

Datasheets

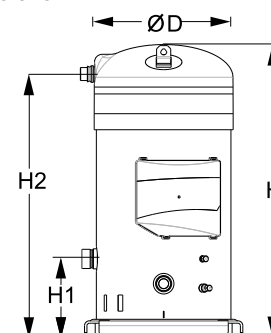
Danfoss scroll compressors **SM / SY / SZ / SH / WSH**



General Characteristics

Model number (on compressor nameplate)	SZ300A4PBE	SZ300A4CBE
Code number for Singlepack*	SZ300A4PBI	SZ300A4CBI
Code number for Industrial pack**	SZ300A4PBM	SZ300A4CBM
Drawing number	8556099b	8556094b
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	1-5/8" ODF	
Discharge connection with supplied sleeve	1-1/8" ODF	
Oil sight glass	Threaded	Threaded
Oil equalisation connection	1/2" flare	1/2" flare
Oil drain connection	1/4" flare	1/4" flare
LP gauge port	Schrader	Schrader
IPR valve	Yes	Yes
Reverse rotation protection	Electronic module	Electronic module
Swept volume	437,5 cm ³ /rev	
Displacement @ Nominal speed	76.1 m ³ /h @ 2900 rpm - 91.9 m ³ /h @ 3500 rpm	
Net weight	157 kg	
Oil charge	8 litre, POE - 160SZ	
Maximum system test pressure Low Side / High side	20 bar(g) / 32 bar(g)	
Maximum differential test pressure	24 bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	20 kg	
Approved refrigerants	R407C, R134a	

Dimensions

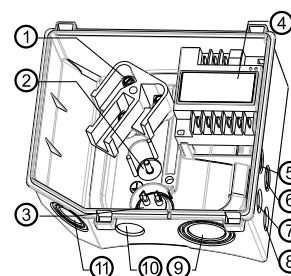


D=344 mm
H=737,9 mm
H1=195,7 mm
H2=665 mm
H3=- mm

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	0.516 Ω
Rated Load Amps (RLA)	49.3 A
Maximum Continuous Current (MCC)	69 A
Locked Rotor Amps (LRA)	270 A
Motor protection	Electronic protection module, 115/230 V

Terminal box



IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermistor connector
- 4: Electronic protection module
- 5: Double knock-out Ø 22.5 mm (7/8") & Ø 16.5 mm (0.65")
- 6: Double knock-out Ø 22.5 mm (7/8") & Ø 16.5 mm (0.65")
- 7: Knock-out Ø 20.7 mm (0.81")
- 8: Knock-out Ø 20.7 mm (0.81")
- 9: Triple knock-out Ø 50.8 mm (2") & Ø 43.7 mm (1.72") & Ø 34.5 mm (1.35")
- 10: Knock-out Ø 25.5 mm (1.00")
- 11: Triple knock-out Ø 40.5 mm (1.59") & Ø 32.2 mm (1.27") & Ø 25.5 mm (1")

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
Mounting bolts	40 Nm

Parts shipped with compressor

Mounting kit with grommets and sleeves
Electronic protection module mounted in terminal box
Initial oil charge
Installation instructions

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

*Singlepack: Compressor in cardboard box

**Industrial pack: 4 Unboxed compressors on pallet (order per multiples of 4)

Rotolock accessories, suction side

Code no.

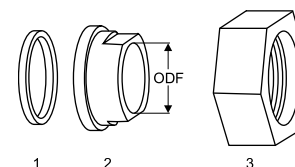
Solder sleeve, P03 (2-1/4" Rotolock, 1-5/8" ODF)	8153006
Rotolock valve, V03 (2-1/4" Rotolock, 1-5/8" ODF)	8168026
Gasket, 2-1/4"	8156133

Gaskets, sleeves and nuts

Rotolock accessories, discharge side

Code no.

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



- 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, V03 (2-1/4"~1-5/8"), V02 (1-3/4"~1-1/8")	7703383
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Oil / lubricants

Code no.

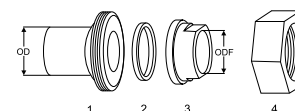
POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	12020571

Solder sleeve adapter set

Crankcase heaters

Code no.

