

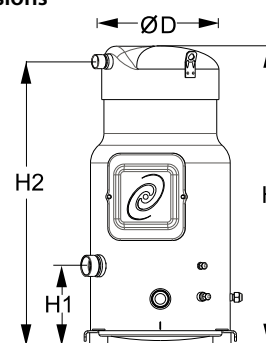
Datasheets

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



**General Characteristics**

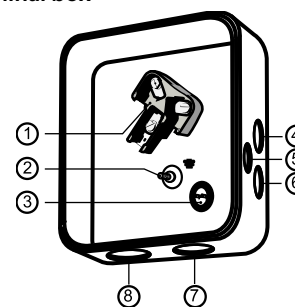
Model number (on compressor nameplate)	SM185S4RC	SM185S4CC
Code number for Singlepack*	SM185-4RI	SM185-4CAI
Code number for Industrial pack**	SM185-4RM	SM185-4CAM
Drawing number	8551119b	8551056c
Suction and discharge connections	Rotolock	Brazed
Suction connection	2-1/4" Rotolock	1-5/8" ODF
Discharge connection	1-3/4" Rotolock	1-1/8" ODF
Suction connection with supplied sleeve	1-3/8" ODF	
Discharge connection with supplied sleeve	7/8" ODF	
Oil sight glass	Threaded	Threaded
Oil equalisation connection	3/8" flare SAE	3/8" flare SAE
Oil drain connection	1/4" flare	1/4" flare
LP gauge port	Schrader	Schrader
IPR valve	None	None
Swept volume	249,9 cm <sup>3</sup> /rev	
Displacement @ Nominal speed	43.5 m <sup>3</sup> /h @ 2900 rpm - 52.5 m <sup>3</sup> /h @ 3500 rpm	
Net weight	100 kg	
Oil charge	6,2 litre, Mineral - 160P	
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	13,5 kg	
Approved refrigerants	R22, R417A-160SZ	

**Dimensions**


D=317 mm  
H=678 mm  
H1=180 mm  
H2=643 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	0.77 Ω
Maximum Must Trip current (MMT)	35 A
Locked Rotor Amps (LRA)	175 A
Motor protection	Internal thermostat, ext. overload protector needed

**Terminal box**


IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermostat connector
- 4: Knock-out Ø 22 mm (7/8") for 1/2" conduit
- 5: Knock-out Ø 16.5 mm (0.65")
- 6: Knock-out Ø 20.5 mm (0.81")
- 7: Double knock-out Ø 32.1 mm (1.26") & Ø 25.4 mm (1")
- 8: Double knock-out Ø 44 mm (1-3/4") for 1-1/4" conduit & Ø 34 mm (1-3/8") for 1" conduit

**Recommended Installation torques**

Suction Rotolock nut or valve	130 Nm
Discharge Rotolock nut or valve	110 Nm
Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Terminal box cover screws	2,3 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

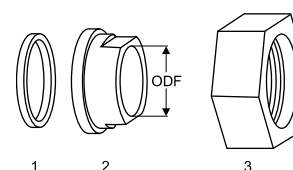
\*\*Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

**Rotolock accessories, suction side**
**Code no.**

Solder sleeve, P08 (2-1/4" Rotolock, 1-3/8" ODF)	8153005
Solder sleeve, P03 (2-1/4" Rotolock, 1-5/8" ODF)	8153006
Rotolock valve, V08 (2-1/4" Rotolock, 1-3/8" ODF)	8168025
Rotolock valve, V03 (2-1/4" Rotolock, 1-5/8" ODF)	8168026
Gasket, 2-1/4"	8156133

**Rotolock accessories, discharge side**
**Code no.**

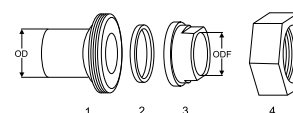
Solder sleeve, P07 (1-3/4" Rotolock, 7/8" ODF)	8153013
Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C07 (1-3/4" Rotolock, 7/8" ODF)	8168008
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V07 (1-3/4" Rotolock, 7/8" ODF)	8168032
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Gasket, 1-3/4"	8156132

**Gaskets, sleeves and nuts**


- 1: Gasket
- 2: Solder sleeve
- 3: Rotolock nut

**Rotolock accessories, sets**
**Code no.**

Solder sleeve adapter set, (2-1/4" Rotolock, 1-5/8" ODF), (1-3/4" Rotolock, 1"1/8 ODF)	7765028
Valve set, V08 (2-1/4"~1-3/8"), V07 (1-3/4"~7/8")	7703010
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

**Solder sleeve adapter set**


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

**Oil / lubricants**
**Code no.**

Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

**Crankcase heaters**
**Code no.**

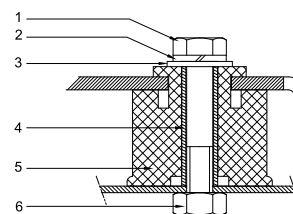
Surface sump heater + bottom insulation, 56 W, 24 V, CE mark, UL	120Z0360
Surface sump heater + bottom insulation, 56 W, 230 V, CE mark, UL	120Z0376
Surface sump heater + bottom insulation, 56 W, 400 V, CE mark, UL	120Z0377
Surface sump heater + bottom insulation, 56 W, 460 V, CE mark, UL	120Z0378
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118
Belt type crankcase heater, 75 W, 460 V, CE mark, UL	120Z0464

**Miscellaneous accessories**
**Code no.**

Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S175-S185	7755007
Acoustic bottom insulation for scroll compressor	120Z0353
Discharge thermostat kit	7750009

**Spare parts**
**Code no.**

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers, 2 rotolock nuts, 2 solder sleeves, 2 gaskets	8156147
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 186 x 198 mm, incl cover	8156139
T block connector 60 x 75 mm	8173021

