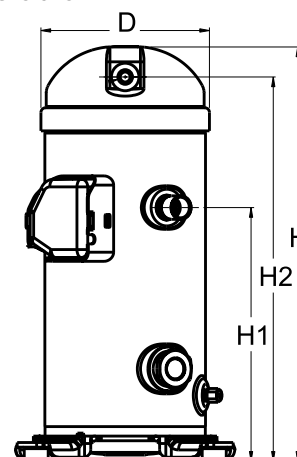


General Characteristics

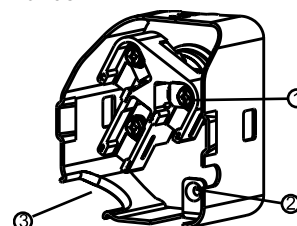
Model number (on compressor nameplate)	MLZ048T2LC9A	MLZ048T2LC9A
Code number for Singlepack*	121U8681	121L8681
Code number for Industrial pack**	121U8680	121L8680
Drawing number	0XR6025B-3	0XR6025B-3
Suction and discharge connections	Brazed	Brazed
Suction connection	7/8" ODF	7/8" ODF
Discharge connection	3/4" ODF	3/4" ODF
Oil sight glass	Threaded	Threaded
Oil equalisation connection	None	None
Oil drain connection	1/4" flare	1/4" flare
LP gauge port	None	None
IPR valve	32 bar	32 bar
Swept volume	107.48 cm ³ /rev	
Displacement @ Nominal speed	18.7 m ³ /h @ 2900 rpm - 22.6 m ³ /h @ 3500 rpm	
Net weight	41 kg	
Oil charge	1.57 litre, POE --	
Maximum system test pressure Low Side / High side	- bar(g) / - bar(g)	
Maximum differential test pressure	- bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	5.44 kg	
Approved refrigerants	R404A, R507, R134a, R407A, R407F, R448A, R449A, R452A, R22	

Dimensions


D=184 mm
H=455 mm
H1=280 mm
H2=422 mm
H3=- mm

Electrical Characteristics

Nominal voltage	208-230V/3/60Hz
Voltage range	188-253 V
Winding resistance between phases 1-2 +/- 7% at 25°C	0.439 Ω
Winding resistance between phases 1-3 +/- 7% at 25°C	0.434 Ω
Winding resistance between phases 2-3 +/- 7% at 25°C	0.427 Ω
Rated Load Amps (RLA)	23.7 A
Maximum Continuous Current (MCC)	37 A
Locked Rotor Amps (LRA)	190 A
Motor protection	Internal overload protector

Terminal box

IP22

- 1: Screw connectors 10-32 UNF x 9.5
- 2: Earth connection
- 3: Power cable passage

Recommended Installation torques

Suction Rotolock nut or valve	0 Nm
Discharge Rotolock nut or valve	0 Nm
Oil sight glass	52.5 Nm
Power connections / Earth connection	3 Nm / 2 Nm

Parts shipped with compressor

Mounting kit with grommets and sleeves
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA11565), -

*Singlepack: Compressor in cardboard box. 121U... optimised for Danfoss pallet, 120U... optimised for US pallet

**Industrial pack: 121U...: 12 unboxed compressors on Danfoss pallet. 120U...: 16 unboxed compressors on US pallet

Rotolock accessories, suction side

Code no.

Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-1/4"	8156131

Rotolock accessories, discharge side

Code no.

Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Rotolock accessories, sets

Code no.

Solder sleeve adapter set (1-1/4" Rotolock, 7/8" ODF), (1-1/4" Rotolock, 3/4" ODF)	120Z0128
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants

Code no.

POE lubricant, 215PZ(PL46HB), 1 litre can	120Z0648
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Crankcase heaters

Code no.

Belt type crankcase heater, 70 W, 230 V, UL	120Z5011
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	120Z0059

Miscellaneous accessories

Code no.

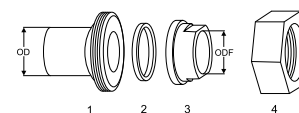
Acoustic hood	120Z5084
Discharge thermostat kit	7750009
IP54 upgrade kit	118U0057

Spare parts

Code no.

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z5005
Terminal box cover	120Z5018

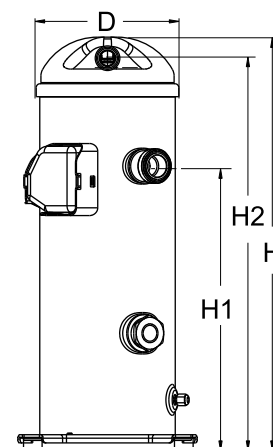
Solder sleeve adapter set



- 1: Rotolock adapter (Suc & Dis)
- 2: Gasket (Suc & Dis)
- 3: Solder sleeve (Suc & Dis)
- 4: Rotolock nut (Suc & Dis)

General Characteristics

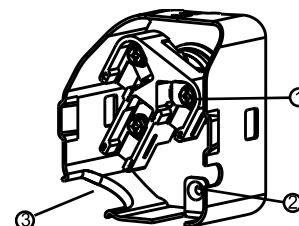
Model number (on compressor nameplate)	MLZ048T2LC9A	MLZ048T2LQ9A
Code number for Singlepack*	120U8681	121U8807
Code number for Industrial pack**	120U8680	121U8806
Drawing number	0XR6025B-3	0XR6298B-3
Suction and discharge connections	Brazed	Rotolock
Suction connection	7/8 " ODF	1-1/4 " Rotolock
Discharge connection	3/4 " ODF	1-1/4 " Rotolock
Suction connection with supplied sleeve		7/8 " -
Discharge connection with supplied sleeve	- "	3/4 " -
Oil sight glass	Threaded	Threaded
Oil equalisation connection	None	None
Oil drain connection	1/4" flare	None
LP gauge port	None	None
IPR valve	32 bar	None
Swept volume	107.48 cm ³ /rev	
Displacement @ Nominal speed	18.7 m ³ /h @ 2900 rpm - 22.6 m ³ /h @ 3500 rpm	
Net weight	41 kg	
Oil charge	1.57 litre, POE - -	
Maximum system test pressure Low Side / High side	- bar(g) / - bar(g)	
Maximum differential test pressure	- bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	5.44 kg	
Approved refrigerants	R404A,R507,R134a,R407A,R407F,R448A,R449A,R452A,R22	

Dimensions


D=184 mm
H=454.9 mm
H1=280 mm
H2=422.2 mm
H3=- mm

Electrical Characteristics

Nominal voltage	208-230V/3/60Hz
Voltage range	188-253 V
Winding resistance between phases 1-2 +/- 7% at 25°C	0.439 Ω
Winding resistance between phases 1-3 +/- 7% at 25°C	0.434 Ω
Winding resistance between phases 2-3 +/- 7% at 25°C	0.427 Ω
Rated Load Amps (RLA)	23.7 A
Maximum Continuous Current (MCC)	37 A
Locked Rotor Amps (LRA)	190 A
Motor protection	Internal overload protector

Terminal box


IP22

- 1: Screw connectors 10-32 UNF x 9.5
- 2: Earth connection
- 3: Power cable passage

Recommended Installation torques

Suction Rotolock nut or valve	0 Nm
Discharge Rotolock nut or valve	0 Nm
Oil sight glass	52.5 Nm
Power connections / Earth connection	3 Nm / 2 Nm

Parts shipped with compressor

Mounting kit with grommets and sleeves
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA11565), -

*Singlepack: Compressor in cardboard box. 121U... optimised for Danfoss pallet, 120U... optimised for US pallet

**Industrial pack: 121U...: 12 unboxed compressors on Danfoss pallet. 120U...: 16 unboxed compressors on US pallet

Rotolock accessories, suction side
Code no.

Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-1/4"	8156131

Rotolock accessories, discharge side
Code no.

Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Rotolock accessories, sets
Code no.

Teflon seals, sleeves, nuts for discharge and suction (1"1/4 and 1"1/4)	120Z5076
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants
Code no.

POE lubricant, 215PZ(PL46HB), 1 litre can	120Z0648
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Crankcase heaters
Code no.

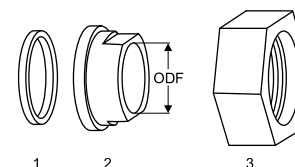
Belt type crankcase heater, 70 W, 230 V, UL	120Z5011
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	120Z0059

Miscellaneous accessories
Code no.

Acoustic hood	120Z5084
Discharge thermostat kit	7750009
IP54 upgrade kit	118U0057

Spare parts
Code no.

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z5005
Terminal box cover	120Z5018

Gaskets, sleeves and nuts


1

2

3

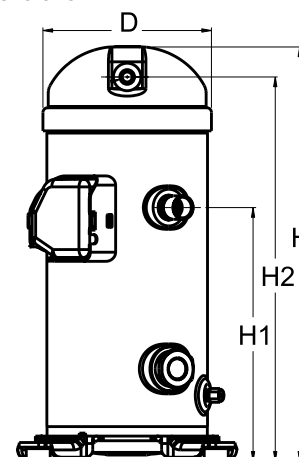
1: Gasket

2: Solder sleeve

3: Rotolock nut

General Characteristics

Model number (on compressor nameplate)	MLZ048T2LC9	MLZ048T2LC9
Code number for Singlepack*	121U8050	120U8050
Code number for Industrial pack**	121U8049	120U8049
Drawing number	0XR6025B-3	0XR6025B-3
Suction and discharge connections	Brazed	Brazed
Suction connection	7/8" ODF	7/8" ODF
Discharge connection	3/4" ODF	3/4" ODF
Oil sight glass	Threaded	Threaded
Oil equalisation connection	None	None
Oil drain connection	1/4" flare	1/4" flare
LP gauge port	None	None
IPR valve	32 bar	32 bar
Swept volume	107.48 cm ³ /rev	
Displacement @ Nominal speed	18.7 m ³ /h @ 2900 rpm - 22.6 m ³ /h @ 3500 rpm	
Net weight	41 kg	
Oil charge	1.57 litre, PVE --	
Maximum system test pressure Low Side / High side	- bar(g) / - bar(g)	
Maximum differential test pressure	- bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	5.44 kg	
Approved refrigerants	R404A, R507, R134a, R22	

