



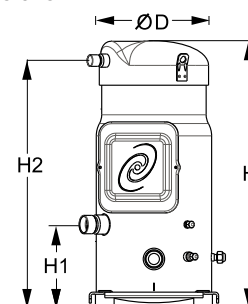
Datasheets

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



General Characteristics

Model number (on compressor nameplate)	SZ115S4RC	SZ115S4CC
Code number for Singlepack*	SZ115-4RI	SZ115-4CAI
Code number for Industrial pack**	SZ115-4RM	SZ115-4CAM
Drawing number	8551121b	8551121b
Suction and discharge connections	Rotolock	Brazed
Suction connection	1-3/4" Rotolock	1-3/8" ODF
Discharge connection	1-1/4" Rotolock	7/8" ODF
Suction connection with supplied sleeve	1-1/8" ODF	
Discharge connection with supplied sleeve	3/4" 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	155 cm ³ /rev	
Displacement @ Nominal speed	27.0 m ³ /h @ 2900 rpm - 32.5 m ³ /h @ 3500 rpm	
Net weight	78 kg	
Oil charge	3,8 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	11 kg	
Approved refrigerants	R407C, R134a, R404A, R507A	

Dimensions


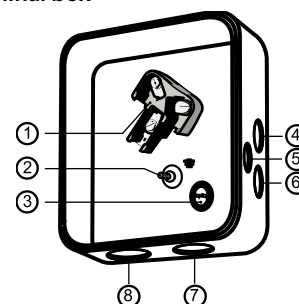
D=253 mm

H=579 mm

H1=180 mm

H2=536 mm

H3=- mm

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

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	1.16 Ω
Maximum Must Trip current (MMT)	25 A
Locked Rotor Amps (LRA)	120 A
Motor protection	Internal thermostat, ext. overload protector needed

Recommended Installation torques

Suction Rotolock nut or valve	110 Nm
Discharge Rotolock nut or valve	90 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

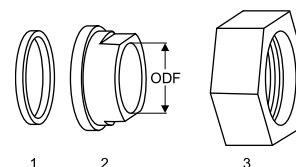
Approvals : CE certified, UL certified (file SA6873), -

*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, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Solder sleeve, P10 (1-3/4" Rotolock, 1-3/8" ODF)	8153003
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Rotolock valve, V10 (1-3/4" Rotolock, 1-3/8" ODF)	8168022
Gasket, 1-3/4"	8156132

Gaskets, sleeves and nuts


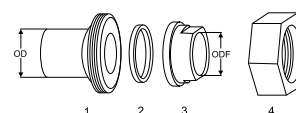
- 1: Gasket
2: Solder sleeve
3: Rotolock nut

Rotolock accessories, discharge side
Code no.

Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Angle adapter, C04 (1-1/4" Rotolock, 3/4" ODF)	8168006
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-1/4"	8156131

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
Angle adapter set, C02 (1-3/4"~1-1/8"), C04 (1-1/4"~3/4")	7703014
Valve set, V02 (1-3/4"~1-1/8"), V04 (1-1/4"~3/4")	7703009
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Solder sleeve adapter set


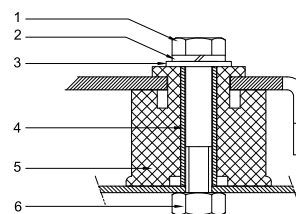
- 1: Rotolock adapter (Suc & Dis)
2: Gasket (Suc & Dis)
3: Solder sleeve (Suc & Dis)
4: Rotolock nut (Suc & Dis)

Oil / lubricants
Code no.

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	120Z0363
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0384
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0385
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark, UL	120Z0386
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

Mounting kit

Miscellaneous accessories
Code no.