**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

R22

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

Cooling capacity in W

30	18 321	22 879	28 204	34 366	41 435	49 479	58 569	68 774	-
35	17 280	21 729	26 914	32 904	39 768	47 575	56 393	66 294	-
40	16 221	20 543	25 569	31 367	38 006	45 556	54 085	63 663	-
45	-	19 302	24 144	29 727	36 118	43 386	51 599	60 828	-
50	-	-	22 668	28 017	34 141	41 109	48 989	57 851	-
55	-	-	-	26 214	32 048	38 693	46 217	54 689	-
60	-	-	-	-	29 832	36 128	43 270	51 324	-
65	-	-	-	-	27 523	33 453	40 192	47 810	-

Power input in W

30	7 964	8 050	8 133	8 212	8 284	8 347	8 399	8 437	-
35	8 819	8 906	8 991	9 071	9 145	9 211	9 265	9 306	-
40	9 773	9 861	9 947	10 030	10 106	10 174	10 231	10 275	-
45	-	10 925	11 013	11 097	11 176	11 247	11 307	11 354	-
50	-	-	12 196	12 283	12 364	12 438	12 501	12 553	-
55	-	-	-	13 596	13 680	13 757	13 824	13 879	-
60	-	-	-	-	15 132	15 212	15 283	15 342	-
65	-	-	-	-	16 731	16 814	16 889	16 953	-

Current consumption in A

30	17.62	17.72	17.80	17.88	17.93	17.97	17.99	17.98	-
35	18.55	18.65	18.74	18.82	18.88	18.93	18.95	18.95	-
40	19.61	19.72	19.82	19.90	19.97	20.03	20.06	20.08	-
45	-	20.94	21.05	21.14	21.22	21.29	21.33	21.36	-
50	-	-	22.45	22.55	22.64	22.72	22.78	22.82	-
55	-	-	-	24.14	24.25	24.34	24.42	24.48	-
60	-	-	-	-	26.06	26.17	26.26	26.34	-
65	-	-	-	-	28.09	28.21	28.32	28.42	-

Mass flow in kg/h

30	394	486	592	712	848	1 001	1 172	1 363	-
35	387	480	586	707	844	999	1 171	1 363	-
40	378	472	580	702	840	994	1 167	1 359	-
45	-	464	572	694	832	988	1 161	1 353	-
50	-	-	562	685	823	978	1 151	1 343	-
55	-	-	-	673	811	966	1 138	1 330	-
60	-	-	-	-	796	950	1 122	1 313	-
65	-	-	-	-	778	931	1 102	1 292	-

Coefficient of performance (C.O.P.)

30	2.30	2.84	3.47	4.18	5.00	5.93	6.97	8.15	-
35	1.96	2.44	2.99	3.63	4.35	5.17	6.09	7.12	-
40	1.66	2.08	2.57	3.13	3.76	4.48	5.29	6.20	-
45	-	1.77	2.19	2.68	3.23	3.86	4.56	5.36	-
50	-	-	1.86	2.28	2.76	3.31	3.92	4.61	-
55	-	-	-	1.93	2.34	2.81	3.34	3.94	-
60	-	-	-	-	1.97	2.37	2.83	3.35	-
65	-	-	-	-	1.65	1.99	2.38	2.82	-

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

Cooling capacity	41 109	W
Power input	12 438	W
Current consumption	22.72	A
Mass flow	978	kg/h
C.O.P.	3.31	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	80	dB(A)
With acoustic hood	72	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**
**R22**

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

**Cooling capacity in W**

30	19 439	24 255	29 878	36 380	43 832	52 306	61 875	72 610	-
35	18 400	23 118	28 611	34 951	42 209	50 458	59 770	70 215	-
40	17 337	21 936	27 278	33 434	40 478	48 480	57 512	67 647	-
45	-	20 708	25 877	31 829	38 637	46 371	55 103	64 906	-
50	-	-	24 409	30 136	36 686	44 131	52 542	61 992	-
55	-	-	-	28 354	34 625	41 760	49 828	58 904	-
60	-	-	-	-	32 455	39 257	46 962	55 642	-
65	-	-	-	-	30 174	36 623	43 943	52 207	-

**Power input in W**

30	7 964	8 050	8 133	8 212	8 284	8 347	8 399	8 437	-
35	8 819	8 906	8 991	9 071	9 145	9 211	9 265	9 306	-
40	9 773	9 861	9 947	10 030	10 106	10 174	10 231	10 275	-
45	-	10 925	11 013	11 097	11 176	11 247	11 307	11 354	-
50	-	-	12 196	12 283	12 364	12 438	12 501	12 553	-
55	-	-	-	13 596	13 680	13 757	13 824	13 879	-
60	-	-	-	-	15 132	15 212	15 283	15 342	-
65	-	-	-	-	16 731	16 814	16 889	16 953	-

**Current consumption in A**

30	17.62	17.72	17.80	17.88	17.93	17.97	17.99	17.98	-
35	18.55	18.65	18.74	18.82	18.88	18.93	18.95	18.95	-
40	19.61	19.72	19.82	19.90	19.97	20.03	20.06	20.08	-
45	-	20.94	21.05	21.14	21.22	21.29	21.33	21.36	-
50	-	-	22.45	22.55	22.64	22.72	22.78	22.82	-
55	-	-	-	24.14	24.25	24.34	24.42	24.48	-
60	-	-	-	-	26.06	26.17	26.26	26.34	-
65	-	-	-	-	28.09	28.21	28.32	28.42	-