Dimensions


D=184 mm

H=455 mm

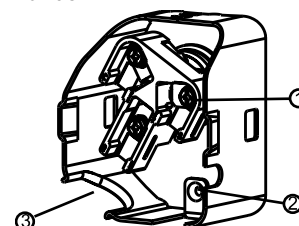
H1=280 mm

H2=422 mm

H3=- mm

Electrical Characteristics

Nominal voltage	208-230V/3/60Hz
Voltage range	188-253 V
Winding resistance between phases 1-2 +/- 7% at 25°C	0.439 Ω
Winding resistance between phases 1-3 +/- 7% at 25°C	0.434 Ω
Winding resistance between phases 2-3 +/- 7% at 25°C	0.427 Ω
Rated Load Amps (RLA)	23.7 A
Maximum Continuous Current (MCC)	37 A
Locked Rotor Amps (LRA)	190 A
Motor protection	Internal overload protector

Terminal box


IP22

1: Screw connectors 10-32 UNF x 9.5

2: Earth connection

3: Power cable passage

Recommended Installation torques

Suction Rotolock nut or valve	0 Nm
Discharge Rotolock nut or valve	0 Nm
Oil sight glass	52.5 Nm
Power connections / Earth connection	3 Nm / 2 Nm

Parts shipped with compressor

Mounting kit with grommets and sleeves
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA11565), -

*Singlepack: Compressor in cardboard box. 121U... optimised for Danfoss pallet, 120U... optimised for US pallet

**Industrial pack: 121U...: 12 unboxed compressors on Danfoss pallet. 120U...: 16 unboxed compressors on US pallet

Rotolock accessories, suction side

Code no.

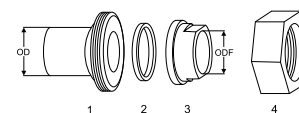
Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-1/4"	8156131

Rotolock accessories, discharge side

Code no.

Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Solder sleeve adapter set



- 1: Rotolock adapter (Suc & Dis)
- 2: Gasket (Suc & Dis)
- 3: Solder sleeve (Suc & Dis)
- 4: Rotolock nut (Suc & Dis)

Rotolock accessories, sets

Code no.

Solder sleeve adapter set (1-1/4" Rotolock, 7/8" ODF), (1-1/4" Rotolock, 3/4" ODF)	120Z0128
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants

Code no.

PVE lubricant, 320HV (FVC68D), 1 litre can	120Z5034
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Crankcase heaters

Code no.

Belt type crankcase heater, 70 W, 230 V, UL	120Z5011
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	120Z0059

Miscellaneous accessories

Code no.

Acoustic hood	120Z5044
Discharge thermostat kit	7750009
IP54 upgrade kit	118U0057

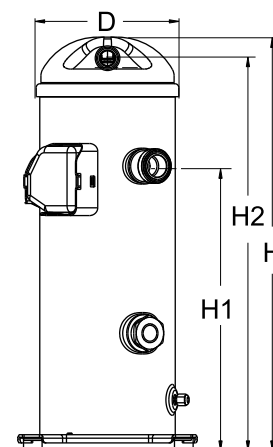
Spare parts

Code no.

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z5005
Terminal box cover	120Z5018

General Characteristics

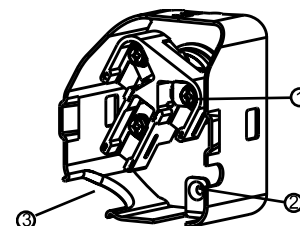
Model number (on compressor nameplate)		MLZ048T2LQ9
Code number for Singlepack*		121U8603
Code number for Industrial pack**		121U8602
Drawing number		0XR6298B-3
Suction and discharge connections		Rotolock
Suction connection		1-1/4 " Rotolock
Discharge connection		1-1/4 " Rotolock
Suction connection with supplied sleeve		7/8 " -
Discharge connection with supplied sleeve	- "	3/4 " -
Oil sight glass		Threaded
Oil equalisation connection		None
Oil drain connection		None
LP gauge port		None
IPR valve		None
Swept volume		107.48 cm ³ /rev
Displacement @ Nominal speed		18.7 m ³ /h @ 2900 rpm - 22.6 m ³ /h @ 3500 rpm
Net weight		41 kg
Oil charge		1.57 litre, PVE - -
Maximum system test pressure Low Side / High side		- bar(g) / - bar(g)
Maximum differential test pressure		- bar
Maximum number of starts per hour		12
Refrigerant charge limit		5.44 kg
Approved refrigerants		R404A, R507, R134a, R407C, R22

Dimensions


D=184 mm
H=454.9 mm
H1=280 mm
H2=422.2 mm
H3=- mm

Electrical Characteristics

Nominal voltage	208-230V/3/60Hz
Voltage range	188-253 V
Winding resistance between phases 1-2 +/- 7% at 25°C	0.439 Ω
Winding resistance between phases 1-3 +/- 7% at 25°C	0.434 Ω
Winding resistance between phases 2-3 +/- 7% at 25°C	0.427 Ω
Rated Load Amps (RLA)	23.7 A
Maximum Continuous Current (MCC)	37 A
Locked Rotor Amps (LRA)	190 A
Motor protection	Internal overload protector

Terminal box


IP22

- 1: Screw connectors 10-32 UNF x 9.5
- 2: Earth connection
- 3: Power cable passage

Recommended Installation torques

Oil sight glass	52.5 Nm
Power connections / Earth connection	3 Nm / 2 Nm

Parts shipped with compressor

Mounting kit with grommets and sleeves
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA11565), -

*Singlepack: Compressor in cardboard box. 121U... optimised for Danfoss pallet, 120U... optimised for US pallet

**Industrial pack: 121U...: 12 unboxed compressors on Danfoss pallet. 120U...: 16 unboxed compressors on US pallet

Rotolock accessories, suction side
Code no.

Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-1/4"	8156131

Rotolock accessories, discharge side
Code no.

Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Rotolock accessories, sets
Code no.

Teflon seals, sleeves, nuts for discharge and suction (1"1/4 and 1"1/4)	120Z5076
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

Oil / lubricants
Code no.

PVE lubricant, 320HV (FVC68D), 1 litre can	120Z5034
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Crankcase heaters
Code no.

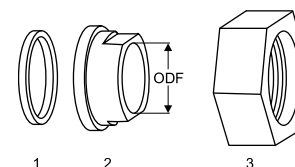
Belt type crankcase heater, 70 W, 230 V, UL	120Z5011
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	120Z0059

Miscellaneous accessories
Code no.

Acoustic hood	120Z5044
Discharge thermostat kit	7750009
IP54 upgrade kit	118U0057

Spare parts
Code no.

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z5005
Terminal box cover	120Z5018

Gaskets, sleeves and nuts


1

2

3

1: Gasket

2: Solder sleeve

3: Rotolock nut

Performance data at 50 Hz, EN 12900 rating conditions, Superheat = 10 K
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	

Cooling capacity in W

16	9 980	12 007	14 386	17 158	-	-	-	-	-
20	9 371	11 382	13 734	16 467	19 617	-	-	-	-
30	8 186	10 125	12 374	14 974	17 966	21 383	25 254	-	-
40	7 278	9 097	11 196	13 617	16 404	19 593	23 217	-	-
50	-	8 049	9 951	12 149	14 685	17 601	20 934	-	-
60	-	-	-	10 325	12 565	15 162	18 159	-	-
68	-	-	-	-	-	12 726	15 419	-	-

Power input in W

16	2 339	2 338	2 327	2 325	-	-	-	-	-
20	2 645	2 652	2 644	2 639	2 656	-	-	-	-
30	3 321	3 358	3 366	3 362	3 366	3 395	3 469	-	-
40	3 992	4 071	4 106	4 115	4 117	4 130	4 173	-	-
50	-	4 942	5 016	5 050	5 063	5 072	5 097	-	-
60	-	-	-	6 321	6 355	6 373	6 390	-	-
68	-	-	-	-	-	7 773	7 794	-	-

Current consumption in A

16	9.00	9.00	8.96	8.95	-	-	-	-	-
20	10.18	10.21	10.18	10.16	10.22	-	-	-	-
30	12.78	12.93	12.95	12.94	12.95	13.07	13.35	-	-
40	15.36	15.67	15.80	15.84	15.85	15.90	16.06	-	-
50	-	19.02	19.31	19.44	19.49	19.52	19.62	-	-
60	-	-	-	24.33	24.46	24.53	24.60	-	-
68	-	-	-	-	-	29.92	30.00	-	-

Mass flow in kg/h

16	196	232	274	322	-	-	-	-	-
20	191	228	270	319	375	-	-	-	-
30	181	219	263	312	368	432	504	-	-
40	170	210	255	305	362	426	497	-	-
50	-	196	243	294	352	416	488	-	-
60	-	-	-	277	335	401	473	-	-
68	-	-	-	-	-	381	454	-	-

Coefficient of performance (C.O.P.)

