

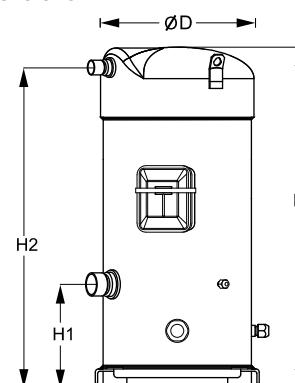
Datasheets

Danfoss scroll compressors **SM / SY / SZ / SH / WSH**



General Characteristics

Model number (on compressor nameplate)		SZ161T4VC
Code number for Singlepack*		SZ161-4VAI
Code number for Industrial pack**		SZ161-4VAM
Drawing number		8551106b
Suction and discharge connections		Brazed
Suction connection		1-3/8" ODF
Discharge connection		7/8" ODF
Oil sight glass		Threaded
Oil equalisation connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		216,6 cm ³ /rev
Displacement @ Nominal speed		37.7 m ³ /h @ 2900 rpm - 45.5 m ³ /h @ 3500 rpm
Net weight		88 kg
Oil charge		3,6 litre, POE - 160SZ
Maximum system test pressure Low Side / High side		25 bar(g) / 32 bar(g)
Maximum differential test pressure		24 bar
Maximum number of starts per hour		12
Refrigerant charge limit		12,5 kg
Approved refrigerants		R407C, R134a, R404A, R507A

Dimensions


D=266 mm

H=591 mm

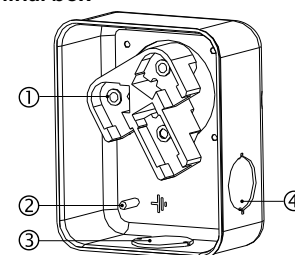
H1=180 mm

H2=556 mm

H3=- mm

Electrical Characteristics

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 25°C	0,94 Ω
Rated Load Amps (RLA)	22.9 A
Maximum Continuous Current (MCC)	32 A
Locked Rotor Amps (LRA)	145 A
Motor protection	Internal overload protector

Terminal box


IP54 (with cable gland)

1: Power connection, 3 x 4.8 mm (3/16")

2: Earth M4-12

3: Knock-out Ø 29 mm (1.14")

4: Knock-out Ø 25.5 mm (1.00")

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	21 Nm

Parts shipped with compressor

Mounting kit with grommets, bolts, nuts, sleeves and washers
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box

**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

Rotolock accessories, suction side
Code no.

Solder sleeve, P10 (1-3/4" Rotolock, 1-3/8" ODF)	8153003
Rotolock valve, V10 (1-3/4" Rotolock, 1-3/8" ODF)	8168022
Gasket, 1-3/4"	8156132

Rotolock accessories, discharge side
Code no.

Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-3/4"	8156132

Rotolock accessories, sets
Code no.

Solder sleeve adapter set (1-3/4" Rotolock, 1-3/8" ODF), (1-1/4" Rotolock, 7/8" ODF)	7765006
Valve set, V10 (1-3/4"~1-3/8"), V05 (1-1/4"~7/8")	7703392
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Oil / lubricants
Code no.

POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	120Z0571

Crankcase heaters
Code no.

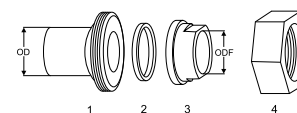
Surface sump heater + bottom insulation, 48 W, 24 V, CE mark, UL	120Z0361
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0380
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0381
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark, UL	120Z0382
Belt type crankcase heater, 65 W, 460 V, CE mark, UL	120Z0466
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	7773117
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	120Z0039

Miscellaneous accessories
Code no.

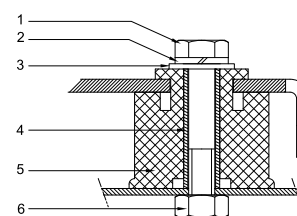
Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S148-S161 (except code 3)	7755017
Bottom insulation for scroll compressor	120Z0356
Discharge thermostat kit	7750009

Spare parts
Code no.

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Service kit for terminal box 96 x 115 mm, including 1 cover, 1 clamp	8156135
T block connector 52 x 57 mm	8173230

Solder sleeve adapter set


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

Mounting kit


- 1: Bolt (4x)
- 2: Lock washer (4x)
- 3: Flat washer (4x)
- 4: Sleeve (4x)
- 5: Grommet (4x)
- 6: Nut (4x)

Performance data at 50 Hz, EN 12900 rating conditions

R407C

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

Cooling capacity in W

30	14 373	18 308	22 989	28 516	34 994	42 523	51 208	61 151	-
35	13 496	17 301	21 806	27 113	33 326	40 547	48 877	58 421	-
40	12 582	16 238	20 550	25 620	31 550	38 444	46 403	55 530	-
45	-	15 129	19 230	24 045	29 675	36 224	43 793	52 486	-
50	-	-	17 855	22 396	27 708	33 894	41 056	49 297	-
55	-	-	-	20 682	25 658	31 464	38 201	45 972	-
60	-	-	-	-	23 533	28 941	35 235	42 518	-
65	-	-	-	-	21 342	26 333	32 167	38 945	-

Power input in W

30	6 651	6 704	6 745	6 781	6 818	6 862	6 920	6 997	-
35	7 443	7 502	7 545	7 579	7 611	7 647	7 693	7 755	-
40	8 336	8 400	8 446	8 479	8 507	8 535	8 570	8 618	-
45	-	9 417	9 466	9 500	9 524	9 545	9 569	9 603	-
50	-	-	10 625	10 659	10 680	10 694	10 709	10 730	-
55	-	-	-	11 974	11 993	12 001	12 007	12 015	-
60	-	-	-	-	13 481	13 485	13 481	13 478	-
65	-	-	-	-	15 163	15 162	15 151	15 136	-

Current consumption in A

30	14.34	14.41	14.47	14.52	14.58	14.65	14.74	14.85	-
35	15.21	15.28	15.34	15.39	15.43	15.48	15.53	15.59	-
40	16.21	16.30	16.37	16.41	16.44	16.47	16.49	16.52	-
45	-	17.49	17.57	17.62	17.64	17.65	17.66	17.66	-
50	-	-	18.98	19.04	19.06	19.07	19.06	19.04	-
55	-	-	-	20.70	20.74	20.74	20.72	20.69	-
60	-	-	-	-	22.69	22.70	22.68	22.64	-
65	-	-	-	-	24.95	24.98	24.97	24.92	-

Mass flow in kg/h

30	302	379	469	572	692	828	984	1 161	-
35	298	375	465	569	689	825	981	1 157	-
40	293	371	461	564	684	820	976	1 152	-
45	-	365	455	558	677	813	968	1 144	-
50	-	-	447	551	669	805	959	1 133	-
55	-	-	-	542	659	794	947	1 120	-
60	-	-	-	-	648	781	933	1 105	-
65	-	-	-	-	635	767	917	1 088	-

Coefficient of performance (C.O.P.)