**Mass flow in kg/h**

30	392	484	589	708	843	995	1 165	1 355	-
35	385	477	583	704	840	993	1 164	1 355	-
40	376	470	577	698	835	989	1 161	1 352	-
45	-	461	569	691	828	982	1 154	1 345	-
50	-	-	559	681	819	973	1 145	1 336	-
55	-	-	-	669	807	960	1 132	1 323	-
60	-	-	-	-	792	945	1 116	1 305	-
65	-	-	-	-	774	926	1 096	1 284	-

**Coefficient of performance (C.O.P.)**

30	2.44	3.01	3.67	4.43	5.29	6.27	7.37	8.61	-
35	2.09	2.60	3.18	3.85	4.62	5.48	6.45	7.55	-
40	1.77	2.22	2.74	3.33	4.01	4.77	5.62	6.58	-
45	-	1.90	2.35	2.87	3.46	4.12	4.87	5.72	-
50	-	-	2.00	2.45	2.97	3.55	4.20	4.94	-
55	-	-	-	2.09	2.53	3.04	3.60	4.24	-
60	-	-	-	-	2.14	2.58	3.07	3.63	-
65	-	-	-	-	1.80	2.18	2.60	3.08	-

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

Cooling capacity	45 500	W
Power input	13 622	W
Current consumption	24.17	A
Mass flow	1 035	kg/h
C.O.P.	3.34	

**Pressure switch settings**

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

**Sound power data**

Sound power level	80	dB(A)
With acoustic hood	72	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

R22

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

Cooling capacity in W

30	22 382	27 798	34 083	41 309	49 548	58 873	69 357	81 072	-
35	21 114	26 408	32 535	39 566	47 574	56 632	66 811	78 184	-
40	19 829	24 979	30 926	37 742	45 497	54 266	64 119	75 130	-
45	-	23 493	29 234	35 806	43 282	51 734	61 232	71 850	-
50	-	-	27 493	33 802	40 978	49 092	58 216	68 422	-
55	-	-	-	31 705	38 555	46 306	55 029	64 797	-
60	-	-	-	-	36 006	43 365	51 659	60 957	-
65	-	-	-	-	33 373	40 319	48 161	56 968	-

Power input in W

30	9 493	9 669	9 842	10 008	10 161	10 298	10 415	10 506	-
35	10 422	10 600	10 777	10 946	11 104	11 246	11 368	11 467	-
40	11 468	11 649	11 829	12 002	12 165	12 313	12 442	12 548	-
45	-	12 827	13 010	13 188	13 357	13 511	13 647	13 760	-
50	-	-	14 331	14 514	14 689	14 850	14 993	15 114	-
55	-	-	-	15 990	16 171	16 339	16 491	16 620	-
60	-	-	-	-	17 815	17 991	18 151	18 290	-
65	-	-	-	-	19 632	19 816	19 985	20 133	-

Current consumption in A

30	16.16	16.36	16.55	16.73	16.88	17.01	17.10	17.15	-
35	17.11	17.32	17.52	17.71	17.87	18.01	18.12	18.19	-
40	18.22	18.44	18.65	18.85	19.03	19.19	19.31	19.40	-
45	-	19.73	19.96	20.17	20.37	20.54	20.69	20.80	-
50	-	-	21.46	21.69	21.91	22.10	22.27	22.40	-
55	-	-	-	23.43	23.67	23.88	24.07	24.23	-
60	-	-	-	-	25.66	25.90	26.11	26.30	-
65	-	-	-	-	27.92	28.18	28.42	28.63	-

Mass flow in kg/h

30	482	591	715	855	1 013	1 191	1 388	1 606	-
35	472	583	709	851	1 010	1 189	1 387	1 607	-
40	462	574	701	844	1 005	1 184	1 384	1 604	-
45	-	565	692	836	998	1 178	1 377	1 598	-
50	-	-	682	826	988	1 168	1 368	1 589	-
55	-	-	-	814	976	1 156	1 355	1 576	-
60	-	-	-	-	961	1 140	1 340	1 560	-
65	-	-	-	-	943	1 122	1 320	1 539	-

Coefficient of performance (C.O.P.)

30	2.36	2.87	3.46	4.13	4.88	5.72	6.66	7.72	-
35	2.03	2.49	3.02	3.61	4.28	5.04	5.88	6.82	-
40	1.73	2.14	2.61	3.14	3.74	4.41	5.15	5.99	-
45	-	1.83	2.25	2.71	3.24	3.83	4.49	5.22	-
50	-	-	1.92	2.33	2.79	3.31	3.88	4.53	-
55	-	-	-	1.98	2.38	2.83	3.34	3.90	-
60	-	-	-	-	2.02	2.41	2.85	3.33	-
65	-	-	-	-	1.70	2.03	2.41	2.83	-

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

Cooling capacity	49 092	W
Power input	14 850	W
Current consumption	22.10	A
Mass flow	1 168	kg/h
C.O.P.	3.31	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	82.5	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**
**R22**

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

**Cooling capacity in W**

30	23 747	29 471	36 106	43 729	52 415	62 237	73 272	85 594	-
35	22 483	28 096	34 586	42 027	50 495	60 065	70 811	82 808	-
40	21 194	26 673	32 993	40 229	48 456	57 749	68 182	79 831	-
45	-	25 205	31 332	38 339	46 301	55 293	65 390	76 667	-
50	-	-	29 605	36 359	44 033	52 701	62 438	73 320	-
55	-	-	-	34 294	41 655	49 975	59 329	69 791	-
60	-	-	-	-	39 172	47 121	56 067	66 086	-
65	-	-	-	-	36 587	44 140	52 655	62 208	-

