

Datasheets

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



**General Characteristics**

Model number (on compressor nameplate)		<b>SM147A4ALB</b>
Code number for Singlepack*		120H0191
Code number for Industrial pack**		120H0311
Drawing number		8560003e
Suction and discharge connections		Brazed
Suction connection		1-3/8" ODF
Discharge connection		7/8" ODF
Oil sight glass		Threaded
Oil equalisation connection		1-3/4" Rotolock
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		193.5 cm <sup>3</sup> /rev
Displacement @ Nominal speed		33.7 m <sup>3</sup> /h @ 2900 rpm - 40.6 m <sup>3</sup> /h @ 3500 rpm
Net weight		67 kg
Oil charge		3.3 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		7.9 kg
Approved refrigerants		R22, R417A-160SZ

**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	0.92 Ω
Rated Load Amps (RLA)	20.7 A
Maximum Continuous Current (MCC)	29 A
Locked Rotor Amps (LRA)	147 A
Motor protection	Internal overload protector

**Recommended Installation torques**

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	15 Nm

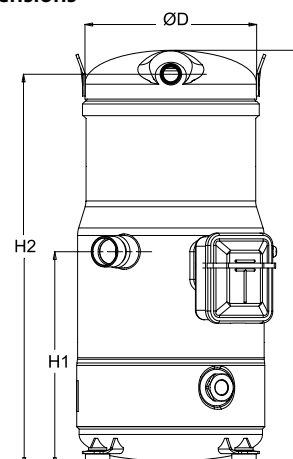
**Parts shipped with compressor**

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: 8 Unboxed compressors on pallet (order per multiples of 8)

**Dimensions**


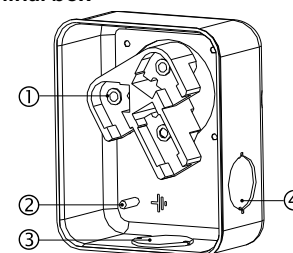
D=243 mm

H=540 mm

H1=278 mm

H2=509 mm

H3= mm

**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")

**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)	120Z0405
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.**

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

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

Surface sump heater, 80 W, 24 V, CE mark, UL	120Z0388
Surface sump heater, 80 W, 230 V, CE mark, UL	120Z0389
Surface sump heater, 80 W, 400 V, CE mark, UL	120Z0390
Surface sump heater, 80 W, 460 V, CE mark, UL	120Z0391

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

Acoustic hood for scroll compressor SH105-161 & SM124, SM147	120Z0035
Gasket, 1-3/4"	8156132
Discharge thermostat kit	7750009

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

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z0066
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

**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	14 780	18 349	22 503	27 311	32 841	39 160	46 338	54 441	-
35	14 025	17 497	21 529	26 189	31 546	37 668	44 622	52 477	-
40	13 234	16 593	20 488	24 986	30 156	36 065	42 781	50 372	-
45	-	15 648	19 390	23 711	28 678	34 359	40 822	48 135	-
50	-	-	18 244	22 373	27 122	32 561	38 756	45 776	-
55	-	-	-	20 979	25 497	30 677	36 590	43 302	-
60	-	-	-	-	23 810	28 719	34 333	40 722	-
65	-	-	-	-	22 072	26 693	31 995	38 046	-

**Power input in W**

30	5 634	5 757	5 918	6 100	6 285	6 454	6 590	6 675	-
35	6 258	6 350	6 496	6 676	6 873	7 069	7 246	7 385	-
40	6 984	7 033	7 149	7 314	7 510	7 718	7 922	8 101	-
45	-	7 829	7 902	8 037	8 218	8 426	8 642	8 849	-
50	-	-	8 777	8 870	9 021	9 214	9 430	9 650	-
55	-	-	-	9 834	9 944	10 108	10 309	10 529	-
60	-	-	-	-	11 008	11 130	11 303	11 509	-
65	-	-	-	-	12 238	12 304	12 435	12 613	-