30	2.16	2.73	3.41	4.21	5.13	6.20	7.40	8.74	-
35	1.81	2.31	2.89	3.58	4.38	5.30	6.35	7.53	-
40	1.51	1.93	2.43	3.02	3.71	4.50	5.41	6.44	-
45	-	1.61	2.03	2.53	3.12	3.80	4.58	5.47	-
50	-	-	1.68	2.10	2.59	3.17	3.83	4.59	-
55	-	-	-	1.73	2.14	2.62	3.18	3.83	-
60	-	-	-	-	1.75	2.15	2.61	3.15	-
65	-	-	-	-	1.41	1.74	2.12	2.57	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	33 894	W
Power input	10 694	W
Current consumption	19.07	A
Mass flow	805	kg/h
C.O.P.	3.17	



Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	79	dB(A)
With acoustic hood	71	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions

R407C

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

Cooling capacity in W

30	15 416	19 614	24 600	30 482	37 368	45 364	54 577	65 113	-
35	14 545	18 622	23 442	29 113	35 744	43 441	52 312	62 463	-
40	13 636	17 574	22 210	27 652	34 010	41 391	49 903	59 653	-
45	-	16 478	20 912	26 109	32 177	39 224	47 360	56 691	-
50	-	-	19 559	24 492	30 252	36 950	44 693	53 590	-
55	-	-	-	22 811	28 248	34 579	41 913	50 360	-
60	-	-	-	-	26 175	32 124	39 035	47 018	-
65	-	-	-	-	24 050	29 602	36 077	43 585	-

Power input in W

30	6 651	6 704	6 745	6 781	6 818	6 862	6 920	6 997	-
35	7 443	7 502	7 545	7 579	7 611	7 647	7 693	7 755	-
40	8 336	8 400	8 446	8 479	8 507	8 535	8 570	8 618	-
45	-	9 417	9 466	9 500	9 524	9 545	9 569	9 603	-
50	-	-	10 625	10 659	10 680	10 694	10 709	10 730	-
55	-	-	-	11 974	11 993	12 001	12 007	12 015	-
60	-	-	-	-	13 481	13 485	13 481	13 478	-
65	-	-	-	-	15 163	15 162	15 151	15 136	-

Current consumption in A

30	14.34	14.41	14.47	14.52	14.58	14.65	14.74	14.85	-
35	15.21	15.28	15.34	15.39	15.43	15.48	15.53	15.59	-
40	16.21	16.30	16.37	16.41	16.44	16.47	16.49	16.52	-
45	-	17.49	17.57	17.62	17.64	17.65	17.66	17.66	-
50	-	-	18.98	19.04	19.06	19.07	19.06	19.04	-
55	-	-	-	20.70	20.74	20.74	20.72	20.69	-
60	-	-	-	-	22.69	22.70	22.68	22.64	-
65	-	-	-	-	24.95	24.98	24.97	24.92	-

Mass flow in kg/h

30	301	377	466	569	688	823	978	1 153	-
35	296	374	463	566	685	820	975	1 150	-
40	291	369	458	561	680	816	970	1 145	-
45	-	363	452	555	673	809	962	1 137	-
50	-	-	445	548	665	800	953	1 126	-
55	-	-	-	539	656	789	941	1 113	-
60	-	-	-	-	644	777	928	1 099	-
65	-	-	-	-	631	763	912	1 081	-

Coefficient of performance (C.O.P.)

30	2.32	2.93	3.65	4.50	5.48	6.61	7.89	9.31	-
35	1.95	2.48	3.11	3.84	4.70	5.68	6.80	8.05	-
40	1.64	2.09	2.63	3.26	4.00	4.85	5.82	6.92	-
45	-	1.75	2.21	2.75	3.38	4.11	4.95	5.90	-
50	-	-	1.84	2.30	2.83	3.46	4.17	4.99	-
55	-	-	-	1.91	2.36	2.88	3.49	4.19	-
60	-	-	-	-	1.94	2.38	2.90	3.49	-
65	-	-	-	-	1.59	1.95	2.38	2.88	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	37 986	W
Power input	11 838	W
Current consumption	20.52	A
Mass flow	855	kg/h
C.O.P.	3.21	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	79	dB(A)
With acoustic hood	71	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 50 Hz, EN 12900 rating conditions

R134a

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

Cooling capacity in W

35	11 083	14 149	17 797	22 105	27 153	33 017	39 777	-	-
40	10 421	13 366	16 860	20 984	25 813	31 428	37 906	-	-
45	9 742	12 555	15 887	19 816	24 419	29 774	35 960	-	-
50	9 049	11 723	14 883	18 607	22 973	28 060	33 945	-	-
55	-	10 874	13 853	17 363	21 483	26 292	31 867	-	-
60	-	-	12 801	16 089	19 954	24 475	29 730	-	-
65	-	-	-	14 789	18 390	22 614	27 540	-	-
70	-	-	-	13 470	16 796	20 714	25 302	-	-

Power input in W

35	5 178	5 229	5 274	5 315	5 351	5 381	5 406	-	-
40	5 752	5 808	5 857	5 898	5 933	5 961	5 980	-	-
45	6 389	6 450	6 502	6 545	6 579	6 603	6 618	-	-
50	7 100	7 166	7 222	7 266	7 299	7 320	7 330	-	-
55	-	7 968	8 027	8 072	8 104	8 123	8 127	-	-
60	-	-	8 927	8 974	9 006	9 021	9 020	-	-
65	-	-	-	9 983	10 013	10 026	10 020	-	-
70	-	-	-	11 108	11 138	11 148	11 137	-	-

Current consumption in A

35	13.01	13.05	13.06	13.05	13.05	13.05	13.08	-	-
40	13.52	13.57	13.59	13.59	13.59	13.60	13.63	-	-
45	14.13	14.19	14.22	14.23	14.23	14.24	14.27	-	-
50	14.85	14.92	14.96	14.98	14.99	15.00	15.03	-	-
55	-	15.78	15.84	15.86	15.88	15.89	15.92	-	-
60	-	-	16.86	16.90	16.92	16.94	16.97	-	-
65	-	-	-	18.10	18.12	18.15	18.18	-	-
70	-	-	-	19.48	19.52	19.54	19.58	-	-

Mass flow in kg/h

35	269	337	414	504	607	724	857	-	-
40	267	334	412	502	605	722	855	-	-
45	264	332	410	500	602	719	851	-	-
50	260	328	406	496	598	715	846	-	-
55	-	324	402	492	593	709	840	-	-
60	-	-	398	486	588	703	833	-	-
65	-	-	-	481	581	695	825	-	-
70	-	-	-	474	574	687	815	-	-

Coefficient of performance (C.O.P.)

35	2.14	2.71	3.37	4.16	5.07	6.14	7.36	-	-
40	1.81	2.30	2.88	3.56	4.35	5.27	6.34	-	-
45	1.52	1.95	2.44	3.03	3.71	4.51	5.43	-	-
50	1.27	1.64	2.06	2.56	3.15	3.83	4.63	-	-
55	-	1.36	1.73	2.15	2.65	3.24	3.92	-	-
60	-	-	1.43	1.79	2.22	2.71	3.30	-	-
65	-	-	-	1.48	1.84	2.26	2.75	-	-
70	-	-	-	1.21	1.51	1.86	2.27	-	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	22 973	W
Power input	7 299	W
Current consumption	14.99	A
Mass flow	598	kg/h
C.O.P.	3.15	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions

R134a

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

Cooling capacity in W

35	12 004	15 298	19 212	23 826	29 223	35 483	42 689	-	-
40	11 349	14 528	18 293	22 727	27 912	33 930	40 861	-	-
45	10 675	13 729	17 337	21 581	26 545	32 310	38 958	-	-
50	9 987	12 907	16 349	20 395	25 128	30 631	36 986	-	-
55	-	12 069	15 335	19 173	23 667	28 899	34 953	-	-
60	-	-	14 302	17 923	22 169	27 122	32 865	-	-
65	-	-	-	16 653	20 641	25 307	30 734	-	-
70	-	-	-	15 371	19 095	23 466	28 568	-	-

Power input in W

35	5 178	5 229	5 274	5 315	5 351	5 381	5 406	-	-
40	5 752	5 808	5 857	5 898	5 933	5 961	5 980	-	-
45	6 389	6 450	6 502	6 545	6 579	6 603	6 618	-	-
50	7 100	7 166	7 222	7 266	7 299	7 320	7 330	-	-
55	-	7 968	8 027	8 072	8 104	8 123	8 127	-	-
60	-	-	8 927	8 974	9 006	9 021	9 020	-	-
65	-	-	-	9 983	10 013	10 026	10 020	-	-
70	-	-	-	11 108	11 138	11 148	11 137	-	-