**Power input in W**

30	9 493	9 669	9 842	10 008	10 161	10 298	10 415	10 506	-
35	10 422	10 600	10 777	10 946	11 104	11 246	11 368	11 467	-
40	11 468	11 649	11 829	12 002	12 165	12 313	12 442	12 548	-
45	-	12 827	13 010	13 188	13 357	13 511	13 647	13 760	-
50	-	-	14 331	14 514	14 689	14 850	14 993	15 114	-
55	-	-	-	15 990	16 171	16 339	16 491	16 620	-
60	-	-	-	-	17 815	17 991	18 151	18 290	-
65	-	-	-	-	19 632	19 816	19 985	20 133	-

**Current consumption in A**

30	16.16	16.36	16.55	16.73	16.88	17.01	17.10	17.15	-
35	17.11	17.32	17.52	17.71	17.87	18.01	18.12	18.19	-
40	18.22	18.44	18.65	18.85	19.03	19.19	19.31	19.40	-
45	-	19.73	19.96	20.17	20.37	20.54	20.69	20.80	-
50	-	-	21.46	21.69	21.91	22.10	22.27	22.40	-
55	-	-	-	23.43	23.67	23.88	24.07	24.23	-
60	-	-	-	-	25.66	25.90	26.11	26.30	-
65	-	-	-	-	27.92	28.18	28.42	28.63	-

**Mass flow in kg/h**

30	479	588	711	851	1 008	1 184	1 380	1 597	-
35	470	580	705	846	1 005	1 182	1 379	1 598	-
40	460	571	698	840	1 000	1 178	1 376	1 595	-
45	-	562	689	832	992	1 171	1 370	1 589	-
50	-	-	678	822	983	1 162	1 360	1 580	-
55	-	-	-	810	970	1 149	1 348	1 567	-
60	-	-	-	-	956	1 134	1 332	1 551	-
65	-	-	-	-	938	1 116	1 313	1 530	-

**Coefficient of performance (C.O.P.)**

30	2.50	3.05	3.67	4.37	5.16	6.04	7.04	8.15	-
35	2.16	2.65	3.21	3.84	4.55	5.34	6.23	7.22	-
40	1.85	2.29	2.79	3.35	3.98	4.69	5.48	6.36	-
45	-	1.97	2.41	2.91	3.47	4.09	4.79	5.57	-
50	-	-	2.07	2.51	3.00	3.55	4.16	4.85	-
55	-	-	-	2.14	2.58	3.06	3.60	4.20	-
60	-	-	-	-	2.20	2.62	3.09	3.61	-
65	-	-	-	-	1.86	2.23	2.63	3.09	-

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

Cooling capacity	54 313	W
Power input	16 221	W
Current consumption	23.74	A
Mass flow	1 236	kg/h
C.O.P.	3.35	

**Pressure switch settings**

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

**Sound power data**

Sound power level	82.5	dB(A)
With acoustic hood	75	dB(A)

