

Data sheet

# Check valve

## Types NRV and NRVH Version 2



NRV and NRVH can be used in liquid suction and hot gas lines in refrigeration and air conditioning plants.

The valves ensure the correct flow direction and prevent back-condensation from a warm part of the system to the cold evaporator.

The hermetic tight design of solder versions meet the environmental demands for today and future.

A built-in damping piston makes the valves suitable for installation in lines where pulsation can occur, e. g. in the discharge line from the compressor.

### Features

- Ensure correct flow direction
- Available in both straightway and angleway versions
- Prevents back-condensation from warm to cold system part
- Hermetic tight design for solder versions
- Built-in damping piston that makes the valves suitable for installation in lines where pulsation can occur, e.g. in the discharge line from the compressor
- NRVH type check valve is with stronger spring and it's recommended to use for compressors in parallel (i.e. power packs) where higher level of pulsation and vibration are expected
- Oversize connections provide flexibility in use

## Data sheet | Check valve, types NRV and NRVH

### Approvals



### Technical data

#### Refrigerants

R134a, R22/R407C, R290, R32, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R513A, R515B, R516A, R600, R600a, R1233zd, R1234ze, R1234yf, R1270  
For complete list of approved refrigerants, go to <http://store.danfoss.com/> and search for individual code numbers, where refrigerants are listed as part of product details.  
This product is approved for R290, R32, R452B, R454A, R454B, R454C, R455A, R516A, R600, R600a, R1234yf and R1270 by ignition source assessment in accordance to standard EN13463-1.



#### Note:

-Only solder version, connection sizes from 6s to 22s are allowed for flammable refrigerant.  
R1234ze can be used for NRV size up to 35s according to the PED category I, Fluid II  
-NRV/NRVH is not suitable for oil application. For detailed information please contact Danfoss.

Valve type	Connection type	Media temperature range	Max. working pressure: PS/MWP
NRV/NRVH 6s-19s	Straight-way - solder	-50 °C - 155 °C / -58 °F - 311 °F	49 bar / 710 psig
NRV/NRVH 6-19	Straight-way - flare	-50 °C - 140 °C / -58 °F - 285 °F	46 bar / 667 psig
NRV/NRVH 22s-35s	Angle-way - solder	-50 °C - 140 °C / -58 °F - 285 °F	46 bar / 667 psig

### Dimensioning and selection

When selecting the right Danfoss check valve the capacity tables should be utilised together with plant requirements concerning piping and connection sizes.

The optimum solution should include the highest capacity at lowest pressure drop across the valve before it closes. Further, when dimensioning and selecting Danfoss check valves for mounting into the compressor discharge line, it is important to be aware of the following:

The differential pressure across the valve must always be higher than the given minimum pressure drop at which the valve is completely open. This also applies to lowest capacities for compressor with capacity regulation.

NRVH type check valve is with stronger spring and it's recommended to use for compressors in parallel (i.e. power packs) where higher level of pulsation and vibration are expected.

### Ordering



#### Straightway Flare Version without flare nut

Valve type	Connection type	Connection		Min. OPD $\Delta p$ <sup>2)</sup>		K <sub>v</sub> value <sup>3)</sup>	C <sub>v</sub> value <sup>3)</sup>	Code no.
		[in]	[mm]	[bar]	[psi]	[m <sup>3</sup> /h]	[gal/min]	
NRV 6	Straight-way - flare	1/4	6	0.07	1.01	0.56	0.65	020-1040
NRV 10	Straight-way - flare	3/8	10	0.07	1.01	1.2	1.39	020-1041
NRV 12	Straight-way - flare	1/2	12	0.05	0.72	2.05	2.37	020-1042
NRV 16	Straight-way - flare	5/8	16	0.05	0.72	3.6	4.16	020-1043
NRV 19	Straight-way - flare	3/4	19	0.05	0.72	5.5	6.36	020-1044



#### Angleway Solder ODF Version

Valve type	Connection type	Connection		Min. OPD $\Delta p$ <sup>2)</sup>		K <sub>v</sub> value <sup>3)</sup>	C <sub>v</sub> value <sup>3)</sup>	Code no.
		[in]	[mm]	[bar]	[psi]	[m <sup>3</sup> /h]	[gal/min]	
NRV 22s	Angle-way - solder	7/8	22	0.04	0.58	8.5	9.83	020-1020
NRVH 22s	Angle-way - solder	7/8	22	0.30	4.35	8.5	9.83	020-1032
NRV 22s <sup>1)</sup>	Angle-way - solder	1 1/8	-	0.04	0.58	8.5	9.83	020-1060
	Angle-way - solder	-	28	0.04	0.58	8.5	9.83	020-1055
NRVH 22s <sup>1)</sup>	Angle-way - solder	1 1/8	-	0.30	4.35	8.5	9.83	020-1072
	Angle-way - solder	-	28	0.30	4.35	8.5	9.83	020-1067
NRV 28s	Angle-way - solder	1 1/8	-	0.04	0.58	16.5	19.07	020-1021
	Angle-way - solder	-	28	0.04	0.58	16.5	19.07	020-1025
NRVH 28s	Angle-way - solder	1 1/8	-	0.30	4.35	16.5	19.07	020-1029
	Angle-way - solder	-	28	0.30	4.35	16.5	19.07	020-1033
NRV 28s <sup>1)</sup>	Angle-way - solder	1 3/8	35	0.04	0.58	16.5	19.07	020-1056
NRVH 28s <sup>1)</sup>	Angle-way - solder	1 3/8	35	0.30	4.35	16.5	19.07	020-1068
NRV 35s	Angle-way - solder	1 3/8	35	0.04	0.58	29	33.52	020-1026
NRVH 35s	Angle-way - solder	1 3/8	35	0.30	4.35	29	33.52	020-1034
NRV 35s <sup>1)</sup>	Angle-way - solder	1 5/8	-	0.04	0.58	29	33.52	020-1061
	Angle-way - solder	-	42	0.04	0.58	29	33.52	020-1027
NRVH 35s <sup>1)</sup>	Angle-way - solder	1 5/8	-	0.30	4.35	29	33.52	020-1073
	Angle-way - solder	-	42	0.30	4.35	29	33.52	020-1035

<sup>1)</sup> Oversize connections

<sup>2)</sup>  $\Delta p$  = Minimum Opening Pressure Differential

<sup>3)</sup> The K<sub>v</sub> / C<sub>v</sub> value is the flow of water in [m<sup>3</sup>/h - gal/min] at a pressure drop across valve of 1 bar/14.5 psig  
 $\rho = 1000 \text{ kg/m}^3 - 2.205 \text{ lbs/G}$

## Data sheet | Check valve, types NRV and NRVH

### Ordering (continued)



### Straightway Solder ODF Version

Valve type	Connection type	Connection		Min. OPD $\Delta p$ <sup>2)</sup>		K <sub>v</sub> value <sup>3)</sup>	C <sub>v</sub> value <sup>3)</sup>	Code no.
		[in]	[mm]	[bar]	[psi]	[m <sup>3</sup> /h]	[gal/min]	
NRV 6s v2	Straight-way - Solder	1/4	–	0.04	0.73	0.67	0.77	020B1010
	Straight-way - Solder	–	6	0.04	0.73	0.67	0.77	020B1014
NRV 6s v2 <sup>1)</sup>	Straight-way - Solder	3/8	–	0.04	0.73	0.67	0.77	020B1057
	Straight-way - Solder	–	10	0.04	0.73	0.67	0.77	020B1050
NRVH 6s v2 <sup>1)</sup>	Straight-way - Solder	3/8	–	0.20	2.90	0.67	0.77	020B1069
	Straight-way - Solder	–	10	0.20	2.90	0.67	0.77	020B1062
NRV 10s v2	Straight-way - Solder	3/8	–	0.04	0.73	1.64	1.90	020B1011
	Straight-way - Solder	–	10	0.04	0.73	1.64	1.90	020B1015
NRVH 10s v2	Straight-way - Solder	3/8	–	0.20	2.90	1.64	1.90	020B1046
	Straight-way - Solder	–	10	0.20	2.90	1.64	1.90	020B1036
NRV 10s v2 <sup>1)</sup>	Straight-way - Solder	1/2	–	0.04	0.73	1.64	1.90	020B1058
	Straight-way - Solder	–	12	0.04	0.73	1.64	1.90	020B1051
NRVH 10s v2 <sup>1)</sup>	Straight-way - Solder	1/2	–	0.20	2.90	1.64	1.90	020B1070
	Straight-way - Solder	–	12	0.20	2.90	1.64	1.90	020B1063
NRV 12s v2	Straight-way - Solder	1/2	–	0.02	0.44	2.50	2.89	020B1012
	Straight-way - Solder	–	12	0.02	0.44	2.50	2.89	020B1016
NRVH 12s v2	Straight-way - Solder	1/2	–	0.20	2.90	2.50	2.89	020B1039
	Straight-way - Solder	–	12	0.20	2.90	2.50	2.89	020B1037
NRV 12s v2 <sup>1)</sup>	Straight-way - Solder	5/8	16	0.02	0.44	2.50	2.89	020B1052
NRVH 12s v2 <sup>1)</sup>	Straight-way - Solder	5/8	16	0.20	2.90	2.50	2.89	020B1064
NRV 16s v2	Straight-way - Solder	5/8	16	0.02	0.44	4.00	4.62	020B1018
NRVH 16s v2	Straight-way - Solder	5/8	16	0.20	2.90	4.00	4.62	020B1038
NRV 16s v2 <sup>1)</sup>	Straight-way - Solder	–	18	0.02	0.44	4.00	4.62	020B1053
NRV 16s v2 <sup>1)</sup>	Straight-way - Solder	–	18	0.20	2.90	4.00	4.62	020B1065
NRV 16s v2 <sup>1)</sup>	Straight-way - Solder	3/4	19	0.02	0.44	4.00	4.62	020B1059
NRVH 16s v2 <sup>1)</sup>	Straight-way - Solder	3/4	19	0.20	2.90	4.00	4.62	020B1071
NRV 19s v2	Straight-way - Solder	–	18	0.02	0.44	6.50	7.51	020B1017
NRVH 19s v2	Straight-way - Solder	–	18	0.14	2.90	6.50	7.51	020B1008
NRV 19s v2	Straight-way - Solder	3/4	19	0.02	0.44	6.50	7.51	020B1019
NRVH 19s v2	Straight-way - Solder	3/4	19	0.14	2.90	6.50	7.51	020B1023
NRV 19s v2 <sup>1)</sup>	Straight-way - Solder	7/8	22	0.02	0.44	6.50	7.51	020B1054
NRVH 19s v2 <sup>1)</sup>	Straight-way - Solder	7/8	22	0.14	2.90	6.50	7.51	020B1066

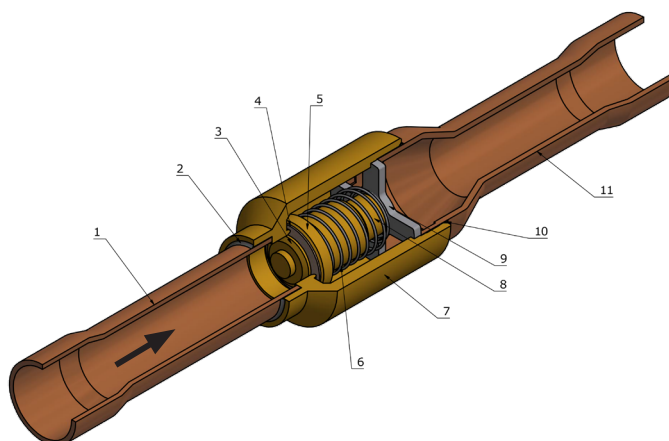
<sup>1)</sup> Oversize connections

<sup>2)</sup>  $\Delta p$  = Minimum Opening Pressure Differential

<sup>3)</sup> The K<sub>v</sub>/C<sub>v</sub> value is the flow of water in [m<sup>3</sup>/h – gal/min] at a pressure drop across valve of 1 bar/14.5 psig  
 $\rho = 1000 \text{ kg/m}^3 - 2205 \text{ lbs/G}$

### Design / Function

1. Copper tube
2. Solder ring
3. Washer
4. Teflon disk
5. Piston
6. Spring
7. Valve body
8. Guide
9. Stop face
10. Solder ring
11. Copper tube



# Data sheet | Check valve, types NRV and NRHV

SI units

## Capacity

### Liquid capacity (kW)

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R134a				
NRV 6 v2	1.4	4.6	11.0	14.4
NRV 10 v2	8.3	18.2	29.5	35.2
NRV 12 v2	26.9	31.8	44.9	53.7
NRV 16 v2	38.8	50.8	71.9	85.9
NRV 19 v2	69.8	82.6	116.9	139.7
NRV 22	91.6	108.4	153.3	183.3
NRV 28	177.9	210.5	297.7	355.8
NRV 35	312.7	369.9	523.2	625.3

R22				
NRV 6 v2	1.5	4.9	11.8	15.5
NRV 10 v2	9.0	19.7	31.8	38.0
NRV 12 v2	28.9	34.2	48.4	57.9
NRV 16 v2	41.8	54.8	77.5	92.6
NRV 19 v2	75.2	89.0	125.9	150.5
NRV 22	98.4	116.4	164.6	196.8
NRV 28	191.0	226.0	319.6	382.0
NRV 35	335.7	397.2	561.7	671.4

R404A				
NRV 6 v2	1.0	3.4	8.0	10.5
NRV 10 v2	6.1	13.4	21.6	25.8
NRV 12 v2	19.7	23.3	32.9	39.3
NRV 16 v2	28.4	37.2	52.6	62.9
NRV 19 v2	51.1	60.5	85.5	102.2
NRV 22	67.0	79.3	112.2	134.1
NRV 28	130.1	154.0	217.8	260.3
NRV 35	228.7	270.6	382.7	457.5

R410A				
NRV 6 v2	1.5	4.9	11.6	15.3
NRV 10 v2	8.8	19.3	31.2	37.3
NRV 12 v2	28.5	33.7	47.6	56.9
NRV 16 v2	41.1	53.9	76.2	91.1
NRV 19 v2	74.0	87.6	123.8	148.0
NRV 22	96.7	114.4	161.8	193.4
NRV 28	187.7	222.1	314.1	375.4
NRV 35	329.9	390.3	552.0	659.7

### Suction vapour capacity in [kW]

Pressure drop across valve Δp [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°C]			
	NRV			
	-30	-10	0	5

R134a				
0.07	0.22	0.39	0.50	0.56
0.07	0.91	1.59	2.01	2.24
0.07	1.68	2.83	3.55	3.95
0.07	2.68	4.53	5.68	6.32
0.07	4.36	7.37	9.24	10.27
0.07	5.73	9.67	12.11	13.47
0.07	11.13	18.77	23.51	26.14
0.07	19.56	32.99	41.33	45.94

R22				
0.07	0.34	0.54	0.66	0.72
0.07	1.39	2.18	2.64	2.89
0.07	2.50	3.84	4.64	5.07
0.07	3.99	6.14	7.42	8.11
0.07	6.49	9.98	12.05	13.17
0.07	8.48	13.05	15.76	17.23
0.07	16.47	25.33	30.59	33.44
0.07	28.94	44.52	53.77	58.78

R404A				
0.07	0.29	0.47	0.59	0.65
0.07	1.17	1.90	2.35	2.59
0.07	2.09	3.34	4.12	4.54
0.07	3.34	5.35	6.59	7.27
0.07	5.43	8.70	10.71	11.81
0.07	7.09	11.37	14.01	15.46
0.07	13.77	22.07	27.19	30.02
0.07	24.20	38.79	47.79	52.76

R410A				
0.07	0.44	0.68	0.83	0.90
0.07	1.78	2.74	3.30	3.61
0.07	3.16	4.80	5.78	6.32
0.07	5.05	7.69	9.26	10.11
0.07	8.21	12.49	15.04	16.42
0.07	10.72	16.35	19.70	21.52
0.07	20.81	31.73	38.24	41.77
0.07	36.57	55.77	67.21	73.42