**Current consumption in A**

30	12.99	13.17	13.31	13.44	13.58	13.77	14.02	14.36	-
35	13.64	13.85	14.00	14.15	14.29	14.47	14.71	15.03	-
40	14.36	14.59	14.76	14.91	15.06	15.24	15.46	15.76	-
45	-	15.42	15.62	15.78	15.93	16.09	16.30	16.58	-
50	-	-	16.60	16.77	16.92	17.08	17.27	17.52	-
55	-	-	-	17.92	18.07	18.22	18.40	18.63	-
60	-	-	-	-	19.42	19.56	19.72	19.93	-
65	-	-	-	-	20.99	21.12	21.27	21.45	-

**Mass flow in kg/h**

30	317	389	471	565	671	791	926	1 077	-
35	313	385	468	562	669	789	925	1 076	-
40	308	381	464	558	665	785	921	1 073	-
45	-	375	458	552	659	780	916	1 068	-
50	-	-	451	545	652	773	908	1 060	-
55	-	-	-	537	643	763	898	1 050	-
60	-	-	-	-	633	752	887	1 038	-
65	-	-	-	-	621	740	873	1 023	-

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

30	2.62	3.19	3.80	4.48	5.23	6.07	7.03	8.16	-
35	2.24	2.76	3.31	3.92	4.59	5.33	6.16	7.11	-
40	1.89	2.36	2.87	3.42	4.02	4.67	5.40	6.22	-
45	-	2.00	2.45	2.95	3.49	4.08	4.72	5.44	-
50	-	-	2.08	2.52	3.01	3.53	4.11	4.74	-
55	-	-	-	2.13	2.56	3.04	3.55	4.11	-
60	-	-	-	-	2.16	2.58	3.04	3.54	-
65	-	-	-	-	1.80	2.17	2.57	3.02	-

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

Cooling capacity	32 561	W
Power input	9 214	W
Current consumption	17.08	A
Mass flow	773	kg/h
C.O.P.	3.53	

**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	74	dB(A)
With acoustic hood	68	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	15 685	19 456	23 843	28 917	34 747	41 405	48 962	57 487	-
35	14 936	18 616	22 888	27 820	33 485	39 954	47 296	55 584	-
40	14 148	17 724	21 864	26 641	32 126	38 390	45 504	53 538	-
45	-	16 787	20 781	25 388	30 678	36 722	43 593	51 361	-
50	-	-	19 650	24 071	29 151	34 962	41 575	49 062	-
55	-	-	-	22 699	27 555	33 118	39 460	46 653	-
60	-	-	-	-	25 902	31 203	37 261	44 146	-
65	-	-	-	-	24 204	29 230	34 989	41 555	-

**Power input in W**

30	5 634	5 757	5 918	6 100	6 285	6 454	6 590	6 675	-
35	6 258	6 350	6 496	6 676	6 873	7 069	7 246	7 385	-
40	6 984	7 033	7 149	7 314	7 510	7 718	7 922	8 101	-
45	-	7 829	7 902	8 037	8 218	8 426	8 642	8 849	-
50	-	-	8 777	8 870	9 021	9 214	9 430	9 650	-
55	-	-	-	9 834	9 944	10 108	10 309	10 529	-
60	-	-	-	-	11 008	11 130	11 303	11 509	-
65	-	-	-	-	12 238	12 304	12 435	12 613	-

**Current consumption in A**

30	12.99	13.17	13.31	13.44	13.58	13.77	14.02	14.36	-
35	13.64	13.85	14.00	14.15	14.29	14.47	14.71	15.03	-
40	14.36	14.59	14.76	14.91	15.06	15.24	15.46	15.76	-
45	-	15.42	15.62	15.78	15.93	16.09	16.30	16.58	-
50	-	-	16.60	16.77	16.92	17.08	17.27	17.52	-
55	-	-	-	17.92	18.07	18.22	18.40	18.63	-
60	-	-	-	-	19.42	19.56	19.72	19.93	-
65	-	-	-	-	20.99	21.12	21.27	21.45	-