to: Evaporating temperature at dew point

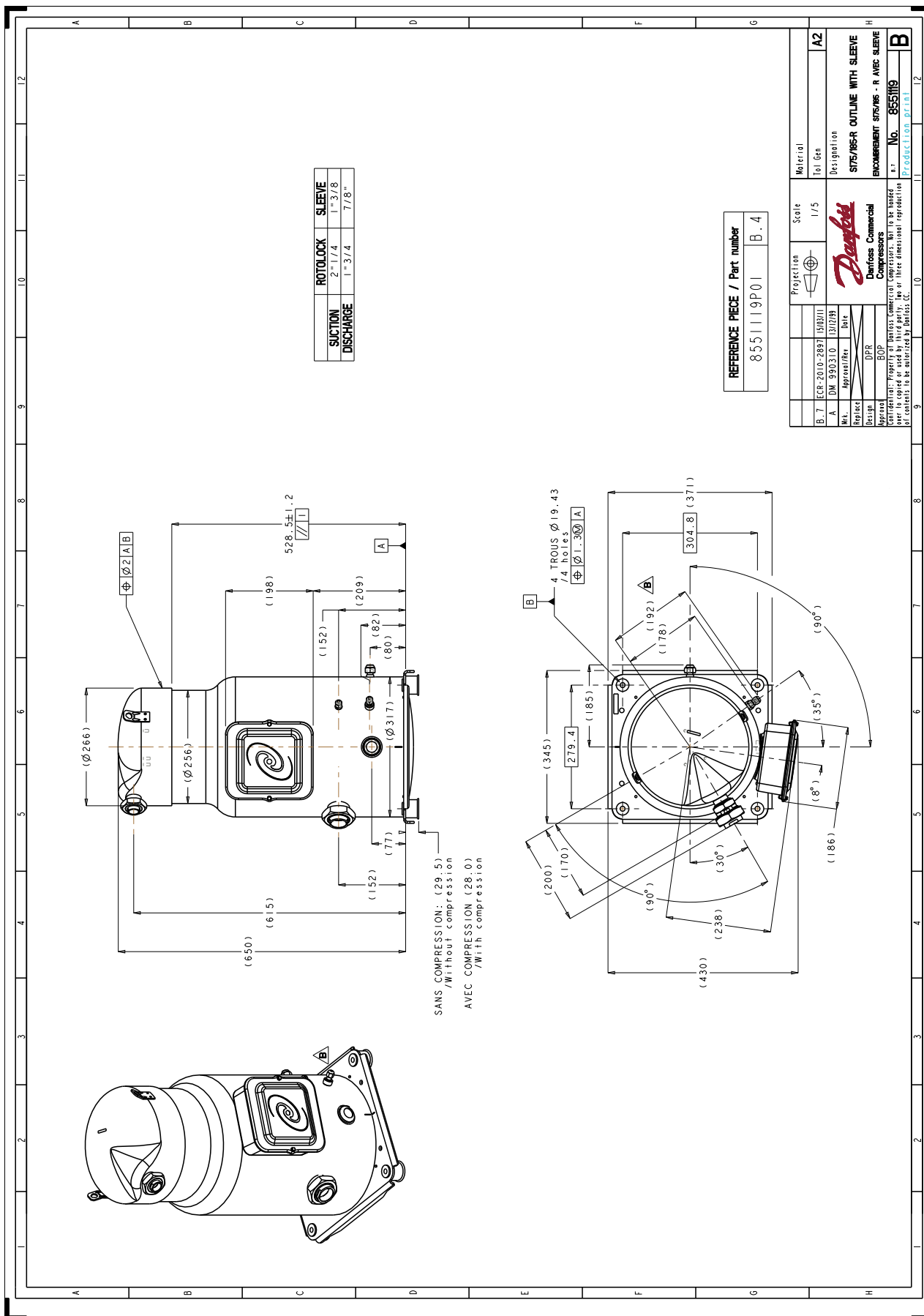
tc: Condensing temperature at dew point

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

All performance data +/- 5%

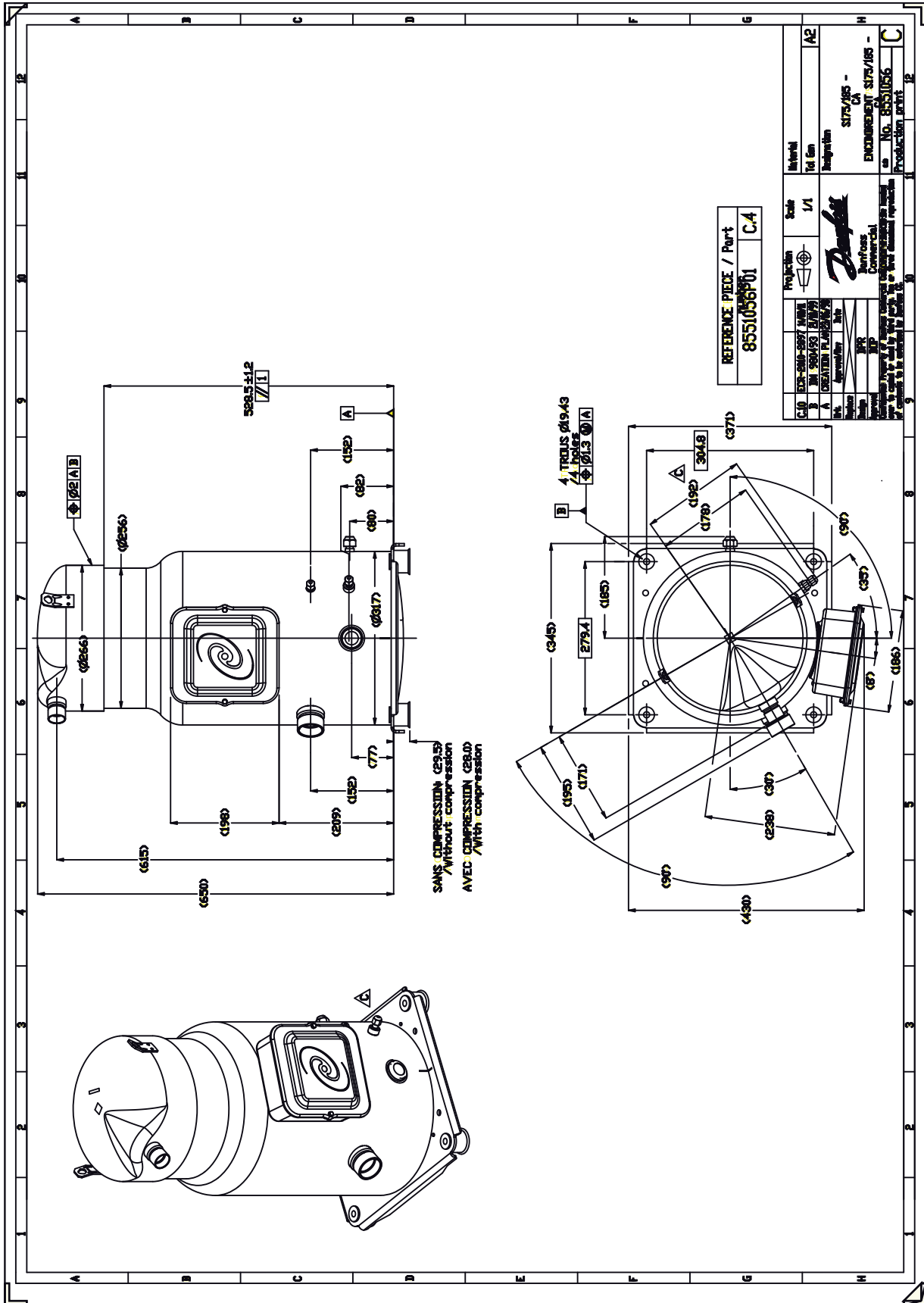
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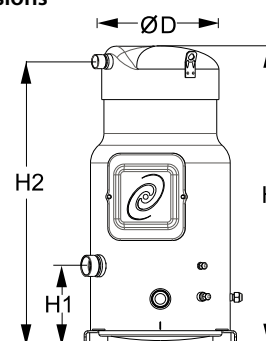


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**General Characteristics**

Model number (on compressor nameplate)		<b>SM185S4QC</b>
Code number for Singlepack*		SM185-4QAI
Code number for Industrial pack**		SM185-4QAM
Drawing number		8551065c
Suction and discharge connections		Brazed
Suction connection		1-5/8" ODF
Discharge connection		1-1/8" ODF
Oil sight glass		Threaded
Oil equalisation connection		3/8" ODF
Oil drain connection		1/4" flare
LP gauge port		Schrader
IPR valve		None
Swept volume		249,9 cm <sup>3</sup> /rev
Displacement @ Nominal speed		43.5 m <sup>3</sup> /h @ 2900 rpm - 52.5 m <sup>3</sup> /h @ 3500 rpm
Net weight		100 kg
Oil charge		6,2 litre, Mineral - 160P
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		13,5 kg
Approved refrigerants		R22, R417A-160SZ