Electronic soft start kit, MCI 25 C	7705007
Soft start kit with statoric resistors, prewired box, SCR03	7705001
Acoustic hood for scroll compressor S115-S125	7755009
Bottom insulation for scroll compressor	120Z0357
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	8156146
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

- 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	10 089	12 952	16 357	20 360	25 019	30 387	36 522	43 479	-
35	9 407	12 187	15 482	19 349	23 842	29 018	34 931	41 639	-
40	8 684	11 363	14 531	18 242	22 552	27 516	33 190	39 629	-
45	-	10 477	13 499	17 036	21 143	25 877	31 292	37 444	-
50	-	-	12 381	15 726	19 613	24 097	29 234	35 078	-
55	-	-	-	14 308	17 956	22 172	27 011	32 528	-
60	-	-	-	-	16 169	20 097	24 618	29 788	-
65	-	-	-	-	14 248	17 867	22 049	26 849	-

Power input in W

30	4 843	4 870	4 892	4 904	4 905	4 891	4 861	4 810	-
35	5 396	5 422	5 442	5 451	5 449	5 431	5 396	5 340	-
40	6 043	6 067	6 084	6 091	6 084	6 063	6 023	5 961	-
45	-	6 818	6 832	6 835	6 825	6 799	6 753	6 686	-
50	-	-	7 699	7 698	7 684	7 652	7 602	7 529	-
55	-	-	-	8 693	8 674	8 637	8 581	8 501	-
60	-	-	-	-	9 809	9 767	9 704	9 617	-
65	-	-	-	-	11 102	11 053	10 984	10 890	-

Current consumption in A

30	9.74	9.78	9.81	9.83	9.84	9.82	9.78	9.72	-
35	10.41	10.45	10.48	10.50	10.49	10.47	10.43	10.35	-
40	11.23	11.26	11.29	11.30	11.29	11.27	11.21	11.13	-
45	-	12.24	12.26	12.27	12.26	12.22	12.16	12.07	-
50	-	-	13.43	13.43	13.41	13.37	13.30	13.20	-
55	-	-	-	14.80	14.77	14.72	14.65	14.54	-
60	-	-	-	-	16.38	16.32	16.23	16.11	-
65	-	-	-	-	18.24	18.17	18.07	17.94	-

Mass flow in kg/h

30	210	265	329	402	486	581	688	809	-
35	206	261	326	400	484	580	688	809	-
40	200	257	322	396	481	577	686	807	-
45	-	251	316	391	477	573	682	803	-
50	-	-	309	384	470	566	675	797	-
55	-	-	-	374	460	556	665	787	-
60	-	-	-	-	446	543	651	773	-
65	-	-	-	-	429	526	634	754	-

Coefficient of performance (C.O.P.)

30	2.08	2.66	3.34	4.15	5.10	6.21	7.51	9.04	-
35	1.74	2.25	2.85	3.55	4.38	5.34	6.47	7.80	-
40	1.44	1.87	2.39	3.00	3.71	4.54	5.51	6.65	-
45	-	1.54	1.98	2.49	3.10	3.81	4.63	5.60	-
50	-	-	1.61	2.04	2.55	3.15	3.85	4.66	-
55	-	-	-	1.65	2.07	2.57	3.15	3.83	-
60	-	-	-	-	1.65	2.06	2.54	3.10	-
65	-	-	-	-	1.28	1.62	2.01	2.47	-

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

Cooling capacity	24 097	W
Power input	7 652	W
Current consumption	13.37	A
Mass flow	566	kg/h
C.O.P.	3.15	

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	77	dB(A)
With acoustic hood	69	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	10 821	13 875	17 503	21 764	26 716	32 417	38 924	46 297	-
35	10 138	13 117	16 644	20 776	25 572	31 089	37 386	44 520	-
40	9 412	12 298	15 704	19 689	24 310	29 625	35 693	42 571	-
45	-	11 411	14 679	18 498	22 926	28 021	33 841	40 444	-
50	-	-	13 563	17 197	21 413	26 269	31 823	38 133	-
55	-	-	-	15 782	19 768	24 367	29 636	35 634	-
60	-	-	-	-	17 984	22 307	27 273	32 940	-
65	-	-	-	-	16 056	20 085	24 730	30 048	-