16	4.27	5.14	6.18	7.38	-	-	-	-	-
20	3.54	4.29	5.19	6.24	7.38	-	-	-	-
30	2.46	3.01	3.68	4.45	5.34	6.30	7.28	-	-
40	1.82	2.23	2.73	3.31	3.98	4.74	5.56	-	-
50	-	1.63	1.98	2.41	2.90	3.47	4.11	-	-
60	-	-	-	1.63	1.98	2.38	2.84	-	-
68	-	-	-	-	-	1.64	1.98	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 597	W
Power input	4 530	W
Current consumption	17.44	A
Mass flow	250	kg/h
C.O.P.	2.34	

Pressure switch settings

Maximum HP switch setting	29.8	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.95	bar(g)

Sound power data

Sound power level	71	dB(A)
With acoustic hood	63	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	

Cooling capacity in W

16	9 736	11 749	14 124	16 906	-	-	-	-	-
20	9 167	11 164	13 508	16 247	19 426	-	-	-	-
30	8 068	9 993	12 232	14 831	17 838	21 296	25 254	-	-
40	-	9 046	11 135	13 550	16 338	19 545	23 217	-	-
50	-	-	-	12 156	14 681	17 592	20 934	-	-
60	-	-	-	-	12 623	15 192	18 159	-	-
68	-	-	-	-	-	-	15 419	-	-

Power input in W

16	2 339	2 338	2 327	2 325	-	-	-	-	-
20	2 645	2 652	2 644	2 639	2 656	-	-	-	-
30	3 321	3 358	3 366	3 362	3 366	3 395	3 469	-	-
40	-	4 071	4 106	4 115	4 117	4 130	4 173	-	-
50	-	-	-	5 050	5 063	5 072	5 097	-	-
60	-	-	-	-	6 355	6 373	6 390	-	-
68	-	-	-	-	-	-	7 794	-	-

Current consumption in A

16	9.00	9.00	8.96	8.95	-	-	-	-	-
20	10.18	10.21	10.18	10.16	10.22	-	-	-	-
30	12.78	12.93	12.95	12.94	12.95	13.07	13.35	-	-
40	-	15.67	15.80	15.84	15.85	15.90	16.06	-	-
50	-	-	-	19.44	19.49	19.52	19.62	-	-
60	-	-	-	-	24.46	24.53	24.60	-	-
68	-	-	-	-	-	-	30.00	-	-

Mass flow in kg/h

16	172	208	251	301	-	-	-	-	-
20	168	204	247	298	357	-	-	-	-
30	159	197	240	291	351	421	504	-	-
40	-	189	233	285	345	415	497	-	-
50	-	-	-	275	336	406	488	-	-
60	-	-	-	-	320	391	473	-	-
68	-	-	-	-	-	-	454	-	-

Coefficient of performance (C.O.P.)

16	4.16	5.03	6.07	7.27	-	-	-	-	-
20	3.47	4.21	5.11	6.16	7.31	-	-	-	-
30	2.43	2.98	3.63	4.41	5.30	6.27	7.28	-	-
40	-	2.22	2.71	3.29	3.97	4.73	5.56	-	-
50	-	-	-	2.41	2.90	3.47	4.11	-	-
60	-	-	-	-	1.99	2.38	2.84	-	-
68	-	-	-	-	-	-	1.98	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 576	W
Power input	4 530	W
Current consumption	17.44	A
Mass flow	228	kg/h
C.O.P.	2.33	

Pressure switch settings

Maximum HP switch setting	29.8	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.95	bar(g)

Sound power data

Sound power level	71	dB(A)
With acoustic hood	63	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Superheat = 10 K
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	

Cooling capacity in W

16	11 543	14 168	17 202	20 647	-	-	-	-	-
20	11 063	13 652	16 642	20 037	23 835	-	-	-	-
30	9 885	12 356	15 211	18 457	22 093	26 116	30 516	-	-
40	8 692	11 007	13 690	16 749	20 187	24 004	28 195	-	-
50	-	9 547	12 021	14 856	18 059	21 635	25 581	-	-
60	-	-	-	12 721	15 653	18 950	22 617	-	-
68	-	-	-	-	-	16 536	19 954	-	-

Power input in W

16	2 662	2 729	2 827	2 963	-	-	-	-	-
20	2 964	3 026	3 113	3 230	3 382	-	-	-	-
30	3 755	3 821	3 894	3 980	4 083	4 208	4 359	-	-
40	4 648	4 738	4 819	4 896	4 972	5 053	5 143	-	-
50	-	5 839	5 949	6 038	6 109	6 167	6 218	-	-
60	-	-	-	7 465	7 552	7 610	7 642	-	-
68	-	-	-	-	-	9 041	9 074	-	-

Current consumption in A

16	8.35	8.56	8.87	9.30	-	-	-	-	-
20	9.30	9.49	9.77	10.14	10.61	-	-	-	-
30	11.78	11.99	12.22	12.49	12.81	13.20	13.68	-	-
40	14.59	14.87	15.12	15.36	15.60	15.86	16.14	-	-
50	-	18.32	18.67	18.94	19.17	19.35	19.51	-	-
60	-	-	-	23.42	23.70	23.88	23.98	-	-
68	-	-	-	-	-	28.37	28.47	-	-

Mass flow in kg/h

16	224	274	331	394	-	-	-	-	-
20	217	267	324	388	458	-	-	-	-
30	206	256	314	379	450	528	610	-	-
40	201	249	307	372	444	523	607	-	-
50	-	240	297	361	434	514	599	-	-
60	-	-	-	341	414	494	580	-	-
68	-	-	-	-	-	466	553	-	-

Coefficient of performance (C.O.P.)

16	4.34	5.19	6.08	6.97	-	-	-	-	-
20	3.73	4.51	5.35	6.20	7.05	-	-	-	-
30	2.63	3.23	3.91	4.64	5.41	6.21	7.00	-	-
40	1.87	2.32	2.84	3.42	4.06	4.75	5.48	-	-
50	-	1.64	2.02	2.46	2.96	3.51	4.11	-	-
60	-	-	-	1.70	2.07	2.49	2.96	-	-
68	-	-	-	-	-	1.83	2.20	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 877	W
Power input	5 355	W
Current consumption	16.80	A
Mass flow	302	kg/h
C.O.P.	2.40	

Pressure switch settings

Maximum HP switch setting	29.8	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.95	bar(g)

Sound power data

Sound power level	75	dB(A)
With acoustic hood	67	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R22

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	

Cooling capacity in W

16	11 261	13 865	16 889	20 343	-	-	-	-	-
20	10 822	13 389	16 368	19 770	23 603	-	-	-	-
30	9 742	12 195	15 037	18 281	21 935	26 010	30 516	-	-
40	-	10 945	13 616	16 666	20 105	23 945	28 195	-	-
50	-	-	-	14 865	18 055	21 624	25 581	-	-
60	-	-	-	-	15 725	18 987	22 617	-	-
68	-	-	-	-	-	-	19 954	-	-

Power input in W

16	2 662	2 729	2 827	2 963	-	-	-	-	-
20	2 964	3 026	3 113	3 230	3 382	-	-	-	-
30	3 755	3 821	3 894	3 980	4 083	4 208	4 359	-	-
40	-	4 738	4 819	4 896	4 972	5 053	5 143	-	-
50	-	-	-	6 038	6 109	6 167	6 218	-	-
60	-	-	-	-	7 552	7 610	7 642	-	-
68	-	-	-	-	-	-	9 074	-	-

Current consumption in A

16	8.35	8.56	8.87	9.30	-	-	-	-	-
20	9.30	9.49	9.77	10.14	10.61	-	-	-	-
30	11.78	11.99	12.22	12.49	12.81	13.20	13.68	-	-
40	-	14.87	15.12	15.36	15.60	15.86	16.14	-	-
50	-	-	-	18.94	19.17	19.35	19.51	-	-
60	-	-	-	-	23.70	23.88	23.98	-	-
68	-	-	-	-	-	-	28.47	-	-

Mass flow in kg/h

16	197	246	303	368	-	-	-	-	-
20	191	240	297	362	437	-	-	-	-
30	182	230	287	353	429	515	610	-	-
40	-	224	281	347	424	510	607	-	-
50	-	-	-	338	414	501	599	-	-
60	-	-	-	-	395	482	580	-	-
68	-	-	-	-	-	-	553	-	-

Coefficient of performance (C.O.P.)

16	4.23	5.08	5.97	6.87	-	-	-	-	-
20	3.65	4.43	5.26	6.12	6.98	-	-	-	-
30	2.59	3.19	3.86	4.59	5.37	6.18	7.00	-	-
40	-	2.31	2.83	3.40	4.04	4.74	5.48	-	-
50	-	-	-	2.46	2.96	3.51	4.11	-	-
60	-	-	-	-	2.08	2.49	2.96	-	-
68	-	-	-	-	-	-	2.20	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 852	W
Power input	5 355	W
Current consumption	16.80	A
Mass flow	277	kg/h
C.O.P.	2.40	

Pressure switch settings

Maximum HP switch setting	29.8	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.95	bar(g)

Sound power data

Sound power level	75	dB(A)
With acoustic hood	67	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Superheat = 10 K
R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

22	6 427	8 086	10 061	12 360	14 992	-	-	-	-
30	5 889	7 457	9 334	11 528	14 046	16 897	-	-	-
40	5 202	6 628	8 354	10 386	12 734	15 405	18 406	-	-
50	-	5 766	7 308	9 148	11 294	13 753	16 533	-	-
60	-	-	6 214	7 830	9 741	11 956	14 483	-	-
70	-	-	-	6 448	8 093	10 032	12 273	-	-
73	-	-	-	6 023	7 582	9 433	11 582	-	-

Power input in W

22	1 741	1 769	1 798	1 824	1 847	-	-	-	-
30	2 084	2 117	2 149	2 177	2 200	2 215	-	-	-
40	2 575	2 620	2 661	2 696	2 723	2 740	2 746	-	-
50	-	3 214	3 270	3 318	3 355	3 379	3 390	-	-
60	-	-	3 992	4 058	4 111	4 149	4 170	-	-
70	-	-	-	4 934	5 008	5 065	5 103	-	-
73	-	-	-	5 225	5 307	5 371	5 416	-	-

Current consumption in A

22	6.70	6.81	6.92	7.02	7.11	-	-	-	-
30	8.02	8.15	8.27	8.38	8.47	8.52	-	-	-
40	9.91	10.09	10.24	10.38	10.48	10.55	10.57	-	-
50	-	12.37	12.59	12.77	12.91	13.01	13.05	-	-
60	-	-	15.37	15.62	15.82	15.97	16.05	-	-
70	-	-	-	18.99	19.28	19.50	19.64	-	-
73	-	-	-	20.11	20.43	20.67	20.84	-	-

Mass flow in kg/h

22	138	171	209	252	300	-	-	-	-
30	136	169	207	251	300	354	-	-	-
40	133	166	204	248	298	353	414	-	-
50	-	161	200	244	294	350	412	-	-
60	-	-	193	237	287	343	406	-	-
70	-	-	-	227	277	333	396	-	-
73	-	-	-	224	273	330	392	-	-

Coefficient of performance (C.O.P.)