**Dimensions**

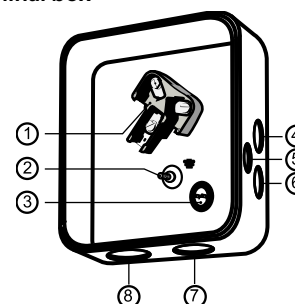


D=317 mm  
H=678 mm  
H1=180 mm  
H2=643 mm  
H3=- mm

**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	0.77 Ω
Maximum Must Trip current (MMT)	35 A
Locked Rotor Amps (LRA)	175 A
Motor protection	Internal thermostat, ext. overload protector needed

**Terminal box**



**Recommended Installation torques**

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Terminal box cover screws	2,3 Nm
Mounting bolts	21 Nm

**Parts shipped with compressor**

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

IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermostat connector
- 4: Knock-out Ø 22 mm (7/8") for 1/2" conduit
- 5: Knock-out Ø 16.5 mm (0.65")
- 6: Knock-out Ø 20.5 mm (0.81")
- 7: Double knock-out Ø 32.1 mm (1.26") & Ø 25.4 mm (1")
- 8: Double knock-out Ø 44 mm (1-3/4") for 1-1/4" conduit & Ø 34 mm (1-3/8") for 1" conduit

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

\*Singlepack: Compressor in cardboard box

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

<b>Rotolock accessories, suction side</b>	<b>Code no.</b>
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<b>Rotolock accessories, discharge side</b>	<b>Code no.</b>
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<b>Rotolock accessories, sets</b>	<b>Code no.</b>
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<b>Oil / lubricants</b>	<b>Code no.</b>
-------------------------	-----------------

Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

<b>Crankcase heaters</b>	<b>Code no.</b>
--------------------------	-----------------

Surface sump heater + bottom insulation, 56 W, 24 V, CE mark, UL	120Z0360
Surface sump heater + bottom insulation, 56 W, 230 V, CE mark, UL	120Z0376
Surface sump heater + bottom insulation, 56 W, 400 V, CE mark, UL	120Z0377
Surface sump heater + bottom insulation, 56 W, 460 V, CE mark, UL	120Z0378
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118
Belt type crankcase heater, 75 W, 460 V, CE mark, UL	120Z0464

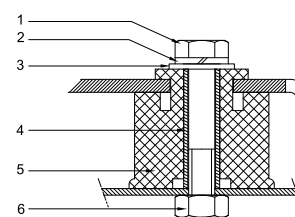
<b>Miscellaneous accessories</b>	<b>Code no.</b>
----------------------------------	-----------------

Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S175-S185	7755007
Acoustic bottom insulation for scroll compressor	120Z0353
Discharge thermostat kit	7750009

<b>Spare parts</b>	<b>Code no.</b>
--------------------	-----------------

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers, 2 rotolock nuts, 2 solder sleeves, 2 gaskets	8156147
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 186 x 198 mm, incl cover	8156139
T block connector 60 x 75 mm	8173021

**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

R22

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

Cooling capacity in W

30	18 318	22 874	28 199	34 360	41 427	49 470	58 559	68 762	-
35	17 278	21 728	26 912	32 902	39 765	47 572	56 390	66 290	-
40	16 216	20 537	25 561	31 358	37 996	45 544	54 071	63 646	-
45	-	19 302	24 145	29 728	36 119	43 387	51 601	60 830	-
50	-	-	22 663	28 011	34 133	41 100	48 979	57 839	-
55	-	-	-	26 206	32 039	38 682	46 204	54 673	-
60	-	-	-	-	29 834	36 131	43 273	51 327	-
65	-	-	-	-	27 517	33 445	40 183	47 799	-

Power input in W

30	7 964	8 050	8 133	8 212	8 284	8 347	8 399	8 437	-
35	8 819	8 906	8 991	9 071	9 145	9 211	9 265	9 306	-
40	9 773	9 861	9 947	10 030	10 106	10 174	10 231	10 275	-
45	-	10 925	11 013	11 097	11 176	11 247	11 307	11 354	-
50	-	-	12 196	12 283	12 364	12 438	12 501	12 553	-
55	-	-	-	13 596	13 680	13 757	13 824	13 879	-
60	-	-	-	-	15 132	15 212	15 283	15 342	-
65	-	-	-	-	16 731	16 814	16 889	16 953	-

Current consumption in A

30	17.62	17.72	17.80	17.88	17.93	17.97	17.99	17.98	-
35	18.55	18.65	18.74	18.82	18.88	18.93	18.95	18.95	-
40	19.61	19.72	19.82	19.90	19.97	20.03	20.06	20.08	-
45	-	20.94	21.05	21.14	21.22	21.29	21.33	21.36	-
50	-	-	22.45	22.55	22.64	22.72	22.78	22.82	-
55	-	-	-	24.14	24.25	24.34	24.42	24.48	-
60	-	-	-	-	26.06	26.17	26.26	26.34	-
65	-	-	-	-	28.09	28.21	28.32	28.42	-

Mass flow in kg/h

30	394	486	592	712	848	1 001	1 172	1 363	-
35	387	480	586	707	844	999	1 171	1 363	-
40	378	472	580	702	840	994	1 167	1 359	-
45	-	464	572	694	832	988	1 161	1 353	-
50	-	-	562	685	823	978	1 151	1 343	-
55	-	-	-	673	811	966	1 138	1 330	-
60	-	-	-	-	796	950	1 122	1 313	-
65	-	-	-	-	778	931	1 102	1 292	-

Coefficient of performance (C.O.P.)