Current consumption in A

35	13.01	13.05	13.06	13.05	13.05	13.05	13.08	-	-
40	13.52	13.57	13.59	13.59	13.59	13.60	13.63	-	-
45	14.13	14.19	14.22	14.23	14.23	14.24	14.27	-	-
50	14.85	14.92	14.96	14.98	14.99	15.00	15.03	-	-
55	-	15.78	15.84	15.86	15.88	15.89	15.92	-	-
60	-	-	16.86	16.90	16.92	16.94	16.97	-	-
65	-	-	-	18.10	18.12	18.15	18.18	-	-
70	-	-	-	19.48	19.52	19.54	19.58	-	-

Mass flow in kg/h

35	268	335	412	501	604	720	852	-	-
40	265	333	410	500	602	718	850	-	-
45	262	330	408	497	599	715	846	-	-
50	259	327	404	493	595	711	842	-	-
55	-	323	400	489	590	705	836	-	-
60	-	-	396	484	585	699	828	-	-
65	-	-	-	478	578	692	820	-	-
70	-	-	-	472	571	683	811	-	-

Coefficient of performance (C.O.P.)

35	2.32	2.93	3.64	4.48	5.46	6.59	7.90	-	-
40	1.97	2.50	3.12	3.85	4.70	5.69	6.83	-	-
45	1.67	2.13	2.67	3.30	4.03	4.89	5.89	-	-
50	1.41	1.80	2.26	2.81	3.44	4.18	5.05	-	-
55	-	1.51	1.91	2.38	2.92	3.56	4.30	-	-
60	-	-	1.60	2.00	2.46	3.01	3.64	-	-
65	-	-	-	1.67	2.06	2.52	3.07	-	-
70	-	-	-	1.38	1.71	2.10	2.57	-	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	26 065	W
Power input	8 013	W
Current consumption	15.77	A
Mass flow	640	kg/h
C.O.P.	3.25	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 50 Hz, EN 12900 rating conditions

R134a

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

Cooling capacity in W

35	11 083	14 149	17 797	22 105	27 153	33 017	39 777	-	-
40	10 421	13 366	16 860	20 984	25 813	31 428	37 906	-	-
45	9 742	12 555	15 887	19 816	24 419	29 774	35 960	-	-
50	9 049	11 723	14 883	18 607	22 973	28 060	33 945	-	-
55	-	10 874	13 853	17 363	21 483	26 292	31 867	-	-
60	-	-	12 801	16 089	19 954	24 475	29 730	-	-
65	-	-	-	14 789	18 390	22 614	27 540	-	-
70	-	-	-	13 470	16 796	20 714	25 302	-	-

Power input in W

35	5 178	5 229	5 274	5 315	5 351	5 381	5 406	-	-
40	5 752	5 808	5 857	5 898	5 933	5 961	5 980	-	-
45	6 389	6 450	6 502	6 545	6 579	6 603	6 618	-	-
50	7 100	7 166	7 222	7 266	7 299	7 320	7 330	-	-
55	-	7 968	8 027	8 072	8 104	8 123	8 127	-	-
60	-	-	8 927	8 974	9 006	9 021	9 020	-	-
65	-	-	-	9 983	10 013	10 026	10 020	-	-
70	-	-	-	11 108	11 138	11 148	11 137	-	-

Current consumption in A

35	13.01	13.05	13.06	13.05	13.05	13.05	13.08	-	-
40	13.52	13.57	13.59	13.59	13.59	13.60	13.63	-	-
45	14.13	14.19	14.22	14.23	14.23	14.24	14.27	-	-
50	14.85	14.92	14.96	14.98	14.99	15.00	15.03	-	-
55	-	15.78	15.84	15.86	15.88	15.89	15.92	-	-
60	-	-	16.86	16.90	16.92	16.94	16.97	-	-
65	-	-	-	18.10	18.12	18.15	18.18	-	-
70	-	-	-	19.48	19.52	19.54	19.58	-	-

Mass flow in kg/h

35	269	337	414	504	607	724	857	-	-
40	267	334	412	502	605	722	855	-	-
45	264	332	410	500	602	719	851	-	-
50	260	328	406	496	598	715	846	-	-
55	-	324	402	492	593	709	840	-	-
60	-	-	398	486	588	703	833	-	-
65	-	-	-	481	581	695	825	-	-
70	-	-	-	474	574	687	815	-	-

Coefficient of performance (C.O.P.)

35	2.14	2.71	3.37	4.16	5.07	6.14	7.36	-	-
40	1.81	2.30	2.88	3.56	4.35	5.27	6.34	-	-
45	1.52	1.95	2.44	3.03	3.71	4.51	5.43	-	-
50	1.27	1.64	2.06	2.56	3.15	3.83	4.63	-	-
55	-	1.36	1.73	2.15	2.65	3.24	3.92	-	-
60	-	-	1.43	1.79	2.22	2.71	3.30	-	-
65	-	-	-	1.48	1.84	2.26	2.75	-	-
70	-	-	-	1.21	1.51	1.86	2.27	-	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	22 973	W
Power input	7 299	W
Current consumption	14.99	A
Mass flow	598	kg/h
C.O.P.	3.15	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions
R134a

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

Cooling capacity in W

35	12 004	15 298	19 212	23 826	29 223	35 483	42 689	-	-
40	11 349	14 528	18 293	22 727	27 912	33 930	40 861	-	-
45	10 675	13 729	17 337	21 581	26 545	32 310	38 958	-	-
50	9 987	12 907	16 349	20 395	25 128	30 631	36 986	-	-
55	-	12 069	15 335	19 173	23 667	28 899	34 953	-	-
60	-	-	14 302	17 923	22 169	27 122	32 865	-	-
65	-	-	-	16 653	20 641	25 307	30 734	-	-
70	-	-	-	15 371	19 095	23 466	28 568	-	-

Power input in W

35	5 178	5 229	5 274	5 315	5 351	5 381	5 406	-	-
40	5 752	5 808	5 857	5 898	5 933	5 961	5 980	-	-
45	6 389	6 450	6 502	6 545	6 579	6 603	6 618	-	-
50	7 100	7 166	7 222	7 266	7 299	7 320	7 330	-	-
55	-	7 968	8 027	8 072	8 104	8 123	8 127	-	-
60	-	-	8 927	8 974	9 006	9 021	9 020	-	-
65	-	-	-	9 983	10 013	10 026	10 020	-	-
70	-	-	-	11 108	11 138	11 148	11 137	-	-

Current consumption in A

35	13.01	13.05	13.06	13.05	13.05	13.05	13.08	-	-
40	13.52	13.57	13.59	13.59	13.59	13.60	13.63	-	-
45	14.13	14.19	14.22	14.23	14.23	14.24	14.27	-	-
50	14.85	14.92	14.96	14.98	14.99	15.00	15.03	-	-
55	-	15.78	15.84	15.86	15.88	15.89	15.92	-	-
60	-	-	16.86	16.90	16.92	16.94	16.97	-	-
65	-	-	-	18.10	18.12	18.15	18.18	-	-
70	-	-	-	19.48	19.52	19.54	19.58	-	-

Mass flow in kg/h

35	268	335	412	501	604	720	852	-	-
40	265	333	410	500	602	718	850	-	-
45	262	330	408	497	599	715	846	-	-
50	259	327	404	493	595	711	842	-	-
55	-	323	400	489	590	705	836	-	-
60	-	-	396	484	585	699	828	-	-
65	-	-	-	478	578	692	820	-	-
70	-	-	-	472	571	683	811	-	-

Coefficient of performance (C.O.P.)