### Hot gas capacity in [kW]

Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]	NRV			
	0.05	0.07	0.14	0.2

R134a				
0.2	0.7	1.7	2.2	
1.3	2.8	4.5	5.4	
4.2	4.9	6.9	8.2	
6.0	7.9	11.1	13.2	
10.8	12.8	18.0	21.4	
14.2	16.8	23.6	28.1	
27.6	32.6	45.9	54.6	
48.6	57.4	80.7	95.9	

R22				
0.3	0.9	2.1	2.8	
1.6	3.5	5.7	6.8	
5.2	6.2	8.7	10.4	
7.5	9.9	14.0	16.6	
13.6	16.1	22.7	27.0	
17.8	21.0	29.6	35.3	
34.5	40.8	57.5	68.6	
60.7	71.8	101.1	120.5	

R404A				
0.2	0.8	1.8	2.4	
1.4	3.1	4.9	5.9	
4.5	5.3	7.5	9.0	
6.5	8.5	12.0	14.3	
11.7	13.9	19.6	23.3	
15.4	18.2	25.6	30.6	
29.9	35.3	49.8	59.3	
52.5	62.0	87.4	104.2	

R410A				
0.3	1.1	2.6	3.4	
2.0	4.4	7.0	8.4	
6.4	7.6	10.7	12.8	
9.3	12.2	17.2	20.5	
16.7	19.8	27.9	33.3	
21.9	25.9	36.5	43.6	
42.5	50.2	70.9	84.6	
74.7	88.3	124.6	148.6	

### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRHV			
	0.2	0.25	0.3	0.35

R134a				
NRHV 6 v2	0.1	0.3	1.4	2.0
NRHV 10 v2	0.0	2.9	5.0	6.5
NRHV 12 v2	5.6	9.2	10.0	10.8
NRHV 16 v2	1.9	10.5	13.8	15.9
NRHV 19 v2	16.0	23.8	26.0	28.0
NRHV 22	-	-	34.1	36.7
NRHV 28	-	-	66.3	71.3
NRHV 35	-	-	116.5	125.3

R22				
NRHV 6 v2	0.1	0.4	1.8	2.6
NRHV 10 v2	0.0	3.6	6.3	8.2
NRHV 12 v2	7.0	11.6	12.7	13.6
NRHV 16 v2	2.5	13.4	17.6	20.2
NRHV 19 v2	20.2	30.1	32.9	35.5
NRHV 22	-	-	43.0	46.4
NRHV 28	-	-	83.5	90.0
NRHV 35	-	-	146.8	158.2

R404A				
NRHV 6 v2	0.1	0.4	1.6	2.3
NRHV 10 v2	0.0	3.1	5.4	7.1
NRHV 12 v2	6.1	10.0	10.9	11.8
NRHV 16 v2	2.1	11.6	15.2	17.5
NRHV 19 v2	17.5	26.0	28.4	30.6
NRHV 22	-	-	37.2	40.1
NRHV 28	-	-	72.3	77.9
NRHV 35	-	-	127.1	137.0

R410A				
NRHV 6 v2	0.2	0.5	2.3	3.2
NRHV 10 v2	0.0	4.5	7.8	10.1
NRHV 12 v2	8.7	14.3	15.6	16.8
NRHV 16 v2	3.1	16.6	21.8	25.1
NRHV 19 v2	25.0	37.1	40.6	43.8
NRHV 22	-	-	53.2	57.3
NRHV 28	-	-	103.2	111.3
NRHV 35	-	-	181.4	195.7

1) Rated capacities are based on:  
 -Evaporating temperature, t<sub>e</sub> = -10 °C.  
 -Condensing temperature, t<sub>c</sub> = 30 °C.  
 -Subcooling t<sub>sub</sub> = 5 K.  
 -Delta superheat t<sub>sh</sub> = 0 K.  
 -Discharge temperature, t<sub>d</sub> = 80 °C ahead of the valve.  
 The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

System capacity = Correction factor × Table capacity

### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°C]	-10	0	10	15	20	25	30	35	40	45	50
R134a	0.73	0.79	0.86	0.90	0.95	1.00	1.06	1.12	1.19	1.27	1.37
R22	0.76	0.82	0.88	0.92	0.96	1.00	1.05	1.10	1.16	1.22	1.30
R404A	0.67	0.74	0.82	0.87	0.93	1.00	1.08	1.17	1.29	1.43	1.61
R410A	0.72	0.78	0.85	0.90	0.94	1.00	1.06	1.14	1.22	1.33	1.46

## Data sheet | Check valve, types NRV and NR VH

### Capacity

SI units

#### Liquid capacity [kW]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R407A				
NRV 6 v2	1.4	4.4	10.5	13.8
NRV 10 v2	7.9	17.4	28.2	33.7
NRV 12 v2	25.7	30.4	42.9	51.3
NRV 16 v2	37.0	48.6	68.7	82.1
NRV 19 v2	66.7	78.9	111.6	133.4
NRV 22	87.5	103.5	146.4	175.0
NRV 28	169.9	201.0	284.2	339.7
NRV 35	298.5	353.2	499.5	597.1

#### Suction vapour capacity in [kW]

Pressure drop across valve Δp [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°C]			
	NRV			
	-30	-10	0	5

R407A				
0.07	0.30	0.50	0.62	0.68
0.07	1.21	2.00	2.47	2.74
0.07	2.17	3.52	4.35	4.80
0.07	3.48	5.63	6.95	7.68
0.07	5.65	9.15	11.30	12.48
0.07	7.40	12.00	14.82	16.38
0.07	14.37	23.29	28.77	31.79
0.07	25.25	40.94	50.57	55.87

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R407A				
0.3	0.9	2.2	2.9	
1.7	3.6	5.9	7.0	
5.4	6.3	8.9	10.6	
7.7	10.1	14.3	17.0	
13.9	16.5	23.2	27.7	
18.3	21.6	30.5	36.4	
35.5	42.0	59.2	70.6	
62.5	73.9	104.1	124.1	

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

RR407A				
NRVH 6 v2	0.2	0.4	1.9	2.7
NRVH 10 v2	0.0	3.7	6.5	8.4
NRVH 12 v2	7.2	11.9	13.0	14.0
NRVH 16 v2	2.5	13.7	18.1	20.8
NRVH 19 v2	20.8	30.9	33.8	36.4
NRVH 22	-	-	44.4	47.8
NRVH 28	-	-	86.1	92.8
NRVH 35	-	-	151.3	163.1

R407C				
NRV 6 v2	1.5	4.7	11.3	14.8
NRV 10 v2	8.6	18.8	30.4	36.3
NRV 12 v2	27.7	32.8	46.3	55.4
NRV 16 v2	40.0	52.4	74.1	88.6
NRV 19 v2	72.0	85.2	120.5	144.0
NRV 22	94.4	111.7	157.9	188.8
NRV 28	183.2	216.8	306.6	366.5
NRV 35	322.0	381.0	538.9	644.1

R407C				
0.07	0.30	0.50	0.62	0.69
0.07	1.22	2.02	2.50	2.77
0.07	2.20	3.56	4.40	4.86
0.07	3.52	5.70	7.04	7.77
0.07	5.72	9.27	11.44	12.63
0.07	7.48	12.14	14.99	16.56
0.07	14.52	23.56	29.10	32.14
0.07	25.52	41.41	51.14	56.49

R407C				
0.3	0.9	2.2	2.9	
1.7	3.7	6.0	7.2	
5.5	6.5	9.2	11.0	
8.0	10.5	14.7	17.6	
14.4	17.0	23.9	28.5	
18.9	22.3	31.4	37.4	
36.6	43.3	61.0	72.7	
64.3	76.0	107.2	127.8	

R407C				
NRVH 6 v2	0.2	0.5	1.9	2.8
NRVH 10 v2	0.0	3.8	6.7	8.7
NRVH 12 v2	7.4	12.2	13.4	14.4
NRVH 16 v2	2.6	14.1	18.6	21.4
NRVH 19 v2	21.4	31.8	34.8	37.5
NRVH 22	-	-	45.6	49.2
NRVH 28	-	-	88.6	95.5
NRVH 35	-	-	155.7	167.8

R407F				
NRV 6 v2	1.5	4.8	11.5	15.1
NRV 10 v2	8.7	19.2	31.0	37.0
NRV 12 v2	28.2	33.4	47.2	56.4
NRV 16 v2	40.7	53.4	75.5	90.2
NRV 19 v2	73.3	86.8	122.7	146.6
NRV 22	95.9	113.4	160.4	191.8
NRV 28	186.1	220.2	311.4	372.2
NRV 35	327.1	387.1	547.4	654.3

R407F				
0.07	0.33	0.54	0.67	0.74
0.07	1.34	2.18	2.68	2.96
0.07	2.39	3.83	4.71	5.19
0.07	3.83	6.14	7.54	8.31
0.07	6.22	9.97	12.25	13.50
0.07	8.14	13.04	16.02	17.66
0.07	15.80	25.31	31.10	34.27
0.07	27.77	44.48	54.66	60.24

R407F				
0.3	1.0	2.4	3.1	
1.8	3.9	6.4	7.6	
5.8	6.9	9.7	11.6	
8.4	11.0	15.6	18.6	
15.2	17.9	25.3	30.2	
19.8	23.5	33.1	39.4	
38.5	45.5	64.2	76.6	
67.7	80.0	112.9	134.6	

R407F				
NRVH 6 v2	0.2	0.5	2.0	2.9
NRVH 10 v2	0.0	4.1	7.0	9.2
NRVH 12 v2	7.9	12.9	14.1	15.2
NRVH 16 v2	2.8	15.0	19.7	22.7
NRVH 19 v2	22.6	33.6	36.8	39.6
NRVH 22	-	-	48.1	51.9
NRVH 28	-	-	93.4	100.7
NRVH 35	-	-	164.1	176.9

R407H				
NRV 6 v2	1.6	5.1	12.3	16.2
NRV 10 v2	9.3	20.5	33.1	39.6
NRV 12 v2	30.2	35.7	50.5	60.3
NRV 16 v2	43.5	57.1	80.7	96.5
NRV 19 v2	78.4	92.8	131.2	156.8
NRV 22	102.5	121.3	171.6	205.1
NRV 28	199.0	235.5	333.1	398.1
NRV 35	349.8	413.9	585.4	699.7

R407H				
0.07	0.33	0.54	0.67	0.74
0.07	1.33	2.18	2.69	2.97
0.07	2.39	3.85	4.73	5.21
0.07	3.83	6.15	7.56	8.34
0.07	6.23	10.00	12.29	13.55
0.07	8.14	13.07	16.07	17.71
0.07	15.80	25.38	31.20	34.39
0.07	27.78	44.60	54.83	60.44

R407H				
0.3	1.0	2.4	3.2	
1.8	4.0	6.5	7.8	
6.0	7.0	9.9	11.8	
8.6	11.3	15.9	18.9	
15.5	18.3	25.8	30.8	
20.3	24.0	33.8	40.3	
39.3	46.5	65.6	78.2	
69.1	81.7	115.2	137.4	

R407H				
NRVH 6 v2	0.2	0.5	2.1	3.0
NRVH 10 v2	0.0	4.2	7.2	9.4
NRVH 12 v2	8.0	13.2	14.4	15.6
NRVH 16 v2	2.8	15.3	20.1	23.1
NRVH 19 v2	23.1	34.3	37.5	40.5
NRVH 22	-	-	49.1	52.9
NRVH 28	-	-	95.3	102.7
NRVH 35	-	-	167.5	180.5

1) Rated capacities are based on:  
 -Evaporating temperature, t<sub>e</sub> = -10 °C.  
 -Condensing temperature, t<sub>c</sub> = 30 °C.  
 -Subcooling t<sub>sub</sub> = 5 K.  
 -Delta superheat t<sub>sh</sub> = 0 K.  
 -Discharge temperature, t<sub>d</sub> = 80 °C ahead of the valve.  
 The table values refer to the evaporator capacity.

#### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

System capacity = Correction factor × Table capacity

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°C]	-10	0	10	15	20	25	30	35	40	45	50
R407A	0.71	0.78	0.85	0.90	0.94	1.00	1.06	1.13	1.22	1.32	1.44
R407C	0.73	0.79	0.86	0.90	0.95	1.00	1.06	1.13	1.20	1.29	1.40
R407F	0.73	0.79	0.86	0.90	0.95	1.00	1.06	1.13	1.20	1.30	1.40
R407H	0.74	0.80	0.87	0.91	0.95	1.00	1.06	1.12	1.19	1.27	1.37

## Data sheet | Check valve, types NRV and NRHV

SI units

### Capacity

#### Liquid capacity (kW)

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R448A				
NRV 6 v2	1.4	4.4	10.6	13.8
NRV 10 v2	8.0	17.5	28.3	33.8
NRV 12 v2	25.8	30.5	43.2	51.6
NRV 16 v2	37.2	48.8	69.1	82.5
NRV 19 v2	67.1	79.4	112.2	134.1
NRV 22	87.7	103.8	146.7	175.4
NRV 28	170.2	201.4	284.9	340.5
NRV 35	299.2	354.0	500.7	598.4

R449A				
NRV 6 v2	1.3	4.3	10.4	13.7
NRV 10 v2	7.9	17.3	28.0	33.4
NRV 12 v2	25.5	30.1	42.6	51.0
NRV 16 v2	36.8	48.2	68.2	81.5
NRV 19 v2	66.3	78.4	110.9	132.5
NRV 22	86.6	102.5	145.0	173.3
NRV 28	168.2	199.0	281.4	336.4
NRV 35	295.6	349.7	494.6	591.2

R449B				
NRV 6 v2	1.4	4.4	10.6	13.8
NRV 10 v2	8.0	17.6	28.4	33.9
NRV 12 v2	25.8	30.6	43.2	51.7
NRV 16 v2	37.3	48.9	69.2	82.7
NRV 19 v2	67.2	79.5	112.4	134.3
NRV 22	87.8	103.9	147.0	175.7
NRV 28	170.5	201.7	285.3	341.0
NRV 35	299.7	354.6	501.5	599.4

R450A				
NRV 6 v2	1.3	4.3	10.2	13.4
NRV 10 v2	7.7	16.9	27.3	32.7
NRV 12 v2	24.9	29.5	41.7	49.8
NRV 16 v2	35.9	47.2	66.7	79.7
NRV 19 v2	64.8	76.6	108.4	129.5
NRV 22	84.8	100.3	141.9	169.6
NRV 28	164.6	194.8	275.5	329.2
NRV 35	289.3	342.3	484.2	578.7

#### Suction vapour capacity in [kW]

Pressure drop across valve Δp [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°C]			
	NRV			
	-30	-10	0	5

R448A				
0.07	0.31	0.51	0.63	0.70
0.07	1.26	2.05	2.53	2.79
0.07	2.25	3.61	4.44	4.90
0.07	3.60	5.78	7.11	7.84
0.07	5.86	9.39	11.55	12.73
0.07	7.66	12.30	15.14	16.70
0.07	14.87	23.88	29.39	32.42
0.07	26.13	41.97	51.66	56.98

R449A				
0.07	0.31	0.51	0.63	0.69
0.07	1.25	2.04	2.52	2.78
0.07	2.24	3.59	4.42	4.88
0.07	3.58	5.75	7.08	7.80
0.07	5.82	9.34	11.50	12.68
0.07	7.61	12.22	15.04	16.59
0.07	14.77	23.71	29.19	32.20
0.07	25.95	41.68	51.30	56.59

R449B				
0.07	0.31	0.51	0.63	0.70
0.07	1.26	2.06	2.54	2.80
0.07	2.26	3.63	4.46	4.92
0.07	3.62	5.80	7.14	7.87
0.07	5.88	9.43	11.60	12.80
0.07	7.68	12.33	15.17	16.73
0.07	14.92	23.94	29.45	32.48
0.07	26.22	42.07	51.76	57.09

R450A				
0.07	0.19	0.35	0.45	0.50
0.07	0.79	1.42	1.80	2.02
0.07	1.48	2.54	3.20	3.57
0.07	2.36	4.06	5.12	5.71
0.07	3.84	6.60	8.32	9.28
0.07	5.01	8.62	10.89	12.14
0.07	9.72	16.74	21.13	23.57
0.07	17.09	29.42	37.14	41.43