30	2.30	2.84	3.47	4.18	5.00	5.93	6.97	8.15	-
35	1.96	2.44	2.99	3.63	4.35	5.16	6.09	7.12	-
40	1.66	2.08	2.57	3.13	3.76	4.48	5.28	6.19	-
45	-	1.77	2.19	2.68	3.23	3.86	4.56	5.36	-
50	-	-	1.86	2.28	2.76	3.30	3.92	4.61	-
55	-	-	-	1.93	2.34	2.81	3.34	3.94	-
60	-	-	-	-	1.97	2.38	2.83	3.35	-
65	-	-	-	-	1.64	1.99	2.38	2.82	-

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

Cooling capacity	41 100	W
Power input	12 438	W
Current consumption	22.72	A
Mass flow	978	kg/h
C.O.P.	3.30	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	80	dB(A)
With acoustic hood	72	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

R22

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

Cooling capacity in W

30	19 439	24 255	29 878	36 380	43 832	52 306	61 875	72 610	-
35	18 400	23 118	28 611	34 951	42 209	50 458	59 770	70 215	-
40	17 337	21 936	27 278	33 434	40 478	48 480	57 512	67 647	-
45	-	20 708	25 877	31 829	38 637	46 371	55 103	64 906	-
50	-	-	24 409	30 136	36 686	44 131	52 542	61 992	-
55	-	-	-	28 354	34 625	41 760	49 828	58 904	-
60	-	-	-	-	32 455	39 257	46 962	55 642	-
65	-	-	-	-	30 174	36 623	43 943	52 207	-

Power input in W

30	7 964	8 050	8 133	8 212	8 284	8 347	8 399	8 437	-
35	8 819	8 906	8 991	9 071	9 145	9 211	9 265	9 306	-
40	9 773	9 861	9 947	10 030	10 106	10 174	10 231	10 275	-
45	-	10 925	11 013	11 097	11 176	11 247	11 307	11 354	-
50	-	-	12 196	12 283	12 364	12 438	12 501	12 553	-
55	-	-	-	13 596	13 680	13 757	13 824	13 879	-
60	-	-	-	-	15 132	15 212	15 283	15 342	-
65	-	-	-	-	16 731	16 814	16 889	16 953	-

Current consumption in A

30	17.62	17.72	17.80	17.88	17.93	17.97	17.99	17.98	-
35	18.55	18.65	18.74	18.82	18.88	18.93	18.95	18.95	-
40	19.61	19.72	19.82	19.90	19.97	20.03	20.06	20.08	-
45	-	20.94	21.05	21.14	21.22	21.29	21.33	21.36	-
50	-	-	22.45	22.55	22.64	22.72	22.78	22.82	-
55	-	-	-	24.14	24.25	24.34	24.42	24.48	-
60	-	-	-	-	26.06	26.17	26.26	26.34	-
65	-	-	-	-	28.09	28.21	28.32	28.42	-

Mass flow in kg/h

30	392	484	589	708	843	995	1 165	1 355	-
35	385	477	583	704	840	993	1 164	1 355	-
40	376	470	577	698	835	989	1 161	1 352	-
45	-	461	569	691	828	982	1 154	1 345	-
50	-	-	559	681	819	973	1 145	1 336	-
55	-	-	-	669	807	960	1 132	1 323	-
60	-	-	-	-	792	945	1 116	1 305	-
65	-	-	-	-	774	926	1 096	1 284	-

Coefficient of performance (C.O.P.)

30	2.44	3.01	3.67	4.43	5.29	6.27	7.37	8.61	-
35	2.09	2.60	3.18	3.85	4.62	5.48	6.45	7.55	-
40	1.77	2.22	2.74	3.33	4.01	4.77	5.62	6.58	-
45	-	1.90	2.35	2.87	3.46	4.12	4.87	5.72	-
50	-	-	2.00	2.45	2.97	3.55	4.20	4.94	-
55	-	-	-	2.09	2.53	3.04	3.60	4.24	-
60	-	-	-	-	2.14	2.58	3.07	3.63	-
65	-	-	-	-	1.80	2.18	2.60	3.08	-

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

Cooling capacity	45 500	W
Power input	13 622	W
Current consumption	24.17	A
Mass flow	1 035	kg/h
C.O.P.	3.34	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	80	dB(A)
With acoustic hood	72	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

R22

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

Cooling capacity in W

30	22 378	27 793	34 077	41 301	49 539	58 863	69 345	81 058	-
35	21 112	26 406	32 532	39 563	47 571	56 628	66 807	78 179	-
40	19 823	24 972	30 917	37 731	45 485	54 251	64 102	75 110	-
45	-	23 494	29 235	35 807	43 283	51 735	61 234	71 852	-
50	-	-	27 487	33 794	40 969	49 081	58 204	68 408	-
55	-	-	-	31 696	38 543	46 292	55 013	64 778	-
60	-	-	-	-	36 009	43 368	51 662	60 961	-
65	-	-	-	-	33 365	40 309	48 149	56 956	-

Power input in W

30	9 493	9 669	9 842	10 008	10 161	10 298	10 415	10 506	-
35	10 422	10 600	10 777	10 946	11 104	11 246	11 368	11 467	-
40	11 468	11 649	11 829	12 002	12 165	12 313	12 442	12 548	-
45	-	12 827	13 010	13 188	13 357	13 511	13 647	13 760	-
50	-	-	14 331	14 514	14 689	14 850	14 993	15 114	-
55	-	-	-	15 990	16 171	16 339	16 491	16 620	-
60	-	-	-	-	17 815	17 991	18 151	18 290	-
65	-	-	-	-	19 632	19 816	19 985	20 133	-

