



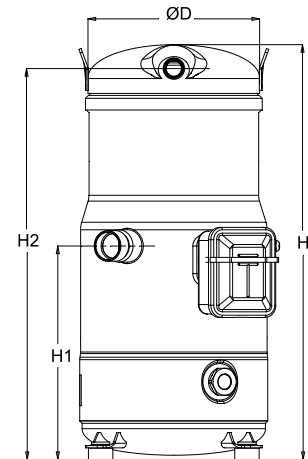
Datasheets

Performer[®] scroll compressors **SM / SY / SZ / SH**



General Characteristics

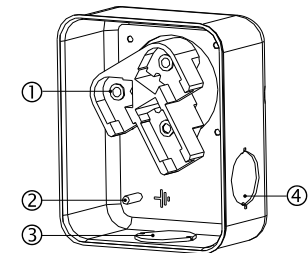
Model number (on compressor nameplate)		SH120A4ALC
Code number for Singlepack*		120H0013
Code number for Industrial pack**		120H0014
Drawing number		8560003d
Suction and discharge connections		Brazed
Suction connection		1-3/8" ODF
Discharge connection		7/8" ODF
Oil sight glass		Threaded
Oil equalization connection		1-3/4" Rotolock
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		7.13 in ³ /rev
Displacement @ Nominal speed		718 cfh @ 2900 rpm - 867 cfh @ 3500 rpm
Net weight		142 lbs
Oil charge		112 oz, POE - 160SZ
Maximum system test pressure Low Side / High side		483 psi / 653 psi
Maximum differential test pressure		537 psi
Maximum number of starts per hour		12
Refrigerant charge limit		17 lbs
Approved refrigerants		R410A

Dimensions


D=9.6 inch, H=21.3 inch,
H1=10.9 inch, H2=20 inch

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 77°F	1.05 Ω
Rated Load Amps (RLA)	20.7 A
Maximum Continuous Current (MCC)	29 A
Locked Rotor Amps (LRA)	142 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	37 ft.lbs
Power connections / Earth connection	2 ft.lbs / 1 ft.lbs
Mounting bolts	11 ft.lbs

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)

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, 1-1/8" ODF & 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.
POE lubricant, 160SZ, 1 liter can	7754023
POE lubricant, 160SZ, 2 liter can	7754024

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	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, 1 T block connector 52 x 57 mm, 1 cable gland	8156135
T block connector 2.1" x 2.3"	8173230

Performance data at 60 Hz, ARI rating conditions

R410A

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)							
	-10	0	10	20	30	40	45	50

Cooling capacity in Btu/h

90	48 427	62 189	78 548	97 881	120 562	146 968	161 685	177 473	194 381
100	45 112	58 427	74 147	92 650	114 310	139 504	153 542	168 605	184 739
110	-	54 359	69 381	86 993	107 571	131 492	144 822	159 129	174 459
120	-	-	64 210	80 871	100 307	122 893	135 485	149 006	163 502
130	-	-	-	74 244	92 477	113 670	125 493	138 197	151 829
140	-	-	-	-	84 044	103 782	114 807	126 664	139 402
150	-	-	-	-	-	93 193	103 389	114 369	126 182

Power input in W

90	6 694	6 815	6 944	7 089	7 258	7 458	7 572	7 697	7 833
100	7 498	7 609	7 729	7 864	8 023	8 213	8 322	8 441	8 572
110	-	8 531	8 633	8 751	8 892	9 064	9 164	9 275	9 397
120	-	-	9 688	9 781	9 898	10 045	10 132	10 230	10 340
130	-	-	-	10 987	11 071	11 185	11 256	11 338	11 431
140	-	-	-	-	12 443	12 517	12 568	12 630	12 703
150	-	-	-	-	-	14 072	14 099	14 137	14 186

Current consumption in A

90	11.92	12.11	12.25	12.37	12.48	12.61	12.69	12.78	12.89
100	12.71	12.91	13.05	13.18	13.31	13.47	13.56	13.67	13.79
110	-	13.86	14.00	14.12	14.25	14.41	14.51	14.63	14.76
120	-	-	15.14	15.24	15.36	15.51	15.61	15.72	15.85
130	-	-	-	16.60	16.69	16.81	16.90	17.00	17.12
140	-	-	-	-	18.30	18.38	18.44	18.53	18.63
150	-	-	-	-	-	20.26	20.30	20.36	20.44

Mass flow in lbs/h

90	609	772	962	1 184	1 441	1 737	1 902	2 078	2 267
100	599	764	955	1 177	1 435	1 731	1 896	2 072	2 260
110	-	751	944	1 167	1 424	1 721	1 885	2 061	2 248
120	-	-	928	1 151	1 409	1 706	1 870	2 045	2 232
130	-	-	-	1 130	1 389	1 685	1 849	2 024	2 210
140	-	-	-	-	1 361	1 657	1 821	1 996	2 182
150	-	-	-	-	-	1 623	1 786	1 960	2 145

Energy Efficiency Ratio (E.E.R.)

