	3,184	3,095	3,219	3,034	2,965
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	3,126	3,514	3,969	4,533	5,111	5,852	6,521	7,196
Pressure drop	(1)(2)	kPa	24,2	24,5	24,2	23,9	23,9	24,4	24,4	23,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	11,6	12,0	12,8	16,8	17,3	18,6	19,2	21,1
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	44	44	45	44	45	50	51	54
Sound power level in cooling	(8)(9)	dB(A)	76	76	77	76	77	82	83	86
SIZE AND WEIGHT										
A	(10)	mm	2980	2980	2980	3970	3970	3970	3970	4670
B	(10)	mm	1260	1260	1260	1260	1260	1260	1260	1260
H	(10)	mm	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	930	980	1060	1220	1380	1400	1430	1610

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NR-C-Z

0072 - 1204 17,43-291,1 kW

Chiller, air source for indoor installation

NR-C-Z / SL-K			0702	0524	0604	0704	0804	0904	1004
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	172,2	124,0	144,5	166,2	185,1	222,3	243,4
Total power input	(1)	kW	65,36	46,62	54,98	62,74	71,80	79,56	91,00
EER	(1)	kW/kW	2,633	2,661	2,627	2,651	2,578	2,793	2,675
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	171,7	123,6	144,0	165,7	184,6	221,6	242,7
EER	(1)(2)	kW/kW	2,640	2,670	2,630	2,660	2,590	2,800	2,680
Cooling energy class			B	B	B	B	B	A	B
SEPR	(3)(4)		4,60	4,97	4,80	4,80	4,69	4,81	4,75
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	187,4	134,8	157,1	181,1	201,9	242,8	265,3
Total power input	(5)	kW	67,51	47,93	56,52	64,64	74,21	81,70	93,28
EER	(5)	kW/kW	2,776	2,814	2,781	2,803	2,721	2,972	2,844
23°C/15°C									
Cooling capacity	(6)	kW	214,4	154,0	179,6	207,8	231,9	279,5	304,4
Total power input	(6)	kW	71,49	50,31	59,30	68,11	78,67	85,67	97,42
EER	(6)	kW/kW	2,999	3,062	3,029	3,051	2,947	3,261	3,125
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	8,237	5,929	6,911	7,946	8,851	10,63	11,64
Pressure drop	(1)(2)	kPa	24,6	24,3	25,6	24,2	24,5	26,6	25,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	4	4	4	4	4	4
No. Circuits		N°	1	2	2	2	2	2	2
Refrigerant charge		kg	25,3	21,0	23,1	27,6	29,7	82,6	84,3
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	57	50	52	57	50	56	57
Sound power level in cooling	(8)(9)	dB(A)	89	82	84	89	82	88	89
SIZE AND WEIGHT									
A	(10)	mm	5670	3970	4670	5670	5670	5670	5670
B	(10)	mm	1260	1260	1260	1260	1260	1260	1260
H	(10)	mm	2100	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	1790	1370	1550	1960	2110	2550	2600

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
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NR-C-Z / A			0072	0092	0102	0122	0152	0182	0202	0232
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	18,11	22,91	27,39	31,64	38,83	46,00	53,05	59,17
Total power input	(1)	kW	5,936	7,831	8,561	10,22	12,55	14,39	17,18	19,81
EER	(1)	kW/kW	3,047	2,925	3,201	3,098	3,079	3,194	3,081	2,990
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	18,00	22,80	27,20	31,40	38,60	45,80	52,80	58,90
EER	(1)(2)	kW/kW	3,060	2,930	3,210	3,100	3,090	3,230	3,110	3,000
Cooling energy class			A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,73	5,68	6,18	5,79	5,52	5,48	5,36	5,21
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	19,99	25,29	30,14	34,78	42,57	50,46	58,10	64,66
Total power input	(5)	kW	5,975	7,977	8,689	10,41	12,76	14,63	17,53	20,24
EER	(5)	kW/kW	3,350	3,170	3,464	3,346	3,328	3,459	3,320	3,203
23°C/15°C										
Cooling capacity	(6)	kW	23,35	29,54	35,09	40,45	49,26	58,48	67,16	74,49
Total power input	(6)	kW	6,057	8,259	8,944	10,78	13,12	15,10	18,17	21,03
EER	(6)	kW/kW	3,861	3,571	3,926	3,750	3,763	3,874	3,692	3,548
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	0,866	1,096	1,310	1,513	1,857	2,200	2,537	2,830
Pressure drop	(1)(2)	kPa	25,8	25,3	26,8	27,9	27,8	25,5	26,6	26,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,50	3,70	6,80	7,00	7,30	8,30	9,20	9,40
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	42	45	50	52	54	51	52	52
Sound power level in cooling	(8)(9)	dB(A)	74	77	82	84	86	83	84	84
SIZE AND WEIGHT										
A	(10)	mm	1500	1500	2480	2480	2480	2480	2480	2480
B	(10)	mm	900	900	1100	1100	1100	1100	1100	1100
H	(10)	mm	1910	1910	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	450	450	690	700	730	790	790	810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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NR-C-Z

0072 - 1204 17,43-291,1 kW

Chiller, air source for indoor installation

NR-C-Z / A			0272	0302	0352	0402	0452	0502	0552	0602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	67,76	77,18	87,21	99,82	113,0	126,1	141,0	158,5
Total power input	(1)	kW	22,81	26,21	30,71	33,70	38,72	43,92	51,68	57,44
EER	(1)	kW/kW	2,974	2,947	2,840	2,961	2,920	2,872	2,727	2,761
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	67,50	76,90	86,90	99,40	112,6	125,7	140,5	158,0
EER	(1)(2)	kW/kW	2,990	2,960	2,850	2,980	2,930	2,880	2,730	2,780
Cooling energy class			A	A	A	A	A	A	A	A
SEPR	(3)(4)		5,23	5,12	4,91	5,08	5,04	4,91	4,72	4,86
COOLING ONLY (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(5)	kW	74,13	84,38	95,43	109,5	123,5	137,5	153,9	173,2
Total power input	(5)	kW	23,27	26,78	31,46	34,53	39,71	45,05	53,05	58,92
EER	(5)	kW/kW	3,180	3,149	3,029	3,174	3,111	3,049	2,904	2,941
23°C/15°C										
Cooling capacity	(6)	kW	85,56	97,34	110,2	126,8	142,5	158,0	176,8	199,6
Total power input	(6)	kW	24,11	27,80	32,82	36,07	41,54	47,16	55,62	61,75
EER	(6)	kW/kW	3,552	3,500	3,360	3,512	3,434	3,347	3,180	3,235
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	3,240	3,691	4,171	4,774	5,402	6,028	6,742	7,580
Pressure drop	(1)(2)	kPa	26,0	27,1	26,7	26,5	26,7	25,9	26,1	26,5
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	11,6	12,0	12,8	16,8	17,3	18,6	19,2	21,1
NOISE LEVEL										
Sound Pressure	(7)	dB(A)	58	51	52	51	53	54	56	61
Sound power level in cooling	(8)(9)	dB(A)	90	83	84	83	85	86	88	93
SIZE AND WEIGHT										
A	(10)	mm	2980	2980	2980	3970	3970	3970	3970	4670
B	(10)	mm	1260	1260	1260	1260	1260	1260	1260	1260
H	(10)	mm	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	930	980	1060	1220	1380	1400	1430	1610

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, outdoors.
10 Unit in standard configuration/execution, without optional accessories.

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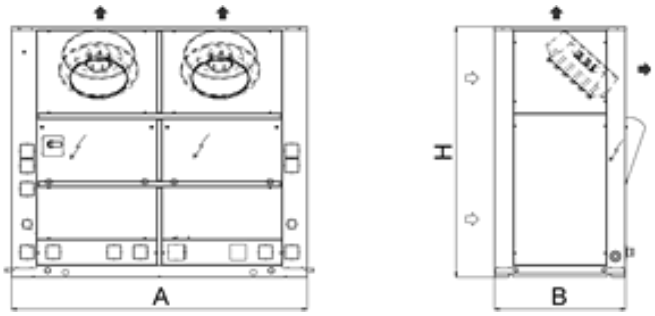
NR-C-Z / A			0702	0524	0604	0704	0804	0904	1004
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	180,4	127,2	150,0	173,5	193,4	225,0	251,1
Total power input	(1)	kW	65,28	46,54	55,11	62,30	70,67	81,65	91,08
EER	(1)	kW/kW	2,763	2,735	2,722	2,785	2,736	2,757	2,756
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	179,8	126,8	149,5	173,0	192,8	224,3	250,4
EER	(1)(2)	kW/kW	2,770	2,740	2,730	2,800	2,750	2,770	2,760
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		4,79	4,93	4,80	4,91	4,84	4,74	4,74
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	197,0	138,6	163,6	189,8	211,7	246,3	273,9
Total power input	(5)	kW	67,07	47,71	56,42	63,86	72,62	83,47	93,40
EER	(5)	kW/kW	2,936	2,906	2,901	2,970	2,916	2,950	2,933
23°C/15°C									
Cooling capacity	(6)	kW	226,7	158,9	188,0	218,8	244,4	284,6	314,6
Total power input	(6)	kW	70,41	49,85	58,80	66,74	76,25	86,82	97,72
EER	(6)	kW/kW	3,220	3,184	3,197	3,280	3,207	3,279	3,220
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	8,628	6,080	7,174	8,298	9,249	10,76	12,01
Pressure drop	(1)(2)	kPa	27,0	25,6	27,6	26,4	26,7	27,3	27,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	4	4	4	4	4	4
No. Circuits		N°	1	2	2	2	2	2	2
Refrigerant charge		kg	25,3	21,0	23,1	27,6	29,7	82,6	84,3
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	64	54	57	56	56	59	59
Sound power level in cooling	(8)(9)	dB(A)	96	86	89	88	88	91	91
SIZE AND WEIGHT									
A	(10)	mm	5670	3970	4670	5670	5670	5670	5670
B	(10)	mm	1260	1260	1260	1260	1260	1260	1260
H	(10)	mm	2100	2100	2100	2100	2100	2100	2100
Operating weight	(10)	kg	1790	1370	1550	1960	2110	2550	2600

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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Dimensional drawing



CHILLERS

NR-W-Z

Water cooled chiller

0122 - 1204 38,14-397,8 kW



Water to water indoor unit for the production of chilled water with hermetic rotary Scroll compressors, braze-welded plate-type exchanger and electronic expansion valve. Basement and frame in hot-galvanised shaped sheet steel with a suitable thickness. All parts polyester-powder painted to assure total weather resistance, RAL 7035.
The range includes the single-circuit two-compressor versions and the dual circuit four-compressor versions.

Control



Electronic control W3000TE
The brand new W3000TE controller offers advanced functions and algorithms.
The keypad W3000 Compact, as standard equipment, features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language.
The regulation is based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional- integral regulations are also available.
Diagnostics include complete alarm management, with “blackbox” functions (via PC) and alarm log (display or PC) for best analysis of unit be haviour. For systems made up of multiple units, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, in this way ensuring more efficient energy distribution and, at the same time, guaranteeing simultaneous water delivery to the different distribution systems.
Supervision is available with different options, using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
A dedicated wall-mounted keypad can be used for remote control of all the functions.
Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

Refrigerant

R410A

Versions

- Basic

Configurations

- Basic function

Features

HIGH EFFICIENCY
Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

ErP READY
The highest level of efficiency at part load can meet and exceed the minimum seasonal energy performance ration, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

VARIBLE PRIMARY FLOW (OPTION)
Energy saving due to variable pump speed management based on load demand and the variable flow assures the functioning of the units also with critical working conditions. VPF (Variable Primary Flow) available for sizes 0604-1204.

EXTREMELY SILENT OPERATION
Extremely silent operation together with high efficiency, tank to dedicated acoustic devices and a precise design for the choice of the components.

INTEGRATED HYDRONIC MODULE
The built-in hydronic module already contains the main water circuit components; it is available as option with single or twin in-line pump, for achieving low head, fixed or variable speed, available for user side and source side (up to 4 pumps).

INTEGRATED CONDENSATION´S CONTROL
The electronics of the units manages the most suitable condensing control for each type of application: pressure-controlled valve, two or three-way modulating valv, 0-10V signal for variable speed driven pumps.

TOTAL VERSATILITY
NR-W-Z units have been designed with a range of integrated accessories in mind for operation with total water loss (well, water bed, etc.), dry cooler or cooling tower and suitable for geothermal application so as to satisfy all service system and installation requirements.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD
The use of the electronic expansion valve generates considerable benefits, and guarantees energy saving due to efficiency optimization in case of source temperature variability. The electronic thermostatic valve allows you to obtain speed in reaching machine stability and an extension of the operating limits.

Accessories

- Touch Screen visual display
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Outside air temperature probe for plant water set point compensation.
- Integral acoustical enclosure (type base)
- Thicker soundproofing cladding
- User side and source side hydronic kit available in different configurations
- VPF (Variable Primary Flow) system
- Condensing control device: two or three-way modulating pressure-controlled valve and inverter on pumps

NR-W-Z			0122	0152	0182	0202	0252	0262	0302
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	38,14	47,70	56,19	65,31	72,33	82,33	96,67
Total power input	(1)	kW	7,525	9,312	10,84	12,62	13,84	15,99	18,88
EER	(1)	kW/kW	5,060	5,124	5,204	5,183	5,239	5,144	5,116
ESEER	(1)	kW/kW	6,460	6,760	6,420	6,470	6,720	6,410	6,490
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	37,90	47,50	55,90	65,10	72,00	82,00	96,40
EER	(1)(2)	kW/kW	4,850	4,890	4,960	4,970	5,010	4,960	4,940
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		6,91	-	6,76	-	7,15	6,91	-
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	42,04	52,55	61,92	71,94	79,73	90,64	106,5
Total power input	(5)	kW	7,591	9,345	10,96	12,78	13,97	16,24	19,13
EER	(5)	kW/kW	5,534	5,621	5,627	5,617	5,693	5,593	5,576
23°C/15°C									
Cooling capacity	(6)	kW	48,71	60,79	71,69	83,27	92,38	104,8	123,3
Total power input	(6)	kW	7,651	9,299	11,08	12,99	14,12	16,59	19,40
EER	(6)	kW/kW	6,366	6,538	6,459	6,408	6,553	6,313	6,356
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,824	2,281	2,687	3,123	3,459	3,937	4,623
Pressure drop	(1)(2)	kPa	21,6	26,6	26,7	21,8	21,6	21,8	22,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	2,175	2,716	3,194	3,713	4,106	4,684	5,505
Pressure drop	(1)(2)	kPa	11,8	15,7	18,1	20,6	23,1	13,5	14,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	3,80	4,20	5,20	5,50	6,70	8,00	9,60
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	57	57	58	58	58	59	60
Sound power level in cooling	(8)(9)	dB(A)	73	73	74	74	74	75	76
SIZE AND WEIGHT									
A	(10)	mm	1225	1225	1225	1225	1225	1225	1225
B	(10)	mm	885	885	885	885	885	885	885
H	(10)	mm	1495	1495	1495	1495	1495	1495	1495
Operating weight	(10)	kg	360	360	390	410	440	480	520

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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NR-W-Z

Water cooled chiller

0122 - 1204 38,14-397,8 kW

NR-W-Z			0352	0402	0452	0502	0552	0602	0702
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	111,4	126,1	141,8	157,5	181,1	204,4	230,5
Total power input	(1)	kW	21,68	24,48	27,68	30,88	35,20	39,59	45,24
EER	(1)	kW/kW	5,134	5,147	5,119	5,097	5,145	5,162	5,100
ESEER	(1)	kW/kW	6,630	6,340	6,470	6,320	6,420	6,420	6,500
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	111,0	125,7	141,4	157,0	180,6	203,8	229,8
EER	(1)(2)	kW/kW	4,960	4,990	4,960	4,930	4,990	5,000	4,930
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		6,96	-	-	6,79	-	6,90	-
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	122,8	139,1	156,3	173,5	199,6	225,5	253,8
Total power input	(5)	kW	22,00	24,88	28,11	31,33	35,75	40,24	46,18
EER	(5)	kW/kW	5,582	5,586	5,562	5,543	5,591	5,609	5,494
23°C/15°C									
Cooling capacity	(6)	kW	142,3	161,4	181,1	200,9	231,4	261,6	293,6
Total power input	(6)	kW	22,42	25,43	28,68	31,93	36,49	41,14	47,57
EER	(6)	kW/kW	6,353	6,354	6,310	6,298	6,340	6,365	6,168
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	5,326	6,030	6,780	7,532	8,659	9,777	11,02
Pressure drop	(1)(2)	kPa	22,9	23,1	23,8	24,4	24,9	25,5	30,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	6,339	7,174	8,074	8,974	10,30	11,63	13,14
Pressure drop	(1)(2)	kPa	14,6	15,4	15,9	18,5	18,3	21,0	23,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	11,0	12,5	13,9	14,8	18,1	21,4	21,9
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	60	60	61	61	62	62	65
Sound power level in cooling	(8)(9)	dB(A)	77	77	78	78	79	79	82
SIZE AND WEIGHT									
A	(10)	mm	1570	1570	1570	1570	1570	1570	1570
B	(10)	mm	885	885	885	885	885	885	885
H	(10)	mm	1805	1805	1805	1805	1805	1805	1805
Operating weight	(10)	kg	660	740	790	820	870	920	940

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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Certified data in EUROVENT

NR-W-Z			0604	0704	0804	0904	1004	1104	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	191,8	221,0	250,0	281,3	312,7	359,3	397,8
Total power input	(1)	kW	38,29	43,95	49,61	56,09	62,55	71,34	79,96
EER	(1)	kW/kW	5,008	5,034	5,040	5,014	5,003	5,039	4,972
ESEER	(1)	kW/kW	6,600	6,640	6,580	6,640	6,530	6,610	6,570
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	191,4	220,5	249,4	280,6	311,9	358,4	396,6
EER	(1)(2)	kW/kW	4,880	4,910	4,910	4,880	4,860	4,880	4,800
Cooling energy class			B	B	B	B	B	B	B
SEPR	(3)(4)		7,10	7,01	6,88	6,86	6,77	6,82	6,76
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	211,1	243,4	275,6	309,8	344,1	395,7	437,9
Total power input	(5)	kW	38,86	44,68	50,50	57,05	63,57	72,58	81,37
EER	(5)	kW/kW	5,427	5,445	5,457	5,426	5,410	5,450	5,380
23°C/15°C									
Cooling capacity	(6)	kW	244,0	281,6	319,1	358,3	397,7	457,8	506,2
Total power input	(6)	kW	39,55	45,65	51,76	58,38	64,97	74,31	83,36
EER	(6)	kW/kW	6,177	6,175	6,160	6,135	6,118	6,162	6,070
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	9,174	10,57	11,96	13,45	14,95	17,18	19,02
Pressure drop	(1)(2)	kPa	17,1	18,1	20,0	21,3	24,9	28,2	34,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,96	12,62	14,27	16,07	17,87	20,51	22,75
Pressure drop	(1)(2)	kPa	16,2	17,4	19,6	22,0	24,8	30,0	36,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	19,3	23,1	25,5	29,9	37,7	44,5	44,6
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	69	70	71	72	73	74	74
Sound power level in cooling	(8)(9)	dB(A)	86	87	88	89	90	91	91
SIZE AND WEIGHT									
A	(10)	mm	2210	2210	2650	2650	2650	2650	2650
B	(10)	mm	885	885	885	885	885	885	885
H	(10)	mm	1805	1805	1805	1805	1805	1805	1805
Operating weight	(10)	kg	870	1050	1240	1330	1530	1630	1710

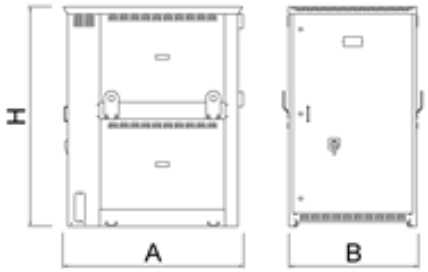
Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

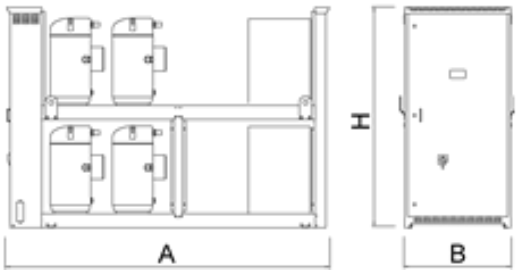
The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing

Size 0122-802



Size 0604-1204



CHILLERS

FR-W-Z

Water cooled chiller

0551 - 1752 124,3-400,6 kW



Indoor unit for the production of chilled water featuring semihermetic screw compressors optimized to operate with low compression ratio and R134a, shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and shell and tube condenser and electronic expansion valve.
Base and supporting structure is made of polyester painted galvanized steel. Eurovent certification. The unit results extremely compact, thanks to the peculiar construction layout, without base frame and panels.
The high performance's level is achieved thanks to the accurate sizing of all internal components.

Refrigerant

R134a

Configurations

- \- Basic function
- D Partial condensing heat recovery function
- R Total condensing heat recovery function

Features

ErP READY
Thanks to the high level of efficiency at part load, the unit can meet and exceed the minimum energy efficiency threshold rated by the Seasonal Energy Performance Ratio SEPR HT, in accordance with the eco-sustainable design requirements for all products using energy. The unit is already compliant with the minimum seasonal efficiency requirements that will start from 2021.

MAXIMUM COMPACTNESS
Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD
The use of the electronic expansion valve generates considerable benefits, especially in cases of variability of the source temperature. The electronic expansion valve guarantees speed in reaching machine stability and an extension of the operating limits.

Accessories

- VPF (Variable Primary Flow) system
- Several devices for condensation´s control
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Touch Screen visual display
- KIPlink user interface

Control



Electronic control W3000TE
The brand new W3000TE controller offers advanced functions and algorithms. The LARGE keyboard with a large format and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits. In addition to or as an alternative at Large Keyboard, the KIPlink - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for enhanced analysis of the unit operation.
Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with the remote keyboard managing up to 8 units. The regulation operates on the water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

FR-W-Z			0551	0651	0751	0851	0951	1102
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	124,3	140,5	166,3	198,2	221,7	252,4
Total power input	(1)	kW	24,47	27,27	34,14	38,89	44,24	48,99
EER	(1)	kW/kW	5,073	5,147	4,877	5,095	5,016	5,151
ESEER	(1)	kW/kW	5,980	6,020	5,950	6,010	5,940	6,340
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	123,9	140,1	165,8	197,5	220,8	251,4
EER	(1)(2)	kW/kW	4,900	4,970	4,700	4,900	4,820	4,960
Cooling energy class			B	B	B	B	B	B
SEPR	(3)(4)		7,05	7,11	7,02	7,05	7,04	7,05
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	137,9	156,2	184,2	220,2	246,0	280,4
Total power input	(5)	kW	24,71	27,53	34,42	39,17	44,57	49,49
EER	(5)	kW/kW	5,583	5,680	5,355	5,617	5,516	5,665
23°C/15°C								
Cooling capacity	(6)	kW	161,5	183,5	215,1	258,4	288,1	328,8
Total power input	(6)	kW	25,02	27,87	34,73	39,38	44,89	50,13
EER	(6)	kW/kW	6,460	6,577	6,199	6,558	6,416	6,563
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	5,944	6,719	7,954	9,479	10,60	12,07
Pressure drop	(1)(2)	kPa	19,8	19,7	27,6	33,0	41,2	41,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION								
Water flow	(1)	l/s	7,087	7,993	9,546	11,29	12,67	14,36
Pressure drop	(1)(2)	kPa	21,8	25,6	30,6	26,6	26,2	22,4
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	2
No. Circuits		N°	1	1	1	1	1	2
Refrigerant charge		kg	22,0	32,0	30,0	56,0	54,0	44,0
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	75	75	76	76	76	78
Sound power level in cooling	(8)(9)	dB(A)	92	92	93	93	93	95
SIZE AND WEIGHT								
A	(10)	mm	2400	2600	2700	3000	3000	3000
B	(10)	mm	920	920	950	960	960	1100
H	(10)	mm	1500	1500	1500	1500	1500	1500
Operating weight	(10)	kg	1050	1110	1280	1450	1460	1710

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

FR-W-Z

Water cooled chiller

0551 - 1752 124,3-400,6 kW

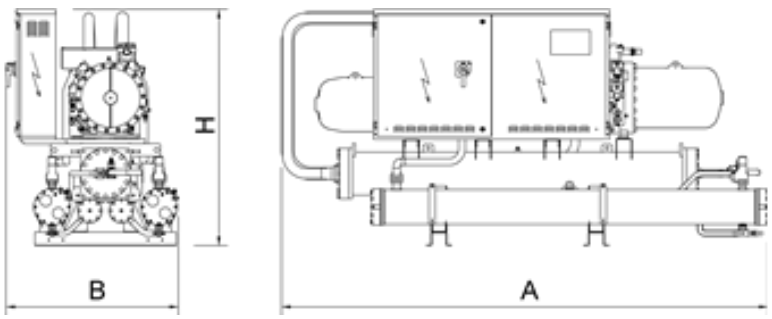
FR-W-Z			1302	1402	1502	1602	1752
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	285,1	311,9	345,2	366,2	400,6
Total power input	(1)	kW	54,57	61,46	68,38	72,99	83,17
EER	(1)	kW/kW	5,222	5,072	5,047	5,016	4,815
ESEER	(1)	kW/kW	6,310	6,300	6,190	6,120	6,090
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	284,1	310,7	344,2	365,1	399,2
EER	(1)(2)	kW/kW	5,030	4,880	4,880	4,860	4,660
Cooling energy class			B	B	B	B	B
SEPR	(3)(4)		7,11	7,08	7,08	7,03	7,01
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	317,3	346,4	383,3	406,3	443,9
Total power input	(5)	kW	55,12	62,07	69,01	73,60	83,82
EER	(5)	kW/kW	5,759	5,578	5,555	5,520	5,297
23°C/15°C							
Cooling capacity	(6)	kW	373,3	406,1	449,2	475,7	518,8
Total power input	(6)	kW	55,85	62,84	69,73	74,21	84,41
EER	(6)	kW/kW	6,678	6,467	6,445	6,411	6,147
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	13,63	14,91	16,51	17,51	19,16
Pressure drop	(1)(2)	kPa	38,5	46,1	32,0	36,0	43,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION							
Water flow	(1)	l/s	16,18	17,79	19,70	20,92	23,03
Pressure drop	(1)(2)	kPa	26,3	28,9	32,5	28,5	24,5
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	64,0	62,0	60,0	86,0	110
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	77	78	78	78	78
Sound power level in cooling	(8)(9)	dB(A)	95	96	96	96	96
SIZE AND WEIGHT							
A	(10)	mm	3100	3100	3200	3200	3200
B	(10)	mm	1100	1100	1100	1200	1200
H	(10)	mm	1500	1500	1600	1600	1600
Operating weight	(10)	kg	1820	1990	2280	2430	2590

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

FRCS3-W-Z

Water cooled chiller

0551 - 4752 188,2-1693 kW



High efficiency unit for indoor installation for chilled water production. Semihermetic screw compressors optimized to operate with low compression ratio and R134a; shell and tubes condenser, flooded evaporator and electronic expansion valve. High efficiency unit thanks to the innovative optimized compressors and the high performing heat exchangers.

Refrigerant

R134a

Versions

CA High energy efficiency units

Features

HIGH EFFICIENCY

Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

MAXIMUM COMPACTNESS

Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variability of the source temperature. The electronic expansion valve guarantees speed in reaching machine stability and an extension of the operating limits.

AHRI CERTIFICATION

Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Control



W3000TE

The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.
For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.
Compatibility with the remote keyboard managing up to 8 units.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Accessories

- Touch Screen visual display
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation´s control

FRCS3-W-Z			0551	0701	0851	0951	1101	1301	1401
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	188,2	250,0	306,0	337,6	383,5	459,9	524,0
Total power input	(1)	kW	34,94	45,85	56,10	61,20	69,80	82,52	93,00
EER	(1)	kW/kW	5,393	5,447	5,455	5,516	5,494	5,575	5,634
ESEER	(1)	kW/kW	6,840	7,090	6,550	6,850	6,800	6,730	6,900
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	187,4	248,9	304,7	336,1	381,9	458,2	522,3
EER	(1)(2)	kW/kW	5,090	5,150	5,160	5,210	5,200	5,300	5,400
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		7,97	8,07	7,69	7,74	7,71	7,51	7,68
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	209,7	278,5	340,5	375,4	426,5	512,8	584,3
Total power input	(5)	kW	35,32	46,32	56,64	61,89	70,61	83,62	94,29
EER	(5)	kW/kW	5,941	6,015	6,016	6,065	6,041	6,134	6,196
23°C/15°C									
Cooling capacity	(6)	kW	247,0	328,1	400,3	441,0	501,0	604,9	689,3
Total power input	(6)	kW	35,82	46,88	57,24	62,82	71,74	85,13	96,12
EER	(6)	kW/kW	6,899	6,996	6,998	7,022	6,987	7,108	7,173
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	9,001	11,95	14,63	16,15	18,34	21,99	25,06
Pressure drop	(1)(2)	kPa	42,0	48,7	49,1	52,4	52,8	47,5	39,9
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,64	14,10	17,26	19,01	21,61	25,86	29,42
Pressure drop	(1)(2)	kPa	56,7	57,2	56,0	58,6	57,4	54,5	44,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	75,0	86,0	95,0	94,0	86,0	100	110
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	77	77	80	80	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	95	95	98	98	98	98	98
SIZE AND WEIGHT									
A	(10)	mm	2920	2920	2920	2920	2920	2900	2900
B	(10)	mm	1180	1180	1180	1180	1180	1180	1180
H	(10)	mm	1870	1870	1870	1870	1870	1960	1970
Operating weight	(10)	kg	1740	1790	2170	2200	2260	2940	3020

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

FRCS3-W-Z

Water cooled chiller

0551 - 4752 188,2-1693 kW

FRCS3-W-Z			1651	1901	2101	2501	2602	3002	3152
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	591,8	681,6	741,3	837,0	915,9	1062	1140
Total power input	(1)	kW	103,9	121,9	133,1	149,3	164,1	186,9	196,0
EER	(1)	kW/kW	5,696	5,591	5,569	5,606	5,581	5,682	5,816
ESEER	(1)	kW/kW	7,000	6,900	6,890	6,940	7,350	7,430	7,460
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	589,5	679,4	738,9	834,3	913,2	1058	1137
EER	(1)(2)	kW/kW	5,410	5,330	5,340	5,370	5,370	5,420	5,630
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		7,53	7,53	7,85	7,86	7,61	7,57	7,96
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	659,5	759,4	826,5	933,2	1021	1184	1272
Total power input	(5)	kW	105,6	124,0	135,3	151,7	166,3	189,5	198,7
EER	(5)	kW/kW	6,245	6,124	6,109	6,152	6,140	6,248	6,402
23°C/15°C									
Cooling capacity	(6)	kW	777,5	894,8	974,7	1101	1205	1397	1502
Total power input	(6)	kW	107,9	126,8	138,0	154,7	169,2	193,1	202,4
EER	(6)	kW/kW	7,206	7,057	7,063	7,117	7,122	7,235	7,421
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	28,30	32,59	35,45	40,03	43,80	50,79	54,53
Pressure drop	(1)(2)	kPa	50,9	42,0	42,7	42,8	40,0	51,5	37,4
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	33,17	38,31	41,69	47,02	51,49	59,55	63,73
Pressure drop	(1)(2)	kPa	55,2	59,7	45,3	47,6	44,0	53,8	31,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2
Refrigerant charge		kg	112	121	147	182	210	249	270
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	80	80	82	82	81	81	81
Sound power level in cooling	(8)(9)	dB(A)	98	98	100	100	100	100	100
SIZE AND WEIGHT									
A	(10)	mm	2900	2930	2980	2990	4430	4430	4440
B	(10)	mm	1180	1180	1190	1280	1270	1270	1270
H	(10)	mm	1960	2050	2100	2200	2210	2210	2280
Operating weight	(10)	kg	3150	3270	3570	3960	6200	6430	7080

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

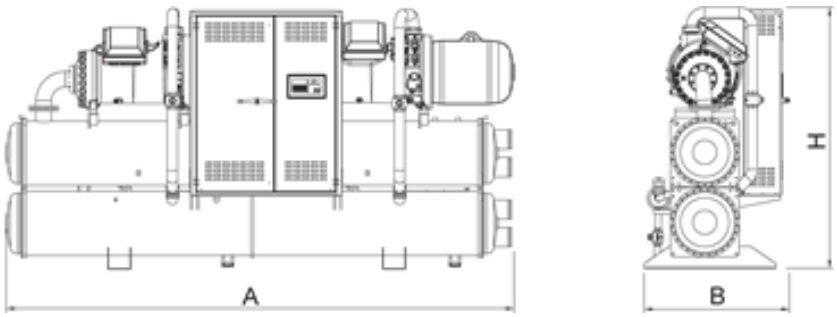
FRCS3-W-Z			3502	3652	4002	4102	4502	4602	4752
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1218	1303	1382	1450	1522	1614	1693
Total power input	(1)	kW	214,0	224,7	241,8	252,5	268,1	284,0	292,0
EER	(1)	kW/kW	5,692	5,799	5,715	5,743	5,677	5,683	5,798
ESEER	(1)	kW/kW	7,240	7,320	7,280	7,270	7,120	7,390	7,390
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1214	1299	1377	1445	1517	1609	1688
EER	(1)(2)	kW/kW	5,430	5,600	5,460	5,500	5,420	5,450	5,540
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		7,57	7,92	7,62	7,69	8,00	8,04	8,14
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1357	1454	1541	1617	1697	1801	1888
Total power input	(5)	kW	217,4	228,0	245,5	256,4	272,3	288,4	296,0
EER	(5)	kW/kW	6,242	6,377	6,277	6,307	6,232	6,245	6,378
23°C/15°C									
Cooling capacity	(6)	kW	1600	1715	1817	1907	2001	2125	2229
Total power input	(6)	kW	222,0	232,5	250,6	261,5	277,6	293,8	300,6
EER	(6)	kW/kW	7,207	7,376	7,251	7,293	7,208	7,233	7,415
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	58,23	62,33	66,11	69,33	72,76	77,20	80,94
Pressure drop	(1)(2)	kPa	51,4	39,8	50,4	46,7	51,5	42,5	46,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	68,26	72,87	77,45	81,18	85,33	90,51	94,64
Pressure drop	(1)(2)	kPa	56,2	33,7	52,9	49,5	54,7	53,1	58,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	270	280	280	288	297	341	341
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	81	81	81	82	82	82	82
Sound power level in cooling	(8)(9)	dB(A)	100	100	100	101	102	102	102
SIZE AND WEIGHT									
A	(10)	mm	4470	4470	4470	4565	4650	5270	5270
B	(10)	mm	1270	1320	1270	1320	1320	1320	1320
H	(10)	mm	2250	2330	2280	2380	2380	2380	2380
Operating weight	(10)	kg	7160	7560	7280	7850	7940	8420	8950

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

FR-W-G04-Z

Water cooled chiller

0551 - 2002 93,17-373,4 kW



Indoor unit for the production of chilled water featuring semihermetic screw compressors optimized to operate with low compression ratio, refrigerant HFO R1234ze, shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and shell and tube condenser and electronic expansion valve.
Base and supporting structure is made of polyester painted galvanized steel. Eurovent certification. The unit results extremely compact thanks to the peculiar construction layout, without base frame and panels, and extremely flexible to easily adapts itself to different thermal load conditions thanks to the precise thermoregulation. The high performance's level is achieved thanks to the accurate sizing of all internal components.

Control



Electronic control W3000TE
The brand new W3000TE controller offers advanced functions and algorithms. The LARGE keyboard with a large format and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits. In addition to or as an alternative at Large Keyboard, the KIPlink - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for enhanced analysis of the unit operation.
Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with the remote keyboard managing up to 8 units. The regulation operates on the water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

Refrigerant

r1234ze

Configurations

- Basic function
- R Total condensing heat recovery function

Features

HFO REFRIGERANT
4th generation refrigerant HFO 1234ze, with negligible greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of HFO 1234ze < 1, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer.

ErP READY
Thanks to the high level of efficiency at part load, the unit can meet and exceed the minimum energy efficiency threshold rated by the Seasonal Energy Performance Ratio SEPR HT, in accordance with the eco-sustainable design requirements for all products using energy. The unit is already compliant with the minimum seasonal efficiency requirements that will start from 2021.

MAXIMUM COMPACTNESS
Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD
The use of the electronic expansion valve generates considerable benefits, especially in cases of variability of the source temperature. The electronic expansion valve guarantees speed in reaching machine stability and an extension of the operating limits.

Accessories

- VPF (Variable Primary Flow) system
- Several devices for condensation´s control
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Touch Screen visual display
- KIPlink user interface
- Kit HWT, High Water Temperature
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover

FR-W-G04-Z			0551	0651	0751	0851	0951	1102
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	93,17	103,0	125,9	143,6	166,0	188,3
Total power input	(1)	kW	18,52	20,89	26,21	29,65	33,88	37,05
EER	(1)	kW/kW	5,038	4,928	4,805	4,851	4,897	5,089
ESEER	(1)	kW/kW						
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	92,90	102,6	125,5	143,1	165,5	187,7
EER	(1)(2)	kW/kW	4,840	4,730	4,650	4,670	4,720	4,910
Cooling energy class			B	B	B	B	B	B
SEPR	(3)(4)		7,05	7,04	7,03	7,02	7,08	7,05
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	103,7	114,8	140,0	159,7	184,8	209,9
Total power input	(5)	kW	18,60	20,97	26,29	29,72	33,96	37,21
EER	(5)	kW/kW	5,575	5,467	5,323	5,377	5,435	5,642
23°C/15°C								
Cooling capacity	(6)	kW	122,3	135,4	164,7	187,8	217,7	247,6
Total power input	(6)	kW	18,63	20,97	26,23	29,64	33,86	37,28
EER	(6)	kW/kW	6,575	6,448	6,286	6,345	6,422	6,638
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	4,455	4,927	6,020	6,866	7,936	9,007
Pressure drop	(1)(2)	kPa	23,3	28,5	20,3	27,6	27,7	30,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION								
Water flow	(1)	l/s	5,320	5,902	7,242	8,249	9,517	10,74
Pressure drop	(1)(2)	kPa	19,8	19,2	23,0	27,2	29,7	20,2
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	2
No. Circuits		N°	1	1	1	1	1	2
Refrigerant charge		kg	22,0	21,0	24,0	35,0	35,0	44,0
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	75	75	76	76	76	78
Sound power level in cooling	(8)(9)	dB(A)	92	92	93	93	93	95
SIZE AND WEIGHT								
A	(10)	mm	2400	2400	2700	2700	2700	3000
B	(10)	mm	945	945	945	945	945	1100
H	(10)	mm	1500	1500	1500	1500	1500	1500
Operating weight	(10)	kg	930	940	1210	1290	1310	1690

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

FR-W-G04-Z

Water cooled chiller

0551 - 2002 93,17-373,4 kW

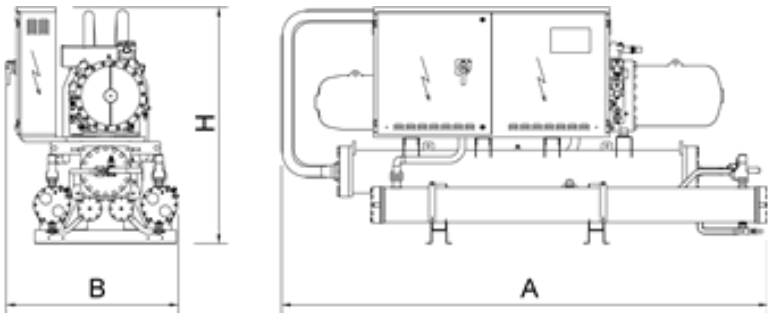
FR-W-G04-Z			1302	1402	1502	1702	1902	2002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	212,0	232,0	259,7	291,8	331,8	373,4
Total power input	(1)	kW	41,78	47,06	52,41	59,28	67,77	75,44
EER	(1)	kW/kW	5,072	4,926	4,956	4,921	4,894	4,952
ESEER	(1)	kW/kW						
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	211,3	231,2	258,9	290,8	330,7	371,9
EER	(1)(2)	kW/kW	4,910	4,760	4,790	4,750	4,720	4,770
Cooling energy class			B	B	B	B	B	B
SEPR	(3)(4)		7,13	7,06	7,15	7,10	7,06	7,07
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	236,7	258,3	289,6	324,9	369,4	414,8
Total power input	(5)	kW	41,94	47,25	52,57	59,43	67,93	75,69
EER	(5)	kW/kW	5,649	5,461	5,506	5,470	5,440	5,480
23°C/15°C								
Cooling capacity	(6)	kW	280,0	304,6	342,0	382,9	435,2	487,0
Total power input	(6)	kW	41,96	47,28	52,47	59,27	67,72	75,58
EER	(6)	kW/kW	6,667	6,440	6,514	6,457	6,428	6,442
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	10,14	11,09	12,42	13,96	15,87	17,86
Pressure drop	(1)(2)	kPa	30,5	36,5	31,6	39,9	38,8	49,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION								
Water flow	(1)	l/s	12,09	13,29	14,87	16,72	19,03	21,38
Pressure drop	(1)(2)	kPa	20,1	21,7	24,1	27,9	29,6	29,0
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	46,0	44,0	48,0	55,0	55,0	69,0
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	78	78	78	78	78	79
Sound power level in cooling	(8)(9)	dB(A)	95	96	96	96	96	98
SIZE AND WEIGHT								
A	(10)	mm	3000	3100	3100	3100	3100	3640
B	(10)	mm	1100	1100	1100	1100	1100	1240
H	(10)	mm	1500	1500	1500	1500	1500	2050
Operating weight	(10)	kg	1700	1860	2030	2170	2190	3270

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing



CHILLERS

FR-W-G05-Z

Water cooled chiller

0551 - 1752 124,3-400,6 kW



Indoor unit for the production of chilled water featuring semihermetic screw compressors optimized to operate with low compression ratio and R513A, shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and shell and tube condenser and electronic expansion valve.
Base and supporting structure is made of polyester painted galvanized steel. Eurovent certification. The unit results extremely compact, thanks to the peculiar construction layout, without base frame and panels.
The high performance's level is achieved thanks to the accurate sizing of all internal components.

Refrigerant

R513A

Configurations

- Basic function
- D Partial condensing heat recovery function
- R Total condensing heat recovery function

Features

LOW GWP REFRIGERANT
New generation refrigerant R513A, with reduced greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of R513A = 572, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer. Not flammable (ASHRAE 34, ISO 817: class A1).

ErP READY
Thanks to the high level of efficiency at part load, the unit can meet and exceed the minimum energy efficiency threshold rated by the Seasonal Energy Performance Ratio SEPR HT, in accordance with the eco-sustainable design requirements for all products using energy. The unit is already compliant with the minimum seasonal efficiency requirements that will start from 2021.

MAXIMUM COMPACTNESS
Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD
The use of the electronic expansion valve generates considerable benefits, especially in cases of variability of the source temperature. The electronic expansion valve guarantees speed in reaching machine stability and an extension of the operating limits.

Control



Electronic control W3000TE
The brand new W3000TE controller offers advanced functions and algorithms. The LARGE keyboard with a large format and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits. In addition to or as an alternative at Large Keyboard, the KIPlink - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for enhanced analysis of the unit operation.
Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with the remote keyboard managing up to 8 units.
The regulation operates on the water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

Accessories

- VPF (Variable Primary Flow) system
- Several devices for condensation´s control
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Touch Screen visual display
- KIPlink user interface
- Kit HWT, High Water Temperature
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover

FR-W-G05-Z			0551	0651	0751	0851	0951	1102
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	124,3	140,5	166,3	198,2	221,7	252,4
Total power input	(1)	kW	25,50	28,41	35,57	40,52	46,10	51,04
EER	(1)	kW/kW	4,875	4,947	4,671	4,894	4,809	4,949
ESEER	(1)	kW/kW	5,970	5,950	5,960	5,940	5,930	6,320
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	123,9	140,1	165,8	197,5	220,8	251,4
EER	(1)(2)	kW/kW	4,710	4,780	4,510	4,720	4,630	4,770
Cooling energy class			B	B	C	B	C	B
SEPR	(3)(4)		7,00	7,04	7,00	7,02	7,00	7,01
COOLING ONLY (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(5)	kW	137,9	156,2	184,2	220,2	246,0	280,4
Total power input	(5)	kW	25,75	28,68	35,87	40,81	46,45	51,57
EER	(5)	kW/kW	5,345	5,443	5,131	5,397	5,302	5,434
23°C/15°C								
Cooling capacity	(6)	kW	161,5	183,5	215,1	258,4	288,1	328,8
Total power input	(6)	kW	26,07	29,04	36,19	41,03	46,77	52,24
EER	(6)	kW/kW	6,188	6,328	5,942	6,302	6,156	6,299
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	5,944	6,719	7,954	9,479	10,60	12,07
Pressure drop	(1)(2)	kPa	19,8	19,7	27,6	33,0	41,2	41,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION								
Water flow	(1)	l/s	7,133	8,045	9,611	11,37	12,75	14,45
Pressure drop	(1)(2)	kPa	22,1	25,9	31,0	27,0	26,5	22,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	2
No. Circuits		N°	1	1	1	1	1	2
Refrigerant charge		kg	24,0	34,0	32,0	59,0	57,0	47,0
NOISE LEVEL								
Sound Pressure	(7)	dB(A)	75	75	76	76	76	78
Sound power level in cooling	(8)(9)	dB(A)	92	92	93	93	93	95
SIZE AND WEIGHT								
A	(10)	mm	2400	2600	2700	3000	3000	3000
B	(10)	mm	920	920	950	960	960	1100
H	(10)	mm	1500	1500	1500	1500	1500	1500
Operating weight	(10)	kg	1050	1110	1280	1450	1460	1710

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FR-W-G05-Z

Water cooled chiller

0551 - 1752 124,3-400,6 kW

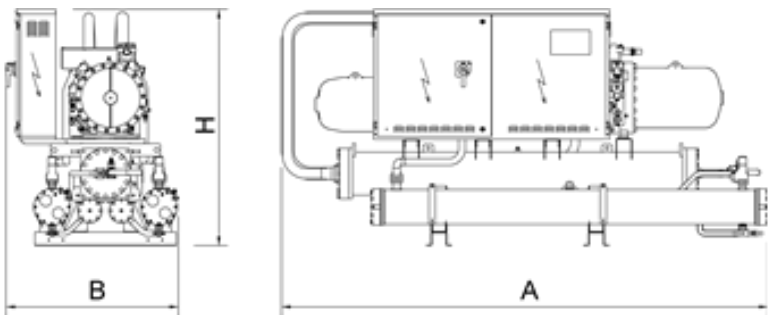
FR-W-G05-Z			1302	1402	1502	1602	1752
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	285,1	311,9	345,2	366,2	400,6
Total power input	(1)	kW	56,86	64,04	71,26	76,05	86,66
EER	(1)	kW/kW	5,011	4,873	4,842	4,812	4,621
ESEER	(1)	kW/kW	6,240	6,220	6,120	6,110	6,090
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	284,1	310,7	344,2	365,1	399,2
EER	(1)(2)	kW/kW	4,840	4,690	4,690	4,660	4,480
Cooling energy class			B	B	B	B	C
SEPR	(3)(4)		7,03	7,02	7,02	7,00	7,00
COOLING ONLY (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(5)	kW	317,3	346,4	383,3	406,3	443,9
Total power input	(5)	kW	57,43	64,68	71,91	76,69	87,34
EER	(5)	kW/kW	5,528	5,354	5,331	5,297	5,085
23°C/15°C							
Cooling capacity	(6)	kW	373,3	406,1	449,2	475,7	518,8
Total power input	(6)	kW	58,20	65,48	72,66	77,33	87,96
EER	(6)	kW/kW	6,414	6,200	6,179	6,154	5,895
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	13,63	14,91	16,51	17,51	19,16
Pressure drop	(1)(2)	kPa	38,5	46,1	32,0	36,0	43,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION							
Water flow	(1)	l/s	16,29	17,90	19,83	21,06	23,19
Pressure drop	(1)(2)	kPa	26,6	29,3	33,0	28,9	24,8
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	68,0	66,0	63,0	91,0	116
NOISE LEVEL							
Sound Pressure	(7)	dB(A)	77	78	78	78	78
Sound power level in cooling	(8)(9)	dB(A)	95	96	96	96	96
SIZE AND WEIGHT							
A	(10)	mm	3100	3100	3200	3200	3200
B	(10)	mm	1100	1100	1100	1200	1200
H	(10)	mm	1500	1500	1600	1600	1600
Operating weight	(10)	kg	1820	1990	2280	2430	2590

Notes

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Certified data in EUROVENT

Dimensional drawing



CHILLERS

FRCS3-W-G05-Z

Water cooled chiller

0551 - 4752 188,2-1693 kW



High efficiency unit for indoor installation for chilled water production. Semihermetic screw compressors optimized to operate with low compression ratio and R513A; shell and tubes condenser, flooded evaporator and electronic expansion valve. High efficiency unit thanks to the innovative optimized compressors and the high performing heat exchangers.

Control



W3000TE

The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.
For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.
Compatibility with the remote keyboard managing up to 8 units.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R513A

Versions

CA High energy efficiency units

Features

HIGH EFFICIENCY

Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

MAXIMUM COMPACTNESS

Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variability of the source temperature. The electronic expansion valve guarantees speed in reaching machine stability and an extension of the operating limits.

AHRI CERTIFICATION

Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Accessories

- Touch Screen visual display
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation´s control

FRCS3-W-G05-Z			0551	0701	0851	0951	1101	1301	1401
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	188,2	250,0	306,0	337,6	383,5	459,9	524,0
Total power input	(1)	kW	36,40	47,78	58,45	63,77	72,73	85,99	96,90
EER	(1)	kW/kW	5,170	5,230	5,231	5,292	5,275	5,348	5,408
ESEER	(1)	kW/kW	6,910	7,150	6,560	6,830	6,800	6,730	7,250
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	187,4	248,9	304,7	336,1	381,9	458,2	522,3
EER	(1)(2)	kW/kW	4,890	4,950	4,960	5,010	5,000	5,090	5,190
Cooling energy class			B	B	B	B	B	A	A
SEPR	(3)(4)		7,74	7,82	7,46	7,50	7,48	7,50	7,52
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	209,7	278,5	340,5	375,4	426,5	512,8	584,3
Total power input	(5)	kW	36,80	48,26	59,02	64,49	73,57	87,13	98,25
EER	(5)	kW/kW	5,698	5,766	5,771	5,820	5,795	5,887	5,944
23°C/15°C									
Cooling capacity	(6)	kW	247,0	328,1	400,3	441,0	501,0	604,9	689,3
Total power input	(6)	kW	37,32	48,85	59,64	65,46	74,75	88,70	100,2
EER	(6)	kW/kW	6,622	6,710	6,716	6,733	6,698	6,820	6,879
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	9,001	11,95	14,63	16,15	18,34	21,99	25,06
Pressure drop	(1)(2)	kPa	42,0	48,7	49,1	52,4	52,8	47,5	39,9
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	10,70	14,19	17,36	19,13	21,74	26,02	29,60
Pressure drop	(1)(2)	kPa	57,4	57,9	56,7	59,3	58,1	55,2	44,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	83,0	95,0	105	104	95,0	110	121
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	77	77	80	80	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	95	95	98	98	98	98	98
SIZE AND WEIGHT									
A	(10)	mm	2920	2920	2920	2920	2920	2900	2900
B	(10)	mm	1180	1180	1180	1180	1180	1180	1180
H	(10)	mm	1870	1870	1870	1870	1870	1960	1970
Operating weight	(10)	kg	1740	1790	2170	2200	2260	2940	3020

Notes

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Certified data in EUROVENT

FRCS3-W-G05-Z

Water cooled chiller

0551 - 4752 188,2-1693 kW

FRCS3-W-G05-Z			1651	1901	2101	2501	2602	3002	3152
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	591,8	681,6	741,3	837,0	915,9	1062	1140
Total power input	(1)	kW	108,2	127,0	138,7	155,6	171,0	194,8	204,3
EER	(1)	kW/kW	5,470	5,367	5,345	5,379	5,356	5,452	5,580
ESEER	(1)	kW/kW	6,960	7,020	6,920	6,800	7,060	7,330	7,530
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	589,5	679,4	738,9	834,3	913,2	1058	1137
EER	(1)(2)	kW/kW	5,200	5,120	5,130	5,160	5,160	5,210	5,400
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		7,51	7,51	7,70	7,65	7,62	7,50	7,71
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	659,5	759,4	826,5	933,2	1021	1184	1272
Total power input	(5)	kW	110,0	129,2	140,9	158,0	173,2	197,4	207,1
EER	(5)	kW/kW	5,995	5,878	5,866	5,906	5,895	5,998	6,142
23°C/15°C									
Cooling capacity	(6)	kW	777,5	894,8	974,7	1101	1205	1397	1502
Total power input	(6)	kW	112,4	132,1	143,8	161,1	176,3	201,2	210,9
EER	(6)	kW/kW	6,917	6,774	6,778	6,834	6,835	6,943	7,122
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	28,30	32,59	35,45	40,03	43,80	50,79	54,53
Pressure drop	(1)(2)	kPa	50,9	42,0	42,7	42,8	40,0	51,5	37,4
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	33,37	38,54	41,94	47,31	51,80	59,91	64,10
Pressure drop	(1)(2)	kPa	55,8	60,4	45,8	48,1	44,5	54,4	32,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	2	2	2
No. Circuits		N°	1	1	1	1	2	2	2
Refrigerant charge		kg	124	134	162	201	231	274	297
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	80	80	82	82	81	81	81
Sound power level in cooling	(8)(9)	dB(A)	98	98	100	100	100	100	100
SIZE AND WEIGHT									
A	(10)	mm	2900	2930	2980	2990	4430	4430	4440
B	(10)	mm	1180	1180	1190	1280	1270	1270	1270
H	(10)	mm	1960	2050	2100	2200	2210	2210	2280
Operating weight	(10)	kg	3150	3270	3570	3960	6200	6430	7080

Notes

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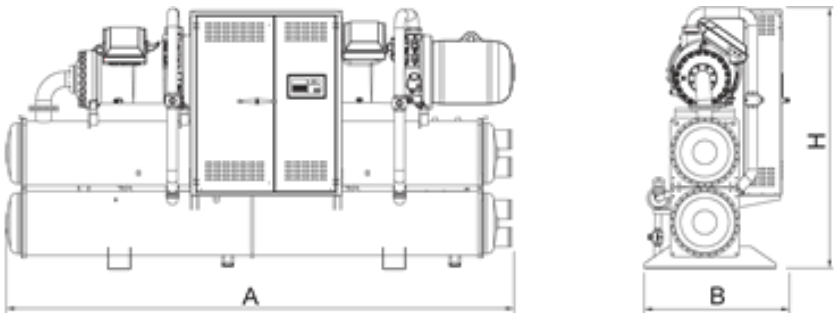
FRCS3-W-G05-Z			3502	3652	4002	4102	4502	4602	4752
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	1218	1303	1382	1450	1522	1614	1693
Total power input	(1)	kW	222,9	234,1	251,9	263,1	279,3	295,9	304,3
EER	(1)	kW/kW	5,464	5,566	5,486	5,511	5,449	5,455	5,564
ESEER	(1)	kW/kW	7,150	7,400	7,130	7,200	7,190	7,230	7,500
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	1214	1299	1377	1445	1517	1609	1688
EER	(1)(2)	kW/kW	5,220	5,380	5,250	5,290	5,210	5,240	5,320
Cooling energy class			A	A	A	A	A	A	A
SEPR	(3)(4)		7,50	7,68	7,50	7,59	8,00	8,00	8,00
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(5)	kW	1357	1454	1541	1617	1697	1801	1888
Total power input	(5)	kW	226,5	237,6	255,8	267,2	283,7	300,5	308,4
EER	(5)	kW/kW	5,991	6,120	6,024	6,052	5,982	5,993	6,122
23°C/15°C									
Cooling capacity	(6)	kW	1600	1715	1817	1907	2001	2125	2229
Total power input	(6)	kW	231,3	242,3	261,1	272,5	289,3	306,1	313,2
EER	(6)	kW/kW	6,917	7,078	6,959	6,998	6,917	6,942	7,117
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	58,23	62,33	66,11	69,33	72,76	77,20	80,94
Pressure drop	(1)(2)	kPa	51,4	39,8	50,4	46,7	51,5	42,5	46,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	68,67	73,30	77,91	81,66	85,84	91,05	95,19
Pressure drop	(1)(2)	kPa	56,8	34,1	53,5	50,1	55,4	53,7	58,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	297	308	308	317	327	376	376
NOISE LEVEL									
Sound Pressure	(7)	dB(A)	81	81	81	82	82	82	82
Sound power level in cooling	(8)(9)	dB(A)	100	100	100	101	102	102	102
SIZE AND WEIGHT									
A	(10)	mm	4470	4470	4470	4565	4650	5270	5270
B	(10)	mm	1270	1320	1270	1320	1320	1320	1320
H	(10)	mm	2250	2330	2280	2380	2380	2380	2380
Operating weight	(10)	kg	7160	7560	7280	7850	7940	8420	8950

Notes

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Dimensional drawing



CHILLERS

i-FR-W (1+i)-Z

High efficiency water cooled chiller

1402 - 4252 532,3-1607 kW



Single circuit indoor unit for the production of chilled water, with fixed speed and variable speed (Inverter Driven) screw compressors optimized for R134a, electronic expansion valve, high performing shell and tube condenser and shell and tube flooded evaporator, both designed and produced by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A.. These technological solutions enhance the EER values over 5,7 at Eurovent standard conditions.
The resulting unit is extremely compact, thanks to the strategic layout, designed without base, frame and panels.

Refrigerant

R134a

Versions

CA High energy efficiency units

Features

HIGH EFFICIENCY
Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

FLEXIBILITY
Unit featured by remarkable application flexibility thanks to the inverter tecnology which allows to obtain, taking in consideration the cooling capacity needed, the best result about costs/performances and maximum efficiency.

TOTAL VERSATILITY
Unit designed gathering in a single circuit a compressor with step regulation and one working with inverter, in order to guarantee the best answer to plant necessities both at full and at part loads.

MAXIMUM COMPACTNESS
Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

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Accessories

- Touch Screen visual display
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation´s control

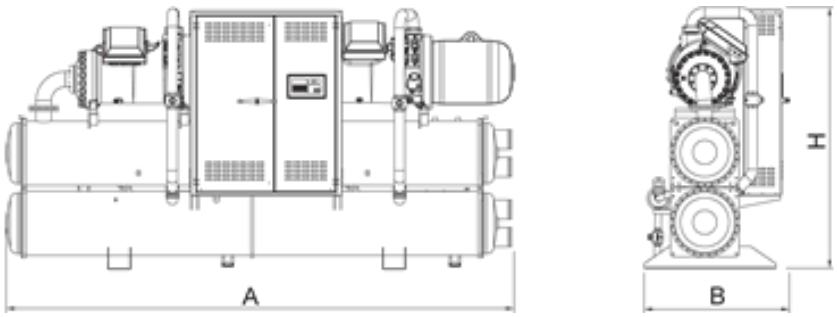
i-FR-W (1+i)-Z			1402	1752	1902	2152	2602	3002	3402	3852	4252
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	532,3	665,0	721,0	819,3	998,7	1143	1296	1472	1607
Total power input	(1)	kW	97,87	119,5	129,9	148,3	181,7	207,3	233,3	264,5	291,6
EER	(1)	kW/kW	5,437	5,565	5,550	5,525	5,496	5,514	5,555	5,565	5,511
ESEER	(1)	kW/kW	8,520	8,570	8,470	8,620	8,630	8,550	8,560	8,600	8,440
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	486,7	608,1	659,4	750,0	914,3	1046	1186	1348	1482
EER	(1)(2)	kW/kW	5,370	5,490	5,480	5,470	5,470	5,520	5,580	5,620	5,520
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		7,85	7,98	7,79	7,84	7,74	7,88	7,98	8,04	7,92
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	594,2	741,5	803,1	913,1	1114	1275	1445	1642	1792
Total power input	(5)	kW	98,86	120,7	131,5	150,1	184,4	210,4	237,3	269,0	296,6
EER	(5)	kW/kW	6,008	6,143	6,107	6,083	6,041	6,060	6,089	6,104	6,042
23°C/15°C											
Cooling capacity	(6)	kW	702,0	874,9	946,1	1076	1314	1505	1705	1937	2112
Total power input	(6)	kW	100,3	122,4	134,1	153,0	188,6	215,5	243,5	276,1	304,1
EER	(6)	kW/kW	6,999	7,148	7,055	7,033	6,967	6,984	7,002	7,016	6,945
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	23,34	29,16	31,62	35,96	43,84	50,15	56,88	64,63	71,06
Pressure drop	(1)(2)	kPa	30,5	34,7	33,8	33,2	37,1	37,5	31,9	30,9	37,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	27,44	34,18	37,07	42,16	51,41	58,76	66,56	75,57	83,27
Pressure drop	(1)(2)	kPa	37,4	35,4	41,7	41,5	38,7	30,0	33,3	29,6	35,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	118	160	164	177	258	295	315	323	338
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	82	82	81	83	83	83	82	82	84
Sound power level in cooling	(8)(9)	dB(A)	100	100	100	102	102	102	102	102	104
SIZE AND WEIGHT											
A	(10)	mm	2950	3310	3310	3310	4475	4475	4570	4650	4650
B	(10)	mm	1320	1425	1445	1480	1410	1405	1435	1495	1495
H	(10)	mm	1805	1935	2000	2150	2250	2250	2380	2500	2500
Operating weight	(10)	kg	3350	4280	4410	4830	6630	7470	8220	8800	8930

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

i-FR-W (1+i)-G05-Z

High efficiency water cooled chiller

1402 - 4252 532,3-1607 kW



Single circuit indoor unit for the production of chilled water, with fixed speed and variable speed (Inverter Driven) screw compressors optimized for R513A, electronic expansion valve, high performing shell and tube condenser and shell and tube flooded evaporator, both designed and produced by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. These technological solutions enhance the EER values over 5,7 at Eurovent standard conditions.
The resulting unit is extremely compact, thanks to the strategic layout, designed without base, frame and panels.

Control



W3000TE

The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.
For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.
Compatibility with the remote keyboard managing up to 8 units.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R513A

Versions

CA High energy efficiency units

Features

HIGH EFFICIENCY
Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

FLEXIBILITY
Unit featured by remarkable application flexibility thanks to the inverter tecnology which allows to obtain, taking in consideration the cooling capacity needed, the best result about costs/performances and maximum efficiency.

TOTAL VERSATILITY
Unit designed gathering in a single circuit a compressor with step regulation and one working with inverter, in order to guarantee the best answer to plant necessities both at full and at part loads.

MAXIMUM COMPACTNESS
Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

AHRI CERTIFICATION
Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Accessories

- Touch Screen visual display
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation´s control

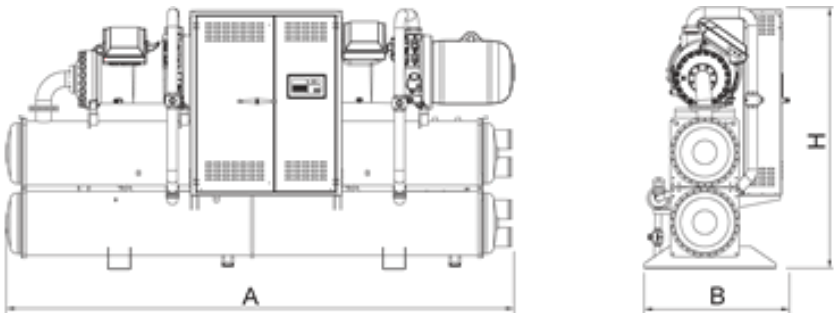
i-FR-W (1+i)-G05-Z			1402	1752	1902	2152	2602	3002	3402	3852	4252
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	532,3	665,0	721,0	819,3	998,7	1143	1296	1472	1607
Total power input	(1)	kW	102,0	124,6	135,4	154,6	189,4	216,0	243,1	275,6	303,9
EER	(1)	kW/kW	5,219	5,337	5,325	5,299	5,273	5,292	5,331	5,341	5,288
ESEER	(1)	kW/kW	8,360	8,410	8,310	8,450	8,440	8,380	8,400	8,430	8,280
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	486,7	608,1	659,4	750,0	914,3	1046	1186	1348	1482
EER	(1)(2)	kW/kW	5,160	5,270	5,260	5,260	5,260	5,310	5,360	5,400	5,300
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		7,70	7,83	7,64	7,69	7,59	7,73	7,82	7,89	7,77
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	594,2	741,5	803,1	913,1	1114	1275	1445	1642	1792
Total power input	(5)	kW	103,0	125,8	137,0	156,4	192,1	219,2	247,3	280,3	309,1
EER	(5)	kW/kW	5,769	5,894	5,862	5,838	5,799	5,817	5,843	5,858	5,797
23°C/15°C											
Cooling capacity	(6)	kW	702,0	874,9	946,1	1076	1314	1505	1705	1937	2112
Total power input	(6)	kW	104,5	127,5	139,8	159,4	196,6	224,5	253,7	287,7	316,9
EER	(6)	kW/kW	6,718	6,862	6,768	6,750	6,684	6,704	6,721	6,733	6,665
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	23,34	29,16	31,62	35,96	43,84	50,15	56,88	64,63	71,06
Pressure drop	(1)(2)	kPa	30,5	34,7	33,8	33,2	37,1	37,5	31,9	30,9	37,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	27,61	34,39	37,29	42,42	51,72	59,11	66,96	76,02	83,76
Pressure drop	(1)(2)	kPa	37,8	35,9	42,2	42,0	39,2	30,3	33,7	30,0	36,4
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	130	176	181	195	284	325	347	356	372
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	82	82	81	83	83	83	82	82	84
Sound power level in cooling	(8)(9)	dB(A)	100	100	100	102	102	102	102	102	104
SIZE AND WEIGHT											
A	(10)	mm	2950	3310	3310	3310	4475	4475	4570	4650	4650
B	(10)	mm	1320	1425	1445	1480	1410	1405	1435	1495	1495
H	(10)	mm	1805	1935	2000	2150	2250	2250	2380	2500	2500
Operating weight	(10)	kg	3350	4280	4410	4830	6630	7470	8220	8800	8930

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

TRCS2-W HFO-Z

High efficiency water cooled chiller

0351 - 1414 339,6-1364 kW



Indoor unit for the production of chilled water featuring centrifugal compressors oil-free, with refrigerant HFO (1234-ze), electronic regulation valve, shell and tube condenser and shell and tube flooded evaporator. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

Control



W3000TE
The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's staus. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.
The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.
Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.
Compatibility with the remote keyboard managing up to 8 units.
The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R1234ze

Versions

HC High Condensing

Configurations

- Basic function

H Function with heat pump, reversible on hydraulic side

Features

HFO REFRIGERANT
4th generation refrigerant HFO 1234ze, with negligible greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of HFO 1234ze < 1, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer.