22	3.69	4.57	5.60	6.78	8.11	-	-	-	-
30	2.83	3.52	4.34	5.30	6.39	7.63	-	-	-
40	2.02	2.53	3.14	3.85	4.68	5.62	6.70	-	-
50	-	1.79	2.23	2.76	3.37	4.07	4.88	-	-
60	-	-	1.56	1.93	2.37	2.88	3.47	-	-
70	-	-	-	1.31	1.62	1.98	2.40	-	-
73	-	-	-	1.15	1.43	1.76	2.14	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	6 200	W
Power input	2 905	W
Current consumption	11.18	A
Mass flow	164	kg/h
C.O.P.	2.13	

Pressure switch settings

Maximum HP switch setting	23.6	bar(g)
Minimum LP switch setting	0.45	bar(g)
LP pump down setting	0.85	bar(g)

Sound power data

Sound power level	71	dB(A)
With acoustic hood	63	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

22	6 530	8 180	10 138	12 413	15 016	-	-	-	-
30	-	7 595	9 454	11 617	14 093	16 897	-	-	-
40	-	-	8 526	10 520	12 810	15 405	18 320	-	-
50	-	-	7 530	9 326	11 398	13 753	16 401	-	-
60	-	-	-	8 049	9 872	11 956	-	-	-
70	-	-	-	-	8 249	10 032	-	-	-
73	-	-	-	-	7 746	9 433	-	-	-

Power input in W

22	1 741	1 769	1 798	1 824	1 847	-	-	-	-
30	-	2 117	2 149	2 177	2 200	2 215	-	-	-
40	-	-	2 661	2 696	2 723	2 740	2 746	-	-
50	-	-	3 270	3 318	3 355	3 379	3 390	-	-
60	-	-	-	4 058	4 111	4 149	-	-	-
70	-	-	-	-	5 008	5 065	-	-	-
73	-	-	-	-	5 307	5 371	-	-	-

Current consumption in A

22	6.70	6.81	6.92	7.02	7.11	-	-	-	-
30	-	8.15	8.27	8.38	8.47	8.52	-	-	-
40	-	-	10.24	10.38	10.48	10.55	10.57	-	-
50	-	-	12.59	12.77	12.91	13.01	13.05	-	-
60	-	-	-	15.62	15.82	15.97	-	-	-
70	-	-	-	-	19.28	19.50	-	-	-
73	-	-	-	-	20.43	20.67	-	-	-

Mass flow in kg/h

22	124	157	195	240	293	-	-	-	-
30	-	155	194	240	293	354	-	-	-
40	-	-	191	237	291	353	425	-	-
50	-	-	187	233	287	350	423	-	-
60	-	-	-	226	280	343	-	-	-
70	-	-	-	-	271	333	-	-	-
73	-	-	-	-	267	330	-	-	-

Coefficient of performance (C.O.P.)

22	3.75	4.62	5.64	6.80	8.13	-	-	-	-
30	-	3.59	4.40	5.34	6.41	7.63	-	-	-
40	-	-	3.20	3.90	4.70	5.62	6.67	-	-
50	-	-	2.30	2.81	3.40	4.07	4.84	-	-
60	-	-	-	1.98	2.40	2.88	-	-	-
70	-	-	-	-	1.65	1.98	-	-	-
73	-	-	-	-	1.46	1.76	-	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	-	W
Power input	-	W
Current consumption	-	A
Mass flow	-	kg/h
C.O.P.	-	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	23.6	bar(g)
Minimum LP switch setting	0.45	bar(g)
LP pump down setting	0.85	bar(g)

Sound power data

Sound power level	71	dB(A)
With acoustic hood	63	dB(A)

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Superheat = 10 K
R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

22	7 837	9 880	12 290	15 078	18 256	-	-	-	-
30	7 220	9 159	11 453	14 113	17 153	20 583	-	-	-
40	6 336	8 113	10 232	12 703	15 539	18 751	22 352	-	-
50	-	6 976	8 886	11 134	13 732	16 692	20 027	-	-
60	-	-	7 489	9 480	11 807	14 482	17 516	-	-
70	-	-	-	7 815	9 837	12 192	14 893	-	-
73	-	-	-	7 325	9 249	11 502	14 095	-	-

Power input in W

22	2 179	2 223	2 278	2 346	2 430	-	-	-	-
30	2 560	2 608	2 659	2 716	2 783	2 862	-	-	-
40	3 137	3 200	3 257	3 312	3 368	3 426	3 491	-	-
50	-	3 919	3 994	4 058	4 114	4 164	4 212	-	-
60	-	-	4 871	4 955	5 023	5 077	5 120	-	-
70	-	-	-	6 008	6 100	6 169	6 218	-	-
73	-	-	-	6 354	6 455	6 531	6 585	-	-

Current consumption in A

22	6.84	6.98	7.15	7.36	7.62	-	-	-	-
30	8.03	8.18	8.34	8.52	8.73	8.98	-	-	-
40	9.84	10.04	10.22	10.39	10.57	10.75	10.95	-	-
50	-	12.30	12.53	12.73	12.91	13.07	13.22	-	-
60	-	-	15.28	15.55	15.76	15.93	16.07	-	-
70	-	-	-	18.85	19.14	19.36	19.51	-	-
73	-	-	-	19.94	20.26	20.49	20.66	-	-

Mass flow in kg/h

22	168	208	254	307	367	-	-	-	-
30	168	207	254	307	367	433	-	-	-
40	166	204	250	303	364	431	504	-	-
50	-	197	243	296	357	425	499	-	-
60	-	-	234	287	348	416	491	-	-
70	-	-	-	276	337	405	481	-	-
73	-	-	-	273	333	402	477	-	-

Coefficient of performance (C.O.P.)

22	3.60	4.44	5.40	6.43	7.51	-	-	-	-
30	2.82	3.51	4.31	5.20	6.16	7.19	-	-	-
40	2.02	2.54	3.14	3.84	4.61	5.47	6.40	-	-
50	-	1.78	2.22	2.74	3.34	4.01	4.75	-	-
60	-	-	1.54	1.91	2.35	2.85	3.42	-	-
70	-	-	-	1.30	1.61	1.98	2.40	-	-
73	-	-	-	1.15	1.43	1.76	2.14	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	7 551	W
Power input	3 543	W
Current consumption	11.12	A
Mass flow	201	kg/h
C.O.P.	2.13	

Pressure switch settings

Maximum HP switch setting	23.6	bar(g)
Minimum LP switch setting	0.45	bar(g)
LP pump down setting	0.85	bar(g)

Sound power data

Sound power level	75	dB(A)
With acoustic hood	67	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

22	7 962	9 995	12 384	15 143	18 286	-	-	-	-
30	-	9 328	11 600	14 223	17 211	20 583	-	-	-
40	-	-	10 442	12 867	15 631	18 751	22 247	-	-
50	-	-	9 156	11 349	13 858	16 692	19 867	-	-
60	-	-	-	9 745	11 965	14 482	-	-	-
70	-	-	-	-	10 027	12 192	-	-	-
73	-	-	-	-	9 448	11 502	-	-	-

Power input in W

22	2 179	2 223	2 278	2 346	2 430	-	-	-	-
30	-	2 608	2 659	2 716	2 783	2 862	-	-	-
40	-	-	3 257	3 312	3 368	3 426	3 491	-	-
50	-	-	3 994	4 058	4 114	4 164	4 212	-	-
60	-	-	-	4 955	5 023	5 077	-	-	-
70	-	-	-	-	6 100	6 169	-	-	-
73	-	-	-	-	6 455	6 531	-	-	-

Current consumption in A

22	6.84	6.98	7.15	7.36	7.62	-	-	-	-
30	-	8.18	8.34	8.52	8.73	8.98	-	-	-
40	-	-	10.22	10.39	10.57	10.75	10.95	-	-
50	-	-	12.53	12.73	12.91	13.07	13.22	-	-
60	-	-	-	15.55	15.76	15.93	-	-	-
70	-	-	-	-	19.14	19.36	-	-	-
73	-	-	-	-	20.26	20.49	-	-	-

Mass flow in kg/h

22	152	191	238	294	358	-	-	-	-
30	-	190	237	293	359	433	-	-	-
40	-	-	234	290	355	431	517	-	-
50	-	-	227	283	349	425	512	-	-
60	-	-	-	274	340	416	-	-	-
70	-	-	-	-	329	405	-	-	-
73	-	-	-	-	326	402	-	-	-

Coefficient of performance (C.O.P.)

22	3.65	4.50	5.44	6.46	7.53	-	-	-	-
30	-	3.58	4.36	5.24	6.18	7.19	-	-	-
40	-	-	3.21	3.88	4.64	5.47	6.37	-	-
50	-	-	2.29	2.80	3.37	4.01	4.72	-	-
60	-	-	-	1.97	2.38	2.85	-	-	-
70	-	-	-	-	1.64	1.98	-	-	-
73	-	-	-	-	1.46	1.76	-	-	-

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	-	W
Power input	-	W
Current consumption	-	A
Mass flow	-	kg/h
C.O.P.	-	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	23.6	bar(g)
Minimum LP switch setting	0.45	bar(g)
LP pump down setting	0.85	bar(g)

Sound power data

Sound power level	75	dB(A)
With acoustic hood	67	dB(A)

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R404A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 429	9 294	11 479	14 040	17 032	-	-	-	-
20	6 790	8 536	10 547	12 878	15 585	18 722	22 344	-	-
30	6 014	7 624	9 444	11 528	13 933	16 713	19 923	23 618	27 851
40	-	6 567	8 179	9 999	12 085	14 491	17 273	20 486	24 183
50	-	-	6 762	8 302	10 052	12 068	14 404	17 118	20 263
60	-	-	-	-	7 844	9 452	11 327	13 526	16 104

Power input in W

10	2 326	2 343	2 358	2 367	2 363	-	-	-	-
20	2 922	2 938	2 957	2 974	2 984	2 981	2 962	-	-
30	3 668	3 671	3 682	3 696	3 708	3 714	3 707	3 684	3 638
40	-	4 624	4 616	4 616	4 620	4 622	4 617	4 600	4 566
50	-	-	5 841	5 816	5 800	5 787	5 773	5 752	5 718
60	-	-	-	-	7 331	7 293	7 257	7 221	7 177

Current consumption in A

10	9.59	9.66	9.73	9.76	9.74	-	-	-	-
20	12.05	12.12	12.19	12.26	12.30	12.29	12.21	-	-
30	15.13	15.14	15.18	15.24	15.29	15.32	15.29	15.19	15.00
40	-	19.07	19.03	19.04	19.05	19.06	19.04	18.97	18.83
50	-	-	24.09	23.98	23.92	23.87	23.81	23.72	23.58
60	-	-	-	-	30.23	30.07	29.93	29.78	29.60

Mass flow in kg/h

10	133	179	229	286	351	-	-	-	-
20	140	184	233	289	353	428	514	-	-
30	143	185	232	286	349	423	510	610	727
40	-	181	226	278	340	413	500	600	717
50	-	-	216	266	327	399	485	585	703
60	-	-	-	-	310	381	466	566	683

Coefficient of performance (C.O.P.)