**Mass flow in kg/h**

30	316	387	469	562	667	787	921	1 071	-
35	312	383	466	559	665	785	919	1 070	-
40	307	379	461	555	661	781	916	1 067	-
45	-	373	456	549	656	776	911	1 061	-
50	-	-	449	542	648	768	903	1 054	-
55	-	-	-	534	640	759	893	1 044	-
60	-	-	-	-	629	748	882	1 032	-
65	-	-	-	-	617	735	868	1 017	-

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

30	2.78	3.38	4.03	4.74	5.53	6.41	7.43	8.61	-
35	2.39	2.93	3.52	4.17	4.87	5.65	6.53	7.53	-
40	2.03	2.52	3.06	3.64	4.28	4.97	5.74	6.61	-
45	-	2.14	2.63	3.16	3.73	4.36	5.04	5.80	-
50	-	-	2.24	2.71	3.23	3.79	4.41	5.08	-
55	-	-	-	2.31	2.77	3.28	3.83	4.43	-
60	-	-	-	-	2.35	2.80	3.30	3.84	-
65	-	-	-	-	1.98	2.38	2.81	3.29	-

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

Cooling capacity	36 048	W
Power input	10 081	W
Current consumption	18.15	A
Mass flow	818	kg/h
C.O.P.	3.58	

**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	74	dB(A)
With acoustic hood	68	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	18 209	22 317	27 093	32 618	38 970	46 229	54 475	63 788	-
35	17 448	21 461	26 117	31 495	37 676	44 738	52 761	61 824	-
40	16 621	20 518	25 032	30 244	36 233	43 076	50 855	59 647	-
45	-	19 499	23 852	28 876	34 651	41 255	48 768	57 268	-
50	-	-	22 587	27 403	32 943	39 287	46 512	54 697	-
55	-	-	-	25 836	31 120	37 181	44 096	51 945	-
60	-	-	-	-	29 191	34 947	41 530	49 019	-
65	-	-	-	-	27 164	32 593	38 822	45 927	-

**Power input in W**

30	6 831	7 000	7 167	7 332	7 495	7 657	7 818	7 977	-
35	7 575	7 749	7 925	8 104	8 285	8 468	8 655	8 844	-
40	8 368	8 544	8 726	8 914	9 109	9 310	9 519	9 735	-
45	-	9 402	9 585	9 780	9 985	10 201	10 429	10 667	-
50	-	-	10 523	10 720	10 932	11 159	11 402	11 659	-
55	-	-	-	11 752	11 967	12 202	12 456	12 729	-
60	-	-	-	-	13 109	13 348	13 610	13 895	-
65	-	-	-	-	14 375	14 614	14 880	15 174	-

**Current consumption in A**

30	12.38	12.52	12.70	12.90	13.14	13.43	13.77	14.18	-
35	13.13	13.28	13.47	13.68	13.93	14.22	14.57	14.97	-
40	13.94	14.11	14.30	14.51	14.76	15.06	15.40	15.80	-
45	-	15.03	15.22	15.44	15.69	15.98	16.31	16.71	-
50	-	-	16.28	16.49	16.73	17.02	17.34	17.72	-
55	-	-	-	17.71	17.94	18.21	18.52	18.89	-
60	-	-	-	-	19.35	19.60	19.89	20.24	-
65	-	-	-	-	20.98	21.22	21.49	21.81	-

**Mass flow in kg/h**

30	391	473	567	674	796	934	1 089	1 262	-
35	390	473	568	676	799	937	1 093	1 268	-
40	387	471	566	675	799	938	1 095	1 271	-
45	-	467	563	673	797	937	1 094	1 270	-
50	-	-	559	668	792	932	1 090	1 266	-
55	-	-	-	661	785	925	1 083	1 259	-
60	-	-	-	-	776	915	1 073	1 249	-
65	-	-	-	-	764	903	1 060	1 235	-