VERY HIGH EFFICIENCY
Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

EXTREMELY SILENT OPERATION
Extremely silent operation in line with the best on the market, and highly reduced vibrations

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

AHRI CERTIFICATION
Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Accessories

- Integral acoustical enclosure (type base or plus)
- VPF (Variable Primary Flow) system
- Several devices for condensation´s control
- Leak detector
- Set-up for remote connectivity with ModBus/Echelon protocol cards

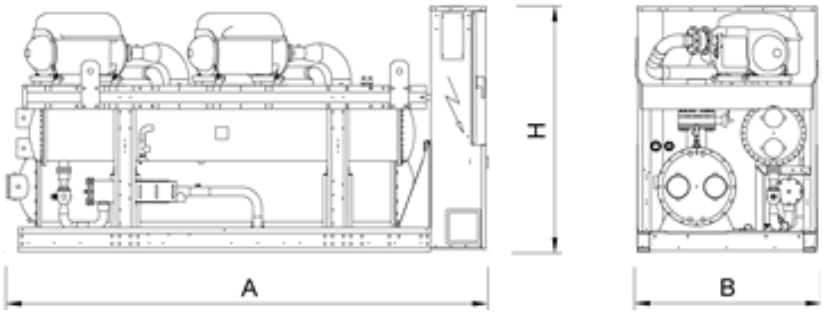
TRCS2-W HFO-Z / HC			0351	0712	1053	1414
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1)	kW	339,6	676,1	1015	1364
Total power input	(1)	kW	62,97	126,6	189,8	251,1
EER	(1)	kW/kW	5,390	5,340	5,348	5,432
ESEER	(1)	kW/kW	9,010	9,400	9,320	9,510
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	kW	338,6	674,5	1013	1361
EER	(1)(2)	kW/kW	5,180	5,170	5,190	5,290
Cooling energy class			A	A	A	A
SEPR	(3)(4)		9,28	9,27	9,42	9,71
COOLING ONLY (GROSS VALUE)						
16°C/10°C						
Cooling capacity	(5)	kW	368,1	733,6	1102	1477
Total power input	(5)	kW	61,63	124,1	185,9	245,1
EER	(5)	kW/kW	5,976	5,911	5,928	6,026
23°C/15°C						
Cooling capacity	(6)	kW	401,8	802,5	1206	1610
Total power input	(6)	kW	56,25	113,7	170,2	222,6
EER	(6)	kW/kW	7,149	7,058	7,086	7,233
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1)	l/s	16,24	32,33	48,54	65,22
Pressure drop	(1)(2)	kPa	32,9	29,0	31,1	33,1
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION						
Water flow	(1)	l/s	19,19	38,25	57,42	76,97
Pressure drop	(1)(2)	kPa	40,8	39,6	32,0	23,0
REFRIGERANT CIRCUIT						
Compressors nr.		N°	1	2	3	4
No. Circuits		N°	1	1	1	1
Refrigerant charge		kg	100	200	420	410
NOISE LEVEL						
Sound Pressure	(7)	dB(A)	74	76	77	78
Sound power level in cooling	(8)(9)	dB(A)	92	94	96	97
SIZE AND WEIGHT						
A	(10)	mm	2990	3490	4990	5450
B	(10)	mm	950	1300	1300	1300
H	(10)	mm	1900	1800	1800	1990
Operating weight	(10)	kg	1570	3010	4380	5240

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC HFO-1234ze [GWP_{100} 7] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



CHILLERS

TR-W-Z

1A00 - 6D00 246-4549 kW

High efficiency water cooled chiller



Indoor unit for the production of chilled water featuring centrifugal compressors oil-free, with R134a, electronic regulation valve, shell and tube condenser and shell and tube flooded evaporator.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

Control



CX4 electronic controller

CX4 controller offers advanced functions and algorithms.
When units are supplied with digital interface on the machine, it comes with a large touchscreen display 13 "colour.
The screens are developed with graphics created exclusively for the family TR-W-Z. The home page allows the immediate visualization of the status of the unit and its main operating parameters, while more specific screens allow a closer view of all the variables related to the compressors, the heat exchangers and the refrigerant circuit. It is possible the analysis in graphical form of the monitored and measured variables.
Secure access to data is guaranteed by three different password levels (user, service, manufacturer).
The temperature control is characterized by the continuous capacity modulation, based on PID algorithms and related to the leaving water temperature, with adjustment on the neutral areas.
The diagnostics includes a complete alarm management, with the "black box" (via PC) and registration of alarms (via display or PC) for a better analysis of the unit performance.
Supervision is achievable through various options, with proprietary devices or with the integration in third party systems by means of the most common communication protocols (ModBus, BACnet-over-IP, Echelon LonWorks, BACnet MS / TP…, Konnex). Connection with remote touchscreen is available.
For systems consisting of multiple units, the management of the resources is possible via optional proprietary devices.

Refrigerant

R134a

Configurations

- Basic function

Features

NO COMPROMISE
Large availability in the combinations of the compressors (up to 6 compressors on the same unit), plus the flexibility in the choice of the heat exchangers can satisfy each specific installation and design requirements: the highest full load efficiency, the best initial investment, an unrivaled seasonal efficiency, an operating range suitable for applications in systems operating at high or low condensation (dry coolers or cooling towers)

VERY HIGH EFFICIENCY
Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

FLEXIBLE COMPOSITION
Choice between horizontal or diagonal arrangement of the heat exchangers, with dimensions that favor the compact overall dimensions in height or plant, water connections to the evaporator and condenser that can be deployed on the right or left, to fit for all applications

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

EXTREMELY SILENT OPERATION
Extremely silent operation in line with the best on the market, and highly reduced vibrations

AHRI CERTIFICATION
Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Accessories

- Integral acoustical enclosure (type base or plus)
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation´s control
- Fast restart

TR-W-Z			1A00	1B00	1B1A	1B2A	1B3A	1C00	1C1A	1C1B	1C3B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	246,1-356,6	346,0-494,3	586,6-850,1	828,9-1201	1096-1566	400,6-572,2	648,9-927,0	744,4-1063	1438-2054
EER	(1)	kW/kW	6,250	6,310	6,250	6,080	6,260	6,460	6,340	6,360	6,380
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	246,1	366,9	586,0	827,1	1157	464,0	649,0	746,0	1723
EER	(1)(2)	kW/kW	6,060	6,060	6,070	5,940	6,020	6,140	6,160	6,180	5,970
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,77	11,60	11,67	11,45	11,66	11,59	11,81	11,68	11,05
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	376,3	517,3	893,7	1271	1646	613,7	988,4	1130	2165
Total power input	(5)	kW	66,54	85,12	153,2	227,6	282,9	97,38	163,9	182,3	345,4
EER	(5)	kW/kW	5,659	6,079	5,834	5,584	5,818	6,301	6,031	6,199	6,268
23°C/15°C											
Cooling capacity	(6)	kW	387,0	521,1	910,6	1316	1676	658,2	1045	1182	2220
Total power input	(6)	kW	58,52	70,83	131,1	200,6	243,1	89,03	147,3	159,7	292,0
EER	(6)	kW/kW	6,615	7,360	6,946	6,560	6,894	7,396	7,094	7,401	7,603
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	11,80	17,59	28,09	39,62	55,47	22,24	31,10	35,75	82,69
Pressure drop	(1)(2)	kPa	19,2	22,1	26,1	21,6	35,1	24,6	26,2	26,3	53,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	13,66	20,35	32,51	46,03	64,24	25,69	35,93	41,29	95,77
Pressure drop	(1)(2)	kPa	17,7	20,8	21,0	19,8	26,7	24,0	20,8	20,5	34,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	2	3	4	1	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	215	220	390	495	747	262	436	416	1078
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	75	76	76	78	78	77	77	77	79
Sound power level in cooling	(8)(9)	dB(A)	93	94	95	97	98	95	96	96	99
SIZE AND WEIGHT											
A	(10)	mm	2910	2910	3050	3710	4690	2910	3050	3050	4720
B	(10)	mm	1000	1000	1620	1710	1890	1000	1620	1620	1890
H	(10)	mm	1950	1950	2190	2260	2400	1950	2190	2190	2400
Operating weight	(10)	kg	2690	2800	5200	7590	9320	2880	5280	5410	11010

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TR-W-Z

High efficiency water cooled chiller

1A00 - 6D00 246-4549 kW

TR-W-Z			1D00	1D1A	1D1B	1D1C	1D2C	1D3C	1D4C	1D5C	2A00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	595,5-744,4	757,5-1098	852,5-1235	1052-1315	1274-1901	1980-2475	2461-3076	2942-3677	499,4-713,5
EER	(1)	kW/kW	6,220	6,160	6,240	6,300	6,390	6,370	6,480	6,560	6,160
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	667,1	758,0	864,0	1077	1285	2160	2659	3153	526,0
EER	(1)(2)	kW/kW	5,970	5,970	6,040	6,040	6,200	6,010	6,090	6,190	5,940
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,70	11,68	11,61	11,59	12,04	-	-	-	11,62
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	792,4	1169	1309	1405	2027	2640	3269	3899	753,4
Total power input	(5)	kW	117,0	184,2	202,8	216,4	311,6	409,5	499,0	587,3	134,1
EER	(5)	kW/kW	6,773	6,346	6,455	6,493	6,505	6,447	6,551	6,639	5,618
23°C/15°C											
Cooling capacity	(6)	kW	803,4	1194	1330	1464	2116	2772	3413	4054	776,3
Total power input	(6)	kW	98,27	157,5	169,8	189,7	273,6	362,5	437,0	510,3	118,3
EER	(6)	kW/kW	8,173	7,581	7,833	7,717	7,734	7,647	7,810	7,944	6,562
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,00	36,34	41,42	51,66	61,59	103,7	127,7	151,4	25,21
Pressure drop	(1)(2)	kPa	39,8	29,6	31,1	41,5	31,0	61,3	69,7	62,3	24,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	37,05	42,14	47,96	59,75	71,08	119,9	147,3	174,3	29,25
Pressure drop	(1)(2)	kPa	39,1	24,2	24,7	32,9	25,5	39,1	45,0	51,2	24,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	2	2	2	3	4	5	6	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	253	422	400	450	814	1017	1319	1696	273
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	78	78	78	79	79	79	80	76
Sound power level in cooling	(8)(9)	dB(A)	96	97	97	97	99	99	100	101	95
SIZE AND WEIGHT											
A	(10)	mm	2910	3050	3050	3050	4690	4720	5700	6610	2910
B	(10)	mm	1000	1620	1620	1620	1660	1890	2350	2400	1560
H	(10)	mm	1950	2190	2190	2190	2260	2400	2400	2450	2190
Operating weight	(10)	kg	2950	5350	5340	5420	8810	11410	15330	20580	4070

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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9 Sound power level in cooling, indoors.
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Certified data in EUROVENT

TR-W-Z			2B00	2B1A	2B2A	2B3A	2C00	2C1A	2C1B	2D00	2D1B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	681,1-987,1	938,5-1341	1191-1702	1444-2063	798,7-1141	1054-1506	1150-1642	994,7-1485	1451-1988
EER	(1)	kW/kW	6,290	6,100	6,300	6,330	6,430	6,440	6,460	6,060	6,330
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	685,1	987,1	1257	1685	925,1	1135	1237	993,1	1464
EER	(1)(2)	kW/kW	6,100	5,900	6,030	5,900	6,090	6,180	6,200	5,890	6,090
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,60	11,34	11,56	11,51	11,42	11,68	11,69	11,69	11,67
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	1034	1414	1784	2157	1224	1606	1747	1584	2102
Total power input	(5)	kW	171,5	247,5	300,2	359,4	195,6	259,0	276,1	235,9	314,9
EER	(5)	kW/kW	6,029	5,713	5,943	6,002	6,258	6,201	6,327	6,715	6,675
23°C/15°C											
Cooling capacity	(6)	kW	1045	1453	1806	2172	1315	1700	1836	1613	2118
Total power input	(6)	kW	143,4	213,9	254,0	301,4	179,4	232,5	243,7	199,6	261,1
EER	(6)	kW/kW	7,287	6,793	7,110	7,206	7,330	7,312	7,534	8,081	8,112
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,83	47,29	60,29	80,94	44,35	54,42	59,31	47,60	70,22
Pressure drop	(1)(2)	kPa	26,4	23,5	41,5	62,0	34,4	36,1	35,6	30,5	42,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	37,98	54,97	69,78	93,81	51,28	62,81	68,41	55,31	81,14
Pressure drop	(1)(2)	kPa	20,8	21,9	27,1	38,8	26,9	28,1	27,3	25,4	33,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	3	4	5	2	3	3	2	3
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	433	640	1015	1303	411	751	795	429	814
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	77	78	78	78	78	78	78	79	79
Sound power level in cooling	(8)(9)	dB(A)	96	97	98	99	97	98	98	98	99
SIZE AND WEIGHT											
A	(10)	mm	3050	3710	4720	5700	3050	4690	4690	3050	4690
B	(10)	mm	1620	1710	1890	2350	1620	1660	1660	1620	1660
H	(10)	mm	2190	2260	2400	2400	2190	2260	2260	2190	2260
Operating weight	(10)	kg	5340	7750	10610	13850	5330	8470	8700	5310	8810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TR-W-Z

High efficiency water cooled chiller

1A00 - 6D00 246-4549 kW

TR-W-Z			2D1C	2D2B	2D2C	2D3C	2D4C	3A00	3B00	3B1A	3B2A
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1656-2070	1984-2479	2117-2646	2599-3249	3081-3852	733,1-1062	1036-1480	1288-1839	1540-2200
EER	(1)	kW/kW	6,370	6,330	6,390	6,490	6,580	6,060	6,130	6,320	6,360
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	1870	2203	2360	2856	3350	732,1	1091	1359	1812
EER	(1)(2)	kW/kW	5,990	5,950	6,000	6,080	6,190	5,910	5,920	6,060	5,930
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,34	-	-	-	-	11,48	11,35	11,57	11,56
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2201	2617	2816	3444	4068	1129	1557	1925	2295
Total power input	(5)	kW	329,6	398,4	427,2	516,4	603,0	207,1	267,6	319,2	376,5
EER	(5)	kW/kW	6,678	6,569	6,592	6,669	6,746	5,451	5,818	6,031	6,096
23°C/15°C											
Cooling capacity	(6)	kW	2256	2638	2913	3548	4178	1178	1591	1942	2302
Total power input	(6)	kW	281,8	329,8	370,2	444,0	515,0	186,4	227,9	267,2	312,3
EER	(6)	kW/kW	8,006	7,999	7,869	7,991	8,113	6,320	6,981	7,268	7,371
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	89,77	105,8	113,3	137,2	160,8	35,07	52,27	65,17	86,97
Pressure drop	(1)(2)	kPa	62,7	66,7	66,6	75,6	67,1	21,5	23,7	40,7	61,8
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	103,8	122,4	131,0	158,3	185,2	40,76	60,73	75,40	100,7
Pressure drop	(1)(2)	kPa	48,9	44,7	42,3	48,7	53,3	19,6	22,5	26,5	39,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	3	4	4	5	6	3	3	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	812	1013	1094	1299	1667	501	598	985	1269
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	79	80	79	80	77	78	78	78
Sound power level in cooling	(8)(9)	dB(A)	99	99	100	100	101	96	97	98	99
SIZE AND WEIGHT											
A	(10)	mm	4690	4720	4720	5700	6610	3710	3710	4720	5700
B	(10)	mm	1660	1890	1890	2350	2400	1710	1710	1890	2350
H	(10)	mm	2260	2400	2400	2400	2450	2260	2260	2400	2400
Operating weight	(10)	kg	8880	11250	11450	15420	20750	7440	7370	10740	14050

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TR-W-Z			3B3A	3C00	3C1A	3C1B	3C2B	3D00	3D1A	3D1C	3D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1793-2562	1205-1721	1453-2076	1550-2214	1907-2724	1792-2240	2076-2594	2254-2817	2738-3423
EER	(1)	kW/kW	6,420	6,490	6,450	6,470	6,540	6,340	6,330	6,370	6,490
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2095	1310	1753	1877	2292	2068	2354	2559	3057
EER	(1)(2)	kW/kW	6,010	6,230	6,010	6,040	6,080	5,960	5,930	5,980	6,060
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	11,81	11,13	11,21	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2666	1844	2217	2359	2885	2377	2752	2992	3620
Total power input	(5)	kW	432,0	290,9	356,0	372,9	449,4	347,7	413,4	445,0	533,9
EER	(5)	kW/kW	6,171	6,339	6,228	6,326	6,420	6,836	6,657	6,724	6,780
23°C/15°C											
Cooling capacity	(6)	kW	2660	1974	2355	2492	3000	2398	2782	3053	3683
Total power input	(6)	kW	355,9	265,1	321,1	331,9	389,4	289,8	346,9	377,8	451,1
EER	(6)	kW/kW	7,474	7,446	7,334	7,508	7,704	8,275	8,020	8,081	8,164
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	100,5	62,81	84,10	90,04	110,1	99,34	113,1	122,9	146,9
Pressure drop	(1)(2)	kPa	56,3	35,8	52,2	52,5	59,6	69,1	76,3	72,4	81,1
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	116,2	72,40	97,31	104,1	127,1	114,9	130,9	142,1	169,4
Pressure drop	(1)(2)	kPa	43,8	28,5	34,4	33,7	41,8	56,4	48,8	47,1	55,8
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	3	4	4	5	3	4	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1677	795	1078	1013	1252	850	1059	1072	1400
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	78	79	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	100	98	99	99	100	99	100	100	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4690	4720	4720	5700	4690	4720	4720	5700
B	(10)	mm	2400	1660	1890	1890	2350	1660	1890	1890	2350
H	(10)	mm	2450	2260	2400	2400	2400	2260	2400	2400	2400
Operating weight	(10)	kg	18670	8700	11010	11210	14910	9010	11250	11580	15500

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
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5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

TR-W-Z

High efficiency water cooled chiller

1A00 - 6D00 246-4549 kW

TR-W-Z			3D3C	4B00	4B1A	4B2A	4C00	4C1B	4D00	4D1C	4D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	3221-4026	1384-1978	1636-2337	1890-2700	1376-2294	1964-2806	2388-2985	2877-3596	3360-4200
EER	(1)	kW/kW	6,590	6,350	6,390	6,450	6,440	6,560	6,330	6,480	6,600
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	3549	1462	1937	2218	1498	2370	2755	3255	3750
EER	(1)(2)	kW/kW	6,190	6,090	5,950	6,030	6,240	6,100	5,940	6,050	6,170
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	11,59	11,64	-	12,05	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	4238	2066	2433	2806	2456	2985	3169	3793	4407
Total power input	(5)	kW	618,2	337,3	393,4	447,8	387,5	464,1	464,3	550,3	633,6
EER	(5)	kW/kW	6,855	6,125	6,185	6,266	6,338	6,432	6,825	6,893	6,955
23°C/15°C											
Cooling capacity	(6)	kW	4300	2074	2431	2790	2628	3141	3198	3813	4423
Total power input	(6)	kW	519,2	278,7	322,7	366,3	352,8	410,3	387,6	456,6	523,6
EER	(6)	kW/kW	8,282	7,442	7,533	7,617	7,449	7,655	8,251	8,351	8,447
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	170,4	70,11	92,98	106,4	71,80	113,8	132,4	156,5	180,1
Pressure drop	(1)(2)	kPa	71,5	40,1	60,5	57,3	30,7	62,1	81,7	88,9	75,7
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	196,1	81,06	107,7	123,0	82,82	131,3	153,1	180,4	207,3
Pressure drop	(1)(2)	kPa	54,8	26,4	39,1	45,1	20,4	42,4	54,7	54,9	61,2
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	4	5	6	4	5	4	5	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1626	1078	1233	1638	1050	1239	1072	1380	1767
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	80	78	78	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	101	98	99	100	99	100	100	101	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4720	5700	6610	4720	5700	4720	5700	6610
B	(10)	mm	2400	1890	2350	2400	1890	2350	1890	2350	2400
H	(10)	mm	2450	2400	2400	2450	2400	2400	2400	2400	2450
Operating weight	(10)	kg	21010	10920	14300	18880	11250	15000	11580	15730	21180

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

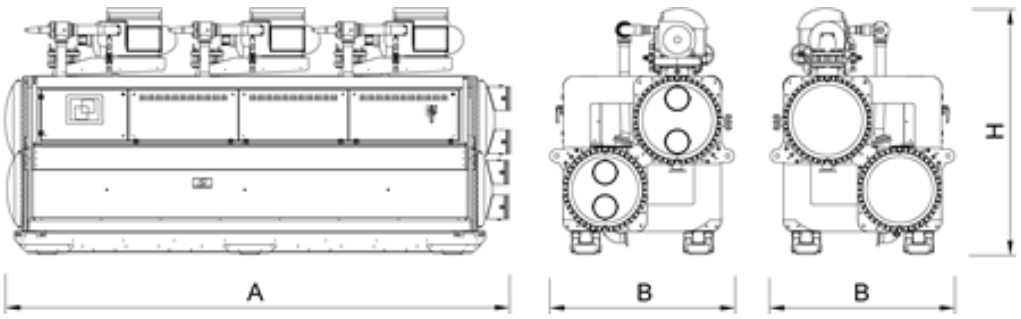
TR-W-Z			5B00	5B1A	5C00	5C1B	5D00	5D1C	6B00	6C00	6D00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1732-2474	1986-2837	2021-2888	2381-3401	3016-3770	3500-4374	2082-2974	2440-3486	3639-4549
EER	(1)	kW/kW	6,420	6,470	6,600	6,640	6,470	6,590	6,490	6,660	6,580
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2062	2342	2448	2864	3453	3948	2466	2942	4147
EER	(1)(2)	kW/kW	5,970	6,050	6,130	6,200	6,040	6,170	6,070	6,220	6,160
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	-	-	-	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2571	2943	3085	3611	3968	4577	3081	3715	4746
Total power input	(5)	kW	410,2	464,0	478,3	551,4	567,3	649,1	480,4	566,7	664,4
EER	(5)	kW/kW	6,268	6,343	6,450	6,549	6,995	7,051	6,413	6,555	7,143
23°C/15°C											
Cooling capacity	(6)	kW	2560	2918	3280	3780	3947	4546	3046	3923	4668
Total power input	(6)	kW	333,2	376,4	430,3	483,0	463,1	528,1	386,8	503,8	532,4
EER	(6)	kW/kW	7,683	7,752	7,623	7,826	8,523	8,608	7,875	7,787	8,768
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	99,01	112,4	117,5	137,4	166,0	189,7	118,4	141,2	199,2
Pressure drop	(1)(2)	kPa	61,0	57,3	62,6	58,7	92,9	79,2	58,1	59,4	82,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	114,6	129,9	135,5	158,3	191,4	218,2	136,7	162,6	229,2
Pressure drop	(1)(2)	kPa	39,1	45,9	40,4	45,5	61,7	61,7	46,0	44,5	68,1
REFRIGERANT CIRCUIT											
Compressors nr.		N°	5	6	5	6	5	6	6	6	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1317	1594	1343	1583	1355	1739	1722	1555	1699
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	79	79	80	80	81	79	80	81
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	101	101	102	100	101	102
SIZE AND WEIGHT											
A	(10)	mm	5700	6610	5700	6610	5700	6610	6610	6610	6610
B	(10)	mm	2350	2400	2350	2400	2350	2400	2400	2400	2400
H	(10)	mm	2400	2450	2400	2450	2400	2450	2450	2450	2450
Operating weight	(10)	kg	14550	19150	15180	20240	15890	21350	19400	20410	21560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
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Dimensional drawing



CHILLERS

TR-W-G05-Z

High efficiency water cooled chiller

1A00 - 6D00 248-4466 kW



Indoor unit for the production of chilled water featuring centrifugal compressors oil-free, with R513A, electronic regulation valve, shell and tube condenser and shell and tube flooded evaporator.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

Control

W3000TE
For the TX-W family, dedicated control logics, named CX4, have been implemented to take full advantage from the variable speed centrifugal compressor, thus maximizing the unit performance in all working conditions.
The control is available through the innovative user interface KIPlink, which allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the components and reset the alarms. Secure access to data is guaranteed by three password levels (user, service, manufacturer).
The continuous capacity modulation is based on the PID algorithms and related to the leaving water temperature, with adjustment on the neutral areas. Complete alarm management system is available, with the “black-box” and the alarm history display functions. Supervision is achievable through various options, with proprietary devices or with the integration in third party systems by means of the most common communication protocols (ModBus, BACnet-over-IP, Echelon LonWorks, BACnet MS / TP). Connection with remote touchscreen is available.
A programmable timer allows the creation of an operating profile up to 4 days and 10 type bands, with automatic transmission from summer time to winter time.
For systems consisting of multiple units, the management of the resources is possible via optional proprietary devices. Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

Refrigerant

R513A

Configurations

- Basic function

Features

NO COMPROMISE
Large availability in the combinations of the compressors (up to 6 compressors on the same unit), plus the flexibility in the choice of the heat exchangers can satisfy each specific installation and design requirements: the highest full load efficiency, the best initial investment, an unrivaled seasonal efficiency, an operating range suitable for applications in systems operating at high or low condensation (dry coolers or cooling towers)

VERY HIGH EFFICIENCY
Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

FLEXIBLE COMPOSITION
Choice between horizontal or diagonal arrangement of the heat exchangers, with dimensions that favor the compact overall dimensions in height or plant, water connections to the evaporator and condenser that can be deployed on the right or left, to fit for all applications

ADAPTABILITY
Adaptability at the building’s heating request thanks to the continuous capacity regulation, assured by sophisticated control’s logic.

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

EXTREMELY SILENT OPERATION
Extremely silent operation in line with the best on the market, and highly reduced vibrations

Accessories

- Integral acoustical enclosure (type base or plus)
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation´s control
- filters kit for conformity to EN 61000-6-3 (residential ambients)

TR-W-G05-Z			1A00	1B00	1B1A	1B2A	1B3A	1C00	1C1A	1C1B	1C3B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	243,6-353,0	343,6-490,9	582,5-844,2	820,6-1189	1083-1547	396,2-565,9	642,4-917,7	735,4-1051	1425-2036
EER	(1)	kW/kW	6,150	6,290	6,230	6,040	6,200	6,390	6,290	6,290	6,320
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	243,7	364,4	581,9	818,9	1143	458,9	642,5	737,1	1708
EER	(1)(2)	kW/kW	5,970	6,050	6,060	5,910	5,970	6,080	6,110	6,120	5,910
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,62	11,56	11,64	11,41	11,57	11,49	11,75	11,58	10,96
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	372,5	513,6	887,4	1259	1626	606,9	978,5	1116	2146
Total power input	(5)	kW	66,87	84,78	152,6	226,5	282,3	97,28	163,6	182,1	345,8
EER	(5)	kW/kW	5,568	6,057	5,815	5,558	5,760	6,237	5,981	6,129	6,206
23°C/15°C											
Cooling capacity	(6)	kW	383,1	517,4	904,2	1303	1656	651,0	1034	1168	2200
Total power input	(6)	kW	58,82	70,54	130,5	199,6	242,6	88,94	147,0	159,6	292,3
EER	(6)	kW/kW	6,515	7,339	6,929	6,528	6,826	7,323	7,034	7,318	7,527
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	11,68	17,46	27,89	39,23	54,81	21,99	30,79	35,32	81,94
Pressure drop	(1)(2)	kPa	18,8	21,8	25,7	21,1	34,3	24,1	25,7	25,7	52,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	13,55	20,22	32,29	45,60	63,56	25,44	35,61	40,85	95,03
Pressure drop	(1)(2)	kPa	17,5	20,5	20,7	19,4	26,2	23,5	20,4	20,1	33,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	2	3	4	1	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	215	220	390	495	747	262	436	416	1078
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	75	76	76	78	78	77	77	77	79
Sound power level in cooling	(8)(9)	dB(A)	93	94	95	97	98	95	96	96	99
SIZE AND WEIGHT											
A	(10)	mm	2910	2910	3050	3710	4690	2910	3050	3050	4720
B	(10)	mm	1000	1000	1620	1710	1890	1000	1620	1620	1890
H	(10)	mm	1950	1950	2190	2260	2400	1950	2190	2190	2400
Operating weight	(10)	kg	2690	2800	5200	7590	9320	2880	5280	5410	11010

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
10 Unit in standard configuration/execution, without optional accessories.

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TR-W-G05-Z

High efficiency water cooled chiller

1A00 - 6D00 248-4466 kW

TR-W-G05-Z			1D00	1D1A	1D1B	1D1C	1D2C	1D3C	1D4C	1D5C	2A00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	587,8-734,7	736,8-1084	833,4-1226	1043-1303	1241-1880	1964-2455	2441-3051	2918-3648	495,9-708,5
EER	(1)	kW/kW	6,130	6,100	6,210	6,250	6,300	6,300	6,420	6,480	6,120
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	658,5	748,2	857,2	1067	1271	2143	2637	3128	522,3
EER	(1)(2)	kW/kW	5,890	5,910	6,020	5,990	6,100	5,940	6,040	6,120	5,900
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,55	11,60	11,58	11,51	11,88	-	-	-	11,55
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	782,1	1154	1299	1393	2004	2619	3243	3868	748,1
Total power input	(5)	kW	117,3	183,7	202,2	216,2	313,2	411,1	499,5	590,2	134,1
EER	(5)	kW/kW	6,668	6,282	6,424	6,443	6,398	6,371	6,492	6,554	5,579
23°C/15°C											
Cooling capacity	(6)	kW	792,9	1178	1319	1451	2093	2750	3386	4021	770,8
Total power input	(6)	kW	98,56	157,0	169,3	189,5	274,9	364,0	437,5	512,8	118,3
EER	(6)	kW/kW	8,042	7,503	7,791	7,657	7,614	7,555	7,739	7,841	6,516
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	31,59	35,86	41,09	51,19	60,91	102,9	126,6	150,1	25,03
Pressure drop	(1)(2)	kPa	38,8	28,8	30,6	40,8	30,3	60,3	68,6	61,4	24,0
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	36,64	41,65	47,60	59,28	70,44	119,1	146,3	173,2	29,07
Pressure drop	(1)(2)	kPa	38,3	23,6	24,4	32,3	25,1	38,6	44,4	50,5	24,6
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	2	2	2	3	4	5	6	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	253	422	400	450	814	1017	1319	1696	273
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	78	78	78	79	79	79	80	76
Sound power level in cooling	(8)(9)	dB(A)	96	97	97	97	99	99	100	101	95
SIZE AND WEIGHT											
A	(10)	mm	2910	3050	3050	3050	4690	4720	5700	6610	2910
B	(10)	mm	1000	1620	1620	1620	1660	1890	2350	2400	1560
H	(10)	mm	1950	2190	2190	2190	2260	2400	2400	2450	2190
Operating weight	(10)	kg	2950	5350	5340	5420	8810	11410	15330	20580	4070

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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Certified data in EUROVENT

TR-W-G05-Z			2B00	2B1A	2B2A	2B3A	2C00	2C1A	2C1B	2D00	2D1B
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	676,3-980,2	930,1-1329	1176-1680	1434-2049	791,5-1131	1042-1489	1135-1621	971,1-1471	1416-1966
EER	(1)	kW/kW	6,210	6,050	6,210	6,320	6,400	6,360	6,360	6,040	6,240
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	680,3	978,2	1240	1674	916,7	1123	1221	984,1	1448
EER	(1)(2)	kW/kW	6,040	5,850	5,960	5,890	6,060	6,100	6,110	5,850	6,010
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,48	11,26	11,45	11,50	11,37	11,56	11,55	11,63	11,54
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	1027	1401	1761	2142	1213	1588	1724	1570	2079
Total power input	(5)	kW	172,4	247,7	300,2	357,6	194,8	259,5	276,7	235,4	316,1
EER	(5)	kW/kW	5,957	5,656	5,866	5,990	6,227	6,119	6,231	6,669	6,577
23°C/15°C											
Cooling capacity	(6)	kW	1038	1440	1783	2157	1304	1681	1812	1598	2095
Total power input	(6)	kW	144,2	214,1	254,0	299,9	178,7	233,0	244,2	199,2	262,1
EER	(6)	kW/kW	7,198	6,726	7,020	7,192	7,297	7,215	7,420	8,022	7,993
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,60	46,87	59,51	80,37	43,95	53,83	58,54	47,17	69,44
Pressure drop	(1)(2)	kPa	26,0	23,1	40,4	61,1	33,8	35,3	34,6	30,0	41,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	37,77	54,55	68,99	93,18	50,86	62,22	67,66	54,87	80,40
Pressure drop	(1)(2)	kPa	20,5	21,6	26,5	38,3	26,5	27,6	26,7	25,0	32,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	3	4	5	2	3	3	2	3
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	433	640	1015	1303	411	751	795	429	814
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	77	78	78	78	78	78	78	79	79
Sound power level in cooling	(8)(9)	dB(A)	96	97	98	99	97	98	98	98	99
SIZE AND WEIGHT											
A	(10)	mm	3050	3710	4720	5700	3050	4690	4690	3050	4690
B	(10)	mm	1620	1710	1890	2350	1620	1660	1660	1620	1660
H	(10)	mm	2190	2260	2400	2400	2190	2260	2260	2190	2260
Operating weight	(10)	kg	5340	7750	10610	13850	5330	8470	8700	5310	8810

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
2 Values in compliance with EN14511
3 Seasonal energy efficiency ratio
4 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
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8 Sound power on the basis of measurements made in compliance with ISO 9614.
9 Sound power level in cooling, indoors.
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Certified data in EUROVENT

TR-W-G05-Z

High efficiency water cooled chiller

1A00 - 6D00 248-4466 kW

TR-W-G05-Z			2D1C	2D2B	2D2C	2D3C	2D4C	3A00	3B00	3B1A	3B2A
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1636-2045	1968-2460	2092-2614	2568-3210	3054-3817	724,3-1050	1009-1462	1273-1819	1522-2174
EER	(1)	kW/kW	6,300	6,270	6,320	6,400	6,510	5,970	6,070	6,220	6,250
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	1848	2185	2332	2823	3320	723,3	1078	1344	1790
EER	(1)(2)	kW/kW	5,920	5,890	5,950	6,010	6,130	5,830	5,850	5,970	5,830
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		11,25	-	-	-	-	11,33	11,24	11,42	11,42
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2175	2596	2782	3403	4032	1115	1538	1904	2268
Total power input	(5)	kW	329,6	399,2	426,4	517,4	603,6	207,7	267,6	320,8	378,4
EER	(5)	kW/kW	6,599	6,503	6,524	6,577	6,680	5,368	5,747	5,935	5,994
23°C/15°C											
Cooling capacity	(6)	kW	2229	2616	2878	3505	4140	1164	1572	1921	2274
Total power input	(6)	kW	281,8	330,5	369,4	444,9	515,6	187,0	227,9	268,5	313,8
EER	(6)	kW/kW	7,910	7,915	7,791	7,878	8,029	6,225	6,898	7,155	7,247
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	88,69	104,9	112,0	135,6	159,4	34,65	51,64	64,46	85,92
Pressure drop	(1)(2)	kPa	61,2	65,6	65,0	73,8	65,9	21,0	23,2	39,8	60,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	102,7	121,6	129,6	156,7	183,7	40,35	60,10	74,72	99,77
Pressure drop	(1)(2)	kPa	47,9	44,1	41,4	47,7	52,5	19,2	22,0	26,1	38,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	3	4	4	5	6	3	3	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	812	1013	1094	1299	1667	501	598	985	1269
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	79	80	79	80	77	78	78	78
Sound power level in cooling	(8)(9)	dB(A)	99	99	100	100	101	96	97	98	99
SIZE AND WEIGHT											
A	(10)	mm	4690	4720	4720	5700	6610	3710	3710	4720	5700
B	(10)	mm	1660	1890	1890	2350	2400	1710	1710	1890	2350
H	(10)	mm	2260	2400	2400	2400	2450	2260	2260	2400	2400
Operating weight	(10)	kg	8880	11250	11450	15420	20750	7440	7370	10740	14050

Notes

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TR-W-G05-Z			3B3A	3C00	3C1A	3C1B	3C2B	3D00	3D1A	3D1C	3D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1772-2531	1196-1709	1442-2059	1531-2187	1894-2705	1771-2213	2051-2563	2233-2792	2711-3388
EER	(1)	kW/kW	6,320	6,430	6,360	6,390	6,470	6,240	6,220	6,350	6,440
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2070	1301	1738	1854	2277	2043	2326	2536	3027
EER	(1)(2)	kW/kW	5,920	6,170	5,940	5,970	6,030	5,870	5,840	5,960	6,010
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	11,71	11,02	11,11	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2634	1831	2199	2331	2865	2349	2719	2965	3584
Total power input	(5)	kW	433,8	291,8	357,8	372,9	450,7	349,4	415,5	442,8	533,4
EER	(5)	kW/kW	6,072	6,275	6,146	6,251	6,357	6,723	6,544	6,696	6,719
23°C/15°C											
Cooling capacity	(6)	kW	2628	1961	2336	2462	2979	2369	2749	3025	3646
Total power input	(6)	kW	357,3	265,9	322,7	331,9	390,6	291,2	348,6	375,9	450,6
EER	(6)	kW/kW	7,355	7,375	7,239	7,418	7,627	8,135	7,886	8,047	8,091
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	99,31	62,37	83,42	88,96	109,3	98,15	111,8	121,8	145,4
Pressure drop	(1)(2)	kPa	55,0	35,3	51,4	51,3	58,8	67,4	74,5	71,1	79,5
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	115,1	71,99	96,69	103,0	126,3	113,7	129,6	140,9	167,9
Pressure drop	(1)(2)	kPa	42,9	28,2	33,9	33,0	41,4	55,3	47,9	46,3	54,8
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	3	4	4	5	3	4	4	5
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1677	795	1078	1013	1252	850	1059	1072	1400
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	79	78	79	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	100	98	99	99	100	99	100	100	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4690	4720	4720	5700	4690	4720	4720	5700
B	(10)	mm	2400	1660	1890	1890	2350	1660	1890	1890	2350
H	(10)	mm	2450	2260	2400	2400	2400	2260	2400	2400	2400
Operating weight	(10)	kg	18670	8700	11010	11210	14910	9010	11250	11580	15500

Notes

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TR-W-G05-Z

High efficiency water cooled chiller

1A00 - 6D00 248-4466 kW

TR-W-G05-Z			3D3C	4B00	4B1A	4B2A	4C00	4C1B	4D00	4D1C	4D2C
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	3192-3990	1366-1952	1620-2314	1875-2679	1344-2277	1947-2781	2369-2961	2857-3571	3337-4171
EER	(1)	kW/kW	6,570	6,260	6,310	6,410	6,400	6,530	6,280	6,450	6,550
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	3518	1443	1918	2200	1488	2349	2733	3233	3724
EER	(1)(2)	kW/kW	6,170	6,020	5,880	6,000	6,190	6,080	5,890	6,020	6,130
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	11,47	11,53	-	11,95	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	4200	2039	2409	2783	2439	2959	3143	3767	4376
Total power input	(5)	kW	615,1	337,3	394,5	446,9	388,2	462,3	464,8	549,7	633,6
EER	(5)	kW/kW	6,828	6,045	6,106	6,227	6,283	6,401	6,762	6,853	6,907
23°C/15°C											
Cooling capacity	(6)	kW	4261	2047	2406	2767	2610	3113	3172	3787	4392
Total power input	(6)	kW	516,6	278,7	323,7	365,6	353,5	408,7	388,0	456,2	523,6
EER	(6)	kW/kW	8,248	7,345	7,433	7,568	7,383	7,617	8,175	8,301	8,388
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	168,9	69,20	92,05	105,6	71,29	112,7	131,3	155,4	178,9
Pressure drop	(1)(2)	kPa	70,2	39,1	59,3	56,3	30,3	60,9	80,4	87,6	74,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	194,5	80,15	106,8	122,1	82,33	130,2	152,0	179,3	206,0
Pressure drop	(1)(2)	kPa	53,9	25,8	38,4	44,5	20,2	41,7	53,9	54,2	60,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	6	4	5	6	4	5	4	5	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1626	1078	1233	1638	1050	1239	1072	1380	1767
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	80	78	78	79	79	79	80	80	80
Sound power level in cooling	(8)(9)	dB(A)	101	98	99	100	99	100	100	101	101
SIZE AND WEIGHT											
A	(10)	mm	6610	4720	5700	6610	4720	5700	4720	5700	6610
B	(10)	mm	2400	1890	2350	2400	1890	2350	1890	2350	2400
H	(10)	mm	2450	2400	2400	2450	2400	2400	2400	2400	2450
Operating weight	(10)	kg	21010	10920	14300	18880	11250	15000	11580	15730	21180

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
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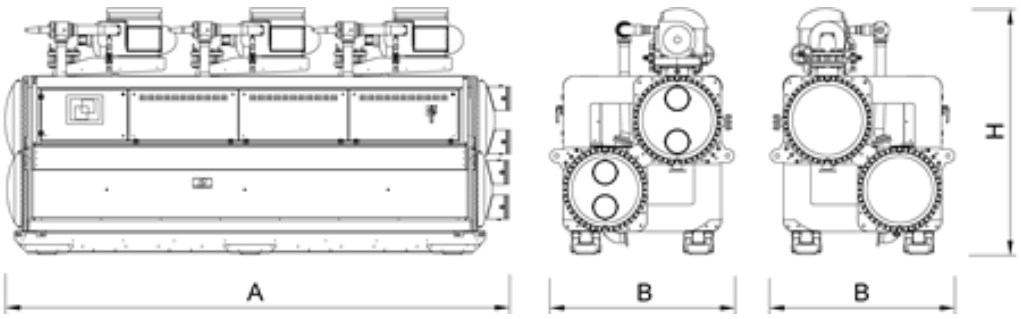
TR-W-G05-Z			5B00	5B1A	5C00	5C1B	5D00	5D1C	6B00	6C00	6D00
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1718-2454	1966-2809	1999-2856	2357-3367	2991-3739	3458-4322	2055-2935	2420-3458	3592-4490
EER	(1)	kW/kW	6,340	6,430	6,540	6,580	6,450	6,540	6,430	6,580	6,520
ESEER (up to)	(1)	kW/kW									
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	2046	2319	2421	2835	3426	3901	2434	2919	4092
EER	(1)(2)	kW/kW	5,900	6,020	6,080	6,150	6,020	6,130	6,020	6,150	6,110
Cooling energy class			A	A	A	A	A	A	A	A	A
SEPR	(3)(4)		-	-	-	-	-	-	-	-	-
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(5)	kW	2551	2914	3051	3575	3937	4522	3041	3685	4684
Total power input	(5)	kW	412,2	462,2	477,3	550,8	564,4	646,5	478,5	569,0	661,7
EER	(5)	kW/kW	6,189	6,305	6,392	6,491	6,976	6,995	6,355	6,476	7,079
23°C/15°C											
Cooling capacity	(6)	kW	2539	2888	3244	3742	3915	4491	3007	3892	4607
Total power input	(6)	kW	334,9	374,9	429,4	482,5	460,7	526,0	385,2	505,8	530,2
EER	(6)	kW/kW	7,581	7,703	7,555	7,755	8,498	8,538	7,806	7,695	8,689
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	98,21	111,3	116,2	136,0	164,7	187,4	116,8	140,1	196,6
Pressure drop	(1)(2)	kPa	60,0	56,2	61,2	57,6	91,4	77,4	56,6	58,5	80,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION											
Water flow	(1)	l/s	113,9	128,7	134,2	156,9	190,0	215,8	135,1	161,5	226,4
Pressure drop	(1)(2)	kPa	38,6	45,1	39,7	44,7	60,8	60,4	44,9	43,9	66,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	5	6	5	6	5	6	6	6	6
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	1317	1594	1343	1583	1355	1739	1722	1555	1699
NOISE LEVEL											
Sound Pressure	(7)	dB(A)	78	79	79	80	80	81	79	80	81
Sound power level in cooling	(8)(9)	dB(A)	99	100	100	101	101	102	100	101	102
SIZE AND WEIGHT											
A	(10)	mm	5700	6610	5700	6610	5700	6610	6610	6610	6610
B	(10)	mm	2350	2400	2350	2400	2350	2400	2400	2400	2400
H	(10)	mm	2400	2450	2400	2450	2400	2450	2450	2450	2450
Operating weight	(10)	kg	14550	19150	15180	20240	15890	21350	19400	20410	21560

Notes

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Certified data in EUROVENT

Dimensional drawing



CHILLERS

HR-Z

Condenserless unit

0011 - 0121 4,700-32,40 kW



Refrigerant

R407C

Versions

FF Basic version, with built-in hydronic kit

Features

Structure and base in hot-dip galvanised steel with epoxy powder paint finish.
High efficiency, low pressure drop AISI 316 stainless steel plate heat exchangers, fitted with heating element to provide frost protection.
Control with foolproof device accessible from the outside.
Differential pressure switch.
The remote condenser may be installed up to a distance of 50 metres from the cooling unit.
The safety of the unit is guaranteed by a door lock isolator on the electrical power switchboard and by active protection devices on the main components.

This Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. range of cooling units is made of indoor units that may be combined with remote outdoor condensers to guarantee maximum flexibility and compliance with any architectural restriction. These units have hermetic Scroll compressors and Full Floating technology. The latter is an intelligent electronic unit providing the perfect answer to residential market requirements: compactness, ease of installation and quietness.

Control

Full Floating features
Once every 3 minutes an algorithm automatically optimises the water set point in relation to the compressor operating time and the temperatures of the water in the system. The water storage tank is no longer indispensable because it is compensated by the Floating
Set function, with resulting reduction in:
size;
weight;
installation times;
system setting-up times.

Accessories

- Buffer tank plus pump
- Hydronic kit plus pump
- Removable metal mesh water filter kit
- Modulating pump kit
- Control board for the modulating pump kit

HR-Z / FF			0011	0021	0025	0031	0021	0025	0031
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	4,700	6,100	7,000	8,200	6,100	7,000	8,200
Total power input	(1)	kW	1,600	2,100	2,500	2,900	2,100	2,400	2,900
EER	(1)	kW/kW	2,840	2,890	2,800	2,790	2,940	2,860	2,860
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EER	(1)(2)	kW/kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Total power input	(3)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EER	(3)	kW/kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
23°C/15°C									
Cooling capacity	(4)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Total power input	(4)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EER	(4)	kW/kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	0,250	0,306	0,361	0,417	0,306	0,361	0,417
Pressure drop	(1)(2)	kPa	22,0	24,0	26,0	27,0	24,0	26,0	27,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	43	43	48	48	43	48	48
Sound power level in cooling	(6)(7)	dB(A)	0	0	0	0	0	0	0
SIZE AND WEIGHT									
A	(8)	mm	450	450	450	450	450	450	450
B	(8)	mm	400	400	400	400	400	400	400
H	(8)	mm	960	960	960	960	960	960	960
Operating weight	(8)	kg	68	70	71	74	70	71	74

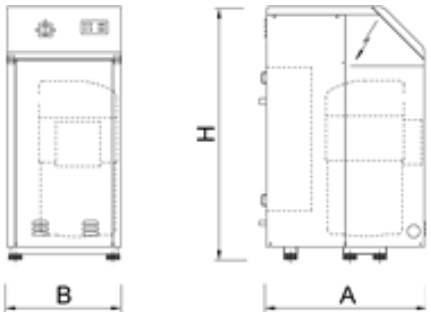
HR-Z / FF			0041	0051	0061	0071	0091	0101	0121
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	10,50	12,50	15,00	19,10	22,20	26,80	32,40
Total power input	(1)	kW	3,400	4,200	4,900	6,300	7,800	8,900	10,90
EER	(1)	kW/kW	3,060	2,970	3,070	3,030	2,860	3,000	2,960
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EER	(1)(2)	kW/kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Total power input	(3)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EER	(3)	kW/kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
23°C/15°C									
Cooling capacity	(4)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Total power input	(4)	kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EER	(4)	kW/kW	0,000	0,000	0,000	0,000	0,000	0,000	0,000
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	0,528	0,639	0,778	0,944	1,139	1,333	1,639
Pressure drop	(1)(2)	kPa	19,0	20,0	20,0	23,0	22,0	23,0	23,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	52	52	52	52	52	53	53
Sound power level in cooling	(6)(7)	dB(A)	0	0	0	0	0	0	0
SIZE AND WEIGHT									
A	(8)	mm	450	450	450	600	600	600	600
B	(8)	mm	400	400	400	600	600	600	600
H	(8)	mm	960	960	960	960	960	960	960
Operating weight	(8)	kg	85	87	90	177	180	187	190

Notes

1 Plant (side) cooling exchanger water (in/out) 0°C/0°C; Condensation temperature 0°C.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 0°C/0°C; Condensation temperature 0°C.
4 Plant (side) cooling exchanger water (in/out) 0°C/0°C; Condensation temperature 0°C.
5 Average sound pressure level at 0m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R407C [GWP_{100} 1774] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

NRCS-ME-Z

Condenserless unit

0152 - 1604 39,51-431,6 kW



Indoor unit for the production of chilled water that may be connected to a remote condenser with hermetic rotary scroll compressors working with R410A, braze-welded plate-type exchanger and thermal expansion valve. Panels and base in hot-dip galvanised sheet steel with paint finish.

Control



W3000 Base – W3000SE Compact

The controller in two different versions according to the unit's type:
W3000 Base: electronic controller complete with keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a menu up to three languages (Italian and English come standard, a further language can be chosen within French, Spanish, German, Russian and Swedish)
W3000SE Compact: electronic controller complete with keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-language menu, with selectable language setting on site. This controller also includes an internal clock.
All the W3000 electronic controllers offer advanced functions and algorithms.
The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.
The regulation is based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional- integral regulations are also available.
The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation (available on W3000SE Compact only).
For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed.
Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.
Compatibility with the remote keyboard managing up to 10 units.

Refrigerant

R410A

Versions

B Basic

Features

REFRIGERANT GAS R410A
The use of R410A allowed to achive better energy efficiencies with environment full respect (ODP = 0)

UNIT DESIGNED FOR COMBINATION WITH REMOTE CONDENSER
Compact units, designed for IT Cooling applications.

INTEGRAL CONTROL AND ADJUSTMENT
The condenserless unit comes complete with built-in microprocessor control with possible connection to the condenser.

INTEGRATED HYDRONIC GROUP
The built-in hydronic module already contains the main water circuit components; it is available with single or double pump configuration, with low or high head.

Accessories

- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Acoustical enclosure to reduce the noise emissions.
- Rubber anti-vibration mounting kit

NRCS-ME-Z / B			0152	0182	0202	0252	0262	0302	0352
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	39,51	45,83	53,60	60,53	67,35	80,23	92,78
Total power input	(1)	kW	12,03	13,47	15,74	18,08	19,97	23,44	26,87
EER	(1)	kW/kW	3,292	3,393	3,414	3,343	3,370	3,427	3,450
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	39,20	45,50	53,30	60,20	67,00	79,90	92,40
EER	(1)(2)	kW/kW	3,190	3,300	3,320	3,260	3,280	3,360	3,390
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	43,60	50,41	59,08	66,71	74,00	88,18	102,3
Total power input	(3)	kW	12,06	13,54	15,79	18,11	20,13	23,64	27,13
EER	(3)	kW/kW	3,603	3,733	3,741	3,685	3,682	3,737	3,775
23°C/15°C									
Cooling capacity	(4)	kW	50,53	58,11	68,36	77,21	85,29	101,7	118,6
Total power input	(4)	kW	12,04	13,61	15,76	18,04	20,26	23,79	27,37
EER	(4)	kW/kW	4,208	4,272	4,329	4,289	4,202	4,273	4,328
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	1,889	2,192	2,563	2,895	3,221	3,837	4,437
Pressure drop	(1)(2)	kPa	48,0	41,3	41,0	39,1	48,4	29,4	27,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	42	43	43	43	44	44	45
Sound power level in cooling	(6)(7)	dB(A)	73	74	74	74	75	76	77
SIZE AND WEIGHT									
A	(8)	mm	1130	1130	1130	1130	1130	1310	1310
B	(8)	mm	669	669	669	669	669	893	893
H	(8)	mm	1255	1255	1255	1255	1255	1496	1496
Operating weight	(8)	kg	270	280	290	295	300	410	500

NRCS-ME-Z / B			0412	0452	0512	0552	0612	0604	0704
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	104,5	117,4	131,4	150,7	169,9	160,8	185,6
Total power input	(1)	kW	30,29	33,93	37,58	43,25	48,92	46,89	53,75
EER	(1)	kW/kW	3,449	3,463	3,495	3,480	3,474	3,429	3,456
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	104,0	116,9	130,9	150,2	169,2	160,2	185,0
EER	(1)(2)	kW/kW	3,380	3,400	3,430	3,430	3,410	3,370	3,400
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	115,5	129,4	144,7	166,0	187,3	176,8	204,6
Total power input	(3)	kW	30,60	34,24	37,91	43,63	49,35	47,28	54,25
EER	(3)	kW/kW	3,775	3,784	3,818	3,807	3,791	3,738	3,768
23°C/15°C									
Cooling capacity	(4)	kW	134,3	150,0	167,4	192,3	217,1	204,0	237,2
Total power input	(4)	kW	30,94	34,55	38,20	44,02	49,83	47,59	54,75
EER	(4)	kW/kW	4,346	4,335	4,382	4,370	4,359	4,286	4,336
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	5,000	5,612	6,283	7,204	8,126	7,692	8,874
Pressure drop	(1)(2)	kPa	35,0	33,1	32,2	28,9	36,8	32,5	31,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	4	4
No. Circuits		N°	1	1	1	1	1	2	2
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	45	46	46	47	47	54	55
Sound power level in cooling	(6)(7)	dB(A)	77	78	78	79	79	86	87
SIZE AND WEIGHT									
A	(8)	mm	1310	1310	1310	1310	1310	2227	2227
B	(8)	mm	893	893	893	893	893	1020	1020
H	(8)	mm	1496	1496	1496	1496	1496	1780	1780
Operating weight	(8)	kg	585	615	645	680	700	755	950

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Condensation temperature 47°C.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Condensation temperature 47°C.
4 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Condensation temperature 47°C.
5 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NRCS-ME-Z

Condenserless unit

0152 - 1604 39,51-431,6 kW

NRCS-ME-Z / B			0804	0904	1004	1104	1204	1404	1604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	207,4	235,4	263,0	300,5	339,2	386,5	431,6
Total power input	(1)	kW	60,55	67,86	75,16	86,49	97,84	110,9	123,9
EER	(1)	kW/kW	3,422	3,467	3,497	3,474	3,468	3,485	3,483
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	206,6	234,5	262,0	299,5	337,9	384,9	429,7
EER	(1)(2)	kW/kW	3,360	3,410	3,440	3,420	3,410	3,420	3,420
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	229,0	259,6	289,6	331,1	373,9	425,1	473,6
Total power input	(3)	kW	61,16	68,50	75,82	87,24	98,69	111,7	124,7
EER	(3)	kW/kW	3,742	3,790	3,821	3,797	3,788	3,806	3,798
23°C/15°C									
Cooling capacity	(4)	kW	266,0	301,0	335,3	383,4	433,3	490,9	545,2
Total power input	(4)	kW	61,82	69,13	76,42	88,01	99,64	112,4	125,0
EER	(4)	kW/kW	4,304	4,356	4,389	4,357	4,350	4,367	4,362
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	9,918	11,26	12,58	14,37	16,22	18,48	20,64
Pressure drop	(1)(2)	kPa	38,8	38,9	39,4	36,7	46,7	49,6	54,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	56	57	58	59	59	59	59
Sound power level in cooling	(6)(7)	dB(A)	88	89	90	91	91	91	91
SIZE AND WEIGHT									
A	(8)	mm	2227	2227	2227	2227	2227	2227	2227
B	(8)	mm	1020	1020	1020	1020	1020	1020	1020
H	(8)	mm	1780	1780	1780	1780	1780	1780	1780
Operating weight	(8)	kg	1125	1185	1250	1330	1370	1430	1480

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Condensation temperature 47°C.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Condensation temperature 47°C.
4 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Condensation temperature 47°C.
5 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

FRCS-ME-Z

Condenserless unit

0401 - 1902 79,23-410,4 kW



Indoor unit for the production of chilled water combined with a remote condenser, with semi-hermetic screw compressors optimized for R134a, shell and tube evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and thermostatic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation. The high performance's level is achieved thanks to the accurate sizing of all internal components.

Refrigerant

R134a

Versions

B Basic

Features

COMPACTNESS
Compactness in terms of overall size and weight, helping installation and working on site

ADAPTABILITY
Adaptability at the building's cooling request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

WIDE OPERATING RANGE
Extensive range of operation with remote condenser operating up to 46°C air temperature

SILENT OPERATION
Extremely silent operation thanks to the accurate unit's design. Optional integral acoustic enclosure, reduces more the sound level beyond the best on market

Accessories

- Soft start
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)
- Electronic expansion valve
- Integral acoustical enclosure (type base or plus)

Control



W3000SE Large
The W3000 SE Large controller offers advanced functions and algorithms.
The keypad is generously sized with full operating status display. The commands and detailed LCD display make access to the unit's settings easy and safe. These resources allow to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.
The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.
For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.
Compatibility with the remote keyboard managing up to 10 units.
The regulation features the continuous modulation of capacity, based on a dynamic dead band and referring to the leaving water temperature. As alternative, step-wise regulation is also available, referred to the return water temperature with selectable proportional- or proportional-integral logic.

FRCS-ME-Z / B			0401	0501	0551	0651	0751	0802	0851
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	79,23	98,20	119,3	135,1	151,2	161,7	181,3
Total power input	(1)	kW	22,73	27,92	32,46	37,59	42,27	45,59	48,88
EER	(1)	kW/kW	3,489	3,520	3,671	3,593	3,574	3,546	3,708
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	79,00	97,90	119,1	134,8	150,8	161,4	180,9
EER	(1)(2)	kW/kW	3,450	3,480	3,640	3,550	3,530	3,510	3,670
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	88,44	109,4	133,5	150,8	168,3	180,7	202,4
Total power input	(3)	kW	23,15	28,53	33,08	38,31	43,22	46,44	49,79
EER	(3)	kW/kW	3,827	3,839	4,033	3,937	3,896	3,894	4,064
23°C/15°C									
Cooling capacity	(4)	kW	104,4	128,9	158,2	178,1	198,1	213,8	239,0
Total power input	(4)	kW	23,69	29,43	33,99	39,31	44,62	47,55	51,02
EER	(4)	kW/kW	4,405	4,384	4,653	4,532	4,442	4,492	4,686
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	3,789	4,696	5,706	6,459	7,230	7,731	8,668
Pressure drop	(1)(2)	kPa	14,7	14,9	11,9	15,2	19,0	14,6	18,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	2	1
No. Circuits		N°	1	1	1	1	1	2	1
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	59	60	62	62	62	62	62
Sound power level in cooling	(6)(7)	dB(A)	91	92	94	94	94	94	94
SIZE AND WEIGHT									
A	(8)	mm	2024	2330	2400	2400	2400	2890	2947
B	(8)	mm	880	880	880	880	880	1081	880
H	(8)	mm	1300	1300	1490	1490	1490	1430	1490
Operating weight	(8)	kg	720	750	1040	1060	1060	1280	1130

FRCS-ME-Z / B			0951	1002	1102	1302	1502	1702	1902
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	203,1	199,8	229,9	273,0	312,2	360,3	410,4
Total power input	(1)	kW	56,47	56,00	64,62	75,29	85,01	97,66	113,2
EER	(1)	kW/kW	3,595	3,568	3,559	3,625	3,673	3,688	3,625
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	202,4	199,1	229,0	272,1	311,2	358,9	409,5
EER	(1)(2)	kW/kW	3,540	3,510	3,490	3,570	3,620	3,620	3,590
COOLING ONLY (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(3)	kW	226,5	222,8	256,5	305,0	348,3	402,0	458,2
Total power input	(3)	kW	57,82	57,26	65,76	76,75	87,01	99,49	115,9
EER	(3)	kW/kW	3,919	3,888	3,898	3,971	4,003	4,040	3,953
23°C/15°C									
Cooling capacity	(4)	kW	267,4	262,9	302,8	360,8	411,3	474,5	541,4
Total power input	(4)	kW	59,84	59,12	67,44	78,79	89,98	101,9	120,0
EER	(4)	kW/kW	4,472	4,448	4,493	4,579	4,570	4,657	4,512
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	9,711	9,553	10,99	13,06	14,93	17,23	19,63
Pressure drop	(1)(2)	kPa	34,8	33,7	44,6	38,7	35,0	46,5	25,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	2	2	2	2	2	2
No. Circuits		N°	1	2	2	2	2	2	2
NOISE LEVEL									
Sound Pressure	(5)	dB(A)	62	63	65	65	65	65	65
Sound power level in cooling	(6)(7)	dB(A)	94	95	97	97	97	97	97
SIZE AND WEIGHT									
A	(8)	mm	2947	2890	3016	3277	3277	3292	3362
B	(8)	mm	880	1081	1081	1081	1081	1081	1081
H	(8)	mm	1500	1430	1480	1580	1580	1590	1700
Operating weight	(8)	kg	1150	1290	1680	1970	1990	2010	2300

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Condensation temperature 47°C.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Condensation temperature 47°C.
4 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Condensation temperature 47°C.
5 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Unit in standard configuration/execution, without optional accessories.

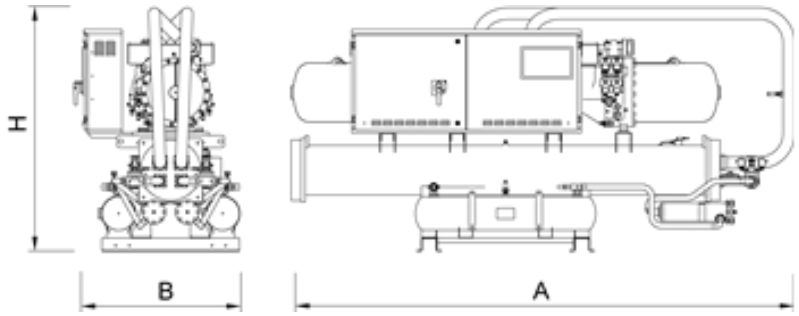
The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FRCS-ME-Z

Condenserless unit

0401 - 1902 79,23-410,4 kW

Dimensional drawing



CHILLERS

FRCS-ME-Z

Condenserless unit

1001 - 9604 218,9-2240 kW



Indoor unit for the production of chilled water combined with a remote condenser, with semi-hermetic screw compressors optimized for R134a, shell and tube evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and thermostatic expansion valve.
Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.
Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation. The high performance's level is achieved thanks to the accurate sizing of all internal components.

Refrigerant

R134a

Versions

B Basic

Features

COMPACTNESS
Compactness in terms of overall size and weight, helping installation and working on site

ADAPTABILITY
Adaptability at the building's cooling request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

WIDE OPERATING RANGE
Extensive range of operation with remote condenser operating up to 46°C air temperature

SILENT OPERATION
Extremely silent operation thanks to the accurate unit's design. Optional integral acoustic enclosure, reduces more the sound level beyond the best on market

Accessories

- Integral acoustical enclosure (type base or plus)
- Electronic expansion valve
- Soft start
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

Control



W3000SE Large
The W3000 SE Large controller offers advanced functions and algorithms.
The keypad is generously sized with full operating status display. The commands and detailed LCD display make access to the unit's settings easy and safe. These resources allow to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.
The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.
For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.
Compatibility with the remote keyboard managing up to 10 units.
The regulation features the continuous modulation of capacity, based on a dynamic dead band and referring to the leaving water temperature. As alternative, step-wise regulation is also available, referred to the return water temperature with selectable proportional- or proportional-integral logic.

FRCS-ME-Z / B			1001	1201	1301	1351	1601	1801	2002	2402	2602
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	218,9	261,7	295,4	333,0	389,0	444,8	418,5	516,4	591,4
Total power input	(1)	kW	59,65	69,66	77,52	85,39	101,5	118,0	113,6	139,2	155,1
EER	(1)	kW/kW	3,667	3,755	3,812	3,899	3,833	3,769	3,684	3,710	3,813
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	218,1	260,8	294,5	331,9	388,2	443,7	417,6	514,9	590,1
EER	(1)(2)	kW/kW	3,600	3,700	3,760	3,830	3,790	3,720	3,650	3,660	3,770
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(3)	kW	241,2	291,7	330,3	371,2	434,8	495,1	467,8	575,0	661,2
Total power input	(3)	kW	60,57	70,48	79,46	86,88	103,4	119,4	116,4	140,8	159,0
EER	(3)	kW/kW	3,980	4,138	4,155	4,272	4,205	4,147	4,019	4,084	4,158
23°C/15°C											
Cooling capacity	(4)	kW	279,3	343,7	391,1	437,7	514,6	582,6	553,8	676,7	783,1
Total power input	(4)	kW	61,80	71,31	82,34	88,79	106,1	120,7	120,7	142,4	164,7
EER	(4)	kW/kW	4,519	4,820	4,752	4,929	4,850	4,827	4,588	4,752	4,755
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	10,47	12,52	14,13	15,93	18,60	21,27	20,01	24,70	28,28
Pressure drop	(1)(2)	kPa	37,3	35,5	31,3	39,8	22,4	29,3	23,9	36,4	25,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	1	1	1	2	2	2
No. Circuits		N°	1	1	1	1	1	1	2	2	2
NOISE LEVEL											
Sound Pressure	(5)	dB(A)	62	65	65	65	65	65	65	65	67
Sound power level in cooling	(6)(7)	dB(A)	94	97	97	97	97	97	97	97	99
SIZE AND WEIGHT											
A	(8)	mm	2835	3120	3120	3120	3530	3530	3730	3730	4500
B	(8)	mm	900	900	900	900	900	900	1150	1150	1150
H	(8)	mm	1800	1800	1800	1800	1950	1950	2000	2000	2000
Operating weight	(8)	kg	1380	1870	1910	1920	2640	2650	2750	3420	3710

FRCS-ME-Z / B			2702	3202	3602	4202	4502	4802	5003	5203	5403
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	674,0	758,6	884,6	1000	1061	1120	1184	1251	1304
Total power input	(1)	kW	171,0	202,2	235,8	264,9	277,4	290,0	319,6	336,6	353,3
EER	(1)	kW/kW	3,942	3,752	3,751	3,775	3,825	3,862	3,705	3,717	3,691
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	672,1	756,0	881,6	997,1	1058	1116	1179	1247	1300
EER	(1)(2)	kW/kW	3,890	3,690	3,690	3,720	3,770	3,800	3,640	3,660	3,630
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(3)	kW	751,8	846,5	984,4	1118	1183	1247	1318	1392	1449
Total power input	(3)	kW	174,1	206,1	238,6	271,6	283,2	295,0	324,7	341,2	357,4
EER	(3)	kW/kW	4,318	4,107	4,126	4,116	4,177	4,227	4,059	4,080	4,054
23°C/15°C											
Cooling capacity	(4)	kW	887,6	999,2	1158	1322	1396	1469	1551	1637	1701
Total power input	(4)	kW	177,9	211,2	241,3	281,5	291,3	301,4	331,1	346,5	361,4
EER	(4)	kW/kW	4,989	4,731	4,799	4,696	4,792	4,874	4,684	4,724	4,707
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	32,23	36,28	42,31	47,84	50,72	53,56	56,60	59,82	62,36
Pressure drop	(1)(2)	kPa	36,3	46,1	45,9	40,0	45,0	50,2	56,0	44,1	47,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	3	3	3
No. Circuits		N°	2	2	2	2	2	2	3	3	3
NOISE LEVEL											
Sound Pressure	(5)	dB(A)	67	67	67	67	67	67	69	69	69
Sound power level in cooling	(6)(7)	dB(A)	99	99	99	99	99	99	101	101	101
SIZE AND WEIGHT											
A	(8)	mm	4500	4500	4500	4500	4500	4500	4425	4425	4425
B	(8)	mm	1150	1150	1150	1150	1150	1150	1700	1700	1700
H	(8)	mm	2000	2000	2000	2000	2000	2000	1900	1900	1900
Operating weight	(8)	kg	3730	4600	5050	5220	5250	5280	6810	6840	6850

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Condensation temperature 47°C.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Condensation temperature 47°C.
4 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Condensation temperature 47°C.
5 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FRCS-ME-Z

Condenserless unit

1001 - 9604 218,9-2240 kW

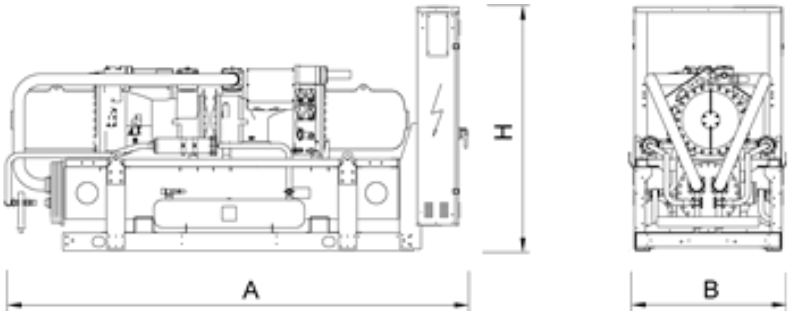
FRCS-ME-Z / B			5414	5904	6404	6804	7204	7804	8404	9004	9604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	1348	1433	1548	1660	1769	1886	2001	2121	2240
Total power input	(1)	kW	342,1	373,3	405,6	438,6	471,7	500,6	529,9	554,8	580,1
EER	(1)	kW/kW	3,940	3,839	3,817	3,785	3,750	3,767	3,776	3,823	3,861
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	1345	1429	1544	1655	1764	1880	1996	2115	2233
EER	(1)(2)	kW/kW	3,890	3,790	3,770	3,740	3,700	3,710	3,730	3,770	3,800
COOLING ONLY (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(3)	kW	1504	1599	1730	1850	1969	2103	2235	2366	2494
Total power input	(3)	kW	348,1	380,2	413,4	445,2	477,2	510,0	543,2	566,5	590,1
EER	(3)	kW/kW	4,321	4,206	4,185	4,155	4,126	4,124	4,115	4,177	4,226
23°C/15°C											
Cooling capacity	(4)	kW	1775	1888	2046	2182	2315	2480	2644	2792	2938
Total power input	(4)	kW	355,9	389,2	424,0	453,1	482,6	522,5	562,9	582,6	602,8
EER	(4)	kW/kW	4,987	4,851	4,825	4,816	4,797	4,746	4,697	4,792	4,874
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	64,46	68,55	74,04	79,37	84,61	90,17	95,68	101,4	107,1
Pressure drop	(1)(2)	kPa	36,3	41,1	35,2	40,4	45,9	52,7	40,1	45,1	50,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	4	4	4	4	4	4	4	4	4
No. Circuits		N°	4	4	4	4	4	4	4	4	4
NOISE LEVEL											
Sound Pressure	(5)	dB(A)	70	70	70	70	70	70	70	70	70
Sound power level in cooling	(6)(7)	dB(A)	102	102	102	102	102	102	102	102	102
SIZE AND WEIGHT											
A	(8)	mm	4500	4500	4500	4500	4500	4500	4500	4500	4500
B	(8)	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250
H	(8)	mm	2000	2000	2000	2000	2000	2000	2000	2000	2000
Operating weight	(8)	kg	7560	8400	9980	10010	10020	10190	10350	10420	10480

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Condensation temperature 47°C.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Condensation temperature 47°C.
4 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Condensation temperature 47°C.
5 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

NRCS-FC-Z

Air cooled chiller with free-cooling

0152 - 1604 41,50-477,1 kW



Outdoor unit for the production of chilled water, equipped with hermetic scroll compressors, R410A refrigerant, axial-fans, condensing coil with copper tubes and aluminum fins, braze-welded plate evaporator and thermostatic expansion valve. External panels are of peraluman, base of galvanized epoxy powder coated steel. The unit is supplied with anti-freeze oil and refrigerant and has been factory tested. On-site installation therefore just involves making connections to the mains power and water supplies.
These chillers, fitted with free-cooling coils, are used when the cooling load is constant all-year-round or the outdoor air temperature is lower than the temperature of the liquid return line. In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero.
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R410A

Versions

B	Basic
SL	Super-low noise version

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

ELEVATED ENERGY EFFICIENCY
Average power saving of 30% compared with standard European consumption thanks to the dedicated coils for Free-Cooling, the R-410A optimised scroll compressors and the R-410A refrigerant.