Surface sump heater + bottom insulation, 80 W, 24 V, CE mark, UL	12020359
Surface sump heater + bottom insulation, 80 W, 230 V, CE mark, UL	12020372
Surface sump heater + bottom insulation, 80 W, 400 V, CE mark, UL	12020373
Surface sump heater + bottom insulation, 80 W, 460 V, CE mark, UL	12020374
Belt type crankcase heater, 130 W, 230 V, CE mark, UL	7773122
Belt type crankcase heater, 130 W, 400 V, CE mark, UL	7773123



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

Miscellaneous accessories

Code no.

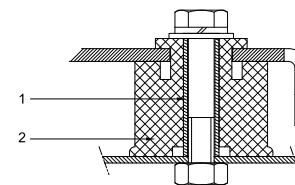
Electronic soft start kit, MCI 50 CM	7705009
Acoustic hood for scroll compressor S240-S300	7755016
Bottom insulation for scroll compressor	12020355
Discharge thermostat kit	7750009

Mounting kit

Spare parts

Code no.

Electronic motor protection module, 115/230 V	8169016
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves	8156144
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 2 rotolock nuts, 2 solder sleeves, 2 gaskets	8156148
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 210 x 190 incl. cover	12020458
T block connector 60 x 75 mm	8173021



- 1: Sleeve (4x)
 - 2: Grommet (4x)
- Bolts, nuts and washers not included

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	27 955	35 114	43 610	53 631	65 362	78 990	94 702	112 684	-
35	26 571	33 564	41 830	51 554	62 924	76 125	91 345	108 768	-
40	25 038	31 803	39 774	49 139	60 083	72 794	87 457	104 259	-
45	23 395	29 868	37 482	46 423	56 879	69 035	83 078	99 195	-
50	-	27 798	34 991	43 445	53 349	64 887	78 247	93 615	-
55	-	25 633	32 340	40 245	49 532	60 389	73 002	87 558	-
60	-	-	29 569	36 859	45 468	55 580	67 382	81 062	-
65	-	-	-	-	41 194	50 497	61 426	74 166	-

Power input in W

30	12 224	12 358	12 495	12 642	12 803	12 986	13 197	13 442	-
35	13 685	13 885	14 081	14 278	14 483	14 702	14 942	15 208	-
40	15 233	15 501	15 757	16 008	16 259	16 517	16 788	17 079	-
45	16 896	17 235	17 555	17 862	18 162	18 461	18 766	19 083	-
50	-	19 118	19 504	19 869	20 220	20 564	20 905	21 251	-
55	-	21 179	21 633	22 059	22 464	22 854	23 234	23 612	-
60	-	-	23 972	24 462	24 924	25 362	25 784	26 196	-
65	-	-	-	-	27 628	28 118	28 584	29 032	-

Current consumption in A

30	24.79	25.11	25.32	25.46	25.57	25.68	25.84	26.09	-
35	26.98	27.37	27.64	27.85	28.03	28.22	28.46	28.78	-
40	29.04	29.49	29.83	30.10	30.35	30.62	30.93	31.33	-
45	31.12	31.62	32.03	32.37	32.69	33.02	33.41	33.89	-
50	-	33.93	34.39	34.80	35.18	35.58	36.04	36.60	-
55	-	36.55	37.07	37.54	37.99	38.46	38.99	39.62	-
60	-	-	40.23	40.75	41.26	41.80	42.40	43.10	-
65	-	-	-	-	45.16	45.76	46.42	47.19	-

Mass flow in kg/h

30	588	727	889	1 076	1 292	1 539	1 821	2 141	-
35	587	729	892	1 082	1 299	1 549	1 833	2 155	-
40	583	726	892	1 082	1 302	1 553	1 838	2 162	-
45	576	720	886	1 078	1 298	1 550	1 836	2 160	-
50	-	710	877	1 068	1 289	1 540	1 827	2 151	-
55	-	697	862	1 054	1 273	1 524	1 810	2 133	-
60	-	-	844	1 034	1 252	1 501	1 786	2 108	-
65	-	-	-	-	1 224	1 472	1 754	2 074	-

Coefficient of performance (C.O.P.)