#### Hot gas capacity in [kW]

Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]	NRV			
	0.05	0.07	0.14	0.2

R448A				
0.3	0.9	2.2	2.9	
1.7	3.7	6.0	7.1	
5.5	6.5	9.1	10.9	
7.9	10.3	14.6	17.4	
14.2	16.8	23.7	28.2	
18.6	22.0	31.1	37.0	
36.2	42.8	60.3	71.9	
63.6	75.1	106.0	126.3	

R449A				
0.3	0.9	2.2	2.9	
1.7	3.7	5.9	7.0	
5.4	6.4	9.0	10.7	
7.8	10.2	14.4	17.2	
14.0	16.6	23.4	27.9	
18.4	21.7	30.6	36.5	
35.6	42.1	59.4	70.8	
62.7	74.1	104.4	124.5	

R449B				
0.3	0.9	2.2	2.9	
1.7	3.7	6.0	7.1	
5.5	6.5	9.1	10.8	
7.9	10.3	14.6	17.3	
14.2	16.8	23.6	28.2	
18.6	21.9	30.9	36.9	
36.0	42.6	60.0	71.6	
63.3	74.8	105.5	125.8	

R450A				
0.2	0.6	1.5	2.0	
1.2	2.6	4.1	4.9	
3.8	4.5	6.3	7.5	
5.5	7.2	10.1	12.0	
9.9	11.7	16.4	19.5	
12.9	15.3	21.5	25.5	
25.1	29.6	41.6	49.5	
44.1	52.1	73.2	87.0	

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

R448A				
NRVH 6 v2	0.2	0.4	1.9	2.7
NRVH 10 v2	0.0	3.8	6.6	8.6
NRVH 12 v2	7.4	12.1	13.2	14.3
NRVH 16 v2	2.6	14.0	18.4	21.2
NRVH 19 v2	21.2	31.5	34.4	37.1
NRVH 22	-	-	45.1	48.7
NRVH 28	-	-	87.6	94.5
NRVH 35	-	-	154.0	166.0

R449A				
NRVH 6 v2	0.2	0.4	1.9	2.7
NRVH 10 v2	0.0	3.8	6.5	8.5
NRVH 12 v2	7.3	12.0	13.1	14.1
NRVH 16 v2	2.6	13.8	18.2	20.9
NRVH 19 v2	20.9	31.1	34.0	36.7
NRVH 22	-	-	44.5	47.9
NRVH 28	-	-	86.4	93.1
NRVH 35	-	-	151.8	163.6

R449B				
NRVH 6 v2	0.2	0.4	1.9	2.7
NRVH 10 v2	0.0	3.8	6.6	8.6
NRVH 12 v2	7.3	12.1	13.2	14.2
NRVH 16 v2	2.6	14.0	18.4	21.2
NRVH 19 v2	21.1	31.4	34.4	37.0
NRVH 22	-	-	45.0	48.4
NRVH 28	-	-	87.3	94.0
NRVH 35	-	-	153.4	165.3

R450A				
NRVH 6 v2	0.1	0.3	1.3	1.8
NRVH 10 v2	0.0	2.6	4.5	5.9
NRVH 12 v2	5.1	8.3	9.1	9.8
NRVH 16 v2	1.8	9.5	12.5	14.4
NRVH 19 v2	14.6	21.7	23.6	25.4
NRVH 22	-	-	30.9	33.2
NRVH 28	-	-	60.0	64.5
NRVH 35	-	-	105.5	113.4

1) Rated capacities are based on:  
 -Evaporating temperature, t<sub>e</sub> = -10 °C.  
 -Condensing temperature, t<sub>c</sub> = 30 °C.  
 -Subcooling t<sub>sub</sub> = 5 K.  
 -Delta superheat t<sub>sh</sub> = 0 K.  
 -Discharge temperature, t<sub>d</sub> = 80 °C ahead of the valve.  
 The table values refer to the evaporator capacity.

#### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

System capacity = Correction factor × Table capacity

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°C]	-10	0	10	15	20	25	30	35	40	45	50
R448A	0.71	0.78	0.85	0.90	0.94	1.00	1.06	1.13	1.22	1.32	1.44
R449A	0.71	0.77	0.85	0.89	0.94	1.00	1.06	1.14	1.22	1.32	1.44
R449B	0.71	0.78	0.85	0.90	0.94	1.00	1.06	1.13	1.22	1.32	1.44
R450A	0.72	0.79	0.86	0.90	0.95	1.00	1.06	1.12	1.20	1.28	1.38

# Data sheet | Check valve, types NRV and NR VH

SI units

## Capacity

### Liquid capacity (kW)

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R452A				
NRV 6 v2	1.1	3.4	8.2	10.7
NRV 10 v2	6.2	13.6	21.9	26.2
NRV 12 v2	20.0	23.6	33.4	40.0
NRV 16 v2	28.8	37.8	53.5	63.9
NRV 19 v2	51.9	61.5	86.9	103.9
NRV 22	67.7	80.1	113.3	135.4
NRV 28	131.4	155.5	219.9	262.8
NRV 35	230.9	273.3	386.4	461.9

### Suction vapour capacity in [kW]

Pressure drop across valve Δp [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°C]			
	NRV			
	-30	-10	0	5

R452A				
0.07	0.27	0.45	0.56	0.62
0.07	1.11	1.82	2.26	2.50
0.07	1.98	3.20	3.96	4.38
0.07	3.17	5.13	6.34	7.01
0.07	5.14	8.33	10.30	11.40
0.07	6.70	10.87	13.45	14.88
0.07	13.01	21.10	26.11	28.89
0.07	22.87	37.08	45.89	50.77

### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R452A				
0.2	0.8	1.9	2.5	
1.4	3.1	5.1	6.0	
4.6	5.5	7.7	9.2	
6.7	8.8	12.4	14.7	
12.1	14.3	20.1	24.0	
15.7	18.6	26.2	31.3	
30.5	36.1	50.9	60.7	
53.7	63.5	89.5	106.7	

### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

R452A				
NRVH 6 v2	0.1	0.4	1.6	2.3
NRVH 10 v2	0.0	3.2	5.6	7.3
NRVH 12 v2	6.2	10.3	11.2	12.1
NRVH 16 v2	2.2	11.9	15.6	18.0
NRVH 19 v2	18.0	26.7	29.2	31.5
NRVH 22	-	-	38.1	41.1
NRVH 28	-	-	74.0	79.8
NRVH 35	-	-	130.1	140.2

R513A				
NRV 6 v2	1.3	4.1	9.8	12.8
NRV 10 v2	7.4	16.2	26.2	31.4
NRV 12 v2	23.9	28.3	40.0	47.8
NRV 16 v2	34.5	45.3	64.0	76.5
NRV 19 v2	62.2	73.6	104.0	124.3
NRV 22	76.2	90.2	127.5	152.4
NRV 28	147.9	175.1	247.6	295.9
NRV 35	260.0	307.7	435.1	520.1

R513A				
0.07	0.21	0.38	0.48	0.54
0.07	0.89	1.54	1.94	2.17
0.07	1.62	2.74	3.43	3.82
0.07	2.60	4.38	5.49	6.11
0.07	4.22	7.11	8.92	9.93
0.07	5.45	9.15	11.46	12.74
0.07	10.58	17.76	22.25	24.74
0.07	18.60	31.22	39.10	43.48

R513A				
0.2	0.6	1.6	2.0	
1.2	2.6	4.2	5.0	
3.8	4.5	6.4	7.6	
5.5	7.3	10.2	12.2	
10.0	11.8	16.6	19.8	
13.1	15.4	21.7	25.8	
25.4	30.0	42.2	50.2	
44.6	52.7	74.1	88.2	

R513A				
NRVH 6 v2	0.1	0.3	1.3	1.9
NRVH 10 v2	0.0	2.6	4.6	6.0
NRVH 12 v2	5.1	8.5	9.2	9.9
NRVH 16 v2	1.8	9.7	12.8	14.7
NRVH 19 v2	14.8	22.0	24.0	25.8
NRVH 22	-	-	31.4	33.8
NRVH 28	-	-	60.9	65.6
NRVH 35	-	-	107.1	115.2

R515B				
NRV 6 v2	1.2	4.0	9.6	12.5
NRV 10 v2	7.2	15.9	25.7	30.7
NRV 12 v2	23.4	27.7	39.1	46.8
NRV 16 v2	33.7	44.3	62.6	74.8
NRV 19 v2	60.8	71.9	101.7	121.6
NRV 22	79.5	94.1	133.0	159.0
NRV 28	154.3	182.6	258.2	308.6
NRV 35	271.2	320.9	453.8	542.4

R515B				
0.07	0.16	0.30	0.40	0.45
0.07	0.67	1.25	1.61	1.81
0.07	1.27	2.25	2.86	3.21
0.07	2.04	3.60	4.58	5.13
0.07	3.31	5.84	7.44	8.33
0.07	4.33	7.64	9.73	10.90
0.07	8.40	14.84	18.89	21.16
0.07	14.77	26.08	33.21	37.18

R515B				
0.2	0.6	1.4	1.8	
1.0	2.3	3.7	4.4	
3.4	4.0	5.6	6.6	
4.9	6.4	9.0	10.6	
8.8	10.4	14.6	17.3	
11.5	13.6	19.0	22.6	
22.3	26.3	36.9	43.8	
39.2	46.3	64.9	77.1	

R515B				
NRVH 6 v2	0.1	0.3	1.1	1.6
NRVH 10 v2	0.0	2.3	4.0	5.2
NRVH 12 v2	4.5	7.4	8.0	8.6
NRVH 16 v2	1.6	8.4	11.0	12.7
NRVH 19 v2	12.9	19.2	20.9	22.5
NRVH 22	-	-	27.3	29.4
NRVH 28	-	-	53.1	57.0
NRVH 35	-	-	93.3	100.2

R1233zd				
NRV 6 v2	1.5	5.0	11.9	15.6
NRV 10 v2	9.0	19.8	31.9	38.2
NRV 12 v2	29.1	34.4	48.7	58.2
NRV 16 v2	42.0	55.1	77.9	93.1
NRV 19 v2	75.6	89.5	126.6	151.3
NRV 22	98.9	117.0	165.5	197.8
NRV 28	192.0	227.2	321.3	384.1
NRV 35	337.5	399.3	564.8	675.0

R1233zd				
0.07	0.04	0.11	0.18	0.22
0.07	0.17	0.52	0.79	0.93
0.07	0.42	1.11	1.54	1.77
0.07	0.67	1.78	2.46	2.83
0.07	1.10	2.89	3.99	4.60
0.07	1.43	3.78	5.22	6.02
0.07	2.78	7.34	10.13	11.68
0.07	4.89	12.90	17.81	20.53

R1233zd				
0.1	0.3	0.8	1.1	
0.6	1.4	2.3	2.6	
2.1	2.5	3.4	4.0	
3.1	4.0	5.5	6.4	
5.6	6.5	8.9	10.4	
7.3	8.5	11.7	13.6	
14.1	16.5	22.7	26.4	
24.8	29.1	39.9	46.4	

R1233zd				
NRVH 6 v2	0.0	0.1	0.6	0.8
NRVH 10 v2	0.0	1.3	2.2	2.9
NRVH 12 v2	2.7	4.4	4.7	4.9
NRVH 16 v2	0.8	4.5	5.9	6.8
NRVH 19 v2	7.7	11.4	12.1	12.8
NRVH 22	-	-	15.9	16.7
NRVH 28	-	-	30.8	32.5
NRVH 35	-	-	54.2	57.1

R1234ze(E)				
NRV 6 v2	1.3	4.1	9.8	12.9
NRV 10 v2	7.4	16.3	26.4	31.5
NRV 12 v2	24.0	28.4	40.2	48.0
NRV 16 v2	34.6	45.4	64.3	76.8
NRV 19 v2	62.4	73.9	104.4	124.8
NRV 22	81.6	96.6	136.6	163.2
NRV 28	158.4	187.5	265.1	316.9
NRV 35	278.5	329.5	466.0	557.0

R1234ze(E)				
0.07	0.16	0.31	0.41	0.46
0.07	0.69	1.28	1.64	1.85
0.07	1.31	2.30	2.93	3.27
0.07	2.09	3.68	4.68	5.24
0.07	3.40	5.98	7.61	8.51
0.07	4.45	7.82	9.95	11.13
0.07	8.64	15.19	19.31	21.60
0.07	15.18	26.69	33.94	37.97

R1234ze(E)				
0.2	0.6	1.4	1.8	
1.1	2.3	3.8	4.5	
3.5	4.1	5.7	6.8	
5.0	6.5	9.2	10.9	
9.0	10.6	14.9	17.7	
11.7	13.9	19.5	23.1	
22.8	26.9	37.8	44.8	
40.1	47.3	66.4	78.8	

R1234ze(E)				
NRVH 6 v2	0.1	0.3	1.2	1.7
NRVH 10 v2	0.0	2.3	4.1	5.3
NRVH 12 v2	4.6	7.6	8.2	8.8
NRVH 16 v2	1.6	8.6	11.3	13.0
NRVH 19 v2	13.2	19.6	21.4	23.0
NRVH 22	-	-	28.0	30.0
NRVH 28	-	-	54.3	58.3
NRVH 35	-	-	95.4	102.5

### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°C]	-10	0	10	15	20	25	30	35	40	45	50
R452A	0.67	0.74	0.83	0.88	0.93	1.00	1.08	1.17	1.28	1.41	1.59
R513A	0.71	0.77	0.85	0.89	0.94	1.00	1.06	1.14	1.22	1.32	1.44
R515B	0.72	0.78	0.86	0.90	0.95	1.00	1.06	1.13	1.20	1.29	1.40
R1233zd	0.77	0.82	0.89	0.92	0.96	1.00	1.04	1.09	1.14	1.20	1.26
R1234ze(E)	0.72	0.78	0.86	0.90	0.95	1.00	1.06	1.12	1.20	1.29	1.39

## Data sheet | Check valve, types NRV and NR VH

SI units

### Capacity

#### Liquid capacity [kW]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R290				
NRV 6 v2	1.7	5.5	13.2	17.3
NRV 10 v2	10.0	22.0	35.5	42.4
NRV 12 v2	32.3	38.2	54.1	64.6
NRV 16 v2	46.6	61.2	86.5	103.4
NRV 19 v2	84.0	99.4	140.6	168.1
NRV 22	110.5	130.8	184.9	221.1

R32				
NRV 6 v2	2.1	6.9	16.6	21.8
NRV 10 v2	12.6	27.6	44.7	53.4
NRV 12 v2	40.7	48.1	68.1	81.4
NRV 16 v2	58.7	77.0	108.9	130.2
NRV 19 v2	105.8	125.1	177.0	211.5
NRV 22	138.3	163.7	231.4	276.6

R452B				
NRV 6 v2	1.7	5.6	13.4	17.5
NRV 10 v2	10.1	22.2	35.8	42.8
NRV 12 v2	32.6	38.6	54.6	65.3
NRV 16 v2	47.1	61.8	87.4	104.4
NRV 19 v2	84.9	100.4	142.0	169.7
NRV 22	111.0	131.3	185.7	222.0

R455A				
NRV 6 v2	1.2	4.0	9.7	12.7
NRV 10 v2	7.3	16.0	25.9	31.0
NRV 12 v2	23.6	27.9	39.5	47.2
NRV 16 v2	34.1	44.7	63.2	75.6
NRV 19 v2	61.4	72.7	102.8	122.8
NRV 22	80.3	95.0	134.4	160.6

#### Suction vapour capacity in [kW]

Pressure drop across valve $\Delta p$ [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature $t_e$ [°C]			
	NRV			
	-30	-10	0	5

R290				
0.07	0.42	0.66	0.81	0.89
0.07	1.71	2.67	3.25	3.57
0.07	3.06	4.72	5.72	6.26
0.07	4.89	7.54	9.14	10.02
0.07	7.94	12.26	14.86	16.28
0.07	10.41	16.07	19.49	21.36