90	7.23	9.13	11.31	13.81	16.61	19.71	21.35	23.06	24.82
100	6.02	7.68	9.59	11.78	14.25	16.99	18.45	19.97	21.55
110	-	6.37	8.04	9.94	12.10	14.51	15.80	17.16	18.57
120	-	-	6.63	8.27	10.13	12.23	13.37	14.57	15.81
130	-	-	-	6.76	8.35	10.16	11.15	12.19	13.28
140	-	-	-	-	6.75	8.29	9.13	10.03	10.97
150	-	-	-	-	-	6.62	7.33	8.09	8.89

Nominal performance at to = 45 °F, tc = 130 °F

Cooling capacity	125 493	Btu/h	Current consumption	16.90	A
Power input	11 256	W	Mass flow	1 849	lbs/h
E.E.R.	11.15				

Pressure switch settings

Maximum HP switch setting	653	psi(g)
Minimum LP switch setting	22	psi(g)
LP pump down setting	33	psi(g)

T 0 : Evaporating temperature at dew point

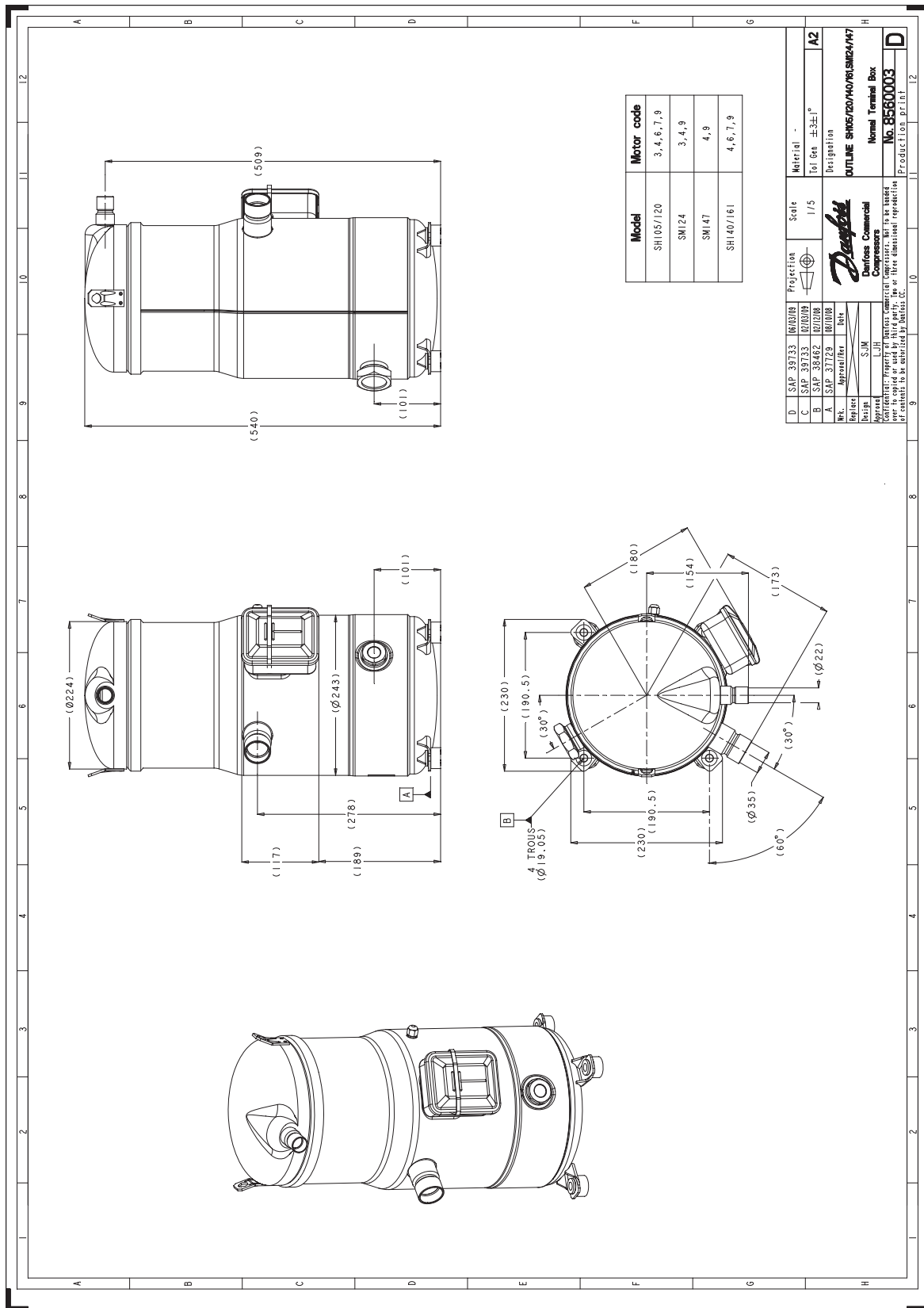
T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

Sound power data

Sound power level	75	dB(A)
With acoustic hood	69	dB(A)



Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alternations can be made without sequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss, the Danfoss logotype and Maneurop are trademarks of Danfoss A/S. All rights reserved.