MAXIMUM FLEXIBILITY
Flexibility is achieved by the continuous modulation of the capacity provided by the compressors. The three-way modulating valve (optional) on the water side offers improved leaving water temperature control also at low outdoor temperatures.

OUTSTANDING VERSATILITY
Units available in two different versions, B (basic) and SL (super low noise), in order to fully satisfy special requirements and comply with the most complex installation solutions.

CUSTOMISED CONTROL
Customised adjustment constantly guarantees the required temperature of the chilled water whilst fully exploiting all the available resources (compressors, fans and water coils) in relation to the temperature of the external air. This makes it possible to fully use the free-cooling system even when external air temperatures are close to zero.

INTEGRATED HYDRONIC GROUP
It consists of 1 or 2 pumps with 2-pole motor, with two head options.

Accessories

- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- Automatic circuit breakers on loads
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)

NRCS-FC-Z /B			0152	0182	0202	0252	0302	0352	0412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	43,64	51,05	61,90	68,01	88,49	104,2	114,9
Total power input	(1)	kW	14,10	15,40	19,40	22,40	28,10	30,70	35,70
EER	(1)	kW/kW	3,092	3,312	3,191	3,036	3,149	3,394	3,218
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	43,10	50,50	61,30	67,40	87,60	103,4	114,0
EER	(2)(3)	kW/kW	2,960	3,180	3,060	2,920	3,010	3,280	3,120
SEPR	(4)(5)		5,57	6,01	4,64	4,57	4,92	5,41	5,42
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	1,4	1,1	0,8	0,0	-0,8	0,4	-0,7
Cooling capacity	(6)	kW	43,64	51,05	61,90	68,01	88,49	104,2	114,9
EER	(6)	kW/kW	29,07	34,00	14,74	16,19	21,07	24,81	27,36
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	43,64	51,05	61,90	68,01	88,49	104,2	114,9
Total power input	(7)	kW	14,10	15,40	19,40	22,40	28,10	30,70	35,70
EER	(7)	kW/kW	3,092	3,312	3,191	3,036	3,149	3,394	3,218
23°C/15°C									
Cooling capacity	(8)	kW	49,27	57,43	70,03	76,84	99,55	117,7	130,0
Total power input	(8)	kW	14,60	16,10	20,00	23,00	29,20	31,90	37,40
EER	(8)	kW/kW	3,377	3,565	3,500	3,339	3,408	3,690	3,476
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	2,312	2,704	3,280	3,603	4,688	5,522	6,089
Pressure drop	(2)(3)	kPa	77,2	71,5	80,5	77,5	108	74,3	68,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	7,70	9,70	11,1	13,0	15,6	22,9	24,5
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	55	55	58	58	59	59	60
Sound power level in cooling	(10)(11)	dB(A)	87	87	90	90	91	91	92
SIZE AND WEIGHT									
A	(12)	mm	2200	2200	2602	2602	2602	3602	3602
B	(12)	mm	920	920	1104	1104	1104	1104	1104
H	(12)	mm	1780	1780	2175	2175	2175	2175	2175
Operating weight	(12)	kg	670	710	870	880	1060	1310	1340

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NRCS-FC-Z

Air cooled chiller with free-cooling

0152 - 1604 41,50-477,1 kW

NRCS-FC-Z /B			0452	0512	0552	0612	0604	0704	0804
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	131,1	149,0	166,4	186,8	177,3	206,8	234,3
Total power input	(1)	kW	41,00	43,60	51,20	59,50	56,10	62,20	73,50
EER	(1)	kW/kW	3,198	3,417	3,250	3,139	3,160	3,325	3,188
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	130,0	147,7	164,9	185,1	175,5	204,4	231,5
EER	(2)(3)	kW/kW	3,090	3,290	3,130	3,020	3,030	3,170	3,030
SEPR	(4)(5)		5,05	5,38	5,39	5,08	5,27	5,48	4,97
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	-0,4	0,2	-1,1	-1,1	1,6	-0,1	0,3
Cooling capacity	(6)	kW	131,1	149,0	166,4	186,8	177,3	206,8	234,3
EER	(6)	kW/kW	20,81	23,65	26,41	22,24	21,11	24,62	18,60
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	131,1	149,0	166,4	186,8	177,3	206,8	234,3
Total power input	(7)	kW	41,00	43,60	51,20	59,50	56,10	62,20	73,50
EER	(7)	kW/kW	3,198	3,417	3,250	3,139	3,160	3,325	3,188
23°C/15°C									
Cooling capacity	(8)	kW	148,1	168,4	187,6	210,6	199,4	233,5	265,2
Total power input	(8)	kW	42,60	45,20	53,40	62,10	58,20	64,80	76,70
EER	(8)	kW/kW	3,477	3,726	3,513	3,391	3,426	3,603	3,458
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	6,946	7,895	8,816	9,896	9,392	10,96	12,41
Pressure drop	(2)(3)	kPa	89,7	94,9	100	102	114	136	149
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	4	4	4
No. Circuits		N°	1	1	1	1	2	2	2
Refrigerant charge		kg	25,0	33,5	34,2	37,0	29,6	39,6	41,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	60	61	61	62	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	92	93	93	94	93	93	94
SIZE AND WEIGHT									
A	(12)	mm	3602	4602	4602	4602	4110	4110	4110
B	(12)	mm	1104	1104	1104	1104	2220	2220	2220
H	(12)	mm	2175	2175	2205	2205	2150	2150	2150
Operating weight	(12)	kg	1410	1650	1680	1740	2200	2330	2510

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NRCS-FC-Z /B			0904	1004	1104	1204	1404	1604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	267,7	293,1	336,1	377,0	430,1	477,1
Total power input	(1)	kW	79,60	89,20	101,0	117,5	129,5	148,3
EER	(1)	kW/kW	3,363	3,286	3,328	3,209	3,321	3,217
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	264,9	290,0	332,3	372,5	426,3	472,8
EER	(2)(3)	kW/kW	3,220	3,140	3,170	3,050	3,200	3,100
SEPR	(4)(5)		5,45	5,47	5,72	5,34	5,68	5,17
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	1,4	0,6	0,5	0,4	0,7	0,5
Cooling capacity	(6)	kW	267,7	293,1	336,1	377,0	430,1	477,1
EER	(6)	kW/kW	21,25	23,26	26,67	22,44	25,60	22,72
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	267,7	293,1	336,1	377,0	430,1	477,1
Total power input	(7)	kW	79,60	89,20	101,0	117,5	129,5	148,3
EER	(7)	kW/kW	3,363	3,286	3,328	3,209	3,321	3,217
23°C/15°C								
Cooling capacity	(8)	kW	302,8	330,6	379,3	425,4	484,3	535,7
Total power input	(8)	kW	82,70	92,60	105,2	122,5	134,5	153,6
EER	(8)	kW/kW	3,661	3,570	3,606	3,473	3,601	3,488
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	14,18	15,53	17,81	19,97	22,79	25,28
Pressure drop	(2)(3)	kPa	128	130	146	158	114	119
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	47,0	49,0	59,4	59,5	76,0	80,4
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	62	62	63	64	63	64
Sound power level in cooling	(10)(11)	dB(A)	94	94	95	96	96	97
SIZE AND WEIGHT								
A	(12)	mm	5110	5110	5110	5110	6110	6110
B	(12)	mm	2220	2220	2220	2220	2220	2220
H	(12)	mm	2150	2150	2480	2480	2480	2480
Operating weight	(12)	kg	2880	2940	3260	3400	3810	3970

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NRCS-FC-Z

Air cooled chiller with free-cooling

0152 - 1604 41,50-477,1 kW

NRCS-FC-Z /SL			0152	0182	0202	0252	0302	0352	0412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	41,50	49,82	56,91	63,84	84,22	97,87	111,7
Total power input	(1)	kW	14,22	16,10	19,00	21,72	27,82	32,18	35,48
EER	(1)	kW/kW	2,923	3,093	2,995	2,940	3,029	3,040	3,146
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	41,10	49,30	56,40	63,20	83,30	97,20	110,9
EER	(2)(3)	kW/kW	2,810	2,980	2,890	2,840	2,910	2,950	3,050
SEPR	(4)(5)		6,03	5,62	5,68	5,45	5,64	5,55	5,82
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	-1,2	-1,5	-1,1	-1,3	-1,3	-1,2	-0,7
Cooling capacity	(6)	kW	41,50	49,82	56,91	63,84	84,22	97,87	111,7
EER	(6)	kW/kW	66,94	33,20	37,93	37,09	48,95	37,95	43,29
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	41,50	49,82	56,91	63,84	84,22	97,87	111,7
Total power input	(7)	kW	14,22	16,10	19,00	21,72	27,82	32,18	35,48
EER	(7)	kW/kW	2,923	3,093	2,995	2,940	3,029	3,040	3,146
23°C/15°C									
Cooling capacity	(8)	kW	46,54	56,05	63,97	71,37	94,70	110,4	126,3
Total power input	(8)	kW	14,82	16,80	19,90	22,52	29,12	33,78	37,48
EER	(8)	kW/kW	3,142	3,333	3,216	3,173	3,254	3,266	3,368
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	2,199	2,639	3,015	3,382	4,462	5,185	5,920
Pressure drop	(2)(3)	kPa	69,8	68,1	68,0	68,3	97,7	65,5	65,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	9,40	10,6	14,1	15,0	20,7	23,4	33,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	45	46	46	47	48	49	49
Sound power level in cooling	(10)(11)	dB(A)	77	78	78	79	80	81	81
SIZE AND WEIGHT									
A	(12)	mm	2200	2602	2602	2602	3602	3602	4602
B	(12)	mm	920	1104	1104	1104	1104	1104	1104
H	(12)	mm	1780	2175	2175	2175	2175	2175	2205
Operating weight	(12)	kg	680	860	920	940	1240	1350	1590

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NRCS-FC-Z /SL			0452	0512	0552	0612	0604	0704	0804
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	122,3	137,4	155,6	179,1	166,2	192,7	215,6
Total power input	(1)	kW	41,08	45,54	53,04	58,90	56,94	65,86	74,86
EER	(1)	kW/kW	2,976	3,020	2,936	3,041	2,921	2,924	2,879
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	121,3	136,3	154,3	177,6	164,7	190,7	213,3
EER	(2)(3)	kW/kW	2,890	2,930	2,840	2,940	2,820	2,810	2,760
SEPR	(4)(5)		5,69	5,55	5,61	5,55	5,88	5,67	5,59
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	-1,5	-1,6	-1,7	-2,8	-1,6	-1,7	-3,3
Cooling capacity	(6)	kW	122,3	137,4	155,6	179,1	166,2	192,7	215,6
EER	(6)	kW/kW	47,40	39,94	45,23	40,70	48,31	37,34	41,78
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	122,3	137,4	155,6	179,1	166,2	192,7	215,6
Total power input	(7)	kW	41,08	45,54	53,04	58,90	56,94	65,86	74,86
EER	(7)	kW/kW	2,976	3,020	2,936	3,041	2,921	2,924	2,879
23°C/15°C									
Cooling capacity	(8)	kW	137,4	153,8	174,1	200,9	186,9	217,2	243,6
Total power input	(8)	kW	43,28	47,64	55,64	61,90	59,64	69,36	79,36
EER	(8)	kW/kW	3,173	3,231	3,131	3,246	3,136	3,130	3,068
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	6,482	7,280	8,245	9,487	8,806	10,21	11,42
Pressure drop	(2)(3)	kPa	78,1	80,7	87,9	94,1	99,9	118	126
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	4	4	4
No. Circuits		N°	1	1	1	1	2	2	2
Refrigerant charge		kg	34,0	35,0	35,1	50,0	39,0	40,0	50,4
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	50	51	52	53	50	51	51
Sound power level in cooling	(10)(11)	dB(A)	82	83	84	85	82	83	83
SIZE AND WEIGHT									
A	(12)	mm	4602	4602	4602	4602	4110	4110	4110
B	(12)	mm	1104	1104	1277	1277	2220	2220	2220
H	(12)	mm	2175	2205	2350	2350	2150	2150	2150
Operating weight	(12)	kg	1610	1690	1920	2000	2280	2410	2580

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
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10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NRCS-FC-Z

Air cooled chiller with free-cooling

0152 - 1604 41,50-477,1 kW

NRCS-FC-Z /SL			0904	1004	1104	1204	1404	1604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	242,8	273,9	313,0	351,0	402,0	445,3
Total power input	(1)	kW	83,16	89,86	103,5	119,0	132,1	150,4
EER	(1)	kW/kW	2,918	3,047	3,024	2,950	3,043	2,961
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	240,6	271,3	309,8	347,3	398,4	441,2
EER	(2)(3)	kW/kW	2,820	2,930	2,900	2,830	2,940	2,860
SEPR	(4)(5)		5,91	5,96	6,09	5,82	6,10	5,63
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-1,6	-2,8	-3,0	-2,9	-2,8	-2,9
Cooling capacity	(6)	kW	242,8	273,9	313,0	351,0	402,0	445,3
EER	(6)	kW/kW	47,05	53,08	60,66	51,02	58,43	51,78
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	242,8	273,9	313,0	351,0	402,0	445,3
Total power input	(7)	kW	83,16	89,86	103,5	119,0	132,1	150,4
EER	(7)	kW/kW	2,918	3,047	3,024	2,950	3,043	2,961
23°C/15°C								
Cooling capacity	(8)	kW	272,6	306,5	350,5	393,0	449,6	496,7
Total power input	(8)	kW	87,46	93,96	108,8	125,5	138,9	158,0
EER	(8)	kW/kW	3,115	3,261	3,222	3,131	3,237	3,144
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	12,86	14,51	16,59	18,60	21,30	23,59
Pressure drop	(2)(3)	kPa	105	113	127	137	113	119
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	50,5	60,9	70,5	77,0	97,8	98,9
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	52	52	53	54	53	54
Sound power level in cooling	(10)(11)	dB(A)	84	84	85	86	86	87
SIZE AND WEIGHT								
A	(12)	mm	5110	5110	5110	5110	6110	6110
B	(12)	mm	2220	2220	2220	2220	2220	2220
H	(12)	mm	2150	2150	2480	2480	2480	2480
Operating weight	(12)	kg	2880	3040	3380	3520	3960	4120

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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12 Unit in standard configuration/execution, without optional accessories.

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NRCS-FC-Z /NG /B			0152	0182	0302	0352	0412	0452	0512	0552	0612
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	44,82	52,43	90,88	107,0	118,0	134,7	153,0	170,9	191,8
Total power input	(1)	kW	14,10	15,50	28,30	30,90	35,80	41,10	43,80	51,50	59,80
EER	(1)	kW/kW	3,177	3,381	3,212	3,463	3,296	3,277	3,493	3,318	3,207
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	44,30	51,80	90,00	106,1	117,1	133,6	151,8	169,5	190,4
EER	(2)(3)	kW/kW	3,020	3,220	3,080	3,330	3,190	3,160	3,370	3,210	3,110
SEPR	(4)(5)		4,83	5,28	4,58	4,97	5,00	4,73	4,97	5,07	4,78
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-1,2	-1,5	-3,3	-2,1	-3,2	-2,9	-2,3	-3,6	-3,6
Cooling capacity	(6)	kW	44,82	52,43	90,88	107,0	118,0	134,7	153,0	170,9	191,8
EER	(6)	kW/kW	17,23	20,15	17,15	18,77	20,70	17,27	18,00	21,91	18,09
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	44,82	52,43	90,88	107,0	118,0	134,7	153,0	170,9	191,8
Total power input	(7)	kW	14,10	15,50	28,30	30,90	35,80	41,10	43,80	51,50	59,80
EER	(7)	kW/kW	3,177	3,381	3,212	3,463	3,296	3,277	3,493	3,318	3,207
23°C/15°C											
Cooling capacity	(8)	kW	50,60	58,98	102,2	120,9	133,5	152,1	172,9	192,6	216,3
Total power input	(8)	kW	14,60	16,20	29,30	32,10	37,50	42,80	45,40	53,60	62,30
EER	(8)	kW/kW	3,466	3,642	3,488	3,766	3,560	3,554	3,808	3,593	3,472
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	2,145	2,509	4,349	5,123	5,648	6,444	7,324	8,178	9,180
Pressure drop	(2)(3)	kPa	102	94,5	108	91,5	83,9	96,9	95,9	94,5	86,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	7,70	9,70	15,6	22,9	24,5	25,0	33,5	34,2	37,0
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	55	55	59	59	60	60	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	87	87	91	91	92	92	93	93	94
SIZE AND WEIGHT											
A	(12)	mm	2200	2200	2602	3602	3602	3602	4602	4602	4602
B	(12)	mm	920	920	1104	1104	1104	1104	1104	1104	1104
H	(12)	mm	1780	1780	2175	2175	2175	2175	2175	2205	2205
Operating weight	(12)	kg	710	760	1130	1410	1450	1530	1780	1810	1890

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NRCS-FC-Z

Air cooled chiller with free-cooling

0152 - 1604 41,50-477,1 kW

NRCS-FC-Z /NG /B			0604	0704	0804	0904	1004	1104	1204	1404
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	182,1	212,4	240,6	274,9	301,0	345,2	387,1	441,7
Total power input	(1)	kW	56,40	62,50	73,80	79,90	89,60	101,5	118,1	130,1
EER	(1)	kW/kW	3,229	3,398	3,260	3,441	3,359	3,401	3,278	3,395
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	180,5	210,3	238,2	272,3	298,2	341,9	383,4	437,7
EER	(2)(3)	kW/kW	3,110	3,260	3,130	3,300	3,230	3,260	3,150	3,260
SEPR	(4)(5)		4,87	5,13	4,66	5,04	5,09	5,21	4,92	5,19
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-1,0	-2,6	-2,2	-1,2	-2,0	-2,0	-2,2	-1,9
Cooling capacity	(6)	kW	182,1	212,4	240,6	274,9	301,0	345,2	387,1	441,7
EER	(6)	kW/kW	17,18	20,04	15,42	17,62	19,29	19,07	17,36	19,81
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	182,1	212,4	240,6	274,9	301,0	345,2	387,1	441,7
Total power input	(7)	kW	56,40	62,50	73,80	79,90	89,60	101,5	118,1	130,1
EER	(7)	kW/kW	3,229	3,398	3,260	3,441	3,359	3,401	3,278	3,395
23°C/15°C										
Cooling capacity	(8)	kW	204,8	239,8	272,4	311,0	339,5	389,5	436,8	497,4
Total power input	(8)	kW	58,50	65,00	77,00	83,00	93,00	105,6	123,0	135,0
EER	(8)	kW/kW	3,501	3,689	3,538	3,747	3,651	3,688	3,551	3,684
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	8,712	10,16	11,51	13,16	14,41	16,52	18,53	21,14
Pressure drop	(2)(3)	kPa	112	125	131	125	124	131	137	131
REFRIGERANT CIRCUIT										
Compressors nr.		N°	4	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	29,6	39,6	41,0	47,0	49,0	59,4	59,5	76,0
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	61	61	62	62	62	63	64	63
Sound power level in cooling	(10)(11)	dB(A)	93	93	94	94	94	95	96	96
SIZE AND WEIGHT										
A	(12)	mm	4110	4110	4110	5110	5110	5110	5110	6110
B	(12)	mm	2220	2220	2220	2220	2220	2220	2220	2220
H	(12)	mm	2150	2150	2150	2150	2150	2480	2480	2480
Operating weight	(12)	kg	2510	2650	2840	3250	3320	3700	3850	4290

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
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NRCS-FC-Z /NG /SL			0152	0182	0202	0252	0302	0352	0412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	42,62	51,16	58,44	65,56	86,49	100,5	114,8
Total power input	(1)	kW	14,32	16,10	19,10	21,82	28,02	32,28	35,68
EER	(1)	kW/kW	2,979	3,180	3,058	3,009	3,089	3,111	3,216
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	42,10	50,70	57,80	65,00	85,70	99,70	113,9
EER	(2)(3)	kW/kW	2,850	3,040	2,940	2,900	2,970	3,010	3,120
SEPR	(4)(5)		5,19	5,00	5,12	4,97	5,24	5,09	5,36
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	-3,7	-3,9	-3,6	-3,8	-3,8	-3,7	-3,2
Cooling capacity	(6)	kW	42,62	51,16	58,44	65,56	86,49	100,5	114,8
EER	(6)	kW/kW	24,77	19,69	22,46	23,26	30,67	24,63	28,14
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	42,62	51,16	58,44	65,56	86,49	100,5	114,8
Total power input	(7)	kW	14,32	16,10	19,10	21,82	28,02	32,28	35,68
EER	(7)	kW/kW	2,979	3,180	3,058	3,009	3,089	3,111	3,216
23°C/15°C									
Cooling capacity	(8)	kW	47,80	57,56	65,69	73,30	97,26	113,3	129,7
Total power input	(8)	kW	14,82	16,90	19,90	22,62	29,32	33,98	37,68
EER	(8)	kW/kW	3,230	3,408	3,302	3,243	3,321	3,332	3,440
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	2,039	2,448	2,797	3,137	4,139	4,810	5,491
Pressure drop	(2)(3)	kPa	91,8	90,0	82,0	80,8	97,9	80,6	79,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	9,40	10,6	14,1	15,0	20,7	23,4	33,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	46	47	47	48	49	50	50
Sound power level in cooling	(10)(11)	dB(A)	78	79	79	80	81	82	82
SIZE AND WEIGHT									
A	(12)	mm	2200	2602	2602	2602	3602	3602	4602
B	(12)	mm	920	1104	1104	1104	1104	1104	1104
H	(12)	mm	1780	2175	2175	2175	2175	2175	2205
Operating weight	(12)	kg	730	910	970	990	1300	1450	1690

Notes

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NRCS-FC-Z

Air cooled chiller with free-cooling

0152 - 1604 41,50-477,1 kW

NRCS-FC-Z /NG /SL			0452	0512	0552	0612	0604	0704	0804
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	125,7	141,1	159,8	183,9	170,7	197,9	221,4
Total power input	(1)	kW	41,28	45,84	53,24	59,20	57,14	66,16	75,26
EER	(1)	kW/kW	3,044	3,081	3,004	3,106	2,989	2,989	2,940
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	124,7	140,1	158,7	182,7	169,3	196,2	219,5
EER	(2)(3)	kW/kW	2,950	2,990	2,920	3,020	2,890	2,890	2,840
SEPR	(4)(5)		5,28	5,21	5,30	5,22	5,42	5,30	5,23
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	-4,0	-4,1	-4,2	-5,3	-4,1	-4,2	-5,7
Cooling capacity	(6)	kW	125,7	141,1	159,8	183,9	170,7	197,9	221,4
EER	(6)	kW/kW	30,81	28,56	32,35	27,86	30,27	26,89	27,13
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	125,7	141,1	159,8	183,9	170,7	197,9	221,4
Total power input	(7)	kW	41,28	45,84	53,24	59,20	57,14	66,16	75,26
EER	(7)	kW/kW	3,044	3,081	3,004	3,106	2,989	2,989	2,940
23°C/15°C									
Cooling capacity	(8)	kW	141,2	158,0	178,8	206,4	192,0	223,1	250,2
Total power input	(8)	kW	43,48	47,84	55,94	62,20	59,94	69,66	79,76
EER	(8)	kW/kW	3,246	3,305	3,199	3,318	3,205	3,201	3,135
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	6,013	6,753	7,648	8,800	8,169	9,469	10,60
Pressure drop	(2)(3)	kPa	84,3	81,6	82,6	79,3	98,7	109	111
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	4	4	4
No. Circuits		N°	1	1	1	1	2	2	2
Refrigerant charge		kg	34,0	35,0	35,1	50,0	39,0	40,0	50,4
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	51	52	53	54	50	51	51
Sound power level in cooling	(10)(11)	dB(A)	83	84	85	86	82	83	83
SIZE AND WEIGHT									
A	(12)	mm	4602	4602	4602	4602	4110	4110	4110
B	(12)	mm	1104	1104	1277	1277	2220	2220	2220
H	(12)	mm	2175	2205	2350	2350	2150	2150	2150
Operating weight	(12)	kg	1730	1810	2060	2150	2590	2730	2910

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
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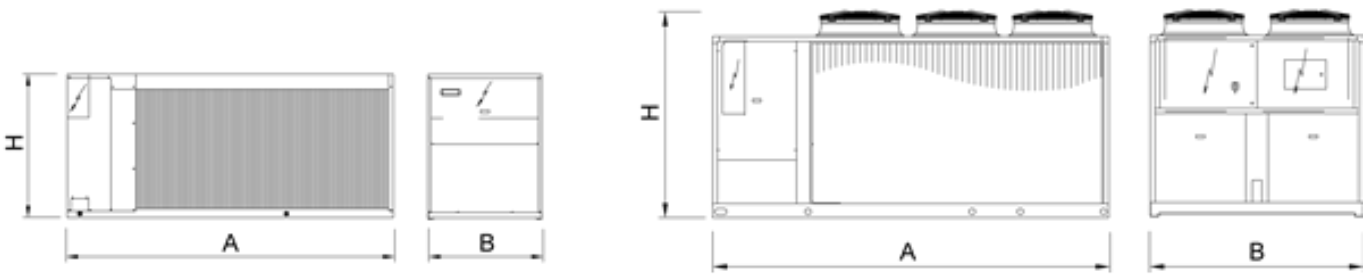
NRCS-FC-Z /NG /SL			0904	1004	1104	1204	1404	1604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	249,3	281,3	321,5	360,5	412,9	457,4
Total power input	(1)	kW	83,56	90,26	104,1	119,6	132,8	151,2
EER	(1)	kW/kW	2,982	3,115	3,088	3,014	3,109	3,025
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	247,3	279,0	318,8	357,4	409,5	453,7
EER	(2)(3)	kW/kW	2,890	3,010	2,980	2,910	3,010	2,930
SEPR	(4)(5)		5,47	5,57	5,56	5,38	5,61	5,16
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-4,1	-5,3	-5,4	-5,3	-5,3	-5,3
Cooling capacity	(6)	kW	249,3	281,3	321,5	360,5	412,9	457,4
EER	(6)	kW/kW	30,55	34,47	30,05	29,07	33,30	28,41
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	249,3	281,3	321,5	360,5	412,9	457,4
Total power input	(7)	kW	83,56	90,26	104,1	119,6	132,8	151,2
EER	(7)	kW/kW	2,982	3,115	3,088	3,014	3,109	3,025
23°C/15°C								
Cooling capacity	(8)	kW	279,9	314,8	359,9	403,6	461,7	510,1
Total power input	(8)	kW	87,86	94,36	109,2	126,0	139,5	158,7
EER	(8)	kW/kW	3,184	3,335	3,296	3,203	3,310	3,214
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	11,93	13,46	15,39	17,25	19,76	21,89
Pressure drop	(2)(3)	kPa	103	108	114	118	114	117
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	50,5	60,9	70,5	77,0	97,8	98,9
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	52	52	53	54	53	54
Sound power level in cooling	(10)(11)	dB(A)	84	84	85	86	86	87
SIZE AND WEIGHT								
A	(12)	mm	5110	5110	5110	5110	6110	6110
B	(12)	mm	2220	2220	2220	2220	2220	2220
H	(12)	mm	2150	2150	2480	2480	2480	2480
Operating weight	(12)	kg	3250	3420	3820	3970	4440	4630

Notes

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Dimensional drawing



CHILLERS

NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature



Outdoor unit for the production of high temperature chilled water equipped with scroll compressors, R410A refrigerant, axial-fans, micro-channel full-aluminum condensing coils, shell and tube evaporator, and electronic expansion valves. Base, supporting structure, and panels are of galvanized epoxy powder coated steel. The free-cooling system chills the water exploiting the outdoor air cold temperatures. It consists of additional water coils, made of copper tubes and aluminum fins, and a devoted hydraulic valve system. The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Control

Electronic control W3000+

The W3000+ controller offers proprietary functions and algorithms.

The thermoregulation features the capacity modulation based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Diagnostics include complete alarm management, with “blackbox” functions (via PC) and alarm log (display or PC).

W3000+ includes group regulation logics (LAN) with Dynamic master management, developed to maximize energy efficiency and reliability in multi-unit systems. Supervision is possible using proprietary devices or third-party systems through the most common communication protocols. Compatibility with the remote keyboard (up to 8 units). Consumption metering and performance measurement are possible as well.

KIPlink - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the refrigerant circuits and the main components, and display and reset the possible alarms. In addition to or as an alternative, the Touch interface, with a 7” WVGA colour display and a front USB port, or the Large keyboard, with a wide LCD display and led icons, are available.

Refrigerant

R410A

Versions

K	Standard efficiency
SL-K	Super low noise, standard efficiency
A	High efficiency
SL-A	Super low noise, high efficiency

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

HIGH TEMPERATURE OF CHILLED WATER

Designed for the production of chilled water with high temperature and high delta T, this unit is the ideal solution for the modern IT-cooling systems, where this optimization allows great energy savings.

FREE-COOLING

The generous size of the free-cooling coils allows to produce the nominal cooling capacity without the use of the compressors for many hours per year, thus cutting the annual energy consuption.

GROUP CONTROLS WITH DYNAMIC MASTER

Load sharing, sequencing, active redundancy, priority of resource activation, alarm management, theese are only some of the LAN functions that the unit is able to manage when connected to a group of chillers. Besides, the system's stability is ensured even in case of alarm or malfunctioning thanks to the Dynamic Master logic.

ADAPTIVE SET-POINT

This function connects the indoor units (close control) with the external group of chillers. An advanced algorithm instantaneously detects the actual indoor thermal load and conveys this information to the chillers, thus optimizing the operation of the whole system.

INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

VARIABLE PRIMARY FLOW

Energy saving due to variable pump speed management based on load demand and the variable flow assures the functioning of the units also with critical working conditions.

Accessories

- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Soft start
- EC fans with electronic DC brushless motor
- Hydronic module with 1 or 2 pumps, high or low head. Buffer tank available.
- Modulating valve for water temperature control in Free-Cooling mode
- Leak detector
- Compressor enclosure (standard on silenced versions)
- Night mode is a system setting to limit maximum noise level of the unit.
- Energy meter
- Set-up for remote connectivity with protocols: ModBus, ModBus over IP (TCP/IP), Echelon, BacNet MS/TP RS485, Bacnet over IP, Konnex, SNMP
- Remote control keyboard (distance to 200m and to 500m)

NR-FC-Z /K			0384	0414	0434	0464	0494	0524	0554
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	367,4	387,8	418,9	443,0	475,5	499,5	534,9
Total power input	(1)	kW	98,46	106,9	113,2	121,2	126,7	136,8	147,5
EER	(1)	kW/kW	3,730	3,628	3,701	3,655	3,753	3,651	3,626
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	366,5	386,8	417,7	441,9	474,2	498,5	533,7
EER	(2)(3)	kW/kW	3,690	3,590	3,650	3,610	3,700	3,620	3,590
SEPR	(4)(5)		5,79	5,68	5,90	5,93	5,88	5,69	5,77
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	9,6	8,9	9,8	9,2	9,9	9,3	8,3
Cooling capacity	(6)	kW	367,4	387,8	418,9	443,0	475,5	499,5	534,9
EER	(6)	kW/kW	32,23	34,02	31,50	33,31	31,28	32,86	35,19
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	295,5	312,4	336,4	359,3	384,6	404,7	431,4
Total power input	(7)	kW	93,06	100,4	106,2	113,6	118,9	127,8	137,0
EER	(7)	kW/kW	3,174	3,112	3,168	3,163	3,235	3,167	3,149
23°C/15°C									
Cooling capacity	(8)	kW	335,8	354,7	382,5	407,2	436,5	458,5	489,5
Total power input	(8)	kW	96,06	104,0	110,1	117,8	123,2	132,8	142,8
EER	(8)	kW/kW	3,494	3,411	3,474	3,457	3,543	3,453	3,428
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	12,10	12,77	13,80	14,59	15,66	16,45	17,62
Pressure drop	(2)(3)	kPa	35,7	40,3	46,7	42,0	46,9	34,6	36,4
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	40,0	45,0	52,0	52,0	56,0	58,0	64,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	62	62	62	63	63	63	63
Sound power level in cooling	(10)(11)	dB(A)	94	94	94	95	95	95	95
SIZE AND WEIGHT									
A	(12)	mm	3905	3905	5080	5080	5080	5080	5080
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	3580	3610	4110	4420	4610	5180	4720

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /K			0594	0624	0685	0746	0836	0866	0926
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	567,5	603,6	649,7	713,6	796,4	837,8	895,9
Total power input	(1)	kW	155,5	163,2	179,2	190,1	220,7	226,3	247,1
EER	(1)	kW/kW	3,650	3,699	3,626	3,754	3,609	3,702	3,626
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	566,2	602,2	648,2	712,2	794,5	835,7	893,4
EER	(2)(3)	kW/kW	3,610	3,660	3,590	3,720	3,570	3,660	3,580
SEPR	(4)(5)		5,83	5,79	5,88	6,28	6,19	5,96	6,06
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	9,2	9,7	9,0	9,9	8,8	9,8	9,0
Cooling capacity	(6)	kW	567,5	603,6	649,7	713,6	796,4	837,8	895,9
EER	(6)	kW/kW	33,19	31,77	34,19	31,30	34,93	31,50	33,68
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	462,2	490,9	528,3	579,9	649,3	678,0	728,9
Total power input	(7)	kW	144,9	152,2	167,1	178,7	205,7	212,0	229,8
EER	(7)	kW/kW	3,190	3,225	3,162	3,245	3,157	3,198	3,172
23°C/15°C									
Cooling capacity	(8)	kW	522,9	555,6	597,9	657,2	732,7	768,4	824,4
Total power input	(8)	kW	150,9	158,4	173,8	185,1	214,0	219,9	239,5
EER	(8)	kW/kW	3,465	3,508	3,440	3,551	3,424	3,494	3,442
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	18,69	19,88	21,40	23,50	26,23	27,59	29,50
Pressure drop	(2)(3)	kPa	40,4	39,0	41,7	34,9	44,6	48,1	55,0
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	5	6	6	6	6
No. Circuits		N°	2	2	2	2	2	3	2
Refrigerant charge		kg	66,0	75,0	75,0	75,0	80,0	82,0	82,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	62	63	63	63	63	64	64
Sound power level in cooling	(10)(11)	dB(A)	95	96	96	96	96	97	97
SIZE AND WEIGHT									
A	(12)	mm	6255	6255	6255	7430	7430	8605	8605
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	4860	4970	5460	6050	6130	6700	6750

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NR-FC-Z /SL-K			0384	0414	0434	0464	0494	0524	0554
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	364,5	385,9	417,0	439,4	466,5	503,5	534,1
Total power input	(1)	kW	97,59	105,7	111,3	120,1	128,7	133,6	144,1
EER	(1)	kW/kW	3,735	3,651	3,747	3,659	3,625	3,769	3,706
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	363,6	384,9	415,8	438,3	465,2	502,4	532,9
EER	(2)(3)	kW/kW	3,690	3,610	3,700	3,620	3,580	3,730	3,670
SEPR	(4)(5)		6,13	6,01	6,21	6,01	6,08	5,99	6,03
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	9,3	8,6	9,3	8,7	8,1	9,7	9,0
Cooling capacity	(6)	kW	364,5	385,9	417,0	439,4	466,5	503,5	534,1
EER	(6)	kW/kW	44,51	47,12	44,55	46,94	49,84	43,03	45,65
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	293,6	311,1	335,3	357,1	379,4	407,6	430,3
Total power input	(7)	kW	91,99	98,99	104,3	112,2	119,7	124,8	133,8
EER	(7)	kW/kW	3,191	3,142	3,215	3,183	3,170	3,266	3,216
23°C/15°C									
Cooling capacity	(8)	kW	333,4	353,0	381,0	404,3	429,3	461,9	488,6
Total power input	(8)	kW	95,09	102,7	108,1	116,6	124,6	129,6	139,5
EER	(8)	kW/kW	3,506	3,437	3,525	3,467	3,445	3,564	3,503
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	12,00	12,71	13,73	14,47	15,36	16,58	17,59
Pressure drop	(2)(3)	kPa	35,1	40,1	46,5	41,3	45,9	35,2	36,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	42,0	47,0	50,0	52,0	52,0	57,0	60,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	54	54	54	54	54	54	54
Sound power level in cooling	(10)(11)	dB(A)	86	86	86	86	86	87	87
SIZE AND WEIGHT									
A	(12)	mm	5080	5080	5080	5080	5080	6255	6255
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	3960	4080	4600	4580	4610	5850	5360

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /SL-K			0594	0624	0685	0746	0836	0866	0926
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	568,2	604,0	643,7	710,6	801,0	826,3	888,2
Total power input	(1)	kW	154,7	160,2	176,2	187,4	213,1	223,3	244,8
EER	(1)	kW/kW	3,673	3,770	3,653	3,792	3,759	3,700	3,628
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	566,9	602,6	642,2	709,2	799,1	824,2	885,7
EER	(2)(3)	kW/kW	3,630	3,730	3,610	3,760	3,720	3,660	3,580
SEPR	(4)(5)		6,04	6,07	6,11	6,62	6,48	6,25	6,33
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	8,4	9,7	9,0	9,6	9,7	9,0	8,5
Cooling capacity	(6)	kW	568,2	604,0	643,7	710,6	801,0	826,3	888,2
EER	(6)	kW/kW	48,56	43,14	45,98	43,33	42,83	44,19	47,50
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	463,9	491,4	523,5	578,1	649,7	669,6	723,9
Total power input	(7)	kW	143,6	149,1	164,0	175,6	198,9	207,5	227,0
EER	(7)	kW/kW	3,231	3,296	3,192	3,292	3,266	3,227	3,189
23°C/15°C									
Cooling capacity	(8)	kW	524,1	556,1	592,4	654,8	733,7	757,7	818,0
Total power input	(8)	kW	149,9	155,3	170,8	182,2	206,6	216,2	237,0
EER	(8)	kW/kW	3,496	3,581	3,468	3,594	3,551	3,505	3,451
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	18,71	19,89	21,20	23,40	26,38	27,21	29,25
Pressure drop	(2)(3)	kPa	40,5	39,1	40,9	34,6	45,1	46,8	54,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	5	6	6	6	6
No. Circuits		N°	2	2	2	2	2	3	2
Refrigerant charge		kg	66,0	77,0	79,0	82,0	86,0	86,0	86,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	54	55	57	55	56	57	57
Sound power level in cooling	(10)(11)	dB(A)	87	88	90	88	89	90	90
SIZE AND WEIGHT									
A	(12)	mm	6255	7430	7430	8605	9780	9780	9780
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	4930	5500	6140	6610	7200	7230	7280

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NR-FC-Z /A			0384	0414	0434	0464	0494	0524	0554
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	389,4	422,0	454,6	479,6	510,6	542,8	577,2
Total power input	(1)	kW	96,52	103,6	109,9	116,6	123,2	132,5	142,3
EER	(1)	kW/kW	4,035	4,073	4,136	4,113	4,144	4,097	4,056
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	388,5	420,8	453,2	478,3	509,1	541,5	575,8
EER	(2)(3)	kW/kW	3,990	4,020	4,070	4,060	4,080	4,050	4,010
SEPR	(4)(5)		6,39	6,43	6,54	6,40	6,33	6,26	6,41
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	10,1	10,8	11,3	11,7	12,0	11,6	11,1
Cooling capacity	(6)	kW	389,4	422,0	454,6	479,6	510,6	542,8	577,2
EER	(6)	kW/kW	40,06	37,35	34,97	32,85	31,52	33,51	35,63
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	312,7	337,9	363,1	386,0	410,1	436,6	462,0
Total power input	(7)	kW	91,42	98,14	104,0	110,6	116,8	125,0	133,4
EER	(7)	kW/kW	3,421	3,444	3,491	3,490	3,511	3,493	3,463
23°C/15°C									
Cooling capacity	(8)	kW	355,7	384,8	414,0	439,3	467,2	496,1	526,3
Total power input	(8)	kW	94,22	101,1	107,2	113,9	120,3	129,1	138,3
EER	(8)	kW/kW	3,776	3,806	3,862	3,857	3,884	3,843	3,805
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	12,82	13,90	14,97	15,79	16,82	17,87	19,01
Pressure drop	(2)(3)	kPa	39,3	46,8	53,9	48,1	53,2	39,4	41,2
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	40,0	45,0	52,0	65,0	67,0	67,0	70,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	63	63	64	63	64	64	64
Sound power level in cooling	(10)(11)	dB(A)	95	95	96	96	97	97	97
SIZE AND WEIGHT									
A	(12)	mm	3905	5080	5080	6255	6255	6255	6255
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	3580	4070	4260	5110	5300	5340	5360

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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6 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /A			0594	0624	0685	0746	0836	0866	0926
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	612,0	650,6	704,5	759,3	854,5	895,8	952,0
Total power input	(1)	kW	151,0	159,6	171,8	185,5	211,8	222,0	241,2
EER	(1)	kW/kW	4,053	4,076	4,101	4,093	4,034	4,035	3,947
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	610,4	649,0	702,7	757,7	852,3	893,3	949,1
EER	(2)(3)	kW/kW	4,000	4,030	4,050	4,050	3,980	3,980	3,890
SEPR	(4)(5)		6,31	6,29	6,42	6,79	6,62	6,52	6,52
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	11,4	11,6	12,1	11,5	11,7	11,4	10,7
Cooling capacity	(6)	kW	612,0	650,6	704,5	759,3	854,5	895,8	952,0
EER	(6)	kW/kW	34,38	33,54	31,04	33,45	32,99	34,59	36,76
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	495,4	526,2	567,1	613,8	689,0	719,8	770,9
Total power input	(7)	kW	141,8	149,7	162,3	175,6	199,4	208,2	225,5
EER	(7)	kW/kW	3,494	3,515	3,494	3,495	3,455	3,457	3,419
23°C/15°C									
Cooling capacity	(8)	kW	562,3	597,3	644,2	697,6	780,5	816,9	874,1
Total power input	(8)	kW	147,0	155,3	167,6	181,1	206,1	215,6	234,3
EER	(8)	kW/kW	3,825	3,846	3,844	3,852	3,787	3,789	3,731
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	20,16	21,42	23,20	25,01	28,14	29,50	31,35
Pressure drop	(2)(3)	kPa	45,7	44,6	47,3	38,6	50,1	53,7	60,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	5	6	6	6	6
No. Circuits		N°	2	2	2	2	2	3	2
Refrigerant charge		kg	77,0	81,0	84,0	86,0	89,0	89,0	89,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	64	65	65	65	65	66	66
Sound power level in cooling	(10)(11)	dB(A)	97	98	98	98	98	99	99
SIZE AND WEIGHT									
A	(12)	mm	7430	7430	8605	8605	9780	9780	9780
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	5400	5500	5960	6610	7210	7230	7280

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NR-FC-Z /SL-A			0384	0414	0434	0464	0494	0524
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	377,0	402,3	424,2	459,2	487,2	517,2
Total power input	(1)	kW	92,02	100,0	107,9	112,1	119,6	129,5
EER	(1)	kW/kW	4,098	4,023	3,931	4,096	4,074	3,994
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	376,1	401,3	423,0	458,0	485,8	516,1
EER	(2)(3)	kW/kW	4,050	3,970	3,880	4,040	4,020	3,950
SEPR	(4)(5)		7,02	6,71	6,65	6,99	6,80	6,62
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	10,3	10,2	9,7	10,5	10,5	10,0
Cooling capacity	(6)	kW	377,0	402,3	424,2	459,2	487,2	517,2
EER	(6)	kW/kW	67,32	71,84	75,75	65,60	69,60	73,89
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	302,6	322,8	340,7	371,2	393,2	418,2
Total power input	(7)	kW	87,02	94,22	101,1	105,2	112,3	121,0
EER	(7)	kW/kW	3,478	3,427	3,370	3,529	3,501	3,456
23°C/15°C								
Cooling capacity	(8)	kW	344,3	367,2	387,4	421,5	446,8	474,1
Total power input	(8)	kW	89,82	97,42	104,8	109,0	116,3	125,6
EER	(8)	kW/kW	3,834	3,770	3,697	3,867	3,842	3,775
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	12,42	13,25	13,97	15,12	16,04	17,03
Pressure drop	(2)(3)	kPa	37,1	42,8	47,9	44,8	49,2	36,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	47,0	47,0	50,0	67,0	67,0	66,0
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	55	55	55	54	55	55
Sound power level in cooling	(10)(11)	dB(A)	87	87	87	87	88	88
SIZE AND WEIGHT								
A	(12)	mm	5080	5080	5080	6255	6255	6255
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	4190	4220	4300	5270	5300	5330

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /SL-A			0554	0594	0624	0685	0746	0836
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	551,6	594,3	620,3	679,9	722,9	822,6
Total power input	(1)	kW	139,9	145,8	155,5	166,3	181,6	206,6
EER	(1)	kW/kW	3,943	4,076	3,989	4,088	3,981	3,982
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	550,4	592,8	618,8	678,2	721,4	820,6
EER	(2)(3)	kW/kW	3,900	4,030	3,940	4,040	3,940	3,930
SEPR	(4)(5)		6,76	6,91	6,69	7,14	7,22	7,11
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	9,4	10,0	10,1	10,2	10,0	10,1
Cooling capacity	(6)	kW	551,6	594,3	620,3	679,9	722,9	822,6
EER	(6)	kW/kW	78,80	70,75	73,85	69,38	73,77	73,45
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	443,8	483,1	504,1	550,7	587,3	666,5
Total power input	(7)	kW	129,9	135,7	144,6	155,3	170,2	192,8
EER	(7)	kW/kW	3,416	3,560	3,486	3,546	3,451	3,457
23°C/15°C								
Cooling capacity	(8)	kW	504,2	547,2	570,8	623,9	665,7	753,0
Total power input	(8)	kW	135,3	141,4	150,7	161,4	176,6	200,3
EER	(8)	kW/kW	3,727	3,870	3,788	3,866	3,770	3,759
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	18,16	19,57	20,43	22,39	23,80	27,09
Pressure drop	(2)(3)	kPa	38,2	43,7	41,2	44,8	35,8	46,4
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	5	6	6
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	70,0	77,0	79,0	82,0	84,0	86,0
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	55	55	56	56	56	56
Sound power level in cooling	(10)(11)	dB(A)	88	88	89	89	89	89
SIZE AND WEIGHT								
A	(12)	mm	6255	7430	7430	8605	8605	9780
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	5360	5460	5500	5960	6610	7210

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Ethylene glycol 30%.
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NR-FC-Z /NG /K			0384	0414	0434	0464	0494	0524	0554
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	377,3	398,3	430,2	455,0	488,4	513,0	549,4
Total power input	(1)	kW	98,76	107,3	113,6	121,6	127,2	137,3	148,1
EER	(1)	kW/kW	3,819	3,712	3,787	3,742	3,840	3,736	3,710
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	376,6	397,5	429,3	454,1	487,5	512,2	548,5
EER	(2)(3)	kW/kW	3,790	3,680	3,750	3,710	3,800	3,710	3,680
SEPR	(4)(5)		5,46	5,39	5,59	5,62	5,48	5,31	5,40
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	6,9	6,2	7,0	6,2	6,9	5,9	5,2
Cooling capacity	(6)	kW	377,3	398,3	430,2	455,0	488,4	513,0	549,4
EER	(6)	kW/kW	27,74	29,29	27,75	29,35	25,44	26,72	28,61
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	303,5	320,8	345,5	369,0	395,0	415,7	443,0
Total power input	(7)	kW	93,46	100,9	106,8	114,2	119,5	128,5	137,7
EER	(7)	kW/kW	3,246	3,179	3,235	3,231	3,305	3,235	3,217
23°C/15°C									
Cooling capacity	(8)	kW	344,9	364,3	392,8	418,2	448,3	470,9	502,7
Total power input	(8)	kW	96,46	104,4	110,4	118,2	123,7	133,3	143,4
EER	(8)	kW/kW	3,574	3,489	3,558	3,538	3,624	3,533	3,506
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	11,32	11,95	12,91	13,65	14,65	15,39	16,48
Pressure drop	(2)(3)	kPa	26,2	29,6	34,3	30,9	34,5	25,5	26,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	40,0	45,0	52,0	52,0	56,0	58,0	64,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	62	62	62	63	63	63	63
Sound power level in cooling	(10)(11)	dB(A)	94	94	94	95	95	95	95
SIZE AND WEIGHT									
A	(12)	mm	3905	3905	5080	5080	5080	5080	5080
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	3990	4020	4520	4830	5106	5676	5216

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
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NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /NG /K			0594	0624	0685	0746	0836	0866	0926
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	582,8	619,9	667,2	732,9	817,9	860,4	920,1
Total power input	(1)	kW	156,0	163,8	179,9	190,8	221,5	227,1	248,0
EER	(1)	kW/kW	3,736	3,784	3,709	3,841	3,693	3,789	3,710
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	581,8	618,9	666,1	731,9	816,5	858,8	918,3
EER	(2)(3)	kW/kW	3,710	3,760	3,680	3,810	3,660	3,760	3,680
SEPR	(4)(5)		5,46	5,43	5,53	5,87	5,82	5,56	5,54
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	6,4	6,7	5,8	7,2	6,0	9,3	6,1
Cooling capacity	(6)	kW	582,8	619,9	667,2	732,9	817,9	860,4	920,1
EER	(6)	kW/kW	27,62	26,95	29,01	25,90	28,90	22,88	24,47
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	474,7	504,2	542,5	595,6	666,9	696,3	748,6
Total power input	(7)	kW	145,6	152,9	167,9	179,5	206,7	213,0	230,9
EER	(7)	kW/kW	3,260	3,298	3,231	3,318	3,226	3,269	3,242
23°C/15°C									
Cooling capacity	(8)	kW	537,1	570,7	614,0	675,0	752,5	789,2	846,7
Total power input	(8)	kW	151,5	159,0	174,5	185,8	214,8	220,8	240,5
EER	(8)	kW/kW	3,545	3,589	3,519	3,633	3,503	3,574	3,521
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	17,48	18,59	20,01	21,98	24,53	25,81	27,60
Pressure drop	(2)(3)	kPa	29,7	28,7	30,6	25,7	32,8	35,4	40,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	5	6	6	6	6
No. Circuits		N°	2	2	2	2	2	3	2
Refrigerant charge		kg	66,0	75,0	75,0	75,0	80,0	82,0	82,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	62	63	63	63	63	64	64
Sound power level in cooling	(10)(11)	dB(A)	95	96	96	96	96	97	97
SIZE AND WEIGHT									
A	(12)	mm	6255	6255	6255	7430	7430	8605	8605
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	5436	5546	6036	6786	6866	7658	7708

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
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NR-FC-Z /NG /SL-K			0384	0414	0434	0464	0494	0524	0554
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	374,3	396,3	428,3	451,3	479,1	517,1	548,6
Total power input	(1)	kW	97,99	106,1	111,7	120,5	129,1	134,0	144,7
EER	(1)	kW/kW	3,819	3,735	3,834	3,745	3,711	3,859	3,791
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	373,6	395,5	427,4	450,5	478,2	516,3	547,7
EER	(2)(3)	kW/kW	3,790	3,700	3,800	3,710	3,680	3,830	3,760
SEPR	(4)(5)		5,76	5,69	5,86	5,69	5,66	5,60	5,64
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	6,7	6,0	6,5	5,8	5,2	7,0	6,4
Cooling capacity	(6)	kW	374,3	396,3	428,3	451,3	479,1	517,1	548,6
EER	(6)	kW/kW	35,99	38,11	36,92	38,91	35,75	32,94	34,94
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	301,5	319,5	344,3	366,7	389,7	418,6	441,9
Total power input	(7)	kW	92,39	99,49	104,8	112,8	120,3	125,4	134,5
EER	(7)	kW/kW	3,263	3,211	3,285	3,251	3,239	3,338	3,286
23°C/15°C									
Cooling capacity	(8)	kW	342,4	362,6	391,3	415,2	440,9	474,4	501,8
Total power input	(8)	kW	95,49	103,1	108,6	117,1	125,1	130,1	140,0
EER	(8)	kW/kW	3,585	3,517	3,603	3,546	3,524	3,646	3,584
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	11,23	11,89	12,85	13,54	14,37	15,51	16,45
Pressure drop	(2)(3)	kPa	25,8	29,5	34,2	30,4	33,7	25,9	26,7
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	42,0	47,0	50,0	52,0	52,0	57,0	60,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	54	54	54	54	54	54	54
Sound power level in cooling	(10)(11)	dB(A)	86	86	86	86	86	87	87
SIZE AND WEIGHT									
A	(12)	mm	5080	5080	5080	5080	5080	6255	6255
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	4370	4490	5010	4990	5020	6340	5936

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /NG /SL-K			0594	0624	0685	0746	0836	0866	0926
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	583,5	620,3	661,1	729,8	822,6	848,6	912,2
Total power input	(1)	kW	155,3	160,8	176,8	188,1	213,9	224,1	245,7
EER	(1)	kW/kW	3,757	3,858	3,739	3,880	3,846	3,787	3,713
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	582,5	619,3	660,0	728,8	821,2	847,1	910,4
EER	(2)(3)	kW/kW	3,730	3,830	3,710	3,850	3,810	3,750	3,680
SEPR	(4)(5)		5,67	5,67	5,72	6,17	6,04	5,67	5,77
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	5,7	6,7	5,8	6,9	6,8	6,1	5,7
Cooling capacity	(6)	kW	583,5	620,3	661,1	729,8	822,6	848,6	912,2
EER	(6)	kW/kW	37,17	34,46	36,73	33,32	33,99	28,57	30,71
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	476,4	504,6	537,7	593,7	667,2	687,6	743,4
Total power input	(7)	kW	144,3	149,8	164,8	176,5	199,9	208,5	228,1
EER	(7)	kW/kW	3,301	3,368	3,263	3,364	3,338	3,298	3,259
23°C/15°C									
Cooling capacity	(8)	kW	538,3	571,1	608,4	672,4	753,5	778,2	840,1
Total power input	(8)	kW	150,5	156,0	171,5	182,9	207,4	217,1	238,0
EER	(8)	kW/kW	3,577	3,661	3,548	3,676	3,633	3,585	3,530
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	17,50	18,61	19,83	21,89	24,67	25,45	27,36
Pressure drop	(2)(3)	kPa	29,8	28,7	30,1	25,5	33,1	34,4	39,8
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	5	6	6	6	6
No. Circuits		N°	2	2	2	2	2	3	2
Refrigerant charge		kg	66,0	77,0	79,0	82,0	86,0	86,0	86,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	54	55	57	55	56	57	57
Sound power level in cooling	(10)(11)	dB(A)	87	88	90	88	89	90	90
SIZE AND WEIGHT									
A	(12)	mm	6255	7430	7430	8605	9780	9780	9780
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	5506	6076	6716	7314	7936	7966	8238

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NR-FC-Z /NG /A			0384	0414	0434	0464	0494	0524	0554
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	399,9	433,4	466,9	492,6	524,4	557,5	592,8
Total power input	(1)	kW	96,82	103,9	110,3	117,1	123,6	132,9	142,8
EER	(1)	kW/kW	4,131	4,171	4,233	4,207	4,243	4,195	4,151
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	399,2	432,5	465,9	491,6	523,3	556,6	591,8
EER	(2)(3)	kW/kW	4,090	4,130	4,180	4,160	4,200	4,160	4,120
SEPR	(4)(5)		6,00	6,07	6,13	6,05	5,86	5,81	5,96
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	7,3	7,8	7,9	8,9	9,0	8,5	8,0
Cooling capacity	(6)	kW	399,9	433,4	466,9	492,6	524,4	557,5	592,8
EER	(6)	kW/kW	33,61	32,10	30,72	29,32	25,96	27,60	29,35
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	321,2	347,0	372,9	396,4	421,2	448,4	474,4
Total power input	(7)	kW	91,82	98,54	104,5	111,1	117,3	125,6	134,0
EER	(7)	kW/kW	3,499	3,523	3,568	3,568	3,591	3,570	3,540
23°C/15°C									
Cooling capacity	(8)	kW	365,3	395,2	425,2	451,1	479,8	509,5	540,6
Total power input	(8)	kW	94,62	101,5	107,7	114,4	120,8	129,6	138,8
EER	(8)	kW/kW	3,862	3,894	3,948	3,943	3,972	3,931	3,895
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	11,99	13,00	14,00	14,77	15,73	16,72	17,78
Pressure drop	(2)(3)	kPa	28,9	34,4	39,7	35,4	39,1	29,0	30,3
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	40,0	45,0	52,0	65,0	67,0	67,0	70,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	63	63	64	63	64	64	64
Sound power level in cooling	(10)(11)	dB(A)	95	95	96	96	97	97	97
SIZE AND WEIGHT									
A	(12)	mm	3905	5080	5080	6255	6255	6255	6255
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	3990	4498	4756	5686	5876	5916	5936

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
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10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

NR-FC-Z /NG /A			0594	0624	0685	0746	0836	0866	0926
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
MECHANICAL COOLING (GROSS VALUE)									
Cooling capacity	(1)	kW	628,6	668,1	723,5	779,8	877,6	920,0	977,7
Total power input	(1)	kW	151,6	160,1	172,4	186,2	212,5	222,7	242,1
EER	(1)	kW/kW	4,146	4,173	4,197	4,188	4,130	4,131	4,038
MECHANICAL COOLING (EN14511 VALUE)									
Cooling capacity	(2)(3)	kW	627,5	666,9	722,2	778,6	876,0	918,2	975,6
EER	(2)(3)	kW/kW	4,110	4,140	4,160	4,160	4,090	4,090	3,990
SEPR	(4)(5)		5,86	5,89	5,97	6,29	6,15	5,86	5,88
TOTAL FREE-COOLING (GROSS VALUE)									
Total free-cooling temperature	(6)	°C	8,0	8,8	9,1	8,5	8,4	8,0	7,2
Cooling capacity	(6)	kW	628,6	668,1	723,5	779,8	877,6	920,0	977,7
EER	(6)	kW/kW	28,83	28,55	27,10	27,65	27,95	24,93	26,50
MECHANICAL COOLING (GROSS VALUE)									
16°C/10°C									
Cooling capacity	(7)	kW	508,8	540,4	582,4	630,4	707,7	739,3	791,7
Total power input	(7)	kW	142,5	150,4	163,1	176,4	200,4	209,2	226,6
EER	(7)	kW/kW	3,571	3,593	3,571	3,574	3,531	3,534	3,494
23°C/15°C									
Cooling capacity	(8)	kW	577,5	613,5	661,6	716,4	801,6	839,0	897,7
Total power input	(8)	kW	147,6	155,9	168,2	181,9	206,9	216,5	235,2
EER	(8)	kW/kW	3,913	3,935	3,933	3,938	3,874	3,875	3,817
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(3)	l/s	18,85	20,04	21,70	23,39	26,32	27,60	29,33
Pressure drop	(2)(3)	kPa	33,6	32,8	34,8	28,4	36,8	39,5	44,6
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	5	6	6	6	6
No. Circuits		N°	2	2	2	2	2	3	2
Refrigerant charge		kg	77,0	81,0	84,0	86,0	89,0	89,0	89,0
NOISE LEVEL									
Sound Pressure	(9)	dB(A)	64	65	65	65	65	66	66
Sound power level in cooling	(10)(11)	dB(A)	97	98	98	98	98	99	99
SIZE AND WEIGHT									
A	(12)	mm	7430	7430	8605	8605	9780	9780	9780
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	6008	6236	6918	7568	8168	8188	8238

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
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10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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NR-FC-Z /NG /SL-A			0384	0414	0434	0464	0494	0524
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	387,2	413,2	435,7	471,7	500,4	531,2
Total power input	(1)	kW	92,42	100,4	108,3	112,5	120,1	129,9
EER	(1)	kW/kW	4,190	4,116	4,023	4,193	4,167	4,089
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	386,5	412,4	434,8	470,8	499,4	530,3
EER	(2)(3)	kW/kW	4,150	4,070	3,980	4,150	4,120	4,060
SEPR	(4)(5)		6,49	6,29	6,25	6,54	6,27	6,14
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	7,6	7,4	6,8	7,6	7,9	7,3
Cooling capacity	(6)	kW	387,2	413,2	435,7	471,7	500,4	531,2
EER	(6)	kW/kW	49,64	52,97	55,86	51,27	45,49	48,29
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	310,8	331,5	349,9	381,2	403,8	429,5
Total power input	(7)	kW	87,42	94,62	101,6	105,7	112,8	121,6
EER	(7)	kW/kW	3,556	3,504	3,444	3,606	3,580	3,532
23°C/15°C								
Cooling capacity	(8)	kW	353,6	377,2	397,8	432,9	458,8	486,9
Total power input	(8)	kW	90,22	97,82	105,2	109,5	116,8	126,1
EER	(8)	kW/kW	3,920	3,857	3,781	3,953	3,928	3,861
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	11,61	12,39	13,07	14,15	15,01	15,93
Pressure drop	(2)(3)	kPa	27,3	31,5	35,2	32,9	36,2	27,0
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	47,0	47,0	50,0	67,0	67,0	66,0
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	55	55	55	54	55	55
Sound power level in cooling	(10)(11)	dB(A)	87	87	87	87	88	88
SIZE AND WEIGHT								
A	(12)	mm	5080	5080	5080	6255	6255	6255
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	4600	4630	4710	5760	5876	5906

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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11 Sound power level in cooling, outdoors.
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NR-FC-Z

0384 - 0926 364,5-977,7 kW

Air cooled chiller with free-cooling for high leaving water temperature

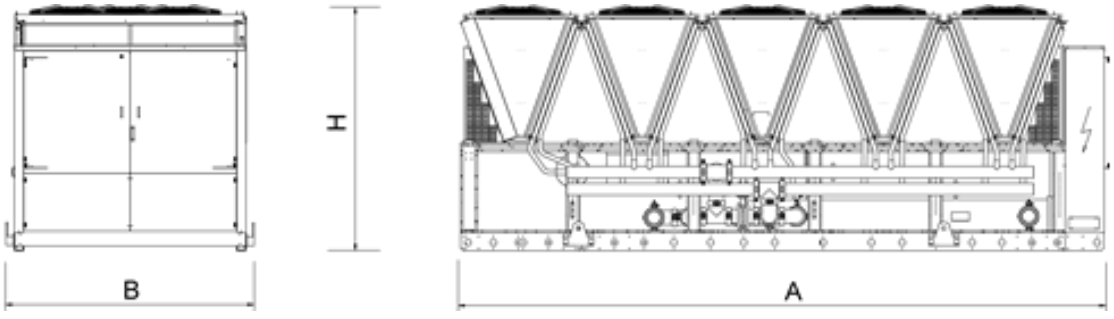
NR-FC-Z /NG /SL-A			0554	0594	0624	0685	0746	0836
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	566,5	610,4	637,1	698,3	742,4	844,8
Total power input	(1)	kW	140,4	146,3	156,0	166,9	182,3	207,4
EER	(1)	kW/kW	4,035	4,172	4,084	4,184	4,072	4,073
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	565,6	609,3	636,0	697,1	741,3	843,3
EER	(2)(3)	kW/kW	4,000	4,130	4,050	4,150	4,040	4,040
SEPR	(4)(5)		6,26	6,39	6,19	6,64	6,68	6,36
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	6,6	7,0	6,8	7,5	7,2	7,3
Cooling capacity	(6)	kW	566,5	610,4	637,1	698,3	742,4	844,8
EER	(6)	kW/kW	51,50	49,23	51,38	50,60	48,52	38,05
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	455,8	496,1	517,7	565,5	603,2	684,5
Total power input	(7)	kW	130,5	136,4	145,4	156,1	171,1	193,8
EER	(7)	kW/kW	3,493	3,637	3,561	3,623	3,525	3,532
23°C/15°C								
Cooling capacity	(8)	kW	517,8	561,9	586,2	640,8	683,6	773,3
Total power input	(8)	kW	135,9	142,0	151,4	162,1	177,3	201,1
EER	(8)	kW/kW	3,810	3,957	3,872	3,953	3,856	3,845
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	16,99	18,31	19,11	20,94	22,27	25,34
Pressure drop	(2)(3)	kPa	28,1	32,1	30,3	33,0	26,3	34,1
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	5	6	6
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	70,0	77,0	79,0	82,0	84,0	86,0
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	55	55	56	56	56	56
Sound power level in cooling	(10)(11)	dB(A)	88	88	89	89	89	89
SIZE AND WEIGHT								
A	(12)	mm	6255	7430	7430	8605	8605	9780
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2450	2450	2450	2450	2450	2450
Operating weight	(12)	kg	5936	6036	6076	6664	7346	8168

Notes

1 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 28°C/20°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

FR-FC-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW



Outdoor unit for the production of chilled water, equipped with semi-hermetic screw compressors, R134a refrigerant, axial-fans, condensing coil with copper tubes and aluminum fins, shell and tube evaporator single pass and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel. The unit is supplied with anti-freeze oil and refrigerant and has been factory tested. On-site installation therefore just involves making connections to the mains power and water supplies.
In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero; this occurs already at positive outdoor temperature (T+ versions and SL-T+).
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R134a

Versions

T+	Version with positive free-cooling temperature 100%
SL-T+	Super low noise version with positive free-cooling temperature 100%

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

ENERGY SAVING
Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

POSITIVE TEMPERATURE OF TOTAL FREE-COOLING
Big heat exchangers surfaces: 100% free-cooling cooling load satisfied at positive environment temperature

WIDE RANGE
Extended capacity range.