10	3.19	3.97	4.87	5.93	7.21	-	-	-	-
20	2.32	2.91	3.57	4.33	5.22	6.28	7.54	-	-
30	1.64	2.08	2.57	3.12	3.76	4.50	5.37	6.41	7.66
40	-	1.42	1.77	2.17	2.62	3.14	3.74	4.45	5.30
50	-	-	1.16	1.43	1.73	2.09	2.50	2.98	3.54
60	-	-	-	-	1.07	1.30	1.56	1.87	2.24

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	11 091	W
Power input	5 171	W
Current consumption	21.33	A
Mass flow	334	kg/h
C.O.P.	2.14	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level	71	dB(A)
With acoustic hood	63	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Superheat = 10 K
R404A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 139	8 995	11 186	13 770	16 804	-	-	-	-
20	6 385	8 107	10 112	12 460	15 209	18 415	22 131	-	-
30	5 500	7 067	8 868	10 962	13 408	16 266	19 593	23 440	27 851
40	4 501	5 892	7 469	9 291	11 416	13 906	16 825	20 233	24 183
50	-	-	5 932	7 460	9 245	11 349	13 840	16 789	20 263
60	-	-	-	-	6 903	8 600	10 644	13 116	16 104

Power input in W

10	2 326	2 343	2 358	2 367	2 363	-	-	-	-
20	2 922	2 938	2 957	2 974	2 984	2 981	2 962	-	-
30	3 668	3 671	3 682	3 696	3 708	3 714	3 707	3 684	3 638
40	4 645	4 624	4 616	4 616	4 620	4 622	4 617	4 600	4 566
50	-	-	5 841	5 816	5 800	5 787	5 773	5 752	5 718
60	-	-	-	-	7 331	7 293	7 257	7 221	7 177

Current consumption in A

10	9.59	9.66	9.73	9.76	9.74	-	-	-	-
20	12.05	12.12	12.19	12.26	12.30	12.29	12.21	-	-
30	15.13	15.14	15.18	15.24	15.29	15.32	15.29	15.19	15.00
40	19.16	19.07	19.03	19.04	19.05	19.06	19.04	18.97	18.83
50	-	-	24.09	23.98	23.92	23.87	23.81	23.72	23.58
60	-	-	-	-	30.23	30.07	29.93	29.78	29.60

Mass flow in kg/h

10	158	209	263	322	387	-	-	-	-
20	167	216	268	325	390	462	543	-	-
30	170	216	266	322	386	457	538	628	727
40	169	211	259	313	376	447	528	618	717
50	-	-	247	300	361	431	512	603	703
60	-	-	-	-	342	412	492	583	683

Coefficient of performance (C.O.P.)

10	3.07	3.84	4.74	5.82	7.11	-	-	-	-
20	2.19	2.76	3.42	4.19	5.10	6.18	7.47	-	-
30	1.50	1.93	2.41	2.97	3.62	4.38	5.28	6.36	7.66
40	0.97	1.27	1.62	2.01	2.47	3.01	3.64	4.40	5.30
50	-	-	1.02	1.28	1.59	1.96	2.40	2.92	3.54
60	-	-	-	-	0.94	1.18	1.47	1.82	2.24

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 352	W
Power input	5 171	W
Current consumption	21.33	A
Mass flow	369	kg/h
C.O.P.	2.00	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level	71	dB(A)
With acoustic hood	63	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R404A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	9 328	11 556	14 253	17 436	21 125	-	-	-	-
20	8 389	10 406	12 842	15 713	19 038	22 834	27 119	-	-
30	7 475	9 269	11 431	13 977	16 927	20 298	24 107	28 371	33 106
40	-	8 059	9 935	12 144	14 707	17 640	20 961	24 688	28 837
50	-	-	8 268	10 129	12 292	14 775	17 597	20 775	24 328
60	-	-	-	-	9 598	11 620	13 931	16 550	19 496

Power input in W

10	2 762	2 774	2 806	2 842	2 866	-	-	-	-
20	3 433	3 444	3 481	3 527	3 568	3 587	3 567	-	-
30	4 312	4 313	4 346	4 395	4 444	4 477	4 478	4 431	4 319
40	-	5 411	5 432	5 475	5 525	5 564	5 577	5 548	5 460
50	-	-	6 769	6 798	6 839	6 876	6 893	6 874	6 803
60	-	-	-	-	8 418	8 445	8 457	8 439	8 375

Current consumption in A

10	8.67	8.70	8.80	8.92	8.99	-	-	-	-
20	10.77	10.81	10.92	11.07	11.20	11.25	11.19	-	-
30	13.53	13.53	13.64	13.79	13.95	14.05	14.05	13.90	13.55
40	-	16.98	17.04	17.18	17.34	17.46	17.50	17.41	17.13
50	-	-	21.24	21.33	21.46	21.58	21.63	21.57	21.34
60	-	-	-	-	26.41	26.50	26.54	26.48	26.28

Mass flow in kg/h

10	161	219	284	356	437	-	-	-	-
20	170	224	284	352	431	522	626	-	-
30	174	225	281	347	423	512	616	735	873
40	-	221	275	339	413	501	604	723	861
50	-	-	264	326	399	486	589	709	848
60	-	-	-	-	381	468	571	692	833

Coefficient of performance (C.O.P.)

10	3.38	4.17	5.08	6.13	7.37	-	-	-	-
20	2.44	3.02	3.69	4.45	5.34	6.37	7.60	-	-
30	1.73	2.15	2.63	3.18	3.81	4.53	5.38	6.40	7.67
40	-	1.49	1.83	2.22	2.66	3.17	3.76	4.45	5.28
50	-	-	1.22	1.49	1.80	2.15	2.55	3.02	3.58
60	-	-	-	-	1.14	1.38	1.65	1.96	2.33

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	13 529	W
Power input	6 151	W
Current consumption	19.30	A
Mass flow	407	kg/h
C.O.P.	2.20	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level	75	dB(A)
With acoustic hood	67	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Superheat = 10 K
R404A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	8 964	11 183	13 888	17 101	20 842	-	-	-	-
20	7 889	9 882	12 312	15 203	18 579	22 460	26 861	-	-
30	6 836	8 592	10 734	13 291	16 290	19 755	23 707	28 157	33 106
40	5 726	7 231	9 073	11 283	13 892	16 928	20 417	24 383	28 837
50	-	-	7 253	9 102	11 304	13 895	16 908	20 376	24 328
60	-	-	-	-	8 446	10 571	13 090	16 049	19 496

Power input in W

10	2 762	2 774	2 806	2 842	2 866	-	-	-	-
20	3 433	3 444	3 481	3 527	3 568	3 587	3 567	-	-
30	4 312	4 313	4 346	4 395	4 444	4 477	4 478	4 431	4 319
40	5 429	5 411	5 432	5 475	5 525	5 564	5 577	5 548	5 460
50	-	-	6 769	6 798	6 839	6 876	6 893	6 874	6 803
60	-	-	-	-	8 418	8 445	8 457	8 439	8 375

Current consumption in A

10	8.67	8.70	8.80	8.92	8.99	-	-	-	-
20	10.77	10.81	10.92	11.07	11.20	11.25	11.19	-	-
30	13.53	13.53	13.64	13.79	13.95	14.05	14.05	13.90	13.55
40	17.03	16.98	17.04	17.18	17.34	17.46	17.50	17.41	17.13
50	-	-	21.24	21.33	21.46	21.58	21.63	21.57	21.34
60	-	-	-	-	26.41	26.50	26.54	26.48	26.28

Mass flow in kg/h

10	192	257	326	400	483	-	-	-	-
20	202	262	326	397	476	564	662	-	-
30	208	263	323	391	468	554	650	757	873
40	207	258	316	381	456	541	637	744	861
50	-	-	303	367	441	526	622	730	848
60	-	-	-	-	420	506	603	713	833

Coefficient of performance (C.O.P.)