Power input in W

30	4 843	4 870	4 892	4 904	4 905	4 891	4 861	4 810	-
35	5 396	5 422	5 442	5 451	5 449	5 431	5 396	5 340	-
40	6 043	6 067	6 084	6 091	6 084	6 063	6 023	5 961	-
45	-	6 818	6 832	6 835	6 825	6 799	6 753	6 686	-
50	-	-	7 699	7 698	7 684	7 652	7 602	7 529	-
55	-	-	-	8 693	8 674	8 637	8 581	8 501	-
60	-	-	-	-	9 809	9 767	9 704	9 617	-
65	-	-	-	-	11 102	11 053	10 984	10 890	-

Current consumption in A

30	9.74	9.78	9.81	9.83	9.84	9.82	9.78	9.72	-
35	10.41	10.45	10.48	10.50	10.49	10.47	10.43	10.35	-
40	11.23	11.26	11.29	11.30	11.29	11.27	11.21	11.13	-
45	-	12.24	12.26	12.27	12.26	12.22	12.16	12.07	-
50	-	-	13.43	13.43	13.41	13.37	13.30	13.20	-
55	-	-	-	14.80	14.77	14.72	14.65	14.54	-
60	-	-	-	-	16.38	16.32	16.23	16.11	-
65	-	-	-	-	18.24	18.17	18.07	17.94	-

Mass flow in kg/h

30	209	264	327	400	483	577	684	804	-
35	205	260	324	397	481	576	684	804	-
40	199	255	320	394	479	574	682	802	-
45	-	249	315	389	474	570	678	798	-
50	-	-	307	382	467	563	671	792	-
55	-	-	-	372	457	553	661	782	-
60	-	-	-	-	444	540	648	768	-
65	-	-	-	-	427	523	630	750	-

Coefficient of performance (C.O.P.)

30	2.23	2.85	3.58	4.44	5.45	6.63	8.01	9.63	-
35	1.88	2.42	3.06	3.81	4.69	5.72	6.93	8.34	-
40	1.56	2.03	2.58	3.23	4.00	4.89	5.93	7.14	-
45	-	1.67	2.15	2.71	3.36	4.12	5.01	6.05	-
50	-	-	1.76	2.23	2.79	3.43	4.19	5.07	-
55	-	-	-	1.82	2.28	2.82	3.45	4.19	-
60	-	-	-	-	1.83	2.28	2.81	3.43	-
65	-	-	-	-	1.45	1.82	2.25	2.76	-

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

Cooling capacity	26 851	W
Power input	8 490	W
Current consumption	14.52	A
Mass flow	601	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	77	dB(A)
With acoustic hood	69	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	8 337	10 699	13 452	16 634	20 281	24 429	29 117	-	-
40	7 785	10 069	12 726	15 795	19 311	23 311	27 833	-	-
45	7 212	9 406	11 957	14 902	18 277	22 118	26 463	-	-
50	6 619	8 713	11 147	13 957	17 179	20 851	25 008	-	-
55	-	7 991	10 297	12 962	16 021	19 512	23 470	-	-
60	-	-	9 410	11 918	14 803	18 101	21 849	-	-
65	-	-	-	10 827	13 527	16 621	20 146	-	-
70	-	-	-	9 691	12 193	15 071	18 361	-	-

Power input in W

35	3 804	3 815	3 817	3 807	3 784	3 745	3 688	-	-
40	4 231	4 245	4 250	4 245	4 226	4 193	4 141	-	-
45	4 712	4 729	4 738	4 737	4 723	4 695	4 651	-	-
50	5 250	5 270	5 284	5 288	5 280	5 258	5 220	-	-
55	-	5 874	5 892	5 901	5 899	5 884	5 853	-	-
60	-	-	6 567	6 582	6 586	6 578	6 554	-	-
65	-	-	-	7 333	7 344	7 343	7 328	-	-
70	-	-	-	8 159	8 177	8 184	8 178	-	-

Current consumption in A

35	8.67	8.70	8.72	8.71	8.68	8.61	8.52	-	-
40	9.11	9.14	9.16	9.16	9.13	9.08	8.99	-	-
45	9.64	9.67	9.70	9.70	9.68	9.63	9.55	-	-
50	10.26	10.30	10.33	10.34	10.32	10.28	10.21	-	-
55	-	11.04	11.07	11.09	11.08	11.05	10.98	-	-
60	-	-	11.93	11.95	11.95	11.93	11.87	-	-
65	-	-	-	12.95	12.96	12.94	12.89	-	-
70	-	-	-	14.08	14.10	14.09	14.05	-	-

Mass flow in kg/h

35	202	254	312	378	452	535	626	-	-
40	198	251	310	377	451	534	626	-	-
45	194	247	307	374	449	532	624	-	-
50	189	243	303	370	446	529	621	-	-
55	-	237	298	365	441	525	617	-	-
60	-	-	291	359	435	518	611	-	-
65	-	-	-	352	427	511	603	-	-
70	-	-	-	343	418	501	593	-	-

Coefficient of performance (C.O.P.)