30	2.29	2.84	3.49	4.24	5.11	6.08	7.18	8.38	-
35	1.94	2.42	2.97	3.61	4.34	5.18	6.11	7.15	-
40	1.64	2.05	2.52	3.07	3.70	4.41	5.21	6.10	-
45	1.38	1.73	2.14	2.60	3.13	3.74	4.43	5.20	-
50	-	1.45	1.79	2.19	2.64	3.16	3.74	4.41	-
55	-	1.21	1.49	1.82	2.20	2.64	3.14	3.71	-
60	-	-	1.23	1.51	1.82	2.19	2.61	3.09	-
65	-	-	-	-	1.49	1.80	2.15	2.55	-

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

Cooling capacity	64 887	W
Power input	20 564	W
Current consumption	35.58	A
Mass flow	1 540	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	84	dB(A)
With acoustic hood	77	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	29 982	37 617	46 667	57 328	69 797	84 267	100 932	119 986	-
35	28 637	36 127	44 969	55 357	67 489	81 559	97 763	116 294	-
40	27 137	34 418	42 986	53 037	64 768	78 375	94 053	111 999	-
45	25 523	32 531	40 759	50 408	61 673	74 753	89 844	107 142	-
50	-	30 506	38 330	47 511	58 247	70 737	85 177	101 766	-
55	-	28 386	35 740	44 389	54 531	66 367	80 096	95 916	-
60	-	-	33 036	41 087	50 572	61 693	74 649	89 641	-
65	-	-	-	-	46 421	56 766	68 893	83 004	-

Power input in W

30	12 224	12 358	12 495	12 642	12 803	12 986	13 197	13 442	-
35	13 685	13 885	14 081	14 278	14 483	14 702	14 942	15 208	-
40	15 233	15 501	15 757	16 008	16 259	16 517	16 788	17 079	-
45	16 896	17 235	17 555	17 862	18 162	18 461	18 766	19 083	-
50	-	19 118	19 504	19 869	20 220	20 564	20 905	21 251	-
55	-	21 179	21 633	22 059	22 464	22 854	23 234	23 612	-
60	-	-	23 972	24 462	24 924	25 362	25 784	26 196	-
65	-	-	-	-	27 628	28 118	28 584	29 032	-

Current consumption in A

30	24.79	25.11	25.32	25.46	25.57	25.68	25.84	26.09	-
35	26.98	27.37	27.64	27.85	28.03	28.22	28.46	28.78	-
40	29.04	29.49	29.83	30.10	30.35	30.62	30.93	31.33	-
45	31.12	31.62	32.03	32.37	32.69	33.02	33.41	33.89	-
50	-	33.93	34.39	34.80	35.18	35.58	36.04	36.60	-
55	-	36.55	37.07	37.54	37.99	38.46	38.99	39.62	-
60	-	-	40.23	40.75	41.26	41.80	42.40	43.10	-
65	-	-	-	-	45.16	45.76	46.42	47.19	-

Mass flow in kg/h

30	585	724	884	1 070	1 284	1 530	1 810	2 128	-
35	584	725	888	1 076	1 292	1 540	1 822	2 142	-
40	580	722	887	1 076	1 294	1 544	1 827	2 148	-
45	573	716	882	1 072	1 291	1 541	1 825	2 147	-
50	-	706	872	1 063	1 281	1 531	1 816	2 138	-
55	-	693	858	1 048	1 266	1 515	1 799	2 120	-
60	-	-	839	1 028	1 245	1 493	1 775	2 095	-
65	-	-	-	-	1 217	1 463	1 744	2 061	-

Coefficient of performance (C.O.P.)