R32				
0.07	0.58	0.87	1.05	1.14
0.07	2.33	3.50	4.18	4.55
0.07	4.12	6.14	7.32	7.96
0.07	6.59	9.83	11.72	12.73
0.07	10.72	15.97	19.04	20.69
0.07	14.01	20.89	24.90	27.06

R452B				
0.07	0.47	0.72	0.87	0.96
0.07	1.90	2.90	3.50	3.82
0.07	3.37	5.10	6.13	6.68
0.07	5.39	8.16	9.80	10.69
0.07	8.75	13.26	15.93	17.38
0.07	11.45	17.34	20.83	22.72

R455A				
0.07	0.28	0.47	0.58	0.64
0.07	1.15	1.88	2.34	2.58
0.07	2.06	3.32	4.10	4.54
0.07	3.29	5.32	6.57	7.26
0.07	5.35	8.64	10.67	11.79
0.07	7.00	11.30	13.96	15.42

#### Hot gas capacity in [kW]

Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [bar]	NRV			
	NRV			
	0.05	0.07	0.14	0.2

R290				
0.3	1.0	2.5	3.3	
1.9	4.2	6.8	8.0	
6.2	7.3	10.3	12.3	
8.9	11.7	16.5	19.6	
16.1	19.0	26.8	31.9	
21.2	25.0	35.2	42.0	

R32				
0.4	1.4	3.4	4.4	
2.5	5.6	9.0	10.8	
8.2	9.7	13.8	16.4	
11.9	15.6	22.0	26.3	
21.4	25.3	35.8	42.7	
28.0	33.1	46.8	55.8	

R452B				
0.4	1.2	2.8	3.7	
2.2	4.7	7.6	9.1	
7.0	8.2	11.6	13.9	
10.1	13.2	18.6	22.2	
18.1	21.4	30.2	36.1	
23.7	28.0	39.5	47.2	

R455A				
0.3	0.9	2.2	2.9	
1.7	3.7	5.9	7.1	
5.4	6.4	9.0	10.8	
7.8	10.3	14.5	17.3	
14.1	16.7	23.5	28.0	
18.4	21.8	30.8	36.7	

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

R290				
NRVH 6 v2	0.2	0.5	2.1	3.1
NRVH 10 v2	0.0	4.3	7.4	9.7
NRVH 12 v2	8.3	13.7	14.9	16.1
NRVH 16 v2	2.9	15.7	20.7	23.8
NRVH 19 v2	23.9	35.6	38.8	41.8
NRVH 22	-	-	51.1	55.0

R32				
NRVH 6 v2	0.2	0.7	2.9	4.2
NRVH 10 v2	0.0	5.8	10.0	13.0
NRVH 12 v2	11.1	18.3	20.0	21.6
NRVH 16 v2	3.9	21.2	28.0	32.2
NRVH 19 v2	32.0	47.6	52.1	56.2
NRVH 22	-	-	68.1	73.5

R452B				
NRVH 6 v2	0.2	0.6	2.5	3.5
NRVH 10 v2	0.0	4.9	8.4	11.0
NRVH 12 v2	9.4	15.5	16.9	18.3
NRVH 16 v2	3.3	17.9	23.6	27.2
NRVH 19 v2	27.1	40.3	44.0	47.5
NRVH 22	-	-	57.6	62.1

R455A				
NRVH 6 v2	0.2	0.4	1.9	2.7
NRVH 10 v2	0.0	3.8	6.6	8.5
NRVH 12 v2	7.3	12.0	13.2	14.2
NRVH 16 v2	2.6	13.9	18.3	21.1
NRVH 19 v2	21.0	31.3	34.2	36.9
NRVH 22	-	-	44.7	48.2

1) Rated capacities are based on:  
 -Evaporating temperature,  $t_e = -10$  °C.  
 -Condensing temperature,  $t_c = 30$  °C.  
 -Subcooling  $t_{sub} = 5$  K.  
 -Delta superheat  $t_{sh} = 0$  K.  
 -Discharge temperature,  $t_d = 80$  °C ahead of the valve.  
 The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature  $t_l$  ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

$$\text{System capacity} \cdot \text{Correction factor} = \text{Table capacity}$$

### Correction factors for liquid temperature $t_l$

$t_l$ [°C]	-10	0	10	15	20	25	30	35	40	45	50
R290	0.73	0.79	0.86	0.90	0.95	1.00	1.06	1.12	1.19	1.28	1.38
R32	0.76	0.82	0.88	0.92	0.96	1.00	1.05	1.11	1.17	1.24	1.33
R452B	0.74	0.80	0.86	0.91	0.95	1.00	1.06	1.12	1.20	1.28	1.39
R455A	0.70	0.77	0.84	0.89	0.94	1.00	1.07	1.14	1.23	1.34	1.47



Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant.

## Data sheet | Check valve, types NRV and NRHV

### Capacity

SI units

#### Liquid capacity (kW)

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

#### R454A

NRV 6 v2	1.4	4.4	10.5	13.8
NRV 10 v2	8.0	17.5	28.3	33.8
NRV 12 v2	25.8	30.5	43.1	51.5
NRV 16 v2	37.2	48.8	69.0	82.5
NRV 19 v2	67.0	79.3	112.1	134.0
NRV 22	87.6	103.7	146.6	175.2

#### R454B

NRV 6 v2	1.7	5.6	13.5	17.7
NRV 10 v2	10.2	22.5	36.3	43.4
NRV 12 v2	33.1	39.2	55.4	66.2
NRV 16 v2	47.8	62.7	88.6	105.9
NRV 19 v2	86.1	101.8	144.0	172.2
NRV 22	112.6	133.2	188.3	225.1

#### R454C

NRV 6 v2	1.2	4.0	9.5	12.5
NRV 10 v2	7.2	15.8	25.5	30.5
NRV 12 v2	23.2	27.5	38.9	46.5
NRV 16 v2	33.5	44.0	62.2	74.4
NRV 19 v2	60.4	71.5	101.1	120.9
NRV 22	79.0	93.5	132.2	158.1

#### R516A

NRV 6 v2	1.2	3.9	9.3	12.2
NRV 10 v2	7.1	15.5	25.0	29.9
NRV 12 v2	22.8	27.0	38.2	45.6
NRV 16 v2	32.9	43.2	61.0	73.0
NRV 19 v2	59.3	70.1	99.2	118.6
NRV 22	77.5	91.7	129.7	155.0

#### Suction vapour capacity in [kW]

Pressure drop across valve Δp [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°C]			
	NRV			
	-30	-10	0	5

#### R454A

0.07	0.33	0.53	0.65	0.72
0.07	1.33	2.13	2.62	2.89
0.07	2.37	3.76	4.60	5.07
0.07	3.80	6.02	7.37	8.11
0.07	6.17	9.77	11.97	13.18
0.07	8.07	12.78	15.65	17.23

#### R454B

0.07	0.47	0.73	0.88	0.96
0.07	1.91	2.91	3.51	3.83
0.07	3.38	5.12	6.15	6.70
0.07	5.40	8.18	9.83	10.72
0.07	8.78	13.30	15.98	17.43
0.07	11.48	17.39	20.89	22.79

#### R454C

0.07	0.27	0.45	0.56	0.62
0.07	1.10	1.82	2.26	2.50
0.07	1.98	3.21	3.97	4.39
0.07	3.17	5.14	6.35	7.03
0.07	5.15	8.35	10.33	11.42
0.07	6.73	10.92	13.50	14.93

#### R516A

0.07	0.21	0.38	0.48	0.53
0.07	0.89	1.53	1.93	2.14
0.07	1.63	2.72	3.40	3.78
0.07	2.61	4.36	5.45	6.05
0.07	4.25	7.08	8.85	9.83
0.07	5.56	9.26	11.57	12.86

#### Hot gas capacity in [kW]

Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]	NRV			
	NRV			
	0.05	0.07	0.14	0.2

#### R454A

0.3	1.0	2.3	3.0
1.7	3.8	6.1	7.3
5.6	6.6	9.4	11.2
8.1	10.6	15.0	17.9
14.6	17.3	24.4	29.1
19.1	22.6	31.9	38.0

#### R454B

0.4	1.2	2.9	3.7
2.2	4.8	7.7	9.2
7.0	8.3	11.7	14.0
10.1	13.3	18.7	22.3
18.2	21.6	30.4	36.3
23.9	28.2	39.8	47.5

#### R454C

0.3	0.8	2.0	2.7
1.5	3.4	5.5	6.5
5.0	5.9	8.3	9.9
7.2	9.5	13.3	15.9
13.0	15.4	21.7	25.8
17.0	20.1	28.3	33.8

#### R516A

0.2	0.7	1.6	2.0
1.2	2.6	4.2	5.0
3.9	4.6	6.4	7.6
5.6	7.3	10.3	12.2
10.1	11.9	16.7	19.9
13.1	15.5	21.8	26.0

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

#### R454A

NRVH 6 v2	0.2	0.5	2.0	2.8
NRVH 10 v2	0.0	3.9	6.8	8.8
NRVH 12 v2	7.6	12.5	13.6	14.7
NRVH 16 v2	2.7	14.4	19.0	21.8
NRVH 19 v2	21.8	32.4	35.4	38.2
NRVH 22	-	-	46.3	49.9

#### R454B

NRVH 6 v2	0.2	0.6	2.5	3.5
NRVH 10 v2	0.0	4.9	8.5	11.1
NRVH 12 v2	9.5	15.6	17.0	18.4
NRVH 16 v2	3.4	18.1	23.8	27.3
NRVH 19 v2	27.2	40.5	44.3	47.8
NRVH 22	-	-	58.0	62.5

#### R454C

NRVH 6 v2	0.1	0.4	1.7	2.5
NRVH 10 v2	0.0	3.5	6.0	7.8
NRVH 12 v2	6.7	11.1	12.1	13.0
NRVH 16 v2	2.4	12.8	16.9	19.4
NRVH 19 v2	19.4	28.8	31.5	33.9
NRVH 22	-	-	41.2	44.4

#### R516A

NRVH 6 v2	0.1	0.3	1.3	1.9
NRVH 10 v2	0.0	2.7	4.6	6.0
NRVH 12 v2	5.2	8.5	9.3	10.0
NRVH 16 v2	1.8	9.7	12.8	14.7
NRVH 19 v2	14.9	22.1	24.1	26.0
NRVH 22	-	-	31.5	33.9

1) Rated capacities are based on:  
 -Evaporating temperature, t<sub>e</sub> = -10 °C.  
 -Condensing temperature, t<sub>c</sub> = 30 °C.  
 -Subcooling t<sub>sub</sub> = 5 K.  
 -Delta superheat t<sub>sh</sub> = 0 K.  
 -Discharge temperature, t<sub>d</sub> = 80 °C ahead of the valve.  
 The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

**System capacity=Correction factor×Table capacity**

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°C]	-10	0	10	15	20	25	30	35	40	45	50
R454A	0.71	0.77	0.85	0.89	0.94	1.00	1.06	1.14	1.22	1.32	1.44
R454B	0.74	0.80	0.87	0.91	0.95	1.00	1.06	1.12	1.19	1.28	1.38
R454C	0.70	0.77	0.84	0.89	0.94	1.00	1.07	1.14	1.23	1.34	1.47
R516A	0.71	0.77	0.85	0.89	0.94	1.00	1.06	1.14	1.22	1.32	1.43



Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant.

## Data sheet | Check valve, types NRV and NR VH

SI units

### Capacity

#### Liquid capacity (kW)

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R600				
NRV 6 v2	1.9	6.2	15.0	19.6
NRV 10 v2	11.3	24.9	40.2	48.0
NRV 12 v2	36.6	43.3	61.2	73.2
NRV 16 v2	52.8	69.3	98.0	117.1
NRV 19 v2	95.2	112.6	159.2	190.3
NRV 22	124.4	147.2	208.2	248.9

R600a				
NRV 6 v2	1.7	5.5	13.3	17.4
NRV 10 v2	10.0	22.1	35.6	42.6
NRV 12 v2	32.5	38.4	54.3	64.9
NRV 16 v2	46.9	61.5	86.9	103.9
NRV 19 v2	84.4	99.9	141.3	168.8
NRV 22	110.4	130.6	184.7	220.8

R1234yf				
NRV 6 v2	1.1	3.4	8.1	10.7
NRV 10 v2	6.2	13.5	21.8	26.1
NRV 12 v2	19.9	23.5	33.3	39.8
NRV 16 v2	28.7	37.7	53.3	63.7
NRV 19 v2	51.7	61.2	86.6	103.5
NRV 22	67.9	80.4	113.7	135.9

R1270				
NRV 6 v2	1.8	5.7	13.7	18.0
NRV 10 v2	10.4	22.8	36.9	44.1
NRV 12 v2	33.6	39.8	56.2	67.2
NRV 16 v2	48.5	63.6	90.0	107.5
NRV 19 v2	87.4	103.4	146.2	174.7
NRV 22	114.2	135.2	191.2	228.5

#### Suction vapour capacity in [kW]

Pressure drop across valve Δp [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°C]			
	NRV			
	-30	-10	0	5

R600				
0.07	0.12	0.29	0.40	0.45
0.07	0.58	1.25	1.64	1.86
0.07	1.25	2.34	3.00	3.37
0.07	2.01	3.74	4.80	5.40
0.07	3.26	6.07	7.81	8.77
0.07	4.27	7.94	10.21	11.47

R600a				
0.07	0.18	0.36	0.47	0.53
0.07	0.80	1.49	1.91	2.14
0.07	1.57	2.72	3.44	3.83
0.07	2.51	4.36	5.50	6.13
0.07	4.08	7.08	8.93	9.96
0.07	5.33	9.26	11.68	13.03

R1234yf				
0.07	0.19	0.34	0.44	0.49
0.07	0.80	1.39	1.76	1.97
0.07	1.47	2.48	3.11	3.47
0.07	2.34	3.96	4.98	5.55
0.07	3.81	6.44	8.09	9.01
0.07	5.00	8.44	10.61	11.81

R1270				
0.07	0.48	0.75	0.90	0.99
0.07	1.97	3.00	3.62	3.95
0.07	3.50	5.29	6.35	6.93
0.07	5.60	8.46	10.16	11.09
0.07	9.09	13.74	16.51	18.01
0.07	11.89	17.97	21.59	23.56

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R600				
0.2	0.6	1.4	1.9	
1.1	2.4	3.9	4.6	
3.7	4.3	6.0	7.1	
5.3	6.9	9.6	11.3	
9.5	11.2	15.6	18.4	
12.5	14.7	20.4	24.1	

R600a				
0.2	0.7	1.6	2.1	
1.2	2.7	4.3	5.1	
4.0	4.7	6.6	7.8	
5.8	7.6	10.6	12.5	
10.4	12.3	17.2	20.4	
13.6	16.1	22.5	26.6	

R1234yf				
0.2	0.6	1.4	1.9	
1.1	2.4	3.8	4.5	
3.5	4.1	5.8	6.9	
5.0	6.6	9.3	11.1	
9.1	10.8	15.1	18.0	
11.9	14.1	19.8	23.5	

R1270				
0.4	1.2	2.8	3.7	
2.1	4.6	7.5	8.9	
6.9	8.1	11.4	13.6	
9.9	13.0	18.3	21.8	
17.8	21.1	29.7	35.4	
23.3	27.6	38.9	46.3	

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

R600				
NRVH 6 v2	0.1	0.3	1.1	1.6
NRVH 10 v2	0.0	2.4	4.1	5.4
NRVH 12 v2	4.8	7.8	8.5	9.0
NRVH 16 v2	1.6	8.6	11.3	13.0
NRVH 19 v2	13.7	20.4	22.0	23.5
NRVH 22	-	-	28.8	30.7

R600a				
NRVH 6 v2	0.1	0.3	1.3	1.9
NRVH 10 v2	0.0	2.7	4.6	6.0
NRVH 12 v2	5.3	8.7	9.4	10.1
NRVH 16 v2	1.8	9.7	12.8	14.7
NRVH 19 v2	15.2	22.6	24.5	26.3
NRVH 22	-	-	32.1	34.4

R1234yf				
NRVH 6 v2	0.1	0.3	1.2	1.7
NRVH 10 v2	0.0	2.4	4.2	5.4
NRVH 12 v2	4.7	7.7	8.4	9.0
NRVH 16 v2	1.6	8.8	11.6	13.3
NRVH 19 v2	13.5	20.0	21.8	23.5
NRVH 22	-	-	28.6	30.7

R1270				
NRVH 6 v2	0.2	0.6	2.4	3.4
NRVH 10 v2	0.0	4.8	8.3	10.8
NRVH 12 v2	9.2	15.2	16.6	17.9
NRVH 16 v2	3.3	17.5	23.1	26.6
NRVH 19 v2	26.6	39.5	43.2	46.5
NRVH 22	-	-	56.5	60.8

<sup>1)</sup> Rated capacities are based on:  
 -Evaporating temperature, t<sub>e</sub> = -10 °C.  
 -Condensing temperature, t<sub>c</sub> = 30 °C.  
 -Subcooling t<sub>sub</sub> = 5 K.  
 -Delta superheat t<sub>sh</sub> = 0 K.  
 -Discharge temperature, t<sub>d</sub> = 80 °C ahead of the valve.  
 The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

$$\text{System capacity} \cdot \text{Correction factor} = \text{Table capacity}$$

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°C]	-10	0	10	15	20	25	30	35	40	45	50
R600	0.77	0.82	0.88	0.92	0.96	1.00	1.05	1.10	1.15	1.22	1.29
R600a	0.75	0.81	0.87	0.91	0.95	1.00	1.05	1.11	1.17	1.25	1.33
R1234yf	0.69	0.76	0.84	0.89	0.94	1.00	1.07	1.15	1.24	1.36	1.49
R1270	0.74	0.80	0.87	0.91	0.95	1.00	1.06	1.12	1.19	1.27	1.37



Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant.  
 - For capacity calculation of other refrigerants, please contact Danfoss.