35	2.19	2.80	3.52	4.37	5.36	6.52	7.89	-	-
40	1.84	2.37	2.99	3.72	4.57	5.56	6.72	-	-
45	1.53	1.99	2.52	3.15	3.87	4.71	5.69	-	-
50	1.26	1.65	2.11	2.64	3.25	3.97	4.79	-	-
55	-	1.36	1.75	2.20	2.72	3.32	4.01	-	-
60	-	-	1.43	1.81	2.25	2.75	3.33	-	-
65	-	-	-	1.48	1.84	2.26	2.75	-	-
70	-	-	-	1.19	1.49	1.84	2.25	-	-

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

Cooling capacity	17 179	W
Power input	5 280	W
Current consumption	10.32	A
Mass flow	446	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 = 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	9 030	11 568	14 522	17 929	21 827	26 254	31 248	-	-
40	8 478	10 944	13 808	17 107	20 881	25 167	30 003	-	-
45	7 903	10 285	13 048	16 230	19 868	24 002	28 669	-	-
50	7 305	9 593	12 244	15 298	18 791	22 761	27 248	-	-
55	-	8 869	11 399	14 313	17 649	21 446	25 742	-	-
60	-	-	10 513	13 277	16 446	20 059	24 153	-	-
65	-	-	-	12 192	15 183	18 600	22 482	-	-
70	-	-	-	11 059	13 861	17 073	20 732	-	-

Power input in W

35	3 804	3 815	3 817	3 807	3 784	3 745	3 688	-	-
40	4 231	4 245	4 250	4 245	4 226	4 193	4 141	-	-
45	4 712	4 729	4 738	4 737	4 723	4 695	4 651	-	-
50	5 250	5 270	5 284	5 288	5 280	5 258	5 220	-	-
55	-	5 874	5 892	5 901	5 899	5 884	5 853	-	-
60	-	-	6 567	6 582	6 586	6 578	6 554	-	-
65	-	-	-	7 333	7 344	7 343	7 328	-	-
70	-	-	-	8 159	8 177	8 184	8 178	-	-

Current consumption in A

35	8.67	8.70	8.72	8.71	8.68	8.61	8.52	-	-
40	9.11	9.14	9.16	9.16	9.13	9.08	8.99	-	-
45	9.64	9.67	9.70	9.70	9.68	9.63	9.55	-	-
50	10.26	10.30	10.33	10.34	10.32	10.28	10.21	-	-
55	-	11.04	11.07	11.09	11.08	11.05	10.98	-	-
60	-	-	11.93	11.95	11.95	11.93	11.87	-	-
65	-	-	-	12.95	12.96	12.94	12.89	-	-
70	-	-	-	14.08	14.10	14.09	14.05	-	-

Mass flow in kg/h

35	201	252	311	376	450	532	623	-	-
40	197	249	308	375	449	531	623	-	-
45	193	246	305	372	446	529	621	-	-
50	188	241	301	368	443	526	618	-	-
55	-	236	296	364	439	522	613	-	-
60	-	-	290	357	433	516	607	-	-
65	-	-	-	350	425	508	600	-	-
70	-	-	-	341	416	499	590	-	-

Coefficient of performance (C.O.P.)