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

30	2.67	3.19	3.78	4.45	5.20	6.04	6.97	8.00	-
35	2.30	2.77	3.30	3.89	4.55	5.28	6.10	6.99	-
40	1.99	2.40	2.87	3.39	3.98	4.63	5.34	6.13	-
45	-	2.07	2.49	2.95	3.47	4.04	4.68	5.37	-
50	-	-	2.15	2.56	3.01	3.52	4.08	4.69	-
55	-	-	-	2.20	2.60	3.05	3.54	4.08	-
60	-	-	-	-	2.23	2.62	3.05	3.53	-
65	-	-	-	-	1.89	2.23	2.61	3.03	-

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

Cooling capacity	39 287	W
Power input	11 159	W
Current consumption	17.02	A
Mass flow	932	kg/h
C.O.P.	3.52	

**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	78	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 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	19 323	23 664	28 707	34 535	41 231	48 879	57 560	67 357	-
35	18 581	22 834	27 765	33 457	39 992	47 453	55 923	65 485	-
40	17 770	21 915	26 713	32 247	38 599	45 853	54 091	63 397	-
45	-	20 919	25 563	30 918	37 067	44 093	52 078	61 106	-
50	-	-	24 328	29 483	35 407	42 184	49 895	58 624	-
55	-	-	-	27 953	33 633	40 139	47 556	55 965	-
60	-	-	-	-	31 755	37 970	45 071	53 140	-
65	-	-	-	-	29 788	35 691	42 455	50 162	-

**Power input in W**

30	6 831	7 000	7 167	7 332	7 495	7 657	7 818	7 977	-
35	7 575	7 749	7 925	8 104	8 285	8 468	8 655	8 844	-
40	8 368	8 544	8 726	8 914	9 109	9 310	9 519	9 735	-
45	-	9 402	9 585	9 780	9 985	10 201	10 429	10 667	-
50	-	-	10 523	10 720	10 932	11 159	11 402	11 659	-
55	-	-	-	11 752	11 967	12 202	12 456	12 729	-
60	-	-	-	-	13 109	13 348	13 610	13 895	-
65	-	-	-	-	14 375	14 614	14 880	15 174	-

**Current consumption in A**

30	12.38	12.52	12.70	12.90	13.14	13.43	13.77	14.18	-
35	13.13	13.28	13.47	13.68	13.93	14.22	14.57	14.97	-
40	13.94	14.11	14.30	14.51	14.76	15.06	15.40	15.80	-
45	-	15.03	15.22	15.44	15.69	15.98	16.31	16.71	-
50	-	-	16.28	16.49	16.73	17.02	17.34	17.72	-
55	-	-	-	17.71	17.94	18.21	18.52	18.89	-
60	-	-	-	-	19.35	19.60	19.89	20.24	-
65	-	-	-	-	20.98	21.22	21.49	21.81	-

**Mass flow in kg/h**

30	389	471	564	671	792	929	1 082	1 255	-
35	388	470	565	672	794	932	1 087	1 261	-
40	385	468	564	672	795	933	1 089	1 263	-
45	-	465	561	669	792	931	1 088	1 263	-
50	-	-	556	664	788	927	1 084	1 259	-
55	-	-	-	658	781	920	1 077	1 252	-
60	-	-	-	-	772	910	1 067	1 242	-
65	-	-	-	-	760	898	1 054	1 228	-

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

30	2.83	3.38	4.01	4.71	5.50	6.38	7.36	8.44	-
35	2.45	2.95	3.50	4.13	4.83	5.60	6.46	7.40	-
40	2.12	2.57	3.06	3.62	4.24	4.93	5.68	6.51	-
45	-	2.23	2.67	3.16	3.71	4.32	4.99	5.73	-
50	-	-	2.31	2.75	3.24	3.78	4.38	5.03	-
55	-	-	-	2.38	2.81	3.29	3.82	4.40	-
60	-	-	-	-	2.42	2.84	3.31	3.82	-
65	-	-	-	-	2.07	2.44	2.85	3.31	-

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

Cooling capacity	43 553	W
Power input	12 181	W
Current consumption	18.19	A
Mass flow	988	kg/h
C.O.P.	3.58	