10	3.25	4.03	4.95	6.02	7.27	-	-	-	-
20	2.30	2.87	3.54	4.31	5.21	6.26	7.53	-	-
30	1.59	1.99	2.47	3.02	3.67	4.41	5.29	6.35	7.67
40	1.05	1.34	1.67	2.06	2.51	3.04	3.66	4.39	5.28
50	-	-	1.07	1.34	1.65	2.02	2.45	2.96	3.58
60	-	-	-	-	1.00	1.25	1.55	1.90	2.33

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 627	W
Power input	6 151	W
Current consumption	19.30	A
Mass flow	449	kg/h
C.O.P.	2.05	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level	75	dB(A)
With acoustic hood	67	dB(A)

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R448A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	6 383	8 045	10 042	12 424	15 239	-	-	-	-
20	5 722	7 318	9 210	11 447	14 078	17 152	20 718	-	-
30	-	-	8 254	10 314	12 727	15 544	18 814	22 585	26 907
40	-	-	-	9 059	11 222	13 750	16 690	20 092	24 006
50	-	-	-	-	9 598	11 803	14 381	17 382	20 854
60	-	-	-	-	-	-	11 923	14 489	17 487

Power input in W

10	2 192	2 182	2 189	2 210	2 242	-	-	-	-
20	2 826	2 790	2 776	2 782	2 808	2 849	2 905	-	-
30	-	-	3 536	3 511	3 511	3 534	3 579	3 642	3 722
40	-	-	-	4 504	4 462	4 449	4 465	4 506	4 570
50	-	-	-	-	5 770	5 704	5 672	5 673	5 704
60	-	-	-	-	-	-	7 311	7 254	7 234

Current consumption in A

10	13.17	13.07	13.03	13.01	13.00	-	-	-	-
20	14.12	14.06	14.06	14.10	14.15	14.21	14.25	-	-
30	-	-	15.45	15.49	15.55	15.63	15.70	15.75	15.74
40	-	-	-	17.60	17.62	17.67	17.72	17.75	17.74
50	-	-	-	-	20.78	20.74	20.71	20.67	20.61
60	-	-	-	-	-	-	25.10	24.94	24.77

Mass flow in kg/h

10	104	132	166	206	253	-	-	-	-
20	100	129	163	203	251	308	375	-	-
30	-	-	158	198	246	302	370	449	542
40	-	-	-	190	237	294	360	439	531
50	-	-	-	-	226	281	347	425	516
60	-	-	-	-	-	-	329	406	495

Coefficient of performance (C.O.P.)

10	2.91	3.69	4.59	5.62	6.80	-	-	-	-
20	2.02	2.62	3.32	4.11	5.01	6.02	7.13	-	-
30	-	-	2.33	2.94	3.63	4.40	5.26	6.20	7.23
40	-	-	-	2.01	2.52	3.09	3.74	4.46	5.25
50	-	-	-	-	1.66	2.07	2.54	3.06	3.66
60	-	-	-	-	-	-	1.63	2.00	2.42

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 423	W
Power input	5 064	W
Current consumption	19.04	A
Mass flow	232	kg/h
C.O.P.	2.06	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Superheat = 10 K

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Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	6 410	8 085	10 099	12 501	15 337	-	-	-	-
20	5 671	7 271	9 172	11 424	14 075	17 171	20 756	-	-
30	4 879	6 369	8 122	10 189	12 621	15 466	18 770	22 573	26 907
40	-	-	6 987	8 836	11 015	13 574	16 563	20 027	24 006
50	-	-	-	7 402	9 294	11 533	14 172	17 263	20 854
60	-	-	-	-	7 494	9 379	11 634	14 318	17 487

Power input in W

10	2 192	2 182	2 189	2 210	2 242	-	-	-	-
20	2 826	2 790	2 776	2 782	2 808	2 849	2 905	-	-
30	3 671	3 588	3 536	3 511	3 511	3 534	3 579	3 642	3 722
40	-	-	4 579	4 504	4 462	4 449	4 465	4 506	4 570
50	-	-	-	5 873	5 770	5 704	5 672	5 673	5 704
60	-	-	-	-	7 546	7 407	7 311	7 254	7 234

Current consumption in A

10	13.17	13.07	13.03	13.01	13.00	-	-	-	-
20	14.12	14.06	14.06	14.10	14.15	14.21	14.25	-	-
30	15.55	15.47	15.45	15.49	15.55	15.63	15.70	15.75	15.74
40	-	-	17.62	17.60	17.62	17.67	17.72	17.75	17.74
50	-	-	-	20.86	20.78	20.74	20.71	20.67	20.61
60	-	-	-	-	25.45	25.26	25.10	24.94	24.77

Mass flow in kg/h

10	123	154	189	230	278	-	-	-	-
20	119	150	186	227	275	331	395	-	-
30	113	144	180	221	270	325	389	461	542
40	-	-	172	213	260	316	379	451	531
50	-	-	-	201	248	302	365	436	516
60	-	-	-	-	232	285	346	417	495

Coefficient of performance (C.O.P.)

10	2.92	3.70	4.61	5.66	6.84	-	-	-	-
20	2.01	2.61	3.30	4.11	5.01	6.03	7.15	-	-
30	1.33	1.77	2.30	2.90	3.59	4.38	5.24	6.20	7.23
40	-	-	1.53	1.96	2.47	3.05	3.71	4.44	5.25
50	-	-	-	1.26	1.61	2.02	2.50	3.04	3.66
60	-	-	-	-	0.99	1.27	1.59	1.97	2.42

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 167	W
Power input	5 064	W
Current consumption	19.04	A
Mass flow	255	kg/h
C.O.P.	2.01	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R448A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 738	9 767	12 204	15 110	18 543	-	-	-	-
20	6 938	8 887	11 196	13 926	17 137	20 889	25 242	-	-
30	-	-	10 065	12 583	15 535	18 981	22 980	27 593	32 880
40	-	-	-	11 114	13 770	16 872	20 481	24 657	29 459
50	-	-	-	-	11 874	14 596	17 778	21 480	25 760
60	-	-	-	-	-	-	14 904	18 094	21 816

Power input in W

10	2 485	2 525	2 578	2 644	2 725	-	-	-	-
20	3 168	3 190	3 229	3 284	3 356	3 446	3 554	-	-
30	-	-	4 085	4 115	4 166	4 237	4 331	4 446	4 584
40	-	-	-	5 237	5 253	5 294	5 359	5 449	5 565
50	-	-	-	-	6 718	6 713	6 737	6 789	6 870
60	-	-	-	-	-	-	8 564	8 564	8 597

Current consumption in A

10	11.55	11.64	11.74	11.83	11.87	-	-	-	-
20	12.93	13.01	13.13	13.29	13.45	13.59	13.68	-	-
30	-	-	14.80	14.92	15.08	15.27	15.45	15.60	15.69
40	-	-	-	17.23	17.28	17.40	17.56	17.73	17.89
50	-	-	-	-	20.57	20.51	20.54	20.62	20.72
60	-	-	-	-	-	-	24.90	24.77	24.72

Mass flow in kg/h

10	126	160	201	250	308	-	-	-	-
20	122	157	198	247	305	375	457	-	-
30	-	-	192	241	300	369	452	549	662
40	-	-	-	233	291	360	442	539	652
50	-	-	-	-	279	348	429	525	637
60	-	-	-	-	-	-	412	506	617

Coefficient of performance (C.O.P.)

10	3.11	3.87	4.73	5.71	6.81	-	-	-	-
20	2.19	2.79	3.47	4.24	5.11	6.06	7.10	-	-
30	-	-	2.46	3.06	3.73	4.48	5.31	6.21	7.17
40	-	-	-	2.12	2.62	3.19	3.82	4.52	5.29
50	-	-	-	-	1.77	2.17	2.64	3.16	3.75
60	-	-	-	-	-	-	1.74	2.11	2.54

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 836	W
Power input	5 932	W
Current consumption	18.76	A
Mass flow	286	kg/h
C.O.P.	2.16	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Superheat = 10 K
R448A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 770	9 815	12 273	15 203	18 662	-	-	-	-
20	6 878	8 829	11 149	13 897	17 133	20 913	25 289	-	-
30	5 942	7 761	9 903	12 431	15 406	18 885	22 926	27 578	32 880
40	-	-	8 572	10 841	13 515	16 657	20 325	24 577	29 459
50	-	-	-	9 162	11 498	14 262	17 520	21 333	25 760
60	-	-	-	-	9 386	11 735	14 543	17 880	21 816

Power input in W

10	2 485	2 525	2 578	2 644	2 725	-	-	-	-
20	3 168	3 190	3 229	3 284	3 356	3 446	3 554	-	-
30	4 084	4 074	4 085	4 115	4 166	4 237	4 331	4 446	4 584
40	-	-	5 245	5 237	5 253	5 294	5 359	5 449	5 565
50	-	-	-	6 750	6 718	6 713	6 737	6 789	6 870
60	-	-	-	-	8 658	8 595	8 564	8 564	8 597

Current consumption in A

10	11.55	11.64	11.74	11.83	11.87	-	-	-	-
20	12.93	13.01	13.13	13.29	13.45	13.59	13.68	-	-
30	14.82	14.76	14.80	14.92	15.08	15.27	15.45	15.60	15.69
40	-	-	17.27	17.23	17.28	17.40	17.56	17.73	17.89
50	-	-	-	20.74	20.57	20.51	20.54	20.62	20.72
60	-	-	-	-	25.48	25.12	24.90	24.77	24.72

Mass flow in kg/h

10	149	186	230	280	338	-	-	-	-
20	144	182	226	276	335	403	481	-	-
30	138	176	219	270	329	397	475	564	662
40	-	-	211	261	320	387	465	553	652
50	-	-	-	249	307	374	451	539	637
60	-	-	-	-	290	356	433	520	617

Coefficient of performance (C.O.P.)