UNIQUE PROPOSAL - PATENT PENDING
Booster function to increase chiller efficiency

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

Accessories

- EC fans with electronic DC brushless motor
- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)
- Noise reducer (only on not silenced versions)

FR-FC-Z /T+			1502	1702	1902	2002	2202	2602	2702	3002	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	335,5	372,5	432,5	480,9	530,3	619,0	665,3	695,1	753,2
Total power input	(1)	kW	88,90	102,6	114,6	133,0	140,7	172,3	184,6	199,1	210,8
EER	(1)	kW/kW	3,774	3,631	3,774	3,616	3,769	3,593	3,604	3,491	3,573
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	333,5	369,9	429,7	477,6	527,6	615,3	661,9	691,3	749,5
EER	(2)(3)	kW/kW	3,670	3,520	3,660	3,500	3,680	3,500	3,520	3,410	3,490
SEPR	(4)(5)		5,95	5,68	6,15	5,84	6,12	5,99	5,98	5,93	6,00
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	1,2	1,4	1,4	1,4	1,5	1,8	1,8	1,4	1,8
Cooling capacity	(6)	kW	335,5	372,5	432,5	480,9	530,3	619,0	665,3	695,1	753,2
EER	(6)	kW/kW	27,96	23,28	27,03	24,05	26,51	25,79	27,72	28,96	26,90
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	335,5	372,5	432,5	480,9	530,3	619,0	665,3	695,1	753,2
Total power input	(7)	kW	88,90	102,6	114,6	133,0	140,7	172,3	184,6	199,1	210,8
EER	(7)	kW/kW	3,774	3,631	3,774	3,616	3,769	3,593	3,604	3,491	3,573
23°C/15°C											
Cooling capacity	(8)	kW	385,3	428,3	498,4	553,0	612,5	710,2	763,8	796,3	864,3
Total power input	(8)	kW	94,90	109,3	122,1	141,6	149,9	184,0	197,3	213,3	225,2
EER	(8)	kW/kW	4,060	3,919	4,082	3,905	4,086	3,860	3,871	3,733	3,838
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	17,77	19,73	22,92	25,48	28,10	32,80	35,24	36,82	39,90
Pressure drop	(2)(3)	kPa	68,7	84,7	78,3	86,3	63,2	77,5	65,2	71,1	62,4
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	82,0	98,0	120	122	144	156	160	164	180
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	67	68	68	68	69	70	69	69	69
Sound power level in cooling	(10)(11)	dB(A)	99	100	100	100	101	102	102	102	102
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	4900	5800	5800	6400	6400	7000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4880	4990	5520	5700	7000	7410	8270	8310	8750

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FR-FC-Z

1502 - 6002 331,7-1450 kW

Air cooled chiller with free-cooling

FR-FC-Z /T+			3402	3602	3902	4202	4502	4802	5402	6002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	826,3	881,4	944,2	1013	1093	1189	1325	1412
Total power input	(1)	kW	223,7	245,3	265,6	277,4	306,0	318,1	371,3	415,9
EER	(1)	kW/kW	3,694	3,593	3,555	3,652	3,572	3,738	3,569	3,395
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	821,6	876,4	937,8	1006	1086	1181	1317	1402
EER	(2)(3)	kW/kW	3,600	3,500	3,450	3,540	3,480	3,620	3,470	3,290
SEPR	(4)(5)		6,00	5,91	5,75	5,80	5,75	5,92	5,89	5,69
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	1,2	1,6	1,1	1,1	1,3	1,2	1,3	1,3
Cooling capacity	(6)	kW	826,3	881,4	944,2	1013	1093	1189	1325	1412
EER	(6)	kW/kW	25,82	27,54	29,51	31,66	27,33	24,77	27,60	29,42
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	826,3	881,4	944,2	1013	1093	1189	1325	1412
Total power input	(7)	kW	223,7	245,3	265,6	277,4	306,0	318,1	371,3	415,9
EER	(7)	kW/kW	3,694	3,593	3,555	3,652	3,572	3,738	3,569	3,395
23°C/15°C										
Cooling capacity	(8)	kW	948,2	1009	1079	1158	1252	1365	1518	1618
Total power input	(8)	kW	237,0	259,9	282,9	295,8	325,8	336,4	395,4	443,9
EER	(8)	kW/kW	4,001	3,882	3,814	3,915	3,843	4,058	3,839	3,645
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	43,78	46,70	50,03	53,65	57,91	62,98	70,20	74,78
Pressure drop	(2)(3)	kPa	75,1	77,0	95,0	98,1	83,3	98,5	89,7	102
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	206	230	232	250	272	298	310	353
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	69	70	70	70	72	73	73	73
Sound power level in cooling	(10)(11)	dB(A)	102	103	103	103	105	106	106	106
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	7900	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	9600	10470	10570	12680	13180	13710	14930	15810

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FR-FC-Z /SL-T+			1502	1702	1902	2002	2202	2602	2702	3002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	331,7	372,1	426,4	476,0	521,6	625,0	656,2	712,0
Total power input	(1)	kW	89,80	98,81	115,7	130,1	142,4	166,7	186,1	192,6
EER	(1)	kW/kW	3,694	3,766	3,685	3,659	3,663	3,749	3,526	3,697
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	329,8	369,5	423,7	472,8	519,0	621,2	652,9	707,9
EER	(2)(3)	kW/kW	3,590	3,640	3,580	3,550	3,580	3,640	3,450	3,600
SEPR	(4)(5)		6,02	5,88	6,26	6,30	6,24	6,26	6,18	6,24
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,6	0,7	0,6	0,6	0,7	0,5	0,9	0,7
Cooling capacity	(6)	kW	331,7	372,1	426,4	476,0	521,6	625,0	656,2	712,0
EER	(6)	kW/kW	34,55	38,76	35,53	39,67	36,22	37,20	39,06	37,08
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	331,7	372,1	426,4	476,0	521,6	625,0	656,2	712,0
Total power input	(7)	kW	89,80	98,81	115,7	130,1	142,4	166,7	186,1	192,6
EER	(7)	kW/kW	3,694	3,766	3,685	3,659	3,663	3,749	3,526	3,697
23°C/15°C										
Cooling capacity	(8)	kW	379,8	427,0	489,4	545,6	600,6	716,4	750,8	816,3
Total power input	(8)	kW	96,20	106,0	123,9	139,4	153,0	178,8	200,3	206,6
EER	(8)	kW/kW	3,948	4,028	3,950	3,914	3,925	4,007	3,748	3,951
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	17,57	19,71	22,59	25,22	27,64	33,11	34,77	37,72
Pressure drop	(2)(3)	kPa	67,2	84,5	76,1	84,6	61,2	79,0	63,4	74,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	96,0	104	114	130	138	156	170	179
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	57	57	57	58	59	58	58	59
Sound power level in cooling	(10)(11)	dB(A)	89	89	89	90	91	91	91	92
SIZE AND WEIGHT										
A	(12)	mm	4000	4900	4900	5800	5800	7000	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5380	5950	6040	6600	7500	8250	9070	9550

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FR-FC-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

FR-FC-Z /SL-T+			3202	3402	3602	3902	4202	4502	4802	5402
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	745,0	787,2	878,0	938,3	983,7	1097	1139	1288
Total power input	(1)	kW	210,5	232,2	244,6	266,3	284,6	300,6	327,5	377,5
EER	(1)	kW/kW	3,539	3,390	3,590	3,523	3,456	3,649	3,478	3,412
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	741,4	783,1	873,4	932,4	977,2	1090	1132	1280
EER	(2)(3)	kW/kW	3,460	3,310	3,500	3,430	3,360	3,550	3,380	3,320
SEPR	(4)(5)		6,28	6,07	6,13	5,97	5,80	6,16	6,07	6,08
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,9	0,6	0,9	0,5	0,1	0,8	0,5	0,0
Cooling capacity	(6)	kW	745,0	787,2	878,0	938,3	983,7	1097	1139	1288
EER	(6)	kW/kW	38,80	41,00	36,58	39,10	40,99	38,09	39,55	44,72
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	745,0	787,2	878,0	938,3	983,7	1097	1139	1288
Total power input	(7)	kW	210,5	232,2	244,6	266,3	284,6	300,6	327,5	377,5
EER	(7)	kW/kW	3,539	3,390	3,590	3,523	3,456	3,649	3,478	3,412
23°C/15°C										
Cooling capacity	(8)	kW	852,3	896,7	1002	1069	1116	1253	1299	1469
Total power input	(8)	kW	226,6	249,6	260,8	285,2	305,2	321,4	351,2	406,2
EER	(8)	kW/kW	3,761	3,593	3,842	3,748	3,657	3,899	3,699	3,616
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	39,47	41,70	46,51	49,71	52,12	58,09	60,32	68,25
Pressure drop	(2)(3)	kPa	61,0	68,2	69,8	86,2	92,6	83,8	90,4	84,8
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	186	208	218	232	243	273	284	321
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	59	59	59	59	59	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	92	92	92	92	92	94	94	95
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	10000	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10040	10590	13020	13060	13560	14970	15060	16360

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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FR-FC-Z /NG /T+			1502	1702	1902	2002	2202	2602	2702	3002	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	344,5	382,6	444,2	493,9	544,6	635,8	683,2	713,8	773,5
Total power input	(1)	kW	89,50	103,0	115,1	133,6	141,6	173,2	185,5	200,2	211,8
EER	(1)	kW/kW	3,849	3,715	3,859	3,697	3,846	3,671	3,683	3,565	3,652
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	341,9	379,2	440,6	489,8	540,2	630,8	678,3	708,3	767,3
EER	(2)(3)	kW/kW	3,710	3,570	3,710	3,560	3,700	3,540	3,560	3,440	3,520
SEPR	(4)(5)		5,56	5,10	5,64	5,33	5,54	5,38	5,39	5,37	5,33
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-1,4	-1,2	-1,3	-1,2	-1,2	-0,8	-0,9	-1,2	-0,9
Cooling capacity	(6)	kW	344,5	382,6	444,2	493,9	544,6	635,8	683,2	713,8	773,5
EER	(6)	kW/kW	22,97	16,28	20,66	17,96	19,80	18,17	19,52	20,39	17,99
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	344,5	382,6	444,2	493,9	544,6	635,8	683,2	713,8	773,5
Total power input	(7)	kW	89,50	103,0	115,1	133,6	141,6	173,2	185,5	200,2	211,8
EER	(7)	kW/kW	3,849	3,715	3,859	3,697	3,846	3,671	3,683	3,565	3,652
23°C/15°C											
Cooling capacity	(8)	kW	395,7	439,9	511,8	567,9	629,1	729,4	784,4	817,8	887,6
Total power input	(8)	kW	95,40	109,7	122,4	142,2	150,8	184,7	198,1	214,3	226,2
EER	(8)	kW/kW	4,148	4,010	4,181	3,994	4,172	3,949	3,960	3,816	3,924
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	16,49	18,31	21,26	23,64	26,06	30,42	32,69	34,16	37,02
Pressure drop	(2)(3)	kPa	100	123	113	121	117	118	107	116	123
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	93,0	101	117	130	140	167	180	188	204
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	67	68	68	68	69	70	69	69	69
Sound power level in cooling	(10)(11)	dB(A)	99	100	100	100	101	102	102	102	102
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	4900	5800	5800	6400	6400	7000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5270	5470	6020	6250	7520	8000	9020	9060	9420

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
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FR-FC-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

FR-FC-Z /NG /T+			3402	3602	3902	4202	4502	4802	5402	6002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	848,6	905,2	969,8	1040	1123	1221	1361	1450
Total power input	(1)	kW	224,7	246,5	267,0	278,7	307,5	319,3	373,1	418,2
EER	(1)	kW/kW	3,777	3,672	3,632	3,732	3,652	3,824	3,648	3,467
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	842,7	898,5	961,5	1030	1114	1210	1348	1434
EER	(2)(3)	kW/kW	3,650	3,550	3,490	3,570	3,520	3,660	3,490	3,310
SEPR	(4)(5)		5,42	5,37	5,26	5,21	5,17	5,35	5,27	5,15
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-1,4	-1,0	-1,6	-1,6	-1,3	-1,4	-1,3	-1,3
Cooling capacity	(6)	kW	848,6	905,2	969,8	1040	1123	1221	1361	1450
EER	(6)	kW/kW	18,06	19,26	20,63	20,59	18,11	18,36	19,44	20,71
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	848,6	905,2	969,8	1040	1123	1221	1361	1450
Total power input	(7)	kW	224,7	246,5	267,0	278,7	307,5	319,3	373,1	418,2
EER	(7)	kW/kW	3,777	3,672	3,632	3,732	3,652	3,824	3,648	3,467
23°C/15°C										
Cooling capacity	(8)	kW	973,8	1036	1108	1189	1285	1402	1559	1662
Total power input	(8)	kW	237,9	261,0	284,1	296,9	327,1	337,5	397,1	446,1
EER	(8)	kW/kW	4,093	3,969	3,900	4,005	3,928	4,154	3,926	3,726
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	40,61	43,32	46,41	49,77	53,72	58,42	65,12	69,37
Pressure drop	(2)(3)	kPa	107	114	137	157	131	155	165	187
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	224	238	254	273	296	324	360	382
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	69	70	70	70	72	73	73	73
Sound power level in cooling	(10)(11)	dB(A)	102	103	103	103	105	106	106	106
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	7900	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10300	11280	11370	13070	13570	14490	15760	16680

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
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10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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FR-FC-Z /NG /SL-T+			1502	1702	1902	2002	2202	2602	2702	3002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	340,6	382,2	437,9	488,9	535,7	641,9	673,9	731,3
Total power input	(1)	kW	90,20	99,21	116,2	130,7	143,1	167,9	186,6	193,5
EER	(1)	kW/kW	3,776	3,853	3,769	3,741	3,744	3,823	3,611	3,779
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	338,1	378,8	434,5	484,9	531,5	636,8	669,2	725,4
EER	(2)(3)	kW/kW	3,650	3,690	3,630	3,600	3,610	3,680	3,500	3,640
SEPR	(4)(5)		5,62	5,43	5,75	5,79	5,65	5,64	5,56	5,64
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-2,0	-1,9	-2,0	-2,1	-2,0	-2,1	-1,7	-2,1
Cooling capacity	(6)	kW	340,6	382,2	437,9	488,9	535,7	641,9	673,9	731,3
EER	(6)	kW/kW	27,03	28,10	25,02	27,94	24,46	23,09	24,24	24,22
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	340,6	382,2	437,9	488,9	535,7	641,9	673,9	731,3
Total power input	(7)	kW	90,20	99,21	116,2	130,7	143,1	167,9	186,6	193,5
EER	(7)	kW/kW	3,776	3,853	3,769	3,741	3,744	3,823	3,611	3,779
23°C/15°C										
Cooling capacity	(8)	kW	390,0	438,5	502,7	560,3	616,8	735,7	771,1	838,4
Total power input	(8)	kW	96,60	106,3	124,4	140,0	153,6	179,9	200,7	207,4
EER	(8)	kW/kW	4,037	4,125	4,041	4,002	4,016	4,089	3,842	4,042
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	16,30	18,29	20,96	23,40	25,64	30,72	32,25	34,99
Pressure drop	(2)(3)	kPa	97,8	123	110	118	113	120	104	122
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	91,0	102	117	131	144	178	180	196
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	57	57	57	58	59	58	58	59
Sound power level in cooling	(10)(11)	dB(A)	89	89	89	90	91	91	91	92
SIZE AND WEIGHT										
A	(12)	mm	4000	4900	4900	5800	5800	7000	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5770	6360	6520	7160	8020	8890	9590	10070

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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FR-FC-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

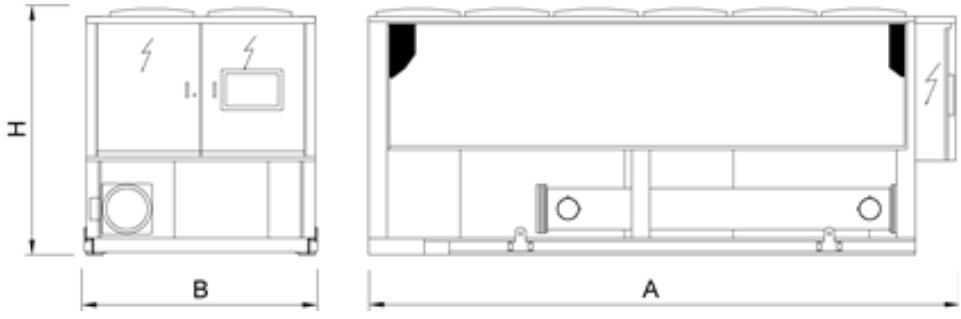
FR-FC-Z /NG /SL-T+			3202	3402	3602	3902	4202	4502	4802	5402
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	765,1	808,4	901,7	963,7	1010	1126	1169	1323
Total power input	(1)	kW	211,7	233,7	245,9	267,0	285,5	302,0	329,4	379,8
EER	(1)	kW/kW	3,614	3,459	3,667	3,609	3,538	3,728	3,549	3,483
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	759,1	803,2	895,1	955,5	1001	1117	1159	1311
EER	(2)(3)	kW/kW	3,490	3,360	3,540	3,470	3,400	3,590	3,410	3,340
SEPR	(4)(5)		5,66	5,47	5,54	5,43	5,21	5,52	5,46	5,44
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-1,7	-2,0	-1,7	-2,2	-2,5	-1,8	-2,1	-2,6
Cooling capacity	(6)	kW	765,1	808,4	901,7	963,7	1010	1126	1169	1323
EER	(6)	kW/kW	25,33	23,64	23,12	24,71	23,76	23,81	24,71	26,04
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	765,1	808,4	901,7	963,7	1010	1126	1169	1323
Total power input	(7)	kW	211,7	233,7	245,9	267,0	285,5	302,0	329,4	379,8
EER	(7)	kW/kW	3,614	3,459	3,667	3,609	3,538	3,728	3,549	3,483
23°C/15°C										
Cooling capacity	(8)	kW	875,3	921,0	1029	1098	1147	1287	1334	1508
Total power input	(8)	kW	227,7	251,1	262,0	285,7	306,0	322,7	353,0	408,4
EER	(8)	kW/kW	3,844	3,668	3,927	3,843	3,748	3,988	3,779	3,692
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	36,61	38,69	43,15	46,11	48,35	53,89	55,96	63,31
Pressure drop	(2)(3)	kPa	120	97,0	113	135	148	132	142	156
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	204	215	240	255	267	300	313	354
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	59	59	59	59	59	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	92	92	92	92	92	94	94	95
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	10000	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10570	11290	13810	13850	13970	15590	15680	17220

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
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10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
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Dimensional drawing




R
HFC R-134a
COOLING
FREE COOLING
T
SHELL & TUBES
AXIAL
SCREW

CHILLERS

FR-FC-G05-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW



Outdoor unit for the production of chilled water, equipped with semi-hermetic screw compressors, R513A refrigerant, axial-fans, condensing coil with copper tubes and aluminum fins, shell and tube evaporator single pass and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel. The unit is supplied with anti-freeze oil and refrigerant and has been factory tested.
These chillers, fitted with free-cooling coils, are used when the cooling load is constant all-year-round or the outdoor air temperature is lower than the temperature of the liquid return line. In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero; this occurs already at positive outdoor temperature (T+ versions and SL-T+).
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Refrigerant

R513A

Versions

T+	Version with positive free-cooling temperature 100%
SL-T+	Super low noise version with positive free-cooling temperature 100%

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

ENERGY SAVING
Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

POSITIVE TEMPERATURE OF TOTAL FREE-COOLING
Big heat exchangers surfaces: 100% free-cooling cooling load satisfied at positive environment temperature

WIDE RANGE
Extended capacity range.

UNIQUE PROPOSAL - PATENT PENDING
Booster function to increase chiller efficiency

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Accessories

- EC fans with electronic DC brushless motor
- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)
- Noise reducer (only on not silenced versions)

FR-FC-G05-Z/T+			1502	1702	1902	2002	2202	2602	2702	3002	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	335,5	372,5	432,5	480,9	530,3	619,0	665,3	695,1	753,2
Total power input	(1)	kW	92,40	106,4	119,0	138,1	146,1	178,9	191,7	206,9	218,9
EER	(1)	kW/kW	3,631	3,501	3,634	3,482	3,630	3,460	3,471	3,360	3,441
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	333,5	369,9	429,7	477,6	527,6	615,3	661,9	691,3	749,5
EER	(2)(3)	kW/kW	3,530	3,390	3,530	3,380	3,540	3,370	3,390	3,280	3,370
SEPR	(4)(5)		5,79	5,52	5,97	5,69	5,96	5,83	5,81	5,76	5,83
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	1,2	1,4	1,4	1,4	1,5	1,8	1,8	1,4	1,8
Cooling capacity	(6)	kW	335,5	372,5	432,5	480,9	530,3	619,0	665,3	695,1	753,2
EER	(6)	kW/kW	27,96	23,28	27,03	24,05	26,51	25,79	27,72	28,96	26,90
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	335,5	372,5	432,5	480,9	530,3	619,0	665,3	695,1	753,2
Total power input	(7)	kW	92,40	106,4	119,0	138,1	146,1	178,9	191,7	206,9	218,9
EER	(7)	kW/kW	3,631	3,501	3,634	3,482	3,630	3,460	3,471	3,360	3,441
23°C/15°C											
Cooling capacity	(8)	kW	385,3	428,3	498,4	553,0	612,5	710,2	763,8	796,3	864,3
Total power input	(8)	kW	98,60	113,5	126,8	147,1	155,7	191,1	205,0	221,8	234,1
EER	(8)	kW/kW	3,908	3,774	3,931	3,759	3,934	3,716	3,726	3,590	3,692
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	17,77	19,73	22,92	25,48	28,10	32,80	35,24	36,82	39,90
Pressure drop	(2)(3)	kPa	68,7	84,7	78,3	86,3	63,2	77,5	65,2	71,1	62,4
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	94,0	113	138	140	166	179	184	189	207
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	67	68	68	68	69	70	69	69	69
Sound power level in cooling	(10)(11)	dB(A)	99	100	100	100	101	102	102	102	102
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	4900	5800	5800	6400	6400	7000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4880	4990	5520	5700	7000	7410	8270	8310	8750

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

FR-FC-G05-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

FR-FC-G05-Z/T+			3402	3602	3902	4202	4502	4802	5402	6002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	826,3	881,4	944,2	1013	1093	1189	1325	1412
Total power input	(1)	kW	232,3	254,9	276,1	288,4	317,9	330,2	385,8	432,3
EER	(1)	kW/kW	3,557	3,458	3,420	3,512	3,438	3,601	3,434	3,266
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	821,6	876,4	937,8	1006	1086	1181	1317	1402
EER	(2)(3)	kW/kW	3,470	3,370	3,320	3,400	3,350	3,490	3,340	3,170
SEPR	(4)(5)		5,84	5,75	5,59	5,64	5,59	5,75	5,72	5,53
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	1,2	1,6	1,1	1,1	1,3	1,2	1,3	1,3
Cooling capacity	(6)	kW	826,3	881,4	944,2	1013	1093	1189	1325	1412
EER	(6)	kW/kW	25,82	27,54	29,51	31,66	27,33	24,77	27,60	29,42
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	826,3	881,4	944,2	1013	1093	1189	1325	1412
Total power input	(7)	kW	232,3	254,9	276,1	288,4	317,9	330,2	385,8	432,3
EER	(7)	kW/kW	3,557	3,458	3,420	3,512	3,438	3,601	3,434	3,266
23°C/15°C										
Cooling capacity	(8)	kW	948,2	1009	1079	1158	1252	1365	1518	1618
Total power input	(8)	kW	246,2	270,1	294,1	307,6	338,6	349,3	411,0	461,5
EER	(8)	kW/kW	3,851	3,736	3,669	3,765	3,698	3,908	3,693	3,506
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	43,78	46,70	50,03	53,65	57,91	62,98	70,20	74,78
Pressure drop	(2)(3)	kPa	75,1	77,0	95,0	98,1	83,3	98,5	89,7	102
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	237	265	267	288	313	343	357	406
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	69	70	70	70	72	73	73	73
Sound power level in cooling	(10)(11)	dB(A)	102	103	103	103	105	106	106	106
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	7900	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	9600	10470	10570	12680	13180	13710	14930	15810

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

FR-FC-G05-Z/SL-T+			1502	1702	1902	2002	2202	2602	2702	3002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	331,7	372,1	426,4	476,0	521,6	625,0	656,2	712,0
Total power input	(1)	kW	93,40	102,8	120,4	135,4	148,2	173,5	193,7	200,5
EER	(1)	kW/kW	3,551	3,620	3,542	3,516	3,520	3,602	3,388	3,551
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	329,8	369,5	423,7	472,8	519,0	621,2	652,9	707,9
EER	(2)(3)	kW/kW	3,460	3,510	3,440	3,410	3,440	3,500	3,310	3,460
SEPR	(4)(5)		5,85	5,71	6,08	6,12	6,07	6,08	6,00	6,07
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,6	0,7	0,6	0,6	0,7	0,5	0,9	0,7
Cooling capacity	(6)	kW	331,7	372,1	426,4	476,0	521,6	625,0	656,2	712,0
EER	(6)	kW/kW	34,55	38,76	35,53	39,67	36,22	37,20	39,06	37,08
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	331,7	372,1	426,4	476,0	521,6	625,0	656,2	712,0
Total power input	(7)	kW	93,40	102,8	120,4	135,4	148,2	173,5	193,7	200,5
EER	(7)	kW/kW	3,551	3,620	3,542	3,516	3,520	3,602	3,388	3,551
23°C/15°C										
Cooling capacity	(8)	kW	379,8	427,0	489,4	545,6	600,6	716,4	750,8	816,3
Total power input	(8)	kW	100,1	110,3	129,0	145,2	159,3	186,1	208,6	215,1
EER	(8)	kW/kW	3,794	3,871	3,794	3,758	3,770	3,850	3,599	3,795
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	17,57	19,71	22,59	25,22	27,64	33,11	34,77	37,72
Pressure drop	(2)(3)	kPa	67,2	84,5	76,1	84,6	61,2	79,0	63,4	74,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	110	120	131	150	159	179	196	206
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	57	57	57	58	59	58	58	59
Sound power level in cooling	(10)(11)	dB(A)	89	89	89	90	91	91	91	92
SIZE AND WEIGHT										
A	(12)	mm	4000	4900	4900	5800	5800	7000	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5380	5950	6040	6600	7500	8250	9070	9550

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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FR-FC-G05-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

FR-FC-G05-Z/SL-T+			3202	3402	3602	3902	4202	4502	4802	5402
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	745,0	787,2	878,0	938,3	983,7	1097	1139	1288
Total power input	(1)	kW	219,1	241,8	254,6	277,2	296,4	312,8	341,0	393,1
EER	(1)	kW/kW	3,400	3,256	3,449	3,385	3,319	3,507	3,340	3,277
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	741,4	783,1	873,4	932,4	977,2	1090	1132	1280
EER	(2)(3)	kW/kW	3,330	3,180	3,370	3,290	3,230	3,410	3,250	3,190
SEPR	(4)(5)		6,10	5,90	5,96	5,80	5,64	5,99	5,90	5,91
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,9	0,6	0,9	0,5	0,1	0,8	0,5	0,0
Cooling capacity	(6)	kW	745,0	787,2	878,0	938,3	983,7	1097	1139	1288
EER	(6)	kW/kW	38,80	41,00	36,58	39,10	40,99	38,09	39,55	44,72
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	745,0	787,2	878,0	938,3	983,7	1097	1139	1288
Total power input	(7)	kW	219,1	241,8	254,6	277,2	296,4	312,8	341,0	393,1
EER	(7)	kW/kW	3,400	3,256	3,449	3,385	3,319	3,507	3,340	3,277
23°C/15°C										
Cooling capacity	(8)	kW	852,3	896,7	1002	1069	1116	1253	1299	1469
Total power input	(8)	kW	235,9	260,0	271,5	297,0	317,9	334,6	365,8	423,1
EER	(8)	kW/kW	3,613	3,449	3,691	3,599	3,511	3,745	3,551	3,472
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	39,47	41,70	46,51	49,71	52,12	58,09	60,32	68,25
Pressure drop	(2)(3)	kPa	61,0	68,2	69,8	86,2	92,6	83,8	90,4	84,8
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	214	239	251	267	279	314	327	369
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	59	59	59	59	59	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	92	92	92	92	92	94	94	95
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	10000	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10040	10590	13020	13060	13560	14970	15060	16360

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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FR-FC-G05-Z/NG/T+			1502	1702	1902	2002	2202	2602	2702	3002	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	344,5	382,6	444,2	493,9	544,6	635,8	683,2	713,8	773,5
Total power input	(1)	kW	93,00	106,9	119,5	138,7	147,1	179,8	192,7	208,1	220,0
EER	(1)	kW/kW	3,704	3,579	3,717	3,561	3,702	3,536	3,545	3,430	3,516
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	341,9	379,2	440,6	489,8	540,2	630,8	678,3	708,3	767,3
EER	(2)(3)	kW/kW	3,580	3,440	3,580	3,430	3,570	3,410	3,430	3,320	3,390
SEPR	(4)(5)		5,41	5,00	5,50	5,19	5,40	5,23	5,24	5,22	5,19
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-1,4	-1,2	-1,3	-1,2	-1,2	-0,8	-0,9	-1,2	-0,9
Cooling capacity	(6)	kW	344,5	382,6	444,2	493,9	544,6	635,8	683,2	713,8	773,5
EER	(6)	kW/kW	22,97	16,28	20,66	17,96	19,80	18,17	19,52	20,39	17,99
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	344,5	382,6	444,2	493,9	544,6	635,8	683,2	713,8	773,5
Total power input	(7)	kW	93,00	106,9	119,5	138,7	147,1	179,8	192,7	208,1	220,0
EER	(7)	kW/kW	3,704	3,579	3,717	3,561	3,702	3,536	3,545	3,430	3,516
23°C/15°C											
Cooling capacity	(8)	kW	395,7	439,9	511,8	567,9	629,1	729,4	784,4	817,8	887,6
Total power input	(8)	kW	99,10	113,9	127,2	147,6	156,6	191,9	205,9	222,8	235,1
EER	(8)	kW/kW	3,993	3,862	4,024	3,848	4,017	3,801	3,810	3,671	3,775
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	16,49	18,31	21,26	23,64	26,06	30,42	32,69	34,16	37,02
Pressure drop	(2)(3)	kPa	100	123	113	121	117	118	107	116	123
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	107	116	135	150	161	192	207	216	235
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	67	68	68	68	69	70	69	69	69
Sound power level in cooling	(10)(11)	dB(A)	99	100	100	100	101	102	102	102	102
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	4900	5800	5800	6400	6400	7000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5270	5470	6020	6250	7520	8000	9020	9060	9420

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

FR-FC-G05-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

FR-FC-G05-Z/NG/T+			3402	3602	3902	4202	4502	4802	5402	6002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	848,6	905,2	969,8	1040	1123	1221	1361	1450
Total power input	(1)	kW	233,3	256,1	277,5	289,7	319,4	331,4	387,6	434,8
EER	(1)	kW/kW	3,637	3,535	3,495	3,590	3,516	3,684	3,511	3,335
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	842,7	898,5	961,5	1030	1114	1210	1348	1434
EER	(2)(3)	kW/kW	3,520	3,420	3,360	3,440	3,390	3,530	3,360	3,180
SEPR	(4)(5)		5,27	5,23	5,12	5,07	5,03	5,21	5,13	5,00
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-1,4	-1,0	-1,6	-1,6	-1,3	-1,4	-1,3	-1,3
Cooling capacity	(6)	kW	848,6	905,2	969,8	1040	1123	1221	1361	1450
EER	(6)	kW/kW	18,06	19,26	20,63	20,59	18,11	18,36	19,44	20,71
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	848,6	905,2	969,8	1040	1123	1221	1361	1450
Total power input	(7)	kW	233,3	256,1	277,5	289,7	319,4	331,4	387,6	434,8
EER	(7)	kW/kW	3,637	3,535	3,495	3,590	3,516	3,684	3,511	3,335
23°C/15°C										
Cooling capacity	(8)	kW	973,8	1036	1108	1189	1285	1402	1559	1662
Total power input	(8)	kW	247,1	271,3	295,4	308,7	340,0	350,4	412,7	463,9
EER	(8)	kW/kW	3,941	3,819	3,751	3,852	3,779	4,001	3,778	3,583
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	40,61	43,32	46,41	49,77	53,72	58,42	65,12	69,37
Pressure drop	(2)(3)	kPa	107	114	137	157	131	155	165	187
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	258	274	292	314	340	373	414	439
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	69	70	70	70	72	73	73	73
Sound power level in cooling	(10)(11)	dB(A)	102	103	103	103	105	106	106	106
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	7900	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10300	11280	11370	13070	13570	14490	15760	16680

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

FR-FC-G05-Z/NG/SL-T+			1502	1702	1902	2002	2202	2602	2702	3002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	340,6	382,2	437,9	488,9	535,7	641,9	673,9	731,3
Total power input	(1)	kW	93,80	103,3	120,9	136,0	148,9	174,7	194,2	201,4
EER	(1)	kW/kW	3,631	3,700	3,622	3,595	3,598	3,674	3,470	3,631
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	338,1	378,8	434,5	484,9	531,5	636,8	669,2	725,4
EER	(2)(3)	kW/kW	3,510	3,550	3,490	3,460	3,470	3,540	3,360	3,500
SEPR	(4)(5)		5,47	5,27	5,59	5,62	5,50	5,50	5,50	5,50
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-2,0	-1,9	-2,0	-2,1	-2,0	-2,1	-1,7	-2,1
Cooling capacity	(6)	kW	340,6	382,2	437,9	488,9	535,7	641,9	673,9	731,3
EER	(6)	kW/kW	27,03	28,10	25,02	27,94	24,46	23,09	24,24	24,22
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	340,6	382,2	437,9	488,9	535,7	641,9	673,9	731,3
Total power input	(7)	kW	93,80	103,3	120,9	136,0	148,9	174,7	194,2	201,4
EER	(7)	kW/kW	3,631	3,700	3,622	3,595	3,598	3,674	3,470	3,631
23°C/15°C										
Cooling capacity	(8)	kW	390,0	438,5	502,7	560,3	616,8	735,7	771,1	838,4
Total power input	(8)	kW	100,5	110,7	129,5	145,8	159,9	187,3	209,0	215,9
EER	(8)	kW/kW	3,881	3,961	3,882	3,843	3,857	3,928	3,689	3,883
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	16,30	18,29	20,96	23,40	25,64	30,72	32,25	34,99
Pressure drop	(2)(3)	kPa	97,8	123	110	118	113	120	104	122
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	105	117	135	151	166	205	207	225
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	57	57	57	58	59	58	58	59
Sound power level in cooling	(10)(11)	dB(A)	89	89	89	90	91	91	91	92
SIZE AND WEIGHT										
A	(12)	mm	4000	4900	4900	5800	5800	7000	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5770	6360	6520	7160	8020	8890	9590	10070

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

FR-FC-G05-Z

Air cooled chiller with free-cooling

1502 - 6002 331,7-1450 kW

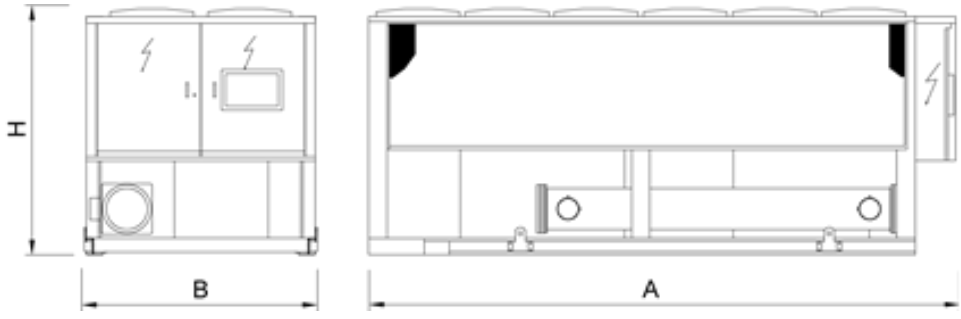
FR-FC-G05-Z/NG/SL-T+			3202	3402	3602	3902	4202	4502	4802	5402
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	765,1	808,4	901,7	963,7	1010	1126	1169	1323
Total power input	(1)	kW	220,4	243,4	256,0	278,0	297,3	314,3	343,0	395,6
EER	(1)	kW/kW	3,471	3,321	3,522	3,467	3,397	3,583	3,408	3,344
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	759,1	803,2	895,1	955,5	1001	1117	1159	1311
EER	(2)(3)	kW/kW	3,350	3,230	3,410	3,340	3,260	3,450	3,280	3,210
SEPR	(4)(5)		5,51	5,33	5,39	5,28	5,07	5,37	5,31	5,29
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	-1,7	-2,0	-1,7	-2,2	-2,5	-1,8	-2,1	-2,6
Cooling capacity	(6)	kW	765,1	808,4	901,7	963,7	1010	1126	1169	1323
EER	(6)	kW/kW	25,33	23,64	23,12	24,71	23,76	23,81	24,71	26,04
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	765,1	808,4	901,7	963,7	1010	1126	1169	1323
Total power input	(7)	kW	220,4	243,4	256,0	278,0	297,3	314,3	343,0	395,6
EER	(7)	kW/kW	3,471	3,321	3,522	3,467	3,397	3,583	3,408	3,344
23°C/15°C										
Cooling capacity	(8)	kW	875,3	921,0	1029	1098	1147	1287	1334	1508
Total power input	(8)	kW	237,1	261,5	272,8	297,5	318,7	335,9	367,6	425,5
EER	(8)	kW/kW	3,692	3,522	3,772	3,691	3,599	3,831	3,629	3,544
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	36,61	38,69	43,15	46,11	48,35	53,89	55,96	63,31
Pressure drop	(2)(3)	kPa	120	97,0	113	135	148	132	142	156
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	235	247	276	293	307	345	360	407
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	59	59	59	59	59	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	92	92	92	92	92	94	94	95
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	10000	10000	10000	11800	11800	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10570	11290	13810	13850	13970	15590	15680	17220

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

TRCS-FC-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 302,2-1693 kW



Outdoor unit for the production of chilled water, equipped with oil-free centrifugal compressors, R134a refrigerant, axial EC fans, condensing coil with copper tubes and aluminum fins, shell and tube flooded evaporator and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel; the unit is supplied with refrigerant.
The rotor speed digital control allows an accurate and efficient thermoregulation in every operating condition.
In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero.
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R134a

Versions

K	Key efficiency, compact version
CA	High energy efficiency units

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

ENERGY SAVING
Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

VERY HIGH EFFICIENCY
Top-level seasonal efficiency thanks to technlogical solutions at the forefront: magnetic levitation centrifugal compressors, flooded evaporator, EC fans and advanced control algorithms.

WIDE RANGE
Extended capacity range.

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

EXTREMELY SILENT OPERATION
Extremely silent operation in line with the best on the market, and highly reduced vibrations

INTEGRATED HYDRONIC GROUP
It consists of 2 pumps with 4-pole motor, fixed or variable speed, with high or low head options to satisfy the different installation requirements.

Accessories

- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)

TRCS-FC-Z /K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	302,2	482,7	594,2	689,0	943,4	980,2
Total power input	(1)	kW	87,10	140,9	178,6	181,0	285,2	275,2
EER	(1)	kW/kW	3,470	3,426	3,327	3,807	3,308	3,562
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	300,0	479,0	590,1	683,7	936,5	972,8
EER	(2)(3)	kW/kW	3,360	3,310	3,230	3,670	3,210	3,440
SEPR	(4)(5)		6,66	6,54	6,39	6,64	6,43	6,58
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-1,9	-2,5	-1,9	-1,4	-2,7	-1,4
Cooling capacity	(6)	kW	302,2	482,7	594,2	689,0	943,4	980,2
EER	(6)	kW/kW	59,25	50,28	49,52	67,55	56,15	51,05
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	302,2	482,7	594,2	689,0	943,4	980,2
Total power input	(7)	kW	87,10	140,9	178,6	181,0	285,2	275,2
EER	(7)	kW/kW	3,470	3,426	3,327	3,807	3,308	3,562
23°C/15°C								
Cooling capacity	(8)	kW	346,4	541,1	679,7	769,4	1051	1103
Total power input	(8)	kW	91,20	143,6	186,7	183,0	290,1	281,4
EER	(8)	kW/kW	3,798	3,768	3,641	4,204	3,623	3,920
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	16,01	25,57	31,48	36,50	49,98	51,93
Pressure drop	(2)(3)	kPa	86,0	98,6	89,3	104	104	107
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(10)(11)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(12)	mm	4000	4000	4900	6400	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	3430	3850	5080	5820	6340	6900

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-FC-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 302,2-1693 kW

TRCS-FC-Z /K			0903	0953	1003	1164	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
MECHANICAL COOLING (GROSS VALUE)							
Cooling capacity	(1)	kW	1185	1253	1421	1578	1649
Total power input	(1)	kW	320,1	373,2	424,6	455,0	460,6
EER	(1)	kW/kW	3,702	3,357	3,347	3,468	3,580
MECHANICAL COOLING (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1177	1246	1411	1567	1637
EER	(2)(3)	kW/kW	3,590	3,280	3,250	3,360	3,460
SEPR	(4)(5)		6,45	6,28	6,32	6,30	6,31
TOTAL FREE-COOLING (GROSS VALUE)							
Total free-cooling temperature	(6)	°C	-1,2	-2,7	-2,5	-1,6	-1,8
Cooling capacity	(6)	kW	1185	1253	1421	1578	1649
EER	(6)	kW/kW	49,38	52,21	53,83	50,58	52,85
MECHANICAL COOLING (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(7)	kW	1185	1253	1421	1578	1649
Total power input	(7)	kW	320,1	373,2	424,6	455,0	460,6
EER	(7)	kW/kW	3,702	3,357	3,347	3,468	3,580
23°C/15°C							
Cooling capacity	(8)	kW	1327	1407	1588	1787	1847
Total power input	(8)	kW	324,5	381,5	433,9	468,7	468,6
EER	(8)	kW/kW	4,089	3,688	3,660	3,813	3,942
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(3)	l/s	62,78	66,38	75,30	83,61	87,35
Pressure drop	(2)(3)	kPa	91,8	80,2	103	106	115
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	4	4
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	430	520	520	540	540
NOISE LEVEL							
Sound Pressure	(9)	dB(A)	64	64	65	65	65
Sound power level in cooling	(10)(11)	dB(A)	97	97	98	98	98
SIZE AND WEIGHT							
A	(12)	mm	10600	11200	11200	13000	13600
B	(12)	mm	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500
Operating weight	(12)	kg	9750	10260	10530	12290	12350

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-FC-Z /CA			0211	0251	0351	0452	0552	0712	0803	0903	1003
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	309,6	353,9	496,1	615,8	714,1	990,3	1068	1209	1446
Total power input	(1)	kW	85,40	89,80	134,3	173,2	177,2	268,3	266,8	308,4	412,3
EER	(1)	kW/kW	3,625	3,941	3,694	3,555	4,030	3,691	4,003	3,920	3,507
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	307,3	351,1	492,1	611,3	708,3	982,7	1062	1201	1436
EER	(2)(3)	kW/kW	3,500	3,790	3,560	3,440	3,870	3,560	3,900	3,800	3,400
SEPR	(4)(5)		6,97	6,90	7,13	6,80	6,88	6,94	6,88	6,88	6,65
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-0,1	-0,2	-1,0	-0,5	0,4	-0,9	0,2	0,0	-1,6
Cooling capacity	(6)	kW	309,6	353,9	496,1	615,8	714,1	990,3	1068	1209	1446
EER	(6)	kW/kW	60,71	52,04	58,36	60,37	52,51	58,25	52,35	54,71	65,43
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	309,6	353,9	496,1	615,8	714,1	990,3	1068	1209	1446
Total power input	(7)	kW	85,40	89,80	134,3	173,2	177,2	268,3	266,8	308,4	412,3
EER	(7)	kW/kW	3,625	3,941	3,694	3,555	4,030	3,691	4,003	3,920	3,507
23°C/15°C											
Cooling capacity	(8)	kW	354,7	393,0	558,7	706,6	790,1	1115	1183	1349	1623
Total power input	(8)	kW	89,20	90,10	137,2	181,0	176,7	274,5	266,5	311,4	422,4
EER	(8)	kW/kW	3,976	4,362	4,072	3,904	4,471	4,062	4,439	4,332	3,842
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	16,40	18,75	26,28	32,63	37,83	52,47	56,60	64,05	76,60
Pressure drop	(2)(3)	kPa	90,3	96,3	104	95,9	111	109	74,6	95,6	107
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(10)(11)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	3660	3790	4380	5720	6770	8870	10530	11370	11730

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-FC-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 302,2-1693 kW

TRCS-FC-Z /NG /K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	310,4	495,7	610,2	707,6	968,9	1007
Total power input	(1)	kW	87,60	141,6	179,5	181,9	286,6	276,6
EER	(1)	kW/kW	3,543	3,501	3,399	3,890	3,381	3,641
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	308,1	491,3	605,5	701,3	960,7	998,8
EER	(2)(3)	kW/kW	3,430	3,370	3,290	3,730	3,260	3,510
SEPR	(4)(5)		6,20	6,06	5,87	6,14	5,84	6,02
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-4,9	-5,5	-5,0	-4,5	-5,8	-4,5
Cooling capacity	(6)	kW	310,4	495,7	610,2	707,6	968,9	1007
EER	(6)	kW/kW	38,32	32,83	31,29	39,98	30,47	29,44
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	310,4	495,7	610,2	707,6	968,9	1007
Total power input	(7)	kW	87,60	141,6	179,5	181,9	286,6	276,6
EER	(7)	kW/kW	3,543	3,501	3,399	3,890	3,381	3,641
23°C/15°C								
Cooling capacity	(8)	kW	355,8	555,7	698,0	790,1	1079	1133
Total power input	(8)	kW	91,60	144,2	187,5	183,8	291,3	282,6
EER	(8)	kW/kW	3,884	3,854	3,723	4,299	3,704	4,009
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	14,85	23,72	29,20	33,86	46,37	48,17
Pressure drop	(2)(3)	kPa	98,1	128	112	137	135	130
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(10)(11)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(12)	mm	4000	4000	4900	6400	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4120	4620	6100	6990	7610	8280

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-FC-Z /NG /K			0903	0953	1003	1164	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
MECHANICAL COOLING (GROSS VALUE)							
Cooling capacity	(1)	kW	1217	1287	1460	1621	1693
Total power input	(1)	kW	321,7	375,0	426,7	457,2	462,9
EER	(1)	kW/kW	3,783	3,432	3,422	3,545	3,657
MECHANICAL COOLING (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1208	1278	1448	1606	1677
EER	(2)(3)	kW/kW	3,660	3,330	3,300	3,410	3,500
SEPR	(4)(5)		5,95	5,76	5,75	5,64	5,65
TOTAL FREE-COOLING (GROSS VALUE)							
Total free-cooling temperature	(6)	°C	-4,3	-5,7	-5,6	-4,7	-4,9
Cooling capacity	(6)	kW	1217	1287	1460	1621	1693
EER	(6)	kW/kW	31,21	30,28	30,17	26,49	27,66
MECHANICAL COOLING (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(7)	kW	1217	1287	1460	1621	1693
Total power input	(7)	kW	321,7	375,0	426,7	457,2	462,9
EER	(7)	kW/kW	3,783	3,432	3,422	3,545	3,657
23°C/15°C							
Cooling capacity	(8)	kW	1363	1445	1631	1835	1897
Total power input	(8)	kW	325,8	383,2	435,7	470,6	470,6
EER	(8)	kW/kW	4,184	3,771	3,743	3,899	4,031
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(3)	l/s	58,24	61,58	69,85	77,56	81,03
Pressure drop	(2)(3)	kPa	113	110	140	154	169
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	4	4
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	430	520	520	540	540
NOISE LEVEL							
Sound Pressure	(9)	dB(A)	64	64	65	65	65
Sound power level in cooling	(10)(11)	dB(A)	97	97	98	98	98
SIZE AND WEIGHT							
A	(12)	mm	10600	11200	11200	13000	13600
B	(12)	mm	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500
Operating weight	(12)	kg	11700	12320	12640	14750	14820

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-FC-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 302,2-1693 kW

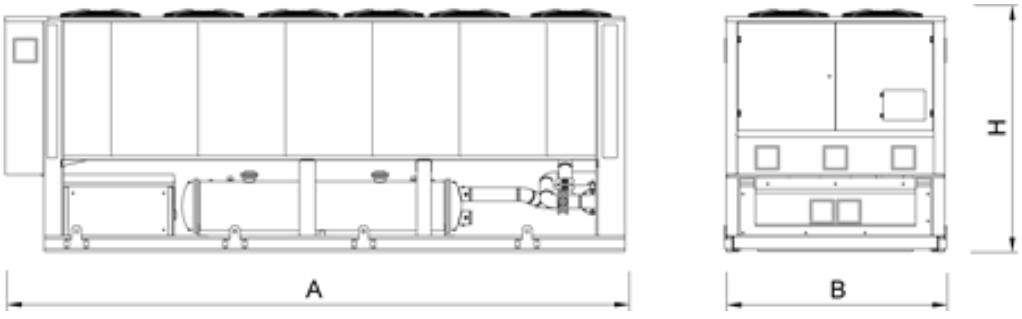
TRCS-FC-Z /NG /CA			0211	0251	0351	0452	0552	0712	0803	0903	1003
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	318,0	363,5	509,5	632,4	733,4	1017	1097	1242	1485
Total power input	(1)	kW	85,90	90,30	134,9	174,1	178,1	269,7	268,1	310,0	414,4
EER	(1)	kW/kW	3,702	4,025	3,777	3,632	4,118	3,771	4,092	4,006	3,583
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	315,5	360,4	504,9	627,3	726,5	1009	1090	1233	1472
EER	(2)(3)	kW/kW	3,570	3,860	3,620	3,500	3,930	3,630	3,970	3,870	3,450
SEPR	(4)(5)		6,46	6,21	6,55	6,31	6,17	6,26	6,29	6,24	6,04
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-3,2	-3,2	-4,1	-3,6	-2,7	-4,0	-2,9	-3,1	-4,7
Cooling capacity	(6)	kW	318,0	363,5	509,5	632,4	733,4	1017	1097	1242	1485
EER	(6)	kW/kW	39,26	29,55	36,39	40,28	29,81	31,78	30,99	30,59	33,67
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	318,0	363,5	509,5	632,4	733,4	1017	1097	1242	1485
Total power input	(7)	kW	85,90	90,30	134,9	174,1	178,1	269,7	268,1	310,0	414,4
EER	(7)	kW/kW	3,702	4,025	3,777	3,632	4,118	3,771	4,092	4,006	3,583
23°C/15°C											
Cooling capacity	(8)	kW	364,3	403,6	573,8	725,7	811,5	1145	1215	1386	1667
Total power input	(8)	kW	89,60	90,40	137,8	181,7	177,5	275,7	267,7	312,7	424,2
EER	(8)	kW/kW	4,066	4,465	4,164	3,994	4,572	4,153	4,539	4,432	3,930
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	15,22	17,39	24,38	30,26	35,10	48,67	52,51	59,42	71,06
Pressure drop	(2)(3)	kPa	103	120	131	120	147	133	92,2	117	145
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(10)(11)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4400	4550	5260	6870	8130	10650	12640	13650	14080

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
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9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

TRCS-FC-G05-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 299,2-1671 kW



Outdoor unit for the production of chilled water, equipped with oil-free centrifugal compressors, R513A refrigerant, axial EC fans, condensing coil with copper tubes and aluminum fins, shell and tube flooded evaporator and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel. The unit is supplied with refrigerant and has been factory tested.
In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero.
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Refrigerant

R513A

Versions

K	Key efficiency, compact version
CA	High energy efficiency units

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

ENERGY SAVING
Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

VERY HIGH EFFICIENCY
Top-level seasonal efficiency thanks to technlogical solutions at the forefront: magnetic levitation centrifugal compressors, flooded evaporator, EC fans and advanced control algorithms.

WIDE RANGE
Extended capacity range.

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

EXTREMELY SILENT OPERATION
Extremely silent operation in line with the best on the market, and highly reduced vibrations

INTEGRATED HYDRONIC GROUP
It consists of 2 pumps with 4-pole motor, fixed or variable speed, with high or low head options to satisfy the different installation requirements.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Accessories

- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)

TRCS-FC-G05-Z/K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	299,2	479,3	590,0	682,1	932,1	969,4
Total power input	(1)	kW	87,50	140,4	177,9	180,1	284,6	275,0
EER	(1)	kW/kW	3,419	3,414	3,316	3,787	3,275	3,525
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	297,1	475,7	586,0	677,0	925,4	962,2
EER	(2)(3)	kW/kW	3,310	3,300	3,220	3,650	3,180	3,410
SEPR	(4)(5)		6,59	6,53	6,38	6,62	6,39	6,54
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-1,8	-2,4	-1,8	-1,3	-2,5	-1,3
Cooling capacity	(6)	kW	299,2	479,3	590,0	682,1	932,1	969,4
EER	(6)	kW/kW	58,67	49,93	49,17	66,87	55,48	50,49
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	299,2	479,3	590,0	682,1	932,1	969,4
Total power input	(7)	kW	87,50	140,4	177,9	180,1	284,6	275,0
EER	(7)	kW/kW	3,419	3,414	3,316	3,787	3,275	3,525
23°C/15°C								
Cooling capacity	(8)	kW	342,9	537,3	674,9	761,7	1038	1091
Total power input	(8)	kW	91,60	143,1	186,0	182,2	289,6	281,2
EER	(8)	kW/kW	3,743	3,755	3,628	4,181	3,584	3,880
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	15,85	25,39	31,26	36,14	49,38	51,36
Pressure drop	(2)(3)	kPa	84,3	97,2	88,0	102	101	105
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(10)(11)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(12)	mm	4000	4000	4900	6400	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	3430	3850	5080	5820	6340	6900

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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TRCS-FC-G05-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 299,2-1671 kW

TRCS-FC-G05-Z/K			0903	0953	1003	1164	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
MECHANICAL COOLING (GROSS VALUE)							
Cooling capacity	(1)	kW	1173	1238	1409	1558	1627
Total power input	(1)	kW	319,5	372,8	425,0	456,2	459,3
EER	(1)	kW/kW	3,671	3,321	3,315	3,415	3,542
MECHANICAL COOLING (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1166	1231	1399	1547	1615
EER	(2)(3)	kW/kW	3,570	3,240	3,220	3,310	3,430
SEPR	(4)(5)		6,41	6,23	6,27	6,23	6,27
TOTAL FREE-COOLING (GROSS VALUE)							
Total free-cooling temperature	(6)	°C	-1,1	-2,5	-2,4	-1,5	-1,6
Cooling capacity	(6)	kW	1173	1238	1409	1558	1627
EER	(6)	kW/kW	48,88	51,58	53,37	49,94	52,15
MECHANICAL COOLING (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(7)	kW	1173	1238	1409	1558	1627
Total power input	(7)	kW	319,5	372,8	425,0	456,2	459,3
EER	(7)	kW/kW	3,671	3,321	3,315	3,415	3,542
23°C/15°C							
Cooling capacity	(8)	kW	1313	1391	1574	1763	1823
Total power input	(8)	kW	323,9	381,2	434,3	470,0	467,3
EER	(8)	kW/kW	4,054	3,649	3,624	3,751	3,901
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(3)	l/s	62,16	65,59	74,62	82,52	86,21
Pressure drop	(2)(3)	kPa	90,0	78,3	101	103	112
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	4	4
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	430	520	520	540	540
NOISE LEVEL							
Sound Pressure	(9)	dB(A)	64	64	65	65	65
Sound power level in cooling	(10)(11)	dB(A)	97	97	98	98	98
SIZE AND WEIGHT							
A	(12)	mm	10600	11200	11200	13000	13600
B	(12)	mm	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500
Operating weight	(12)	kg	9750	10260	10530	12290	12350

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%
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6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
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10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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TRCS-FC-G05-Z/CA			0211	0251	0351	0452	0552	0712	0803	0903	1003
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	306,5	351,4	492,6	609,7	705,6	979,4	1058	1195	1433
Total power input	(1)	kW	85,80	89,50	133,8	172,4	176,9	268,1	266,3	308,1	412,7
EER	(1)	kW/kW	3,572	3,926	3,682	3,537	3,989	3,653	3,973	3,879	3,472
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	304,2	348,7	488,7	605,3	700,0	972,0	1052	1187	1423
EER	(2)(3)	kW/kW	3,450	3,780	3,550	3,420	3,840	3,530	3,870	3,760	3,370
SEPR	(4)(5)		6,90	6,87	7,11	6,78	6,83	6,89	6,84	6,82	6,60
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	0,0	-0,1	-0,9	-0,4	0,5	-0,8	0,3	0,1	-1,5
Cooling capacity	(6)	kW	306,5	351,4	492,6	609,7	705,6	979,4	1058	1195	1433
EER	(6)	kW/kW	60,10	51,68	57,95	59,77	51,88	57,61	51,86	54,07	64,84
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	306,5	351,4	492,6	609,7	705,6	979,4	1058	1195	1433
Total power input	(7)	kW	85,80	89,50	133,8	172,4	176,9	268,1	266,3	308,1	412,7
EER	(7)	kW/kW	3,572	3,926	3,682	3,537	3,989	3,653	3,973	3,879	3,472
23°C/15°C											
Cooling capacity	(8)	kW	351,2	390,2	554,8	699,5	780,6	1103	1171	1333	1609
Total power input	(8)	kW	89,60	89,70	136,7	180,1	176,4	274,2	266,1	311,1	422,8
EER	(8)	kW/kW	3,920	4,350	4,059	3,884	4,425	4,023	4,401	4,285	3,806
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	16,24	18,62	26,10	32,30	37,38	51,89	56,04	63,28	75,91
Pressure drop	(2)(3)	kPa	88,5	94,9	103	94,0	109	107	73,1	93,3	105
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(10)(11)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	3660	3790	4380	5720	6770	8870	10530	11370	11730

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 30%.
2 Values in compliance with EN14511
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11 Sound power level in cooling, outdoors.
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TRCS-FC-G05-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 299,2-1671 kW

TRCS-FC-G05-Z/NG/K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	307,3	492,2	605,9	700,6	957,3	995,6
Total power input	(1)	kW	88,00	141,1	178,8	181,0	286,1	276,4
EER	(1)	kW/kW	3,492	3,488	3,389	3,871	3,346	3,602
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	305,0	487,9	601,3	694,5	949,4	987,6
EER	(2)(3)	kW/kW	3,380	3,360	3,280	3,710	3,230	3,470
SEPR	(4)(5)		6,15	6,05	5,86	6,12	5,80	5,97
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-4,8	-5,4	-4,9	-4,4	-5,6	-4,4
Cooling capacity	(6)	kW	307,3	492,2	605,9	700,6	957,3	995,6
EER	(6)	kW/kW	37,94	32,60	31,07	39,58	30,10	29,11
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	307,3	492,2	605,9	700,6	957,3	995,6
Total power input	(7)	kW	88,00	141,1	178,8	181,0	286,1	276,4
EER	(7)	kW/kW	3,492	3,488	3,389	3,871	3,346	3,602
23°C/15°C								
Cooling capacity	(8)	kW	352,2	551,9	693,1	782,2	1066	1120
Total power input	(8)	kW	92,00	143,7	186,8	182,9	290,8	282,4
EER	(8)	kW/kW	3,828	3,841	3,710	4,277	3,666	3,966
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	14,70	23,56	29,00	33,52	45,81	47,64
Pressure drop	(2)(3)	kPa	96,2	126	111	135	132	127
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(10)(11)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(12)	mm	4000	4000	4900	6400	7000	7900
B	(12)	mm	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4120	4620	6100	6990	7610	8280

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
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6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
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VPF VARIABLE PRIMARY FLOW | VSPEED VARIABLE SPEED DRIVE

R513A | FLOODED | COOLING | EC AXIAL | FREE COOLING | CENTRIFUGAL

TRCS-FC-G05-Z/NG/K			0903	0953	1003	1164	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
MECHANICAL COOLING (GROSS VALUE)							
Cooling capacity	(1)	kW	1205	1271	1447	1600	1671
Total power input	(1)	kW	321,1	374,7	427,1	458,5	461,6
EER	(1)	kW/kW	3,753	3,392	3,388	3,490	3,620
MECHANICAL COOLING (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1197	1263	1435	1586	1655
EER	(2)(3)	kW/kW	3,630	3,290	3,270	3,360	3,470
SEPR	(4)(5)		5,91	5,71	5,71	5,58	5,61
TOTAL FREE-COOLING (GROSS VALUE)							
Total free-cooling temperature	(6)	°C	-4,2	-5,5	-5,5	-4,5	-4,7
Cooling capacity	(6)	kW	1205	1271	1447	1600	1671
EER	(6)	kW/kW	30,90	29,91	29,90	26,14	27,30
MECHANICAL COOLING (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(7)	kW	1205	1271	1447	1600	1671
Total power input	(7)	kW	321,1	374,7	427,1	458,5	461,6
EER	(7)	kW/kW	3,753	3,392	3,388	3,490	3,620
23°C/15°C							
Cooling capacity	(8)	kW	1349	1428	1617	1811	1873
Total power input	(8)	kW	325,2	382,8	436,1	472,0	469,2
EER	(8)	kW/kW	4,148	3,730	3,708	3,837	3,992
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(3)	l/s	57,66	60,84	69,22	76,55	79,97
Pressure drop	(2)(3)	kPa	111	107	138	150	165
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	4	4
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	430	520	520	540	540
NOISE LEVEL							
Sound Pressure	(9)	dB(A)	64	64	65	65	65
Sound power level in cooling	(10)(11)	dB(A)	97	97	98	98	98
SIZE AND WEIGHT							
A	(12)	mm	10600	11200	11200	13000	13600
B	(12)	mm	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500
Operating weight	(12)	kg	11700	12320	12640	14750	14820

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
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TRCS-FC-G05-Z

High efficiency air cooled chiller with free-cooling

0211 - 1204 299,2-1671 kW

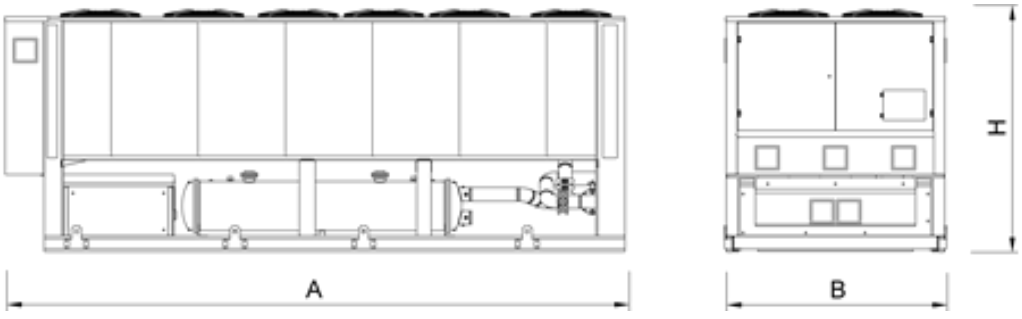
TRCS-FC-G05-Z/NG/CA			0211	0251	0351	0452	0552	0712	0803	0903	1003
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	314,8	360,9	505,9	626,1	724,6	1006	1086	1227	1472
Total power input	(1)	kW	86,30	89,90	134,4	173,3	177,8	269,4	267,6	309,7	414,8
EER	(1)	kW/kW	3,648	4,014	3,764	3,613	4,075	3,734	4,058	3,962	3,549
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	312,4	357,8	501,4	621,1	717,9	997,8	1080	1218	1460
EER	(2)(3)	kW/kW	3,520	3,850	3,610	3,480	3,890	3,590	3,940	3,830	3,420
SEPR	(4)(5)		6,39	6,20	6,53	6,29	6,13	6,21	6,25	6,18	5,99
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-3,1	-3,2	-4,0	-3,5	-2,6	-3,9	-2,8	-3,0	-4,6
Cooling capacity	(6)	kW	314,8	360,9	505,9	626,1	724,6	1006	1086	1227	1472
EER	(6)	kW/kW	38,86	29,34	36,14	39,88	29,46	31,44	30,68	30,22	33,38
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	314,8	360,9	505,9	626,1	724,6	1006	1086	1227	1472
Total power input	(7)	kW	86,30	89,90	134,4	173,3	177,8	269,4	267,6	309,7	414,8
EER	(7)	kW/kW	3,648	4,014	3,764	3,613	4,075	3,734	4,058	3,962	3,549
23°C/15°C											
Cooling capacity	(8)	kW	360,7	400,8	569,8	718,4	801,7	1133	1203	1369	1652
Total power input	(8)	kW	90,00	90,10	137,3	180,9	177,1	275,4	267,2	312,4	424,6
EER	(8)	kW/kW	4,008	4,448	4,150	3,971	4,527	4,114	4,502	4,382	3,891
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	15,06	17,27	24,21	29,96	34,68	48,13	51,98	58,71	70,42
Pressure drop	(2)(3)	kPa	101	118	130	118	144	130	90,3	114	143
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(10)(11)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(12)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4400	4550	5260	6870	8130	10650	12640	13650	14080

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C; Ethylene glycol 0%
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

FR-EFC-Z

1502 - 6002 329,5-1441 kW

Air cooled chiller with evaporative free-cooling



Outdoor unit for the production of chilled water, equipped with semi-hermetic screw compressors, R134a refrigerant, axial-fans, condensing coil with copper tubes and aluminum fins, evaporative cooling system, shell and tube evaporator single pass and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel. The unit is supplied with anti-freeze oil and refrigerant and has been factory tested.
These chillers, fitted with free-cooling coils and evaporative cooling system, are used when the cooling load is constant all-year-round.
In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero. The evaporative cooling system is made of treated cellulose pads and a water circulator that keeps the pads wet. It lowers the air temperature before it reaches unit's coils, thus increasing mechanical cooling efficiency and allowing free-cooling benefits to begin at higher outdoor temperatures.
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Refrigerant

R134a

Versions

- Basic
- SL Super-low noise version

Configurations

- Basic function
- NG Function for free-cooling without use of glycole

Features

EXTENSION OF FREE-COOLING TEMPERATURE RANGE
Thanks to the evaporative cooling system that decreases the outdoor air temperature, the unit can take full advantage of the free-cooling benefit also in climatic conditions that normally don't permit it.

ENERGY SAVING
Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

WIDE RANGE
Extended capacity range.

UNIQUE PROPOSAL - PATENT PENDING
Booster function to increase chiller efficiency

INTEGRATED HYDRONIC GROUP
The built-in hydronic group (optional) includes the main water circuit components. The 2 pumps are in twin configuration and available with 2 or 4-pole motor, fixed or variable speed, high or low head, to satisfy the different installation requirements.