## Data sheet | Check valve, types NRV and NRHV

### Capacity

US units

#### Liquid capacity [TR]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRV			
	0.7	1	2	3

#### R134a

NRV 6 v2	0.3	1.3	3.1	4.2
NRV 10 v2	2.1	5.1	8.3	10.2
NRV 12 v2	7.5	9.0	12.7	15.6
NRV 16 v2	10.7	14.3	20.4	24.9
NRV 19 v2	19.6	23.4	33.1	40.5
NRV 22	25.6	30.6	43.3	53.0
NRV 28	49.7	59.4	84.0	102.9
NRV 35	87.3	104.4	147.6	180.8

#### R22

NRV 6 v2	0.4	1.4	3.3	4.5
NRV 10 v2	2.2	5.5	8.9	11.0
NRV 12 v2	8.1	9.7	13.7	16.7
NRV 16 v2	11.5	15.4	21.9	26.8
NRV 19 v2	21.0	25.1	35.5	43.5
NRV 22	27.5	32.9	46.5	56.9
NRV 28	53.4	63.8	90.2	110.5
NRV 35	93.8	112.1	158.5	194.1

#### R404A

NRV 6 v2	0.2	0.9	2.3	3.1
NRV 10 v2	1.5	3.7	6.1	7.5
NRV 12 v2	5.5	6.6	9.3	11.4
NRV 16 v2	7.9	10.5	14.9	18.2
NRV 19 v2	14.3	17.1	24.2	29.6
NRV 22	18.7	22.4	31.7	38.8
NRV 28	36.4	43.5	61.5	75.3
NRV 35	63.9	76.4	108.0	132.3

#### R410A

NRV 6 v2	0.3	1.3	3.3	4.4
NRV 10 v2	2.2	5.4	8.8	10.8
NRV 12 v2	7.9	9.5	13.4	16.4
NRV 16 v2	11.3	15.1	21.5	26.3
NRV 19 v2	20.7	24.7	34.9	42.8
NRV 22	27.0	32.3	45.7	55.9
NRV 28	52.4	62.7	88.6	108.5
NRV 35	92.2	110.1	155.8	190.8

#### Suction vapour capacity [TR]

Pressure drop across valve Δp [psi]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°F]			
	NRV			
	-20	15	32	40

#### R134a

1	0.06	0.11	0.14	0.15
1	0.26	0.45	0.56	0.62
1	0.49	0.81	1.01	1.11
1	0.78	1.29	1.60	1.76
1	1.28	2.11	2.61	2.87
1	1.67	2.77	3.42	3.76
1	3.25	5.37	6.64	7.29
1	5.71	9.44	11.67	12.82

#### R22

1	0.10	0.15	0.18	0.20
1	0.40	0.62	0.74	0.80
1	0.72	1.10	1.31	1.42
1	1.15	1.74	2.08	2.25
1	1.88	2.85	3.40	3.68
1	2.46	3.72	4.45	4.82
1	4.77	7.23	8.63	9.35
1	8.39	12.70	15.18	16.43

#### R404A

1	0.08	0.13	0.16	0.18
1	0.34	0.54	0.66	0.72
1	0.61	0.96	1.16	1.27
1	0.96	1.52	1.85	2.02
1	1.58	2.48	3.02	3.30
1	2.06	3.25	3.95	4.32
1	4.00	6.30	7.67	8.38
1	7.03	11.08	13.49	14.73

#### R410A

1	0.12	0.19	0.23	0.25
1	0.51	0.77	0.93	1.00
1	0.91	1.37	1.64	1.77
1	1.45	2.18	2.60	2.81
1	2.37	3.57	4.25	4.60
1	3.10	4.66	5.56	6.01
1	6.03	9.05	10.79	11.68
1	10.59	15.91	18.97	20.52

#### Hot gas capacity [TR]

Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]	NRV			
	NRV			
	0.7	1	2	4

#### R134a

0.0	0.2	0.4	0.6
0.3	0.7	1.1	1.6
1.0	1.2	1.7	2.4
1.4	1.9	2.7	3.8
2.6	3.1	4.4	6.1
3.4	4.1	5.7	8.0
6.7	7.9	11.2	15.6
11.7	14.0	19.6	27.4

#### R22

0.1	0.2	0.5	0.8
0.3	0.8	1.4	1.9
1.3	1.5	2.1	3.0
1.8	2.4	3.4	4.7
3.3	3.9	5.5	7.7
4.3	5.1	7.2	10.1
8.3	9.9	13.9	19.6
14.6	17.4	24.5	34.4

#### R404A

0.0	0.2	0.4	0.7
0.3	0.7	1.2	1.7
1.1	1.3	1.8	2.5
1.5	2.0	2.9	4.0
2.8	3.3	4.7	6.6
3.6	4.3	6.1	8.6
7.1	8.4	11.9	16.7
12.4	14.8	20.9	29.3

#### R410A

0.1	0.3	0.6	1.0
0.4	1.0	1.7	2.4
1.5	1.8	2.6	3.6
2.2	2.9	4.1	5.8
3.9	4.7	6.7	9.4
5.2	6.2	8.7	12.3
10.0	12.0	16.9	23.8
17.6	21.0	29.7	41.8

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRVH			
	3	4	5	6

#### R134a

NRVH 6 v2	0.0	0.1	0.5	0.6
NRVH 10 v2	0.1	1.0	1.6	1.9
NRVH 12 v2	1.6	2.4	2.6	2.9
NRVH 16 v2	0.7	3.1	3.9	4.4
NRVH 19 v2	4.3	6.1	6.8	7.4
NRVH 22	7.0	8.0	8.9	9.7
NRVH 28	13.6	15.6	17.3	18.9
NRVH 35	23.9	27.4	30.5	33.2

#### R22

NRVH 6 v2	0.0	0.2	0.6	0.8
NRVH 10 v2	0.1	1.2	2.0	2.4
NRVH 12 v2	2.1	3.0	3.3	3.6
NRVH 16 v2	0.8	3.9	4.9	5.6
NRVH 19 v2	5.4	7.7	8.6	9.4
NRVH 22	8.8	10.1	11.2	12.3
NRVH 28	17.0	19.6	21.8	23.8
NRVH 35	29.9	34.4	38.3	41.8

#### R404A

NRVH 6 v2	0.0	0.1	0.5	0.7
NRVH 10 v2	0.1	1.1	1.7	2.0
NRVH 12 v2	1.8	2.5	2.8	3.1
NRVH 16 v2	0.7	3.3	4.2	4.8
NRVH 19 v2	4.6	6.6	7.3	8.0
NRVH 22	7.5	8.6	9.6	10.5
NRVH 28	14.5	16.7	18.6	20.3
NRVH 35	25.5	29.3	32.7	35.7

#### R410A

NRVH 6 v2	0.1	0.2	0.8	0.9
NRVH 10 v2	0.2	1.5	2.4	2.9
NRVH 12 v2	2.5	3.6	4.0	4.4
NRVH 16 v2	1.0	4.7	6.0	6.8
NRVH 19 v2	6.6	9.4	10.5	11.4
NRVH 22	10.6	12.3	13.7	14.9
NRVH 28	20.6	23.8	26.5	29.0
NRVH 35	36.3	41.8	46.6	51.0

<sup>1)</sup> Rated capacities are based on:

-Evaporating temperature, t<sub>e</sub> = 14 °F

-Condensing temperature, t<sub>c</sub> = 86 °F

-Subcooling t<sub>sub</sub> = 9 °F

-Superheat t<sub>sh</sub> = 0 °F

-Discharge temperature, t<sub>d</sub> = 176 °F ahead of the valve.

The table values refer to the evaporator capacity.

#### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

System capacity = Correction factor × Table capacity

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°F]	15	32	50	60	70	80	86	95	105	115	125
R134a	0.74	0.79	0.86	0.91	0.96	1.02	1.08	1.16	1.24	1.34	1.46
R22	0.77	0.82	0.88	0.92	0.97	1.02	1.07	1.13	1.20	1.28	1.38
R404A	0.67	0.74	0.82	0.88	0.95	1.02	1.12	1.23	1.38	1.57	1.83
R410A	0.72	0.78	0.85	0.90	0.96	1.02	1.09	1.18	1.29	1.43	1.60

## Data sheet | Check valve, types NRV and NRHV

### Capacity

US units

#### Liquid capacity [TR]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRV			
	0.7	1	2	3

R407A				
NRV 6 v2	0.3	1.2	3.0	4.0
NRV 10 v2	2.0	4.9	8.0	9.8
NRV 12 v2	7.2	8.6	12.2	14.9
NRV 16 v2	10.3	13.7	19.4	23.8
NRV 19 v2	18.7	22.3	31.6	38.7
NRV 22	24.4	29.2	41.3	50.6
NRV 28	47.5	56.7	80.2	98.2
NRV 35	83.4	99.7	141.0	172.7

#### Suction vapour capacity [TR]

Pressure drop across valve Δp [psi]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°F]			
	NRV			
	-20	15	32	40

R407A				
1	0.08	0.14	0.17	0.19
1	0.35	0.57	0.69	0.76
1	0.63	1.01	1.23	1.34
1	1.01	1.60	1.96	2.14
1	1.65	2.62	3.20	3.50
1	2.15	3.43	4.18	4.57
1	4.18	6.66	8.12	8.87
1	7.34	11.70	14.27	15.60

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRV			
	0.7	1	2	4

R407A				
0.1	0.2	0.5	0.8	
0.3	0.9	1.4	2.0	
1.3	1.5	2.1	3.0	
1.8	2.4	3.4	4.8	
3.3	4.0	5.6	7.9	
4.3	5.2	7.3	10.3	
8.4	10.1	14.2	19.9	
14.8	17.7	24.9	35.1	

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRVH			
	3	4	5	6

R407A				
NRVH 6 v2	0.0	0.2	0.6	0.8
NRVH 10 v2	0.1	1.3	2.0	2.4
NRVH 12 v2	2.1	3.0	3.4	3.7
NRVH 16 v2	0.9	4.0	5.0	5.7
NRVH 19 v2	5.5	7.9	8.8	9.6
NRVH 22	8.9	10.3	11.5	12.5
NRVH 28	17.3	19.9	22.2	24.3
NRVH 35	30.4	35.1	39.1	42.7

#### R407C

NRV 6 v2	0.3	1.3	3.2	4.3
NRV 10 v2	2.1	5.3	8.6	10.5
NRV 12 v2	7.8	9.3	13.1	16.1
NRV 16 v2	11.1	14.7	21.0	25.7
NRV 19 v2	20.2	24.1	34.1	41.7
NRV 22	26.4	31.5	44.6	54.6
NRV 28	51.2	61.2	86.5	106.0
NRV 35	90.0	107.5	152.1	186.3

#### R407C

1	0.08	0.14	0.17	0.19
1	0.35	0.57	0.70	0.77
1	0.64	1.02	1.24	1.36
1	1.02	1.62	1.98	2.16
1	1.66	2.65	3.24	3.53
1	2.18	3.47	4.23	4.62
1	4.22	6.73	8.21	8.97
1	7.42	11.83	14.43	15.77

#### R407C

0.1	0.2	0.5	0.8	
0.4	0.9	1.5	2.0	
1.3	1.6	2.2	3.1	
1.9	2.5	3.5	5.0	
3.4	4.1	5.8	8.1	
4.5	5.3	7.5	10.6	
8.7	10.4	14.6	20.6	
15.3	18.2	25.7	36.1	

#### R407C

NRVH 6 v2	0.0	0.2	0.7	0.8
NRVH 10 v2	0.2	1.3	2.1	2.5
NRVH 12 v2	2.2	3.1	3.5	3.8
NRVH 16 v2	0.9	4.1	5.1	5.9
NRVH 19 v2	5.7	8.1	9.0	9.9
NRVH 22	9.2	10.6	11.8	12.9
NRVH 28	17.9	20.6	22.9	25.0
NRVH 35	31.4	36.1	40.3	44.0

#### R407F

NRV 6 v2	0.3	1.3	3.2	4.4
NRV 10 v2	2.1	5.4	8.7	10.7
NRV 12 v2	7.9	9.4	13.3	16.3
NRV 16 v2	11.2	15.0	21.3	26.1
NRV 19 v2	20.5	24.5	34.6	42.4
NRV 22	26.8	32.0	45.3	55.5
NRV 28	52.0	62.1	87.9	107.6
NRV 35	91.4	109.2	154.5	189.2

#### R407F

1	0.09	0.15	0.18	0.20
1	0.38	0.62	0.75	0.82
1	0.70	1.10	1.33	1.45
1	1.11	1.74	2.12	2.31
1	1.81	2.85	3.46	3.77
1	2.36	3.72	4.52	4.93
1	4.59	7.23	8.78	9.57
1	8.07	12.71	15.43	16.82

#### R407F

0.1	0.2	0.6	0.9	
0.4	0.9	1.5	2.1	
1.4	1.7	2.3	3.3	
2.0	2.6	3.7	5.2	
3.6	4.3	6.1	8.5	
4.7	5.6	7.9	11.1	
9.1	10.9	15.4	21.6	
16.0	19.2	27.0	38.0	

#### R407F

NRVH 6 v2	0.0	0.2	0.7	0.8
NRVH 10 v2	0.2	1.4	2.2	2.6
NRVH 12 v2	2.3	3.3	3.7	4.0
NRVH 16 v2	0.9	4.3	5.4	6.2
NRVH 19 v2	6.0	8.5	9.5	10.4
NRVH 22	9.7	11.1	12.4	13.6
NRVH 28	18.8	21.6	24.1	26.3
NRVH 35	33.0	38.0	42.4	46.3

#### R407H

NRV 6 v2	0.4	1.4	3.5	4.7
NRV 10 v2	2.3	5.7	9.3	11.4
NRV 12 v2	8.4	10.1	14.2	17.4
NRV 16 v2	12.0	16.0	22.8	27.9
NRV 19 v2	21.9	26.2	37.0	45.3
NRV 22	28.6	34.2	48.4	59.3
NRV 28	55.6	66.5	94.0	115.1
NRV 35	97.7	116.8	165.2	202.3

#### R407H

1	0.09	0.15	0.18	0.20
1	0.38	0.62	0.75	0.82
1	0.70	1.10	1.33	1.45
1	1.11	1.75	2.12	2.31
1	1.81	2.86	3.47	3.78
1	2.37	3.73	4.54	4.95
1	4.59	7.25	8.81	9.60
1	8.07	12.74	15.48	16.88

#### R407H

0.1	0.2	0.6	0.9	
0.4	1.0	1.6	2.2	
1.4	1.7	2.4	3.3	
2.0	2.7	3.8	5.4	
3.7	4.4	6.2	8.7	
4.8	5.7	8.1	11.4	
9.3	11.2	15.7	22.1	
16.4	19.6	27.6	38.8	

#### R407H

NRVH 6 v2	0.0	0.2	0.7	0.9
NRVH 10 v2	0.2	1.4	2.2	2.7
NRVH 12 v2	2.3	3.3	3.7	4.1
NRVH 16 v2	1.0	4.4	5.5	6.3
NRVH 19 v2	6.1	8.7	9.7	10.6
NRVH 22	9.9	11.4	12.7	13.9
NRVH 28	19.2	22.1	24.6	26.9
NRVH 35	33.7	38.8	43.3	47.3

1) Rated capacities are based on:

-Evaporating temperature, t<sub>e</sub> = 14 °F

-Condensing temperature, t<sub>c</sub> = 86 °F

-Subcooling t<sub>sub</sub> = 9 °F

-Superheat t<sub>sh</sub> = 0 °F

-Discharge temperature, t<sub>d</sub> = 176 °F ahead of the valve.