35	2.32	2.93	3.64	4.48	5.46	6.59	7.90	-	-
40	1.97	2.50	3.12	3.85	4.70	5.69	6.83	-	-
45	1.67	2.13	2.67	3.30	4.03	4.89	5.89	-	-
50	1.41	1.80	2.26	2.81	3.44	4.18	5.05	-	-
55	-	1.51	1.91	2.38	2.92	3.56	4.30	-	-
60	-	-	1.60	2.00	2.46	3.01	3.64	-	-
65	-	-	-	1.67	2.06	2.52	3.07	-	-
70	-	-	-	1.38	1.71	2.10	2.57	-	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	26 065	W
Power input	8 013	W
Current consumption	15.77	A
Mass flow	640	kg/h
C.O.P.	3.25	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 50 Hz, EN 12900 rating conditions

R407C

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

Cooling capacity in W

30	14 373	18 308	22 989	28 516	34 994	42 523	51 208	61 151	-
35	13 496	17 301	21 806	27 113	33 326	40 547	48 877	58 421	-
40	12 582	16 238	20 550	25 620	31 550	38 444	46 403	55 530	-
45	-	15 129	19 230	24 045	29 675	36 224	43 793	52 486	-
50	-	-	17 855	22 396	27 708	33 894	41 056	49 297	-
55	-	-	-	20 682	25 658	31 464	38 201	45 972	-
60	-	-	-	-	23 533	28 941	35 235	42 518	-
65	-	-	-	-	21 342	26 333	32 167	38 945	-

Power input in W

30	6 651	6 704	6 745	6 781	6 818	6 862	6 920	6 997	-
35	7 443	7 502	7 545	7 579	7 611	7 647	7 693	7 755	-
40	8 336	8 400	8 446	8 479	8 507	8 535	8 570	8 618	-
45	-	9 417	9 466	9 500	9 524	9 545	9 569	9 603	-
50	-	-	10 625	10 659	10 680	10 694	10 709	10 730	-
55	-	-	-	11 974	11 993	12 001	12 007	12 015	-
60	-	-	-	-	13 481	13 485	13 481	13 478	-
65	-	-	-	-	15 163	15 162	15 151	15 136	-

Current consumption in A

30	14.34	14.41	14.47	14.52	14.58	14.65	14.74	14.85	-
35	15.21	15.28	15.34	15.39	15.43	15.48	15.53	15.59	-
40	16.21	16.30	16.37	16.41	16.44	16.47	16.49	16.52	-
45	-	17.49	17.57	17.62	17.64	17.65	17.66	17.66	-
50	-	-	18.98	19.04	19.06	19.07	19.06	19.04	-
55	-	-	-	20.70	20.74	20.74	20.72	20.69	-
60	-	-	-	-	22.69	22.70	22.68	22.64	-
65	-	-	-	-	24.95	24.98	24.97	24.92	-

Mass flow in kg/h

30	302	379	469	572	692	828	984	1 161	-
35	298	375	465	569	689	825	981	1 157	-
40	293	371	461	564	684	820	976	1 152	-
45	-	365	455	558	677	813	968	1 144	-
50	-	-	447	551	669	805	959	1 133	-
55	-	-	-	542	659	794	947	1 120	-
60	-	-	-	-	648	781	933	1 105	-
65	-	-	-	-	635	767	917	1 088	-

Coefficient of performance (C.O.P.)

30	2.16	2.73	3.41	4.21	5.13	6.20	7.40	8.74	-
35	1.81	2.31	2.89	3.58	4.38	5.30	6.35	7.53	-
40	1.51	1.93	2.43	3.02	3.71	4.50	5.41	6.44	-
45	-	1.61	2.03	2.53	3.12	3.80	4.58	5.47	-
50	-	-	1.68	2.10	2.59	3.17	3.83	4.59	-
55	-	-	-	1.73	2.14	2.62	3.18	3.83	-
60	-	-	-	-	1.75	2.15	2.61	3.15	-
65	-	-	-	-	1.41	1.74	2.12	2.57	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	33 894	W
Power input	10 694	W
Current consumption	19.07	A
Mass flow	805	kg/h
C.O.P.	3.17	



Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	79	dB(A)
With acoustic hood	71	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions

R407C

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

Cooling capacity in W

30	15 416	19 614	24 600	30 482	37 368	45 364	54 577	65 113	-
35	14 545	18 622	23 442	29 113	35 744	43 441	52 312	62 463	-
40	13 636	17 574	22 210	27 652	34 010	41 391	49 903	59 653	-
45	-	16 478	20 912	26 109	32 177	39 224	47 360	56 691	-
50	-	-	19 559	24 492	30 252	36 950	44 693	53 590	-
55	-	-	-	22 811	28 248	34 579	41 913	50 360	-
60	-	-	-	-	26 175	32 124	39 035	47 018	-
65	-	-	-	-	24 050	29 602	36 077	43 585	-

Power input in W

30	6 651	6 704	6 745	6 781	6 818	6 862	6 920	6 997	-
35	7 443	7 502	7 545	7 579	7 611	7 647	7 693	7 755	-
40	8 336	8 400	8 446	8 479	8 507	8 535	8 570	8 618	-
45	-	9 417	9 466	9 500	9 524	9 545	9 569	9 603	-
50	-	-	10 625	10 659	10 680	10 694	10 709	10 730	-
55	-	-	-	11 974	11 993	12 001	12 007	12 015	-
60	-	-	-	-	13 481	13 485	13 481	13 478	-
65	-	-	-	-	15 163	15 162	15 151	15 136	-

Current consumption in A

30	14.34	14.41	14.47	14.52	14.58	14.65	14.74	14.85	-
35	15.21	15.28	15.34	15.39	15.43	15.48	15.53	15.59	-
40	16.21	16.30	16.37	16.41	16.44	16.47	16.49	16.52	-
45	-	17.49	17.57	17.62	17.64	17.65	17.66	17.66	-
50	-	-	18.98	19.04	19.06	19.07	19.06	19.04	-
55	-	-	-	20.70	20.74	20.74	20.72	20.69	-
60	-	-	-	-	22.69	22.70	22.68	22.64	-
65	-	-	-	-	24.95	24.98	24.97	24.92	-

Mass flow in kg/h

30	301	377	466	569	688	823	978	1 153	-
35	296	374	463	566	685	820	975	1 150	-
40	291	369	458	561	680	816	970	1 145	-
45	-	363	452	555	673	809	962	1 137	-
50	-	-	445	548	665	800	953	1 126	-
55	-	-	-	539	656	789	941	1 113	-
60	-	-	-	-	644	777	928	1 099	-
65	-	-	-	-	631	763	912	1 081	-

Coefficient of performance (C.O.P.)