Accessories

- EC fans with electronic DC brushless motor
- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)
- Noise reducer (only on not silenced versions)

FR-EFC-Z			1502	1702	1902	2002	2202	2602	2702	3002	3202
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	333,4	370,5	430,1	478,2	527,5	615,3	661,4	691,0	748,8
Total power input	(1)	kW	78,20	90,70	100,4	116,4	123,2	147,7	159,5	170,8	182,1
EER	(1)	kW/kW	4,263	4,085	4,284	4,108	4,282	4,166	4,147	4,046	4,112
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	290,5	325,4	376,8	419,3	462,9	538,7	580,4	606,4	657,7
EER	(2)(3)	kW/kW	4,110	3,940	4,180	4,010	4,180	4,170	4,090	4,020	4,080
SEPR	(4)(5)		5,73	5,48	5,92	5,64	5,90	5,78	5,78	5,73	5,78
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	0,8	1,0	0,9	1,0	1,0	1,4	1,3	1,0	1,3
Cooling capacity	(6)	kW	333,4	370,5	430,1	478,2	527,5	615,3	661,4	691,0	748,8
EER	(6)	kW/kW	27,78	23,16	26,88	23,91	26,38	25,64	27,56	28,79	26,74
COOLING ONLY - maximum cooling capacity (GROSS VALUE)											
Cooling capacity	(1)	kW	356,4	392,8	456,4	507,5	559,3	656,2	704,6	736,9	797,6
EER	(1)	kW/kW	4,289	4,104	4,277	4,103	4,286	4,114	4,130	4,014	4,088
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	290,5	325,4	376,8	419,3	462,9	538,7	580,4	606,4	657,7
EER	(2)(3)	kW/kW	4,110	3,940	4,180	4,010	4,180	4,170	4,090	4,020	4,080
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	333,4	370,5	430,1	478,2	527,5	615,3	661,4	691,0	748,8
Total power input	(7)	kW	78,20	90,70	100,4	116,4	123,2	147,7	159,5	170,8	182,1
EER	(7)	kW/kW	4,263	4,085	4,284	4,108	4,282	4,166	4,147	4,046	4,112
23°C/15°C											
Cooling capacity	(8)	kW	382,9	426,0	495,6	549,9	609,3	705,9	759,4	791,6	859,4
Total power input	(8)	kW	83,40	96,50	107,0	123,8	130,7	155,8	170,2	182,5	194,1
EER	(8)	kW/kW	4,591	4,415	4,632	4,442	4,662	4,531	4,462	4,338	4,428
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	15,47	17,34	20,08	22,34	24,64	28,68	30,89	32,27	34,98
Pressure drop	(2)(3)	kPa	52,8	66,2	60,9	67,2	48,9	59,7	50,9	55,5	48,7
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	85,0	90,0	108	119	128	141	145	175	180
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	67	68	68	68	68	69	69	69	69
Sound power level in cooling	(10)(11)	dB(A)	99	100	100	100	101	102	102	102	102
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	4900	5800	5800	6400	6400	7000
B	(12)	mm	3060	3060	3060	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5210	5320	5930	6110	7490	7900	8810	8850	9350

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FR-EFC-Z

1502 - 6002 329,5-1441 kW

Air cooled chiller with evaporative free-cooling

FR-EFC-Z			3402	3602	3902	4202	4502	4802	5402	6002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	821,6	876,1	938,3	1006	1087	1183	1318	1403
Total power input	(1)	kW	194,6	212,2	229,6	241,9	266,7	279,4	322,2	361,6
EER	(1)	kW/kW	4,222	4,129	4,087	4,159	4,076	4,234	4,091	3,880
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	721,4	767,8	820,3	880,6	954,7	1043	1160	1232
EER	(2)(3)	kW/kW	4,150	4,060	4,010	4,060	4,000	4,090	4,020	3,830
SEPR	(4)(5)		5,79	5,70	5,55	5,59	5,55	5,72	5,69	5,49
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,8	1,2	0,6	0,6	0,8	0,8	0,9	0,9
Cooling capacity	(6)	kW	821,6	876,1	938,3	1006	1087	1183	1318	1403
EER	(6)	kW/kW	25,67	27,38	29,32	31,44	27,17	24,65	27,46	29,23
COOLING ONLY - maximum cooling capacity (GROSS VALUE)										
Cooling capacity	(1)	kW	873,9	935,0	1003	1074	1157	1252	1400	1493
EER	(1)	kW/kW	4,212	4,117	4,067	4,150	4,065	4,243	4,073	3,857
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	721,4	767,8	820,3	880,6	954,7	1043	1160	1232
EER	(2)(3)	kW/kW	4,150	4,060	4,010	4,060	4,000	4,090	4,020	3,830
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	821,6	876,1	938,3	1006	1087	1183	1318	1403
Total power input	(7)	kW	194,6	212,2	229,6	241,9	266,7	279,4	322,2	361,6
EER	(7)	kW/kW	4,222	4,129	4,087	4,159	4,076	4,234	4,091	3,880
23°C/15°C										
Cooling capacity	(8)	kW	942,8	1003	1072	1151	1244	1358	1509	1609
Total power input	(8)	kW	205,4	223,6	242,4	256,0	282,3	294,8	341,8	385,2
EER	(8)	kW/kW	4,590	4,486	4,422	4,496	4,407	4,607	4,415	4,177
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	38,39	40,86	43,70	46,92	50,82	55,57	61,76	65,65
Pressure drop	(2)(3)	kPa	58,2	59,0	72,6	75,4	64,6	77,4	70,0	79,1
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	190	199	220	244	290	295	310	330
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	69	70	70	70	72	73	73	73
Sound power level in cooling	(10)(11)	dB(A)	102	103	103	103	105	106	106	106
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	7900	10000	10000	11800	11800	13000
B	(12)	mm	3060	3060	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10280	11150	11250	13550	14050	14740	15960	16950

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FR-EFC-Z /SL			1502	1702	1902	2002	2202	2602	2702	3002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	329,5	370,0	423,8	473,2	518,6	621,2	652,2	707,8
Total power input	(1)	kW	77,90	87,20	99,60	111,4	122,7	142,1	158,3	165,0
EER	(1)	kW/kW	4,230	4,243	4,255	4,248	4,227	4,372	4,120	4,290
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	286,7	324,8	370,6	414,1	454,8	543,3	571,7	621,2
EER	(2)(3)	kW/kW	4,130	4,010	4,240	4,230	4,180	4,380	4,150	4,270
SEPR	(4)(5)		5,80	5,66	6,03	6,07	6,02	6,02	5,96	6,03
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,1	0,2	0,2	0,1	0,2	0,1	0,5	0,2
Cooling capacity	(6)	kW	329,5	370,0	423,8	473,2	518,6	621,2	652,2	707,8
EER	(6)	kW/kW	34,32	38,54	35,32	39,43	36,01	36,98	38,82	36,86
COOLING ONLY - maximum cooling capacity (GROSS VALUE)										
Cooling capacity	(1)	kW	353,5	393,4	451,9	504,4	551,9	663,4	697,2	754,6
EER	(1)	kW/kW	4,228	4,295	4,215	4,200	4,207	4,308	4,068	4,249
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	286,7	324,8	370,6	414,1	454,8	543,3	571,7	621,2
EER	(2)(3)	kW/kW	4,130	4,010	4,240	4,230	4,180	4,380	4,150	4,270
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	329,5	370,0	423,8	473,2	518,6	621,2	652,2	707,8
Total power input	(7)	kW	77,90	87,20	99,60	111,4	122,7	142,1	158,3	165,0
EER	(7)	kW/kW	4,230	4,243	4,255	4,248	4,227	4,372	4,120	4,290
23°C/15°C										
Cooling capacity	(8)	kW	377,3	424,6	486,5	542,3	597,2	712,0	746,3	811,6
Total power input	(8)	kW	83,40	93,70	106,5	119,2	131,3	150,6	169,8	176,5
EER	(8)	kW/kW	4,524	4,531	4,568	4,549	4,548	4,728	4,395	4,598
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	15,25	17,30	19,73	22,06	24,19	28,94	30,42	33,06
Pressure drop	(2)(3)	kPa	51,3	66,4	58,7	65,4	47,2	60,8	49,3	58,2
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	98,0	104	124	137	147	162	167	201
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	57	57	57	57	58	58	58	59
Sound power level in cooling	(10)(11)	dB(A)	89	89	89	90	91	91	91	92
SIZE AND WEIGHT										
A	(12)	mm	4000	4900	4900	5800	5800	7000	7000	7900
B	(12)	mm	3060	3060	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	5710	6360	6450	7090	7990	8850	9670	10230

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FR-EFC-Z

Air cooled chiller with evaporative free-cooling

1502 - 6002 329,5-1441 kW

FR-EFC-Z /SL			3202	3402	3602	3902	4202	4502	4802	5402
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
MECHANICAL COOLING (GROSS VALUE)										
Cooling capacity	(1)	kW	740,4	782,1	872,4	932,1	976,9	1090	1132	1280
Total power input	(1)	kW	178,5	195,6	209,3	227,4	243,2	258,7	279,4	319,8
EER	(1)	kW/kW	4,148	3,998	4,168	4,099	4,017	4,213	4,052	4,003
MECHANICAL COOLING (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	649,3	684,6	763,7	814,0	852,6	956,0	995,8	1125
EER	(2)(3)	kW/kW	4,200	4,060	4,140	4,090	4,000	4,180	4,060	4,060
SEPR	(4)(5)		6,05	5,86	5,90	5,75	5,59	5,94	5,86	5,87
TOTAL FREE-COOLING (GROSS VALUE)										
Total free-cooling temperature	(6)	°C	0,5	0,1	0,5	0,0	-0,3	0,4	0,1	-0,4
Cooling capacity	(6)	kW	740,4	782,1	872,4	932,1	976,9	1090	1132	1280
EER	(6)	kW/kW	38,56	40,73	36,35	38,84	40,70	37,85	39,31	44,44
COOLING ONLY - maximum cooling capacity (GROSS VALUE)										
Cooling capacity	(1)	kW	791,2	838,4	933,7	1000	1051	1163	1206	1367
EER	(1)	kW/kW	4,085	3,931	4,135	4,052	3,971	4,179	3,997	3,930
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)										
Cooling capacity	(2)(3)	kW	649,3	684,6	763,7	814,0	852,6	956,0	995,8	1125
EER	(2)(3)	kW/kW	4,200	4,060	4,140	4,090	4,000	4,180	4,060	4,060
MECHANICAL COOLING (GROSS VALUE)										
16°C/10°C										
Cooling capacity	(7)	kW	740,4	782,1	872,4	932,1	976,9	1090	1132	1280
Total power input	(7)	kW	178,5	195,6	209,3	227,4	243,2	258,7	279,4	319,8
EER	(7)	kW/kW	4,148	3,998	4,168	4,099	4,017	4,213	4,052	4,003
23°C/15°C										
Cooling capacity	(8)	kW	847,1	891,0	996,0	1062	1108	1246	1292	1460
Total power input	(8)	kW	191,4	208,7	221,4	241,1	257,6	275,1	298,4	342,5
EER	(8)	kW/kW	4,426	4,269	4,499	4,405	4,301	4,529	4,330	4,263
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(3)	l/s	34,53	36,43	40,62	43,34	45,41	50,90	53,05	59,89
Pressure drop	(2)(3)	kPa	47,3	52,2	53,3	65,5	70,4	64,7	70,3	65,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	207	219	229	253	281	334	339	357
NOISE LEVEL										
Sound Pressure	(9)	dB(A)	59	59	59	59	59	61	61	62
Sound power level in cooling	(10)(11)	dB(A)	92	92	92	92	92	94	94	95
SIZE AND WEIGHT										
A	(12)	mm	7900	7900	10000	10000	10000	11800	11800	13000
B	(12)	mm	3060	3060	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10720	11270	13890	13930	14430	16000	16090	17500

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
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8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

Dimensional drawing



CHILLERS

TRCS-EFC-Z

High efficiency air cooled chiller with evaporative free-cooling

0211 - 1204 300,2-1682 kW



Outdoor unit for the production of chilled water, equipped with oil-free centrifugal compressors, R134a refrigerant, axial EC fans, condensing coil with copper tubes and aluminum fins, shell and tube flooded evaporator, evaporative cooling system and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel. The unit is supplied with refrigerant and has been factory tested. In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero. The evaporative cooling system is made of treated cellulose pads and a water circulator that keeps the pads wet. It lowers the air temperature before it reaches unit's coils, thus increasing mechanical cooling efficiency and allowing free-cooling benefits to begin at higher outdoor temperatures.
The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Refrigerant

R134a

Versions

K	Key efficiency, compact version
CA	High energy efficiency units

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

EXTENSION OF FREE-COOLING TEMPERATURE RANGE
Thanks to the evaporative cooling system that decreases the outdoor air temperature, the unit can take full advantage of the free-cooling benefit also in climatic conditions that normally don't permit it.

ENERGY SAVING
Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

VERY HIGH EFFICIENCY
Top-level seasonal efficiency thanks to technlogical solutions at the forefront: magnetic levitation centrifugal compressors, flooded evaporator, EC fans and advanced control algorithms.

WIDE RANGE
Extended capacity range.

LOW INRUSH CURRENTS
Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

EXTREMELY SILENT OPERATION
Extremely silent operation in line with the best on the market, and highly reduced vibrations

INTEGRATED HYDRONIC GROUP
It consists of 2 pumps with 4-pole motor, fixed or variable speed, with high or low head options to satisfy the different installation requirements.

Control



Electronic control W3000 TE
W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.
Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Accessories

- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)

TRCS-EFC-Z /K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	300,2	479,1	589,5	684,8	935,0	974,2
Total power input	(1)	kW	74,00	113,3	148,0	158,0	220,1	227,2
EER	(1)	kW/kW	4,057	4,229	3,983	4,334	4,248	4,288
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	258,0	408,9	500,8	601,3	788,1	841,0
EER	(2)(3)	kW/kW	4,390	4,500	4,320	4,570	4,490	4,600
SEPR	(4)(5)		6,37	6,31	6,16	6,42	6,20	6,34
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-2,3	-2,8	-2,3	-1,8	-3,1	-1,9
Cooling capacity	(6)	kW	300,2	479,1	589,5	684,8	935,0	974,2
EER	(6)	kW/kW	58,86	49,91	49,12	67,14	55,65	50,74
COOLING ONLY - maximum cooling capacity (GROSS VALUE)								
Cooling capacity	(1)	kW	317,5	506,8	631,3	717,6	1004	1016
EER	(1)	kW/kW	3,816	3,956	3,685	4,162	3,856	4,097
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	258,0	408,9	500,8	601,3	788,1	841,0
EER	(2)(3)	kW/kW	4,390	4,500	4,320	4,570	4,490	4,600
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	300,2	479,1	589,5	684,8	935,0	974,2
Total power input	(7)	kW	74,00	113,3	148,0	158,0	220,1	227,2
EER	(7)	kW/kW	4,057	4,229	3,983	4,334	4,248	4,288
23°C/15°C								
Cooling capacity	(8)	kW	344,1	536,4	673,9	765,2	1039	1096
Total power input	(8)	kW	78,60	117,0	155,6	161,7	223,5	237,4
EER	(8)	kW/kW	4,378	4,585	4,331	4,732	4,649	4,617
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	13,75	21,79	26,68	32,06	41,99	44,83
Pressure drop	(2)(3)	kPa	64,2	72,9	64,9	80,8	74,4	80,9
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(10)(11)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(12)	mm	4000	4000	4900	6400	7000	7900
B	(12)	mm	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	3760	4180	5490	6360	6940	7580

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
7 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-EFC-Z

High efficiency air cooled chiller with evaporative free-cooling

0211 - 1204 300,2-1682 kW

TRCS-EFC-Z /K			0903	0953	1003	1164	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
MECHANICAL COOLING (GROSS VALUE)							
Cooling capacity	(1)	kW	1179	1243	1409	1567	1638
Total power input	(1)	kW	276,6	297,4	332,5	376,0	386,1
EER	(1)	kW/kW	4,262	4,180	4,238	4,168	4,242
MECHANICAL COOLING (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1034	1054	1195	1345	1418
EER	(2)(3)	kW/kW	4,540	4,490	4,490	4,480	4,510
SEPR	(4)(5)		6,23	6,07	6,10	6,08	6,10
TOTAL FREE-COOLING (GROSS VALUE)							
Total free-cooling temperature	(6)	°C	-1,7	-3,0	-2,9	-2,1	-2,2
Cooling capacity	(6)	kW	1179	1243	1409	1567	1638
EER	(6)	kW/kW	49,12	51,79	53,37	50,22	52,50
COOLING ONLY - maximum cooling capacity (GROSS VALUE)							
Cooling capacity	(1)	kW	1225	1328	1505	1653	1721
EER	(1)	kW/kW	4,119	3,848	3,893	3,928	4,033
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1034	1054	1195	1345	1418
EER	(2)(3)	kW/kW	4,540	4,490	4,490	4,480	4,510
MECHANICAL COOLING (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(7)	kW	1179	1243	1409	1567	1638
Total power input	(7)	kW	276,6	297,4	332,5	376,0	386,1
EER	(7)	kW/kW	4,262	4,180	4,238	4,168	4,242
23°C/15°C							
Cooling capacity	(8)	kW	1320	1394	1572	1773	1835
Total power input	(8)	kW	285,5	306,2	341,3	393,2	399,1
EER	(8)	kW/kW	4,623	4,553	4,606	4,509	4,598
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(3)	l/s	55,07	56,07	63,64	71,64	75,60
Pressure drop	(2)(3)	kPa	71,4	58,2	75,0	78,8	87,6
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	4	4
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	430	520	520	540	540
NOISE LEVEL							
Sound Pressure	(9)	dB(A)	64	64	65	65	65
Sound power level in cooling	(10)(11)	dB(A)	97	97	98	98	98
SIZE AND WEIGHT							
A	(12)	mm	10600	11200	11200	13000	13600
B	(12)	mm	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500
Operating weight	(12)	kg	10670	11240	11510	13430	13540

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
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8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-EFC-Z /CA			0211	0251	0351	0452	0552	0712	0803	0903	1003
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	308,0	352,6	493,5	612,1	712,1	985,1	1065	1205	1436
Total power input	(1)	kW	74,10	81,10	112,8	147,7	160,8	225,2	241,2	273,5	332,6
EER	(1)	kW/kW	4,157	4,348	4,375	4,144	4,428	4,374	4,415	4,406	4,317
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	268,2	316,8	429,5	529,1	645,7	857,5	964,7	1077	1229
EER	(2)(3)	kW/kW	4,500	4,540	4,710	4,500	4,570	4,720	4,630	4,700	4,640
SEPR	(4)(5)		6,66	6,62	6,87	6,54	6,62	6,66	6,62	6,62	6,41
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-0,6	-0,6	-1,4	-0,9	-0,1	-1,3	-0,2	-0,5	-2,0
Cooling capacity	(6)	kW	308,0	352,6	493,5	612,1	712,1	985,1	1065	1205	1436
EER	(6)	kW/kW	60,39	51,85	58,06	60,01	52,36	57,95	52,21	54,52	64,98
COOLING ONLY - maximum cooling capacity (GROSS VALUE)											
Cooling capacity	(1)	kW	320,8	360,3	509,7	642,5	720,6	1018	1081	1226	1513
EER	(1)	kW/kW	3,990	4,279	4,233	3,937	4,391	4,231	4,368	4,344	4,055
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	268,2	316,8	429,5	529,1	645,7	857,5	964,7	1077	1229
EER	(2)(3)	kW/kW	4,500	4,540	4,710	4,500	4,570	4,720	4,630	4,700	4,640
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	308,0	352,6	493,5	612,1	712,1	985,1	1065	1205	1436
Total power input	(7)	kW	74,10	81,10	112,8	147,7	160,8	225,2	241,2	273,5	332,6
EER	(7)	kW/kW	4,157	4,348	4,375	4,144	4,428	4,374	4,415	4,406	4,317
23°C/15°C											
Cooling capacity	(8)	kW	353,2	391,8	555,8	702,7	778,2	1110	1169	1340	1610
Total power input	(8)	kW	79,10	82,50	118,2	157,4	159,0	236,7	240,5	279,8	345,3
EER	(8)	kW/kW	4,465	4,749	4,702	4,464	4,894	4,689	4,861	4,789	4,663
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	14,30	16,89	22,91	28,20	34,45	45,72	51,35	57,38	65,48
Pressure drop	(2)(3)	kPa	69,3	78,1	80,0	72,6	92,5	83,8	61,6	76,7	79,4
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(10)(11)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(12)	mm	3060	3060	3060	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	3990	4120	4790	6260	7450	9740	11590	12510	12870

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
2 Values in compliance with EN14511
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8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-EFC-Z

High efficiency air cooled chiller with evaporative free-cooling

0211 - 1204 300,2-1682 kW

TRCS-EFC-Z /NG /K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
MECHANICAL COOLING (GROSS VALUE)								
Cooling capacity	(1)	kW	308,3	492,0	605,4	703,3	960,2	1001
Total power input	(1)	kW	74,30	113,9	148,7	158,8	221,2	228,4
EER	(1)	kW/kW	4,149	4,320	4,071	4,429	4,341	4,383
MECHANICAL COOLING (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	257,5	407,6	499,9	599,8	786,1	839,2
EER	(2)(3)	kW/kW	4,570	4,630	4,490	4,710	4,630	4,740
SEPR	(4)(5)		5,98	5,86	5,69	5,96	5,65	5,82
TOTAL FREE-COOLING (GROSS VALUE)								
Total free-cooling temperature	(6)	°C	-5,3	-5,9	-5,4	-4,9	-6,2	-4,9
Cooling capacity	(6)	kW	308,3	492,0	605,4	703,3	960,2	1001
EER	(6)	kW/kW	38,06	32,58	31,05	39,73	30,19	29,27
COOLING ONLY - maximum cooling capacity (GROSS VALUE)								
Cooling capacity	(1)	kW	326,1	520,5	648,3	737,0	1031	1044
EER	(1)	kW/kW	3,901	4,041	3,765	4,253	3,940	4,189
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)								
Cooling capacity	(2)(3)	kW	257,5	407,6	499,9	599,8	786,1	839,2
EER	(2)(3)	kW/kW	4,570	4,630	4,490	4,710	4,630	4,740
MECHANICAL COOLING (GROSS VALUE)								
16°C/10°C								
Cooling capacity	(7)	kW	308,3	492,0	605,4	703,3	960,2	1001
Total power input	(7)	kW	74,30	113,9	148,7	158,8	221,2	228,4
EER	(7)	kW/kW	4,149	4,320	4,071	4,429	4,341	4,383
23°C/15°C								
Cooling capacity	(8)	kW	353,4	550,9	692,1	785,9	1067	1125
Total power input	(8)	kW	79,00	117,5	156,1	162,4	224,4	238,1
EER	(8)	kW/kW	4,473	4,689	4,434	4,839	4,755	4,725
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(3)	l/s	12,39	19,64	24,06	28,90	37,85	40,41
Pressure drop	(2)(3)	kPa	69,2	89,4	77,0	101	91,5	93,1
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(9)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(10)(11)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(12)	mm	4000	4000	4900	6400	7000	7900
B	(12)	mm	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4450	4950	6510	7530	8210	8960

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

TRCS-EFC-Z /NG /K			0903	0953	1003	1164	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
MECHANICAL COOLING (GROSS VALUE)							
Cooling capacity	(1)	kW	1210	1276	1448	1610	1682
Total power input	(1)	kW	277,6	298,8	334,8	378,1	387,7
EER	(1)	kW/kW	4,359	4,270	4,325	4,258	4,338
MECHANICAL COOLING (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1032	1053	1192	1340	1415
EER	(2)(3)	kW/kW	4,690	4,630	4,630	4,600	4,620
SEPR	(4)(5)		5,77	5,58	5,57	5,47	5,49
TOTAL FREE-COOLING (GROSS VALUE)							
Total free-cooling temperature	(6)	°C	-4,7	-6,1	-6,0	-5,1	-5,3
Cooling capacity	(6)	kW	1210	1276	1448	1610	1682
EER	(6)	kW/kW	31,03	30,02	29,92	26,31	27,48
COOLING ONLY - maximum cooling capacity (GROSS VALUE)							
Cooling capacity	(1)	kW	1258	1364	1545	1698	1768
EER	(1)	kW/kW	4,209	3,933	3,976	4,015	4,123
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)							
Cooling capacity	(2)(3)	kW	1032	1053	1192	1340	1415
EER	(2)(3)	kW/kW	4,690	4,630	4,630	4,600	4,620
MECHANICAL COOLING (GROSS VALUE)							
16°C/10°C							
Cooling capacity	(7)	kW	1210	1276	1448	1610	1682
Total power input	(7)	kW	277,6	298,8	334,8	378,1	387,7
EER	(7)	kW/kW	4,359	4,270	4,325	4,258	4,338
23°C/15°C							
Cooling capacity	(8)	kW	1356	1431	1615	1821	1884
Total power input	(8)	kW	286,7	307,1	342,8	395,0	400,3
EER	(8)	kW/kW	4,730	4,660	4,711	4,610	4,706
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(3)	l/s	49,65	50,61	57,39	64,56	68,23
Pressure drop	(2)(3)	kPa	83,3	75,2	96,4	109	122
REFRIGERANT CIRCUIT							
Compressors nr.		N°	3	3	3	4	4
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	430	520	520	540	540
NOISE LEVEL							
Sound Pressure	(9)	dB(A)	64	64	65	65	65
Sound power level in cooling	(10)(11)	dB(A)	97	97	98	98	98
SIZE AND WEIGHT							
A	(12)	mm	10600	11200	11200	13000	13600
B	(12)	mm	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500
Operating weight	(12)	kg	12620	13300	13620	15890	16010

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
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5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
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8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
12 Unit in standard configuration/execution, without optional accessories.

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TRCS-EFC-Z

High efficiency air cooled chiller with evaporative free-cooling

0211 - 1204 300,2-1682 kW

TRCS-EFC-Z /NG /CA			0211	0251	0351	0452	0552	0712	0803	0903	1003
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
MECHANICAL COOLING (GROSS VALUE)											
Cooling capacity	(1)	kW	316,3	362,1	506,8	628,7	731,3	1012	1094	1237	1474
Total power input	(1)	kW	74,40	81,60	113,3	148,4	161,6	226,6	242,6	274,4	333,8
EER	(1)	kW/kW	4,251	4,438	4,473	4,237	4,525	4,466	4,509	4,508	4,416
MECHANICAL COOLING (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	267,8	316,1	428,4	527,9	643,6	855,7	963,0	1075	1225
EER	(2)(3)	kW/kW	4,660	4,690	4,850	4,660	4,760	4,860	4,820	4,840	4,770
SEPR	(4)(5)		6,21	6,00	6,32	6,10	5,97	6,04	6,09	6,03	5,84
TOTAL FREE-COOLING (GROSS VALUE)											
Total free-cooling temperature	(6)	°C	-3,7	-3,7	-4,5	-4,1	-3,2	-4,4	-3,3	-3,6	-5,1
Cooling capacity	(6)	kW	316,3	362,1	506,8	628,7	731,3	1012	1094	1237	1474
EER	(6)	kW/kW	39,05	29,44	36,20	40,04	29,73	31,62	30,90	30,47	33,42
COOLING ONLY - maximum cooling capacity (GROSS VALUE)											
Cooling capacity	(1)	kW	329,5	370,0	523,5	659,9	740,0	1045	1110	1260	1554
EER	(1)	kW/kW	4,078	4,368	4,326	4,024	4,488	4,322	4,463	4,443	4,145
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)											
Cooling capacity	(2)(3)	kW	267,8	316,1	428,4	527,9	643,6	855,7	963,0	1075	1225
EER	(2)(3)	kW/kW	4,660	4,690	4,850	4,660	4,760	4,860	4,820	4,840	4,770
MECHANICAL COOLING (GROSS VALUE)											
16°C/10°C											
Cooling capacity	(7)	kW	316,3	362,1	506,8	628,7	731,3	1012	1094	1237	1474
Total power input	(7)	kW	74,40	81,60	113,3	148,4	161,6	226,6	242,6	274,4	333,8
EER	(7)	kW/kW	4,251	4,438	4,473	4,237	4,525	4,466	4,509	4,508	4,416
23°C/15°C											
Cooling capacity	(8)	kW	362,7	402,4	570,8	721,7	799,2	1140	1201	1376	1654
Total power input	(8)	kW	79,50	82,80	118,7	158,0	159,6	237,5	241,5	281,0	346,8
EER	(8)	kW/kW	4,562	4,860	4,809	4,568	5,008	4,800	4,973	4,897	4,769
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(3)	l/s	12,89	15,23	20,64	25,42	31,04	41,21	46,31	51,77	59,00
Pressure drop	(2)(3)	kPa	74,7	92,5	95,7	86,1	115	96,6	71,8	89,5	102
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(9)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(10)(11)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(12)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(12)	mm	3060	3060	3060	3060	3060	3060	3060	3060	3060
H	(12)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(12)	kg	4730	4880	5670	7410	8810	11520	13700	14790	15220

Notes

1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
2 Values in compliance with EN14511
3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
4 Seasonal energy efficiency ratio
5 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
6 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
7 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
8 Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C - 50% R.H.; Ethylene glycol 30%
9 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Sound power on the basis of measurements made in compliance with ISO 9614.
11 Sound power level in cooling, outdoors.
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The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

<<< BACK INDEX

NR-Q-Z	0152P - 0602P
NRCS-Q-Z	0604 - 1204
NRCS-Q-Z	1314 - 2818
ERRCS2-Q-Z	1062 - 3222
ERRCS2-Q-G05-Z	1062 - 3222
i-FR-Q2-Z	0502 - 1002
i-FR-Q2-G05-Z	0502 - 1002
NRCS-WQ-Z	0152 - 0904
ERRCS2-WQ-Z	0802 - 1302
ERRCS2-WQ-G05-Z	0802 - 1302

UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

NR-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

0152P - 0602P 43,90-168,6 kW



Multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent hydronic circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler. Unit with two independent refrigerant circuits, each circuit works with an hermetic rotary Scroll compressors using R410A, axial fans, braze-welded plate-type exchanger and thermal expansion valve.

Control



Electronic control W3000TE

W3000TE controller feature a large format keyboard with wide LCD display in order to ensure an easy access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of various components.

As alternative, the innovative KIPlink user interface allows one to operate on the unit directly from the smartphone or tablet. The regulation operates on both water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. This allows to satisfy simultaneously the different requests of both cooling and heating, with no need of mode setting. Complete alarm management system is available, with the "black-box" and the alarm history display functions. Optional proprietary devices adjust the resources in systems made of several units. Consumption metering and performance measurement are available and supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with the remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organised into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity.

Proprietary self-adaptive logic for the defrosting features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

- Basic
- SL Super-low noise version

Configurations

- Basic function

Features

UNIQUE PROPOSAL

Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

ErP READY

The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP (only for reversible units) and for process cooling, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

INTEGRATED HYDRONIC GROUP

The built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line pump, for achieving both low or high head, fixed or variable speed, available for both plant and recovery circuits (up to 4 pumps).

WIDE OPERATING RANGE

The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C to 46°C of outdoor air temperature, from -8°C to 18°C of evaporator leaving water temperature and hot water up to 55°C.

Accessories

- Touch Screen visual display
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Hydronic kit available in different configurations with 1 or 2 pumps fixed speed or variable speed, for achieving both low or high head, available for both plant and recovery circuits.
- EC fans with electronic DC brushless motor
- LOW NOISE KIT (only on no silenced versions)
- Soft starters
- Electronic expansion valve

NR-Q-Z			0152P	0182P	0202P	0252P	0262P	0302P	0402P	0502P	0602P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	43,94	50,85	58,12	64,03	71,56	85,53	110,7	137,9	168,6
Total power input	(1)	kW	12,74	14,83	17,63	19,16	22,23	25,60	33,40	42,28	56,50
EER	(1)	kW/kW	3,457	3,432	3,301	3,333	3,225	3,340	3,314	3,260	2,984
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	43,80	50,60	57,90	63,80	71,40	85,20	110,3	137,4	168,0
EER	(1)(2)	kW/kW	3,420	3,370	3,250	3,290	3,190	3,290	3,260	3,210	2,940
COOLING ONLY											
16°C/10°C											
Cooling capacity	(5)	kW	48,05	55,57	63,40	69,83	77,86	93,15	121,0	150,4	183,3
Total power input	(5)	kW	12,96	15,12	18,02	19,58	22,79	26,20	34,25	43,31	58,17
EER	(5)	kW/kW	3,692	3,682	3,522	3,561	3,417	3,557	3,528	3,473	3,149
23°C/15°C											
Cooling capacity	(6)	kW	54,91	63,46	72,19	79,44	88,26	105,8	138,2	171,3	207,4
Total power input	(6)	kW	13,25	15,50	18,59	20,18	23,58	27,04	35,51	44,82	60,78
EER	(6)	kW/kW	4,159	4,097	3,882	3,931	3,742	3,919	3,893	3,824	3,411
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(7)	kW	46,44	53,18	60,63	67,30	75,18	90,09	115,2	144,8	177,3
Total power input	(7)	kW	13,49	15,30	17,49	19,25	21,42	25,56	32,70	41,33	52,06
COP	(7)	kW/kW	3,437	3,477	3,463	3,487	3,514	3,520	3,523	3,506	3,403
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(2)(7)	kW	46,60	53,40	60,80	67,60	75,50	90,40	115,6	145,3	178,0
COP	(2)(7)	kW/kW	3,400	3,440	3,430	3,450	3,480	3,490	3,490	3,470	3,370
COOLING WITH TOTAL HEAT RECOVERY											
Cooling capacity	(8)	kW	44,00	51,12	58,91	64,26	73,07	86,88	111,9	139,7	176,5
Total power input	(8)	kW	11,56	13,39	15,74	17,32	19,83	23,44	30,46	39,51	50,69
Recovery heat exchanger capacity	(8)	kW	54,86	63,71	73,71	80,54	91,71	108,9	140,5	176,8	224,1
TER	(8)	kW/kW	8,526	8,567	8,446	8,370	8,323	8,368	8,275	8,013	7,901
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Process refrigeration at high temperature											
Prated,c	(9)	kW	-	-	-	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesign	(11)	kW	33,2	38,2	43,6	49,4	55,6	65,8	83,0	106	135
SCOP	(11)(12)		3,59	3,60	3,63	3,75	3,77	3,71	3,69	3,66	3,64
Performance ηs	(11)(13)	%	141	141	142	147	148	145	144	143	143
Seasonal efficiency class	(11)		A+	A+	A+	A+	A+	A+	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	2,101	2,432	2,780	3,062	3,422	4,090	5,292	6,592	8,061
Pressure drop	(1)	kPa	14,7	19,7	15,8	19,2	17,1	19,4	22,3	26,2	31,8
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(7)	l/s	2,242	2,567	2,927	3,249	3,629	4,349	5,563	6,992	8,561
Pressure drop	(7)	kPa	16,7	21,9	17,5	21,6	19,3	21,9	24,6	29,5	35,9
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	20,8	22,4	22,9	30,2	30,9	37,1	53,5	64,8	64,9
NOISE LEVEL											
Sound Pressure	(14)	dB(A)	53	53	53	53	53	54	55	56	56
Sound power level in cooling	(15)(16)	dB(A)	85	85	85	85	85	86	87	88	88
Sound power level in heating	(15)(17)	dB(A)	85	85	85	85	85	86	87	88	88
SIZE AND WEIGHT											
A	(18)	mm	2625	2625	2625	2625	2625	3250	3875	4500	4500
B	(18)	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
H	(18)	mm	2070	2070	2070	2070	2070	2070	2070	2070	2070
Operating weight	(18)	kg	850	870	890	960	970	1130	1430	1670	1730

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

NR-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

0152P - 0602P 43,90-168,6 kW

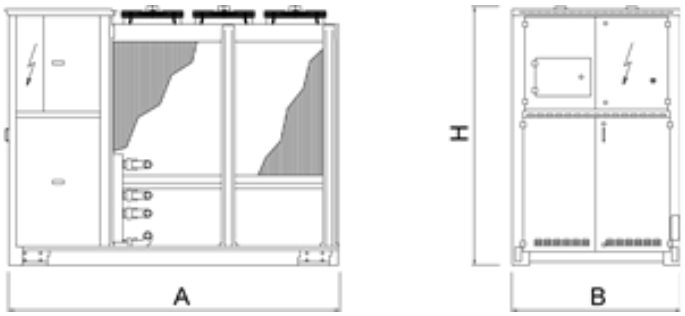
NR-Q-Z /SL			0152P	0182P	0202P	0252P	0262P	0302P	0402P	0502P
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	43,20	49,82	58,48	63,18	71,56	84,78	108,5	130,7
Total power input	(1)	kW	12,48	14,69	17,25	19,36	22,03	25,52	33,44	44,29
EER	(1)	kW/kW	3,456	3,388	3,382	3,258	3,255	3,325	3,249	2,950
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	43,10	49,60	58,30	63,00	71,40	84,50	108,2	130,3
EER	(1)(2)	kW/kW	3,420	3,330	3,330	3,210	3,220	3,280	3,210	2,910
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	47,20	54,39	63,81	68,85	77,85	92,28	118,5	142,2
Total power input	(5)	kW	12,73	15,01	17,64	19,81	22,59	26,14	34,35	45,57
EER	(5)	kW/kW	3,717	3,627	3,625	3,475	3,447	3,536	3,455	3,118
23°C/15°C										
Cooling capacity	(6)	kW	53,86	62,02	72,70	78,23	88,26	104,7	135,1	161,1
Total power input	(6)	kW	13,07	15,45	18,19	20,47	23,39	27,03	35,68	47,45
EER	(6)	kW/kW	4,115	4,000	3,995	3,815	3,774	3,878	3,784	3,392
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	46,53	53,32	62,15	67,14	76,80	91,15	116,3	141,2
Total power input	(7)	kW	12,89	14,71	17,33	19,05	21,28	25,19	32,31	40,01
COP	(7)	kW/kW	3,605	3,626	3,595	3,513	3,606	3,615	3,601	3,530
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	46,70	53,50	62,40	67,40	77,10	91,40	116,7	141,7
COP	(2)(7)	kW/kW	3,560	3,590	3,560	3,470	3,570	3,580	3,570	3,500
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	44,00	51,12	58,91	64,26	73,07	86,88	111,9	139,7
Total power input	(8)	kW	11,56	13,39	15,74	17,32	19,83	23,44	30,46	39,51
Recovery heat exchanger capacity	(8)	kW	54,86	63,71	73,71	80,54	91,71	108,9	140,5	176,8
TER	(8)	kW/kW	8,526	8,567	8,446	8,370	8,323	8,368	8,275	8,013
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	33,2	38,6	45,5	48,9	56,4	66,7	84,3	105
SCOP	(11)(12)		3,81	3,81	3,80	3,78	3,88	3,83	3,82	3,75
Performance ηs	(11)(13)	%	150	150	149	148	152	150	150	147
Seasonal efficiency class	(11)		A++	A++	A+	A+	A++	A++	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	2,066	2,382	2,797	3,021	3,422	4,054	5,188	6,252
Pressure drop	(1)	kPa	14,2	18,9	16,0	18,7	17,1	19,0	21,4	23,6
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	2,246	2,574	3,000	3,241	3,707	4,400	5,615	6,818
Pressure drop	(7)	kPa	16,8	22,1	18,4	21,5	20,1	22,4	25,1	28,0
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	27,1	28,7	28,8	29,9	42,0	48,9	63,1	63,2
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	47	47	48	48	48	49	50	52
Sound power level in cooling	(15)(16)	dB(A)	79	79	80	80	80	81	82	84
Sound power level in heating	(15)(17)	dB(A)	79	79	80	80	80	81	82	84
SIZE AND WEIGHT										
A	(18)	mm	2625	2625	3250	3250	3250	3875	4500	4500
B	(18)	mm	1350	1350	1350	1350	1350	1350	1350	1350
H	(18)	mm	2070	2070	2070	2070	2070	2070	2070	2070
Operating weight	(18)	kg	890	910	1000	1030	1090	1270	1610	1680

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

NRCS-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

0604 - 1204 142,0-310,8 kW



Multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent hydronic circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler. This unit is equipped with hermetic rotary Scroll compressors, with R410A, axial fans, braze-welded plate-type exchanger and thermal expansion valve. External panels in Peraluman and base in galvanised sheet steel with paint finish. The range includes two-compressor and four-compressor versions, both with two independent refrigerant circuits.

Control



W3000SE Large

The W3000SE Large controller offers advanced functions and algorithms.
The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.
The regulation operates on both water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. This allows to satisfy simultaneously the different requests of both cooling and heating, with no need of mode setting.
The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.
For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.
Compatibility with the remote keyboard managing up to 10 units.
The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

B Basic
LN Low noise
SL Super-low noise version

Features

UNIQUE PROPOSAL
Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

CUTTING-EDGE ELECTRONICS
The Energy Raiser units are fitted with an evolved electronic unit that allows fully automatic management of the best type of operation to meet the load requirements

VENTILATION CONTROL FOR LOW-TEMPERATURE OPERATION
The standard units come fitted with pressure-operated control of ventilation, which allows the unit to produce cold water with an external air temperature down to -10°C

INTEGRATED HYDRONIC GROUP
The built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line pump, for achieving both low or high head, available for both plant and recovery circuits (up to 4 pumps).

Accessories

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)
- Soft starters
- Rubber anti-vibration mounting kit

NRCS-Q-Z / B			0604	0704	0804	0904	1004	1104	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	149,9	166,2	188,8	211,0	240,0	277,0	310,8
Total power input	(1)	kW	58,92	68,96	75,78	85,23	95,63	107,4	120,5
EER	(1)	kW/kW	2,545	2,409	2,491	2,477	2,510	2,579	2,579
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	149,2	165,5	188,0	210,1	239,0	275,9	309,6
EER	(1)(2)	kW/kW	2,500	2,370	2,450	2,440	2,470	2,540	2,540
COOLING ONLY									
16°C/10°C									
Cooling capacity	(5)	kW	162,3	180,4	205,6	229,0	260,1	300,5	337,1
Total power input	(5)	kW	60,32	70,95	78,13	87,66	97,93	110,2	123,8
EER	(5)	kW/kW	2,692	2,541	2,633	2,611	2,657	2,727	2,723
23°C/15°C									
Cooling capacity	(6)	kW	182,7	204,0	233,8	258,8	293,0	339,1	380,5
Total power input	(6)	kW	62,35	74,00	81,82	91,30	101,2	114,3	128,8
EER	(6)	kW/kW	2,928	2,757	2,858	2,835	2,895	2,967	2,954
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(7)	kW	167,3	185,4	209,3	234,2	266,5	306,3	343,9
Total power input	(7)	kW	58,03	64,93	72,14	79,79	91,97	104,1	116,3
COP	(7)	kW/kW	2,884	2,857	2,903	2,935	2,897	2,942	2,957
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(7)	kW	168,2	186,4	210,4	235,4	268,0	307,9	345,7
COP	(2)(7)	kW/kW	2,860	2,830	2,870	2,910	2,870	2,910	2,930
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(8)	kW	151,0	172,7	194,1	219,9	246,0	280,5	316,6
Total power input	(8)	kW	49,79	57,06	64,48	72,13	79,79	92,81	104,6
Recovery heat exchanger capacity	(8)	kW	197,8	226,3	254,7	287,7	321,0	367,7	415,0
TER	(8)	kW/kW	7,004	6,988	6,958	7,039	7,104	6,985	6,994
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Process refrigeration at high temperature									
Prated,c	(9)	kW	-	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(11)	kW	127	143	157	172	205	231	255
SCOP	(11)(12)		3,25	3,24	3,34	3,20	3,21	3,27	3,25
Performance ηs	(11)(13)	%	127	127	131	125	125	128	127
Seasonal efficiency class	(11)		-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	7,166	7,949	9,028	10,09	11,48	13,25	14,86
Pressure drop	(1)	kPa	41,9	43,0	43,7	42,8	44,4	47,3	47,2
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(7)	l/s	8,074	8,950	10,10	11,30	12,86	14,79	16,60
Pressure drop	(7)	kPa	56,9	59,2	61,4	61,9	66,5	65,7	67,5
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	42,6	42,7	60,2	63,7	67,2	80,5	108
NOISE LEVEL									
Sound Pressure	(14)	dB(A)	60	60	60	61	62	63	63
Sound power level in cooling	(15)(16)	dB(A)	92	92	92	93	94	95	95
Sound power level in heating	(15)(17)	dB(A)	92	92	92	93	94	95	95
SIZE AND WEIGHT									
A	(18)	mm	3110	3110	3110	4110	4110	4110	4110
B	(18)	mm	2220	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2150	2150	2150	2150	2150	2150
Operating weight	(18)	kg	1600	1840	2120	2320	2480	2680	2860

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NRCS-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

0604 - 1204 142,0-310,8 kW

NRCS-Q-Z / LN			0604	0704	0804	0904	1004	1104	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	143,1	157,1	177,2	199,1	227,3	260,7	290,7
Total power input	(1)	kW	58,82	70,21	78,43	87,81	96,52	110,2	125,3
EER	(1)	kW/kW	2,434	2,238	2,260	2,268	2,355	2,366	2,320
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	142,5	156,4	176,5	198,3	226,4	259,7	289,6
EER	(1)(2)	kW/kW	2,400	2,210	2,230	2,240	2,320	2,340	2,290
COOLING ONLY									
16°C/10°C									
Cooling capacity	(5)	kW	154,5						
Total power input	(5)	kW	60,45						
EER	(5)	kW/kW	2,558						
23°C/15°C									
Cooling capacity	(6)	kW							
Total power input	(6)	kW							
EER	(6)	kW/kW							
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(7)	kW	159,5	176,0	198,0	225,4	253,5	290,2	323,9
Total power input	(7)	kW	54,01	60,78	67,86	75,69	85,84	97,89	110,1
COP	(7)	kW/kW	2,954	2,895	2,916	2,978	2,955	2,964	2,942
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(7)	kW	160,3	176,9	199,0	226,5	254,8	291,6	325,5
COP	(2)(7)	kW/kW	2,920	2,870	2,890	2,950	2,930	2,940	2,910
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(8)	kW	151,0	172,7	194,1	219,9	246,0	280,5	316,6
Total power input	(8)	kW	49,79	57,06	64,48	72,13	79,79	92,81	104,6
Recovery heat exchanger capacity	(8)	kW	197,8	226,3	254,7	287,7	321,0	367,7	415,0
TER	(8)	kW/kW	7,004	6,988	6,958	7,039	7,104	6,985	6,994
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Process refrigeration at high temperature									
Prated,c	(9)	kW	-	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(11)	kW	117	128	154	144	186	229	255
SCOP	(11)(12)		3,33	3,34	3,41	3,37	3,34	3,48	3,49
Performance ηs	(11)(13)	%	130	131	134	132	130	136	136
Seasonal efficiency class	(11)		-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	6,842	7,513	8,472	9,522	10,87	12,47	13,90
Pressure drop	(1)	kPa	38,2	38,4	38,5	38,1	39,8	41,9	41,3
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(7)	l/s	7,700	8,498	9,556	10,88	12,24	14,01	15,63
Pressure drop	(7)	kPa	51,8	53,3	54,9	57,4	60,2	59,0	59,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	42,6	42,7	60,2	63,7	67,2	80,5	108
NOISE LEVEL									
Sound Pressure	(14)	dB(A)	54	54	54	55	56	57	57
Sound power level in cooling	(15)(16)	dB(A)	86	86	86	87	88	89	89
Sound power level in heating	(15)(17)	dB(A)	87	87	87	88	89	90	90
SIZE AND WEIGHT									
A	(18)	mm	3110	3110	3110	4110	4110	4110	4110
B	(18)	mm	2220	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2150	2150	2150	2150	2150	2150
Operating weight	(18)	kg	1600	1840	2120	2320	2480	2680	2860

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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NRCS-Q-Z / SL			0604	0704	0804	0904	1004	1104	1204
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	142,0	159,7	183,4	200,8	225,3	260,7	293,9
Total power input	(1)	kW	58,03	67,45	75,42	87,31	95,50	108,2	123,4
EER	(1)	kW/kW	2,448	2,369	2,432	2,300	2,359	2,409	2,382
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	141,4	159,0	182,6	200,0	224,4	259,7	292,8
EER	(1)(2)	kW/kW	2,410	2,330	2,400	2,270	2,330	2,380	2,350
COOLING ONLY									
16°C/10°C									
Cooling capacity	(5)	kW	159,7	180,9	199,6	227,0	255,1	295,8	332,5
Total power input	(5)	kW	57,98	67,13	78,04	87,41	94,75	106,9	122,9
EER	(5)	kW/kW	2,753	2,696	2,559	2,597	2,694	2,767	2,705
23°C/15°C									
Cooling capacity	(6)	kW	179,4	204,5	235,3	256,4	286,8	333,2	374,8
Total power input	(6)	kW	60,13	70,14	79,82	91,15	98,16	111,3	128,3
EER	(6)	kW/kW	2,985	2,917	2,949	2,814	2,921	2,994	2,921
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(7)	kW	159,0	178,0	205,2	226,3	252,9	294,5	329,9
Total power input	(7)	kW	52,62	59,54	68,66	76,10	83,76	96,06	110,0
COP	(7)	kW/kW	3,023	2,992	2,987	2,974	3,018	3,065	2,999
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(7)	kW	159,8	178,9	206,3	227,4	254,2	296,0	331,6
COP	(2)(7)	kW/kW	2,990	2,960	2,960	2,940	2,990	3,030	2,970
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(8)	kW	151,0	172,7	194,1	219,9	246,0	280,5	316,6
Total power input	(8)	kW	49,79	57,06	64,48	72,13	79,79	92,81	104,6
Recovery heat exchanger capacity	(8)	kW	197,8	226,3	254,7	287,7	321,0	367,7	415,0
TER	(8)	kW/kW	7,004	6,988	6,958	7,039	7,104	6,985	6,994
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Process refrigeration at high temperature									
Prated,c	(9)	kW	-	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(11)	kW	125	141	137	149	200	229	257
SCOP	(11)(12)		3,72	3,76	3,48	3,50	3,72	3,84	3,71
Performance ηs	(11)(13)	%	146	148	136	137	146	151	145
Seasonal efficiency class	(11)		-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	6,790	7,638	8,768	9,600	10,77	12,47	14,05
Pressure drop	(1)	kPa	37,6	39,7	41,3	38,7	39,1	41,9	42,2
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(7)	l/s	7,675	8,591	9,906	10,93	12,21	14,22	15,93
Pressure drop	(7)	kPa	51,5	54,5	59,0	57,9	59,9	60,8	62,1
REFRIGERANT CIRCUIT									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	55,0	70,1	70,2	70,3	82,0	110	110
NOISE LEVEL									
Sound Pressure	(14)	dB(A)	50	50	51	51	51	53	54
Sound power level in cooling	(15)(16)	dB(A)	82	82	83	83	83	85	86
Sound power level in heating	(15)(17)	dB(A)	83	83	84	84	84	86	87
SIZE AND WEIGHT									
A	(18)	mm	3110	3110	4110	4110	4110	5110	5110
B	(18)	mm	2220	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2150	2150	2150	2150	2150	2150
Operating weight	(18)	kg	1700	1960	2350	2420	2590	2950	3100

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

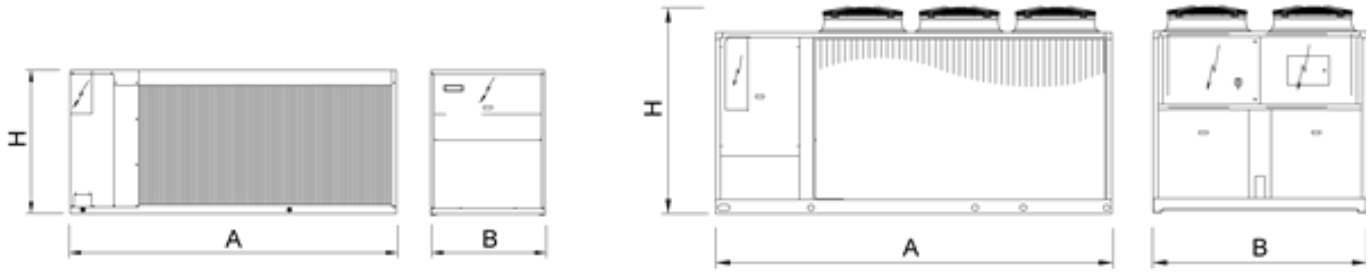
The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

NRCS-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

0604 - 1204 142,0-310,8 kW

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

NRCS-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1314 - 2818 332,0-756,7 kW



Multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent hydronic circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler. This unit is equipped with hermetic rotary Scroll compressors, with R410A, axial fans, shell and tube heat exchangers and electronic expansion valve. The range is composed by units equipped with four, six and eight compressors in multi-circuit configuration.

Control



W3000SE Large

The W3000SE Large controller offers advanced functions and algorithms.

The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.

The regulation operates on both water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. This allows to satisfy simultaneously the different requests of both cooling and heating, with no need of mode setting.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.

Compatibility with the remote keyboard managing up to 10 units.

The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

B	Basic	SL-CA	Super Low noise version, Class A of efficiency
CA	Class A of efficiency		

Features

REFRIGERANT GAS R410A

The use of R410A allowed to achive better energy efficiencies with environment full respect (ODP = 0)

UNIQUE PROPOSAL

Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

CLASS A EFFICIENCY

The full range is also available with the Class A efficiency rating (in heating). CA and SL-CA versions guarantee premium levels of efficiency thanks to the generous sizing of the refrigerant-exchange surface areas and to an accurate control of the fans, available on both standard and low-noise versions.

INTEGRATED HYDRONIC GROUP

The built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line pump, for achieving low or high head, available for both hot and cold water distribution systems (up to 4 pumps).

Accessories

- Remote control keyboard (distance to 200m and to 500m)
- Soft starters
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- LT kit for extending the operating limits in heat pump mode down to -10 °C (/SL-CA versions) and -12 °C (/CA versions)

NRCS-Q-Z / B			1314	1414	1614	1716	1816	2016	2116	2618	2818
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	352,6	377,5	411,8	451,8	496,3	546,1	567,4	704,4	756,7
Total power input	(1)	kW	125,3	130,8	150,0	163,1	176,2	188,7	196,3	250,4	261,8
EER	(1)	kW/kW	2,814	2,886	2,745	2,770	2,817	2,894	2,890	2,813	2,890
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	351,1	376,0	410,0	450,4	494,5	544,3	565,4	701,6	754,3
EER	(1)(2)	kW/kW	2,770	2,840	2,700	2,740	2,780	2,860	2,850	2,770	2,860
COOLING ONLY											
16°C/10°C											
Cooling capacity	(5)	kW	381,9	408,8	444,6	489,3	538,2	591,8	614,5	763,0	819,4
Total power input	(5)	kW	128,7	134,3	154,3	167,7	181,1	193,8	201,6	257,4	268,8
EER	(5)	kW/kW	2,967	3,044	2,881	2,918	2,972	3,054	3,048	2,964	3,048
23°C/15°C											
Cooling capacity	(6)	kW	430,1	460,2	498,2	550,8	607,2	667,0	691,8	859,2	922,6
Total power input	(6)	kW	134,1	139,6	160,8	174,7	188,6	201,5	209,6	268,0	279,4
EER	(6)	kW/kW	3,207	3,297	3,098	3,153	3,220	3,310	3,301	3,206	3,302
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(7)	kW	380,4	408,1	446,6	484,7	527,5	586,7	612,3	760,6	816,5
Total power input	(7)	kW	121,4	128,5	141,5	155,8	169,1	185,5	192,3	243,0	256,4
COP	(7)	kW/kW	3,133	3,176	3,156	3,111	3,119	3,163	3,184	3,130	3,184
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(2)(7)	kW	382,3	409,9	448,9	486,4	529,7	589,0	614,8	764,1	819,5
COP	(2)(7)	kW/kW	3,100	3,150	3,120	3,090	3,090	3,140	3,160	3,100	3,160
COOLING WITH TOTAL HEAT RECOVERY											
Cooling capacity	(8)	kW	354,6	378,8	423,4	459,6	499,8	546,9	568,5	711,0	757,8
Total power input	(8)	kW	107,3	112,8	126,4	139,1	149,5	162,6	169,7	213,2	226,5
Recovery heat exchanger capacity	(8)	kW	455,4	484,8	542,2	590,3	640,3	699,7	728,0	911,5	970,7
TER	(8)	kW/kW	7,549	7,657	7,639	7,549	7,625	7,669	7,643	7,613	7,629
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Process refrigeration at high temperature											
Prated,c	(9)	kW	-	-	-	-	-	544,3	565,4	701,6	754,3
SEPR	(9)(10)		-	-	-	-	-	5,08	5,00	5,00	5,04
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesign	(11)	kW	280	318	367	383	396	-	-	-	-
SCOP	(11)(12)		3,57	3,66	3,54	3,70	3,60	-	-	-	-
Performance ηs	(11)(13)	%	140	143	139	145	141	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	16,86	18,05	19,69	21,61	23,73	26,11	27,13	33,68	36,18
Pressure drop	(1)	kPa	53,4	46,9	55,8	38,1	46,0	42,4	45,8	54,4	42,4
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(7)	l/s	18,36	19,70	21,56	23,40	25,46	28,32	29,56	36,72	39,41
Pressure drop	(7)	kPa	63,4	55,8	66,9	44,7	52,9	49,9	54,3	64,6	50,3
REFRIGERANT CIRCUIT											
Compressors nr.		N°	4	4	4	6	6	6	6	8	8
No. Circuits		N°	2	2	2	3	3	3	3	4	4
Refrigerant charge		kg	86,0	104	104	108	120	138	139	172	185
NOISE LEVEL											
Sound Pressure	(14)	dB(A)	64	64	64	64	65	65	65	65	66
Sound power level in cooling	(15)(16)	dB(A)	96	96	96	96	97	97	97	98	99
Sound power level in heating	(15)(17)	dB(A)	96	96	96	96	97	0	0	0	0
SIZE AND WEIGHT											
A	(18)	mm	3905	3905	3905	4515	5690	5690	5690	7430	7430
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450
Operating weight	(18)	kg	3530	3620	3650	4850	5240	5370	5430	6830	7000

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NRCS-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1314 - 2818 332,0-756,7 kW

NRCS-Q-Z / CA			1314	1414	1614	1716	1816	2016
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	362,2	386,7	424,9	471,4	524,0	559,1
Total power input	(1)	kW	122,2	127,8	144,6	156,8	172,6	184,7
EER	(1)	kW/kW	2,964	3,026	2,938	3,006	3,036	3,027
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	360,6	385,1	422,9	469,8	521,9	557,2
EER	(1)(2)	kW/kW	2,910	2,980	2,880	2,970	2,990	2,990
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	393,7	420,0	460,3	512,8	570,2	607,8
Total power input	(5)	kW	125,0	130,5	147,9	160,5	176,6	188,8
EER	(5)	kW/kW	3,150	3,218	3,112	3,195	3,229	3,219
23°C/15°C								
Cooling capacity	(6)	kW	446,0	475,3	518,8	581,8	647,0	688,7
Total power input	(6)	kW	129,2	134,5	152,6	165,8	182,6	194,7
EER	(6)	kW/kW	3,452	3,534	3,400	3,509	3,543	3,537
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	394,1	419,8	462,0	507,2	546,4	603,2
Total power input	(7)	kW	119,5	126,7	139,8	154,8	166,2	182,6
COP	(7)	kW/kW	3,298	3,313	3,305	3,276	3,288	3,303
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	396,2	421,8	464,5	509,2	548,8	605,6
COP	(2)(7)	kW/kW	3,260	3,280	3,260	3,250	3,260	3,270
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	354,6	378,8	423,4	459,6	499,8	546,9
Total power input	(8)	kW	107,3	112,8	126,4	139,1	149,5	162,6
Recovery heat exchanger capacity	(8)	kW	455,4	484,8	542,2	590,3	640,3	699,7
TER	(8)	kW/kW	7,549	7,657	7,639	7,549	7,625	7,669
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	557,2
SEPR	(9)(10)		-	-	-	-	-	5,04
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	283	317	363	376	390	-
SCOP	(11)(12)		3,75	3,86	3,73	3,86	3,77	-
Performance ηs	(11)(13)	%	147	151	146	152	148	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	17,32	18,49	20,32	22,54	25,06	26,74
Pressure drop	(1)	kPa	56,4	49,2	59,4	41,5	51,3	44,5
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	19,02	20,27	22,30	24,48	26,38	29,12
Pressure drop	(7)	kPa	68,0	59,1	71,5	48,9	56,8	52,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	4	4	4	6	6	6
No. Circuits		N°	2	2	2	3	3	3
Refrigerant charge		kg	111	112	119	142	142	152
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	65	65	65	64	65	65
Sound power level in cooling	(15)(16)	dB(A)	97	97	97	97	98	98
Sound power level in heating	(15)(17)	dB(A)	97	97	97	97	98	0
SIZE AND WEIGHT								
A	(18)	mm	5080	5080	5080	6255	7430	7430
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2450	2450	2450	2450	2450	2450
Operating weight	(18)	kg	3850	3950	3980	5460	5740	5890

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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NRCS-Q-Z / SL-CA			1314	1414	1614	1716	1816
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	332,0	356,5	397,7	428,7	461,8
Total power input	(1)	kW	129,9	136,8	153,0	168,8	183,2
EER	(1)	kW/kW	2,556	2,606	2,599	2,540	2,521
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	330,7	355,2	396,0	427,5	460,3
EER	(1)(2)	kW/kW	2,520	2,570	2,560	2,510	2,490
COOLING ONLY							
16°C/10°C							
Cooling capacity	(5)	kW	358,3	384,7	428,6	462,6	498,4
Total power input	(5)	kW	134,2	141,1	158,0	174,1	189,3
EER	(5)	kW/kW	2,670	2,726	2,713	2,657	2,633
23°C/15°C							
Cooling capacity	(6)	kW	425,4	455,2	508,9	549,0	596,9
Total power input	(6)	kW	132,4	139,2	153,8	172,2	185,4
EER	(6)	kW/kW	3,213	3,270	3,309	3,188	3,220
HEATING ONLY (GROSS VALUE)							
Total heating capacity	(7)	kW	377,6	400,3	453,0	486,1	525,7
Total power input	(7)	kW	116,2	124,1	137,8	150,9	162,9
COP	(7)	kW/kW	3,250	3,226	3,287	3,221	3,227
HEATING ONLY (EN14511 VALUE)							
Total heating capacity	(2)(7)	kW	379,5	402,0	455,4	487,9	527,8
COP	(2)(7)	kW/kW	3,210	3,190	3,250	3,200	3,200
COOLING WITH TOTAL HEAT RECOVERY							
Cooling capacity	(8)	kW	354,6	378,8	423,4	459,6	499,8
Total power input	(8)	kW	107,3	112,8	126,4	139,1	149,5
Recovery heat exchanger capacity	(8)	kW	455,4	484,8	542,2	590,3	640,3
TER	(8)	kW/kW	7,549	7,657	7,639	7,549	7,625
ENERGY EFFICIENCY							
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)							
Process refrigeration at high temperature							
Prated,c	(9)	kW	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)							
PDesign	(11)	kW	225	260	359	288	399
SCOP	(11)(12)		3,65	3,69	3,77	3,67	3,90
Performance ηs	(11)(13)	%	143	145	148	144	153
Seasonal efficiency class	(11)		-	-	-	-	-
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	15,88	17,05	19,02	20,50	22,08
Pressure drop	(1)	kPa	47,4	41,8	52,0	34,3	39,8
HEAT EXCHANGER USER SIDE IN HEATING							
Water flow	(7)	l/s	18,23	19,32	21,87	23,47	25,37
Pressure drop	(7)	kPa	62,4	53,7	68,8	45,0	52,6
REFRIGERANT CIRCUIT							
Compressors nr.		N°	4	4	4	6	6
No. Circuits		N°	2	2	2	3	3
Refrigerant charge		kg	97,0	103	119	126	142
NOISE LEVEL							
Sound Pressure	(14)	dB(A)	56	56	56	57	57
Sound power level in cooling	(15)(16)	dB(A)	88	88	88	89	89
Sound power level in heating	(15)(17)	dB(A)	89	89	89	90	90
SIZE AND WEIGHT							
A	(18)	mm	4515	5080	5080	5690	5690
B	(18)	mm	2260	2260	2260	2260	2260
H	(18)	mm	2450	2450	2450	2450	2450
Operating weight	(18)	kg	3760	3900	4050	5350	5490

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NRCS-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1314 - 2818 332,0-756,7 kW

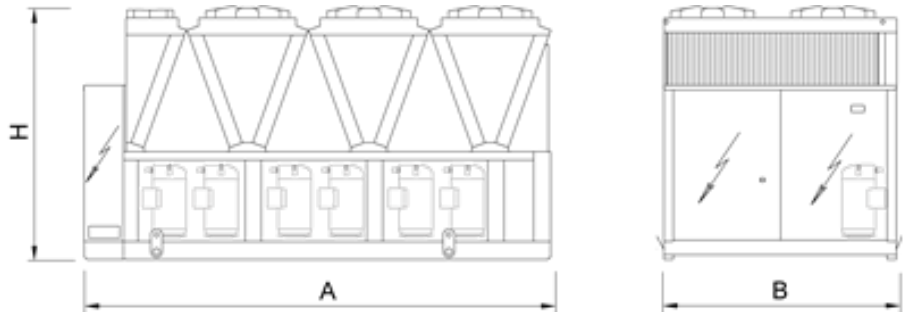
NRCS-Q-Z / SL-CA			2016	2116	2418	2618	2818
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	512,2	535,8	616,3	663,3	714,5
Total power input	(1)	kW	197,7	205,3	244,4	259,8	273,8
EER	(1)	kW/kW	2,591	2,610	2,522	2,553	2,610
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	510,6	534,1	614,3	660,9	712,4
EER	(1)(2)	kW/kW	2,560	2,580	2,490	2,520	2,580
COOLING ONLY							
16°C/10°C							
Cooling capacity	(5)	kW	552,9	578,2	665,2	715,8	771,1
Total power input	(5)	kW	204,0	211,9	252,4	268,2	282,5
EER	(5)	kW/kW	2,710	2,729	2,635	2,669	2,730
23°C/15°C							
Cooling capacity	(6)	kW	653,9	684,4	796,8	849,7	912,7
Total power input	(6)	kW	201,9	209,0	247,3	264,6	278,7
EER	(6)	kW/kW	3,239	3,275	3,222	3,211	3,275
HEATING ONLY (GROSS VALUE)							
Total heating capacity	(7)	kW	578,3	600,5	701,0	755,0	800,7
Total power input	(7)	kW	178,2	185,8	217,0	232,8	247,7
COP	(7)	kW/kW	3,245	3,232	3,230	3,243	3,233
HEATING ONLY (EN14511 VALUE)							
Total heating capacity	(2)(7)	kW	580,5	602,9	703,8	758,5	803,6
COP	(2)(7)	kW/kW	3,220	3,200	3,200	3,210	3,210
COOLING WITH TOTAL HEAT RECOVERY							
Cooling capacity	(8)	kW	546,9	568,5	666,7	711,0	757,8
Total power input	(8)	kW	162,6	169,7	199,6	213,2	226,5
Recovery heat exchanger capacity	(8)	kW	699,7	728,0	854,3	911,5	970,7
TER	(8)	kW/kW	7,669	7,643	7,620	7,613	7,629
ENERGY EFFICIENCY							
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)							
Process refrigeration at high temperature							
Prated,c	(9)	kW	-	-	614,3	660,9	712,4
SEPR	(9)(10)		-	-	5,11	5,11	5,08
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)							
PDesign	(11)	kW	360	388	-	-	-
SCOP	(11)(12)		3,73	3,70	-	-	-
Performance ηs	(11)(13)	%	146	145	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	24,49	25,62	29,47	31,72	34,17
Pressure drop	(1)	kPa	37,3	40,8	41,7	48,3	37,8
HEAT EXCHANGER USER SIDE IN HEATING							
Water flow	(7)	l/s	27,91	28,99	33,84	36,44	38,65
Pressure drop	(7)	kPa	48,5	52,3	54,9	63,7	48,4
REFRIGERANT CIRCUIT							
Compressors nr.		N°	6	6	8	8	8
No. Circuits		N°	3	3	4	4	4
Refrigerant charge		kg	142	142	185	185	185
NOISE LEVEL							
Sound Pressure	(14)	dB(A)	57	57	58	58	59
Sound power level in cooling	(15)(16)	dB(A)	90	90	91	91	92
Sound power level in heating	(15)(17)	dB(A)	91	91	0	0	0
SIZE AND WEIGHT							
A	(18)	mm	6865	7430	7430	8605	9780
B	(18)	mm	2260	2260	2260	2260	2260
H	(18)	mm	2450	2450	2450	2450	2450
Operating weight	(18)	kg	5780	5890	7020	7330	7600

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

ERRCS2-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW



Multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent hydronic circuits.
These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler.
Each circuit works with a semi-hermetic screw compressor using R134a, two shell and tubes heat exchangers shared by both circuits, a cold heat exchanger on plant's side that acts as an evaporator in the production of cold water, a heat exchanger on plant's side that works as a condenser in the production of hot water, and a source side coil heat exchanger that works as either condenser or evaporator as required by the loads.

Control



W3000SE Large
The controller W3000 large offers the latest control and functions specially developed for these units.
The keypad is generously sized with full operating status display. The controls and detailed LCD make access to machine settings easy and safe. These resources permit to diirectly act on the unit settings through a multilevel menu, available in several languages.
The diagnostics includes full management of alarms with black-box functions and alarm record for better analysis of unit performance.
For multi-units plants a special device to coordinate and manage all the resources is available as an option; energy metering device is even possible as an option. Supervision is easy through Climaveneta devices or with various options for interfacing to ModBus, Bacnet, Echelon LonTalk protocols.
Compatibility with remote keyboard (management up to 10 units). Clock available with programming of operation (standard 4 days and 10 time bands).
Temperature regulation managed on the two water circuits, with a proportional logic referred to the return water temperatures. This allows to satisfy simultaneously the different heating- and cooling requests, with no need of mode changeover.
Exclusive self-adaptive defrost logic, monitoring multiple operational- and ambient parameters, which allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R134a

Versions

CA	Class A of efficiency
LN-CA	Low Noise, Class A of efficiency
SL-CA	Super Low noise version, Class A of efficiency
XL-CA	eXtra Low noise version, Class A of efficiency
XL-CA-E	eXtra Low noise, Class A enhanced

Features

UNIQUE PROPOSAL
Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING
Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

WIDE OPERATING RANGE
Unit´s operation guaranteed with external air temperature down to -10 °C during winter and up to 46 °C during summer.