**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	78	dB(A)
With acoustic hood	72	dB(A)

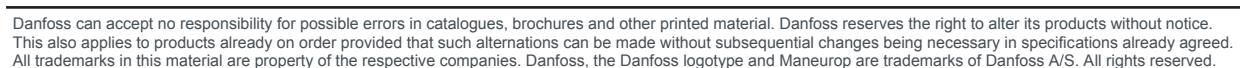
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

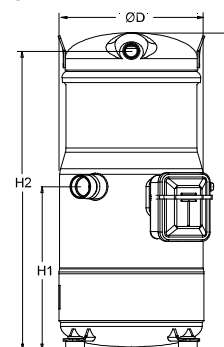
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**General Characteristics**

Model number (on compressor nameplate)		<b>SM147A4CLB</b>
Code number for Industrial pack**		120H1179
Drawing number		8560077a
Suction and discharge connections		Brazed
Suction connection		1-3/8 " ODF
Discharge connection		7/8 " ODF
Oil sight glass		None
Oil equalisation connection		None
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		193.5 cm <sup>3</sup> /rev
Displacement @ Nominal speed		33.7 m <sup>3</sup> /h @ 2900 rpm - 40.6 m <sup>3</sup> /h @ 3500 rpm
Net weight		67 kg
Oil charge		3.3 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		7.9 kg
Approved refrigerants		R22, R417A-160SZ

**Dimensions**


D=243 mm

H=540 mm

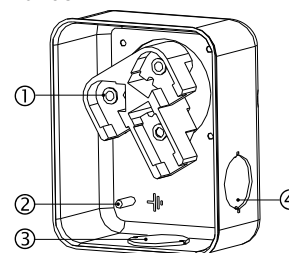
H1=278 mm

H2=509 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	0.92 Ω
Rated Load Amps (RLA)	20.7 A
Maximum Continuous Current (MCC)	29 A
Locked Rotor Amps (LRA)	147 A
Motor protection	Internal overload protector

**Terminal box**

**Recommended Installation torques**

Oil sight glass	0 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	15 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 M4-12

3: Knock-out Ø 29 mm (1.14")

4: Knock-out Ø 25.5 mm (1.00")

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

\*Singlepack: Compressor in cardboard box

\*\*Industrial pack: 8 Unboxed compressors on pallet (order per multiples of 8)

**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)	120Z0405
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.**

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

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

Surface sump heater, 80 W, 24 V, CE mark, UL	120Z0388
Surface sump heater, 80 W, 230 V, CE mark, UL	120Z0389
Surface sump heater, 80 W, 400 V, CE mark, UL	120Z0390
Surface sump heater, 80 W, 460 V, CE mark, UL	120Z0391

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

Acoustic hood for scroll compressor SH105-161 & SM124, SM147	120Z0035
Discharge thermostat kit	7750009

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

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z0066
Service kit for terminal box 96 x 115 mm, including 1 cover, 1 clamp	8156135
T block connector 52 x 57 mm	8173230

**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	14 780	18 349	22 503	27 311	32 841	39 160	46 338	54 441	-
35	14 025	17 497	21 529	26 189	31 546	37 668	44 622	52 477	-
40	13 234	16 593	20 488	24 986	30 156	36 065	42 781	50 372	-
45	-	15 648	19 390	23 711	28 678	34 359	40 822	48 135	-
50	-	-	18 244	22 373	27 122	32 561	38 756	45 776	-
55	-	-	-	20 979	25 497	30 677	36 590	43 302	-
60	-	-	-	-	23 810	28 719	34 333	40 722	-
65	-	-	-	-	22 072	26 693	31 995	38 046	-

**Power input in W**

30	5 634	5 757	5 918	6 100	6 285	6 454	6 590	6 675	-
35	6 258	6 350	6 496	6 676	6 873	7 069	7 246	7 385	-
40	6 984	7 033	7 149	7 314	7 510	7 718	7 922	8 101	-
45	-	7 829	7 902	8 037	8 218	8 426	8 642	8 849	-
50	-	-	8 777	8 870	9 021	9 214	9 430	9 650	-
55	-	-	-	9 834	9 944	10 108	10 309	10 529	-
60	-	-	-	-	11 008	11 130	11 303	11 509	-
65	-	-	-	-	12 238	12 304	12 435	12 613	-