The table values refer to the evaporator capacity.

#### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

System capacity = Correction factor × Table capacity

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°F]	15	32	50	60	70	80	86	95	105	115	125
R407A	0.72	0.78	0.85	0.90	0.96	1.02	1.09	1.18	1.28	1.41	1.56
R407C	0.73	0.79	0.86	0.91	0.96	1.02	1.09	1.17	1.26	1.37	1.51
R407F	0.73	0.79	0.86	0.91	0.96	1.02	1.09	1.17	1.26	1.38	1.52
R407H	0.74	0.80	0.87	0.91	0.96	1.02	1.08	1.16	1.24	1.35	1.47

# Data sheet | Check valve, types NRV and NRHV

## Capacity

US units

### Liquid capacity [TR]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRV			
	0.7	1	2	3

R448A				
NRV 6 v2	0.3	1.2	3.0	4.0
NRV 10 v2	2.0	4.9	8.0	9.8
NRV 12 v2	7.2	8.6	12.2	14.9
NRV 16 v2	10.3	13.7	19.5	23.9
NRV 19 v2	18.7	22.4	31.7	38.8
NRV 22	24.5	29.3	41.4	50.7
NRV 28	47.6	56.8	80.4	98.5
NRV 35	83.6	99.9	141.3	173.0

### Suction vapour capacity [TR]

Pressure drop across valve Δp [psi]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°F]			
	NRV			
	-20	15	32	40

R448A				
1	0.09	0.14	0.17	0.19
1	0.36	0.58	0.71	0.77
1	0.65	1.03	1.26	1.37
1	1.04	1.64	2.00	2.18
1	1.70	2.69	3.27	3.57
1	2.23	3.51	4.27	4.66
1	4.32	6.82	8.30	9.05
1	7.59	11.99	14.58	15.91

### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRV			
	0.7	1	2	4

R448A				
0.1	0.2	0.5	0.8	
0.4	0.9	1.4	2.0	
1.3	1.5	2.2	3.1	
1.8	2.5	3.5	4.9	
3.4	4.0	5.7	8.0	
4.4	5.3	7.4	10.4	
8.6	10.2	14.4	20.3	
15.1	18.0	25.3	35.6	

### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRVH			
	3	4	5	6

R448A				
NRVH 6 v2	0.0	0.2	0.6	0.8
NRVH 10 v2	0.1	1.3	2.0	2.5
NRVH 12 v2	2.1	3.1	3.4	3.7
NRVH 16 v2	0.9	4.0	5.1	5.8
NRVH 19 v2	5.6	8.0	8.9	9.7
NRVH 22	9.1	10.4	11.6	12.7
NRVH 28	17.6	20.3	22.6	24.7
NRVH 35	30.9	35.6	39.7	43.4

R449A				
NRV 6 v2	0.3	1.2	2.9	3.9
NRV 10 v2	1.9	4.8	7.9	9.7
NRV 12 v2	7.1	8.5	12.0	14.7
NRV 16 v2	10.2	13.5	19.3	23.6
NRV 19 v2	18.5	22.1	31.3	38.3
NRV 22	24.2	28.9	40.9	50.1
NRV 28	47.0	56.2	79.4	97.3
NRV 35	82.6	98.7	139.6	170.9

R449A				
1	0.09	0.14	0.17	0.19
1	0.36	0.58	0.70	0.77
1	0.65	1.03	1.25	1.36
1	1.03	1.63	1.99	2.17
1	1.69	2.67	3.25	3.54
1	2.21	3.49	4.24	4.63
1	4.29	6.77	8.24	8.99
1	7.54	11.90	14.48	15.80

R449A				
0.1	0.2	0.5	0.8	
0.3	0.9	1.4	2.0	
1.3	1.5	2.2	3.0	
1.8	2.4	3.4	4.8	
3.3	4.0	5.6	7.9	
4.3	5.2	7.3	10.3	
8.4	10.1	14.2	20.0	
14.8	17.7	25.0	35.1	

R449A				
NRVH 6 v2	0.0	0.2	0.6	0.8
NRVH 10 v2	0.1	1.3	2.0	2.4
NRVH 12 v2	2.1	3.0	3.4	3.7
NRVH 16 v2	0.9	4.0	5.0	5.7
NRVH 19 v2	5.5	7.9	8.8	9.6
NRVH 22	8.9	10.3	11.5	12.5
NRVH 28	17.4	20.0	22.3	24.3
NRVH 35	30.5	35.1	39.1	42.7

R449B				
NRV 6 v2	0.3	1.2	3.0	4.0
NRV 10 v2	2.0	4.9	8.0	9.8
NRV 12 v2	7.2	8.6	12.2	14.9
NRV 16 v2	10.3	13.7	19.5	23.9
NRV 19 v2	18.8	22.4	31.7	38.8
NRV 22	24.5	29.3	41.5	50.8
NRV 28	47.6	56.9	80.5	98.6
NRV 35	83.7	100.1	141.5	173.3

R449B				
1	0.09	0.14	0.17	0.19
1	0.36	0.58	0.71	0.78
1	0.66	1.04	1.26	1.37
1	1.04	1.65	2.00	2.19
1	1.71	2.69	3.27	3.57
1	2.23	3.52	4.28	4.67
1	4.33	6.84	8.31	9.07
1	7.62	12.02	14.61	15.94

R449B				
0.1	0.2	0.5	0.8	
0.4	0.9	1.4	2.0	
1.3	1.5	2.2	3.1	
1.8	2.5	3.5	4.9	
3.4	4.0	5.7	8.0	
4.4	5.2	7.4	10.4	
8.5	10.2	14.4	20.2	
15.0	17.9	25.2	35.5	

R449B				
NRVH 6 v2	0.0	0.2	0.6	0.8
NRVH 10 v2	0.1	1.3	2.0	2.4
NRVH 12 v2	2.1	3.1	3.4	3.7
NRVH 16 v2	0.9	4.0	5.0	5.8
NRVH 19 v2	5.6	8.0	8.9	9.7
NRVH 22	9.0	10.4	11.6	12.7
NRVH 28	17.5	20.2	22.5	24.6
NRVH 35	30.8	35.5	39.6	43.2

R450A				
NRV 6 v2	0.3	1.2	2.9	3.9
NRV 10 v2	1.9	4.7	7.7	9.5
NRV 12 v2	7.0	8.3	11.8	14.4
NRV 16 v2	9.9	13.3	18.8	23.1
NRV 19 v2	18.1	21.7	30.6	37.5
NRV 22	23.7	28.3	40.0	49.0
NRV 28	46.0	55.0	77.7	95.2
NRV 35	80.8	96.6	136.6	167.3

R450A				
1	0.05	0.10	0.12	0.14
1	0.23	0.40	0.50	0.56
1	0.43	0.73	0.90	1.00
1	0.68	1.15	1.44	1.58
1	1.12	1.89	2.35	2.59
1	1.46	2.47	3.07	3.39
1	2.84	4.79	5.97	6.57
1	4.99	8.42	10.48	11.56

R450A				
0.0	0.2	0.4	0.6	
0.2	0.6	1.0	1.4	
0.9	1.1	1.5	2.1	
1.3	1.7	2.5	3.4	
2.4	2.8	4.0	5.6	
3.1	3.7	5.2	7.3	
6.1	7.2	10.1	14.2	
10.6	12.7	17.8	24.9	

R450A				
NRVH 6 v2	0.0	0.1	0.4	0.5
NRVH 10 v2	0.1	0.9	1.4	1.7
NRVH 12 v2	1.5	2.1	2.4	2.6
NRVH 16 v2	0.6	2.8	3.5	4.0
NRVH 19 v2	3.9	5.6	6.2	6.7
NRVH 22	6.4	7.3	8.1	8.8
NRVH 28	12.3	14.2	15.7	17.1
NRVH 35	21.7	24.9	27.6	30.1

1) Rated capacities are based on:  
 -Evaporating temperature, t<sub>e</sub> = 14 °F  
 -Condensing temperature, t<sub>c</sub> = 86 °F  
 -Subcooling t<sub>sub</sub> = 9 °F  
 -Superheat t<sub>sh</sub> = 0 °F  
 -Discharge temperature, t<sub>d</sub> = 176 °F ahead of the valve.  
 The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

System capacity = Correction factor × Table capacity

### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°F]	15	32	50	60	70	80	86	95	105	115	125
R448A	0.72	0.78	0.85	0.90	0.96	1.02	1.09	1.18	1.28	1.41	1.56
R449A	0.72	0.77	0.85	0.90	0.96	1.02	1.09	1.18	1.29	1.41	1.57
R449B	0.72	0.78	0.85	0.90	0.96	1.02	1.09	1.18	1.28	1.41	1.56
R450A	0.73	0.79	0.86	0.91	0.96	1.02	1.09	1.16	1.25	1.36	1.49

## Data sheet | Check valve, types NRV and NR VH

### Capacity

US units

#### Liquid capacity (kW)

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R452A				
NRV 6 v2	0.2	0.9	2.3	3.1
NRV 10 v2	1.5	3.8	6.2	7.6
NRV 12 v2	5.6	6.6	9.4	11.5
NRV 16 v2	7.9	10.6	15.0	18.4
NRV 19 v2	14.5	17.3	24.4	29.9
NRV 22	18.9	22.6	32.0	39.1
NRV 28	36.7	43.9	62.0	76.0
NRV 35	64.5	77.1	109.1	133.6

#### Suction vapour capacity in [kW]

Pressure drop across valve $\Delta p$ [bar]	Suction vapour capacity <sup>1)</sup> at evaporating temperature $t_e$ [°C]			
	NRV			
	-30	-10	0	5

R452A				
1	0.08	0.13	0.15	0.17
1	0.32	0.51	0.63	0.69
1	0.57	0.91	1.12	1.22
1	0.91	1.45	1.78	1.94
1	1.49	2.37	2.90	3.18
1	1.95	3.11	3.80	4.15
1	3.78	6.03	7.37	8.06
1	6.65	10.59	12.95	14.17

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [bar]			
	NRV			
	0.05	0.07	0.14	0.2

R452A				
0.0	0.2	0.4	0.7	
0.3	0.7	1.2	1.7	
1.1	1.3	1.8	2.6	
1.6	2.1	2.9	4.1	
2.8	3.4	4.8	6.7	
3.7	4.4	6.3	8.8	
7.2	8.6	12.1	17.1	
12.7	15.1	21.4	30.0	

#### Hot gas capacity in [kW]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [bar]			
	NRVH			
	0.2	0.25	0.3	0.35

R452A				
NRVH 6 v2	0.0	0.2	0.5	0.7
NRVH 10 v2	0.1	1.1	1.7	2.1
NRVH 12 v2	1.8	2.6	2.9	3.2
NRVH 16 v2	0.7	3.4	4.3	4.9
NRVH 19 v2	4.7	6.7	7.5	8.2
NRVH 22	7.6	8.8	9.8	10.7
NRVH 28	14.8	17.1	19.0	20.8
NRVH 35	26.1	30.0	33.5	36.5

#### R513A

NRV 6 v2	0.3	1.1	2.6	3.5
NRV 10 v2	1.7	4.3	6.9	8.5
NRV 12 v2	6.3	7.5	10.6	13.0
NRV 16 v2	8.9	11.9	16.9	20.7
NRV 19 v2	16.3	19.5	27.5	33.7
NRV 22	21.3	25.4	36.0	44.1
NRV 28	41.3	49.4	69.9	85.6
NRV 35	72.6	86.8	122.8	150.4

#### R513A

1	0.06	0.10	0.13	0.14
1	0.25	0.43	0.53	0.59
1	0.47	0.77	0.95	1.05
1	0.74	1.22	1.51	1.66
1	1.22	2.00	2.47	2.72
1	1.59	2.62	3.24	3.56
1	3.09	5.08	6.28	6.90
1	5.42	8.93	11.04	12.13

#### R513A

0.0	0.2	0.4	0.6
0.2	0.6	1.0	1.4
0.9	1.1	1.5	2.2
1.3	1.8	2.5	3.5
2.4	2.9	4.0	5.6
3.1	3.7	5.3	7.4
6.1	7.3	10.2	14.3
10.7	12.8	18.0	25.1

#### R513A

NRVH 6 v2	0.0	0.1	0.5	0.6
NRVH 10 v2	0.1	0.9	1.4	1.7
NRVH 12 v2	1.5	2.2	2.4	2.6
NRVH 16 v2	0.6	2.8	3.5	4.0
NRVH 19 v2	4.0	5.6	6.3	6.8
NRVH 22	6.4	7.4	8.2	8.9
NRVH 28	12.4	14.3	15.9	17.3
NRVH 35	21.9	25.1	27.9	30.4

#### R515B

NRV 6 v2	0.3	1.1	2.7	3.6
NRV 10 v2	1.8	4.4	7.2	8.9
NRV 12 v2	6.5	7.8	11.0	13.5
NRV 16 v2	9.3	12.4	17.7	21.6
NRV 19 v2	17.0	20.3	28.7	35.2
NRV 22	22.2	26.5	37.5	46.0
NRV 28	43.1	51.5	72.9	89.2
NRV 35	75.8	90.6	128.1	156.8

#### R515B

1	0.04	0.09	0.11	0.12
1	0.20	0.35	0.45	0.50
1	0.37	0.64	0.81	0.89
1	0.59	1.02	1.29	1.42
1	0.97	1.67	2.10	2.32
1	1.27	2.19	2.75	3.04
1	2.46	4.25	5.33	5.90
1	4.32	7.47	9.37	10.37

#### R515B

0.0	0.1	0.3	0.5
0.2	0.5	0.9	1.2
0.8	1.0	1.4	1.9
1.2	1.5	2.2	3.0
2.1	2.5	3.6	4.9
2.8	3.3	4.6	6.5
5.4	6.4	9.0	12.6
9.5	11.3	15.9	22.1

#### R515B

NRVH 6 v2	0.0	0.1	0.4	0.5
NRVH 10 v2	0.1	0.8	1.2	1.5
NRVH 12 v2	1.3	1.9	2.1	2.3
NRVH 16 v2	0.5	2.5	3.1	3.5
NRVH 19 v2	3.5	4.9	5.5	6.0
NRVH 22	5.6	6.5	7.2	7.8
NRVH 28	11.0	12.6	13.9	15.1
NRVH 35	19.3	22.1	24.5	26.6

#### R1233zd

NRV 6 v2	0.4	1.4	3.3	4.5
NRV 10 v2	2.2	5.5	9.0	11.0
NRV 12 v2	8.1	9.7	13.7	16.8
NRV 16 v2	11.6	15.5	22.0	26.9
NRV 19 v2	21.1	25.3	35.7	43.7
NRV 22	27.6	33.0	46.7	57.2
NRV 28	53.6	64.1	90.7	111.1
NRV 35	94.3	112.7	159.4	195.2