VERSION ´XL-CA-E´ AVAILABLE
Exclusive Premium version. Together for the first time, the lowest noise level on the market and the maximum efficiency in each operating mode.

HOT WATER SUPPLY
Supply of hot water in use up to 60°C, offering maximum versatility with respect to different plant engineering solutions

Accessories

- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Electronic expansion valve
- Set-up for remote connectivity with ModBus/Echelon protocol cards

ERRCS2-Q-Z / CA			1062	1162	1362	1562	1762	1962
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	210,0	248,3	302,3	329,4	380,3	425,2
Total power input	(1)	kW	72,08	84,81	101,5	109,3	129,1	144,1
EER	(1)	kW/kW	2,913	2,928	2,978	3,014	2,946	2,951
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	209,3	247,4	301,3	328,2	379,0	424,2
EER	(1)(2)	kW/kW	2,870	2,890	2,940	2,970	2,910	2,920
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	229,0	270,7	329,6	358,7	414,4	463,4
Total power input	(5)	kW	74,06	87,42	104,4	112,3	132,7	148,7
EER	(5)	kW/kW	3,090	3,097	3,157	3,194	3,123	3,116
23°C/15°C								
Cooling capacity	(6)	kW	260,7	307,8	374,9	407,5	471,0	527,0
Total power input	(6)	kW	77,07	91,44	108,7	116,9	138,2	155,9
EER	(6)	kW/kW	3,381	3,368	3,449	3,486	3,408	3,380
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	217,7	258,4	308,5	339,2	395,6	433,9
Total power input	(7)	kW	66,97	80,69	92,16	101,3	121,6	130,5
COP	(7)	kW/kW	3,249	3,202	3,346	3,348	3,253	3,325
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	218,4	259,4	309,6	340,5	397,1	435,0
COP	(2)(7)	kW/kW	3,230	3,170	3,320	3,320	3,230	3,310
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	427,5
Total power input	(8)	kW	60,58	72,21	87,07	92,53	111,2	121,7
Recovery heat exchanger capacity	(8)	kW	265,6	316,0	386,4	416,4	486,0	542,0
TER	(8)	kW/kW	7,825	7,812	7,933	8,063	7,800	7,966
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	155	210	219	241	282	311
SCOP	(11)(12)		3,41	3,21	3,45	3,53	3,40	3,54
Performance ηs	(11)(13)	%	133	125	135	138	133	139
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	10,04	11,88	14,46	15,75	18,19	20,33
Pressure drop	(1)	kPa	28,8	40,2	36,6	43,4	40,3	27,9
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	10,51	12,47	14,89	16,37	19,10	20,95
Pressure drop	(7)	kPa	31,5	44,3	38,8	46,9	44,4	29,6
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	94,0	112	135	160	166	172
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	65	65	65	66	66	66
Sound power level in cooling	(15)(16)	dB(A)	97	97	97	98	99	99
Sound power level in heating	(15)(17)	dB(A)	97	97	97	98	99	99
SIZE AND WEIGHT								
A	(18)	mm	4610	4610	5610	5610	6610	6610
B	(18)	mm	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2420	2430	2430	2430	2430
Operating weight	(18)	kg	3600	3870	4620	5040	5520	5670

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

ERRCS2-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

ERRCS2-Q-Z / CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	482,7	525,0	553,8	624,1	701,4	825,6
Total power input	(1)	kW	155,7	167,2	175,5	201,1	222,4	264,0
EER	(1)	kW/kW	3,100	3,140	3,156	3,103	3,154	3,127
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	481,6	523,7	552,3	622,9	699,7	823,6
EER	(1)(2)	kW/kW	3,070	3,110	3,120	3,080	3,120	3,100
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	526,3	572,5	603,2	681,1	764,2	899,8
Total power input	(5)	kW	160,0	171,1	179,4	207,6	228,7	273,5
EER	(5)	kW/kW	3,289	3,346	3,362	3,281	3,341	3,290
23°C/15°C								
Cooling capacity	(6)	kW	598,6	651,5	685,3	776,5	868,8	1023
Total power input	(6)	kW	166,2	176,6	184,7	217,5	238,1	289,0
EER	(6)	kW/kW	3,602	3,689	3,710	3,570	3,649	3,540
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	492,0	541,4	570,7	614,7	711,4	825,6
Total power input	(7)	kW	148,7	159,0	168,6	177,8	207,2	240,0
COP	(7)	kW/kW	3,309	3,405	3,385	3,457	3,433	3,440
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	493,2	542,8	572,3	615,9	713,2	827,6
COP	(2)(7)	kW/kW	3,290	3,380	3,360	3,440	3,410	3,420
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	133,7	144,8	153,3	170,4	193,4	228,4
Recovery heat exchanger capacity	(8)	kW	609,2	657,7	694,5	791,4	882,9	1041
TER	(8)	kW/kW	8,175	8,142	8,121	8,351	8,190	8,174
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	699,7	823,6
SEPR	(9)(10)		-	-	-	-	5,02	5,12
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	359	387	353	398	-	-
SCOP	(11)(12)		3,48	3,60	3,60	3,61	-	-
Performance ηs	(11)(13)	%	136	141	141	141	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	23,09	25,11	26,49	29,84	33,54	39,48
Pressure drop	(1)	kPa	26,7	29,0	32,3	23,1	30,5	30,9
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,75	26,13	27,55	29,67	34,34	39,85
Pressure drop	(7)	kPa	28,2	31,4	34,9	22,8	31,9	31,5
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	190	210	240	253	280	330
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	66	68	68	68	68	69
Sound power level in cooling	(15)(16)	dB(A)	99	101	101	101	101	102
Sound power level in heating	(15)(17)	dB(A)	99	101	101	101	101	102
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7580	8060	8160	8600	9160	11380

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-Z / LN-CA			1062	1162	1362	1562	1762	1962
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	204,9	241,0	293,8	321,8	369,3	413,6
Total power input	(1)	kW	70,79	84,58	102,9	108,8	130,3	144,0
EER	(1)	kW/kW	2,894	2,849	2,855	2,958	2,834	2,872
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	204,3	240,1	292,9	320,6	368,1	412,6
EER	(1)(2)	kW/kW	2,860	2,810	2,820	2,910	2,800	2,850
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	223,0	262,1	319,7	349,8	401,7	449,7
Total power input	(5)	kW	73,03	87,64	106,4	112,3	134,7	149,2
EER	(5)	kW/kW	3,055	2,992	3,005	3,115	2,982	3,014
23°C/15°C								
Cooling capacity	(6)	kW	252,9	297,0	362,4	396,0	455,0	509,4
Total power input	(6)	kW	76,42	92,45	111,7	117,5	141,4	157,6
EER	(6)	kW/kW	3,310	3,211	3,244	3,370	3,218	3,232
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	217,7	258,4	308,5	339,2	395,6	433,9
Total power input	(7)	kW	66,97	80,69	92,16	101,3	121,6	130,5
COP	(7)	kW/kW	3,249	3,202	3,346	3,348	3,253	3,325
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	218,4	259,4	309,6	340,5	397,1	435,0
COP	(2)(7)	kW/kW	3,230	3,170	3,320	3,320	3,230	3,310
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	427,5
Total power input	(8)	kW	60,58	72,21	87,07	92,53	111,2	121,7
Recovery heat exchanger capacity	(8)	kW	265,6	316,0	386,4	416,4	486,0	542,0
TER	(8)	kW/kW	7,825	7,812	7,933	8,063	7,800	7,966
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	155	210	219	241	282	311
SCOP	(11)(12)		3,41	3,21	3,45	3,53	3,40	3,54
Performance ηs	(11)(13)	%	133	125	135	138	133	139
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	9,797	11,52	14,05	15,39	17,66	19,78
Pressure drop	(1)	kPa	27,4	37,9	34,5	41,4	38,0	26,4
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	10,51	12,47	14,89	16,37	19,10	20,95
Pressure drop	(7)	kPa	31,5	44,3	38,8	46,9	44,4	29,6
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	88,0	112	136	160	171	192
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	58	59	59	60	59	59
Sound power level in cooling	(15)(16)	dB(A)	90	91	91	92	92	92
Sound power level in heating	(15)(17)	dB(A)	91	92	92	93	93	93
SIZE AND WEIGHT								
A	(18)	mm	4610	4610	5610	5610	6610	6610
B	(18)	mm	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2420	2430	2430	2430	2430
Operating weight	(18)	kg	3600	3870	4620	5040	5520	5670

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

ERRCS2-Q-Z / LN-CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	468,7	513,4	541,3	603,9	683,8	799,5
Total power input	(1)	kW	162,7	167,6	177,4	206,1	225,4	274,4
EER	(1)	kW/kW	2,881	3,063	3,051	2,930	3,034	2,914
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	467,7	512,2	539,9	602,8	682,2	797,7
EER	(1)(2)	kW/kW	2,860	3,030	3,020	2,910	3,010	2,890
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	510,0	559,0	588,6	657,8	743,4	869,1
Total power input	(5)	kW	168,1	172,4	182,2	213,5	233,1	287,1
EER	(5)	kW/kW	3,034	3,242	3,231	3,081	3,189	3,027
23°C/15°C								
Cooling capacity	(6)	kW	578,0	634,4	666,8	747,4	842,1	983,7
Total power input	(6)	kW	176,2	179,3	189,2	224,4	245,0	308,5
EER	(6)	kW/kW	3,280	3,538	3,524	3,331	3,437	3,189
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	492,0	541,4	570,7	614,7	711,4	825,6
Total power input	(7)	kW	148,7	159,0	168,6	177,8	207,2	240,0
COP	(7)	kW/kW	3,309	3,405	3,385	3,457	3,433	3,440
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	493,2	542,8	572,3	615,9	713,2	827,6
COP	(2)(7)	kW/kW	3,290	3,380	3,360	3,440	3,410	3,420
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	133,7	144,8	153,3	170,4	193,4	228,4
Recovery heat exchanger capacity	(8)	kW	609,2	657,7	694,5	791,4	882,9	1041
TER	(8)	kW/kW	8,175	8,142	8,121	8,351	8,190	8,174
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	682,2	797,7
SEPR	(9)(10)		-	-	-	-	5,18	5,23
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	359	387	353	398	-	-
SCOP	(11)(12)		3,48	3,60	3,60	3,61	-	-
Performance ηs	(11)(13)	%	136	141	141	141	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	22,42	24,55	25,89	28,88	32,70	38,23
Pressure drop	(1)	kPa	25,1	27,7	30,8	21,6	29,0	29,0
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,75	26,13	27,55	29,67	34,34	39,85
Pressure drop	(7)	kPa	28,2	31,4	34,9	22,8	31,9	31,5
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	200	205	240	250	280	320
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	60	62	62	62	62	63
Sound power level in cooling	(15)(16)	dB(A)	93	95	95	95	95	96
Sound power level in heating	(15)(17)	dB(A)	94	96	96	96	96	97
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7580	8060	8160	8600	9160	11380

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
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12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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ERRCS2-Q-Z / SL-CA			1062	1162	1362	1562	1762	1962
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	199,5	233,2	283,4	313,8	356,0	401,4
Total power input	(1)	kW	72,68	87,56	108,6	112,7	137,2	149,2
EER	(1)	kW/kW	2,744	2,662	2,610	2,784	2,595	2,690
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	198,9	232,4	282,5	312,7	354,9	400,5
EER	(1)(2)	kW/kW	2,710	2,630	2,580	2,750	2,570	2,670
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	216,5	253,1	307,6	340,3	386,1	435,4
Total power input	(5)	kW	75,17	91,09	112,9	116,6	142,6	155,2
EER	(5)	kW/kW	2,879	2,778	2,725	2,919	2,708	2,805
23°C/15°C								
Cooling capacity	(6)	kW	244,4	284,9	345,8	383,7	446,1	505,1
Total power input	(6)	kW	78,96	79,79	95,73	122,5	124,1	147,5
EER	(6)	kW/kW	3,094	3,570	3,613	3,132	3,595	3,424
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	211,2	251,0	300,9	330,1	385,2	421,9
Total power input	(7)	kW	64,76	78,41	89,91	98,39	118,5	126,7
COP	(7)	kW/kW	3,259	3,202	3,347	3,355	3,251	3,330
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	211,9	252,0	301,9	331,4	386,6	422,9
COP	(2)(7)	kW/kW	3,240	3,170	3,320	3,320	3,220	3,310
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	427,5
Total power input	(8)	kW	60,58	72,21	87,07	92,53	111,2	121,7
Recovery heat exchanger capacity	(8)	kW	265,6	316,0	386,4	416,4	486,0	542,0
TER	(8)	kW/kW	7,825	7,812	7,933	8,063	7,800	7,966
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	152	205	215	236	276	304
SCOP	(11)(12)		3,42	3,21	3,45	3,54	3,40	3,55
Performance ηs	(11)(13)	%	134	126	135	138	133	139
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	9,540	11,15	13,55	15,00	17,02	19,20
Pressure drop	(1)	kPa	26,0	35,4	32,1	39,4	35,3	24,8
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	10,19	12,12	14,52	15,93	18,59	20,36
Pressure drop	(7)	kPa	29,6	41,9	36,9	44,4	42,1	27,9
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	88,0	106	129	156	162	172
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	54	55	55	56	55	55
Sound power level in cooling	(15)(16)	dB(A)	86	87	87	88	88	88
Sound power level in heating	(15)(17)	dB(A)	87	88	88	89	89	89
SIZE AND WEIGHT								
A	(18)	mm	4610	4610	5610	5610	6610	6610
B	(18)	mm	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2420	2430	2430	2430	2430
Operating weight	(18)	kg	3600	3870	4620	5040	5520	5670

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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13 Seasonal space heating energy efficiency
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15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

ERRCS2-Q-Z / SL-CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	464,1	509,0	537,1	597,3	677,7	790,4
Total power input	(1)	kW	165,5	170,1	180,0	209,8	228,9	281,0
EER	(1)	kW/kW	2,804	2,992	2,984	2,847	2,961	2,813
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	463,1	507,8	535,7	596,2	676,1	788,6
EER	(1)(2)	kW/kW	2,780	2,960	2,950	2,830	2,930	2,790
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	504,5	553,9	583,6	650,1	736,3	858,4
Total power input	(5)	kW	171,3	175,3	185,2	217,5	237,1	294,9
EER	(5)	kW/kW	2,945	3,160	3,151	2,989	3,105	2,911
23°C/15°C								
Cooling capacity	(6)	kW	571,1	627,9	660,4	729,2	832,9	964,0
Total power input	(6)	kW	180,0	182,8	192,7	199,7	249,9	237,3
EER	(6)	kW/kW	3,173	3,435	3,427	3,651	3,333	4,062
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	485,8	535,7	564,1	605,5	703,1	815,5
Total power input	(7)	kW	147,3	157,5	167,1	176,1	205,3	237,8
COP	(7)	kW/kW	3,298	3,401	3,376	3,438	3,425	3,429
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	487,0	537,1	565,7	606,7	704,9	817,5
COP	(2)(7)	kW/kW	3,280	3,380	3,350	3,420	3,400	3,410
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	133,7	144,8	153,3	170,4	193,4	228,4
Recovery heat exchanger capacity	(8)	kW	609,2	657,7	694,5	791,4	882,9	1041
TER	(8)	kW/kW	8,175	8,142	8,121	8,351	8,190	8,174
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	676,1	788,6
SEPR	(9)(10)		-	-	-	-	5,16	5,20
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	359	386	356	400	-	-
SCOP	(11)(12)		3,49	3,60	3,62	3,62	-	-
Performance ηs	(11)(13)	%	137	141	142	142	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	22,19	24,34	25,68	28,56	32,41	37,80
Pressure drop	(1)	kPa	24,6	27,3	30,3	21,1	28,5	28,3
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,45	25,86	27,23	29,23	33,94	39,36
Pressure drop	(7)	kPa	27,5	30,8	34,1	22,1	31,2	30,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	200	205	230	240	260	310
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	56	58	58	58	58	59
Sound power level in cooling	(15)(16)	dB(A)	89	91	91	91	91	92
Sound power level in heating	(15)(17)	dB(A)	90	92	92	92	92	93
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7670	8150	8250	8690	9260	11480

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-Z / XL-CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	454,5	500,5	528,4	583,9	665,4	772,4
Total power input	(1)	kW	166,7	169,4	179,9	211,8	229,6	286,5
EER	(1)	kW/kW	2,726	2,955	2,937	2,757	2,898	2,696
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	453,5	499,4	527,1	582,9	663,9	770,7
EER	(1)(2)	kW/kW	2,700	2,930	2,910	2,740	2,870	2,670
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	493,3	543,8	573,3	630,5	721,7	837,1
Total power input	(5)	kW	173,2	175,2	185,8	187,4	238,9	302,9
EER	(5)	kW/kW	2,848	3,104	3,086	3,364	3,021	2,764
23°C/15°C								
Cooling capacity	(6)	kW	558,1	615,1	647,1	728,7	831,6	965,1
Total power input	(6)	kW	149,6	183,8	194,5	198,7	229,7	235,1
EER	(6)	kW/kW	3,731	3,347	3,327	3,667	3,620	4,105
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	485,8	535,7	564,1	606,7	703,1	815,5
Total power input	(7)	kW	142,6	151,9	161,4	170,4	198,7	230,3
COP	(7)	kW/kW	3,407	3,527	3,495	3,560	3,539	3,541
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	487,0	537,1	565,7	607,9	704,9	817,5
COP	(2)(7)	kW/kW	3,390	3,500	3,470	3,540	3,520	3,520
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	133,7	144,8	153,3	170,4	193,4	228,4
Recovery heat exchanger capacity	(8)	kW	609,2	657,7	694,5	791,4	882,9	1041
TER	(8)	kW/kW	8,175	8,142	8,121	8,351	8,190	8,174
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	527,1	582,9	663,9	770,7
SEPR	(9)(10)		-	-	5,64	5,21	5,41	5,45
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	359	386	-	-	-	-
SCOP	(11)(12)		3,73	3,89	-	-	-	-
Performance ηs	(11)(13)	%	146	153	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	21,73	23,93	25,27	27,92	31,82	36,94
Pressure drop	(1)	kPa	23,6	26,4	29,4	20,2	27,4	27,1
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,45	25,86	27,23	29,29	33,94	39,36
Pressure drop	(7)	kPa	27,5	30,8	34,1	22,2	31,2	30,7
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	185	205	234	240	272	320
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	52	54	54	54	54	55
Sound power level in cooling	(15)(16)	dB(A)	85	87	87	87	87	88
Sound power level in heating	(15)(17)	dB(A)	86	88	88	88	88	89
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7790	8260	8350	8790	9340	11580

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
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15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

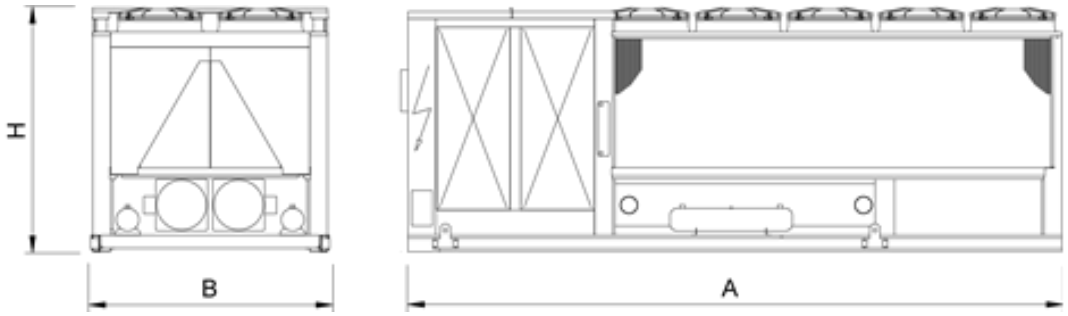
ERRCS2-Q-Z / XL-CA-E			1062	1162	1362	1562	1762	2022	2222	2422	2622
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	204,3	247,2	293,3	319,4	366,3	472,5	509,5	541,3	611,3
Total power input	(1)	kW	66,55	76,99	99,45	104,5	127,1	151,9	162,5	169,0	193,0
EER	(1)	kW/kW	3,068	3,210	2,948	3,056	2,882	3,111	3,135	3,203	3,167
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	203,7	246,3	292,4	318,3	365,1	471,4	508,3	539,9	610,1
EER	(1)(2)	kW/kW	3,030	3,160	2,910	3,010	2,850	3,080	3,110	3,170	3,140
COOLING ONLY											
16°C/10°C											
Cooling capacity	(5)	kW	222,3	269,3	319,2	347,0	398,1	514,4	554,4	588,6	666,4
Total power input	(5)	kW	68,81	79,67	103,0	108,1	131,8	157,0	167,6	173,8	200,1
EER	(5)	kW/kW	3,231	3,379	3,099	3,210	3,020	3,276	3,308	3,387	3,330
23°C/15°C											
Cooling capacity	(6)	kW	252,0	306,1	361,7	392,4	450,5	583,7	628,6	666,8	758,2
Total power input	(6)	kW	72,25	83,83	108,4	113,5	138,8	164,6	175,1	180,8	210,6
EER	(6)	kW/kW	3,490	3,653	3,337	3,457	3,246	3,546	3,590	3,688	3,600
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(7)	kW	218,2	267,3	308,1	340,3	392,8	512,7	551,7	588,0	643,7
Total power input	(7)	kW	62,39	77,63	88,38	95,24	116,1	145,5	154,0	163,8	175,5
COP	(7)	kW/kW	3,497	3,445	3,485	3,575	3,383	3,524	3,582	3,590	3,668
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(2)(7)	kW	218,9	268,4	309,2	341,7	394,2	514,0	553,2	589,8	645,1
COP	(2)(7)	kW/kW	3,470	3,410	3,450	3,540	3,350	3,500	3,560	3,560	3,650
COOLING WITH TOTAL HEAT RECOVERY											
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	483,5	521,5	550,3	631,2
Total power input	(8)	kW	60,58	72,21	87,07	92,53	111,2	133,7	144,8	153,3	170,4
Recovery heat exchanger capacity	(8)	kW	265,6	316,0	386,4	416,4	486,0	609,2	657,7	694,5	791,4
TER	(8)	kW/kW	7,825	7,812	7,933	8,063	7,800	8,175	8,142	8,121	8,351
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Process refrigeration at high temperature											
Prated,c	(9)	kW	-	-	-	-	-	-	-	539,9	610,1
SEPR	(9)(10)		-	-	-	-	-	-	-	5,86	5,46
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesign	(11)	kW	155	186	219	239	280	363	371	-	-
SCOP	(11)(12)		3,81	3,48	3,67	3,88	3,64	3,81	3,85	-	-
Performance ηs	(11)(13)	%	149	136	144	152	142	150	151	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	9,771	11,82	14,03	15,28	17,52	22,60	24,37	25,89	29,23
Pressure drop	(1)	kPa	27,2	39,8	34,4	40,8	37,4	25,5	27,3	30,8	22,1
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(7)	l/s	10,53	12,90	14,87	16,43	18,96	24,75	26,63	28,38	31,07
Pressure drop	(7)	kPa	31,6	47,5	38,7	47,2	43,8	30,6	32,6	37,1	25,0
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	106	137	172	177	202	210	220	234	253
NOISE LEVEL											
Sound Pressure	(14)	dB(A)	53	54	54	54	54	53	55	55	55
Sound power level in cooling	(15)(16)	dB(A)	85	86	86	87	87	86	88	88	88
Sound power level in heating	(15)(17)	dB(A)	86	87	87	88	88	87	89	89	89
SIZE AND WEIGHT											
A	(18)	mm	4610	5610	5610	6610	6610	8400	9300	9300	9300
B	(18)	mm	2220	2220	2220	2220	2220	2260	2260	2260	2260
H	(18)	mm	2420	2430	2430	2430	2430	2350	2350	2350	2350
Operating weight	(18)	kg	3900	4490	4830	5590	5730	8510	8720	8890	9400

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

ERRCS2-Q-G05-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW



Multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent hydronic circuits.
These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler.
Each circuit works with a semi-hermetic screw compressor using R513A, two shell and tubes heat exchangers shared by both circuits, a cold heat exchanger on plant's side that acts as an evaporator in the production of cold water, a heat exchanger on plant's side that works as a condenser in the production of hot water, and a source side coil heat exchanger that works as either condenser or evaporator as required by the loads.

Control



W3000SE Large
The controller W3000 large offers the latest control and functions specially developed for these units.
The keypad is generously sized with full operating status display. The controls and detailed LCD make access to machine settings easy and safe. These resources permit to diirectly act on the unit settings through a multilevel menu, available in several languages.
The diagnostics includes full management of alarms with black-box functions and alarm record for better analysis of unit performance.
For multi-units plants a special device to coordinate and manage all the resources is available as an option; energy metering device is even possible as an option. Supervision is easy through Climaveneta devices or with various options for interfacing to ModBus, Bacnet, Echelon LonTalk protocols.
Compatibility with remote keyboard (management up to 10 units). Clock available with programming of operation (standard 4 days and 10 time bands).
Temperature regulation managed on the two water circuits, with a proportional logic referred to the return water temperatures. This allows to satisfy simultaneously the different heating- and cooling requests, with no need of mode changeover.
Exclusive self-adaptive defrost logic, monitoring multiple operational- and ambient parameters, which allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R513A

Versions

CA	Class A of efficiency
LN-CA	Low Noise, Class A of efficiency
SL-CA	Super Low noise version, Class A of efficiency
XL-CA	eXtra Low noise version, Class A of efficiency
XL-CA-E	eXtra Low noise, Class A enhanced

Features

UNIQUE PROPOSAL
Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING
Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

WIDE OPERATING RANGE
Unit´s operation guaranteed with external air temperature down to -10 °C during winter and up to 46 °C during summer.

VERSION ´XL-CA-E´ AVAILABLE
Exclusive Premium version. Together for the first time, the lowest noise level on the market and the maximum efficiency in each operating mode.

HOT WATER SUPPLY
Supply of hot water in use up to 60°C, offering maximum versatility with respect to different plant engineering solutions

Accessories

- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Electronic expansion valve
- Set-up for remote connectivity with ModBus/Echelon protocol cards

ERRCS2-Q-G05-Z /CA			1062	1162	1362	1562	1762	1962
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	210,0	248,3	302,3	329,4	380,3	425,2
Total power input	(1)	kW	74,78	88,09	105,5	113,5	134,1	149,7
EER	(1)	kW/kW	2,807	2,818	2,865	2,902	2,836	2,840
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	209,3	247,4	301,3	328,2	379,0	424,2
EER	(1)(2)	kW/kW	2,770	2,780	2,830	2,860	2,800	2,810
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	229,0	270,7	329,6	358,7	414,4	463,4
Total power input	(5)	kW	76,85	90,81	108,6	116,6	138,0	154,5
EER	(5)	kW/kW	2,982	2,981	3,035	3,076	3,003	2,999
23°C/15°C								
Cooling capacity	(6)	kW	260,7	307,8	374,9	407,5	471,0	527,0
Total power input	(6)	kW	80,00	95,02	113,0	121,4	143,7	162,0
EER	(6)	kW/kW	3,259	3,240	3,318	3,357	3,278	3,253
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	219,8	261,0	311,6	342,6	399,6	438,3
Total power input	(7)	kW	69,66	84,00	95,98	105,5	126,7	135,8
COP	(7)	kW/kW	3,154	3,107	3,246	3,247	3,154	3,228
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	220,5	262,0	312,7	344,0	401,1	439,5
COP	(2)(7)	kW/kW	3,130	3,080	3,220	3,220	3,130	3,210
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	427,5
Total power input	(8)	kW	63,13	75,25	90,73	96,42	115,9	126,9
Recovery heat exchanger capacity	(8)	kW	267,9	318,8	389,9	420,0	490,3	546,8
TER	(8)	kW/kW	7,553	7,539	7,657	7,774	7,522	7,678
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	157	213	221	244	285	314
SCOP	(11)(12)		3,36	3,20	3,40	3,47	3,35	3,49
Performance ηs	(11)(13)	%	131	125	133	136	131	137
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	10,04	11,88	14,46	15,75	18,19	20,33
Pressure drop	(1)	kPa	28,8	40,2	36,6	43,4	40,3	27,9
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	10,61	12,60	15,04	16,54	19,29	21,16
Pressure drop	(7)	kPa	32,1	45,2	39,6	47,9	45,3	30,2
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	108	129	155	184	191	198
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	65	65	65	66	66	66
Sound power level in cooling	(15)(16)	dB(A)	97	97	97	98	99	99
Sound power level in heating	(15)(17)	dB(A)	97	97	97	98	99	99
SIZE AND WEIGHT								
A	(18)	mm	4610	4610	5610	5610	6610	6610
B	(18)	mm	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2420	2430	2430	2430	2430
Operating weight	(18)	kg	3600	3870	4620	5040	5520	5670

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
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13 Seasonal space heating energy efficiency
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16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

ERRCS2-Q-G05-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

ERRCS2-Q-G05-Z /CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	482,7	525,0	553,8	624,1	701,4	825,6
Total power input	(1)	kW	161,8	173,6	182,3	209,0	231,2	274,4
EER	(1)	kW/kW	2,983	3,024	3,038	2,986	3,034	3,009
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	481,6	523,7	552,3	622,9	699,7	823,6
EER	(1)(2)	kW/kW	2,960	2,990	3,000	2,960	3,000	2,980
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	526,3	572,5	603,2	681,1	764,2	899,8
Total power input	(5)	kW	166,3	177,7	186,4	215,9	237,7	284,4
EER	(5)	kW/kW	3,165	3,222	3,236	3,155	3,215	3,164
23°C/15°C								
Cooling capacity	(6)	kW	598,6	651,5	685,3	776,5	868,8	1023
Total power input	(6)	kW	172,7	183,4	191,9	226,2	247,6	300,6
EER	(6)	kW/kW	3,466	3,552	3,571	3,433	3,509	3,403
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	496,9	546,8	576,4	617,8	718,5	833,8
Total power input	(7)	kW	154,8	165,5	175,5	185,2	215,7	249,9
COP	(7)	kW/kW	3,210	3,304	3,284	3,336	3,331	3,337
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	498,1	548,3	578,1	619,0	720,4	835,9
COP	(2)(7)	kW/kW	3,190	3,280	3,260	3,320	3,310	3,320
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	139,3	150,9	159,8	177,6	201,5	238,0
Recovery heat exchanger capacity	(8)	kW	614,5	663,4	700,5	798,1	890,5	1050
TER	(8)	kW/kW	7,882	7,853	7,829	8,046	7,901	7,882
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	699,7	823,6
SEPR	(9)(10)		-	-	-	-	5,00	5,01
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	362	391	357	400	-	-
SCOP	(11)(12)		3,42	3,54	3,55	3,55	-	-
Performance ηs	(11)(13)	%	134	139	139	139	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	23,09	25,11	26,49	29,84	33,54	39,48
Pressure drop	(1)	kPa	26,7	29,0	32,3	23,1	30,5	30,9
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,99	26,39	27,82	29,82	34,68	40,25
Pressure drop	(7)	kPa	28,8	32,1	35,6	23,1	32,6	32,1
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	219	242	276	291	322	380
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	66	68	68	68	68	69
Sound power level in cooling	(15)(16)	dB(A)	99	101	101	101	101	102
Sound power level in heating	(15)(17)	dB(A)	99	101	101	101	101	102
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7580	8060	8160	8600	9160	11380

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

ERRCS2-Q-G05-Z /LN-CA			1062	1162	1362	1562	1762	1962
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	204,9	241,0	293,8	321,8	369,3	413,6
Total power input	(1)	kW	73,65	88,06	107,2	113,3	135,7	149,9
EER	(1)	kW/kW	2,780	2,736	2,741	2,840	2,721	2,759
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	204,3	240,1	292,9	320,6	368,1	412,6
EER	(1)(2)	kW/kW	2,750	2,700	2,710	2,800	2,690	2,730
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	223,0	262,1	319,7	349,8	401,7	449,7
Total power input	(5)	kW	75,99	91,26	110,9	116,9	140,4	155,4
EER	(5)	kW/kW	2,934	2,871	2,883	2,992	2,861	2,894
23°C/15°C								
Cooling capacity	(6)	kW	252,9	297,0	362,4	396,0	455,0	509,4
Total power input	(6)	kW	79,54	96,29	116,4	122,3	147,3	164,1
EER	(6)	kW/kW	3,181	3,084	3,113	3,238	3,089	3,104
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	219,8	261,0	311,6	342,6	399,6	438,3
Total power input	(7)	kW	69,66	84,00	95,98	105,5	126,7	135,8
COP	(7)	kW/kW	3,154	3,107	3,246	3,247	3,154	3,228
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	220,5	262,0	312,7	344,0	401,1	439,5
COP	(2)(7)	kW/kW	3,130	3,080	3,220	3,220	3,130	3,210
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	427,5
Total power input	(8)	kW	63,13	75,25	90,73	96,42	115,9	126,9
Recovery heat exchanger capacity	(8)	kW	267,9	318,8	389,9	420,0	490,3	546,8
TER	(8)	kW/kW	7,553	7,539	7,657	7,774	7,522	7,678
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	157	213	221	244	285	314
SCOP	(11)(12)		3,36	3,20	3,40	3,47	3,35	3,49
Performance ηs	(11)(13)	%	131	125	133	136	131	137
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	9,797	11,52	14,05	15,39	17,66	19,78
Pressure drop	(1)	kPa	27,4	37,9	34,5	41,4	38,0	26,4
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	10,61	12,60	15,04	16,54	19,29	21,16
Pressure drop	(7)	kPa	32,1	45,2	39,6	47,9	45,3	30,2
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	101	129	156	184	197	221
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	58	59	59	60	59	59
Sound power level in cooling	(15)(16)	dB(A)	90	91	91	92	92	92
Sound power level in heating	(15)(17)	dB(A)	91	92	92	93	93	93
SIZE AND WEIGHT								
A	(18)	mm	4610	4610	5610	5610	6610	6610
B	(18)	mm	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2420	2430	2430	2430	2430
Operating weight	(18)	kg	3600	3870	4620	5040	5520	5670

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-G05-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

ERRCS2-Q-G05-Z /LN-CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	468,7	513,4	541,3	603,9	683,8	799,5
Total power input	(1)	kW	169,5	174,5	184,7	214,7	234,7	285,9
EER	(1)	kW/kW	2,765	2,942	2,931	2,813	2,914	2,796
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	467,7	512,2	539,9	602,8	682,2	797,7
EER	(1)(2)	kW/kW	2,740	2,920	2,900	2,790	2,890	2,770
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	510,0	559,0	588,6	657,8	743,4	869,1
Total power input	(5)	kW	175,1	179,5	189,8	222,5	242,8	299,2
EER	(5)	kW/kW	2,913	3,114	3,101	2,956	3,062	2,905
23°C/15°C								
Cooling capacity	(6)	kW	578,0	634,4	666,8	747,4	842,1	983,7
Total power input	(6)	kW	183,6	186,7	197,0	233,8	255,3	321,5
EER	(6)	kW/kW	3,148	3,398	3,385	3,197	3,298	3,060
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	496,9	546,8	576,4	617,8	718,5	833,8
Total power input	(7)	kW	154,8	165,5	175,5	185,2	215,7	249,9
COP	(7)	kW/kW	3,210	3,304	3,284	3,336	3,331	3,337
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	498,1	548,3	578,1	619,0	720,4	835,9
COP	(2)(7)	kW/kW	3,190	3,280	3,260	3,320	3,310	3,320
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	139,3	150,9	159,8	177,6	201,5	238,0
Recovery heat exchanger capacity	(8)	kW	614,5	663,4	700,5	798,1	890,5	1050
TER	(8)	kW/kW	7,882	7,853	7,829	8,046	7,901	7,882
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	682,2	797,7
SEPR	(9)(10)		-	-	-	-	5,11	5,21
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	362	391	357	400	-	-
SCOP	(11)(12)		3,42	3,54	3,55	3,55	-	-
Performance ηs	(11)(13)	%	134	139	139	139	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	22,42	24,55	25,89	28,88	32,70	38,23
Pressure drop	(1)	kPa	25,1	27,7	30,8	21,6	29,0	29,0
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,99	26,39	27,82	29,82	34,68	40,25
Pressure drop	(7)	kPa	28,8	32,1	35,6	23,1	32,6	32,1
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	230	236	276	288	322	368
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	60	62	62	62	62	63
Sound power level in cooling	(15)(16)	dB(A)	93	95	95	95	95	96
Sound power level in heating	(15)(17)	dB(A)	94	96	96	96	96	97
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7580	8060	8160	8600	9160	11380

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

ERRCS2-Q-G05-Z /SL-CA			1062	1162	1362	1562	1762	1962
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	199,5	233,2	283,4	313,8	356,0	401,4
Total power input	(1)	kW	75,71	91,26	113,2	117,5	143,1	155,5
EER	(1)	kW/kW	2,635	2,554	2,504	2,671	2,488	2,581
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	198,9	232,4	282,5	312,7	354,9	400,5
EER	(1)(2)	kW/kW	2,610	2,520	2,480	2,640	2,460	2,560
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	216,5	253,1	307,6	340,3	386,1	435,4
Total power input	(5)	kW	78,31	94,94	117,7	121,5	148,6	161,8
EER	(5)	kW/kW	2,765	2,667	2,613	2,801	2,598	2,691
23°C/15°C								
Cooling capacity	(6)	kW	244,4	284,9	345,8	383,7	446,1	505,1
Total power input	(6)	kW	82,27	82,84	99,49	127,7	129,0	153,3
EER	(6)	kW/kW	2,970	3,441	3,475	3,005	3,458	3,295
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	213,3	253,5	303,9	333,4	389,1	426,1
Total power input	(7)	kW	67,43	81,70	93,71	102,5	123,5	132,0
COP	(7)	kW/kW	3,165	3,103	3,243	3,253	3,151	3,228
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	214,0	254,5	304,9	334,7	390,5	427,2
COP	(2)(7)	kW/kW	3,140	3,080	3,220	3,220	3,130	3,210
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	427,5
Total power input	(8)	kW	63,13	75,25	90,73	96,42	115,9	126,9
Recovery heat exchanger capacity	(8)	kW	267,9	318,8	389,9	420,0	490,3	546,8
TER	(8)	kW/kW	7,553	7,539	7,657	7,774	7,522	7,678
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	153	207	217	238	279	307
SCOP	(11)(12)		3,36	3,21	3,40	3,48	3,35	3,49
Performance ηs	(11)(13)	%	131	125	133	136	131	137
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	9,540	11,15	13,55	15,00	17,02	19,20
Pressure drop	(1)	kPa	26,0	35,4	32,1	39,4	35,3	24,8
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	10,30	12,24	14,67	16,09	18,78	20,57
Pressure drop	(7)	kPa	30,2	42,7	37,6	45,3	43,0	28,5
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	101	122	148	179	186	198
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	54	55	55	56	55	55
Sound power level in cooling	(15)(16)	dB(A)	86	87	87	88	88	88
Sound power level in heating	(15)(17)	dB(A)	87	88	88	89	89	89
SIZE AND WEIGHT								
A	(18)	mm	4610	4610	5610	5610	6610	6610
B	(18)	mm	2220	2220	2220	2220	2220	2220
H	(18)	mm	2150	2420	2430	2430	2430	2430
Operating weight	(18)	kg	3600	3870	4620	5040	5520	5670

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

ERRCS2-Q-G05-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

ERRCS2-Q-G05-Z /SL-CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	464,1	509,0	537,1	597,3	677,7	790,4
Total power input	(1)	kW	172,5	177,2	187,6	218,6	238,5	292,8
EER	(1)	kW/kW	2,690	2,872	2,863	2,732	2,842	2,699
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	463,1	507,8	535,7	596,2	676,1	788,6
EER	(1)(2)	kW/kW	2,670	2,850	2,830	2,710	2,820	2,680
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	504,5	553,9	583,6	650,1	736,3	858,4
Total power input	(5)	kW	178,5	182,6	193,0	226,7	247,1	307,3
EER	(5)	kW/kW	2,826	3,033	3,024	2,868	2,980	2,793
23°C/15°C								
Cooling capacity	(6)	kW	571,1	627,9	660,4	729,2	832,9	964,0
Total power input	(6)	kW	187,6	190,4	200,8	207,6	260,5	246,5
EER	(6)	kW/kW	3,044	3,298	3,289	3,513	3,197	3,911
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	490,7	541,1	569,7	605,5	710,1	823,6
Total power input	(7)	kW	153,4	164,0	174,0	183,4	213,8	247,7
COP	(7)	kW/kW	3,199	3,299	3,274	3,302	3,321	3,325
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	491,9	542,5	571,3	606,7	711,9	825,6
COP	(2)(7)	kW/kW	3,180	3,280	3,250	3,290	3,300	3,310
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	139,3	150,9	159,8	177,6	201,5	238,0
Recovery heat exchanger capacity	(8)	kW	614,5	663,4	700,5	798,1	890,5	1050
TER	(8)	kW/kW	7,882	7,853	7,829	8,046	7,901	7,882
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	676,1	788,6
SEPR	(9)(10)		-	-	-	-	5,09	5,18
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	363	390	359	400	-	-
SCOP	(11)(12)		3,44	3,55	3,57	3,56	-	-
Performance ηs	(11)(13)	%	135	139	140	139	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	22,19	24,34	25,68	28,56	32,41	37,80
Pressure drop	(1)	kPa	24,6	27,3	30,3	21,1	28,5	28,3
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,69	26,12	27,50	29,23	34,28	39,76
Pressure drop	(7)	kPa	28,1	31,4	34,8	22,1	31,8	31,3
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	230	236	265	276	299	357
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	56	58	58	58	58	59
Sound power level in cooling	(15)(16)	dB(A)	89	91	91	91	91	92
Sound power level in heating	(15)(17)	dB(A)	90	92	92	92	92	93
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7670	8150	8250	8690	9260	11480

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
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ERRCS2-Q-G05-Z /XL-CA			2022	2222	2422	2622	2722	3222
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	454,5	500,5	528,4	583,9	665,4	772,4
Total power input	(1)	kW	174,0	176,8	187,8	221,1	239,6	299,1
EER	(1)	kW/kW	2,612	2,831	2,814	2,641	2,777	2,582
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	453,5	499,4	527,1	582,9	663,9	770,7
EER	(1)(2)	kW/kW	2,590	2,810	2,790	2,620	2,750	2,560
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	493,3	543,8	573,3	630,5	721,7	837,1
Total power input	(5)	kW	180,8	182,9	193,9	194,8	249,4	316,2
EER	(5)	kW/kW	2,728	2,973	2,957	3,237	2,894	2,647
23°C/15°C								
Cooling capacity	(6)	kW	558,1	615,1	647,1	728,7	831,6	965,1
Total power input	(6)	kW	155,5	191,9	203,0	206,6	238,8	244,3
EER	(6)	kW/kW	3,589	3,205	3,188	3,527	3,482	3,950
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	490,7	541,1	569,7	612,8	710,1	823,6
Total power input	(7)	kW	148,7	158,4	168,4	177,8	207,2	240,2
COP	(7)	kW/kW	3,300	3,416	3,383	3,447	3,427	3,429
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	491,9	542,5	571,3	614,0	711,9	825,6
COP	(2)(7)	kW/kW	3,280	3,390	3,360	3,430	3,410	3,410
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	483,5	521,5	550,3	631,2	701,1	826,1
Total power input	(8)	kW	139,3	150,9	159,8	177,6	201,5	238,0
Recovery heat exchanger capacity	(8)	kW	614,5	663,4	700,5	798,1	890,5	1050
TER	(8)	kW/kW	7,882	7,853	7,829	8,046	7,901	7,882
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	527,1	582,9	663,9	770,7
SEPR	(9)(10)		-	-	5,46	5,11	5,24	5,34
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	363	390	-	-	-	-
SCOP	(11)(12)		3,66	3,82	-	-	-	-
Performance ηs	(11)(13)	%	144	150	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	21,73	23,93	25,27	27,92	31,82	36,94
Pressure drop	(1)	kPa	23,6	26,4	29,4	20,2	27,4	27,1
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(7)	l/s	23,69	26,12	27,50	29,58	34,28	39,76
Pressure drop	(7)	kPa	28,1	31,4	34,8	22,7	31,8	31,3
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	213	236	269	276	313	368
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	52	54	54	54	54	55
Sound power level in cooling	(15)(16)	dB(A)	85	87	87	87	87	88
Sound power level in heating	(15)(17)	dB(A)	86	88	88	88	88	89
SIZE AND WEIGHT								
A	(18)	mm	6300	7200	7200	7200	8400	9700
B	(18)	mm	2260	2260	2260	2260	2260	2260
H	(18)	mm	2350	2350	2350	2350	2350	2350
Operating weight	(18)	kg	7790	8260	8350	8790	9340	11580

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
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18 Unit in standard configuration/execution, without optional accessories.

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ERRCS2-Q-G05-Z

INTEGRA unit for 4-pipe systems, air source for outdoor installation

1062 - 3222 199,5-825,6 kW

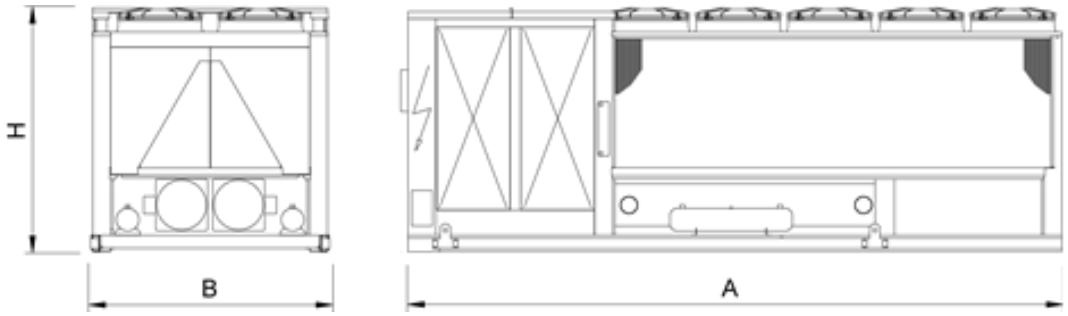
ERRCS2-Q-G05-Z /XL-CA-E			1062	1162	1362	1562	1762	2022	2222	2422	2622
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	204,3	247,2	293,3	319,4	366,3	472,5	509,5	541,3	611,3
Total power input	(1)	kW	69,43	80,30	103,8	109,1	132,7	158,5	169,6	176,3	201,4
EER	(1)	kW/kW	2,944	3,078	2,826	2,928	2,760	2,981	3,004	3,070	3,035
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	203,7	246,3	292,4	318,3	365,1	471,4	508,3	539,9	610,1
EER	(1)(2)	kW/kW	2,910	3,030	2,790	2,890	2,730	2,950	2,980	3,040	3,010
COOLING ONLY											
16°C/10°C											
Cooling capacity	(5)	kW	222,3	269,3	319,2	347,0	398,1	514,4	554,4	588,6	666,4
Total power input	(5)	kW	71,79	83,10	107,5	112,8	137,5	163,9	174,9	181,4	208,8
EER	(5)	kW/kW	3,096	3,241	2,969	3,076	2,895	3,138	3,170	3,245	3,192
23°C/15°C											
Cooling capacity	(6)	kW	252,0	306,1	361,7	392,4	450,5	583,7	628,6	666,8	758,2
Total power input	(6)	kW	75,38	87,45	113,1	118,4	144,8	171,8	182,7	188,6	219,8
EER	(6)	kW/kW	3,342	3,502	3,198	3,314	3,111	3,398	3,441	3,536	3,449
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(7)	kW	220,4	269,9	311,2	343,7	396,8	517,8	557,2	593,9	650,2
Total power input	(7)	kW	65,08	80,96	92,20	99,37	121,2	151,7	160,5	170,7	183,0
COP	(7)	kW/kW	3,386	3,332	3,375	3,458	3,274	3,413	3,472	3,479	3,553
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(2)(7)	kW	221,1	271,0	312,3	345,1	398,3	519,2	558,7	595,7	651,6
COP	(2)(7)	kW/kW	3,360	3,300	3,350	3,420	3,250	3,390	3,450	3,450	3,530
COOLING WITH TOTAL HEAT RECOVERY											
Cooling capacity	(8)	kW	208,6	248,1	304,6	329,4	381,4	483,5	521,5	550,3	631,2
Total power input	(8)	kW	63,13	75,25	90,73	96,42	115,9	139,3	150,9	159,8	177,6
Recovery heat exchanger capacity	(8)	kW	267,9	318,8	389,9	420,0	490,3	614,5	663,4	700,5	798,1
TER	(8)	kW/kW	7,553	7,539	7,657	7,774	7,522	7,882	7,853	7,829	8,046
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Process refrigeration at high temperature											
Prated,c	(9)	kW	-	-	-	-	-	-	-	539,9	610,1
SEPR	(9)(10)		-	-	-	-	-	-	-	5,67	5,28
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesign	(11)	kW	156	188	221	242	283	367	374	-	-
SCOP	(11)(12)		3,74	3,42	3,60	3,81	3,56	3,75	3,78	-	-
Performance ηs	(11)(13)	%	146	134	141	149	139	147	148	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	9,771	11,82	14,03	15,28	17,52	22,60	24,37	25,89	29,23
Pressure drop	(1)	kPa	27,2	39,8	34,4	40,8	37,4	25,5	27,3	30,8	22,1
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(7)	l/s	10,64	13,03	15,02	16,59	19,15	25,00	26,90	28,67	31,38
Pressure drop	(7)	kPa	32,3	48,4	39,5	48,2	44,7	31,3	33,3	37,8	25,5
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	122	158	198	204	232	242	253	269	291
NOISE LEVEL											
Sound Pressure	(14)	dB(A)	53	54	54	54	54	53	55	55	55
Sound power level in cooling	(15)(16)	dB(A)	85	86	86	87	87	86	88	88	88
Sound power level in heating	(15)(17)	dB(A)	86	87	87	88	88	87	89	89	89
SIZE AND WEIGHT											
A	(18)	mm	4610	5610	5610	6610	6610	8400	9300	9300	9300
B	(18)	mm	2220	2220	2220	2220	2220	2260	2260	2260	2260
H	(18)	mm	2420	2430	2430	2430	2430	2350	2350	2350	2350
Operating weight	(18)	kg	3900	4490	4830	5590	5730	8510	8720	8890	9400

Notes

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Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

i-FR-Q2-Z

INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation

0502 - 1002 442,9-985,3 kW



Full inverter multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water in two independent hydronic circuits. These units are able to simultaneously satisfy the demand for hot and cold water through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler. Each circuit works with a variable speed drive semi-hermetic screw compressor using R134a, two shell and tubes heat exchangers and a source side coil heat exchanger shared by both circuits. The cold side shell and tube heat exchanger acts as an evaporator for the production of cold water, while the hot side shell and tube heat exchanger works as a condenser for the production of hot water. The source side auxiliary finned coil works as either condenser or evaporator as required by the loads.

Control

W3000TE

W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms. Complete alarm management system is available, with the "black-box" and the alarm history display functions. Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with the remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organised into time bands to optimise unit performance by minimising power consumption during periods of inactivity. Up to 10 daily time bands can be associated with different operating set points.

Refrigerant

R134a

Versions

CA	Class A of efficiency	XL-CA	eXtra Low noise version, Class A of efficiency
SL-CA	Super Low noise version, Class A of efficiency		

Features

UNIQUE PROPOSAL

Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

VERY HIGH EFFICIENCY

High full load and partial load efficiency in both heating and cooling mode, using inverter technology to continuously modulate compressors operation and EC fans as standard, in order to deliver the exact amount of energy based on the actual needs of the plant. High efficiency means reduced energy consumption throughout the entire year, for any operation mode and any outdoor condition.

ErP READY

The highest level of efficiency at part load, thanks to the inverter technology, can meet and exceed the minimum Seasonal Coefficent Of Performance, SCOP, (only for reversible units) and the Seasonal Energy Performance Ratio, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

WIDE OPERATING RANGE

Unit´s operation guaranteed with external air temperature down to -12°C during winter and up to 46°C during summer. Production of hot water up to 60°C without accessories and chilled water from -8°C to +18°C in order to suit any possible application.

HARMONY BETWEEN UNIT AND PLANT

Low inrush current and power factor higher than similar fixed speed units, permit an easy electrical installation which is not stressed during start-up and with no need of extra devices for power factor correction. The use of VSD technology allows the unit to partialize in a stepless way, with consequent lower fluctuations of leaving water temperature.

TRUE SILENCE

At partial loads (ie for most of the year), thanks to the use of EC fans and VSD screw compressors, i-FR-Q2-Z units are characterized by lower noise emissions compared to fixed speed units.

FLEXIBLE SELECTION

The units can be selected beyond the nominal point, giving the possibility to contain the initial investment (boost selection) or to enphasize even more the efficiencies (derating selection).

Accessories

- "LT" kit for working down to -12°C in heat pump mode
- Noise reducer (only on not silenced versions)
- Special fan diffusers
- Thicker soundproofing cladding
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Touch Screen visual display
- Leak detector

i-FR-Q2-Z CA			0502	0532	0602	0652	0702	0802	0902	1002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	520,5	536,1	570,0	670,8	712,2	787,4	982,0	1048
Total power input	(1)	kW	173,4	174,1	181,7	220,9	229,8	251,4	331,2	342,7
EER	(1)	kW/kW	3,002	3,079	3,137	3,037	3,099	3,132	2,965	3,058
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	485,9	529,2	568,5	624,8	686,6	785,6	912,3	982,3
EER	(1)(2)	kW/kW	3,100	3,100	3,100	3,100	3,100	3,100	3,140	3,120
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	571,7	589,2	627,0	737,6	783,7	861,7	1069	1144
Total power input	(5)	kW	179,6	180,4	188,2	229,9	239,2	262,3	343,0	356,3
EER	(5)	kW/kW	3,183	3,266	3,332	3,208	3,276	3,285	3,117	3,211
23°C/15°C										
Cooling capacity	(6)	kW	658,7	679,7	724,2	851,7	905,9	921,4	1212	1304
Total power input	(6)	kW	188,8	189,5	197,9	244,5	254,7	271,0	361,1	378,0
EER	(6)	kW/kW	3,489	3,587	3,659	3,483	3,557	3,400	3,356	3,450
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	491,9	491,9	525,7	637,5	678,1	757,2	930,6	978,9
Total power input	(7)	kW	146,7	146,7	153,6	187,6	197,6	215,5	282,2	298,9
COP	(7)	kW/kW	3,353	3,353	3,423	3,398	3,432	3,514	3,298	3,275
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	459,5	487,4	526,7	594,0	654,1	759,1	864,6	930,9
COP	(2)(7)	kW/kW	3,420	3,380	3,410	3,450	3,430	3,490	3,440	3,480
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	527,3	539,2	571,2	676,3	708,6	784,8	991,2	1054
Total power input	(8)	kW	152,0	154,9	160,9	192,8	201,4	221,3	286,0	299,7
Recovery heat exchanger capacity	(8)	kW	670,2	684,8	722,4	857,5	897,9	992,8	1260	1336
TER	(8)	kW/kW	7,882	7,902	8,042	7,956	7,974	8,034	7,871	7,978
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	624,8	686,6	785,6	912,3	982,3
SEPR	(9)(10)		-	-	-	5,23	5,25	5,66	5,09	5,01
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	340	364	390	-	-	-	-	-
SCOP	(11)(12)		3,91	3,92	3,89	-	-	-	-	-
Performance ηs	(11)(13)	%	153	154	153	-	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	23,31	25,41	27,26	29,97	32,95	37,65	43,76	47,12
Pressure drop	(1)	kPa	40,8	51,6	32,5	40,5	45,4	29,0	39,7	42,3
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	22,13	23,47	25,38	28,61	31,49	36,55	41,61	44,81
Pressure drop	(7)	kPa	22,5	25,4	21,4	27,0	32,0	32,2	41,7	34,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	230	235	240	260	260	325	350	470
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	67	67	68	69	69	68	70	70
Sound power level in cooling	(15)(16)	dB(A)	100	100	101	102	102	101	103	103
Sound power level in heating	(15)(17)	dB(A)	100	100	101	102	102	101	103	103
SIZE AND WEIGHT										
A	(18)	mm	8150	8150	8900	9650	10400	10400	10400	11900
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2530	2530	2530	2530	2530	2530	2530	2530
Operating weight	(18)	kg	8350	8380	9080	9590	10060	11010	12310	14110

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-Q2-Z

INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation

0502 - 1002 442,9-985,3 kW

i-FR-Q2-Z SL-CA			0502	0532	0602	0652	0702	0802	0902	1002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	498,6	513,3	549,0	646,7	686,7	765,6	905,4	981,9
Total power input	(1)	kW	175,5	176,4	181,1	220,1	226,2	250,8	308,6	333,3
EER	(1)	kW/kW	2,841	2,910	3,031	2,938	3,036	3,053	2,934	2,946
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	466,1	506,6	547,6	602,3	662,8	763,9	878,7	949,1
EER	(1)(2)	kW/kW	2,980	2,960	3,000	3,040	3,060	3,030	2,970	2,980
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	553,9	570,8	603,7	709,9	754,3	836,2	995,9	1079
Total power input	(5)	kW	180,2	181,1	188,1	230,1	236,6	262,3	316,8	344,4
EER	(5)	kW/kW	3,074	3,152	3,209	3,085	3,188	3,188	3,144	3,133
23°C/15°C										
Cooling capacity	(6)	kW	637,7	657,9	704,4	827,6	878,4	892,8	1025	1228
Total power input	(6)	kW	189,6	190,4	196,7	243,7	252,2	271,3	306,1	369,4
EER	(6)	kW/kW	3,363	3,455	3,581	3,396	3,483	3,291	3,349	3,324
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	487,2	487,2	520,9	631,0	672,2	748,8	872,9	939,5
Total power input	(7)	kW	144,7	144,7	151,4	184,9	194,7	212,4	254,7	272,1
COP	(7)	kW/kW	3,367	3,367	3,441	3,413	3,452	3,525	3,427	3,453
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	455,0	482,7	521,9	588,3	648,5	750,7	854,1	921,6
COP	(2)(7)	kW/kW	3,440	3,390	3,420	3,470	3,450	3,500	3,450	3,490
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	527,3	539,2	571,2	676,3	708,6	784,8	945,4	1021
Total power input	(8)	kW	152,0	154,9	160,9	192,8	201,4	221,3	269,3	287,0
Recovery heat exchanger capacity	(8)	kW	670,2	684,8	722,4	857,5	897,9	992,8	1199	1291
TER	(8)	kW/kW	7,882	7,902	8,042	7,956	7,974	8,034	7,961	8,056
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	602,3	662,8	763,9	878,7	949,1
SEPR	(9)(10)		-	-	-	5,30	5,30	5,41	5,08	5,01
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	363	363	385	-	-	-	-	-
SCOP	(11)(12)		3,99	3,92	4,00	-	-	-	-	-
Performance ηs	(11)(13)	%	157	154	157	-	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	22,36	24,32	26,26	28,89	31,80	36,61	42,14	45,52
Pressure drop	(1)	kPa	37,5	47,3	30,2	37,6	42,3	27,4	36,8	39,5
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	21,92	23,25	25,14	28,33	31,22	36,15	41,10	44,37
Pressure drop	(7)	kPa	22,1	24,9	21,1	26,5	31,5	31,5	40,7	34,2
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	230	235	240	260	260	325	350	470
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	57	58	58	59	59	59	61	61
Sound power level in cooling	(15)(16)	dB(A)	90	91	91	92	92	92	94	94
Sound power level in heating	(15)(17)	dB(A)	90	91	91	92	92	92	94	94
SIZE AND WEIGHT										
A	(18)	mm	8150	8150	8900	9650	10400	10400	10400	11900
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2530	2530	2530	2530	2530	2530	2530	2530
Operating weight	(18)	kg	8800	8830	9530	10040	10510	11450	12750	14560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-Q2-Z XL-CA			0502	0532	0602	0652	0702	0802	0902	1002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	442,9	483,5	525,6	571,7	632,6	731,8	847,6	912,3
Total power input	(1)	kW	146,5	162,2	172,2	184,8	203,6	239,2	281,8	302,1
EER	(1)	kW/kW	3,023	2,981	3,052	3,094	3,107	3,059	3,008	3,020
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	441,6	481,8	524,4	570,1	630,7	730,3	845,4	909,8
EER	(1)(2)	kW/kW	2,990	2,940	3,020	3,060	3,070	3,030	2,980	2,990
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	486,3	565,2	577,9	628,6	695,5	799,7	968,9	1048
Total power input	(5)	kW	152,1	174,3	178,7	192,5	212,5	250,0	301,2	326,7
EER	(5)	kW/kW	3,197	3,243	3,234	3,265	3,273	3,199	3,217	3,208
23°C/15°C										
Cooling capacity	(6)	kW	598,3	650,6	704,4	725,6	802,9	854,1	1096	1195
Total power input	(6)	kW	167,9	183,8	196,7	204,3	226,4	258,4	319,4	349,5
EER	(6)	kW/kW	3,563	3,540	3,581	3,552	3,546	3,305	3,431	3,419
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	434,0	461,8	502,0	560,3	620,6	721,1	825,1	888,5
Total power input	(7)	kW	124,6	134,2	144,5	159,9	177,5	203,5	235,1	250,2
COP	(7)	kW/kW	3,483	3,441	3,474	3,504	3,496	3,543	3,510	3,551
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	434,9	462,8	502,9	561,5	622,1	722,8	827,5	890,7
COP	(2)(7)	kW/kW	3,470	3,420	3,460	3,490	3,480	3,520	3,480	3,530
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	464,1	508,8	548,8	590,8	650,9	751,5	883,4	921,3
Total power input	(8)	kW	129,4	142,5	150,8	164,7	182,5	212,4	247,2	261,8
Recovery heat exchanger capacity	(8)	kW	585,7	642,7	690,5	745,6	822,4	951,2	1116	1167
TER	(8)	kW/kW	8,114	8,077	8,216	8,112	8,071	8,018	8,087	7,979
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	570,1	630,7	730,3	845,4	909,8
SEPR	(9)(10)		-	-	-	5,34	5,35	5,64	5,03	5,03
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	316	343	368	-	-	-	-	-
SCOP	(11)(12)		4,23	4,20	4,26	-	-	-	-	-
Performance ηs	(11)(13)	%	166	165	167	-	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	21,18	23,12	25,14	27,34	30,25	35,00	40,54	43,63
Pressure drop	(1)	kPa	33,7	42,7	27,7	33,7	38,3	25,1	34,1	36,3
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	20,95	22,29	24,23	27,05	29,96	34,81	39,83	42,89
Pressure drop	(7)	kPa	20,2	22,9	19,6	24,2	29,0	29,2	38,2	31,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	230	235	240	260	260	325	350	470
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	53	54	55	55	55	56	55	56
Sound power level in cooling	(15)(16)	dB(A)	86	87	88	88	88	89	88	89
Sound power level in heating	(15)(17)	dB(A)	87	88	89	89	89	90	89	90
SIZE AND WEIGHT										
A	(18)	mm	8150	8150	8900	9650	10400	10400	10400	11900
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2530	2530	2530	2530	2530	2530	2530	2530
Operating weight	(18)	kg	8800	8830	9530	10040	10510	11450	12750	14560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
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13 Seasonal space heating energy efficiency
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15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

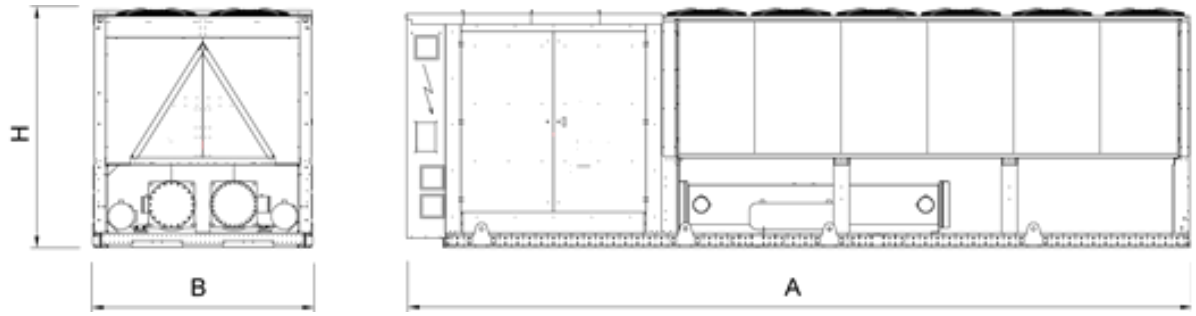
The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-Q2-Z

INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation

0502 - 1002 442,9-985,3 kW

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

i-FR-Q2-G05-Z

INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation

0502 - 1002 442,9-985,3 kW



Full inverter multi-purpose outdoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water in two independent hydronic circuits. These units are able to simultaneously satisfy the demand for hot and cold water through a system that does not require seasonal switching and is therefore a valid alternative to traditional plants with chiller and boiler. Each circuit works with a variable speed drive semi-hermetic screw compressor using R513A, two shell and tubes heat exchangers and a source side coil heat exchanger shared by both circuits. The cold side shell and tube heat exchanger acts as an evaporator for the production of cold water, while the hot side shell and tube heat exchanger works as a condenser for the production of hot water. The source side auxiliary finned coil works as either condenser or evaporator as required by the loads.

Control

W3000TE

W3000TE control is available with the new KIPlink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPlink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms. Complete alarm management system is available, with the "black-box" and the alarm history display functions. Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with the remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organised into time bands to optimise unit performance by minimising power consumption during periods of inactivity. Up to 10 daily time bands can be associated with different operating set points.

Refrigerant

R513A

Versions

CA	Class A of efficiency	XL-CA	eXtra Low noise version, Class A of efficiency
SL-CA	Super Low noise version, Class A of efficiency		

Features

UNIQUE PROPOSAL

Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

VERY HIGH EFFICIENCY

High full load and partial load efficiency in both heating and cooling mode, using inverter technology to continuously modulate compressors operation and EC fans as standard, in order to deliver the exact amount of energy based on the actual needs of the plant. High efficiency means reduced energy consumption throughout the entire year, for any operation mode and any outdoor condition.

ErP READY

The highest level of efficiency at part load, thanks to the inverter technology, can meet and exceed the minimum Seasonal Coefficent Of Performance, SCOP, (only for reversible units) and the Seasonal Energy Performance Ratio, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

WIDE OPERATING RANGE

Unit´s operation guaranteed with external air temperature down to -12°C during winter and up to 46°C during summer. Production of hot water up to 60°C without accessories and chilled water from -8°C to +18°C in order to suit any possible application.

HARMONY BETWEEN UNIT AND PLANT

Low inrush current and power factor higher than similar fixed speed units, permit an easy electrical installation which is not stressed during start-up and with no need of extra devices for power factor correction. The use of VSD technology allows the unit to partialize in a stepless way, with consequent lower fluctuations of leaving water temperature.

TRUE SILENCE

At partial loads (ie for most of the year), thanks to the use of EC fans and VSD screw compressors, i-FR-Q2-Z units are characterized by lower noise emissions compared to fixed speed units.

FLEXIBLE SELECTION

The units can be selected beyond the nominal point, giving the possibility to contain the initial investment (boost selection) or to enphasize even more the efficiencies (derating selection).