**Current consumption in A**

30	12.99	13.17	13.31	13.44	13.58	13.77	14.02	14.36	-
35	13.64	13.85	14.00	14.15	14.29	14.47	14.71	15.03	-
40	14.36	14.59	14.76	14.91	15.06	15.24	15.46	15.76	-
45	-	15.42	15.62	15.78	15.93	16.09	16.30	16.58	-
50	-	-	16.60	16.77	16.92	17.08	17.27	17.52	-
55	-	-	-	17.92	18.07	18.22	18.40	18.63	-
60	-	-	-	-	19.42	19.56	19.72	19.93	-
65	-	-	-	-	20.99	21.12	21.27	21.45	-

**Mass flow in kg/h**

30	317	389	471	565	671	791	926	1 077	-
35	313	385	468	562	669	789	925	1 076	-
40	308	381	464	558	665	785	921	1 073	-
45	-	375	458	552	659	780	916	1 068	-
50	-	-	451	545	652	773	908	1 060	-
55	-	-	-	537	643	763	898	1 050	-
60	-	-	-	-	633	752	887	1 038	-
65	-	-	-	-	621	740	873	1 023	-

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

30	2.62	3.19	3.80	4.48	5.23	6.07	7.03	8.16	-
35	2.24	2.76	3.31	3.92	4.59	5.33	6.16	7.11	-
40	1.89	2.36	2.87	3.42	4.02	4.67	5.40	6.22	-
45	-	2.00	2.45	2.95	3.49	4.08	4.72	5.44	-
50	-	-	2.08	2.52	3.01	3.53	4.11	4.74	-
55	-	-	-	2.13	2.56	3.04	3.55	4.11	-
60	-	-	-	-	2.16	2.58	3.04	3.54	-
65	-	-	-	-	1.80	2.17	2.57	3.02	-

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

Cooling capacity	32 561	W
Power input	9 214	W
Current consumption	17.08	A
Mass flow	773	kg/h
C.O.P.	3.53	

**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	74	dB(A)
With acoustic hood	68	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	15 685	19 456	23 843	28 917	34 747	41 405	48 962	57 487	-
35	14 936	18 616	22 888	27 820	33 485	39 954	47 296	55 584	-
40	14 148	17 724	21 864	26 641	32 126	38 390	45 504	53 538	-
45	-	16 787	20 781	25 388	30 678	36 722	43 593	51 361	-
50	-	-	19 650	24 071	29 151	34 962	41 575	49 062	-
55	-	-	-	22 699	27 555	33 118	39 460	46 653	-
60	-	-	-	-	25 902	31 203	37 261	44 146	-
65	-	-	-	-	24 204	29 230	34 989	41 555	-

**Power input in W**

30	5 634	5 757	5 918	6 100	6 285	6 454	6 590	6 675	-
35	6 258	6 350	6 496	6 676	6 873	7 069	7 246	7 385	-
40	6 984	7 033	7 149	7 314	7 510	7 718	7 922	8 101	-
45	-	7 829	7 902	8 037	8 218	8 426	8 642	8 849	-
50	-	-	8 777	8 870	9 021	9 214	9 430	9 650	-
55	-	-	-	9 834	9 944	10 108	10 309	10 529	-
60	-	-	-	-	11 008	11 130	11 303	11 509	-
65	-	-	-	-	12 238	12 304	12 435	12 613	-

**Current consumption in A**

30	12.99	13.17	13.31	13.44	13.58	13.77	14.02	14.36	-
35	13.64	13.85	14.00	14.15	14.29	14.47	14.71	15.03	-
40	14.36	14.59	14.76	14.91	15.06	15.24	15.46	15.76	-
45	-	15.42	15.62	15.78	15.93	16.09	16.30	16.58	-
50	-	-	16.60	16.77	16.92	17.08	17.27	17.52	-
55	-	-	-	17.92	18.07	18.22	18.40	18.63	-
60	-	-	-	-	19.42	19.56	19.72	19.93	-
65	-	-	-	-	20.99	21.12	21.27	21.45	-