#### R1233zd

1	0.01	0.03	0.05	0.06
1	0.05	0.15	0.22	0.26
1	0.13	0.32	0.43	0.49
1	0.20	0.51	0.69	0.78
1	0.33	0.83	1.13	1.28
1	0.44	1.09	1.48	1.67
1	0.85	2.12	2.86	3.25
1	1.49	3.72	5.03	5.71

#### R1233zd

0.0	0.1	0.2	0.3
0.1	0.3	0.6	0.7
0.5	0.6	0.9	1.1
0.7	1.0	1.4	1.8
1.4	1.6	2.2	2.9
1.8	2.1	2.9	3.8
3.5	4.1	5.6	7.5
6.1	7.2	9.9	13.1

#### R1233zd

NRVH 6 v2	0.0	0.1	0.2	0.2
NRVH 10 v2	0.1	0.4	0.7	0.8
NRVH 12 v2	0.8	1.1	1.2	1.3
NRVH 16 v2	0.3	1.3	1.7	1.9
NRVH 19 v2	2.1	2.9	3.2	3.4
NRVH 22	3.4	3.8	4.2	4.4
NRVH 28	6.7	7.5	8.1	8.5
NRVH 35	11.7	13.1	14.2	15.0

#### R1234ze(E)

NRV 6 v2	0.3	1.1	2.8	3.7
NRV 10 v2	1.8	4.6	7.4	9.1
NRV 12 v2	6.7	8.0	11.3	13.9
NRV 16 v2	9.6	12.8	18.1	22.2
NRV 19 v2	17.4	20.8	29.5	36.1
NRV 22	22.8	27.3	38.5	47.2
NRV 28	44.3	52.9	74.8	91.6
NRV 35	77.8	93.0	131.5	161.1

#### R1234ze(E)

1	0.05	0.09	0.11	0.12
1	0.20	0.36	0.46	0.51
1	0.38	0.66	0.83	0.91
1	0.61	1.05	1.31	1.45
1	1.00	1.71	2.15	2.37
1	1.30	2.24	2.81	3.10
1	2.53	4.35	5.45	6.02
1	4.44	7.64	9.58	10.59

#### R1234ze(E)

0.0	0.1	0.3	0.5
0.2	0.6	0.9	1.3
0.8	1.0	1.4	1.9
1.2	1.6	2.2	3.1
2.2	2.6	3.6	5.1
2.8	3.4	4.8	6.6
5.5	6.6	9.2	12.8
9.7	11.6	16.2	22.6

#### R1234ze(E)

NRVH 6 v2	0.0	0.1	0.4	0.5
NRVH 10 v2	0.1	0.8	1.3	1.5
NRVH 12 v2	1.4	1.9	2.2	2.3
NRVH 16 v2	0.5	2.5	3.2	3.6
NRVH 19 v2	3.6	5.1	5.6	6.1
NRVH 22	5.8	6.6	7.3	8.0
NRVH 28	11.2	12.8	14.2	15.5
NRVH 35	19.7	22.6	25.0	27.2

#### Correction factors for liquid temperature $t_l$

$t_l$ [°F]	15	32	50	60	70	80	86	95	105	115	125
R452A	0.68	0.74	0.83	0.88	0.95	1.02	1.12	1.23	1.37	1.54	1.79
R513A	0.71	0.77	0.85	0.90	0.96	1.02	1.10	1.18	1.29	1.41	1.57
R515B	0.72	0.78	0.86	0.90	0.96	1.02	1.09	1.17	1.26	1.37	1.51
R1233zd	0.77	0.82	0.89	0.93	0.97	1.01	1.06	1.12	1.18	1.25	1.33
R1234ze(E)	0.72	0.78	0.86	0.91	0.96	1.02	1.09	1.17	1.26	1.36	1.49

## Data sheet | Check valve, types NRV and NR VH

US units

### Capacity

#### Liquid capacity [TR]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [psi]			
	NRV			
	0.7	1	2	3

R290				
NRV 6 v2	0.4	1.5	3.7	5.0
NRV 10 v2	2.5	6.2	10.1	12.3
NRV 12 v2	9.1	10.9	15.4	18.8
NRV 16 v2	13.0	17.3	24.6	30.1
NRV 19 v2	23.6	28.2	39.9	48.9
NRV 22	30.9	36.9	52.2	63.9

R32				
NRV 6 v2	0.5	1.9	4.7	6.3
NRV 10 v2	3.1	7.7	12.6	15.4
NRV 12 v2	11.4	13.6	19.2	23.5
NRV 16 v2	16.2	21.6	30.7	37.6
NRV 19 v2	29.5	35.3	49.9	61.2
NRV 22	38.6	46.2	65.3	80.0

R452B				
NRV 6 v2	0.4	1.5	3.7	5.1
NRV 10 v2	2.5	6.2	10.1	12.4
NRV 12 v2	9.1	10.9	15.4	18.9
NRV 16 v2	13.0	17.3	24.7	30.2
NRV 19 v2	23.7	28.3	40.1	49.1
NRV 22	31.0	37.1	52.4	64.2

R455A				
NRV 6 v2	0.3	1.1	2.7	3.7
NRV 10 v2	1.8	4.5	7.3	9.0
NRV 12 v2	6.6	7.9	11.2	13.7
NRV 16 v2	9.4	12.5	17.8	21.9
NRV 19 v2	17.2	20.5	29.0	35.5
NRV 22	22.4	26.8	37.9	46.4

#### Suction vapour capacity [TR]

Pressure drop across valve $\Delta p$ [psi]	Suction vapour capacity <sup>1)</sup> at evaporating temperature $t_e$ [°F]			
	NRV			
	-20	15	32	40

R290					
1	0.12	0.19	0.22	0.24	
1	0.49	0.76	0.91	0.99	
1	0.89	1.35	1.62	1.76	
1	1.41	2.15	2.57	2.79	
1	2.31	3.51	4.21	4.56	
1	3.02	4.59	5.50	5.97	

R32					
1	0.16	0.24	0.29	0.31	
1	0.67	0.99	1.17	1.26	
1	1.19	1.75	2.07	2.23	
1	1.90	2.79	3.29	3.54	
1	3.10	4.55	5.37	5.79	
1	4.05	5.95	7.03	7.57	

R452B					
1	0.13	0.20	0.24	0.26	
1	0.55	0.82	0.98	1.06	
1	0.97	1.45	1.73	1.87	
1	1.55	2.31	2.75	2.97	
1	2.53	3.78	4.50	4.86	
1	3.31	4.95	5.88	6.35	

R455A					
1	0.08	0.13	0.16	0.18	
1	0.33	0.53	0.65	0.71	
1	0.60	0.95	1.16	1.27	
1	0.95	1.51	1.84	2.01	
1	1.56	2.47	3.01	3.29	
1	2.03	3.23	3.94	4.30	

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [psi]			
	NRV			
	0.7	1	2	4

R290				
0.1	0.2	0.6	0.9	
0.4	1.0	1.6	2.3	
1.5	1.8	2.5	3.5	
2.1	2.8	4.0	5.6	
3.9	4.6	6.5	9.1	
5.1	6.1	8.5	12.0	

R32				
0.1	0.3	0.8	1.2	
0.5	1.3	2.2	3.0	
1.9	2.3	3.3	4.6	
2.8	3.7	5.3	7.4	
5.1	6.1	8.5	12.0	
6.6	7.9	11.2	15.7	

R452B				
0.1	0.3	0.7	1.0	
0.4	1.1	1.8	2.6	
1.6	2.0	2.8	3.9	
2.3	3.1	4.4	6.3	
4.3	5.1	7.2	10.2	
5.6	6.7	9.4	13.3	

R455A				
0.1	0.2	0.5	0.8	
0.3	0.9	1.4	2.0	
1.3	1.5	2.2	3.0	
1.8	2.4	3.4	4.8	
3.3	4.0	5.6	7.9	
4.3	5.2	7.3	10.3	

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [psi]			
	NRVH			
	3	4	5	6

R290				
NRVH 6 v2	0.1	0.2	0.7	0.9
NRVH 10 v2	0.2	1.5	2.3	2.8
NRVH 12 v2	2.4	3.5	3.9	4.3
NRVH 16 v2	1.0	4.6	5.8	6.6
NRVH 19 v2	6.4	9.1	10.2	11.1
NRVH 22	10.4	12.0	13.3	14.5

R32				
NRVH 6 v2	0.1	0.3	1.0	1.2
NRVH 10 v2	0.2	1.9	3.1	3.7
NRVH 12 v2	3.2	4.6	5.2	5.6
NRVH 16 v2	1.3	6.1	7.6	8.7
NRVH 19 v2	8.5	12.0	13.4	14.7
NRVH 22	13.7	15.7	17.6	19.2

R452B				
NRVH 6 v2	0.1	0.2	0.8	1.0
NRVH 10 v2	0.2	1.6	2.6	3.1
NRVH 12 v2	2.7	3.9	4.4	4.8
NRVH 16 v2	1.1	5.1	6.5	7.4
NRVH 19 v2	7.2	10.2	11.3	12.4
NRVH 22	11.5	13.3	14.8	16.2

R455A				
NRVH 6 v2	0.0	0.2	0.6	0.8
NRVH 10 v2	0.1	1.3	2.0	2.4
NRVH 12 v2	2.1	3.0	3.4	3.7
NRVH 16 v2	0.9	4.0	5.0	5.7
NRVH 19 v2	5.5	7.9	8.8	9.6
NRVH 22	8.9	10.3	11.5	12.5

1) Rated capacities are based on:  
 -Evaporating temperature,  $t_e = 14^\circ\text{F}$   
 -Condensing temperature,  $t_c = 86^\circ\text{F}$   
 -Subcooling  $t_{sub} = 9^\circ\text{F}$   
 -Superheat  $t_{sh} = 0^\circ\text{F}$   
 -Discharge temperature,  $t_d = 176^\circ\text{F}$  ahead of  
 the valve.  
 The table values refer to the evaporator  
 capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature  $t_l$  ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

$$\text{System capacity} \cdot \text{Correction factor} = \text{Table capacity}$$

#### Correction factors for liquid temperature $t_l$

$t_l$ [°F]	15	32	50	60	70	80	86	95	105	115	125
R290	0.74	0.79	0.86	0.91	0.96	1.02	1.08	1.16	1.25	1.35	1.48
R32	0.76	0.82	0.88	0.92	0.97	1.02	1.07	1.14	1.22	1.31	1.42
R452B	0.74	0.80	0.86	0.91	0.96	1.02	1.08	1.16	1.25	1.36	1.50
R455A	0.70	0.77	0.84	0.90	0.95	1.02	1.10	1.19	1.30	1.44	1.61



Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant.

## Data sheet | Check valve, types NRV and NRHV

### Capacity

US units

#### Liquid capacity [TR]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [psi]			
	NRV			
	0.7	1	2	3

#### R454A

NRV 6 v2	0.3	1.2	3.0	4.0
NRV 10 v2	2.0	4.9	8.0	9.8
NRV 12 v2	7.2	8.6	12.2	14.9
NRV 16 v2	10.3	13.7	19.5	23.8
NRV 19 v2	18.7	22.4	31.6	38.7
NRV 22	24.5	29.3	41.4	50.7

#### R454B

NRV 6 v2	0.4	1.6	3.8	5.1
NRV 10 v2	2.5	6.3	10.2	12.6
NRV 12 v2	9.2	11.1	15.6	19.1
NRV 16 v2	13.2	17.6	25.0	30.6
NRV 19 v2	24.0	28.7	40.6	49.8
NRV 22	31.4	37.6	53.2	65.1

#### R454C

NRV 6 v2	0.3	1.1	2.7	3.6
NRV 10 v2	1.8	4.4	7.2	8.8
NRV 12 v2	6.5	7.8	11.0	13.4
NRV 16 v2	9.3	12.3	17.6	21.5
NRV 19 v2	16.9	20.2	28.5	35.0
NRV 22	22.1	26.4	37.3	45.7

#### R516A

NRV 6 v2	0.3	1.1	2.6	3.5
NRV 10 v2	1.7	4.3	7.0	8.6
NRV 12 v2	6.4	7.6	10.8	13.2
NRV 16 v2	9.1	12.1	17.2	21.1
NRV 19 v2	16.6	19.8	28.0	34.3
NRV 22	21.7	25.9	36.6	44.8

#### Suction vapour capacity [TR]

Pressure drop across valve $\Delta p$ [psi]	Suction vapour capacity <sup>1)</sup> at evaporating temperature $t_e$ [°F]			
	NRV			
	-20	15	32	40

#### R454A

1	0.09	0.15	0.18	0.20
1	0.38	0.60	0.73	0.80
1	0.69	1.07	1.30	1.42
1	1.10	1.71	2.07	2.25
1	1.79	2.79	3.38	3.68
1	2.34	3.65	4.42	4.81

#### R454B

1	0.13	0.20	0.24	0.26
1	0.55	0.82	0.98	1.06
1	0.98	1.46	1.73	1.87
1	1.56	2.32	2.76	2.98
1	2.54	3.79	4.51	4.87
1	3.32	4.96	5.90	6.37

#### R454C

1	0.08	0.13	0.15	0.17
1	0.32	0.51	0.63	0.69
1	0.58	0.92	1.12	1.23
1	0.92	1.46	1.78	1.95
1	1.50	2.39	2.91	3.19
1	1.96	3.12	3.81	4.17

#### R516A

1	0.06	0.11	0.13	0.14
1	0.26	0.43	0.54	0.59
1	0.48	0.78	0.96	1.06
1	0.76	1.24	1.53	1.68
1	1.24	2.03	2.50	2.74
1	1.62	2.65	3.27	3.59

#### Hot gas capacity [TR]

Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [psi]	NRV			
	NRV			
	0.7	1	2	4

#### R454A

0.1	0.2	0.5	0.8
0.4	0.9	1.5	2.1
1.3	1.6	2.2	3.1
1.9	2.5	3.6	5.0
3.5	4.1	5.8	8.2
4.5	5.4	7.6	10.7

#### R454B

0.1	0.3	0.7	1.1
0.5	1.1	1.8	2.6
1.7	2.0	2.8	3.9
2.4	3.1	4.5	6.3
4.3	5.1	7.3	10.2
5.6	6.7	9.5	13.4

#### R454C

0.1	0.2	0.5	0.7
0.3	0.8	1.3	1.8
1.2	1.4	2.0	2.8
1.7	2.2	3.2	4.5
3.1	3.7	5.2	7.3
4.0	4.8	6.8	9.5

#### R516A

0.0	0.2	0.4	0.6
0.3	0.6	1.0	1.4
0.9	1.1	1.6	2.2
1.3	1.8	2.5	3.5
2.4	2.9	4.0	5.7
3.2	3.8	5.3	7.4

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve $\Delta p$ [psi]			
	NRVH			
	3	4	5	6

#### R454A

NRVH 6 v2	0.0	0.2	0.7	0.8
NRVH 10 v2	0.2	1.3	2.1	2.5
NRVH 12 v2	2.2	3.1	3.5	3.8
NRVH 16 v2	0.9	4.1	5.2	5.9
NRVH 19 v2	5.8	8.2	9.1	10.0
NRVH 22	9.3	10.7	11.9	13.0

#### R454B

NRVH 6 v2	0.1	0.2	0.8	1.0
NRVH 10 v2	0.2	1.7	2.6	3.1
NRVH 12 v2	2.7	3.9	4.4	4.8
NRVH 16 v2	1.1	5.2	6.5	7.4
NRVH 19 v2	7.2	10.2	11.4	12.5
NRVH 22	11.6	13.4	14.9	16.3

#### R454C

NRVH 6 v2	0.0	0.2	0.6	0.7
NRVH 10 v2	0.1	1.2	1.9	2.2
NRVH 12 v2	1.9	2.8	3.1	3.4
NRVH 16 v2	0.8	3.7	4.6	5.3
NRVH 19 v2	5.1	7.3	8.1	8.8
NRVH 22	8.3	9.5	10.6	11.6

#### R516A

NRVH 6 v2	0.0	0.1	0.5	0.6
NRVH 10 v2	0.1	0.9	1.4	1.7
NRVH 12 v2	1.5	2.2	2.4	2.6
NRVH 16 v2	0.6	2.8	3.6	4.1
NRVH 19 v2	4.0	5.7	6.3	6.9
NRVH 22	6.4	7.4	8.2	9.0

1) Rated capacities are based on:

-Evaporating temperature,  $t_e = 14^\circ\text{F}$

-Condensing temperature,  $t_c = 86^\circ\text{F}$

-Subcooling  $t_{\text{sub}} = 9^\circ\text{F}$

-Superheat  $t_{\text{sh}} = 0^\circ\text{F}$

-Discharge temperature,  $t_d = 176^\circ\text{F}$  ahead of the valve.