35	2.37	3.03	3.80	4.71	5.77	7.01	8.47	-	-
40	2.00	2.58	3.25	4.03	4.94	6.00	7.24	-	-
45	1.68	2.18	2.75	3.43	4.21	5.11	6.16	-	-
50	1.39	1.82	2.32	2.89	3.56	4.33	5.22	-	-
55	-	1.51	1.93	2.43	2.99	3.64	4.40	-	-
60	-	-	1.60	2.02	2.50	3.05	3.68	-	-
65	-	-	-	1.66	2.07	2.53	3.07	-	-
70	-	-	-	1.36	1.70	2.09	2.54	-	-

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

Cooling capacity	19 410	W
Power input	5 816	W
Current consumption	10.97	A
Mass flow	475	kg/h
C.O.P.	3.34	

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)

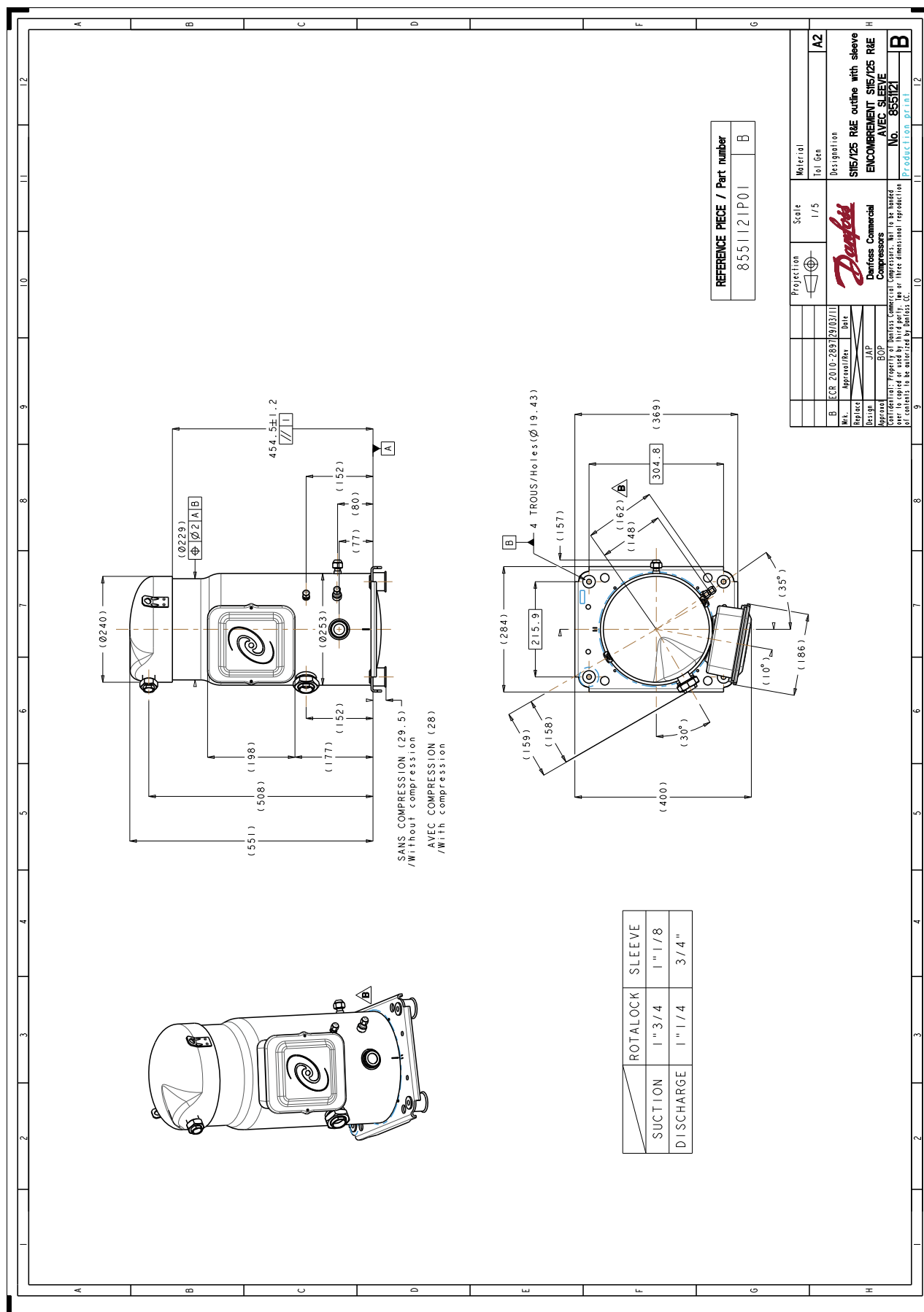
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