Current consumption in A

30	16.16	16.36	16.55	16.73	16.88	17.01	17.10	17.15	-
35	17.11	17.32	17.52	17.71	17.87	18.01	18.12	18.19	-
40	18.22	18.44	18.65	18.85	19.03	19.19	19.31	19.40	-
45	-	19.73	19.96	20.17	20.37	20.54	20.69	20.80	-
50	-	-	21.46	21.69	21.91	22.10	22.27	22.40	-
55	-	-	-	23.43	23.67	23.88	24.07	24.23	-
60	-	-	-	-	25.66	25.90	26.11	26.30	-
65	-	-	-	-	27.92	28.18	28.42	28.63	-

Mass flow in kg/h

30	482	591	715	855	1 013	1 191	1 388	1 606	-
35	472	583	709	851	1 010	1 189	1 387	1 607	-
40	462	574	701	844	1 005	1 184	1 384	1 604	-
45	-	565	692	836	998	1 178	1 377	1 598	-
50	-	-	682	826	988	1 168	1 368	1 589	-
55	-	-	-	814	976	1 156	1 355	1 576	-
60	-	-	-	-	961	1 140	1 340	1 560	-
65	-	-	-	-	943	1 122	1 320	1 539	-

Coefficient of performance (C.O.P.)

30	2.36	2.87	3.46	4.13	4.88	5.72	6.66	7.72	-
35	2.03	2.49	3.02	3.61	4.28	5.04	5.88	6.82	-
40	1.73	2.14	2.61	3.14	3.74	4.41	5.15	5.99	-
45	-	1.83	2.25	2.72	3.24	3.83	4.49	5.22	-
50	-	-	1.92	2.33	2.79	3.31	3.88	4.53	-
55	-	-	-	1.98	2.38	2.83	3.34	3.90	-
60	-	-	-	-	2.02	2.41	2.85	3.33	-
65	-	-	-	-	1.70	2.03	2.41	2.83	-

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

Cooling capacity	49 081	W
Power input	14 850	W
Current consumption	22.10	A
Mass flow	1 168	kg/h
C.O.P.	3.31	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	82.5	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

R22

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

Cooling capacity in W

30	23 747	29 471	36 106	43 729	52 415	62 237	73 272	85 594	-
35	22 483	28 096	34 586	42 027	50 495	60 065	70 811	82 808	-
40	21 194	26 673	32 993	40 229	48 456	57 749	68 182	79 831	-
45	-	25 205	31 332	38 339	46 301	55 293	65 390	76 667	-
50	-	-	29 605	36 359	44 033	52 701	62 438	73 320	-
55	-	-	-	34 294	41 655	49 975	59 329	69 791	-
60	-	-	-	-	39 172	47 121	56 067	66 086	-
65	-	-	-	-	36 587	44 140	52 655	62 208	-

Power input in W

30	9 493	9 669	9 842	10 008	10 161	10 298	10 415	10 506	-
35	10 422	10 600	10 777	10 946	11 104	11 246	11 368	11 467	-
40	11 468	11 649	11 829	12 002	12 165	12 313	12 442	12 548	-
45	-	12 827	13 010	13 188	13 357	13 511	13 647	13 760	-
50	-	-	14 331	14 514	14 689	14 850	14 993	15 114	-
55	-	-	-	15 990	16 171	16 339	16 491	16 620	-
60	-	-	-	-	17 815	17 991	18 151	18 290	-
65	-	-	-	-	19 632	19 816	19 985	20 133	-

Current consumption in A

30	16.16	16.36	16.55	16.73	16.88	17.01	17.10	17.15	-
35	17.11	17.32	17.52	17.71	17.87	18.01	18.12	18.19	-
40	18.22	18.44	18.65	18.85	19.03	19.19	19.31	19.40	-
45	-	19.73	19.96	20.17	20.37	20.54	20.69	20.80	-
50	-	-	21.46	21.69	21.91	22.10	22.27	22.40	-
55	-	-	-	23.43	23.67	23.88	24.07	24.23	-
60	-	-	-	-	25.66	25.90	26.11	26.30	-
65	-	-	-	-	27.92	28.18	28.42	28.63	-

Mass flow in kg/h

30	479	588	711	851	1 008	1 184	1 380	1 597	-
35	470	580	705	846	1 005	1 182	1 379	1 598	-
40	460	571	698	840	1 000	1 178	1 376	1 595	-
45	-	562	689	832	992	1 171	1 370	1 589	-
50	-	-	678	822	983	1 162	1 360	1 580	-
55	-	-	-	810	970	1 149	1 348	1 567	-
60	-	-	-	-	956	1 134	1 332	1 551	-
65	-	-	-	-	938	1 116	1 313	1 530	-

Coefficient of performance (C.O.P.)

30	2.50	3.05	3.67	4.37	5.16	6.04	7.04	8.15	-
35	2.16	2.65	3.21	3.84	4.55	5.34	6.23	7.22	-
40	1.85	2.29	2.79	3.35	3.98	4.69	5.48	6.36	-
45	-	1.97	2.41	2.91	3.47	4.09	4.79	5.57	-
50	-	-	2.07	2.51	3.00	3.55	4.16	4.85	-
55	-	-	-	2.14	2.58	3.06	3.60	4.20	-
60	-	-	-	-	2.20	2.62	3.09	3.61	-
65	-	-	-	-	1.86	2.23	2.63	3.09	-

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

Cooling capacity	54 313	W
Power input	16 221	W
Current consumption	23.74	A
Mass flow	1 236	kg/h
C.O.P.	3.35	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	82.5	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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