The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature  $t_l$  ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

**System capacity** = Correction factor × Table capacity

#### Correction factors for liquid temperature $t_l$

$t_l$ [°F]	15	32	50	60	70	80	86	95	105	115	125
R454A	0.71	0.77	0.85	0.90	0.96	1.02	1.09	1.18	1.29	1.42	1.58
R454B	0.74	0.80	0.87	0.91	0.96	1.02	1.08	1.16	1.25	1.35	1.49
R454C	0.70	0.77	0.84	0.90	0.95	1.02	1.10	1.19	1.30	1.44	1.61
R516A	0.71	0.77	0.85	0.90	0.96	1.02	1.09	1.18	1.28	1.40	1.55



Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant.

## Data sheet | Check valve, types NRV and NRHV

US units

### Capacity

#### Liquid capacity [TR]

Type	Liquid capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRV			
	0.7	1	2	3

#### R600

NRV 6 v2	0.4	1.7	4.2	5.7
NRV 10 v2	2.8	7.0	11.3	13.9
NRV 12 v2	10.2	12.2	17.3	21.2
NRV 16 v2	14.6	19.4	27.7	33.9
NRV 19 v2	26.6	31.8	44.9	55.0
NRV 22	34.8	41.5	58.8	72.0

#### R600a

NRV 6 v2	0.4	1.5	3.7	5.0
NRV 10 v2	2.5	6.2	10.0	12.3
NRV 12 v2	9.1	10.8	15.3	18.8
NRV 16 v2	12.9	17.2	24.5	30.0
NRV 19 v2	23.6	28.2	39.9	48.8
NRV 22	30.8	36.9	52.1	63.8

#### R1234yf

NRV 6 v2	0.2	0.9	2.3	3.1
NRV 10 v2	1.5	3.8	6.2	7.6
NRV 12 v2	5.6	6.7	9.4	11.6
NRV 16 v2	8.0	10.6	15.1	18.5
NRV 19 v2	14.5	17.3	24.5	30.0
NRV 22	19.0	22.7	32.1	39.3

#### R1270

NRV 6 v2	0.4	1.6	3.9	5.2
NRV 10 v2	2.6	6.4	10.4	12.7
NRV 12 v2	9.4	11.2	15.9	19.4
NRV 16 v2	13.4	17.9	25.4	31.1
NRV 19 v2	24.4	29.2	41.3	50.5
NRV 22	31.9	38.1	53.9	66.1

#### Suction vapour capacity [TR]

Pressure drop across valve Δp [psi]	Suction vapour capacity <sup>1)</sup> at evaporating temperature t <sub>e</sub> [°F]			
	NRV			
	-20	15	32	40

#### R600

1	0.04	0.08	0.11	0.12
1	0.17	0.35	0.46	0.51
1	0.37	0.67	0.85	0.94
1	0.59	1.06	1.35	1.50
1	0.96	1.74	2.20	2.44
1	1.26	2.28	2.88	3.20

#### R600a

1	0.05	0.10	0.13	0.14
1	0.23	0.42	0.54	0.59
1	0.46	0.78	0.97	1.07
1	0.73	1.24	1.54	1.70
1	1.19	2.03	2.52	2.78
1	1.56	2.65	3.30	3.63

#### R1234yf

1	0.06	0.10	0.12	0.13
1	0.23	0.40	0.49	0.54
1	0.43	0.71	0.88	0.97
1	0.68	1.13	1.40	1.54
1	1.12	1.85	2.29	2.52
1	1.46	2.41	2.99	3.30

#### R1270

1	0.14	0.21	0.25	0.27
1	0.56	0.85	1.01	1.09
1	1.01	1.51	1.79	1.94
1	1.61	2.40	2.85	3.08
1	2.63	3.92	4.66	5.04
1	3.44	5.13	6.09	6.59

#### Hot gas capacity [TR]

Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]	NRV			
	NRV			
	0.7	1	2	4

#### R600

0.0	0.1	0.4	0.5
0.2	0.6	1.0	1.3
0.9	1.1	1.5	2.0
1.3	1.7	2.4	3.2
2.3	2.8	3.9	5.3
3.0	3.6	5.0	6.9

#### R600a

0.0	0.2	0.4	0.6
0.3	0.7	1.1	1.5
1.0	1.2	1.6	2.2
1.4	1.9	2.6	3.6
2.5	3.0	4.2	5.8
3.3	4.0	5.5	7.6

#### R1234yf

0.0	0.1	0.3	0.5
0.2	0.6	0.9	1.3
0.8	1.0	1.4	2.0
1.2	1.6	2.3	3.2
2.2	2.6	3.7	5.1
2.9	3.4	4.8	6.7

#### R1270

0.1	0.3	0.7	1.0
0.4	1.1	1.8	2.5
1.6	2.0	2.8	3.9
2.3	3.1	4.4	6.2
4.3	5.1	7.2	10.1
5.6	6.7	9.4	13.2

#### Hot gas capacity [TR]

Type	Hot gas capacity <sup>1)</sup> at pressure drop across valve Δp [psi]			
	NRVH			
	3	4	5	6

#### R600

NRVH 6 v2	0.0	0.1	0.4	0.5
NRVH 10 v2	0.1	0.8	1.3	1.6
NRVH 12 v2	1.4	2.0	2.2	2.4
NRVH 16 v2	0.6	2.5	3.2	3.7
NRVH 19 v2	3.7	5.3	5.8	6.2
NRVH 22	6.1	6.9	7.6	8.2

#### R600a

NRVH 6 v2	0.0	0.1	0.4	0.6
NRVH 10 v2	0.1	0.9	1.5	1.8
NRVH 12 v2	1.6	2.2	2.5	2.7
NRVH 16 v2	0.6	2.9	3.6	4.1
NRVH 19 v2	4.1	5.8	6.5	7.0
NRVH 22	6.7	7.6	8.4	9.1

#### R1234yf

NRVH 6 v2	0.0	0.1	0.4	0.5
NRVH 10 v2	0.1	0.8	1.3	1.6
NRVH 12 v2	1.4	2.0	2.2	2.4
NRVH 16 v2	0.6	2.6	3.2	3.7
NRVH 19 v2	3.6	5.1	5.7	6.2
NRVH 22	5.8	6.7	7.4	8.1

#### R1270

NRVH 6 v2	0.1	0.2	0.8	1.0
NRVH 10 v2	0.2	1.6	2.6	3.1
NRVH 12 v2	2.7	3.9	4.3	4.7
NRVH 16 v2	1.1	5.1	6.4	7.3
NRVH 19 v2	7.1	10.1	11.2	12.3
NRVH 22	11.4	13.2	14.7	16.0

<sup>1)</sup> Rated capacities are based on:

- Evaporating temperature, t<sub>e</sub> = 14 °F
  - Condensing temperature, t<sub>c</sub> = 86 °F
  - Subcooling t<sub>sub</sub> = 9 °F
  - Superheat t<sub>sh</sub> = 0 °F
  - Discharge temperature, t<sub>d</sub> = 176 °F ahead of the valve.
- The table values refer to the evaporator capacity.

### Correction factors

When selecting the evaporator capacity is to be multiplied by a correction factor depending on the liquid temperature t<sub>l</sub> ahead of the valve/the evaporator. The corrected capacity can then be found from the table.

**System capacity** = Correction factor × Table capacity

#### Correction factors for liquid temperature t<sub>l</sub>

t <sub>l</sub> [°F]	15	32	50	60	70	80	86	95	105	115	125
R600	0.77	0.82	0.88	0.92	0.97	1.02	1.07	1.13	1.20	1.27	1.36
R600a	0.75	0.81	0.87	0.92	0.96	1.02	1.08	1.14	1.22	1.31	1.41
R1234yf	0.69	0.76	0.84	0.89	0.95	1.02	1.10	1.20	1.32	1.46	1.63
R1270	0.74	0.80	0.87	0.91	0.96	1.02	1.08	1.16	1.24	1.35	1.47

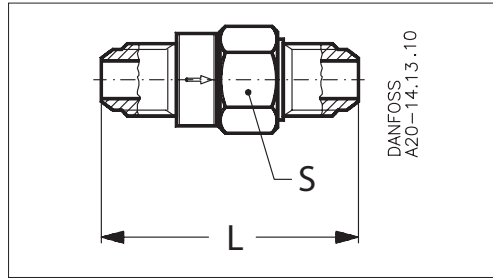


Note: Only solder version, connection sizes from 6 s to 22 s are allowed for flammable refrigerant.  
- For capacity calculation of other refrigerants, please contact Danfoss.

**Data sheet | Check valve, types NRV and NRVH**

**Dimensions and weights**

**NRV 6 - 19**



**Flare straightway connection - SI Units**

Type	Size		L [mm]	Spanner flats S [mm]	Net weight [kg]
	[in]	[mm]			
<b>NRV 6</b>	1/4	6	55	19	0.07
<b>NRV 10</b>	3/8	10	60	19	0.08
<b>NRV 12</b>	1/2	12	70	24	0.14
<b>NRV 16</b>	5/8	16	81	28	0.20
<b>NRV 19</b>	3/4	19	95	34	0.34

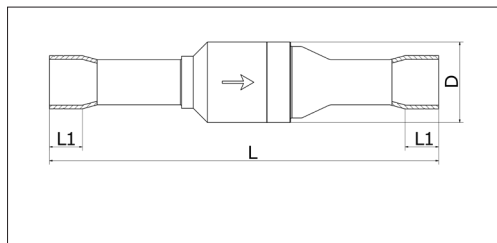
**Flare straightway connection - US Units**

Type	Size	L [in]	Spanner flats S [in]	Net weight [lb]
	[in]			
<b>NRV 6</b>	1/4	2.17	0.75	0.15
<b>NRV 10</b>	3/8	2.36	0.75	0.19
<b>NRV 12</b>	1/2	2.76	0.94	0.30
<b>NRV 16</b>	5/8	3.19	1.10	0.45
<b>NRV 19</b>	3/4	3.74	1.34	0.75

## Data sheet | Check valve, types NRV and NRVH

### Dimensions and weights

#### NRV 6s - 19s / NRVH 6s - 19s



#### Solder straightway connection - SI Units

Type	Size		L [mm]	L <sub>1</sub> [mm]	øD [mm]	Net weight [kg]
	[in]	[mm]				
NRV/NRVH 6s v2	1/4	6	92	7	18	0.05
NRV/NRVH 6s v2 <sup>1)</sup>	3/8	10	95	9	18	0.06
NRV/NRVH 10s v2	3/8	10	109	9	18	0.05
NRV/NRVH 10s v2 <sup>1)</sup>	1/2	12	109	10	18	0.06
NRV/NRVH 12s v2	1/2	12	131	10	22	0.09
NRV/NRVH 12s v2 <sup>1)</sup>	5/8	16	131	12	22	0.09
NRV/NRVH 16s v2	5/8	16	139	12	28	0.16
NRV/NRVH 16s v2 <sup>1)</sup>	–	18	139	14	28	0.17
NRV/NRVH 19s v2	–	18	165	14	34	0.27
NRV/NRVH 16s v2 <sup>1)</sup>	3/4	19	139	14	28	0.17
NRV/NRVH 19s v2	3/4	19	165	14	34	0.28
NRV/NRVH 19s v2 <sup>1)</sup>	7/8	22	165	17	34	0.28

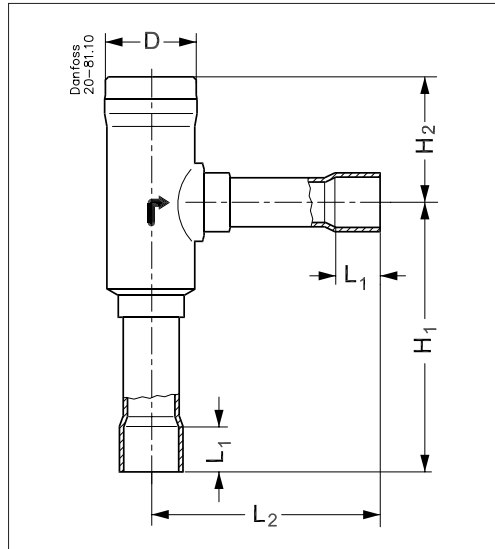
#### Solder straightway connection - US Units

Type	Size	L [in]	L <sub>1</sub> [in]	øD [in]	Net weight [lb]
	[in]				
NRV/NRVH 6s v2	1/4	3.62	0.28	0.71	0.11
NRV/NRVH 6s v2 <sup>1)</sup>	3/8	3.74	0.35	0.71	0.13
NRV/NRVH 10s v2	3/8	4.29	0.35	0.71	0.11
NRV/NRVH 10s v2 <sup>1)</sup>	1/2	4.29	0.39	0.71	0.13
NRV/NRVH 12s v2	1/2	5.16	0.39	0.87	0.20
NRV/NRVH 12s v2 <sup>1)</sup>	5/8	5.16	0.47	0.87	0.20
NRV/NRVH 16s v2	5/8	5.47	0.47	1.10	0.35
NRV/NRVH 16s v2 <sup>1)</sup>	3/4	5.47	0.55	1.10	0.38
NRV/NRVH 19s v2	3/4	6.50	0.55	1.34	0.62
NRV/NRVH 19s v2 <sup>1)</sup>	7/8	6.50	0.67	1.34	0.62

<sup>1)</sup> Oversize connections.

**Dimensions  
and weights**

**NRV 22s - 35s / NRVH 22s - 35s**



**Solder angleway connection - SI Units**

Type	Size		H <sub>1</sub> [mm]	H <sub>2</sub> [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	øD [mm]	Net weight [Kg]
	[in]	[mm]						
NRV/NRVH 22s	7/8	22	94	48	17	87	37	0.58
NRV/NRVH 22s <sup>1)</sup>	1 1/8	28	94	48	22	87	37	0.61
NRV/NRVH 28s	1 1/8	28	141	67	20	123	49	1.33
NRV/NRVH 28s <sup>1)</sup>	1 3/8	35	141	67	25	123	49	1.47
NRV/NRVH 35s	1 3/8	35	141	67	25	123	49	1.40
NRV/NRVH 35s <sup>1)</sup>	1 5/8	42	141	67	29	123	49	1.38

**Solder angleway connection - US Units**

Type	Size	H <sub>1</sub> [in]	H <sub>2</sub> [in]	L <sub>1</sub> [in]	L <sub>2</sub> [in]	øD [in]	Net weight [lb]
	[in]						
NRV/NRVH 22s	7/8	3.70	1.89	0.67	3.43	1.46	1.28
NRV/NRVH 22s <sup>1)</sup>	1 1/8	3.70	1.89	0.87	3.43	1.46	1.35
NRV/NRVH 28s	1 1/8	5.55	2.64	0.79	4.84	1.93	2.93
NRV/NRVH 28s <sup>1)</sup>	1 3/8	5.55	2.64	0.98	4.84	1.93	3.26
NRV/NRVH 35s	1 3/8	5.55	2.64	0.98	4.84	1.93	3.08
NRV/NRVH 35s <sup>1)</sup>	1 5/8	5.55	2.64	1.14	4.84	1.93	3.06

<sup>1)</sup> Oversize connections.