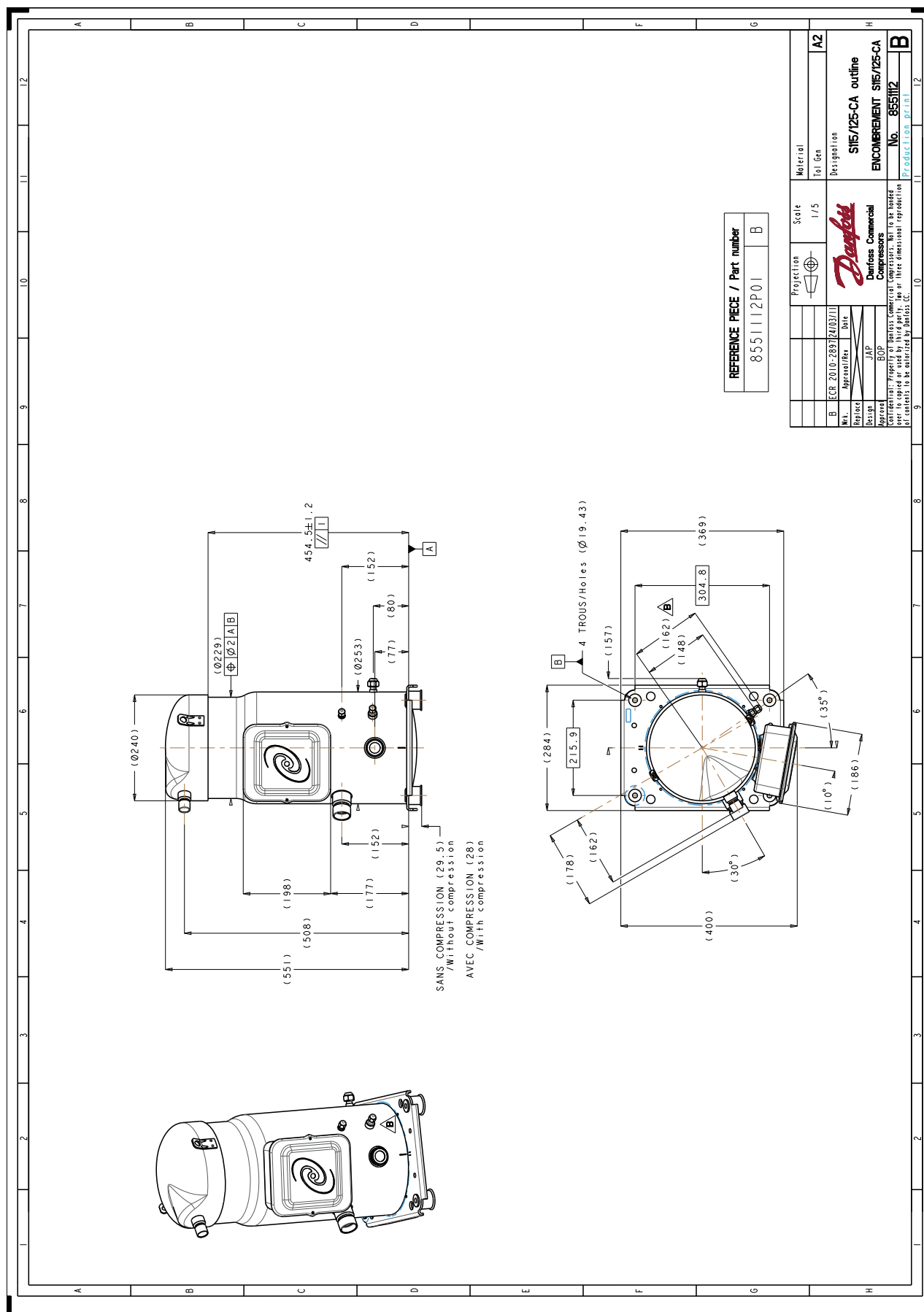
Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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