30	2.32	2.93	3.65	4.50	5.48	6.61	7.89	9.31	-
35	1.95	2.48	3.11	3.84	4.70	5.68	6.80	8.05	-
40	1.64	2.09	2.63	3.26	4.00	4.85	5.82	6.92	-
45	-	1.75	2.21	2.75	3.38	4.11	4.95	5.90	-
50	-	-	1.84	2.30	2.83	3.46	4.17	4.99	-
55	-	-	-	1.91	2.36	2.88	3.49	4.19	-
60	-	-	-	-	1.94	2.38	2.90	3.49	-
65	-	-	-	-	1.59	1.95	2.38	2.88	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	37 986	W
Power input	11 838	W
Current consumption	20.52	A
Mass flow	855	kg/h
C.O.P.	3.21	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	79	dB(A)
With acoustic hood	71	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 60 Hz, EN 12900 rating conditions

R407C

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

Cooling capacity in W

30	17 566	22 291	27 891	34 489	42 211	51 179	61 518	73 354	-
35	16 544	21 110	26 499	32 836	40 243	48 844	58 763	70 124	-
40	15 476	19 863	25 022	31 076	38 148	46 361	55 839	66 705	-
45	-	18 561	23 470	29 221	35 937	43 742	52 757	63 105	-
50	-	-	21 853	27 281	33 621	40 995	49 526	59 335	-
55	-	-	-	25 266	31 208	38 130	46 154	55 402	-
60	-	-	-	-	28 706	35 154	42 648	51 309	-
65	-	-	-	-	26 118	32 067	39 006	47 054	-

Power input in W

30	7 980	8 093	8 195	8 292	8 392	8 502	8 631	8 785	-
35	8 898	9 026	9 138	9 239	9 338	9 441	9 556	9 691	-
40	9 914	10 060	10 183	10 291	10 389	10 487	10 591	10 708	-
45	-	11 215	11 352	11 466	11 567	11 660	11 754	11 857	-
50	-	-	12 664	12 787	12 891	12 982	13 068	13 156	-
55	-	-	-	14 274	14 383	14 473	14 553	14 629	-
60	-	-	-	-	16 062	16 154	16 229	16 294	-
65	-	-	-	-	17 950	18 044	18 116	18 172	-

Current consumption in A

30	13.43	13.57	13.72	13.87	14.04	14.21	14.39	14.57	-
35	14.42	14.56	14.70	14.84	14.98	15.12	15.26	15.40	-
40	15.52	15.68	15.82	15.96	16.09	16.20	16.31	16.41	-
45	-	16.96	17.12	17.26	17.38	17.49	17.58	17.65	-
50	-	-	18.61	18.77	18.90	19.01	19.09	19.15	-
55	-	-	-	20.52	20.68	20.79	20.88	20.92	-
60	-	-	-	-	22.73	22.87	22.96	23.01	-
65	-	-	-	-	25.09	25.26	25.38	25.45	-

Mass flow in kg/h

30	369	462	569	692	834	997	1 182	1 392	-
35	365	458	565	689	831	994	1 179	1 389	-
40	360	453	561	685	827	989	1 174	1 383	-
45	-	447	555	678	820	982	1 166	1 375	-
50	-	-	548	671	812	973	1 156	1 364	-
55	-	-	-	662	802	962	1 144	1 350	-
60	-	-	-	-	790	949	1 129	1 334	-
65	-	-	-	-	777	934	1 113	1 315	-

Coefficient of performance (C.O.P.)

30	2.20	2.75	3.40	4.16	5.03	6.02	7.13	8.35	-
35	1.86	2.34	2.90	3.55	4.31	5.17	6.15	7.24	-
40	1.56	1.97	2.46	3.02	3.67	4.42	5.27	6.23	-
45	-	1.65	2.07	2.55	3.11	3.75	4.49	5.32	-
50	-	-	1.73	2.13	2.61	3.16	3.79	4.51	-
55	-	-	-	1.77	2.17	2.63	3.17	3.79	-
60	-	-	-	-	1.79	2.18	2.63	3.15	-
65	-	-	-	-	1.46	1.78	2.15	2.59	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	40 995	W
Power input	12 982	W
Current consumption	19.01	A
Mass flow	973	kg/h
C.O.P.	3.16	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	83	dB(A)
With acoustic hood	75	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 60 Hz, ARI rating conditions

R407C

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

Cooling capacity in W

30	18 840	23 880	29 846	36 867	45 075	54 598	65 565	78 107	-
35	17 830	22 722	28 488	35 258	43 162	52 330	62 892	74 976	-
40	16 773	21 496	27 042	33 541	41 122	49 916	60 050	71 657	-
45	-	20 216	25 522	31 729	38 967	47 365	57 053	68 161	-
50	-	-	23 939	29 834	36 708	44 691	53 912	64 502	-
55	-	-	-	27 867	34 358	41 905	50 640	60 691	-
60	-	-	-	-	31 928	39 020	47 247	56 740	-
65	-	-	-	-	29 432	36 048	43 748	52 661	-

Power input in W

30	7 980	8 093	8 195	8 292	8 392	8 502	8 631	8 785	-
35	8 898	9 026	9 138	9 239	9 338	9 441	9 556	9 691	-
40	9 914	10 060	10 183	10 291	10 389	10 487	10 591	10 708	-
45	-	11 215	11 352	11 466	11 567	11 660	11 754	11 857	-
50	-	-	12 664	12 787	12 891	12 982	13 068	13 156	-
55	-	-	-	14 274	14 383	14 473	14 553	14 629	-
60	-	-	-	-	16 062	16 154	16 229	16 294	-
65	-	-	-	-	17 950	18 044	18 116	18 172	-

Current consumption in A

30	13.43	13.57	13.72	13.87	14.04	14.21	14.39	14.57	-
35	14.42	14.56	14.70	14.84	14.98	15.12	15.26	15.40	-
40	15.52	15.68	15.82	15.96	16.09	16.20	16.31	16.41	-
45	-	16.96	17.12	17.26	17.38	17.49	17.58	17.65	-
50	-	-	18.61	18.77	18.90	19.01	19.09	19.15	-
55	-	-	-	20.52	20.68	20.79	20.88	20.92	-
60	-	-	-	-	22.73	22.87	22.96	23.01	-
65	-	-	-	-	25.09	25.26	25.38	25.45	-

Mass flow in kg/h

30	367	459	566	688	829	991	1 175	1 384	-
35	363	456	562	685	827	988	1 172	1 381	-
40	358	451	558	681	822	984	1 167	1 375	-
45	-	445	552	675	816	977	1 159	1 366	-
50	-	-	545	667	807	967	1 149	1 355	-
55	-	-	-	658	797	956	1 137	1 342	-
60	-	-	-	-	786	943	1 123	1 326	-
65	-	-	-	-	772	929	1 106	1 307	-

Coefficient of performance (C.O.P.)

30	2.36	2.95	3.64	4.45	5.37	6.42	7.60	8.89	-
35	2.00	2.52	3.12	3.82	4.62	5.54	6.58	7.74	-
40	1.69	2.14	2.66	3.26	3.96	4.76	5.67	6.69	-
45	-	1.80	2.25	2.77	3.37	4.06	4.85	5.75	-
50	-	-	1.89	2.33	2.85	3.44	4.13	4.90	-
55	-	-	-	1.95	2.39	2.90	3.48	4.15	-
60	-	-	-	-	1.99	2.42	2.91	3.48	-
65	-	-	-	-	1.64	2.00	2.41	2.90	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	45 960	W
Power input	14 321	W
Current consumption	20.61	A
Mass flow	1 035	kg/h
C.O.P.	3.21	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	83	dB(A)
With acoustic hood	75	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 60 Hz, EN 12900 rating conditions
R134a

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

Cooling capacity in W

35	13 495	17 179	21 561	26 735	32 793	39 828	47 934	-	-
40	12 704	16 241	20 434	25 374	31 154	37 867	45 607	-	-
45	11 887	15 274	19 273	23 976	29 475	35 863	43 232	-	-
50	11 043	14 276	18 078	22 540	27 754	33 813	40 808	-	-
55	-	13 247	16 848	21 065	25 991	31 716	38 333	-	-
60	-	-	15 583	19 551	24 184	29 571	35 805	-	-
65	-	-	-	17 995	22 330	27 374	33 219	-	-
70	-	-	-	16 396	20 425	25 120	30 571	-	-

Power input in W

35	6 225	6 337	6 423	6 483	6 521	6 535	6 528	-	-
40	6 872	7 001	7 101	7 173	7 220	7 242	7 239	-	-
45	7 585	7 731	7 846	7 931	7 988	8 018	8 021	-	-
50	8 376	8 540	8 670	8 769	8 836	8 874	8 883	-	-
55	-	9 439	9 585	9 697	9 776	9 823	9 838	-	-
60	-	-	10 602	10 728	10 819	10 875	10 897	-	-
65	-	-	-	11 873	11 976	12 042	12 072	-	-
70	-	-	-	13 143	13 259	13 336	13 374	-	-

