

Datasheets

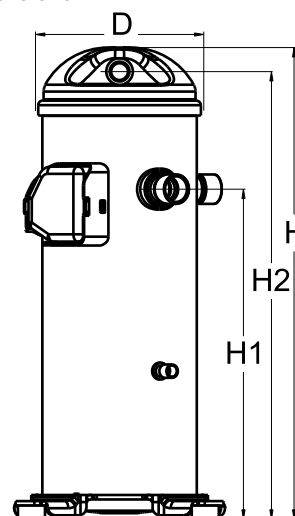
# Danfoss scroll compressors **H series**



### General Characteristics

Model number (on compressor nameplate)		<b>HLM078T4LC6</b>
Code number for Singlepack*		120U1771
Code number for Industrial pack**		120U1768
Drawing number		0XR6089B-2
Suction and discharge connections		Brazed
Suction connection		7/8 " ODF
Discharge connection		3/4 " ODF
Oil sight glass		None
Oil equalisation connection		None
Oil drain connection		None
LP gauge port		None
IPR valve		Yes
Swept volume		107,48 cm <sup>3</sup> /rev
Displacement @ Nominal speed		18.7 m <sup>3</sup> /h @ 2900 rpm - 22.6 m <sup>3</sup> /h @ 3500 rpm
Net weight		37,2 kg
Oil charge		1,57 litre, Alkylbenzene - -
Maximum system test pressure Low Side / High side		- bar(g) / - bar(g)
Maximum differential test pressure		- bar
Maximum number of starts per hour		-
Refrigerant charge limit		5,44 kg
Approved refrigerants		R22

### Dimensions

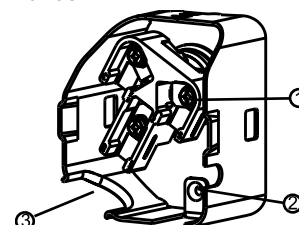


D=183,5 mm  
H=455 mm  
H1=280 mm  
H2=422 mm  
H3=- mm

### Electrical Characteristics

Nominal voltage	380-415V/3/50Hz - 460V/3/60Hz
Voltage range	342-457 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance between phases 1-2 +/- 7% at 25°C	1.716 Ω
Winding resistance between phases 1-3 +/- 7% at 25°C	1.694 Ω
Winding resistance between phases 2-3 +/- 7% at 25°C	1.666 Ω
Rated Load Amps (RLA)	10.3 A
Maximum Continuous Current (MCC)	16 A
Locked Rotor Amps (LRA)	87 A
Motor protection	Internal overload protector

### Terminal box



IP22

- 1: Screw connectors 10-32 UNF x 9.5
- 2: Earth connection
- 3: Power cable passage

### Recommended Installation torques

Oil sight glass	52,5 Nm
Power connections / Earth connection	3 Nm / 2 Nm

### Parts shipped with compressor

Mounting kit with grommets and sleeves
Initial oil charge
Installation instructions

**Approvals** : CE certified, UL certified (file SA11565), -

\*Singlepack: Compressor in cardboard box

\*\*Industrial pack: 12 or 16 Unboxed compressors on pallet

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

Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-1/4"	8156131

**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
Gasket, 1-1/4"	8156131

**Solder sleeve adapter set**


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

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

Solder sleeve adapter set (1-1/4" Rotolock, 7/8" ODF), (1-1/4" Rotolock, 3/4" ODF)	120Z0128
Gasket set, 1", 1-1/4", 1-3/4", OSG gaskets black & white	8156009

**Oil / lubricants**
**Code no.**
**Crankcase heaters**
**Code no.**

Belt type crankcase heater, 65 W, 230 V, CE mark, UL	120Z0059
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	120Z0060
Belt type crankcase heater, 70 W, 240 V, CE mark, UL	120Z5040
Belt type crankcase heater, 70 W, 240 V, CE mark, UL	120Z5040

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

Acoustic hood	120Z5044
Discharge thermostat kit	7750009

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

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z5005
Mounting kit, including 1 bolt, 1 sleeve, 1 washer	120Z5031

**Performance data at 50 Hz, EN 12900 rating conditions**
**R22**

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-25	-20	-15	-10	-5	0	5	10	15