30	2.45	3.04	3.73	4.53	5.45	6.49	7.65	8.93	-
35	2.09	2.60	3.19	3.88	4.66	5.55	6.54	7.65	-
40	1.78	2.22	2.73	3.31	3.98	4.74	5.60	6.56	-
45	1.51	1.89	2.32	2.82	3.40	4.05	4.79	5.61	-
50	-	1.60	1.97	2.39	2.88	3.44	4.07	4.79	-
55	-	1.34	1.65	2.01	2.43	2.90	3.45	4.06	-
60	-	-	1.38	1.68	2.03	2.43	2.90	3.42	-
65	-	-	-	-	1.68	2.02	2.41	2.86	-

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

Cooling capacity	72 743	W
Power input	22 734	W
Current consumption	38.31	A
Mass flow	1 638	kg/h
C.O.P.	3.20	

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	84	dB(A)
With acoustic hood	77	dB(A)

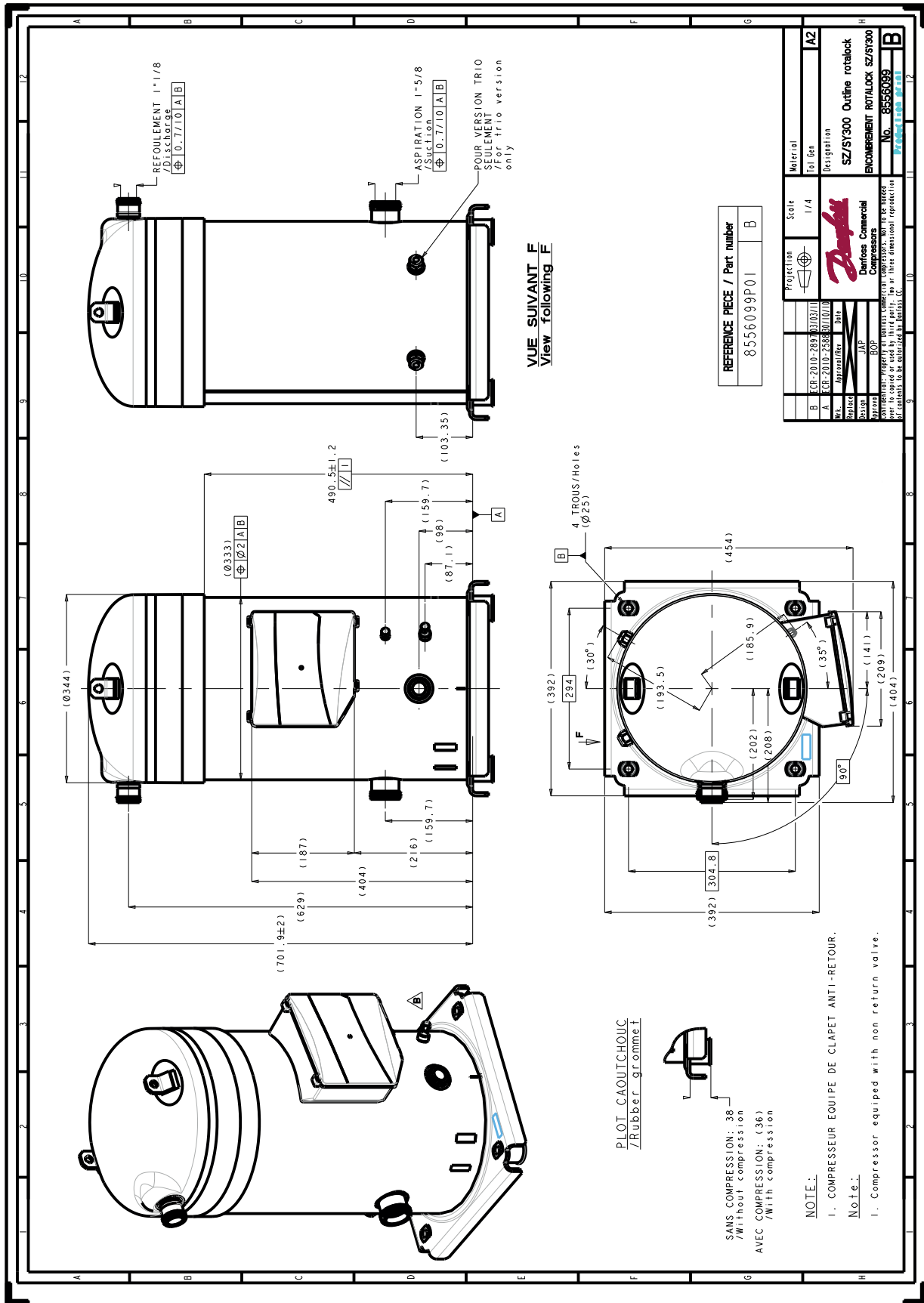
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