Current consumption in A

35	11.58	11.69	11.78	11.86	11.92	11.97	12.01	-	-
40	12.14	12.26	12.35	12.42	12.48	12.52	12.56	-	-
45	12.83	12.96	13.06	13.14	13.20	13.24	13.27	-	-
50	13.65	13.79	13.91	14.00	14.07	14.12	14.15	-	-
55	-	14.75	14.89	15.00	15.08	15.15	15.20	-	-
60	-	-	15.99	16.13	16.24	16.33	16.39	-	-
65	-	-	-	17.39	17.53	17.65	17.74	-	-
70	-	-	-	18.78	18.96	19.11	19.24	-	-

Mass flow in kg/h

35	328	409	502	610	733	873	1 032	-	-
40	325	406	500	607	730	870	1 028	-	-
45	322	403	497	604	727	866	1 023	-	-
50	317	400	494	601	723	861	1 017	-	-
55	-	395	489	596	718	856	1 011	-	-
60	-	-	484	591	712	849	1 003	-	-
65	-	-	-	585	705	842	995	-	-
70	-	-	-	577	698	833	985	-	-

Coefficient of performance (C.O.P.)

35	2.17	2.71	3.36	4.12	5.03	6.09	7.34	-	-
40	1.85	2.32	2.88	3.54	4.31	5.23	6.30	-	-
45	1.57	1.98	2.46	3.02	3.69	4.47	5.39	-	-
50	1.32	1.67	2.08	2.57	3.14	3.81	4.59	-	-
55	-	1.40	1.76	2.17	2.66	3.23	3.90	-	-
60	-	-	1.47	1.82	2.24	2.72	3.29	-	-
65	-	-	-	1.52	1.86	2.27	2.75	-	-
70	-	-	-	1.25	1.54	1.88	2.29	-	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	27 754	W
Power input	8 836	W
Current consumption	14.07	A
Mass flow	723	kg/h
C.O.P.	3.14	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 60 Hz, ARI rating conditions

R134a

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

Cooling capacity in W

35	14 616	18 575	23 275	28 816	35 292	42 802	51 443	-	-
40	13 835	17 653	22 170	27 483	33 687	40 882	49 163	-	-
45	13 025	16 701	21 031	26 112	32 042	38 918	46 836	-	-
50	12 188	15 717	19 858	24 705	30 357	36 911	44 464	-	-
55	-	14 703	18 650	23 261	28 632	34 861	42 045	-	-
60	-	-	17 409	21 780	26 868	32 769	39 581	-	-
65	-	-	-	20 263	25 064	30 635	37 072	-	-
70	-	-	-	18 710	23 221	28 458	34 517	-	-

Power input in W

35	6 225	6 337	6 423	6 483	6 521	6 535	6 528	-	-
40	6 872	7 001	7 101	7 173	7 220	7 242	7 239	-	-
45	7 585	7 731	7 846	7 931	7 988	8 018	8 021	-	-
50	8 376	8 540	8 670	8 769	8 836	8 874	8 883	-	-
55	-	9 439	9 585	9 697	9 776	9 823	9 838	-	-
60	-	-	10 602	10 728	10 819	10 875	10 897	-	-
65	-	-	-	11 873	11 976	12 042	12 072	-	-
70	-	-	-	13 143	13 259	13 336	13 374	-	-

Current consumption in A

35	11.58	11.69	11.78	11.86	11.92	11.97	12.01	-	-
40	12.14	12.26	12.35	12.42	12.48	12.52	12.56	-	-
45	12.83	12.96	13.06	13.14	13.20	13.24	13.27	-	-
50	13.65	13.79	13.91	14.00	14.07	14.12	14.15	-	-
55	-	14.75	14.89	15.00	15.08	15.15	15.20	-	-
60	-	-	15.99	16.13	16.24	16.33	16.39	-	-
65	-	-	-	17.39	17.53	17.65	17.74	-	-
70	-	-	-	18.78	18.96	19.11	19.24	-	-

Mass flow in kg/h

35	326	407	499	606	729	868	1 026	-	-
40	323	404	497	604	726	865	1 022	-	-
45	320	401	495	601	723	861	1 017	-	-
50	316	398	491	598	719	856	1 012	-	-
55	-	393	487	593	714	851	1 005	-	-
60	-	-	481	588	708	845	998	-	-
65	-	-	-	582	702	837	989	-	-
70	-	-	-	574	694	829	980	-	-

Coefficient of performance (C.O.P.)

35	2.35	2.93	3.62	4.44	5.41	6.55	7.88	-	-
40	2.01	2.52	3.12	3.83	4.67	5.65	6.79	-	-
45	1.72	2.16	2.68	3.29	4.01	4.85	5.84	-	-
50	1.46	1.84	2.29	2.82	3.44	4.16	5.01	-	-
55	-	1.56	1.95	2.40	2.93	3.55	4.27	-	-
60	-	-	1.64	2.03	2.48	3.01	3.63	-	-
65	-	-	-	1.71	2.09	2.54	3.07	-	-
70	-	-	-	1.42	1.75	2.13	2.58	-	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	31 487	W
Power input	9 682	W
Current consumption	14.98	A
Mass flow	773	kg/h
C.O.P.	3.25	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 60 Hz, EN 12900 rating conditions

R134a

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

Cooling capacity in W

35	13 495	17 179	21 561	26 735	32 793	39 828	47 934	-	-
40	12 704	16 241	20 434	25 374	31 154	37 867	45 607	-	-
45	11 887	15 274	19 273	23 976	29 475	35 863	43 232	-	-
50	11 043	14 276	18 078	22 540	27 754	33 813	40 808	-	-
55	-	13 247	16 848	21 065	25 991	31 716	38 333	-	-
60	-	-	15 583	19 551	24 184	29 571	35 805	-	-
65	-	-	-	17 995	22 330	27 374	33 219	-	-
70	-	-	-	16 396	20 425	25 120	30 571	-	-

Power input in W

35	6 225	6 337	6 423	6 483	6 521	6 535	6 528	-	-
40	6 872	7 001	7 101	7 173	7 220	7 242	7 239	-	-
45	7 585	7 731	7 846	7 931	7 988	8 018	8 021	-	-
50	8 376	8 540	8 670	8 769	8 836	8 874	8 883	-	-
55	-	9 439	9 585	9 697	9 776	9 823	9 838	-	-
60	-	-	10 602	10 728	10 819	10 875	10 897	-	-
65	-	-	-	11 873	11 976	12 042	12 072	-	-
70	-	-	-	13 143	13 259	13 336	13 374	-	-

Current consumption in A

35	11.58	11.69	11.78	11.86	11.92	11.97	12.01	-	-
40	12.14	12.26	12.35	12.42	12.48	12.52	12.56	-	-
45	12.83	12.96	13.06	13.14	13.20	13.24	13.27	-	-
50	13.65	13.79	13.91	14.00	14.07	14.12	14.15	-	-
55	-	14.75	14.89	15.00	15.08	15.15	15.20	-	-
60	-	-	15.99	16.13	16.24	16.33	16.39	-	-
65	-	-	-	17.39	17.53	17.65	17.74	-	-
70	-	-	-	18.78	18.96	19.11	19.24	-	-

Mass flow in kg/h

35	328	409	502	610	733	873	1 032	-	-
40	325	406	500	607	730	870	1 028	-	-
45	322	403	497	604	727	866	1 023	-	-
50	317	400	494	601	723	861	1 017	-	-
55	-	395	489	596	718	856	1 011	-	-
60	-	-	484	591	712	849	1 003	-	-
65	-	-	-	585	705	842	995	-	-
70	-	-	-	577	698	833	985	-	-

Coefficient of performance (C.O.P.)