**Cooling capacity in W**

30	6 756	7 853	9 536	11 754	14 453	17 583	21 091	24 925	-
35	6 347	7 458	9 115	11 264	13 856	16 837	20 155	23 760	-
40	5 776	6 938	8 604	10 723	13 243	16 113	19 280	22 692	-
45	-	6 251	7 963	10 087	12 572	15 367	18 419	21 677	-
50	-	-	7 149	9 314	11 800	14 556	17 529	20 669	-
55	-	-	-	8 364	10 885	13 636	16 567	19 625	-
60	-	-	-	-	9 786	12 568	15 489	18 499	-
65	-	-	-	-	-	11 309	14 253	17 248	-

**Power input in W**

30	3 080	2 951	2 948	3 039	3 190	3 367	3 537	3 668	-
35	3 607	3 461	3 429	3 478	3 574	3 685	3 776	3 815	-
40	4 089	3 958	3 928	3 967	4 041	4 117	4 162	4 141	-
45	-	4 410	4 414	4 475	4 559	4 632	4 661	4 614	-
50	-	-	4 856	4 971	5 096	5 199	5 245	5 202	-
55	-	-	-	5 422	5 621	5 785	5 880	5 874	-
60	-	-	-	-	6 103	6 360	6 537	6 598	-
65	-	-	-	-	-	6 893	7 182	7 344	-

**Current consumption in A**

30	6.24	6.36	6.44	6.49	6.51	6.51	6.49	6.46	-
35	6.73	6.82	6.87	6.90	6.92	6.91	6.90	6.89	-
40	7.40	7.45	7.48	7.49	7.49	7.48	7.48	7.48	-
45	-	8.27	8.26	8.25	8.24	8.23	8.23	8.24	-
50	-	-	9.24	9.20	9.17	9.15	9.15	9.18	-
55	-	-	-	10.34	10.29	10.27	10.26	10.29	-
60	-	-	-	-	11.62	11.57	11.57	11.60	-
65	-	-	-	-	-	13.08	13.07	13.10	-

**Mass flow in kg/h**

30	148	169	202	246	299	360	427	499	-
35	144	167	201	245	298	358	423	493	-
40	137	162	198	243	297	356	421	490	-
45	-	153	191	239	294	354	419	488	-
50	-	-	181	231	288	351	417	486	-
55	-	-	-	219	279	345	413	483	-
60	-	-	-	-	266	335	407	479	-
65	-	-	-	-	-	321	397	473	-

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

30	2.19	2.66	3.23	3.87	4.53	5.22	5.96	6.80	-
35	1.76	2.15	2.66	3.24	3.88	4.57	5.34	6.23	-
40	1.41	1.75	2.19	2.70	3.28	3.91	4.63	5.48	-
45	-	1.42	1.80	2.25	2.76	3.32	3.95	4.70	-
50	-	-	1.47	1.87	2.32	2.80	3.34	3.97	-
55	-	-	-	1.54	1.94	2.36	2.82	3.34	-
60	-	-	-	-	1.60	1.98	2.37	2.80	-
65	-	-	-	-	-	1.64	1.98	2.35	-

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

Cooling capacity	17 529	W
Power input	5 245	W
Current consumption	9.15	A
Mass flow	417	kg/h
C.O.P.	3.34	

**Pressure switch settings**

Maximum HP switch setting	29	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

**Sound power data**

Sound power level	71	dB(A)
With acoustic hood	66	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)								
	-25	-20	-15	-10	-5	0	5	10	15

**Cooling capacity in W**

30	7 175	8 334	10 112	12 454	15 303	18 604	22 300	26 336	-
35	6 765	7 943	9 698	11 975	14 719	17 872	21 379	25 184	-
40	6 181	7 418	9 190	11 443	14 120	17 165	20 523	24 136	-
45	-	6 713	8 543	10 811	13 461	16 438	19 686	23 148	-
50	-	-	7 709	10 032	12 695	15 644	18 822	22 173	-
55	-	-	-	9 060	11 777	14 738	17 885	21 164	-
60	-	-	-	-	10 660	13 672	16 829	20 076	-
65	-	-	-	-	-	12 401	15 608	18 863	-

**Power input in W**

30	3 080	2 951	2 948	3 039	3 190	3 367	3 537	3 668	-
35	3 607	3 461	3 429	3 478	3 574	3 685	3 776	3 815	-
40	4 089	3 958	3 928	3 967	4 041	4 117	4 162	4 141	-
45	-	4 410	4 414	4 475	4 559	4 632	4 661	4 614	-
50	-	-	4 856	4 971	5 096	5 199	5 245	5 202	-
55	-	-	-	5 422	5 621	5 785	5 880	5 874	-
60	-	-	-	-	6 103	6 360	6 537	6 598	-
65	-	-	-	-	-	6 893	7 182	7 344	-