10	3.13	3.89	4.76	5.75	6.85	-	-	-	-
20	2.17	2.77	3.45	4.23	5.11	6.07	7.12	-	-
30	1.46	1.90	2.42	3.02	3.70	4.46	5.29	6.20	7.17
40	-	-	1.63	2.07	2.57	3.15	3.79	4.51	5.29
50	-	-	-	1.36	1.71	2.12	2.60	3.14	3.75
60	-	-	-	-	1.08	1.37	1.70	2.09	2.54

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 520	W
Power input	5 932	W
Current consumption	18.76	A
Mass flow	314	kg/h
C.O.P.	2.11	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Suction temp. = 20 °C

R449A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	6 383	8 045	10 042	12 424	15 239	-	-	-	-
20	5 722	7 318	9 210	11 447	14 078	17 152	20 718	-	-
30	-	-	8 254	10 314	12 727	15 544	18 814	22 585	26 907
40	-	-	-	9 059	11 222	13 750	16 690	20 092	24 006
50	-	-	-	-	9 598	11 803	14 381	17 382	20 854
60	-	-	-	-	-	-	11 923	14 489	17 487

Power input in W

10	2 192	2 182	2 189	2 210	2 242	-	-	-	-
20	2 826	2 790	2 776	2 782	2 808	2 849	2 905	-	-
30	-	-	3 536	3 511	3 511	3 534	3 579	3 642	3 722
40	-	-	-	4 504	4 462	4 449	4 465	4 506	4 570
50	-	-	-	-	5 770	5 704	5 672	5 673	5 704
60	-	-	-	-	-	-	7 311	7 254	7 234

Current consumption in A

10	13.17	13.07	13.03	13.01	13.00	-	-	-	-
20	14.12	14.06	14.06	14.10	14.15	14.21	14.25	-	-
30	-	-	15.45	15.49	15.55	15.63	15.70	15.75	15.74
40	-	-	-	17.60	17.62	17.67	17.72	17.75	17.74
50	-	-	-	-	20.78	20.74	20.71	20.67	20.61
60	-	-	-	-	-	-	25.10	24.94	24.77

Mass flow in kg/h

10	104	132	166	206	253	-	-	-	-
20	100	129	163	203	251	308	375	-	-
30	-	-	158	198	246	302	370	449	542
40	-	-	-	190	237	294	360	439	531
50	-	-	-	-	226	281	347	425	516
60	-	-	-	-	-	-	329	406	495

Coefficient of performance (C.O.P.)

10	2.91	3.69	4.59	5.62	6.80	-	-	-	-
20	2.02	2.62	3.32	4.11	5.01	6.02	7.13	-	-
30	-	-	2.33	2.94	3.63	4.40	5.26	6.20	7.23
40	-	-	-	2.01	2.52	3.09	3.74	4.46	5.25
50	-	-	-	-	1.66	2.07	2.54	3.06	3.66
60	-	-	-	-	-	-	1.63	2.00	2.42

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 423	W
Power input	5 064	W
Current consumption	19.04	A
Mass flow	232	kg/h
C.O.P.	2.06	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Superheat = 10 K
R449A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	6 396	8 070	10 083	12 485	15 323	-	-	-	-
20	5 657	7 255	9 155	11 407	14 059	17 157	20 745	-	-
30	4 864	6 352	8 104	10 172	12 604	15 451	18 758	22 566	26 907
40	-	-	6 969	8 818	10 997	13 558	16 550	20 019	24 006
50	-	-	-	7 383	9 275	11 516	14 159	17 255	20 854
60	-	-	-	-	7 475	9 362	11 620	14 309	17 487

Power input in W

10	2 192	2 182	2 189	2 210	2 242	-	-	-	-
20	2 826	2 790	2 776	2 782	2 808	2 849	2 905	-	-
30	3 671	3 588	3 536	3 511	3 511	3 534	3 579	3 642	3 722
40	-	-	4 579	4 504	4 462	4 449	4 465	4 506	4 570
50	-	-	-	5 873	5 770	5 704	5 672	5 673	5 704
60	-	-	-	-	7 546	7 407	7 311	7 254	7 234

Current consumption in A

10	13.17	13.07	13.03	13.01	13.00	-	-	-	-
20	14.12	14.06	14.06	14.10	14.15	14.21	14.25	-	-
30	15.55	15.47	15.45	15.49	15.55	15.63	15.70	15.75	15.74
40	-	-	17.62	17.60	17.62	17.67	17.72	17.75	17.74
50	-	-	-	20.86	20.78	20.74	20.71	20.67	20.61
60	-	-	-	-	25.45	25.26	25.10	24.94	24.77

Mass flow in kg/h

10	123	154	189	230	278	-	-	-	-
20	119	150	186	227	275	331	395	-	-
30	113	144	180	221	270	325	389	461	542
40	-	-	172	213	260	316	379	451	531
50	-	-	-	201	248	302	365	436	516
60	-	-	-	-	232	285	346	417	495

Coefficient of performance (C.O.P.)

10	2.92	3.70	4.61	5.65	6.83	-	-	-	-
20	2.00	2.60	3.30	4.10	5.01	6.02	7.14	-	-
30	1.33	1.77	2.29	2.90	3.59	4.37	5.24	6.20	7.23
40	-	-	1.52	1.96	2.46	3.05	3.71	4.44	5.25
50	-	-	-	1.26	1.61	2.02	2.50	3.04	3.66
60	-	-	-	-	0.99	1.26	1.59	1.97	2.42

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 148	W
Power input	5 064	W
Current consumption	19.04	A
Mass flow	255	kg/h
C.O.P.	2.00	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R449A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 738	9 767	12 204	15 110	18 543	-	-	-	-
20	6 938	8 887	11 196	13 926	17 137	20 889	25 242	-	-
30	-	-	10 065	12 583	15 535	18 981	22 980	27 593	32 880
40	-	-	-	11 114	13 770	16 872	20 481	24 657	29 459
50	-	-	-	-	11 874	14 596	17 778	21 480	25 760
60	-	-	-	-	-	-	14 904	18 094	21 816

Power input in W

10	2 485	2 525	2 578	2 644	2 725	-	-	-	-
20	3 168	3 190	3 229	3 284	3 356	3 446	3 554	-	-
30	-	-	4 085	4 115	4 166	4 237	4 331	4 446	4 584
40	-	-	-	5 237	5 253	5 294	5 359	5 449	5 565
50	-	-	-	-	6 718	6 713	6 737	6 789	6 870
60	-	-	-	-	-	-	8 564	8 564	8 597

Current consumption in A

10	11.55	11.64	11.74	11.83	11.87	-	-	-	-
20	12.93	13.01	13.13	13.29	13.45	13.59	13.68	-	-
30	-	-	14.80	14.92	15.08	15.27	15.45	15.60	15.69
40	-	-	-	17.23	17.28	17.40	17.56	17.73	17.89
50	-	-	-	-	20.57	20.51	20.54	20.62	20.72
60	-	-	-	-	-	-	24.90	24.77	24.72

Mass flow in kg/h

10	128	163	205	254	313	-	-	-	-
20	124	159	201	251	311	381	465	-	-
30	-	-	196	246	305	376	460	559	674
40	-	-	-	238	297	367	451	550	665
50	-	-	-	-	285	355	438	536	650
60	-	-	-	-	-	-	421	518	631

Coefficient of performance (C.O.P.)

10	3.11	3.87	4.73	5.71	6.81	-	-	-	-
20	2.19	2.79	3.47	4.24	5.11	6.06	7.10	-	-
30	-	-	2.46	3.06	3.73	4.48	5.31	6.21	7.17
40	-	-	-	2.12	2.62	3.19	3.82	4.52	5.29
50	-	-	-	-	1.77	2.17	2.64	3.16	3.75
60	-	-	-	-	-	-	1.74	2.11	2.54

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 836	W
Power input	5 932	W
Current consumption	18.76	A
Mass flow	291	kg/h
C.O.P.	2.16	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Superheat = 10 K

R449A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 753	9 797	12 254	15 184	18 645	-	-	-	-
20	6 860	8 810	11 129	13 877	17 114	20 896	25 276	-	-
30	5 924	7 741	9 882	12 410	15 385	18 867	22 912	27 570	32 880
40	-	-	8 549	10 818	13 493	16 637	20 310	24 568	29 459
50	-	-	-	9 138	11 474	14 241	17 503	21 323	25 760
60	-	-	-	-	9 362	11 714	14 526	17 870	21 816

Power input in W

10	2 485	2 525	2 578	2 644	2 725	-	-	-	-
20	3 168	3 190	3 229	3 284	3 356	3 446	3 554	-	-
30	4 084	4 074	4 085	4 115	4 166	4 237	4 331	4 446	4 584
40	-	-	5 245	5 237	5 253	5 294	5 359	5 449	5 565
50	-	-	-	6 750	6 718	6 713	6 737	6 789	6 870
60	-	-	-	-	8 658	8 595	8 564	8 564	8 597

Current consumption in A

10	11.55	11.64	11.74	11.83	11.87	-	-	-	-
20	12.93	13.01	13.13	13.29	13.45	13.59	13.68	-	-
30	14.82	14.76	14.80	14.92	15.08	15.27	15.45	15.60	15.69
40	-	-	17.27	17.23	17.28	17.40	17.56	17.73	17.89
50	-	-	-	20.74	20.57	20.51	20.54	20.62	20.72
60	-	-	-	-	25.48	25.12	24.90	24.77	24.72

Mass flow in kg/h

10	151	190	233	284	344	-	-	-	-
20	147	185	229	281	341	410	489	-	-
30	140	179	223	275	335	404	484	574	674
40	-	-	215	266	326	395	475	565	665
50	-	-	-	254	313	382	461	551	650
60	-	-	-	-	296	364	443	532	631

Coefficient of performance (C.O.P.)

10	3.12	3.88	4.75	5.74	6.84	-	-	-	-
20	2.17	2.76	3.45	4.23	5.10	6.06	7.11	-	-
30	1.45	1.90	2.42	3.02	3.69	4.45	5.29	6.20	7.17
40	-	-	1.63	2.07	2.57	3.14	3.79	4.51	5.29
50	-	-	-	1.35	1.71	2.12	2.60	3.14	3.75
60	-	-	-	-	1.08	1.36	1.70	2.09	2.54

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 498	W
Power input	5 932	W
Current consumption	18.76	A
Mass flow	320	kg/h
C.O.P.	2.11	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R452A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 259	8 993	11 087	13 583	16 523	-	-	-	-
20	6 491	8 157	10 143	12 490	15 239	18 434	22 116	-	-
30	-	7 219	9 045	11 191	13 700	16 613	19 972	23 820	28 199
40	-	-	7 827	9 721	11 937	14 517	17 503	20 936	24 860
50	-	-	-	-	9 986	12 181	14 742	17 709	21 126
60	-	-	-	-	-	9 639	11 723	14 173	17 033

Power input in W

10	2 219	2 228	2 239	2 253	2 266	-	-	-	-
20	2 827	2 830	2 841	2 857	2 877	2 900	2 923	-	-
30	-	3 588	3 589	3 600	3 619	3 644	3 674	3 708	3 742
40	-	-	4 575	4 571	4 581	4 600	4 629	4 664	4 705
50	-	-	-	-	5 853	5 859	5 877	5 906	5 945
60	-	-	-	-	-	7 509	7 509	7 524	7 552

Current consumption in A

10	12.84	12.99	13.12	13.23	13.33	-	-	-	-
20	13.97	14.05	14.11	14.16	14.22	14.27	14.34	-	-
30	-	15.57	15.58	15.59	15.61	15.65	15.71	15.79	15.91
40	-	-	17.75	17.74	17.74	17.77	17.84	17.94	18.08
50	-	-	-	-	20.82	20.86	20.95	21.08	21.27
60	-	-	-	-	-	25.14	25.26	25.44	25.68

Mass flow in kg/h

10	146	184	228	280	342	-	-	-	-
20	143	181	226	279	342	417	505	-	-
30	-	176	220	274	337	413	502	607	730
40	-	-	212	265	328	403	493	598	721
50	-	-	-	-	314	388	477	582	704
60	-	-	-	-	-	367	455	558	680

Coefficient of performance (C.O.P.)