35	2.17	2.71	3.36	4.12	5.03	6.09	7.34	-	-
40	1.85	2.32	2.88	3.54	4.31	5.23	6.30	-	-
45	1.57	1.98	2.46	3.02	3.69	4.47	5.39	-	-
50	1.32	1.67	2.08	2.57	3.14	3.81	4.59	-	-
55	-	1.40	1.76	2.17	2.66	3.23	3.90	-	-
60	-	-	1.47	1.82	2.24	2.72	3.29	-	-
65	-	-	-	1.52	1.86	2.27	2.75	-	-
70	-	-	-	1.25	1.54	1.88	2.29	-	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	27 754	W
Power input	8 836	W
Current consumption	14.07	A
Mass flow	723	kg/h
C.O.P.	3.14	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 60 Hz, ARI rating conditions

R134a

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

Cooling capacity in W

35	14 616	18 575	23 275	28 816	35 292	42 802	51 443	-	-
40	13 835	17 653	22 170	27 483	33 687	40 882	49 163	-	-
45	13 025	16 701	21 031	26 112	32 042	38 918	46 836	-	-
50	12 188	15 717	19 858	24 705	30 357	36 911	44 464	-	-
55	-	14 703	18 650	23 261	28 632	34 861	42 045	-	-
60	-	-	17 409	21 780	26 868	32 769	39 581	-	-
65	-	-	-	20 263	25 064	30 635	37 072	-	-
70	-	-	-	18 710	23 221	28 458	34 517	-	-

Power input in W

35	6 225	6 337	6 423	6 483	6 521	6 535	6 528	-	-
40	6 872	7 001	7 101	7 173	7 220	7 242	7 239	-	-
45	7 585	7 731	7 846	7 931	7 988	8 018	8 021	-	-
50	8 376	8 540	8 670	8 769	8 836	8 874	8 883	-	-
55	-	9 439	9 585	9 697	9 776	9 823	9 838	-	-
60	-	-	10 602	10 728	10 819	10 875	10 897	-	-
65	-	-	-	11 873	11 976	12 042	12 072	-	-
70	-	-	-	13 143	13 259	13 336	13 374	-	-

Current consumption in A

35	11.58	11.69	11.78	11.86	11.92	11.97	12.01	-	-
40	12.14	12.26	12.35	12.42	12.48	12.52	12.56	-	-
45	12.83	12.96	13.06	13.14	13.20	13.24	13.27	-	-
50	13.65	13.79	13.91	14.00	14.07	14.12	14.15	-	-
55	-	14.75	14.89	15.00	15.08	15.15	15.20	-	-
60	-	-	15.99	16.13	16.24	16.33	16.39	-	-
65	-	-	-	17.39	17.53	17.65	17.74	-	-
70	-	-	-	18.78	18.96	19.11	19.24	-	-

Mass flow in kg/h

35	326	407	499	606	729	868	1 026	-	-
40	323	404	497	604	726	865	1 022	-	-
45	320	401	495	601	723	861	1 017	-	-
50	316	398	491	598	719	856	1 012	-	-
55	-	393	487	593	714	851	1 005	-	-
60	-	-	481	588	708	845	998	-	-
65	-	-	-	582	702	837	989	-	-
70	-	-	-	574	694	829	980	-	-

Coefficient of performance (C.O.P.)

35	2.35	2.93	3.62	4.44	5.41	6.55	7.88	-	-
40	2.01	2.52	3.12	3.83	4.67	5.65	6.79	-	-
45	1.72	2.16	2.68	3.29	4.01	4.85	5.84	-	-
50	1.46	1.84	2.29	2.82	3.44	4.16	5.01	-	-
55	-	1.56	1.95	2.40	2.93	3.55	4.27	-	-
60	-	-	1.64	2.03	2.48	3.01	3.63	-	-
65	-	-	-	1.71	2.09	2.54	3.07	-	-
70	-	-	-	1.42	1.75	2.13	2.58	-	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	31 487	W
Power input	9 682	W
Current consumption	14.98	A
Mass flow	773	kg/h
C.O.P.	3.25	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 60 Hz, EN 12900 rating conditions

R407C

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

Cooling capacity in W

30	17 566	22 291	27 891	34 489	42 211	51 179	61 518	73 354	-
35	16 544	21 110	26 499	32 836	40 243	48 844	58 763	70 124	-
40	15 476	19 863	25 022	31 076	38 148	46 361	55 839	66 705	-
45	-	18 561	23 470	29 221	35 937	43 742	52 757	63 105	-
50	-	-	21 853	27 281	33 621	40 995	49 526	59 335	-
55	-	-	-	25 266	31 208	38 130	46 154	55 402	-
60	-	-	-	-	28 706	35 154	42 648	51 309	-
65	-	-	-	-	26 118	32 067	39 006	47 054	-

Power input in W

30	7 980	8 093	8 195	8 292	8 392	8 502	8 631	8 785	-
35	8 898	9 026	9 138	9 239	9 338	9 441	9 556	9 691	-
40	9 914	10 060	10 183	10 291	10 389	10 487	10 591	10 708	-
45	-	11 215	11 352	11 466	11 567	11 660	11 754	11 857	-
50	-	-	12 664	12 787	12 891	12 982	13 068	13 156	-
55	-	-	-	14 274	14 383	14 473	14 553	14 629	-
60	-	-	-	-	16 062	16 154	16 229	16 294	-
65	-	-	-	-	17 950	18 044	18 116	18 172	-

Current consumption in A

30	13.43	13.57	13.72	13.87	14.04	14.21	14.39	14.57	-
35	14.42	14.56	14.70	14.84	14.98	15.12	15.26	15.40	-
40	15.52	15.68	15.82	15.96	16.09	16.20	16.31	16.41	-
45	-	16.96	17.12	17.26	17.38	17.49	17.58	17.65	-
50	-	-	18.61	18.77	18.90	19.01	19.09	19.15	-
55	-	-	-	20.52	20.68	20.79	20.88	20.92	-
60	-	-	-	-	22.73	22.87	22.96	23.01	-
65	-	-	-	-	25.09	25.26	25.38	25.45	-

Mass flow in kg/h

30	369	462	569	692	834	997	1 182	1 392	-
35	365	458	565	689	831	994	1 179	1 389	-
40	360	453	561	685	827	989	1 174	1 383	-
45	-	447	555	678	820	982	1 166	1 375	-
50	-	-	548	671	812	973	1 156	1 364	-
55	-	-	-	662	802	962	1 144	1 350	-
60	-	-	-	-	790	949	1 129	1 334	-
65	-	-	-	-	777	934	1 113	1 315	-

Coefficient of performance (C.O.P.)