**Current consumption in A**

30	6.24	6.36	6.44	6.49	6.51	6.51	6.49	6.46	-
35	6.73	6.82	6.87	6.90	6.92	6.91	6.90	6.89	-
40	7.40	7.45	7.48	7.49	7.49	7.48	7.48	7.48	-
45	-	8.27	8.26	8.25	8.24	8.23	8.23	8.24	-
50	-	-	9.24	9.20	9.17	9.15	9.15	9.18	-
55	-	-	-	10.34	10.29	10.27	10.26	10.29	-
60	-	-	-	-	11.62	11.57	11.57	11.60	-
65	-	-	-	-	-	13.08	13.07	13.10	-

**Mass flow in kg/h**

30	147	168	201	245	298	358	425	496	-
35	143	166	200	244	297	356	421	490	-
40	136	161	197	242	295	354	419	487	-
45	-	152	190	238	292	352	417	485	-
50	-	-	180	230	287	349	415	483	-
55	-	-	-	218	278	343	411	481	-
60	-	-	-	-	265	333	404	477	-
65	-	-	-	-	-	319	394	470	-

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

30	2.33	2.82	3.43	4.10	4.80	5.53	6.30	7.18	-
35	1.88	2.29	2.83	3.44	4.12	4.85	5.66	6.60	-
40	1.51	1.87	2.34	2.88	3.49	4.17	4.93	5.83	-
45	-	1.52	1.94	2.42	2.95	3.55	4.22	5.02	-
50	-	-	1.59	2.02	2.49	3.01	3.59	4.26	-
55	-	-	-	1.67	2.10	2.55	3.04	3.60	-
60	-	-	-	-	1.75	2.15	2.57	3.04	-
65	-	-	-	-	-	1.80	2.17	2.57	-

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

Cooling capacity	19 435	W
Power input	5 811	W
Current consumption	10.13	A
Mass flow	442	kg/h
C.O.P.	3.34	

**Pressure switch settings**

Maximum HP switch setting	29	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

**Sound power data**

Sound power level	71	dB(A)
With acoustic hood	66	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)								
	-25	-20	-15	-10	-5	0	5	10	15

**Cooling capacity in W**

30	8 209	9 582	11 607	14 243	17 446	21 175	25 387	30 040	-
35	7 703	9 063	11 034	13 576	16 645	20 201	24 200	28 601	-
40	7 055	8 434	10 385	12 866	15 835	19 251	23 072	27 254	-
45	-	7 651	9 613	12 066	14 968	18 278	21 952	25 950	-
50	-	-	8 674	11 131	13 998	17 233	20 794	24 639	-
55	-	-	-	10 016	12 879	16 071	19 550	23 275	-
60	-	-	-	-	11 566	14 745	18 173	21 809	-
65	-	-	-	-	-	13 212	16 617	20 192	-

**Power input in W**

30	4 164	4 200	4 220	4 218	4 187	4 122	4 015	3 862	-
35	4 657	4 664	4 669	4 663	4 642	4 599	4 528	4 422	-
40	5 209	5 178	5 156	5 138	5 116	5 084	5 037	4 968	-
45	-	5 766	5 708	5 665	5 632	5 601	5 568	5 526	-
50	-	-	6 347	6 270	6 215	6 175	6 146	6 119	-
55	-	-	-	6 978	6 891	6 831	6 794	6 773	-
60	-	-	-	-	7 683	7 594	7 539	7 513	-
65	-	-	-	-	-	8 487	8 404	8 363	-

**Current consumption in A**

30	6.24	6.36	6.44	6.49	6.51	6.51	6.49	6.46	-
35	6.73	6.82	6.87	6.90	6.91	6.91	6.90	6.89	-
40	7.40	7.45	7.48	7.49	7.49	7.48	7.48	7.48	-
45	-	8.27	8.26	8.25	8.24	8.23	8.23	8.24	-
50	-	-	9.24	9.20	9.17	9.15	9.15	9.18	-
55	-	-	-	10.34	10.29	10.27	10.26	10.29	-
60	-	-	-	-	11.62	11.57	11.57	11.60	-
65	-	-	-	-	-	13.08	13.07	13.10	-