**Mass flow in kg/h**

30	316	387	469	562	667	787	921	1 071	-
35	312	383	466	559	665	785	919	1 070	-
40	307	379	461	555	661	781	916	1 067	-
45	-	373	456	549	656	776	911	1 061	-
50	-	-	449	542	648	768	903	1 054	-
55	-	-	-	534	640	759	893	1 044	-
60	-	-	-	-	629	748	882	1 032	-
65	-	-	-	-	617	735	868	1 017	-

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

30	2.78	3.38	4.03	4.74	5.53	6.41	7.43	8.61	-
35	2.39	2.93	3.52	4.17	4.87	5.65	6.53	7.53	-
40	2.03	2.52	3.06	3.64	4.28	4.97	5.74	6.61	-
45	-	2.14	2.63	3.16	3.73	4.36	5.04	5.80	-
50	-	-	2.24	2.71	3.23	3.79	4.41	5.08	-
55	-	-	-	2.31	2.77	3.28	3.83	4.43	-
60	-	-	-	-	2.35	2.80	3.30	3.84	-
65	-	-	-	-	1.98	2.38	2.81	3.29	-

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

Cooling capacity	36 048	W
Power input	10 081	W
Current consumption	18.15	A
Mass flow	818	kg/h
C.O.P.	3.58	

**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	74	dB(A)
With acoustic hood	68	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	18 209	22 317	27 093	32 618	38 970	46 229	54 475	63 788	-
35	17 448	21 461	26 117	31 495	37 676	44 738	52 761	61 824	-
40	16 621	20 518	25 032	30 244	36 233	43 076	50 855	59 647	-
45	-	19 499	23 852	28 876	34 651	41 255	48 768	57 268	-
50	-	-	22 587	27 403	32 943	39 287	46 512	54 697	-
55	-	-	-	25 836	31 120	37 181	44 096	51 945	-
60	-	-	-	-	29 191	34 947	41 530	49 019	-
65	-	-	-	-	27 164	32 593	38 822	45 927	-

**Power input in W**

30	6 831	7 000	7 167	7 332	7 495	7 657	7 818	7 977	-
35	7 575	7 749	7 925	8 104	8 285	8 468	8 655	8 844	-
40	8 368	8 544	8 726	8 914	9 109	9 310	9 519	9 735	-
45	-	9 402	9 585	9 780	9 985	10 201	10 429	10 667	-
50	-	-	10 523	10 720	10 932	11 159	11 402	11 659	-
55	-	-	-	11 752	11 967	12 202	12 456	12 729	-
60	-	-	-	-	13 109	13 348	13 610	13 895	-
65	-	-	-	-	14 375	14 614	14 880	15 174	-

**Current consumption in A**

30	12.38	12.52	12.70	12.90	13.14	13.43	13.77	14.18	-
35	13.13	13.28	13.47	13.68	13.93	14.22	14.57	14.97	-
40	13.94	14.11	14.30	14.51	14.76	15.06	15.40	15.80	-
45	-	15.03	15.22	15.44	15.69	15.98	16.31	16.71	-
50	-	-	16.28	16.49	16.73	17.02	17.34	17.72	-
55	-	-	-	17.71	17.94	18.21	18.52	18.89	-
60	-	-	-	-	19.35	19.60	19.89	20.24	-
65	-	-	-	-	20.98	21.22	21.49	21.81	-

**Mass flow in kg/h**

30	391	473	567	674	796	934	1 089	1 262	-
35	390	473	568	676	799	937	1 093	1 268	-
40	387	471	566	675	799	938	1 095	1 271	-
45	-	467	563	673	797	937	1 094	1 270	-
50	-	-	559	668	792	932	1 090	1 266	-
55	-	-	-	661	785	925	1 083	1 259	-
60	-	-	-	-	776	915	1 073	1 249	-
65	-	-	-	-	764	903	1 060	1 235	-