Accessories

- "LT" kit for working down to -12°C in heat pump mode
- Noise reducer (only on not silenced versions)
- Special fan diffusers
- Thicker soundproofing cladding
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Touch Screen visual display
- Leak detector

i-FR-Q2-G05-Z /CA			0502	0532	0602	0652	0702	0802	0902	1002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	520,5	536,1	570,0	670,8	712,2	787,4	982,0	1048
Total power input	(1)	kW	180,4	181,2	189,0	229,8	238,9	261,5	344,9	356,6
EER	(1)	kW/kW	2,885	2,959	3,016	2,919	2,981	3,011	2,847	2,939
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	485,9	529,2	568,5	624,8	686,6	785,6	912,3	982,3
EER	(1)(2)	kW/kW	2,980	2,980	2,980	2,990	2,980	2,980	3,020	3,000
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	571,7	589,2	627,0	737,6	783,7	861,7	1069	1144
Total power input	(5)	kW	186,9	187,7	195,7	239,2	248,8	272,9	357,2	370,8
EER	(5)	kW/kW	3,059	3,139	3,204	3,084	3,150	3,158	2,993	3,085
23°C/15°C										
Cooling capacity	(6)	kW	658,7	679,7	724,2	851,7	905,9	921,4	1212	1304
Total power input	(6)	kW	196,5	197,2	205,9	254,4	264,9	282,0	376,1	393,5
EER	(6)	kW/kW	3,352	3,447	3,517	3,348	3,420	3,267	3,223	3,314
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	496,8	496,8	531,0	643,9	684,9	764,8	939,9	988,7
Total power input	(7)	kW	152,9	152,9	160,1	195,5	205,8	224,6	294,3	311,5
COP	(7)	kW/kW	3,249	3,249	3,317	3,294	3,328	3,405	3,194	3,174
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	464,1	492,3	532,0	600,0	660,7	766,8	873,3	940,2
COP	(2)(7)	kW/kW	3,320	3,280	3,300	3,340	3,330	3,380	3,340	3,370
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	527,3	539,2	571,2	676,3	708,6	784,8	991,2	1054
Total power input	(8)	kW	158,4	161,4	167,6	200,9	209,8	230,6	298,1	312,2
Recovery heat exchanger capacity	(8)	kW	676,2	690,9	728,8	865,2	905,8	1002	1271	1348
TER	(8)	kW/kW	7,601	7,621	7,757	7,670	7,693	7,745	7,591	7,694
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	624,8	686,6	785,6	912,3	982,3
SEPR	(9)(10)		-	-	-	5,21	5,21	5,66	5,08	5,00
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	369	369	389	-	-	-	-	-
SCOP	(11)(12)		3,85	3,85	3,83	-	-	-	-	-
Performance ηs	(11)(13)	%	151	151	150	-	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	23,31	25,41	27,26	29,97	32,95	37,65	43,76	47,12
Pressure drop	(1)	kPa	40,8	51,6	32,5	40,5	45,4	29,0	39,7	42,3
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	22,35	23,71	25,63	28,89	31,81	36,92	42,02	45,26
Pressure drop	(7)	kPa	23,0	25,9	21,9	27,6	32,7	32,9	42,6	35,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	265	270	276	299	299	374	403	541
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	67	67	68	69	69	68	70	70
Sound power level in cooling	(15)(16)	dB(A)	100	100	101	102	102	101	103	103
Sound power level in heating	(15)(17)	dB(A)	100	100	101	102	102	101	103	103
SIZE AND WEIGHT										
A	(18)	mm	8150	8150	8900	9650	10400	10400	10400	11900
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2530	2530	2530	2530	2530	2530	2530	2530
Operating weight	(18)	kg	8350	8380	9080	9590	10060	11010	12310	14110

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-Q2-G05-Z

INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation

0502 - 1002 442,9-985,3 kW

i-FR-Q2-G05-Z /SL-CA			0502	0532	0602	0652	0702	0802	0902	1002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	498,6	513,3	549,0	646,7	686,7	765,6	905,4	981,9
Total power input	(1)	kW	183,1	184,0	188,8	229,5	235,8	261,6	322,0	347,6
EER	(1)	kW/kW	2,723	2,790	2,908	2,818	2,912	2,927	2,812	2,825
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	466,1	506,6	547,6	602,3	662,8	763,9	878,7	949,1
EER	(1)(2)	kW/kW	2,850	2,840	2,880	2,920	2,930	2,900	2,850	2,860
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	553,9	570,8	603,7	709,9	754,3	836,2	995,9	1079
Total power input	(5)	kW	187,9	188,9	196,2	240,0	246,7	273,6	330,4	359,2
EER	(5)	kW/kW	2,948	3,022	3,077	2,958	3,058	3,056	3,014	3,004
23°C/15°C										
Cooling capacity	(6)	kW	637,7	657,9	704,4	827,6	878,4	892,8	1025	1228
Total power input	(6)	kW	197,8	198,6	205,1	254,2	262,9	283,0	319,4	385,3
EER	(6)	kW/kW	3,224	3,313	3,434	3,256	3,341	3,155	3,209	3,187
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	492,0	492,0	526,1	637,4	678,9	756,3	881,6	948,9
Total power input	(7)	kW	150,9	150,9	157,8	192,7	203,0	221,5	265,7	283,7
COP	(7)	kW/kW	3,260	3,260	3,334	3,308	3,344	3,414	3,318	3,345
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	459,6	487,6	527,1	594,3	654,9	758,2	862,8	930,9
COP	(2)(7)	kW/kW	3,330	3,290	3,320	3,360	3,350	3,390	3,340	3,380
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	527,3	539,2	571,2	676,3	708,6	784,8	945,4	1021
Total power input	(8)	kW	158,4	161,4	167,6	200,9	209,8	230,6	280,6	299,1
Recovery heat exchanger capacity	(8)	kW	676,2	690,9	728,8	865,2	905,8	1002	1209	1302
TER	(8)	kW/kW	7,601	7,621	7,757	7,670	7,693	7,745	7,680	7,770
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	602,3	662,8	763,9	878,7	949,1
SEPR	(9)(10)		-	-	-	5,25	5,20	5,40	5,02	5,00
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	367	367	389	-	-	-	-	-
SCOP	(11)(12)		3,92	3,85	3,94	-	-	-	-	-
Performance ηs	(11)(13)	%	154	151	154	-	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	22,36	24,32	26,26	28,89	31,80	36,61	42,14	45,52
Pressure drop	(1)	kPa	37,5	47,3	30,2	37,6	42,3	27,4	36,8	39,5
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	22,14	23,48	25,39	28,62	31,53	36,51	41,52	44,81
Pressure drop	(7)	kPa	22,6	25,4	21,5	27,1	32,1	32,1	41,5	34,9
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	265	270	276	299	299	374	403	541
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	57	58	58	59	59	59	61	61
Sound power level in cooling	(15)(16)	dB(A)	90	91	91	92	92	92	94	94
Sound power level in heating	(15)(17)	dB(A)	90	91	91	92	92	92	94	94
SIZE AND WEIGHT										
A	(18)	mm	8150	8150	8900	9650	10400	10400	10400	11900
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2530	2530	2530	2530	2530	2530	2530	2530
Operating weight	(18)	kg	8800	8830	9530	10040	10510	11450	12750	14560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FR-Q2-G05-Z /XL-CA			0502	0532	0602	0652	0702	0802	0902	1002
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1)	kW	442,9	483,5	525,6	571,7	632,6	731,8	847,6	912,3
Total power input	(1)	kW	152,8	169,2	179,6	192,8	212,3	249,5	294,0	315,1
EER	(1)	kW/kW	2,899	2,858	2,927	2,965	2,980	2,933	2,883	2,895
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2)	kW	441,6	481,8	524,4	570,1	630,7	730,3	845,4	909,8
EER	(1)(2)	kW/kW	2,870	2,820	2,900	2,930	2,940	2,910	2,850	2,860
COOLING ONLY										
16°C/10°C										
Cooling capacity	(5)	kW	486,3	565,2	577,9	628,6	695,5	799,7	968,9	1048
Total power input	(5)	kW	158,6	181,8	186,4	200,8	221,6	260,8	314,1	340,6
EER	(5)	kW/kW	3,066	3,109	3,100	3,130	3,139	3,066	3,085	3,077
23°C/15°C										
Cooling capacity	(6)	kW	598,3	650,6	704,4	725,6	802,9	854,1	1096	1195
Total power input	(6)	kW	175,1	191,7	205,1	213,1	236,2	269,6	333,2	364,5
EER	(6)	kW/kW	3,417	3,394	3,434	3,405	3,399	3,168	3,289	3,278
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(7)	kW	438,3	466,5	507,0	565,9	626,8	728,3	833,4	897,4
Total power input	(7)	kW	129,9	140,0	150,6	166,7	185,0	212,1	245,2	260,8
COP	(7)	kW/kW	3,374	3,332	3,367	3,395	3,388	3,434	3,399	3,441
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(2)(7)	kW	439,2	467,5	507,9	567,1	628,3	730,0	835,9	899,7
COP	(2)(7)	kW/kW	3,360	3,320	3,350	3,380	3,370	3,410	3,370	3,420
COOLING WITH TOTAL HEAT RECOVERY										
Cooling capacity	(8)	kW	464,1	508,8	548,8	590,8	650,9	751,5	883,4	921,3
Total power input	(8)	kW	134,8	148,4	157,1	171,6	190,1	221,3	257,6	272,8
Recovery heat exchanger capacity	(8)	kW	590,8	648,3	696,5	752,1	829,6	959,6	1126	1178
TER	(8)	kW/kW	7,826	7,796	7,925	7,826	7,785	7,732	7,799	7,694
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)										
Process refrigeration at high temperature										
Prated,c	(9)	kW	-	-	-	570,1	630,7	730,3	845,4	909,8
SEPR	(9)(10)		-	-	-	5,22	5,28	5,63	5,00	5,01
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)										
PDesign	(11)	kW	319	347	372	-	-	-	-	-
SCOP	(11)(12)		4,16	4,12	4,18	-	-	-	-	-
Performance ηs	(11)(13)	%	164	162	164	-	-	-	-	-
Seasonal efficiency class	(11)		-	-	-	-	-	-	-	-
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1)	l/s	21,18	23,12	25,14	27,34	30,25	35,00	40,54	43,63
Pressure drop	(1)	kPa	33,7	42,7	27,7	33,7	38,3	25,1	34,1	36,3
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(7)	l/s	21,16	22,52	24,47	27,32	30,26	35,15	40,23	43,32
Pressure drop	(7)	kPa	20,6	23,3	19,9	24,7	29,5	29,8	39,0	32,6
REFRIGERANT CIRCUIT										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2
Refrigerant charge		kg	265	270	276	299	299	374	403	541
NOISE LEVEL										
Sound Pressure	(14)	dB(A)	53	54	55	55	55	56	55	56
Sound power level in cooling	(15)(16)	dB(A)	86	87	88	88	88	89	88	89
Sound power level in heating	(15)(17)	dB(A)	87	88	89	89	89	90	89	90
SIZE AND WEIGHT										
A	(18)	mm	8150	8150	8900	9650	10400	10400	10400	11900
B	(18)	mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(18)	mm	2530	2530	2530	2530	2530	2530	2530	2530
Operating weight	(18)	kg	8800	8830	9530	10040	10510	11450	12750	14560

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
5 Plant (side) cooling exchanger water (in/out) 16°C/ 10°C; Source (side) heat exchanger air (in) 35°C.
6 Plant (side) cooling exchanger water (in/out) 23°C/ 15°C; Source (side) heat exchanger air (in) 35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, outdoors.
17 Sound power level in heating, outdoors.
18 Unit in standard configuration/execution, without optional accessories.

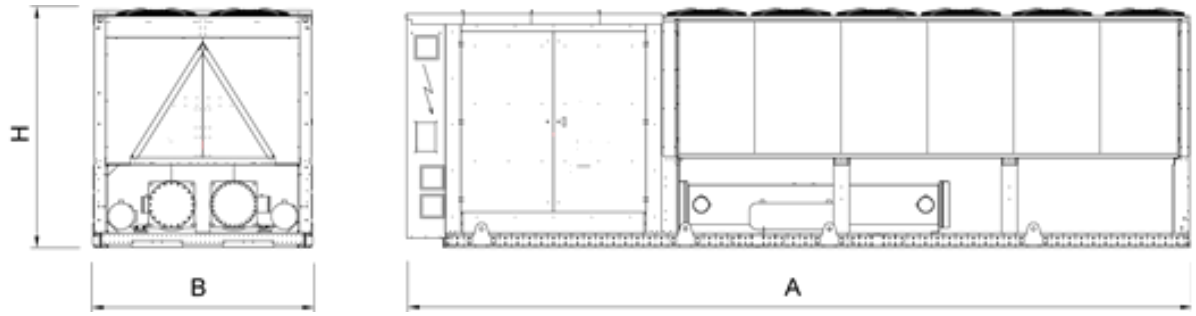
The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

i-FR-Q2-G05-Z

INTEGRA unit for 4-pipe systems, air source, VSD screw compressors and EC fans, for outdoor installation

0502 - 1002 442,9-985,3 kW

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

NRCS-WQ-Z

INTEGRA unit for 4-pipe systems, water source

0152 - 0904 48,38-283,9 kW



Multi-purpose indoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent water circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching. Water-source unit equipped with hermetic rotary Scroll compressors, with R410A, plate heat exchangers and thermostatic expansion valve. The range is composed by units equipped with two and four compressors, all with two independent refrigerant circuits.

Control



W3000 large

The controller W3000 large offers the latest control and functions developed directly by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. on the basis of their experience gained over the years with these particular units and the related plant engineering. The keypad is generously sized with full operating status display. The controls and detailed LCD make access to machine settings easy and safe. Temperature regulation managed on the two water circuits, with a proportional logic referred to the return water temperatures. This allows to satisfy simultaneously the different heating- and cooling requests, with no need of mode changeover. The diagnostics includes full management of alarms with black-box functions and alarm record for better analysis of unit performance. Supervision is easy through Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. devices or with various options for interfacing to ModBus, Bacnet, Echelon LonTalk protocols. Compatibility with remote keyboard (management up to 10 units). Clock available with programming of operation (standard 4 days and 10 time bands). Exclusive self-adaptive defrost logic, monitoring multiple operational- and ambient parameters, which allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R410A

Versions

B Basic

Features

REFRIGERANT GAS R410A

The use of R410A allowed to achive better energy efficiencies with environment full respect (ODP = 0)

INTEGRATED CONDENSATION´S CONTROL

A 2 way valve is supplied as standard for the condensing pressure control. For all the applications in which a constant waterflow through the condenser is needed, a 3-way valve option is also available under request.

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

HOT WATER SUPPLY

Production of hot water up to 55°C to meet the most demanding application needs.

Accessories

- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Acoustical enclosure to reduce the noise emissions.
- Water connections directed upwards (for 2 compressors units only)

NRCS-WQ-Z			0152	0182	0202	0252	0262	0302	0412
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	48,38	55,59	64,57	73,35	82,77	97,04	126,7
Total power input	(1)	kW	8,560	9,730	11,23	13,15	14,69	17,37	22,81
EER	(1)	kW/kW	5,654	5,714	5,768	5,561	5,633	5,575	5,557
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	45,50	52,20	60,90	69,20	77,90	91,30	118,6
EER	(1)(2)	kW/kW	4,420	4,500	4,510	4,430	4,500	4,440	4,440
COOLING ONLY									
16°C/10°C									
Cooling capacity	(5)	kW	52,91	60,89	70,52	80,26	90,64	106,4	139,0
Total power input	(5)	kW	8,677	9,875	11,37	13,33	14,97	17,62	23,19
EER	(5)	kW/kW	6,094	6,164	6,184	6,038	6,040	6,045	5,991
23°C/15°C									
Cooling capacity	(6)	kW	60,47	69,78	80,41	91,92	104,0	122,4	160,0
Total power input	(6)	kW	8,846	10,09	11,56	13,56	15,36	17,91	23,71
EER	(6)	kW/kW	6,836	6,911	6,931	6,757	6,753	6,838	6,751
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(7)	kW	52,07	59,68	69,34	79,04	88,88	104,4	134,8
Total power input	(7)	kW	12,39	13,78	16,19	18,47	20,37	23,87	31,02
COP	(7)	kW/kW	4,202	4,326	4,278	4,270	4,358	4,368	4,348
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(7)	kW	52,40	60,00	69,60	79,40	89,30	104,9	135,5
COP	(2)(7)	kW/kW	3,970	4,110	4,080	4,070	4,140	4,150	4,130
COOLING WITH TOTAL HEAT RECOVERY									
Cooling capacity	(8)	kW	40,42	46,72	54,12	61,68	69,73	81,98	105,6
Total power input	(8)	kW	12,39	13,78	16,19	18,47	20,37	23,87	31,02
Recovery heat exchanger capacity	(8)	kW	52,07	59,68	69,34	79,04	88,88	104,4	134,8
TER	(8)	kW/kW	7,460	7,710	7,623	7,605	7,775	7,799	7,755
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Process refrigeration at high temperature									
Prated,c	(9)	kW	-	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(11)	kW	62,2	71,1	82,8	94,4	106	125	162
SCOP	(11)(12)		5,71	5,88	5,93	5,74	5,79	5,79	5,73
Performance ηs	(11)(13)	%	220	227	229	222	224	224	221
Seasonal efficiency class	(11)		A++	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	l/s	2,186	2,505	2,923	3,323	3,741	4,387	5,697
Pressure drop	(1)	kPa	25,3	22,8	22,4	25,8	28,5	30,2	34,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION									
Water flow	(1)	l/s	2,643	3,023	3,522	4,017	4,512	5,298	6,881
Pressure drop	(1)	kPa	37,0	33,2	32,5	37,6	41,4	44,0	50,4
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(8)	l/s	2,513	2,881	3,347	3,815	4,290	5,041	6,506
Pressure drop	(8)	kPa	33,5	30,1	29,3	34,0	37,5	39,8	45,1
HEAT EXCHANGER SOURCE SIDE IN HEATING									
Water flow	(7)	l/s	1,381	1,596	1,849	2,107	2,382	2,801	3,609
Pressure drop	(7)	kPa	10,1	9,25	8,95	10,4	11,5	12,3	13,9
REFRIGERANT CIRCUIT									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	5,90	6,50	7,20	8,20	8,60	10,3	13,9
NOISE LEVEL									
Sound Pressure	(14)	dB(A)	42	43	43	43	44	45	46
Sound power level in cooling	(15)(16)	dB(A)	73	74	74	74	75	76	77
Sound power level in heating	(15)(17)	dB(A)	73	74	74	74	75	76	77
SIZE AND WEIGHT									
A	(18)	mm	1220	1220	1220	1220	1220	1220	1220
B	(18)	mm	877	877	877	877	877	877	877
H	(18)	mm	1496	1496	1496	1496	1496	1496	1496
Operating weight	(18)	kg	450	470	490	505	525	550	745

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°C.
2 Values in compliance with EN14511
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 14°C/7°C.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, indoors.
17 Sound power level in heating, indoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

NRCS-WQ-Z

INTEGRA unit for 4-pipe systems, water source

0152 - 0904 48,38-283,9 kW

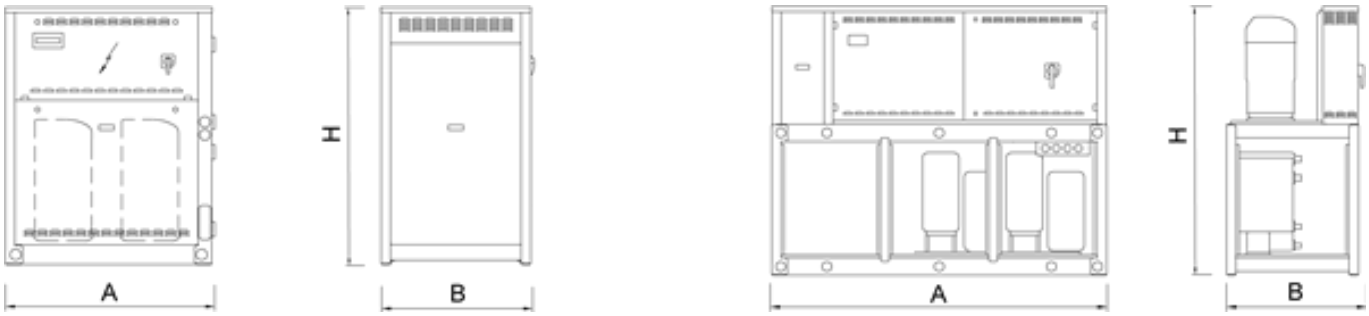
NRCS-WQ-Z			0512	0612	0604	0704	0804	0904
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	157,7	204,8	193,2	224,2	254,2	283,9
Total power input	(1)	kW	28,16	36,56	34,74	40,05	45,46	50,86
EER	(1)	kW/kW	5,592	5,596	5,568	5,591	5,587	5,578
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	148,5	192,5	182,0	210,6	238,2	267,0
EER	(1)(2)	kW/kW	4,490	4,500	4,450	4,480	4,500	4,510
COOLING ONLY								
16°C/10°C								
Cooling capacity	(5)	kW	172,8	224,6	211,7	246,1	279,2	311,3
Total power input	(5)	kW	28,63	37,17	35,26	40,66	46,19	51,72
EER	(5)	kW/kW	6,042	6,038	5,997	6,047	6,043	6,021
23°C/15°C								
Cooling capacity	(6)	kW	198,3	258,2	243,2	283,4	321,6	357,4
Total power input	(6)	kW	29,27	37,97	35,88	41,41	47,16	52,92
EER	(6)	kW/kW	6,768	6,795	6,774	6,845	6,814	6,756
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(7)	kW	168,8	218,9	208,2	239,5	270,1	303,3
Total power input	(7)	kW	38,41	49,95	47,72	54,72	61,82	69,22
COP	(7)	kW/kW	4,396	4,387	4,365	4,378	4,371	4,383
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(2)(7)	kW	169,6	219,9	209,2	240,6	271,3	302,3
COP	(2)(7)	kW/kW	4,160	4,160	4,150	4,160	4,160	4,180
COOLING WITH TOTAL HEAT RECOVERY								
Cooling capacity	(8)	kW	132,7	172,0	163,3	188,1	212,0	238,2
Total power input	(8)	kW	38,41	49,95	47,72	54,72	61,82	69,22
Recovery heat exchanger capacity	(8)	kW	168,8	218,9	208,2	239,5	270,1	303,3
TER	(8)	kW/kW	7,852	7,834	7,788	7,817	7,803	7,825
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Process refrigeration at high temperature								
Prated,c	(9)	kW	-	-	-	-	-	-
SEPR	(9)(10)		-	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)								
PDesign	(11)	kW	202	262	248	289	325	-
SCOP	(11)(12)		5,72	5,76	5,80	5,65	5,77	-
Performance ηs	(11)(13)	%	221	222	224	218	223	-
Seasonal efficiency class	(11)		-	-	-	-	-	-
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	7,129	9,242	8,735	10,11	11,43	12,81
Pressure drop	(1)	kPa	37,9	39,2	37,3	39,2	38,6	38,3
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION								
Water flow	(1)	l/s	8,598	11,15	10,56	12,20	13,79	15,46
Pressure drop	(1)	kPa	55,1	57,0	54,5	57,1	56,2	55,7
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(8)	l/s	8,149	10,57	10,05	11,56	13,04	14,64
Pressure drop	(8)	kPa	49,5	51,2	49,3	51,3	50,2	50,0
HEAT EXCHANGER SOURCE SIDE IN HEATING								
Water flow	(7)	l/s	4,534	5,876	5,580	6,426	7,244	8,139
Pressure drop	(7)	kPa	15,3	15,8	15,2	15,8	15,5	15,5
REFRIGERANT CIRCUIT								
Compressors nr.		N°	2	2	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2
Refrigerant charge		kg	16,8	21,2	22,6	25,2	29,4	29,6
NOISE LEVEL								
Sound Pressure	(14)	dB(A)	47	48	54	55	56	57
Sound power level in cooling	(15)(16)	dB(A)	78	79	86	87	88	89
Sound power level in heating	(15)(17)	dB(A)	78	79	86	87	88	89
SIZE AND WEIGHT								
A	(18)	mm	1220	1220	2560	2560	2560	2560
B	(18)	mm	877	877	891	891	891	891
H	(18)	mm	1496	1496	1810	1810	1810	1810
Operating weight	(18)	kg	825	910	975	1165	1365	1445

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°C.
2 Values in compliance with EN14511
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 14°C/7°C.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, indoors.
17 Sound power level in heating, indoors.
18 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

ERRCS2-WQ-Z

INTEGRA unit for 4-pipe systems, water source

0802 - 1302 189,4-317,9 kW



Multi-purpose indoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent water circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching. Each circuit works with a semi-hermetic screw compressor using R134a, and three tube nest heat exchangers, a cold exchanger on the user side shared by both circuits that acts as an evaporator in the production of cold water, a heat exchanger on the user side that words as a condenser in the production of hot water, and a source side exchanger that works as either condenser or evaporator as required by the loads.

Control



Electronic control W3000TE

W3000TE controller feature a large format keyboard with wide LCD display in order to ensure an easy access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of various components.

As alternative, the innovative KIPlink user interface allows one to operate on the unit directly from the smartphone or tablet. The regulation operates on both water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. This allows to satisfy simultaneously the different requests of both cooling and heating, with no need of mode setting. Complete alarm management system is available, with the "black-box" and the alarm history display functions. Optional proprietary devices adjust the resources in systems made of several units. Consumption metering and performance measurement are available and supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with the remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organised into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity.

Proprietary self-adaptive logic for the defrosting features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R134a

Versions

- Basic

Features

UNIQUE PROPOSAL

Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

WIDE OPERATING RANGE

Supply of hot water in use up to 60°C, offering maximum versatility with respect to different plant engineering solutions

INTEGRATED CONDENSATION´S CONTROL

A 2 way valve is supplied as standard for the condensing pressure control. For all the applications in which a constant waterflow through the condenser is needed, a 3-way valve option is also available under request.

Accessories

- Integral acoustical enclosure (type base or plus)
- Several devices for condensation´s control
- Electronic expansion valve
- Set-up for remote connectivity with ModBus/Echelon protocol cards

ERRCS2-WQ-Z			0802	1002	1102	1302
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1)	kW	189,4	234,2	268,0	317,9
Total power input	(1)	kW	35,74	44,93	50,61	59,66
EER	(1)	kW/kW	5,305	5,216	5,296	5,325
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	kW	182,0	224,9	256,9	305,5
EER	(1)(2)	kW/kW	4,600	4,540	4,530	4,610
COOLING ONLY						
16°C/10°C						
Cooling capacity	(5)	kW	209,8	259,2	296,5	352,0
Total power input	(5)	kW	36,69	46,40	51,81	61,29
EER	(5)	kW/kW	5,717	5,586	5,724	5,742
23°C/15°C						
Cooling capacity	(6)	kW	245,0	302,3	345,4	410,7
Total power input	(6)	kW	38,19	48,80	53,67	63,87
EER	(6)	kW/kW	6,414	6,195	6,432	6,427
HEATING ONLY (GROSS VALUE)						
Total heating capacity	(7)	kW	205,4	254,8	291,2	344,1
Total power input	(7)	kW	45,73	56,90	65,83	76,27
COP	(7)	kW/kW	4,495	4,478	4,426	4,510
HEATING ONLY (EN14511 VALUE)						
Total heating capacity	(2)(7)	kW	206,1	255,8	292,6	345,5
COP	(2)(7)	kW/kW	4,320	4,280	4,190	4,290
COOLING WITH TOTAL HEAT RECOVERY						
Cooling capacity	(8)	kW	162,4	201,3	229,3	272,4
Total power input	(8)	kW	45,73	56,90	65,83	76,27
Recovery heat exchanger capacity	(8)	kW	205,4	254,8	291,2	344,1
TER	(8)	kW/kW	8,046	8,014	7,910	8,081
ENERGY EFFICIENCY						
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)						
Process refrigeration at high temperature						
Prated,c	(9)	kW	-	-	-	-
SEPR	(9)(10)		-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)						
PDesign	(11)	kW	249	309	353	418
SCOP	(11)(12)		5,59	5,56	5,18	5,45
Performance ηs	(11)(13)	%	215	214	199	210
Seasonal efficiency class	(11)		-	-	-	-
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1)	l/s	8,732	10,79	12,33	14,66
Pressure drop	(1)	kPa	25,7	32,5	43,4	37,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION						
Water flow	(1)	l/s	10,51	13,02	14,86	17,62
Pressure drop	(1)	kPa	37,2	47,2	62,9	54,3
HEAT EXCHANGER USER SIDE IN HEATING						
Water flow	(8)	l/s	9,913	12,30	14,06	16,61
Pressure drop	(8)	kPa	33,1	42,1	56,3	48,3
HEAT EXCHANGER SOURCE SIDE IN HEATING						
Water flow	(7)	l/s	5,548	6,877	7,835	9,308
Pressure drop	(7)	kPa	10,4	13,2	17,5	15,2
REFRIGERANT CIRCUIT						
Compressors nr.		N°	2	2	2	2
No. Circuits		N°	2	2	2	2
Refrigerant charge		kg	40,0	46,0	52,0	58,0
NOISE LEVEL						
Sound Pressure	(14)	dB(A)	62	63	65	65
Sound power level in cooling	(15)(16)	dB(A)	94	95	97	97
Sound power level in heating	(15)(17)	dB(A)	94	95	97	97
SIZE AND WEIGHT						
A	(18)	mm	3680	3680	3680	3680
B	(18)	mm	1170	1170	1170	1170
H	(18)	mm	1950	1950	1950	1950
Operating weight	(18)	kg	2420	2470	2880	3580

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°C.
2 Values in compliance with EN14511
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 14°C/7°C.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
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17 Sound power level in heating, indoors.
18 Unit in standard configuration/execution, without optional accessories.

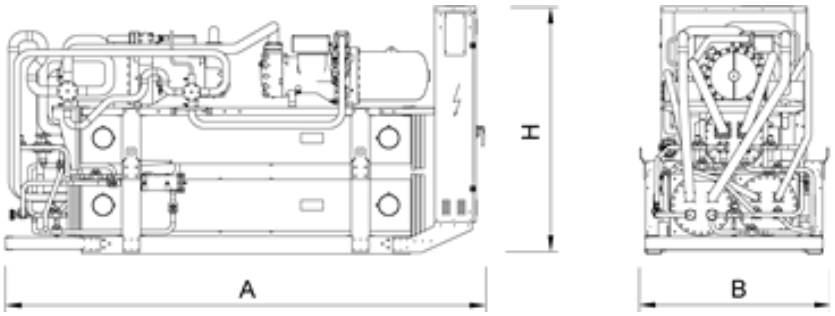
The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.
Certified data in EUROVENT

ERRCS2-WQ-Z

INTEGRA unit for 4-pipe systems, water source

0802 - 1302 189,4-317,9 kW

Dimensional drawing



UNITS FOR SIMULTANEOUS AND INDEPENDENT PRODUCTION OF HOT AND COLD WATER

ERRCS2-WQ-G05-Z

INTEGRA unit for 4-pipe systems, water source

0802 - 1302 189,4-317,9 kW



Multi-purpose indoor unit for use in 4-pipe systems for the simultaneous production of chilled and hot water by means of two independent water circuits. These units are able to satisfy the demand for hot and cold water simultaneously through a system that does not require seasonal switching. Each circuit works with a semi-hermetic screw compressor using R513A, and three tube nest heat exchangers, a cold exchanger on the user side shared by both circuits that acts as an evaporator in the production of cold water, a heat exchanger on the user side that words as a condenser in the production of hot water, and a source side exchanger that works as either condenser or evaporator as required by the loads.

Control



Electronic control W3000TE

W3000TE controller feature a large format keyboard with wide LCD display in order to ensure an easy access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of various components.

As alternative, the innovative KIPlink user interface allows one to operate on the unit directly from the smartphone or tablet. The regulation operates on both water circuits featuring the step-wise regulation referred to the return water temperature with proportional logic. This allows to satisfy simultaneously the different requests of both cooling and heating, with no need of mode setting. Complete alarm management system is available, with the "black-box" and the alarm history display functions. Optional proprietary devices adjust the resources in systems made of several units. Consumption metering and performance measurement are available and supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with the remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organised into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity.

Proprietary self-adaptive logic for the defrosting features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Refrigerant

R513A

Versions

- Basic

Features

UNIQUE PROPOSAL

Unit designed to satisfy the cold and the hot side requirements simultaneously, for 4-pipe systems without any particular operation mode setting

ENERGY SAVING

Energy saving guaranteed by the advanced operation's logic. The best operation mode is set completely automatically and independently by the unit's controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be

WIDE OPERATING RANGE

Supply of hot water in use up to 60°C, offering maximum versatility with respect to different plant engineering solutions

INTEGRATED CONDENSATION´S CONTROL

A 2 way valve is supplied as standard for the condensing pressure control. For all the applications in which a constant waterflow through the condenser is needed, a 3-way valve option is also available under request.

Accessories

- Integral acoustical enclosure (type base or plus)
- Several devices for condensation´s control
- Electronic expansion valve
- Set-up for remote connectivity with ModBus/Echelon protocol cards

ERRCS2-WQ-G05-Z			0802	1002	1102	1302
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1)	kW	189,4	234,2	268,0	317,9
Total power input	(1)	kW	37,24	46,82	52,74	62,16
EER	(1)	kW/kW	5,091	5,004	5,085	5,111
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	kW	182,0	224,9	256,9	305,5
EER	(1)(2)	kW/kW	4,420	4,360	4,350	4,430
COOLING ONLY						
16°C/10°C						
Cooling capacity	(5)	kW	209,8	259,2	296,5	352,0
Total power input	(5)	kW	38,23	48,35	53,98	63,87
EER	(5)	kW/kW	5,492	5,355	5,491	5,509
23°C/15°C						
Cooling capacity	(6)	kW	245,0	302,3	345,4	410,7
Total power input	(6)	kW	39,79	50,85	55,92	66,55
EER	(6)	kW/kW	6,156	5,951	6,179	6,167
HEATING ONLY (GROSS VALUE)						
Total heating capacity	(7)	kW	207,2	257,0	293,8	347,1
Total power input	(7)	kW	47,65	59,29	68,60	79,47
COP	(7)	kW/kW	4,344	4,334	4,283	4,366
HEATING ONLY (EN14511 VALUE)						
Total heating capacity	(2)(7)	kW	207,9	258,0	295,2	348,5
COP	(2)(7)	kW/kW	4,180	4,150	4,060	4,160
COOLING WITH TOTAL HEAT RECOVERY						
Cooling capacity	(8)	kW	162,4	201,3	229,3	272,4
Total power input	(8)	kW	47,65	59,29	68,60	79,47
Recovery heat exchanger capacity	(8)	kW	207,2	257,0	293,8	347,1
TER	(8)	kW/kW	7,746	7,728	7,625	7,794
ENERGY EFFICIENCY						
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)						
Process refrigeration at high temperature						
Prated,c	(9)	kW	-	-	-	-
SEPR	(9)(10)		-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)						
PDesign	(11)	kW	251	311	355	421
SCOP	(11)(12)		5,48	5,45	5,09	5,37
Performance ηs	(11)(13)	%	211	210	195	207
Seasonal efficiency class	(11)		-	-	-	-
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1)	l/s	8,732	10,79	12,33	14,66
Pressure drop	(1)	kPa	25,7	32,5	43,4	37,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION						
Water flow	(1)	l/s	10,58	13,11	14,96	17,74
Pressure drop	(1)	kPa	37,7	47,9	63,8	55,1
HEAT EXCHANGER USER SIDE IN HEATING						
Water flow	(8)	l/s	10,00	12,41	14,18	16,76
Pressure drop	(8)	kPa	33,7	42,9	57,3	49,1
HEAT EXCHANGER SOURCE SIDE IN HEATING						
Water flow	(7)	l/s	5,548	6,877	7,835	9,308
Pressure drop	(7)	kPa	10,4	13,2	17,5	15,2
REFRIGERANT CIRCUIT						
Compressors nr.		N°	2	2	2	2
No. Circuits		N°	2	2	2	2
Refrigerant charge		kg	42,0	48,0	55,0	61,0
NOISE LEVEL						
Sound Pressure	(14)	dB(A)	62	63	65	65
Sound power level in cooling	(15)(16)	dB(A)	94	95	97	97
Sound power level in heating	(15)(17)	dB(A)	94	95	97	97
SIZE AND WEIGHT						
A	(18)	mm	3680	3680	3680	3680
B	(18)	mm	1170	1170	1170	1170
H	(18)	mm	1950	1950	1950	1950
Operating weight	(18)	kg	2420	2470	2880	3580

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 14°C/30°C.
2 Values in compliance with EN14511
5 User side heat exchanger water temperature (in/out) 16°C/10°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
6 User side heat exchanger water temperature (in/out) 23°C/15°C; source side heat exchanger water temperature (in/out) 30°C/35°C.
7 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 14°C/7°C.
8 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (side) heat exchanger water (in/out) 40°C/45°C.
9 Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
10 Seasonal energy efficiency ratio
11 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
12 Seasonal coefficient of performance
13 Seasonal space heating energy efficiency
14 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
15 Sound power on the basis of measurements made in compliance with ISO 9614.
16 Sound power level in cooling, indoors.
17 Sound power level in heating, indoors.
18 Unit in standard configuration/execution, without optional accessories.

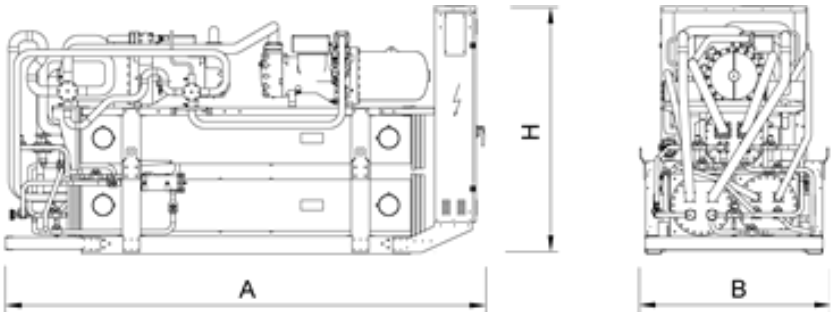
The units highlighted in this publication contain R513A [GWP_{100} 631] fluorinated greenhouse gases.
Certified data in EUROVENT

ERRCS2-WQ-G05-Z

INTEGRA unit for 4-pipe systems, water source

0802 - 1302 189,4-317,9 kW

Dimensional drawing



TELECOM SOLUTIONS

<<< BACK INDEX

MINIPAC EVO INV	0031 - 0071
MINIPAC EVO	0001 - 0091
ENERTEL EVO INV	0031 - 0061
ENERTEL EVO	0001 - 0061
SPLIT EVO INV in	0031 - 0071
SPLIT EVO in	0011 - 0061

TELECOM SOLUTIONS

TELECOM SOLUTIONS

MINIPAC EVO INV

0031 - 0071 8,56-17,6 kW

Packaged INVERTER air conditioners for outdoor installation for telecommunication shelters



The packaged air conditioners for telecommunication shelters are direct expansion packaged systems for outdoor installation, which are fitted with external panels in electrogalvanized steel sheet paintedwith powder-coated paint finish.
The units can be fitted with a Free Cooling damper (optional), which ensures 30% annual energy savings compared to standard systems. The evaporating section fan could work on a direct current at 48 Volt (optional) to ensure operation in an emergency.
Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units are also made to ensure a standard level of operation even under extreme environmental conditions.
The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads and optimizing the power absorbed and eliminating the start current.
Units fitted with electronic expansion valve.

Control



EVOLUTION
Semi-graphic display 132 x 64 pixel, 6 backlit buttons, Programmable software, Record storage of 100 alarms, General alarm, Automatic reset after blackout, Integral LAN system, Standby management, Automatic rotation, Serious alarms, 6 configurable Output alarm.

Versions

BASIC Basic

Features

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Condensing control for lower noise levels
Unit with components vandal proof
Condensing coil protection grill.
User terminal supplied as standard.
Contacts for alarms and working state signal plots
EU3 air filter or EU4 as option
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Emergency mode with UPS
- Indoor grilles for air intake and discharge
- Interface electronic board
- Free cooling damper

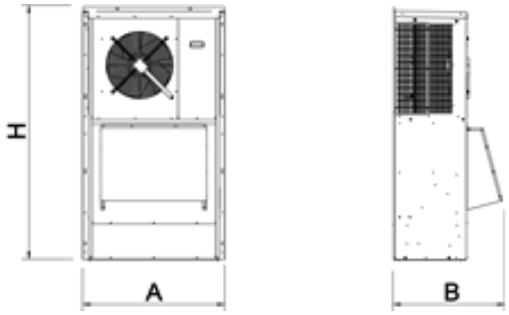
MINIPAC EVO INV BASIC			0051	0071
Power supply		V/ph/Hz	230/1/50	400/3+N/50
PERFORMANCE MAX				
Total cooling capacity gross	(1)	kW	12,6	17,6
Sensible cooling capacity gross	(1)	kW	11,0	15,5
Total power input (Comp.+fans)	(1)	kW	4,34	5,78
EER (Indoor unit)	(1)	kW/kW	2,90	3,04
SHR	(1)(2)		0,87	0,88
PERFORMANCE MIN				
Total cooling capacity gross	(1)	kW	4,46	7,10
Sensible cooling capacity gross	(1)	kW	4,46	7,10
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	-	-
EVAPORATOR FANS				
Quantity		N°	1	2
Air flow rate		m³/h	3200	3900
CONDENSER FAN				
Quantity		N°	1	1
Air flow rate	(1)	m³/h	4000	5900
NOISE LEVEL				
Sound Power		dB(A)	70	79
Sound Pressure	(3)	dB(A)	54	62
SIZE AND WEIGHT - UNDER				
A		mm	1016	1196
B		mm	600	780
H		mm	1935	2280
Weight		kg	270	310

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 1m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



TELECOM SOLUTIONS

MINIPAC EVO

0001 - 0091 1,95-20,6 kW

Packaged air conditioners for outdoor installation for telecommunication shelters



The packaged air conditioners for telecommunication shelters are direct expansion packaged systems for outdoor installation, which are fitted with external panels in electrogalvanized steel sheet paintedwith powder-coated paint finish.
The units can be fitted with a Free Cooling damper (optional), which ensures 30% annual energy savings compared to standard systems. The evaporating section fan could work on a direct current at 48 Volt (optional) to ensure operation in an emergency. Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units are also made to ensure a standard level of operation even under extreme environmental conditions.

Control



EVOLUTION
Semi-graphic display 132 x 64 pixel, 6 backlit buttons, Programmable software, Record storage of 100 alarms, General alarm, Automatic reset after blackout, Integral LAN system, Standby management, Automatic rotation, Serious alarms, 6 configurable Output alarm.

Versions

BASIC	Basic	LT	Low temperature

Features

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Condensing control for lower noise levels
Unit with components vandal proof
Condensing coil protection grill.
User terminal supplied as standard.
Contacts for alarms and working state signal plots
EU3 air filter or EU4 as option
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Interface electronic board
- Emergency mode with UPS
- Free cooling damper
- Indoor grilles for air intake and discharge

MINIPAC EVO BASIC			0001	0003	0004	0011	0021	0031
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	1,95	2,91	3,45	4,94	6,36	8,43
Sensible cooling capacity gross	(1)	kW	1,42	2,67	2,88	4,94	5,65	6,77
Total power input (Comp.+fans)	(1)	kW	0,76	1,19	1,36	1,57	2,01	2,66
EER (Indoor unit)	(1)	kW/kW	2,57	2,45	2,54	3,15	3,16	3,17
SHR	(1)(2)		0,73	0,92	0,83	1,00	0,89	0,80
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	-	-	-	-	-	-
EVAPORATOR FANS								
Quantity		N°	1	1	1	1	1	1
Air flow rate		m³/h	300	990	990	1450	1450	1600
CONDENSER FAN								
Quantity		N°	1	1	1	1	1	1
Air flow rate	(1)	m³/h	500	1210	1210	2500	2500	2500
NOISE LEVEL								
Sound Power		dB(A)	63	66	66	68	68	68
Sound Pressure	(3)	dB(A)	49	52	52	52	52	52
SIZE AND WEIGHT - OVER								
A		mm	394	505	505	970	970	970
B		mm	250	394	394	500	500	500
H		mm	900	1236	1236	1814	1814	1814
Weight		kg	50	75	75	165	170	175

MINIPAC EVO BASIC			0041	0051	0056	0061	0071	0091
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE								
Total cooling capacity gross	(1)	kW	9,72	10,7	14,3	16,8	18,4	20,6
Sensible cooling capacity gross	(1)	kW	9,18	9,53	12,5	14,2	14,8	16,6
Total power input (Comp.+fans)	(1)	kW	3,08	3,44	4,57	5,21	6,16	6,90
EER (Indoor unit)	(1)	kW/kW	3,16	3,11	3,13	3,22	2,99	2,99
SHR	(1)(2)		0,94	0,89	0,87	0,85	0,80	0,81
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	-	-	-	-	-	-
EVAPORATOR FANS								
Quantity		N°	1	1	1	2	2	2
Air flow rate		m³/h	2450	2450	3200	3500	3500	3900
CONDENSER FAN								
Quantity		N°	1	1	1	1	1	1
Air flow rate	(1)	m³/h	4000	4000	4900	5900	5900	5900
NOISE LEVEL								
Sound Power		dB(A)	70	70	74	79	79	79
Sound Pressure	(3)	dB(A)	54	54	58	62	62	62
SIZE AND WEIGHT - OVER								
A		mm	1011	1011	1011	1178	1178	1178
B		mm	600	600	600	777	777	777
H		mm	2115	2115	2115	2240	2240	2240
Weight		kg	265	270	275	300	310	325

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 1m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

TELECOM SOLUTIONS

MINIPAC EVO

0001 - 0091 1,95-20,6 kW

Packaged air conditioners for outdoor installation for telecommunication shelters

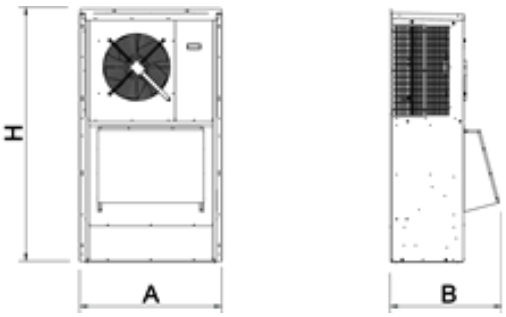
MINIPAC EVO LT			0011	0021	0031	0041	0051	0056	0061	0071	0091
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE											
Total cooling capacity gross	(1)	kW	4,94	6,36	8,43	9,72	10,7	14,3	16,8	18,4	20,6
Sensible cooling capacity gross	(1)	kW	4,94	5,65	6,77	9,18	9,53	12,5	14,2	14,8	16,6
Total power input (Comp.+fans)	(1)	kW	1,57	2,01	2,66	3,08	3,44	4,57	5,21	6,16	6,90
EER (Indoor unit)	(1)	kW/kW	3,15	3,16	3,17	3,16	3,11	3,13	3,22	2,99	2,99
SHR	(1)(2)		1,00	0,89	0,80	0,94	0,89	0,87	0,85	0,80	0,81
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1	1	1
Refrigerant charge		kg	-	-	-	-	-	-	-	-	-
EVAPORATOR FANS											
Quantity		N°	1	1	1	1	1	1	2	2	2
Air flow rate		m³/h	1450	1450	1600	2450	2450	3200	3500	3500	3900
CONDENSER FAN											
Quantity		N°	1	1	1	1	1	1	1	1	1
Air flow rate	(1)	m³/h	2500	2500	2500	4000	4000	4900	5900	5900	5900
NOISE LEVEL											
Sound Power		dB(A)	68	68	68	70	70	74	79	79	79
Sound Pressure	(3)	dB(A)	52	52	52	54	54	58	62	62	62
SIZE AND WEIGHT - OVER											
A		mm	970	970	970	1011	1011	1011	1178	1178	1178
B		mm	500	500	500	600	600	600	777	777	777
H		mm	1814	1814	1814	2115	2115	2115	2240	2240	2240
Weight		kg	165	170	175	265	270	275	300	310	325

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 1m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



TELECOM SOLUTIONS

ENERTEL EVO INV

0031 - 0061 8,51-18,1 kW

Packaged INVERTER air conditioners for indoor installation for telecommunication shelters



The packaged air conditioners for telecommunication shelters are direct expansion packaged systems for indoor installation, which are fitted with external panels in electrogalvanized steel sheet with powder-coated paint finish.
The units can be fitted with a Free Cooling damper (optional), which ensures 30% annual energy savings compared to standard systems. The evaporating section fan could work on a direct current at 48 Volt (optional) to ensure operation in an emergency.
Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units are also made to ensure a standard level of operation even under extreme environmental conditions.
The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads and optimizing the power absorbed and eliminating the start current.
Units fitted with electronic expansion valve.

Control



EVOLUTION
Semi-graphic display 132 x 64 pixel, 6 backlit buttons, Programmable software, Record storage of 100 alarms, General alarm, Automatic reset after blackout, Integral LAN system, Standby management, Automatic rotation, Serious alarms, 6 configurable Output alarm.

Versions

BASIC Basic

Features

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Condensing control for lower noise levels
User terminal supplied as standard.
Contacts for alarms and working state signal plots
EU3 air filter or EU4 as option
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Emergency mode with UPS
- Interface electronic board
- Free cooling damper

ENERTEL EVO INV BASIC			0051	0061
Power supply		V/ph/Hz	230/1/50	400/3+N/50
PERFORMANCE MAX				
Total cooling capacity gross	(1)	kW	12,3	15,1
Sensible cooling capacity gross	(1)	kW	10,7	12,8
Total power input (Comp.+fans)	(1)	kW	4,41	6,47
EER (Indoor unit)	(1)	kW/kW	2,79	2,33
SHR	(1)(2)		0,87	0,85
PERFORMANCE MIN				
Total cooling capacity gross	(1)	kW	4,36	6,58
Sensible cooling capacity gross	(1)	kW	4,36	6,16
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	-	-
EVAPORATOR FANS				
Quantity		N°	1	2
Air flow rate		m³/h	3200	3200
CONDENSER FAN				
Quantity		N°	1	1
Air flow rate	(1)	m³/h	4500	4500
NOISE LEVEL				
Sound Power		dB(A)	72	77
Sound Pressure	(3)	dB(A)	52	57
SIZE AND WEIGHT - UNDER				
A		mm	895	895
B		mm	750	750
H		mm	2050	2050
Weight		kg	270	280

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 2m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



TELECOM SOLUTIONS

ENERTEL EVO

0001 - 0061 1,95-14,8 kW

Packaged air conditioners for indoor installation for telecommunication shelters



The packaged air conditioners for telecommunication shelters are direct expansion packaged systems for indoor installation, which are fitted with external panels in electrogalvanized steel sheet with powder-coated paint finish .
The units can be fitted with a Free Cooling damper (optional), which ensures 30% annual energy savings compared to standard systems. The evaporating section fan could work on a direct current at 48 Volt (optional) to ensure operation in an emergency. Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units are also made to ensure a standard level of operation even under extreme environmental conditions.

Control



EVOLUTION
Semi-graphic display 132 x 64 pixel, 6 backlit buttons, Programmable software, Record storage of 100 alarms, General alarm, Automatic reset after blackout, Integral LAN system, Standby management, Automatic rotation, Serious alarms, 6 configurable Output alarm.

Versions

BASIC	Basic	LT	Low temperature

Features

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Condensing control for lower noise levels
User terminal supplied as standard.
Contacts for alarms and working state signal plots
EU3 air filter or EU4 as option
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Emergency mode with UPS
- Interface electronic board
- Free cooling damper

ENERTEL EVO BASIC			0001	0003	0004	0011	0021
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	1,95	2,91	3,45	4,94	6,09
Sensible cooling capacity gross	(1)	kW	1,42	2,67	2,88	4,94	5,49
Total power input (Comp.+fans)	(1)	kW	0,80	1,19	1,36	2,17	2,68
EER (Indoor unit)	(1)	kW/kW	2,44	2,45	2,54	2,28	2,27
SHR	(1)(2)		0,73	0,92	0,83	1,00	0,90
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	-	-	-	-	-
EVAPORATOR FANS							
Quantity		N°	1	1	1	1	1
Air flow rate		m³/h	300	990	990	1450	1450
CONDENSER FAN							
Quantity		N°	1	1	1	1	1
Air flow rate	(1)	m³/h	500	1210	1210	2600	2600
NOISE LEVEL							
Sound Power		dB(A)	63	67	67	69	69
Sound Pressure	(3)	dB(A)	45	48	48	49	49
SIZE AND WEIGHT - OVER							
A		mm	394	505	505	650	650
B		mm	250	395	395	650	650
H		mm	900	1265	1265	2075	2075
Weight		kg	40	85	85	180	180

ENERTEL EVO BASIC			0031	0041	0051	0056	0061
Power supply		V/ph/Hz	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE							
Total cooling capacity gross	(1)	kW	8,14	9,52	10,6	13,8	14,8
Sensible cooling capacity gross	(1)	kW	6,72	8,64	9,07	12,5	12,9
Total power input (Comp.+fans)	(1)	kW	3,32	3,62	4,05	4,86	5,90
EER (Indoor unit)	(1)	kW/kW	2,45	2,63	2,62	2,84	2,51
SHR	(1)(2)		0,83	0,91	0,86	0,91	0,87
REFRIGERANT CIRCUIT							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	-	-	-	-	-
EVAPORATOR FANS							
Quantity		N°	1	2	2	2	2
Air flow rate		m³/h	1600	2200	2200	3200	3200
CONDENSER FAN							
Quantity		N°	1	1	1	1	1
Air flow rate	(1)	m³/h	2600	3700	3700	4500	4500
NOISE LEVEL							
Sound Power		dB(A)	70	72	72	76	77
Sound Pressure	(3)	dB(A)	50	52	52	56	57
SIZE AND WEIGHT - OVER							
A		mm	650	895	895	895	895
B		mm	650	750	750	750	750
H		mm	2075	2050	2050	2050	2050
Weight		kg	180	260	270	275	280

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 2m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

ENERTEL EVO

0001 - 0061 1,95-14,8 kW

Packaged air conditioners for indoor installation for telecommunication shelters

ENERTEL EVO LT			0011	0021	0031	0041	0051	0056	0061
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	4,94	6,09	8,14	9,52	10,6	13,8	14,8
Sensible cooling capacity gross	(1)	kW	4,94	5,49	6,72	8,64	9,07	12,5	12,9
Total power input (Comp.+fans)	(1)	kW	2,17	2,68	3,32	3,62	4,05	4,86	5,90
EER (Indoor unit)	(1)	kW/kW	2,28	2,27	2,45	2,63	2,62	2,84	2,51
SHR	(1)(2)		1,00	0,90	0,83	0,91	0,86	0,91	0,87
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	-	-	-	-	-	-	-
EVAPORATOR FANS									
Quantity		N°	1	1	1	2	2	2	2
Air flow rate		m³/h	1450	1450	1600	2200	2200	3200	3200
CONDENSER FAN									
Quantity		N°	1	1	1	1	1	1	1
Air flow rate	(1)	m³/h	2600	2600	2600	3700	3700	4500	4500
NOISE LEVEL									
Sound Power		dB(A)	69	69	70	72	72	76	77
Sound Pressure	(3)	dB(A)	49	49	50	52	52	56	57
SIZE AND WEIGHT - OVER									
A		mm	650	650	650	895	895	895	895
B		mm	650	650	650	750	750	750	750
H		mm	2075	2075	2075	2050	2050	2050	2050
Weight		kg	180	180	180	260	270	275	280

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 20Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 2m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



TELECOM SOLUTIONS

SPLIT EVO INV in

0031 - 0071 8,64-17,3 kW

Split air conditioners INVERTER for telecommunication shelters



The split air conditioners for telecommunication shelters are direct expansion systems consisting of motoroperated condensers (BASIC or LT low temperature versions are available) combined with indoor units. Suitable for horizontal installation fixed on a ceiling or vertical installation fixed on a wall, they are fitted with external panels in electrogalvanized steel sheet with powder-coated paint finish. The units can be fitted with a module Free Cooling with damper (optional), which ensures 30% annual energy savings compared to standard systems. The evaporating section fan could work on a direct current at 48 Volt to ensure operation in an emergency (optional). Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units are also made to ensure a standard level of operation even under extreme environmental conditions.
The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads and optimizing the power absorbed and eliminating the start current. Units fitted with electronic expansion valve.

Control



EVOLUTION
Semi-graphic display 132 x 64 pixel, 6 backlit buttons, Programmable software, Record storage of 100 alarms, General alarm, Automatic reset after blackout, Integral LAN system, Standby management, Automatic rotation, Serious alarms, 6 configurable Output alarm.

Versions

BASIC Basic
LT Low temperature

Features

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Condensing control for lower noise levels
Condensing coil protection grill.
User terminal supplied as standard.
Contacts for alarms and working state signal plots
EU3 air filter or EU4 as option
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Emergency mode with UPS
- Interface electronic board
- Plenum with free cooling damper

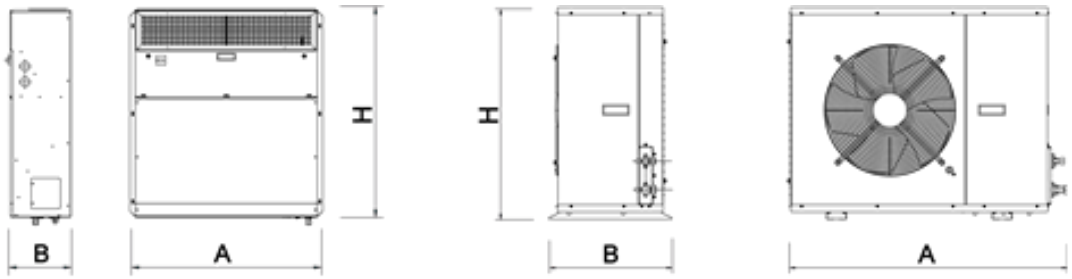
SPLIT EVO INV in			0051	0071
Power supply		V/ph/Hz	230/1/50	230/1/50
PERFORMANCE				
Total cooling capacity gross	(1)	kW	12,6	17,3
Sensible cooling capacity gross	(1)	kW	11,0	15,4
Total power input (Comp.+fans)	(1)	kW	3,95	5,30
EER total	(1)	kW/kW	3,19	3,26
SHR	(2)		0,87	0,89
PERFORMANCE MIN				
Total cooling capacity gross	(1)	kW	4,85	6,97
Sensible cooling capacity gross	(1)	kW	4,85	6,97
FANS				
Quantity		N°	2	2
Air flow rate		m³/h	3200	3900
NOISE LEVEL				
Sound Power		dB(A)	62	63
Sound Pressure	(3)	dB(A)	48	48
SIZE AND WEIGHT				
A		mm	1236	1236
B		mm	1100	1340
H		mm	405	450
Weight		kg	107	125
COUPLING UNIT EXTERNAL				
Code				
Power supply		V/ph/Hz	230/1/50	400/3+N/50
REFRIGERANT CIRCUIT				
Compressors nr.		N°	1	1
Compressors power absorption	(1)	kW	3,18	4,23
Refrigerant charge		kg	-	-
FANS				
Quantity		N°	2	1
Air flow for fan	(1)	m³/h	6400	8640
Fans power input	(1)	kW	0,12	0,53
SIZE AND WEIGHT				
Dimension A		mm	900	1200
Dimension B		mm	420	550
Dimension H		mm	1240	1200
Weight		kg	102	190

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 1m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



MODULO INTERNO - INSIDE MODULE

TELECOM SOLUTIONS

SPLIT EVO in

0011 - 0061 4,94-16,8 kW

Split air conditioners for telecommunication shelters



The split air conditioners for telecommunication shelters are direct expansion systems consisting of motoroperated condensers (BASIC or LT low temperature versions are available) combined with indoor units. Suitable for horizontal installation fixed on a ceiling or vertical installation fixed on a wall, they are fitted with external panels in electrogalvanized steel sheet with powder-coated paint finish. The units can be fitted with a module Free Cooling with damper (optional), which ensures 30% annual energy savings compared to standard systems. The evaporating section fan could work on a direct current at 48 Volt to ensure operation in an emergency (optional). Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units are also made to ensure a standard level of operation even under extreme environmental conditions

Control



EVOLUTION

Semi-graphic display 132 x 64 pixel, 6 backlit buttons, Programmable software, Record storage of 100 alarms, General alarm, Automatic reset after blackout, Integral LAN system, Standby management, Automatic rotation, Serious alarms, 6 configurable Output alarm.

Versions

BASIC Basic

LT Low temperature

Features

Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish.
The panels are lined with sound-insulating material to limit noise levels.
The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Condensing control for lower noise levels
Condensing coil protection grill.
User terminal supplied as standard.
Contacts for alarms and working state signal plots
EU3 air filter or EU4 as option
Capillary Pre and After sales service.

Accessories

- Electric heating coil
- Emergency mode with UPS
- Interface electronic board
- Plenum with free cooling damper

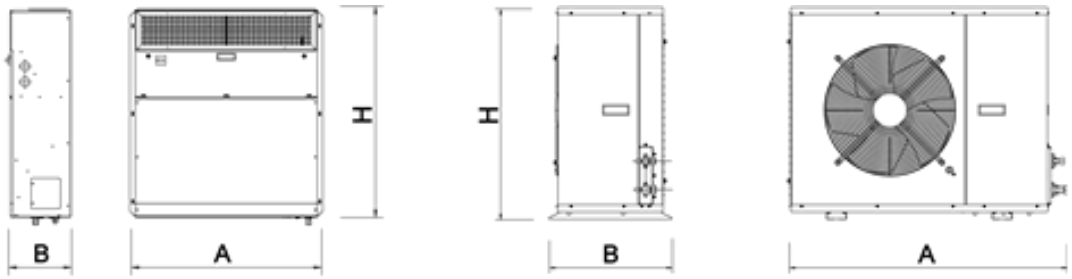
SPLIT EVO in			0011	0021	0031	0041	0051	0056	0061
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
Total cooling capacity gross	(1)	kW	4,94	6,36	8,43	9,71	10,6	14,3	16,8
Sensible cooling capacity gross	(1)	kW	4,94	5,65	6,77	9,17	9,53	12,5	13,8
Total power input (Comp.+fans)	(1)	kW	1,51	1,95	2,61	2,99	3,34	4,41	4,87
EER total	(1)	kW/kW	3,27	3,26	3,23	3,25	3,17	3,24	3,45
SHR	(2)		1,00	0,89	0,80	0,94	0,90	0,87	0,82
FANS									
Quantity		N°	2	2	2	2	2	2	2
Air flow rate		m³/h	1450	1450	1600	2450	2450	3200	3200
NOISE LEVEL									
Sound Power		dB(A)	75	75	75	64	64	62	62
Sound Pressure	(3)	dB(A)	61	61	61	50	50	48	48
SIZE AND WEIGHT									
A		mm	1060	1060	1060	1236	1236	1236	1236
B		mm	990	990	990	1110	1110	1110	1110
H		mm	310	310	310	405	405	405	405
Weight		kg	74	74	74	107	107	107	107
COUPLING UNIT EXTERNAL									
Code									
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
REFRIGERANT CIRCUIT									
Compressors nr.		N°	1	1	1	1	1	1	1
Compressors power absorption	(1)	kW	1,18	1,62	2,27	2,37	2,72	3,64	4,10
Refrigerant charge		kg	-	-	-	-	-	-	-
FANS									
Quantity		N°	1	1	1	2	2	2	2
Air flow for fan	(1)	m³/h	2500	2500	2500	3600	3600	4900	4900
Fans power input	(1)	kW	0,13	0,13	0,13	0,06	0,06	0,12	0,12
SIZE AND WEIGHT									
Dimension A		mm	900	900	900	900	900	900	900
Dimension B		mm	370	370	370	370	370	420	420
Dimension H		mm	740	740	740	990	990	1240	1240
Weight		kg	67	93	87	109	102	148	125

Notes

1 Indoor conditions=27°C, 50%UR Outdoor temperature=35°C ESP= 0Pa.
2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.
3 Measured at 1 m height, 1m in front of the unit in free field.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



MODULO INTERNO - INSIDE MODULE

CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS

ClimaPRO DCO

DATACENTER MANAGER - - -

ClimaPRO DCO

Chiller Plant Control with Active Optimization System

ClimaPRO System Manager



Versions

CPMV	Version featuring Measurement & Performance Verification
CPCO	Version featuring Control & Active Optimization

Features

- Acquisition of real-time data from the plant
- Measurement of energy indexes for the units and the entire system
- Energy reporting
- Chart building for trend analysis
- Supervisory and control for the units and the main field components
- Active Optimization based on real time data measurement

**ClimaPRO System Manager represents the state-of-the-art platform for chiller plant management and control.
ClimaPRO ensures to actively optimize the entire chiller plant by managing and adjusting each component directly involved in the production and the distribution of the heating and the cooling energies, therefore involving chillers and heat pumps, pumping groups as well as the source-side devices like, for example, the cooling towers.**

In particular, ClimaPRO measures in real-time all the operating variables from the field, for each individual device and each of the main system branche, by using serial communication lines as well as dedicated analogue signals.

The acquired data are then compared with the design data of each single unit at any different working conditions, thus allowing to implement control strategies based on dynamic algorithms which take into account the real operating conditions.

On the basis of these values, an advanced diagnostic module also allows to assess the level of efficiency for each individual unit, translating data into easy-to-read information in order to simplify and optimize the maintenance activities.

The “Chart Builder” software module allows to display the trends of the main operating variables. The “Reporting” module allows to send reports to selected users, including data and system’s status of the main devices as well as to perform calculation of the energy indexes for each single unit and for the entire chiller plant.

The accessibility to ClimaPRO System Manager is ensured by an integrated web server that makes it visible from any computer equipped with a web browser, either locally or remotely.

CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS

DATACENTER MANAGER

DATACENTERS's group regulation device

- - -



Features

- Ease of installation thanks to the all-in-one solution
- 8.4" Touch-screen display, 65536 colours
- Security - password-protected data access
- Balancing of single unit operating hours
- Multi-language interface
- Possibility of selecting the type of regulation and the reference probe for regulation
- Possibility of selecting the type of distribution of the requests of the group regulation device to the machines according to the needs of the system
- Some units can be given priority
- Possibility of choosing the number of units on standby - dynamic standby
- Device and unit alarm display
- Management of an additional serial connection for the integration of existing BMS

DATACENTER MANAGER is a centralized management and control system specifically designed for Datacenters applications that provides up to a 70% efficiency improvement to the air conditioning system with a substantial global benefit & drastic decreasing of the datacenter's global PUE value (Power Usage Effectiveness).

DATACENTER MANAGER combine the optimized management of Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. units, the indoor CRAC units on chilled water version inside the datacenters, together with the external chillers.

It manages up to 10 internal units and up to 8 external units with the same or different power ratings, on 2 pipes systems. The indoor units regulation is demanded to the Master unit that through a clever algorithm named ADS (Adaptive Set Point) recognizes the real instantaneous heat load inside the Datacenter and transfers such info to the external group of chillers to optimize their functioning and resources to provide maximum global efficiency. DATACENTER MANAGER great advantage is to provide continue cooling capacity modulation of the external chillers based on the real Datacenter's heat load noticed from indoor units.

The DATACENTER MANAGER has an 8.4" touch-screen user interface, allowing access to all information and the sending of commands with a few simple touches. Communication between DATACENTER MANAGER and the machines is accomplished by means of an RS485 serial connection. It has its own adjustment probes to be placed in suitably prepared pockets in the hydraulic system pipes. Various additional appliances, to be chosen according to the characteristics, needs and availability of remote connection at the place of installation of the units, can be supplied in the same industrial box as the DATACENTER MANAGER: modem/router for connection to a fixed ADSL line, modem for connection to a fixed PSTN, modem for connection to GPRS.

ANCILLARY PRODUCTS

<<< BACK INDEX

NHCR	0011-21 - 0121
NCE	118A - 528B
FCE	218A - 828C
T-MATE DX-A	M 11 - T 280
T-MATE DX-E	M 11 - T 280
T-MATE DX-PF-E	T 11 - T 144
T-MATE DC-A	M 20 - T 280
GR-Z A	010 - 164
GR-Z E	010 - 164
i-BRRE	014m - 190b
BRRE	007m - 190b
i-BRDC	013m - 210m
BRDC	008m - 210m

ANCILLARY PRODUCTS

NHCR

0011-21 - 0121 7,90-40,1 kW

Remote condenser with axial fans



Remote condensers with axial-type fans for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow.

Refrigerant

R407C

Features

Structure and base in hot-dip galvanised steel with epoxy powder paint finish. Finned coil exchanger made from copper tubes and aluminium fins. The aluminium fins are correctly spaced to guarantee optimum heat exchange efficiency.

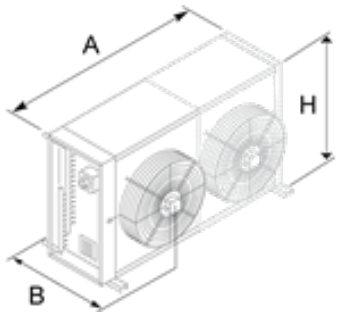
NHCR			0011-21	0025-31-41	0051	0061	0071-91	0101	0121
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	7,90	15,9	16,3	24,0	25,5	32,7	40,1
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,16	0,32	0,27	0,48	0,54	0,54	0,81
FANS									
Air flow		m³/h	2267	4535	4899	6802	10330	9798	15500
NOISE LEVEL									
Sound Power	(2)	dB(A)	33	36	35	38	38	38	40
SIZE AND WEIGHT									
A	(3)	mm	780	1380	1105	1980	2005	2005	2905
H	(3)	mm	555	555	828	555	828	828	828
B	(3)	mm	362	362	428	362	428	428	428
Weight	(3)	kg	20,0	38,0	43,0	51,0	76,0	84,0	111

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R407C [GWP_{100} 1774] fluorinated greenhouse gases.