**Mass flow in kg/h**

30	178	206	247	299	361	434	514	603	-
35	174	203	244	296	358	429	508	594	-
40	166	197	239	292	355	425	504	588	-
45	-	187	231	286	350	421	500	584	-
50	-	-	219	276	342	415	495	579	-
55	-	-	-	262	331	406	487	573	-
60	-	-	-	-	314	393	477	565	-
65	-	-	-	-	-	375	462	554	-

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

30	1.97	2.28	2.75	3.38	4.17	5.14	6.32	7.78	-
35	1.65	1.94	2.36	2.91	3.59	4.39	5.34	6.47	-
40	1.35	1.63	2.01	2.50	3.10	3.79	4.58	5.49	-
45	-	1.33	1.68	2.13	2.66	3.26	3.94	4.70	-
50	-	-	1.37	1.78	2.25	2.79	3.38	4.03	-
55	-	-	-	1.44	1.87	2.35	2.88	3.44	-
60	-	-	-	-	1.51	1.94	2.41	2.90	-
65	-	-	-	-	-	1.56	1.98	2.41	-

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

Cooling capacity	20 794	W
Power input	6 146	W
Current consumption	9.15	A
Mass flow	495	kg/h
C.O.P.	3.38	

**Pressure switch settings**

Maximum HP switch setting	29	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	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 60 Hz, ARI rating conditions**
**R22**

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-25	-20	-15	-10	-5	0	5	10	15

**Cooling capacity in W**

30	8 719	10 169	12 308	15 091	18 472	22 404	26 843	31 741	-
35	8 211	9 651	11 740	14 432	17 682	21 443	25 669	30 315	-
40	7 550	9 017	11 092	13 729	16 884	20 509	24 559	28 988	-
45	-	8 216	10 313	12 932	16 027	19 552	23 462	27 711	-
50	-	-	9 353	11 989	15 060	18 522	22 328	26 432	-
55	-	-	-	10 850	13 934	17 368	21 106	25 101	-
60	-	-	-	-	12 598	16 040	19 745	23 668	-
65	-	-	-	-	-	14 487	18 196	22 082	-

**Power input in W**

30	4 164	4 200	4 220	4 218	4 187	4 122	4 015	3 862	-
35	4 657	4 664	4 669	4 663	4 642	4 599	4 528	4 422	-
40	5 209	5 178	5 156	5 138	5 116	5 084	5 037	4 968	-
45	-	5 766	5 708	5 665	5 632	5 601	5 568	5 526	-
50	-	-	6 347	6 270	6 215	6 175	6 146	6 119	-
55	-	-	-	6 978	6 891	6 831	6 794	6 773	-
60	-	-	-	-	7 683	7 594	7 539	7 513	-
65	-	-	-	-	-	8 487	8 404	8 363	-

**Current consumption in A**

30	6.24	6.36	6.44	6.49	6.51	6.51	6.49	6.46	-
35	6.73	6.82	6.87	6.90	6.91	6.91	6.90	6.89	-
40	7.40	7.45	7.48	7.49	7.49	7.48	7.48	7.48	-
45	-	8.27	8.26	8.25	8.24	8.23	8.23	8.24	-
50	-	-	9.24	9.20	9.17	9.15	9.15	9.18	-
55	-	-	-	10.34	10.29	10.27	10.26	10.29	-
60	-	-	-	-	11.62	11.57	11.57	11.60	-
65	-	-	-	-	-	13.08	13.07	13.10	-

**Mass flow in kg/h**

30	177	205	245	297	360	431	512	599	-
35	173	202	243	294	356	427	506	591	-
40	165	196	238	291	353	423	501	585	-
45	-	186	230	284	348	419	497	581	-
50	-	-	218	275	340	413	492	576	-
55	-	-	-	261	329	404	485	570	-
60	-	-	-	-	313	391	475	562	-
65	-	-	-	-	-	373	460	551	-

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

30	2.09	2.42	2.92	3.58	4.41	5.44	6.68	8.22	-
35	1.76	2.07	2.51	3.09	3.81	4.66	5.67	6.86	-
40	1.45	1.74	2.15	2.67	3.30	4.03	4.88	5.83	-
45	-	1.42	1.81	2.28	2.85	3.49	4.21	5.02	-
50	-	-	1.47	1.91	2.42	3.00	3.63	4.32	-
55	-	-	-	1.55	2.02	2.54	3.11	3.71	-
60	-	-	-	-	1.64	2.11	2.62	3.15	-
65	-	-	-	-	-	1.71	2.17	2.64	-