30	2.20	2.75	3.40	4.16	5.03	6.02	7.13	8.35	-
35	1.86	2.34	2.90	3.55	4.31	5.17	6.15	7.24	-
40	1.56	1.97	2.46	3.02	3.67	4.42	5.27	6.23	-
45	-	1.65	2.07	2.55	3.11	3.75	4.49	5.32	-
50	-	-	1.73	2.13	2.61	3.16	3.79	4.51	-
55	-	-	-	1.77	2.17	2.63	3.17	3.79	-
60	-	-	-	-	1.79	2.18	2.63	3.15	-
65	-	-	-	-	1.46	1.78	2.15	2.59	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	40 995	W
Power input	12 982	W
Current consumption	19.01	A
Mass flow	973	kg/h
C.O.P.	3.16	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	83	dB(A)
With acoustic hood	75	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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Performance data at 60 Hz, ARI rating conditions
R407C

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

Cooling capacity in W

30	18 840	23 880	29 846	36 867	45 075	54 598	65 565	78 107	-
35	17 830	22 722	28 488	35 258	43 162	52 330	62 892	74 976	-
40	16 773	21 496	27 042	33 541	41 122	49 916	60 050	71 657	-
45	-	20 216	25 522	31 729	38 967	47 365	57 053	68 161	-
50	-	-	23 939	29 834	36 708	44 691	53 912	64 502	-
55	-	-	-	27 867	34 358	41 905	50 640	60 691	-
60	-	-	-	-	31 928	39 020	47 247	56 740	-
65	-	-	-	-	29 432	36 048	43 748	52 661	-

Power input in W

30	7 980	8 093	8 195	8 292	8 392	8 502	8 631	8 785	-
35	8 898	9 026	9 138	9 239	9 338	9 441	9 556	9 691	-
40	9 914	10 060	10 183	10 291	10 389	10 487	10 591	10 708	-
45	-	11 215	11 352	11 466	11 567	11 660	11 754	11 857	-
50	-	-	12 664	12 787	12 891	12 982	13 068	13 156	-
55	-	-	-	14 274	14 383	14 473	14 553	14 629	-
60	-	-	-	-	16 062	16 154	16 229	16 294	-
65	-	-	-	-	17 950	18 044	18 116	18 172	-

Current consumption in A

30	13.43	13.57	13.72	13.87	14.04	14.21	14.39	14.57	-
35	14.42	14.56	14.70	14.84	14.98	15.12	15.26	15.40	-
40	15.52	15.68	15.82	15.96	16.09	16.20	16.31	16.41	-
45	-	16.96	17.12	17.26	17.38	17.49	17.58	17.65	-
50	-	-	18.61	18.77	18.90	19.01	19.09	19.15	-
55	-	-	-	20.52	20.68	20.79	20.88	20.92	-
60	-	-	-	-	22.73	22.87	22.96	23.01	-
65	-	-	-	-	25.09	25.26	25.38	25.45	-

Mass flow in kg/h

30	367	459	566	688	829	991	1 175	1 384	-
35	363	456	562	685	827	988	1 172	1 381	-
40	358	451	558	681	822	984	1 167	1 375	-
45	-	445	552	675	816	977	1 159	1 366	-
50	-	-	545	667	807	967	1 149	1 355	-
55	-	-	-	658	797	956	1 137	1 342	-
60	-	-	-	-	786	943	1 123	1 326	-
65	-	-	-	-	772	929	1 106	1 307	-

Coefficient of performance (C.O.P.)

30	2.36	2.95	3.64	4.45	5.37	6.42	7.60	8.89	-
35	2.00	2.52	3.12	3.82	4.62	5.54	6.58	7.74	-
40	1.69	2.14	2.66	3.26	3.96	4.76	5.67	6.69	-
45	-	1.80	2.25	2.77	3.37	4.06	4.85	5.75	-
50	-	-	1.89	2.33	2.85	3.44	4.13	4.90	-
55	-	-	-	1.95	2.39	2.90	3.48	4.15	-
60	-	-	-	-	1.99	2.42	2.91	3.48	-
65	-	-	-	-	1.64	2.00	2.41	2.90	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	45 960	W
Power input	14 321	W
Current consumption	20.61	A
Mass flow	1 035	kg/h
C.O.P.	3.21	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	83	dB(A)
With acoustic hood	75	dB(A)

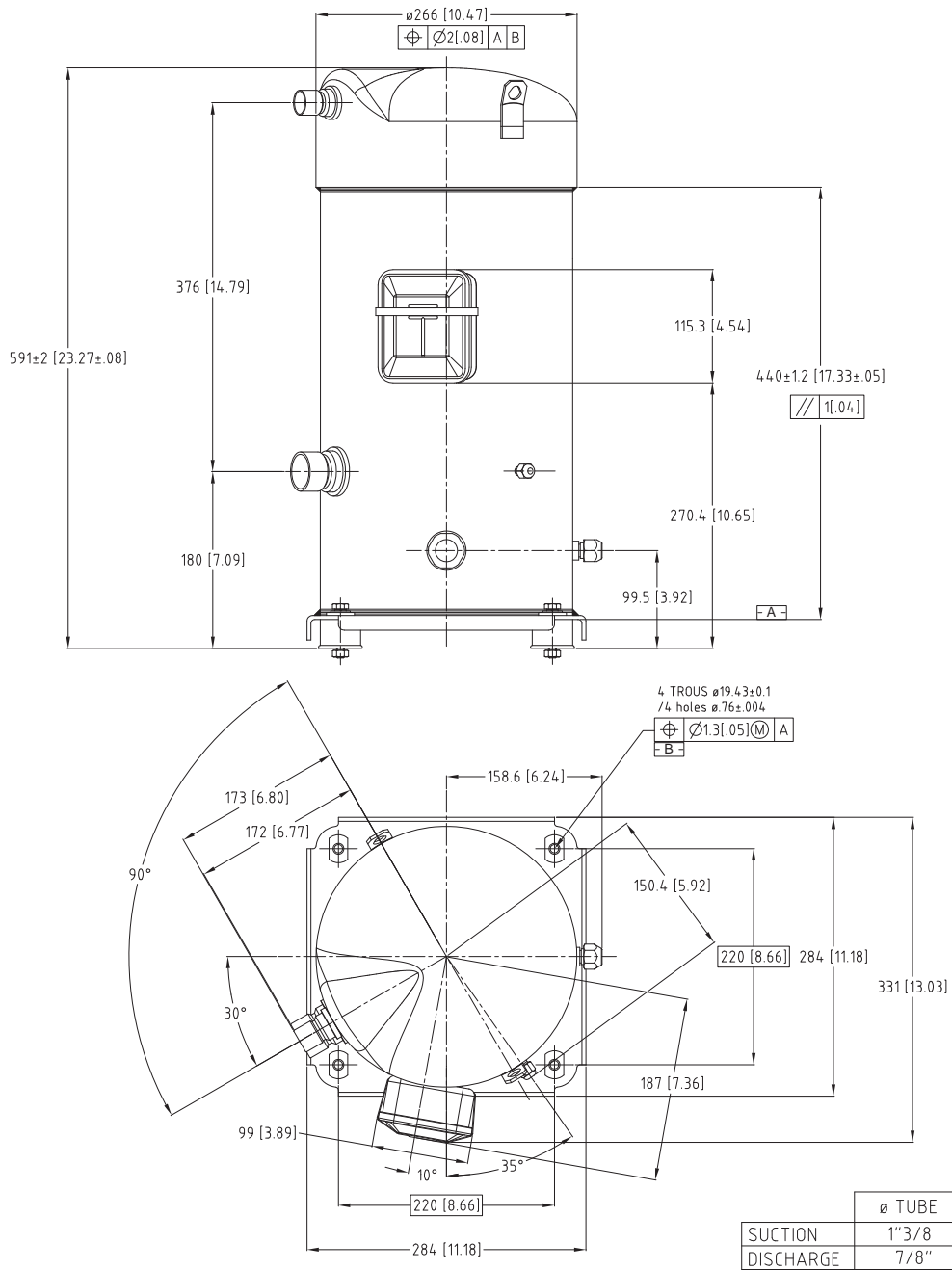
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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A	PEP	02/06/99	MAP	CREATION PLAN SERIE
IND	RT	PAR	DATE	APPROBATION
				MODIFICATIONS
MATERIE:				
Ech.: 1/4	Tol.gén.: ± 0.8 [± .03] ± 2°			
ENCOMBREMENT S148/161-4V				Danfoss Maneurop S.A.
S148/161-4V OUTLINE				Z.I. de REYRIEUX - B.P. 331F 01603 TREVOUX - FRANCE
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