10	3.27	4.04	4.95	6.03	7.29	-	-	-	-
20	2.30	2.88	3.57	4.37	5.30	6.36	7.57	-	-
30	-	2.01	2.52	3.11	3.79	4.56	5.44	6.42	7.54
40	-	-	1.71	2.13	2.61	3.16	3.78	4.49	5.28
50	-	-	-	-	1.71	2.08	2.51	3.00	3.55
60	-	-	-	-	-	1.28	1.56	1.88	2.26

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 983	W
Power input	5 172	W
Current consumption	19.15	A
Mass flow	322	kg/h
C.O.P.	2.12	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Tolerance according EN12900

Performance data at 50 Hz, EN 12900 rating conditions, Superheat = 10 K
R452A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	7 024	8 755	10 856	13 373	16 348	-	-	-	-
20	6 160	7 808	9 788	12 148	14 932	18 185	21 945	-	-
30	5 252	6 764	8 571	10 720	13 260	16 237	19 694	23 672	28 199
40	4 335	5 659	7 240	9 128	11 370	14 018	17 119	20 720	24 860
50	-	-	5 833	7 408	9 301	11 565	14 255	17 425	21 126
60	-	-	-	-	7 079	8 907	11 132	13 818	17 033

Power input in W

10	2 219	2 228	2 239	2 253	2 266	-	-	-	-
20	2 827	2 830	2 841	2 857	2 877	2 900	2 923	-	-
30	3 598	3 588	3 589	3 600	3 619	3 644	3 674	3 708	3 742
40	4 625	4 592	4 575	4 571	4 581	4 600	4 629	4 664	4 705
50	-	-	5 888	5 863	5 853	5 859	5 877	5 906	5 945
60	-	-	-	-	7 527	7 509	7 509	7 524	7 552

Current consumption in A

10	12.84	12.99	13.12	13.23	13.33	-	-	-	-
20	13.97	14.05	14.11	14.16	14.22	14.27	14.34	-	-
30	15.56	15.57	15.58	15.59	15.61	15.65	15.71	15.79	15.91
40	17.82	17.78	17.75	17.74	17.74	17.77	17.84	17.94	18.08
50	-	-	20.85	20.82	20.82	20.86	20.95	21.08	21.27
60	-	-	-	-	25.08	25.14	25.26	25.44	25.68

Mass flow in kg/h

10	173	214	260	314	376	-	-	-	-
20	169	211	258	313	376	449	532	-	-
30	163	205	252	307	371	445	529	624	730
40	154	195	242	297	361	435	519	615	721
50	-	-	228	282	345	418	503	598	704
60	-	-	-	-	323	396	479	574	680

Coefficient of performance (C.O.P.)

10	3.16	3.93	4.85	5.94	7.22	-	-	-	-
20	2.18	2.76	3.45	4.25	5.19	6.27	7.51	-	-
30	1.46	1.89	2.39	2.98	3.66	4.46	5.36	6.38	7.54
40	0.94	1.23	1.58	2.00	2.48	3.05	3.70	4.44	5.28
50	-	-	0.99	1.26	1.59	1.97	2.43	2.95	3.55
60	-	-	-	-	0.94	1.19	1.48	1.84	2.26

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	10 356	W
Power input	5 172	W
Current consumption	19.15	A
Mass flow	354	kg/h
C.O.P.	2.00	

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Suction temp. = 20 °C
R452A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	8 783	10 877	13 408	16 427	19 984	-	-	-	-
20	7 855	9 849	12 229	15 047	18 352	22 196	26 627	-	-
30	-	8 751	10 928	13 491	16 491	19 979	24 004	28 617	33 867
40	-	-	9 524	11 780	14 422	17 501	21 068	25 172	29 864
50	-	-	-	-	12 166	14 783	17 838	21 382	25 464
60	-	-	-	-	-	11 847	14 338	17 269	20 690

Power input in W

10	2 703	2 745	2 783	2 822	2 867	-	-	-	-
20	3 377	3 441	3 491	3 534	3 574	3 618	3 670	-	-
30	-	4 283	4 359	4 418	4 466	4 508	4 551	4 598	4 657
40	-	-	5 424	5 513	5 582	5 636	5 681	5 722	5 766
50	-	-	-	-	6 961	7 039	7 100	7 148	7 189
60	-	-	-	-	-	8 757	8 847	8 914	8 966

Current consumption in A

10	12.40	12.28	12.25	12.31	12.45	-	-	-	-
20	13.51	13.47	13.50	13.57	13.69	13.84	14.01	-	-
30	-	15.04	15.16	15.31	15.46	15.61	15.74	15.85	15.92
40	-	-	17.38	17.63	17.85	18.04	18.18	18.27	18.29
50	-	-	-	-	20.99	21.27	21.46	21.57	21.58
60	-	-	-	-	-	25.40	25.70	25.87	25.91

Mass flow in kg/h

10	177	222	275	338	413	-	-	-	-
20	173	218	272	336	411	502	608	-	-
30	-	213	266	330	406	496	603	729	876
40	-	-	258	321	396	486	593	719	866
50	-	-	-	-	382	471	577	703	849
60	-	-	-	-	-	451	556	680	825

Coefficient of performance (C.O.P.)

10	3.25	3.96	4.82	5.82	6.97	-	-	-	-
20	2.33	2.86	3.50	4.26	5.13	6.14	7.25	-	-
30	-	2.04	2.51	3.05	3.69	4.43	5.28	6.22	7.27
40	-	-	1.76	2.14	2.58	3.11	3.71	4.40	5.18
50	-	-	-	-	1.75	2.10	2.51	2.99	3.54
60	-	-	-	-	-	1.35	1.62	1.94	2.31

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	13 316	W
Power input	6 236	W
Current consumption	19.32	A
Mass flow	390	kg/h
C.O.P.	2.14	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Suction gas temp. = 20 °C , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900

Performance data at 60 Hz, EN 12900 rating conditions, Superheat = 10 K
R452A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-30	-25	-20	-15	-10	-5	0	5	10

Cooling capacity in W

10	8 499	10 588	13 128	16 172	19 773	-	-	-	-
20	7 455	9 427	11 801	14 635	17 982	21 895	26 422	-	-
30	6 398	8 199	10 355	12 923	15 962	19 527	23 670	28 439	33 867
40	5 349	6 926	8 810	11 061	13 737	16 899	20 606	24 912	29 864
50	-	-	7 189	9 070	11 331	14 035	17 250	21 038	25 464
60	-	-	-	-	8 753	10 947	13 615	16 835	20 690

Power input in W

10	2 703	2 745	2 783	2 822	2 867	-	-	-	-
20	3 377	3 441	3 491	3 534	3 574	3 618	3 670	-	-
30	4 184	4 283	4 359	4 418	4 466	4 508	4 551	4 598	4 657
40	5 162	5 309	5 424	5 513	5 582	5 636	5 681	5 722	5 766
50	-	-	6 726	6 858	6 961	7 039	7 100	7 148	7 189
60	-	-	-	-	8 641	8 757	8 847	8 914	8 966

Current consumption in A

10	12.40	12.28	12.25	12.31	12.45	-	-	-	-
20	13.51	13.47	13.50	13.57	13.69	13.84	14.01	-	-
30	14.96	15.04	15.16	15.31	15.46	15.61	15.74	15.85	15.92
40	16.87	17.12	17.38	17.63	17.85	18.04	18.18	18.27	18.29
50	-	-	20.26	20.65	20.99	21.27	21.46	21.57	21.58
60	-	-	-	-	25.00	25.40	25.70	25.87	25.91

Mass flow in kg/h

10	210	259	315	380	455	-	-	-	-
20	205	255	311	377	453	541	641	-	-
30	198	248	305	370	447	535	636	750	876
40	190	239	295	360	436	524	625	739	866
50	-	-	281	345	421	508	608	722	849
60	-	-	-	-	400	486	586	699	825

Coefficient of performance (C.O.P.)

10	3.14	3.86	4.72	5.73	6.90	-	-	-	-
20	2.21	2.74	3.38	4.14	5.03	6.05	7.20	-	-
30	1.53	1.91	2.38	2.92	3.57	4.33	5.20	6.18	7.27
40	1.04	1.30	1.62	2.01	2.46	3.00	3.63	4.35	5.18
50	-	-	1.07	1.32	1.63	1.99	2.43	2.94	3.54
60	-	-	-	-	1.01	1.25	1.54	1.89	2.31

Nominal performance at to = -10 °C, tc = 45 °C

Cooling capacity	12 556	W
Power input	6 236	W
Current consumption	19.32	A
Mass flow	429	kg/h
C.O.P.	2.01	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Pressure switch settings

Maximum HP switch setting	29.7	bar(g)
Minimum LP switch setting	1.4	bar(g)
LP pump down setting	2	bar(g)

Sound power data

Sound power level		dB(A)
With acoustic hood		dB(A)

Tolerance according EN12900