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

Cooling capacity	22 992	W
Power input	6 701	W
Current consumption	10.13	A
Mass flow	523	kg/h
C.O.P.	3.43	

**Pressure switch settings**

Maximum HP switch setting	29	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	69	dB(A)

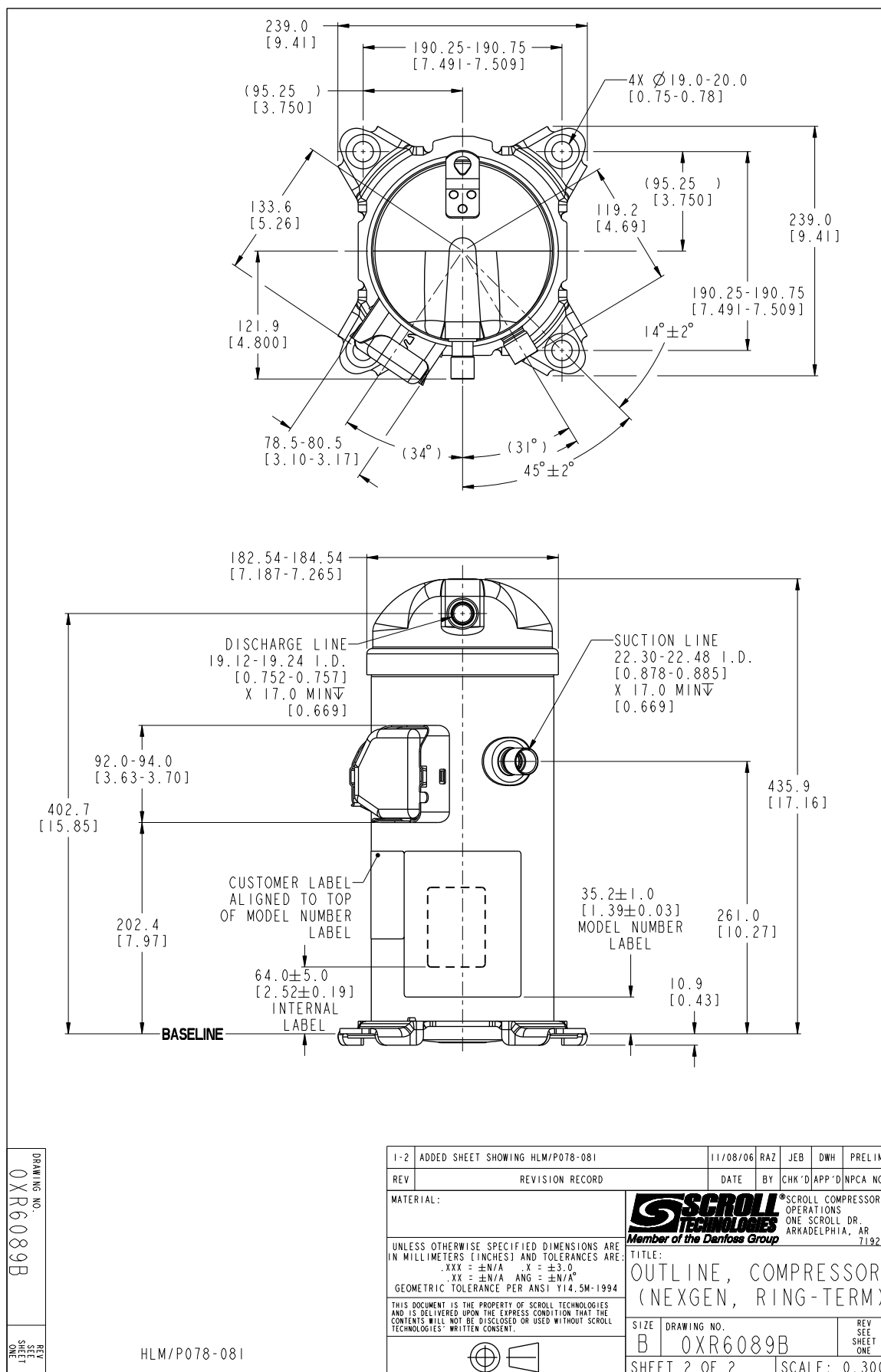
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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