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

30	2.67	3.19	3.78	4.45	5.20	6.04	6.97	8.00	-
35	2.30	2.77	3.30	3.89	4.55	5.28	6.10	6.99	-
40	1.99	2.40	2.87	3.39	3.98	4.63	5.34	6.13	-
45	-	2.07	2.49	2.95	3.47	4.04	4.68	5.37	-
50	-	-	2.15	2.56	3.01	3.52	4.08	4.69	-
55	-	-	-	2.20	2.60	3.05	3.54	4.08	-
60	-	-	-	-	2.23	2.62	3.05	3.53	-
65	-	-	-	-	1.89	2.23	2.61	3.03	-

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

Cooling capacity	39 287	W
Power input	11 159	W
Current consumption	17.02	A
Mass flow	932	kg/h
C.O.P.	3.52	

**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	78	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 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	19 323	23 664	28 707	34 535	41 231	48 879	57 560	67 357	-
35	18 581	22 834	27 765	33 457	39 992	47 453	55 923	65 485	-
40	17 770	21 915	26 713	32 247	38 599	45 853	54 091	63 397	-
45	-	20 919	25 563	30 918	37 067	44 093	52 078	61 106	-
50	-	-	24 328	29 483	35 407	42 184	49 895	58 624	-
55	-	-	-	27 953	33 633	40 139	47 556	55 965	-
60	-	-	-	-	31 755	37 970	45 071	53 140	-
65	-	-	-	-	29 788	35 691	42 455	50 162	-

**Power input in W**

30	6 831	7 000	7 167	7 332	7 495	7 657	7 818	7 977	-
35	7 575	7 749	7 925	8 104	8 285	8 468	8 655	8 844	-
40	8 368	8 544	8 726	8 914	9 109	9 310	9 519	9 735	-
45	-	9 402	9 585	9 780	9 985	10 201	10 429	10 667	-
50	-	-	10 523	10 720	10 932	11 159	11 402	11 659	-
55	-	-	-	11 752	11 967	12 202	12 456	12 729	-
60	-	-	-	-	13 109	13 348	13 610	13 895	-
65	-	-	-	-	14 375	14 614	14 880	15 174	-

**Current consumption in A**

30	12.38	12.52	12.70	12.90	13.14	13.43	13.77	14.18	-
35	13.13	13.28	13.47	13.68	13.93	14.22	14.57	14.97	-
40	13.94	14.11	14.30	14.51	14.76	15.06	15.40	15.80	-
45	-	15.03	15.22	15.44	15.69	15.98	16.31	16.71	-
50	-	-	16.28	16.49	16.73	17.02	17.34	17.72	-
55	-	-	-	17.71	17.94	18.21	18.52	18.89	-
60	-	-	-	-	19.35	19.60	19.89	20.24	-
65	-	-	-	-	20.98	21.22	21.49	21.81	-

**Mass flow in kg/h**

30	389	471	564	671	792	929	1 082	1 255	-
35	388	470	565	672	794	932	1 087	1 261	-
40	385	468	564	672	795	933	1 089	1 263	-
45	-	465	561	669	792	931	1 088	1 263	-
50	-	-	556	664	788	927	1 084	1 259	-
55	-	-	-	658	781	920	1 077	1 252	-
60	-	-	-	-	772	910	1 067	1 242	-
65	-	-	-	-	760	898	1 054	1 228	-

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

30	2.83	3.38	4.01	4.71	5.50	6.38	7.36	8.44	-
35	2.45	2.95	3.50	4.13	4.83	5.60	6.46	7.40	-
40	2.12	2.57	3.06	3.62	4.24	4.93	5.68	6.51	-
45	-	2.23	2.67	3.16	3.71	4.32	4.99	5.73	-
50	-	-	2.31	2.75	3.24	3.78	4.38	5.03	-
55	-	-	-	2.38	2.81	3.29	3.82	4.40	-
60	-	-	-	-	2.42	2.84	3.31	3.82	-
65	-	-	-	-	2.07	2.44	2.85	3.31	-

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

Cooling capacity	43 553	W
Power input	12 181	W
Current consumption	18.19	A
Mass flow	988	kg/h
C.O.P.	3.58	

**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	78	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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