Dimensional drawing



NCE

Remote condenser with axial fans

118A - 528B 45,0-566 kW



Remote condensers with axial-type fans for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for those projects where acoustical emissions play a central role.

Refrigerant

R410A

Versions

B	Basic	SL	super-low noise version
LN	Low noise		

NCE / B			118A	118B	118C	218A	218B	218C	318A	318B
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	55,0	68,0	75,0	110	135	150	160	197
No. Circuits		N°	1	1	1	1	1	1	1	1
Total power input	(1)	kW	2,00	2,00	2,00	4,00	4,00	4,00	6,00	6,00
FANS										
Air flow		m³/h	21200	19600	18400	42400	39000	36800	63600	58800
NOISE LEVEL										
Sound Power	(2)	dB(A)	81	81	81	84	84	84	86	86
SIZE AND WEIGHT										
A	(3)	mm	1880	1880	1880	3230	3230	3230	4580	4580
H	(3)	mm	1370	1370	1370	1370	1370	1370	1370	1370
B	(3)	mm	800	800	800	800	800	800	800	800
Weight	(3)	kg	145	157	168	279	302	324	413	447

NCE / B			318C	328A	328B	328C	418B	418C	428B	428C
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	228	301	389	430	270	300	511	566
No. Circuits		N°	1	2	2	2	1	1	2	2
Total power input	(1)	kW	6,00	12,0	12,0	12,0	8,00	8,00	16,0	16,0
FANS										
Air flow		m³/h	55200	123600	114000	106200	78400	73600	152000	141600
NOISE LEVEL										
Sound Power	(2)	dB(A)	86	89	89	89	86	86	90	90
SIZE AND WEIGHT										
A	(3)	mm	4580	5930	4580	4580	5930	5930	5930	5930
H	(3)	mm	1370	2390	2390	2390	1370	1370	2390	2390
B	(3)	mm	800	800	800	800	800	800	800	800
Weight	(3)	kg	481	680	742	804	592	637	982	1065

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NCE / LN			118A	118B	118C	218A	218B	218C	318A	318B
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	49,0	58,0	63,0	97,0	116	125	141	169
No. Circuits		N°	1	1	1	1	1	1	1	1
Total power input	(1)	kW	1,30	1,30	1,30	2,50	2,50	2,50	3,80	3,80
FANS										
Air flow		m³/h	17000	15500	14400	34000	31000	28800	51000	46500
NOISE LEVEL										
Sound Power	(2)	dB(A)	75	75	75	78	78	78	80	80
SIZE AND WEIGHT										
A	(3)	mm	1880	1880	1880	3230	3230	3230	4580	4580
H	(3)	mm	1370	1370	1370	1370	1370	1370	1370	1370
B	(3)	mm	800	800	800	800	800	800	800	800
Weight	(3)	kg	145	157	168	279	302	324	413	447

NCE / LN			318C	328A	328B	328C	418B	418C	428B	428C
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	191	264	331	354	232	251	435	466
No. Circuits		N°	1	2	2	2	1	1	2	2
Total power input	(1)	kW	3,80	7,60	7,60	7,60	5,10	5,10	10,2	10,2
FANS										
Air flow		m³/h	43200	97800	88800	81000	46500	43200	118400	108000
NOISE LEVEL										
Sound Power	(2)	dB(A)	80	83	83	83	80	80	84	84
SIZE AND WEIGHT										
A	(3)	mm	4580	4580	4580	4580	5930	5930	5930	5930
H	(3)	mm	1370	2390	2390	2390	1370	1370	2390	2390
B	(3)	mm	800	800	800	800	800	800	800	800
Weight	(3)	kg	481	680	742	804	592	637	982	1065

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

NCE

Remote condenser with axial fans

118A - 528B 45,0-566 kW

NCE / SL			216A	216B	218A	218C	316A	318A	318B	328A
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	45,0	49,0	79,0	95,0	67,0	115	133	215
No. Circuits		N°	1	1	1	1	1	1	1	2
Total power input	(1)	kW	0,40	0,40	1,20	1,20	0,60	1,80	1,80	3,60
FANS										
Air flow		m³/h	11600	10400	24400	20200	17400	36600	33000	48800
NOISE LEVEL										
Sound Power	(2)	dB(A)	68	68	71	71	70	73	73	76
SIZE AND WEIGHT										
A	(3)	mm	2630	2630	3230	3230	3770	4580	4580	4580
H	(3)	mm	1230	1230	1370	1370	1230	1370	1370	2390
B	(3)	mm	600	600	800	800	600	800	800	800
Weight	(3)	kg	200	215	340	360	290	490	530	770

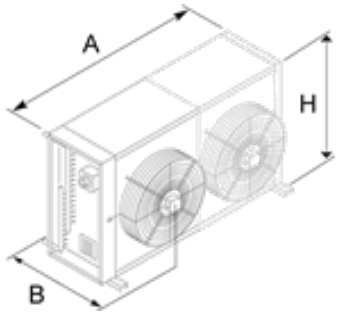
NCE / SL			328B	328C	418A	418B	418C	428A	428B	528B
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	259	273	158	182	190	295	340	430
No. Circuits		N°	2	2	1	1	1	2	2	2
Total power input	(1)	kW	3,60	3,60	2,40	2,40	2,40	4,80	4,80	6,00
FANS										
Air flow		m³/h	44000	40400	69600	62400	57600	92800	83200	104000
NOISE LEVEL										
Sound Power	(2)	dB(A)	76	76	74	74	74	77	77	78
SIZE AND WEIGHT										
A	(3)	mm	4580	4580	5930	5930	5930	4580	4580	7280
H	(3)	mm	2390	2390	1370	1370	1370	2390	2390	2390
B	(3)	mm	800	800	800	800	800	800	800	800
Weight	(3)	kg	830	890	645	695	735	1010	1090	1350

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



FCE

Remote condenser with axial fans

218A - 828C 83,0-929 kW



Remote condensers with axial-type fans for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for those projects where acoustical emissions play a central role.

Refrigerant

R134a

Versions

B	Basic	SL	super-low noise version
LN	Low noise		

FCE / B			218A	218B	228A	228B	228C	318B	328B	328C	418C
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE											
NOMINAL SPECIFICATIONS											
Rated capacity	(1)	kW	98,0	123	185	232	262	177	340	390	278
No. Circuits		N°	1	1	2	2	2	1	2	2	1
Total power input	(1)	kW	4,00	4,00	8,00	8,00	8,00	6,00	12,0	12,0	8,00
FANS											
Air flow		m³/h	42400	39200	82400	76000	70800	58800	114000	106200	73600
NOISE LEVEL											
Sound Power	(2)	dB(A)	84	84	87	87	87	86	89	89	87
SIZE AND WEIGHT											
A	(3)	mm	3230	3230	3230	3230	3230	4580	4580	4580	5930
H	(3)	mm	1370	1370	2390	2390	2390	1370	2390	2390	1370
B	(3)	mm	800	800	800	800	800	800	800	800	800
Weight	(3)	kg	279	302	462	502	543	447	742	804	637

FCE / B			428B	428C	518B	518C	528B	528C	628B	628C	828B
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE											
NOMINAL SPECIFICATIONS											
Rated capacity	(1)	kW	464	524	311	351	586	661	683	783	929
No. Circuits		N°	2	2	1	1	2	2	2	2	2
Total power input	(1)	kW	16,0	16,0	10,0	10,0	20,0	20,0	24,0	24,0	32,0
FANS											
Air flow		m³/h	152000	141600	98000	92000	190000	177000	228000	212400	236800
NOISE LEVEL											
Sound Power	(2)	dB(A)	90	90	88	88	91	91	91	92	94
SIZE AND WEIGHT											
A	(3)	mm	5930	5930	7280	7280	7280	7280	8630	8630	11330
H	(3)	mm	2390	2390	1370	1370	2390	2390	2390	2390	2390
B	(3)	mm	800	800	800	800	800	800	800	800	800
Weight	(3)	kg	982	1065	737	794	1222	1325	1461	1585	1942

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FCE / LN			218A	218B	228A	228B	228C	318B	328A
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	87,0	107	164	200	219	154	233
No. Circuits		N°	1	1	2	2	2	1	2
Total power input	(1)	kW	2,50	2,50	5,10	5,10	5,10	3,80	7,60
FANS									
Air flow		m³/h	34000	31000	65200	59200	54000	46500	97800
NOISE LEVEL									
Sound Power	(2)	dB(A)	78	78	81	81	81	80	83
SIZE AND WEIGHT									
A	(3)	mm	3230	3230	3230	3230	3230	4580	4580
H	(3)	mm	1370	1370	2390	2390	2390	1370	2390
B	(3)	mm	800	800	800	800	800	800	800
Weight	(3)	kg	279	302	462	502	543	447	680

FCE / LN			328B	328C	418C	428B	428C	518B	518C
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	299	329	236	399	437	270	283
No. Circuits		N°	2	2	1	2	2	1	1
Total power input	(1)	kW	7,60	7,60	5,10	10,2	10,2	6,40	6,40
FANS									
Air flow		m³/h	88800	81000	57600	118400	108000	77500	72000
NOISE LEVEL									
Sound Power	(2)	dB(A)	83	83	81	84	84	82	82
SIZE AND WEIGHT									
A	(3)	mm	4580	4580	5930	5930	5930	7280	7280
H	(3)	mm	2390	2390	1370	2390	2390	1370	1370
B	(3)	mm	800	800	800	800	800	800	800
Weight	(3)	kg	742	804	637	982	1065	737	794

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FCE

Remote condenser with axial fans

218A - 828C 83,0-929 kW

FCE / LN			528B	528C	628B	628C	828B
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	506	553	599	660	800
No. Circuits		N°	2	2	2	2	2
Total power input	(1)	kW	12,7	12,7	15,2	15,2	20,3
FANS							
Air flow		m³/h	148000	135000	177600	162000	236800
NOISE LEVEL							
Sound Power	(2)	dB(A)	85	85	86	86	88
SIZE AND WEIGHT							
A	(3)	mm	7280	7280	8630	8630	11330
H	(3)	mm	2390	2390	2390	2390	2390
B	(3)	mm	800	800	800	800	800
Weight	(3)	kg	1222	1325	1461	1585	1942

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

FCE / SL			228C	318A	318B	328B	328C	416A	418A
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	171	104	122	241	260	83,0	145
No. Circuits		N°	2	1	1	2	2	1	1
Total power input	(1)	kW	2,40	1,80	1,80	3,50	3,50	0,80	2,40
FANS									
Air flow		m³/h	38400	36600	33000	82200	76200	23200	48800
NOISE LEVEL									
Sound Power	(2)	dB(A)	74	73	73	76	76	71	74
SIZE AND WEIGHT									
A	(3)	mm	3230	4580	4580	4580	4580	4910	5930
H	(3)	mm	2390	1370	1370	2390	2390	1230	1370
B	(3)	mm	800	800	800	800	800	600	800
Weight	(3)	kg	543	413	447	742	804	292	547

FCE / SL			418B	418C	428A	428B	428C	518B	528B
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	171	173	270	318	342	217	274
No. Circuits		N°	1	1	2	2	2	1	2
Total power input	(1)	kW	2,40	2,40	4,70	4,70	4,70	3,00	5,90
FANS									
Air flow		m³/h	44000	40400	92800	83200	76800	55000	104000
NOISE LEVEL									
Sound Power	(2)	dB(A)	74	74	77	77	77	75	78
SIZE AND WEIGHT									
A	(3)	mm	5930	5930	5930	5930	5930	7280	7280
H	(3)	mm	1370	1370	2390	2390	2390	1370	2390
B	(3)	mm	800	800	800	800	800	800	800
Weight	(3)	kg	592	637	900	982	1065	737	1222

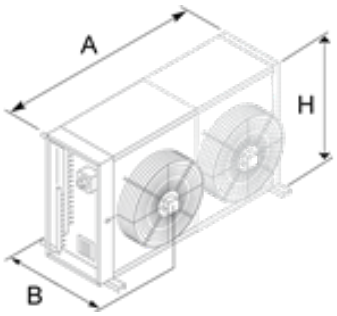
FCE / SL			528C	628B	628C	728B	728C	828B	828C
Power supply		V/ph/Hz	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE	400/3/50+PE
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	433	483	520	552	600	636	683
No. Circuits		N°	2	2	2	2	2	2	2
Total power input	(1)	kW	5,90	7,10	7,10	8,30	8,30	9,40	9,40
FANS									
Air flow		m³/h	96000	124800	115200	145600	134400	166400	153600
NOISE LEVEL									
Sound Power	(2)	dB(A)	78	79	79	79	79	80	80
SIZE AND WEIGHT									
A	(3)	mm	7280	8630	8630	9980	9980	11330	11330
H	(3)	mm	2390	2390	2390	2390	2390	2390	2390
B	(3)	mm	800	800	800	800	800	800	800
Weight	(3)	kg	1325	1461	1585	1702	1845	1942	2106

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP_{100} 1430] fluorinated greenhouse gases.

Dimensional drawing



ANCILLARY PRODUCTS

T-MATE DX-A

M 11 - T 280 9,50-302 kW

Remote condenser for close control air conditioners with AC axial fans



Remote condensers with axial-type fan(s) for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow.
The very low noise, adjustable-speed fans are excellent for use in both technological and civil applications.
The units operate with a single-phase 230V/1ph/50Hz and 400V/3ph/50Hz and are fitted with integrated fans speed regulator per standard.

Refrigerant

R410A

Versions

STD Standard
LNO Low noise
ELN Extra low noise

Features

HOUSING: Base, self-supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
ELECTRIC FANS of an axial type, statically and dynamically balanced on two levels, with blades in an inoxidable material and external rotor motor suitable for adjusting the speed, all mounted on a metal supporting grid in conformity with safety regulations. The motors are to VDE 0530-12.84. The protection rating is IP54 to DIN40050.
CONDENSING COIL: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.
REFRIGERANT CIRCUIT CONNECTIONS are arranged along one side of the unit and are to be welded for safe connection that prevents any fluid leak.

Accessories

- Legs kit for vertical air flow

T-MATE DX-A STD			M 11	M 110	M 130	M 14	M 140	M 17	M 20
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	11,9	109	131	14,4	147	18,2	20,6
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,25	1,59	2,12	0,25	2,12	0,25	0,39
FANS									
Air flow		m³/h	4900	27200	37800	4500	36000	5200	6400
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	46	55	56	46	56	46	48
SIZE AND WEIGHT									
A	(3)	mm	875	3490	4540	875	4540	1200	1200
H	(3)	mm	727	1150	1150	727	1150	727	727
B	(3)	mm	540	665	665	540	665	540	540
Weight	(3)	kg	51,0	270	320	55,0	350	66,0	72,0

T-MATE DX-A STD			M 25	M 30	M 35	M 45	M 50	M 60	M 70
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	24,0	32,4	37,0	47,1	54,6	61,3	73,0
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,53	0,53	0,53	0,78	1,08	1,08	1,08
FANS									
Air flow		m³/h	9600	9500	9100	12000	17000	16000	18000
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	51	51	51	51	53	53	54
SIZE AND WEIGHT									
A	(3)	mm	1400	1400	1400	1600	1850	1850	2320
H	(3)	mm	1027	1027	1027	1027	1027	1027	1140
B	(3)	mm	665	665	665	665	665	665	665
Weight	(3)	kg	102	111	120	153	175	188	214

T-MATE DX-A STD			M 95	T 185	T 210	T 250	T 280
Power supply		V/ph/Hz	230/1/50	400/3/50+N(*)	400/3/50+N(*)	400/3/50+N(*)	400/3/50+N(*)
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	97,7	199	227	270	302
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,59	3,18	3,18	4,24	4,24
FANS							
Air flow		m³/h	28200	56000	54000	74600	72000
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	55	57	57	58	58
SIZE AND WEIGHT							
A	(3)	mm	3490	3490	3490	4540	4540
H	(3)	mm	1150	2250	2250	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	240	470	520	630	690

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-A LNO			M 11	M 110	M 130	M 14	M 140	M 17	M 20
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	10,8	96,7	117	12,9	130	16,2	18,4
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,21	1,35	1,80	0,21	1,80	0,21	0,33
FANS									
Air flow		m³/h	4165	23120	32130	3825	30600	4420	5440
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	42	51	53	42	53	42	44
SIZE AND WEIGHT									
A	(3)	mm	875	3490	4540	875	4540	1200	1200
H	(3)	mm	727	1150	1150	727	1150	727	727
B	(3)	mm	540	665	665	540	665	540	540
Weight	(3)	kg	51,0	270	320	55,0	350	66,0	72,0

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-A

Remote condenser for close control air conditioners with AC axial fans

M 11 - T 280 9,50-302 kW

T-MATE DX-A LNO			M 25	M 30	M 35	M 45	M 50	M 60	M 70
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	21,7	28,9	32,6	41,6	48,9	54,4	62,4
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,45	0,45	0,45	0,66	0,92	0,92	0,92
FANS									
Air flow		m³/h	8160	8075	7735	10200	14450	13600	15300
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	47	47	47	47	49	49	50
SIZE AND WEIGHT									
A	(3)	mm	1400	1400	1400	1600	1850	1850	2320
H	(3)	mm	1027	1027	1027	1027	1027	1027	1140
B	(3)	mm	665	665	665	665	665	665	665
Weight	(3)	kg	102	111	120	153	175	188	214

T-MATE DX-A LNO			M 95	T 185	T 210	T 250	T 280
Power supply		V/ph/Hz	230/1/50	400/3/50+N(*)	400/3/50+N(*)	400/3/50+N(*)	400/3/50+N(*)
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	87,1	177	200	241	266
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,35	2,70	2,70	3,60	3,60
FANS							
Air flow		m³/h	23970	47600	45900	63410	61200
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	51	53	53	54	54
SIZE AND WEIGHT							
A	(3)	mm	3490	3490	3490	4540	4540
H	(3)	mm	1150	2250	2250	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	240	470	520	630	690

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-A ELN			M 11	M 110	M 130	M 14	M 140	M 17	M 20
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	9,50	83,0	101	11,2	112	14,1	16,0
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,18	1,11	1,48	0,18	1,48	0,18	0,27
FANS									
Air flow		m³/h	3430	19040	26460	3150	25200	3640	4480
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	37	47	48	37	48	37	39
SIZE AND WEIGHT									
A	(3)	mm	875	3490	4540	875	4540	1200	1200
H	(3)	mm	727	1150	1150	727	1150	727	727
B	(3)	mm	540	665	665	540	665	540	540
Weight	(3)	kg	51,0	270	320	55,0	350	66,0	72,0

T-MATE DX-A ELN			M 25	M 30	M 35	M 45	M 50	M 60	M 70
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	19,1	25,1	27,9	35,8	42,8	47,0	55,2
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,37	0,37	0,37	0,55	0,76	0,76	0,76
FANS									
Air flow		m³/h	6720	6650	6370	8400	11900	11200	12600
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	42	42	42	43	45	45	45
SIZE AND WEIGHT									
A	(3)	mm	1400	1400	1400	1600	1850	1850	2320
H	(3)	mm	1027	1027	1027	1027	1027	1027	1140
B	(3)	mm	665	665	665	665	665	665	665
Weight	(3)	kg	102	111	120	153	175	188	214

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

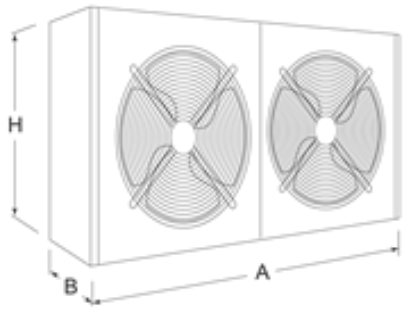
T-MATE DX-A ELN			M 95	T 185	T 210	T 250	T 280
Power supply		V/ph/Hz	230/1/50	400/3/50+N(*)	400/3/50+N(*)	400/3/50+N(*)	400/3/50+N(*)
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	75,6	154	172	209	243
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,11	2,23	2,23	2,23	2,97
FANS							
Air flow		m³/h	19740	39200	37800	52220	50400
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	47	49	49	50	50
SIZE AND WEIGHT							
A	(3)	mm	3490	3490	3490	4540	4540
H	(3)	mm	1150	2250	2250	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	240	470	520	630	690

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



ANCILLARY PRODUCTS

T-MATE DX-E

M 11 - T 280 9,50-302 kW

Remote condenser for close control air conditioners with EC axial fans



Remote condensers with axial fans with EC electric motor for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for use in both technological and civil applications. The units operate with a single-phase 230V/1ph/50Hz and 400V/3ph/50Hz and are fitted without integrated fans speed regulator per standard. The motor rotation control is obtained according to the 0÷10V proportional signal coming from the internal unit microprocessor control.

Refrigerant

R410A

Versions

STD Standard
LNO Low noise
ELN Extra low noise

Features

HOUSING: Base, self-supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
ELECTRIC FANS: the “EC” axial fans are equipped with a brushless type synchronous motor with integrated electronic commutated system.
Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
External rotor EC type electric motor with step-less variable speed control. The protection rating is IP54.
CONDENSING COIL: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.
HYDRAULICS CIRCUIT CONNECTIONS are arranged along one side of the unit and are to be welded for safe connection that prevents any fluid leak.

Accessories

- Legs kit for vertical air flow

T-MATE DX-E STD			M 11	M 110	M 130	M 14	M 140	M 17	M 20
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	11,9	109	131	14,4	147	18,2	20,6
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,17	1,27	1,53	0,18	1,68	0,18	0,30
FANS									
Air flow		m³/h	4900	27200	37800	4500	36000	5200	6400
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	46	55	56	46	56	46	48
SIZE AND WEIGHT									
A	(3)	mm	875	3490	4540	875	4540	1200	1200
H	(3)	mm	727	1150	1150	727	1150	727	727
B	(3)	mm	540	665	665	540	665	540	540
Weight	(3)	kg	51,0	270	320	55,0	350	66,0	72,0

T-MATE DX-E STD			M 25	M 30	M 35	M 45	M 50	M 60	M 70
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	24,0	32,4	37,0	47,1	54,6	61,3	73,0
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,34	0,39	0,40	0,60	0,82	0,86	0,81
FANS									
Air flow		m³/h	9600	9500	9100	12000	17000	16000	18000
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	51	51	51	51	53	53	54
SIZE AND WEIGHT									
A	(3)	mm	1400	1400	1400	1600	1850	1850	2320
H	(3)	mm	1027	1027	1027	1027	1027	1027	1140
B	(3)	mm	665	665	665	665	665	665	665
Weight	(3)	kg	102	111	120	153	175	188	214

T-MATE DX-E STD			M 95	T 185	T 210	T 250	T 280
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	97,7	199	227	270	302
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,20	2,40	2,52	3,20	3,36
FANS							
Air flow		m³/h	28200	56000	54000	74600	72000
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	55	57	57	58	58
SIZE AND WEIGHT							
A	(3)	mm	3490	3490	3490	4540	4540
H	(3)	mm	1150	2250	2250	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	240	470	520	630	690

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-E LNO			M 11	M 110	M 130	M 14	M 140	M 17	M 20
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	10,8	96,7	117	12,9	130	16,2	18,4
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,10	0,78	0,94	0,11	1,03	0,11	0,18
FANS									
Air flow		m³/h	4165	23120	32130	3825	30600	4420	5440
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	42	51	53	42	53	42	44
SIZE AND WEIGHT									
A	(3)	mm	875	3490	4540	875	4540	1200	1200
H	(3)	mm	727	1150	1150	727	1150	727	727
B	(3)	mm	540	665	665	540	665	540	540
Weight	(3)	kg	51,0	270	320	55,0	350	66,0	72,0

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-E

Remote condenser for close control air conditioners with EC axial fans

M 11 - T 280 9,50-302 kW

T-MATE DX-E LNO			M 25	M 30	M 35	M 45	M 50	M 60	M 70
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	21,7	28,9	32,6	41,6	48,9	54,4	62,4
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,21	0,24	0,24	0,37	0,50	0,53	0,49
FANS									
Air flow		m³/h	8160	8075	7735	10200	14450	13600	15300
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	47	47	47	47	49	49	50
SIZE AND WEIGHT									
A	(3)	mm	1400	1400	1400	1600	1850	1850	2320
H	(3)	mm	1027	1027	1027	1027	1027	1027	1140
B	(3)	mm	665	665	665	665	665	665	665
Weight	(3)	kg	102	111	120	153	175	188	214

T-MATE DX-E LNO			M 95	T 185	T 210	T 250	T 280
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	87,1	177	200	241	266
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,74	1,47	1,55	1,96	2,06
FANS							
Air flow		m³/h	23970	47600	45900	63410	61200
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	51	53	53	54	54
SIZE AND WEIGHT							
A	(3)	mm	3490	3490	3490	4540	4540
H	(3)	mm	1150	2250	2250	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	240	470	520	630	690

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-E ELN			M 11	M 110	M 130	M 14	M 140	M 17	M 20
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	9,50	83,0	101	11,2	112	14,1	16,0
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,05	0,43	0,52	0,06	0,57	0,06	0,10
FANS									
Air flow		m³/h	3430	19040	26460	3150	25200	3640	4480
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	37	47	48	37	48	37	39
SIZE AND WEIGHT									
A	(3)	mm	875	3490	4540	875	4540	1200	1200
H	(3)	mm	727	1150	1150	727	1150	727	727
B	(3)	mm	540	665	665	540	665	540	540
Weight	(3)	kg	51,0	270	320	55,0	350	66,0	72,0

T-MATE DX-E ELN			M 25	M 30	M 35	M 45	M 50	M 60	M 70
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	19,1	25,1	27,9	35,8	42,8	47,0	55,2
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,11	0,13	0,13	0,20	0,28	0,29	0,27
FANS									
Air flow		m³/h	6720	6650	6370	8400	11900	11200	12600
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	42	42	42	43	45	45	45
SIZE AND WEIGHT									
A	(3)	mm	1400	1400	1400	1600	1850	1850	2320
H	(3)	mm	1027	1027	1027	1027	1027	1027	1140
B	(3)	mm	665	665	665	665	665	665	665
Weight	(3)	kg	102	111	120	153	175	188	214

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

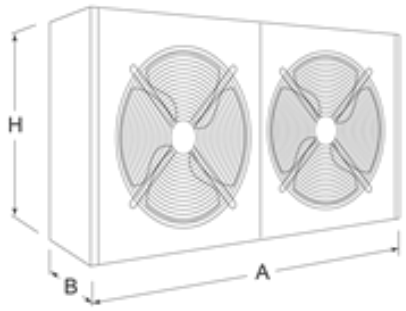
T-MATE DX-E ELN			M 95	T 185	T 210	T 250	T 280
Power supply		V/ph/Hz	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60	380-480/3/50-60
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	75,6	154	172	209	243
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,41	0,82	0,86	1,09	1,15
FANS							
Air flow		m³/h	19740	39200	37800	52220	50400
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	47	49	49	50	50
SIZE AND WEIGHT							
A	(3)	mm	3490	3490	3490	4540	4540
H	(3)	mm	1150	2250	2250	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	240	470	520	630	690

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



ANCILLARY PRODUCTS

T-MATE DX-PF-E

T 11 - T 144 9,90-156 kW

Remote condenser for close control air conditioners with EC Plug fans



Refrigerant

R410A

Versions

STD Standard
LNO Low noise
ELN Extra low noise

Features

HOUSING: Base, self-supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
CONDENSING COIL with high efficiency made by innovative corrugated fins and copper pipes with grooved internal surface.
CENTRIFUGAL FANS with backwards blades with wing profile, single inlet and without housing (Plug-Fans). EC electric motor, IP54 enclosure.

Condensing unit with EC Plug fans with very low noise level are excellent for use in both technological and civil applications. Units are designed for ductable installation.
The possibility to remove the side panel made easier the cleaning operation. Horizontal air flow configuration.
The units operate at 380-480V/3ph/50-60Hz power supply totally independent and separate from the indoor unit.
These units are therefore also suited for use without being directly connected to indoor units.

T-MATE DX-PF-E STD			T 108	T 11	T 114	T 14	T 144	T 17	T 21
Power supply		V/ph/Hz	380-480/3/50-64	380-480/3/50-60	380-480/3/50-65	380-480/3/50-61	380-480/3/50-66	380-480/3/50-62	380-480/3/50-63
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	116	12,5	125	15,9	156	18,7	22,2
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	4,74	0,38	5,63	0,42	7,40	0,45	0,52
FANS									
Air flow		m³/h	32000	4900	28000	4900	36000	4900	4900
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	67	45	69	45	70	45	45
SIZE AND WEIGHT									
A	(3)	mm	1840	890	2290	890	1840	890	890
H	(3)	mm	1800	900	1300	900	1800	900	900
B	(3)	mm	880	880	880	880	880	880	880
Weight	(3)	kg	625	143	557	148	673	153	163

T-MATE DX-PF-E STD			T 24	T 33	T 38	T 44	T 58	T 69	T 86
Power supply		V/ph/Hz	380-480/3/50-64	380-480/3/50-65	380-480/3/50-66	380-480/3/50-60	380-480/3/50-61	380-480/3/50-62	380-480/3/50-63
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	25,5	35,9	40,8	47,8	63,1	74,8	92,7
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,64	1,30	1,14	1,24	2,18	2,39	3,34
FANS									
Air flow		m³/h	6400	8000	10000	10000	16000	16000	24000
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	51	56	55	55	62	62	65
SIZE AND WEIGHT									
A	(3)	mm	1190	1190	1390	1390	1840	1840	2290
H	(3)	mm	900	900	1300	1300	1300	1300	1300
B	(3)	mm	880	880	880	880	880	880	880
Weight	(3)	kg	210	222	284	310	387	421	515

Notes

1 Exchanger air (in) 35°C; ΔT = 13 K. – ESP = 50Pa
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-PF-E LNO			T 108	T 11	T 114	T 14	T 144	T 17	T 21
Power supply		V/ph/Hz	380-480/3/50-64	380-480/3/50-60	380-480/3/50-65	380-480/3/50-61	380-480/3/50-66	380-480/3/50-62	380-480/3/50-63
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	103	11,3	110	14,3	138	16,6	19,5
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	3,04	0,26	3,57	0,28	4,69	0,30	0,34
FANS									
Air flow		m³/h	27200	4165	23800	4165	30600	4165	4165
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	63	41	65	41	66	41	41
SIZE AND WEIGHT									
A	(3)	mm	1840	890	2290	890	1840	890	890
H	(3)	mm	1800	900	1300	900	1800	900	900
B	(3)	mm	880	880	880	880	880	880	880
Weight	(3)	kg	625	143	557	148	673	153	163

T-MATE DX-PF-E LNO			T 24	T 33	T 38	T 44	T 58	T 69	T 86
Power supply		V/ph/Hz	380-480/3/50-64	380-480/3/50-65	380-480/3/50-66	380-480/3/50-60	380-480/3/50-61	380-480/3/50-62	380-480/3/50-63
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	22,6	31,5	36,1	41,7	55,9	65,5	82,3
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,42	0,83	0,74	0,80	1,40	1,51	2,15
FANS									
Air flow		m³/h	5440	6800	8500	8500	13600	13600	20400
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	47	52	51	52	58	58	61
SIZE AND WEIGHT									
A	(3)	mm	1190	1190	1390	1390	1840	1840	2290
H	(3)	mm	900	900	1300	1300	1300	1300	1300
B	(3)	mm	880	880	880	880	880	880	880
Weight	(3)	kg	210	222	284	310	387	421	515

Notes

1 Exchanger air (in) 35°C; ΔT = 13 K. – ESP = 50Pa
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DX-PF-E

Remote condenser for close control air conditioners with EC Plug fans

T 11 - T 144 9,90-156 kW

T-MATE DX-PF-E ELN			T 108	T 11	T 114	T 14	T 144	T 17	T 21
Power supply		V/ph/Hz	380-480/3/50-64	380-480/3/50-60	380-480/3/50-65	380-480/3/50-61	380-480/3/50-66	380-480/3/50-62	380-480/3/50-63
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	89,6	9,90	93,7	12,4	118	14,3	16,6
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	1,82	0,16	2,10	0,17	2,76	0,19	0,21
FANS									
Air flow		m³/h	22400	3430	19600	3430	25200	3430	3430
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	59	36	60	36	61	36	36
SIZE AND WEIGHT									
A	(3)	mm	1840	890	2290	890	1840	890	890
H	(3)	mm	1800	900	1300	900	1800	900	900
B	(3)	mm	880	880	880	880	880	880	880
Weight	(3)	kg	625	143	557	148	673	153	163

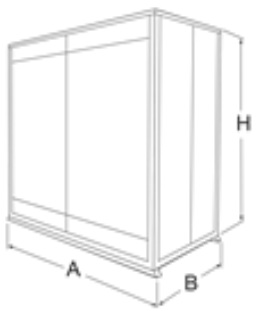
T-MATE DX-PF-E ELN			T 24	T 33	T 38	T 44	T 58	T 69	T 86
Power supply		V/ph/Hz	380-480/3/50-64	380-480/3/50-65	380-480/3/50-66	380-480/3/50-60	380-480/3/50-61	380-480/3/50-62	380-480/3/50-63
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	19,5	26,9	31,0	35,3	48,3	55,6	71,2
No. Circuits		N°	1	1	1	1	1	1	1
Total power input	(1)	kW	0,26	0,50	0,49	0,48	0,84	0,92	1,29
FANS									
Air flow		m³/h	4480	5600	7000	7000	11200	11200	16800
NOISE LEVEL									
Sound Pressure	(2)	dB(A)	43	48	47	47	53	53	57
SIZE AND WEIGHT									
A	(3)	mm	1190	1190	1390	1390	1840	1840	2290
H	(3)	mm	900	900	1300	1300	1300	1300	1300
B	(3)	mm	880	880	880	880	880	880	880
Weight	(3)	kg	210	222	284	310	387	421	515

Notes

1 Exchanger air (in) 35°C; ΔT = 13 K. – ESP = 50Pa
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



ANCILLARY PRODUCTS

T-MATE DC-A

M 20 - T 280 9,00-172 kW

Dry Cooler for close control air conditioners with AC axial fans



Dry Cooler with axial-type fan(s) for outdoor installation. Unit installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for use in both technological and civil applications. The units operate with a single-phase 230V/1ph/50Hz and 400V/3ph/50Hz (only for 210 and 280 model) power supply totally independent and separate from the indoor unit. Dry coolers are therefore also suitable for use without being directly connected to indoor units. Units are provided with integrated electronic fans speed regulator.

Refrigerant

R410A

Versions

STD Standard
LNO Low noise
ELN Extra low noise

Features

HOUSING: Base, self-supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
ELECTRIC FANS of an axial type, statically and dynamically balanced on two levels, with blades in an inoxidable material and external rotor motor suitable for adjusting the speed, all mounted on a metal supporting grid in conformity with safety regulations. The motors are to VDE 0530-12.84. The protection rating is IP54 to DIN40050.
HEAT EXCHANGER: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.
HYDRAULICS CIRCUIT CONNECTIONS are arranged along one side of the unit and are to be welded for safe connection that prevents any fluid leak.

Accessories

- Legs kit for vertical air flow

T-MATE DC-A STD			M 110	M 14	M 140	M 20	M 35
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	62,2	8,30	86,1	11,7	22,6
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,59	0,25	2,12	0,39	0,53
FANS							
Air flow		m³/h	27200	4500	36000	6400	9100
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	55	46	56	48	51
SIZE AND WEIGHT							
A	(3)	mm	3490	875	4540	1200	1400
H	(3)	mm	1150	727	1150	727	1027
B	(3)	mm	665	540	665	540	665
Weight	(3)	kg	227	56,0	359	73,0	122

T-MATE DC-A STD			M 45	M 60	M 70	T 210	T 280
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	26,4	31,8	40,2	124	172
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,78	1,08	1,08	3,18	4,24
FANS							
Air flow		m³/h	12000	16000	18000	54000	72000
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	51	53	54	57	58
SIZE AND WEIGHT							
A	(3)	mm	1600	1850	2320	3490	4540
H	(3)	mm	1027	1027	1140	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	156	191	219	533	708

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DC-A LNO			M 110	M 14	M 140	M 20	M 35
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	54,8	7,30	75,9	10,4	19,8
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,35	0,21	1,80	0,33	0,45
FANS							
Air flow		m³/h	23120	3825	30600	5440	7735
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	51	42	53	44	47
SIZE AND WEIGHT							
A	(3)	mm	3490	875	4540	1200	1400
H	(3)	mm	1150	727	1150	727	1027
B	(3)	mm	665	540	665	540	665
Weight	(3)	kg	227	56,0	359	73,0	122

T-MATE DC-A LNO			M 45	M 60	M 70	T 210	T 280
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	23,3	28,0	35,3	109	152
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,66	0,92	0,92	2,70	3,60
FANS							
Air flow		m³/h	10200	13600	15300	45900	61200
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	47	49	50	53	54
SIZE AND WEIGHT							
A	(3)	mm	1600	1850	2320	3490	4540
H	(3)	mm	1027	1027	1140	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	156	191	219	533	708

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

T-MATE DC-A

Dry Cooler for close control air conditioners with AC axial fans

M 20 - T 280 9,00-172 kW

T-MATE DC-A ELN			M 110	M 14	M 140	M 20	M 35
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	46,9	6,40	65,0	9,00	16,9
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	1,11	0,18	1,48	0,27	0,37
FANS							
Air flow		m³/h	19040	3150	25200	4480	6370
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	47	37	48	39	42
SIZE AND WEIGHT							
A	(3)	mm	3490	875	4540	1200	1400
H	(3)	mm	1150	727	1150	727	1027
B	(3)	mm	665	540	665	540	665
Weight	(3)	kg	227	56,0	359	73,0	122

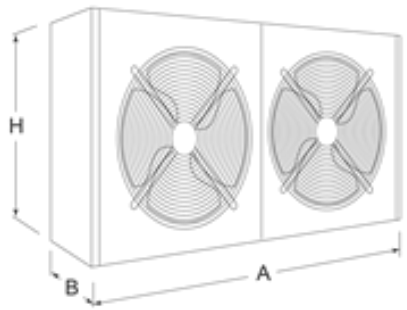
T-MATE DC-A ELN			M 45	M 60	M 70	T 210	T 280
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	19,9	23,8	30,2	93,2	130
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,55	0,76	0,76	2,23	2,97
FANS							
Air flow		m³/h	8400	11200	12600	37800	50400
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	43	45	45	49	50
SIZE AND WEIGHT							
A	(3)	mm	1600	1850	2320	3490	4540
H	(3)	mm	1027	1027	1140	2250	2250
B	(3)	mm	665	665	665	665	665
Weight	(3)	kg	156	191	219	533	708

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



ANCILLARY PRODUCTS

GR-Z A

010 - 164 9,41-156 kW

Microchannel coil remote condensers with AC axial fans.



Microchannel coil remote condensers with axial-type AC fan(s) to be coupled with indoor close control air conditioners.
Each single detail of the remote condensers has been accurately designed to ensure very low noise levels: from the new generation AC fans to the advanced electronics and the sound-proof insulation of the lateral paneling (ultra low noise version only).
The very low noise adjustable speed fans are excellent for use in both industrial and civil applications.
Remote condensers feature over 50% less refrigerant charge compared to traditional finned coil remote condensers
This provides a more environmentally friendly solution and significant savings for cooling system
The condensers feature microchannel coils and AC fans provide best-in-class efficiency and higher corrosion resistance and can be either installed vertically or horizontally.

Refrigerant

R410A

Versions

B Standard noise

L Ultra low noise

Features

FAN SECTION: High efficiency axial fans with AC motor in optimised full bell mouth with guiding vane and short diffusor. Sickled-shaped blades made of uncoated aluminium and free nozzle made of high performance composite material.
Very smooth running and long service life due to dynamic balancing in two levels.
CONDENSING COILS: microchannel coils consisting of parallel flow aluminium tubes mechanically brazed to enhanced aluminium fins, for better heat transfer and higher corrosion resistance.
REFRIGERANT CIRCUIT: safe refrigerant connections to be welded on the unit side in order to prevent any fluid leaks.

Accessories

- Legs kit for vertical air flow
- Coil with e-coating treatment for better corrosion resistance
- Kit for earthquake protection available

GR-ZA vesione B			013	015	024	027	034	049
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	12,9	14,4	23,0	25,7	32,0	47,0
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,32	0,38	0,54	0,64	0,64	1,08
FANS								
Air flow		m³/h	3910	4600	7098	8350	9550	15555
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	50	54	51	55	56	54
SIZE AND WEIGHT								
A	(3)	mm	770	770	1150	1150	1360	2040
H	(3)	mm	900	900	900	900	1100	1100
B	(3)	mm	718	718	718	718	718	718
Weight	(3)	kg	30,0	30,0	45,0	45,0	53,0	86,0

GR-ZA vesione B			055	067	082	110	134	164
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	52,5	63,8	77,8	105	128	156
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	1,28	1,28	1,92	2,56	2,56	3,84
FANS								
Air flow		m³/h	18300	19000	25000	36600	38000	50000
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	57	58	59	59	59	60
SIZE AND WEIGHT								
A	(3)	mm	2040	2600	2600	2200	2600	2600
H	(3)	mm	1100	1100	1100	1168	1168	1168
B	(3)	mm	718	718	718	2040	2200	2200
Weight	(3)	kg	86,0	100	120	177	208	248

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

GR-ZA versione L			010	011	018	021	025	043
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	9,41	11,2	16,7	20,0	24,5	40,9
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,21	0,27	0,35	0,45	0,45	0,90
FANS								
Air flow		m³/h	2530	3220	4593	5845	6685	12810
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	41	45	44	47	48	50
SIZE AND WEIGHT								
A	(3)	mm	770	770	1150	1150	1360	2040
H	(3)	mm	900	900	900	900	1100	1100
B	(3)	mm	718	718	718	718	718	718
Weight	(3)	kg	32,0	32,0	47,0	47,0	56,0	89,0

GR-ZA versione L			051	063	086	102	126	036
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	48,6	60,0	81,8	97,1	120	34,2
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,90	1,34	1,79	1,79	2,69	0,70
FANS								
Air flow		m³/h	13300	17500	25620	26600	35000	10065
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	50	51	52	51	52	46
SIZE AND WEIGHT								
A	(3)	mm	2600	2600	2200	2600	2600	2040
H	(3)	mm	1100	1100	1168	1168	1168	1100
B	(3)	mm	718	718	2040	2200	2200	718
Weight	(3)	kg	103	124	184	215	255	89,0

Notes

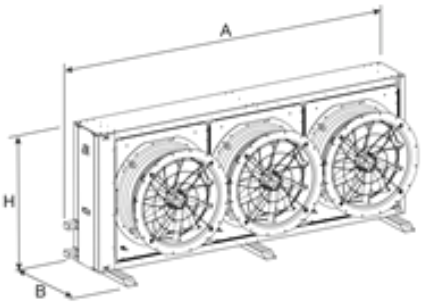
1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

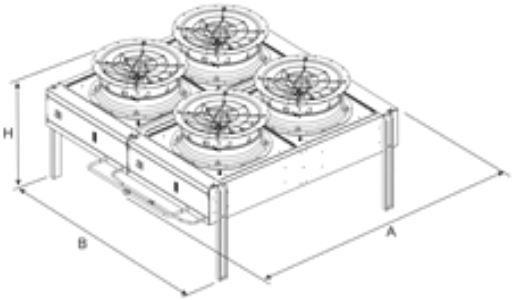
GR-Z A

010 - 164 9,41-156 kW

Microchannel coil remote condensers with AC axial fans.

Dimensional drawing





GR-Z E

010 - 164 8,30-156 kW

Microchannel coil remote condensers with EC axial fans



Microchannel coil remote condensers with axial-type EC fan(s) for outdoor installation.
Each single detail of the remote condensers has been accurately designed to ensure very low noise levels: from the new generation EC fans to the advanced electronics and the sound-proof insulation of the lateral paneling (ultra low noise version only). The very low noise adjustable speed fans are excellent for use in both industrial and civil applications.
Remote condensers feature over 50% less refrigerant charge compared to traditional finned coil remote condensers.
This provides a more environmentally friendly solution and significant savings for cooling system.
The condensers feature microchannel coils and EC fans provide best-in-class efficiency and higher corrosion resistance and can be either installed vertically or horizontally.

Refrigerant

R410A

Versions

B Standard noise

L Ultra low noise

Features

CASING: made of aluminium with removable panels on the electric board side. The aluminium alloy offers high mechanical resistance, good surface sturdiness and high corrosion resistance against atmospheric agents.
FAN SECTION: High efficiency axial fans with EC motor in optimised full bell mouth with guiding vane and short diffusor. Sickled-shaped blades made of uncoated aluminium and free nozzle made of high performance composite material. Precise and advanced airflow control thanks to the integrated controller.
Very smooth running and long service life due to dynamic balancing in two levels.
CONDENSING COILS: microchannel coils consisting of parallel flow aluminium tubes mechanically brazed to enhanced aluminium fins, for better heat transfer and higher corrosion resistance.
REFRIGERANT CIRCUIT: safe refrigerant connections to be welded on the unit side in order to prevent any fluid leaks.

Accessories

- Kit for earthquake protection available
- Legs kit for vertical air flow
- Coil with e-coating treatment for better corrosion resistance

GR-Z E B 50			013	015	024	027	034	049
Power supply		V/ph/Hz	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	11,4	13,8	23,0	25,7	32,0	47,0
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,21	0,21	1,00	1,00	1,00	2,00
FANS								
Air flow		m³/h	3300	4300	7098	8350	9550	15555
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	43	49	51	55	56	54
SIZE AND WEIGHT								
A	(3)	mm	770	770	1150	1150	1360	2040
H	(3)	mm	900	900	900	900	1100	1100
B	(3)	mm	718	718	718	718	718	718
Weight	(3)	kg	28,0	28,0	43,0	43,0	50,0	82,0

GR-Z E B 50			055	067	082	110	134	164
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	52,5	63,8	77,8	105	128	156
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	2,00	2,00	3,00	4,00	4,00	6,00
FANS								
Air flow		m³/h	18300	19000	25000	36600	38000	50000
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	57	58	59	59	59	60
SIZE AND WEIGHT								
A	(3)	mm	2040	2600	2600	2200	2600	2600
H	(3)	mm	1100	1100	1100	1168	1168	1168
B	(3)	mm	718	718	718	2040	2200	2200
Weight	(3)	kg	82,0	96,0	114	169	200	237

Notes

1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

GR-Z E L 50			010	011	018	021	025	036
Power supply		V/ph/Hz	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	8,30	10,7	16,7	20,0	24,5	34,2
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,21	0,21	1,00	1,00	1,00	2,00
FANS								
Air flow		m³/h	2150	3010	4593	5845	6685	10065
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	36	42	44	47	48	46
SIZE AND WEIGHT								
A	(3)	mm	770	770	1150	1150	1360	2040
H	(3)	mm	900	900	900	900	1100	1100
B	(3)	mm	718	718	718	718	718	718
Weight	(3)	kg	29,0	29,0	45,0	45,0	53,0	85,0

GR-Z E L 50			043	051	063	086	102	126
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	40,9	48,6	60,0	81,8	97,1	120
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	2,00	2,00	3,00	4,00	4,00	6,00
FANS								
Air flow		m³/h	12810	13300	17500	25620	26600	35000
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	50	50	51	52	51	52
SIZE AND WEIGHT								
A	(3)	mm	2040	2600	2600	2200	2600	2600
H	(3)	mm	1100	1100	1100	1168	1168	1168
B	(3)	mm	718	718	718	2040	2200	2200
Weight	(3)	kg	85,0	99,0	118	176	207	244

Notes

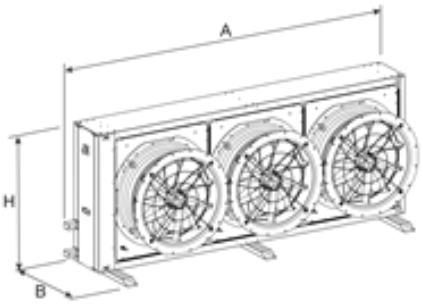
1 Exchanger air (in) 35 °C; ΔT = 13 K.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

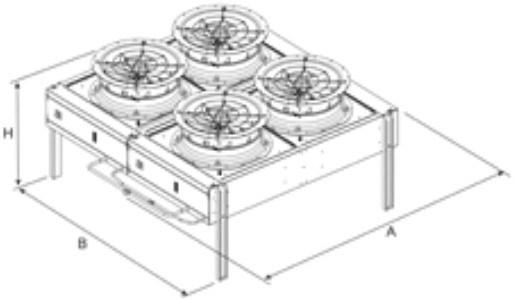
GR-Z E

010 - 164 8,30-156 kW

Microchannel coil remote condensers with EC axial fans

Dimensional drawing





ANCILLARY PRODUCTS

i-BRRE

014m - 190b 13,4-187 kW

Remote condenser for close control air conditioners with EC axial fans



Remote condensers with axial-type fan(s) for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The EC motor fans with very low noise and adjustable-speed fans are excellent for use in both technological and civil applications. Remote condensers are not provided with integrated fans speed regulator per standard. However, it can be supplied as OPTIONAL and installed directly inside the indoor unit.

Refrigerant

R410A

Versions

BASIC Basic

LN Low noise

Features

ELECTRIC FANS of an axial type, statically and dynamically balanced on two levels, with blades in an inoxidable material and external rotor motor suitable for adjusting the speed, all mounted on a metal supporting grid in conformity with safety regulations. The motors are to VDE 0530-12.84. The protection rating is IP54 to DIN40050.

CONDENSING COIL: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.

REFRIGERANT CIRCUIT CONNECTIONS are arranged along one side of the unite and are to be welded for safe connection that prevents any fluid leak.

Accessories

- Legs kit for vertical air flow
- Copper-Copper coil
- Epoxy coated coil (for fins only)
- Cataphoresys coil treatment

i-BRRE / BASIC			014m	022m	027m	044m	051m	054b	065b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	13,4	21,7	26,6	43,5	50,4	53,3	65,1
No. Circuits		N°	1	1	1	1	1	2	2
Total power input	(1)	kW	0,36	0,72	0,72	1,44	1,44	1,44	2,16
FANS									
Air flow		m³/h	5000	8200	7200	16400	15200	14400	24600
NOISE LEVEL									
Sound Power	(2)	dB(A)	37	43	43	46	46	46	48
SIZE AND WEIGHT									
A	(3)	mm	1240	1360	1360	2360	2360	2360	3360
H	(3)	mm	814	1114	1114	1114	1114	1114	1114
B	(3)	mm	596	703	703	703	703	703	703
Weight	(3)	kg	72,0	89,0	106	145	161	175	203

i-BRRE / BASIC			065m	076b	076m	100b	116b	134b	190b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	65,1	76,2	76,2	100	116	134	187
No. Circuits		N°	1	2	1	2	2	2	2
Total power input	(1)	kW	2,16	2,16	2,16	2,88	4,95	4,95	7,68
FANS									
Air flow		m³/h	24600	22800	22800	28800	38000	35850	53000
NOISE LEVEL									
Sound Power	(2)	dB(A)	48	48	48	49	50	50	53
SIZE AND WEIGHT									
A	(3)	mm	3360	3360	3360	4360	5360	5360	4815
H	(3)	mm	1114	1114	1114	1114	1114	1114	1328
B	(3)	mm	703	703	703	703	703	703	965
Weight	(3)	kg	203	225	225	318	359	394	550

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-BRRE / LN			014m	022m	027m	044m	051m	054b	065b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	14,1	20,0	28,2	42,3	50,0	55,3	73,1
No. Circuits		N°	1	1	1	1	1	2	2
Total power input	(1)	kW	0,40	0,72	0,80	1,20	1,20	1,20	1,60
FANS									
Air flow		m³/h	6000	6500	12000	18000	16500	16000	22000
NOISE LEVEL									
Sound Power	(2)	dB(A)	34	32	37	38	38	38	39
SIZE AND WEIGHT									
A	(3)	mm	1360	2120	2360	3360	3360	3360	4360
H	(3)	mm	1114	764	1114	1114	1114	1114	1114
B	(3)	mm	596	596	703	703	703	703	703
Weight	(3)	kg	89,0	130	145	203	225	247	292

i-BRRE / LN			065m	076b	076m	100b	116b	134b	190b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	73,1	75,5	75,5	99,1	118	134	187
No. Circuits		N°	1	2	1	2	2	2	2
Total power input	(1)	kW	1,60	1,60	1,60	2,00	3,72	3,72	7,40
FANS									
Air flow		m³/h	22000	20300	20300	27050	28560	28560	58000
NOISE LEVEL									
Sound Power	(2)	dB(A)	39	39	39	40	43	43	45
SIZE AND WEIGHT									
A	(3)	mm	4360	4360	4360	5360	5560	5560	6290
H	(3)	mm	1114	1114	1114	1114	1070	1070	1328
B	(3)	mm	703	703	703	703	747	747	965
Weight	(3)	kg	292	318	318	359	375	408	661

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

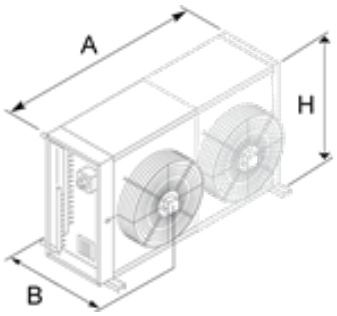
The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-BRRE

014m - 190b 13,4-187 kW

Remote condenser for close control air conditioners with EC axial fans

Dimensional drawing



ANCILLARY PRODUCTS

BRRE

007m - 190b 6,93-187 kW

Remote condenser for close control air conditioners with AC axial fans



Remote condensers with axial-type fan(s) for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for use in both technological and civil applications. Condensers units are not provided with integrated fans speed regulator per standard. The units are not provided with integrated fans speed regulator per standard. However, it can be supplied as OPTIONAL and installed directly inside the indoor unit

Refrigerant

R410A

Versions

BASIC	Basic	LT	Low temperature
LN	Low noise		

Configurations

- basic function

Features

ELECTRIC FANS of an axial type, statically and dynamically balanced on two levels, with blades in an inoxidable material and external rotor motor suitable for adjusting the speed, all mounted on a metal supporting grid in conformity with safety regulations. The motors are to VDE 0530-12.84. The protection rating is IP54 to DIN40050.

CONDENSING COIL: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.

REFRIGERANT CIRCUIT CONNECTIONS are arranged along one side of the unite and are to be welded for safe connection that prevents any fluid leak.

Accessories

- Legs kit for vertical air flow
- Copper-Copper coil
- Epoxy coated coil (for fins only)
- Cataphoresys coil treatment

BRRE / BASIC			007m	014m	022m	027m	044m	051m	054b	065b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	6,93	13,4	21,7	26,6	43,5	50,4	53,3	65,1
No. Circuits		N°	1	1	1	1	1	1	2	2
Total power input	(1)	kW	0,15	0,22	0,60	0,60	1,20	1,20	1,20	1,80
FANS										
Air flow		m³/h	2300	5000	8200	7200	16400	15200	14400	24600
NOISE LEVEL										
Sound Power	(2)	dB(A)	43	37	43	43	46	46	46	48
SIZE AND WEIGHT										
A	(3)	mm	740	1240	1360	1360	2360	2360	2360	3360
H	(3)	mm	584	814	1114	1114	1114	1114	1114	1114
B	(3)	mm	440	596	703	703	703	703	703	703
Weight	(3)	kg	20,0	72,0	89,0	106	145	161	175	203

BRRE / BASIC			065m	076b	076m	100b	116b	134b	190b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	65,1	76,2	76,2	100	116	134	187
No. Circuits		N°	1	2	1	2	2	2	2
Total power input	(1)	kW	1,80	1,80	1,80	2,40	3,00	3,00	5,82
FANS									
Air flow		m³/h	24600	22800	22800	28800	38000	35850	53000
NOISE LEVEL									
Sound Power	(2)	dB(A)	48	48	48	49	50	50	53
SIZE AND WEIGHT									
A	(3)	mm	3360	3360	3360	4360	5360	5360	4815
H	(3)	mm	1114	1114	1114	1114	1114	1114	1328
B	(3)	mm	703	703	703	703	703	703	965
Weight	(3)	kg	203	225	225	318	359	394	550

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

BRRE / LN			007m	014m	022m	027m	044m	051m	054b	065b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE										
NOMINAL SPECIFICATIONS										
Rated capacity	(1)	kW	9,60	14,1	20,0	28,2	42,3	50,0	55,3	73,1
No. Circuits		N°	1	1	1	1	1	1	2	2
Total power input	(1)	kW	0,13	0,60	0,26	1,20	1,80	1,80	1,80	2,40
FANS										
Air flow		m³/h	3600	6000	6500	12000	18000	16500	16000	22000
NOISE LEVEL										
Sound Power	(2)	dB(A)	29	34	32	37	38	38	38	39
SIZE AND WEIGHT										
A	(3)	mm	1240	1360	2120	2360	3360	3360	3360	4360
H	(3)	mm	764	1114	764	1114	1114	1114	1114	1114
B	(3)	mm	596	703	596	703	703	703	703	703
Weight	(3)	kg	64,0	89,0	130	145	203	225	247	292

BRRE / LN			065m	076b	076m	100b	116b	134b	190b
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
PERFORMANCE									
NOMINAL SPECIFICATIONS									
Rated capacity	(1)	kW	73,1	75,5	75,5	99,1	118	134	187
No. Circuits		N°	1	2	1	2	2	2	2
Total power input	(1)	kW	2,40	2,40	2,40	3,00	3,36	3,36	3,32
FANS									
Air flow		m³/h	22000	20300	203000	27050	28560	28560	58000
NOISE LEVEL									
Sound Power	(2)	dB(A)	39	39	39	40	43	43	45
SIZE AND WEIGHT									
A	(3)	mm	4360	4360	4360	5360	5560	5560	6290
H	(3)	mm	1114	1114	1114	1114	1070	1070	1328
B	(3)	mm	703	703	703	703	747	747	965
Weight	(3)	kg	292	318	318	359	375	408	661

Notes

1 Exchanger air (in) 35 °C; ΔT = 17 K.
2 Sound power on the basis of measurements made in compliance with ISO 9614.
3 Unit in standard configuration/execution, without optional accessories.

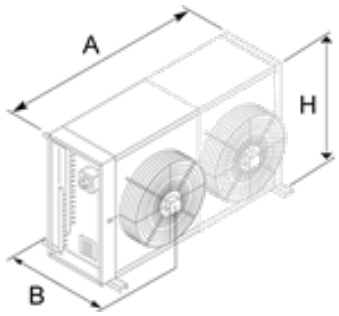
The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

BRRE

007m - 190b 6,93-187 kW

Remote condenser for close control air conditioners with AC axial fans

Dimensional drawing



ANCILLARY PRODUCTS

i-BRDC

013m - 210m 14,0-210 kW

Dry cooler for close control air conditioners with EC axial fans



Dry Cooler with EC axial-type fan(s) for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for use in both technological and civil applications. These units are therefore also suited for use without being directly connected to indoor units. The units are not provided with integrated fans speed regulator per standard. However, it can be supplied as OPTIONAL and installed directly inside the indoor unit.

Refrigerant

R410A

Versions

BASIC Basic

LN Low noise

Features

HOUSING: designed to allowed easy access to internal components, is made from prepainted galvanized sheet steel, and it:
• offers hight corrosion strenght and impact resistence;
• is resistant at low temperatures;
• is non toxic;
• does not produce polluting debris;
• is completely covered in a protective plastic film.

ELECTRIC FANS of an axial type, statically and dynamically balanced on two levels, with blades in an inoxidable material and external rotor motor suitable for adjusting the speed, all mounted on a metal supporting grid in conformity with safety regulations. The motors are to VDE 0530-12.84. The protection rating is IP54 to DIN40050.

HEAT EXCHANGER: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.

HYDRAULICS CIRCUIT CONNECTIONS are arranged along one side of the unite and are to be welded for safe connection that prevents any fluid leak.

ISOLATING SWITCH, contained in an electric box with protection rating IP54, with switch control accessible from the outside and connecting terminals.

Accessories

- Legs kit for vertical air flow
- Copper-Copper coil
- Epoxy coated coil (for fins only)
- Cataphoresys coil treatment

i-BRDC / BAS			030m	039m	052m	062m	078m
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	33,0	40,5	61,0	68,0	83,0
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,66	0,66	0,99	0,99	1,32
FANS							
Air flow		m³/h	17560	16820	25230	23610	33640
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	49	49	51	51	52
SIZE AND WEIGHT							
A	(3)	mm	2425	2425	3525	3525	4625
H	(3)	mm	1168	1168	1168	1168	1168
B	(3)	mm	690	690	690	690	690
Weight	(3)	kg	175	185	265	305	353

i-BRDC / BAS			092m	103m	123m	190m	210m
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	98,5	121	135	176	210
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	2,04	2,04	2,04	5,20	6,50
FANS							
Air flow		m³/h	52680	50460	47220	71920	93300
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	54	54	56	54	55
SIZE AND WEIGHT							
A	(3)	mm	3658	3658	3658	6290	7765
H	(3)	mm	2286	2286	2286	1328	1328
B	(3)	mm	760	760	760	965	965
Weight	(3)	kg	514	543	625	731	774

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

i-BRDC / LN			013m	030m	039m	052m	062m	078m
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	14,0	32,0	40,5	54,0	65,5	82,0
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,16	0,32	0,48	0,64	0,64	0,80
FANS								
Air flow		m³/h	6410	12160	19230	25640	24320	30400
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	35	38	40	41	41	42
SIZE AND WEIGHT								
A	(3)	mm	1325	2425	3525	4625	4625	5725
H	(3)	mm	1168	1168	1168	1168	1168	1168
B	(3)	mm	690	690	690	690	690	690
Weight	(3)	kg	94,0	185	251	336	353	383

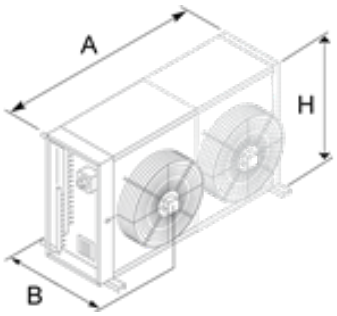
i-BRDC / LN			092m	103m	123m	190m	210m
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
NOMINAL SPECIFICATIONS							
Rated capacity	(1)	kW	96,0	107	129	184	203
No. Circuits		N°	1	1	1	1	1
Total power input	(1)	kW	0,90	1,20	1,20	4,08	4,08
FANS							
Air flow		m³/h	36480	51280	48640	76420	67170
NOISE LEVEL							
Sound Pressure	(2)	dB(A)	43	44	44	42	42
SIZE AND WEIGHT							
A	(3)	mm	3658	4758	4758	6290	6290
H	(3)	mm	2286	2286	2286	2393	2393
B	(3)	mm	760	760	760	965	965
Weight	(3)	kg	543	672	707	1194	1334

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
3 Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Dimensional drawing



ANCILLARY PRODUCTS

BRDC

008m - 210m 7,50-210 kW

Dry Cooler for close control air conditioners with AC axial fans



Dry Cooler with axial-type fan(s) for outdoor installation. Installation may be vertical with a horizontal air outflow or, using special brackets, horizontal with an upward air outflow. The very low noise, adjustable-speed fans are excellent for use in both technological and civil applications. These units are therefore also suited for use without being directly connected to indoor units. The units are not provided with integrated fans speed regulator per standard. However, it can be supplied as OPTIONAL and installed directly inside the indoor unit.

Versions

BASIC	Basic	LT	Low temperature
LN	Low noise		

Features

HOUSING: designed to allowed easy access to internal components, is made from prepainted galvanized sheet steel, and it:
• offers hight corrosion strenght and impact resistence;
• is resistant at low temperatures;
• is non toxic;
• does not produce polluting debris;
• is completely covered in a protective plastic film.

ELECTRIC FANS of an axial type, statically and dynamically balanced on two levels, with blades in an inoxidable material and external rotor motor suitable for adjusting the speed, all mounted on a metal supporting grid in conformity with safety regulations. The motors are to VDE 0530-12.84. The protection rating is IP54 to DIN40050.

HEAT EXCHANGER: the combination of innovative corrugated fins with the use of smooth pipes on the exchanger ensures excellent heat transfer with a minimum amount of fluid. The heat exchangers consist of aluminium fins and copper pipes.

HYDRAULICS CIRCUIT CONNECTIONS are arranged along one side of the unite and are to be welded for safe connection that prevents any fluid leak.

ISOLATING SWITCH, contained in an electric box with protection rating IP54, with switch control accessible from the outside and connecting terminals.

Accessories

- Legs kit for vertical air flow
- Copper-Copper coil
- Cataphoresys coil treatment
- Epoxy coated coil (for fins only)

BRDC / BASIC			008m	013m	030m	039m	052m	062m
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	7,90	17,0	33,0	40,5	61,0	68,0
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,22	0,60	1,20	1,20	1,80	1,80
FANS								
Air flow		m³/h	4410	8780	17560	16820	25230	23610
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	39	46	49	49	51	51
SIZE AND WEIGHT								
A	(3)	mm	1175	1325	2425	2425	3525	3525
H	(3)	mm	872	1168	1168	1168	1168	1168
B	(3)	mm	555	690	690	690	690	690
Weight	(3)	kg	70,5	94,0	175	185	265	305

BRDC / BASIC			078m	092m	103m	123m	190m	210m
Power supply		V/ph/Hz	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	83,0	98,5	121	135	176	210
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	2,40	3,60	3,60	3,60	7,76	9,70
FANS								
Air flow		m³/h	33640	52680	50460	47220	71920	93300
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	52	54	54	56	54	55
SIZE AND WEIGHT								
A	(3)	mm	4625	3658	3658	3658	6290	7765
H	(3)	mm	1168	2286	2286	2286	1328	1328
B	(3)	mm	690	760	760	760	965	965
Weight	(3)	kg	353	514	543	625	731	774

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
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3 Unit in standard configuration/execution, without optional accessories.

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BRDC / LN			008m	013m	030m	039m	052m	062m
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	7,50	14,0	32,0	40,5	54,0	65,5
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	0,12	0,60	1,20	1,80	2,40	2,40
FANS								
Air flow		m³/h	2930	6410	12160	19230	25640	24320
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	31	37	39	41	42	42
SIZE AND WEIGHT								
A	(3)	mm	1175	1325	2425	3525	4625	4625
H	(3)	mm	872	1168	1168	1168	1168	1168
B	(3)	mm	555	690	690	690	690	690
Weight	(3)	kg	52,5	94,0	185	251	336	353

BRDC / LN			078m	092m	103m	123m	190m	210m
Power supply		V/ph/Hz	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
NOMINAL SPECIFICATIONS								
Rated capacity	(1)	kW	82,0	96,0	107	128	184	203
No. Circuits		N°	1	1	1	1	1	1
Total power input	(1)	kW	3,00	1,44	1,92	1,92	4,98	4,98
FANS								
Air flow		m³/h	30400	36480	51280	48640	76420	67170
NOISE LEVEL								
Sound Pressure	(2)	dB(A)	43	44	45	45	42	42
SIZE AND WEIGHT								
A	(3)	mm	5725	3658	4758	4758	6290	6290
H	(3)	mm	1168	2286	2286	2286	2393	2393
B	(3)	mm	690	760	760	760	965	965
Weight	(3)	kg	383	543	672	707	1194	1334

Notes

1 Water temp.: 35/30 °C ; Ext. Temp.: 24 °C.
2 Average sound pressure level, at a distance of 10 m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.
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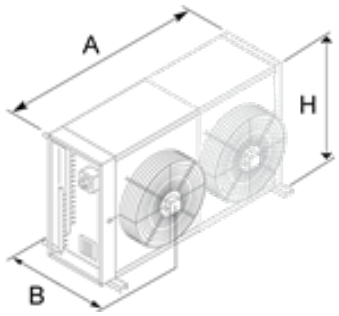
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BRDC

Dry Cooler for close control air conditioners with AC axial fans

008m - 210m 7,50-210 kW

Dimensional drawing



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for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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