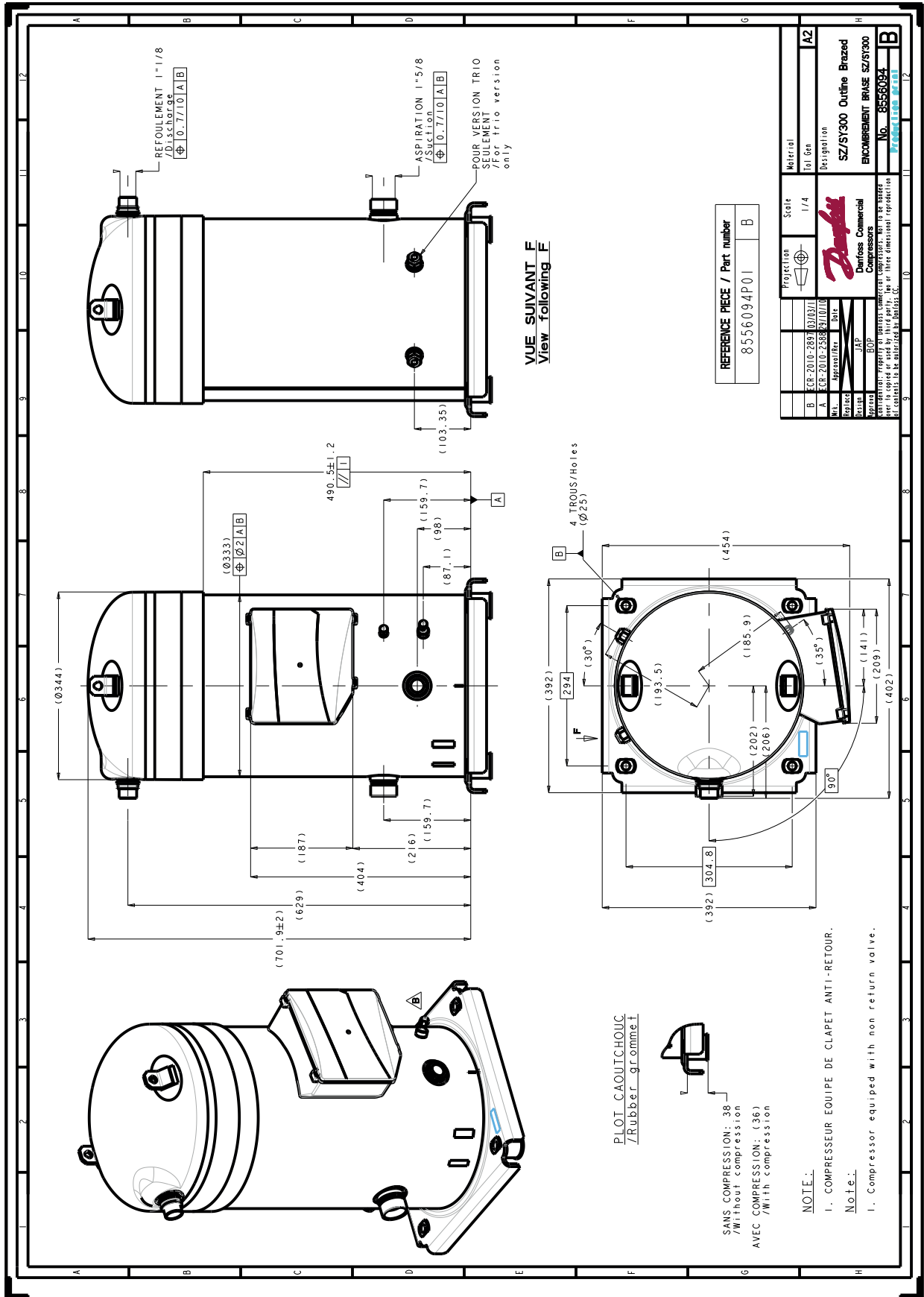
Rating conditions : Superheat = 11.1 K, Subcooling = 8.3 K

All performance data +/- 5%

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