ENGINEERING



Datasheets

Danfoss scroll compressors **H series**



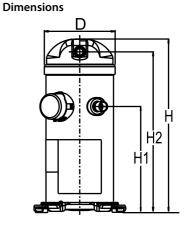


Datasheet, technical data

Danfoss scroll compressor, HRM047U4

General Characteristics

Model number (on compressor nameplate)		HRM047U4LP6			
Code number for Singlepack*		120U1051			
Code number for Industrial pack**		120U1048			
Drawing number		0XC6301B-3			
Suction and discharge connections		Brazed			
Suction connection		" ODF			
Oil sight glass		None			
Oil equalisation connection		None			
Oil drain connection		None			
LP gauge port		None			
IPR valve		Yes			
Swept volume	64.07 c	m3/rev			
Displacement @ Nominal speed	11.2 m3/h @ 2900 rpm	- 13.4 m3/h @ 3500 rpm			
Net weight	30.8	4 kg			
Oil charge	1.33 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	3.63 kg				
Approved refrigerants	R	22			

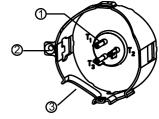


D=164.5 mm H=439 mm H1=275 mm H2=405 mm H3=- mm

Electrical Characteristics

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	3.873 Ω
Winding resistance between phases 1-3 +/- 7% at 25°C	3.870 Ω
Winding resistance between phases 2-3 +/- 7% at 25°C	2.850 Ω
Rated Load Amps (RLA)	7.7 A
Maximum Continuous Current (MCC)	12 A
Locked Rotor Amps (LRA)	50 A
Motor protection	Internal overload protector

Terminal box



Recommended Installation torques

Oil sight glass	52.5 Nm		
Power connections / Earth connection	0 Nm / 0 Nm		

Parts shipped with compressor

Mounting kit with grommets and sleeves	
Initial oil charge	
Installation instructions	

IP22

Spade connectors 1/4"
Earth connection
Power cable passage

 $\textbf{Approvals:} \ \mathsf{CE} \ \mathsf{certified}, \ \mathsf{UL} \ \mathsf{certified} \ (\mathsf{file} \ \mathsf{SA11565}), -$

*Singlepack: Compressor in cardboard box

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



Datasheet, accessories and spare parts

Danfoss scroll compressor, HRM047U4

Rotolock accessories, suction side	Code no.
No translation for	
Rotolock accessories, discharge side	Code no.
No translation for	
Rotolock accessories, sets	Code no.
No translation for	
Oil / lubricants	Code no.
Crankcase heaters	Code no.
Belt type crankcase heater, 40 W, 230 V, CE mark, UL	120Z0055
Belt type crankcase heater, 40 W, 400 V, CE mark, UL	120Z0056
Miscellaneous accessories	Code no.
Acoustic hood	120Z5043
Discharge thermostat kit	7750009
IP54 upgrade kit	118U0056
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
No translation for 120Z5015	120Z5015



Danfoss scroll compressor. HRM047U4

Performance data at 50 Hz, EN 12900 rating conditions

R22

Cond. temp. in	Evaporating temperature in °C (to)									
°C (tc)	-25	-20	-15	-10	-5	0	5	10	15	
Cooling capacity	ı in W									
30	4 182	4 885	5 919	7 262	8 895	10 797	12 949	15 328	_	
35	3 912	4 607	5 611	6 903	8 463	10 270	12 305	14 546	_	
40	-	4 269	5 261	6 518	8 022	9 752	11 687	13 808		
45		-	4 847	6 087	7 552	9 221	11 074	13 091		
50		-	7 047	5 589	7 031	8 656	10 444	12 374		
55	<u>-</u>	-	-	-	6 440	8 037	9 775	11 635		
60		-	-	-	-	7 343	9 048	10 853	_	
65		-			_	-	8 241	10 007		
00							0 2 4 1	10 001		
Power input in W	ı									
30	2 053	2 038	2 032	2 023	2 003	1 961	1 888	1 774	-	
35	2 372	2 323	2 295	2 277	2 261	2 235	2 191	2 118	-	
40	-	2 673	2 612	2 574	2 549	2 528	2 501	2 458	-	
45	-	-	2 998	2 928	2 884	2 856	2 834	2 809	-	
50	-	-	-	3 355	3 280	3 234	3 207	3 188	-	
55	-	-	-	-	3 754	3 678	3 633	3 610	-	
60	-	-	-	-	-	4 203	4 129	4 090	-	
65	-	-	-	-	-	-	4 711	4 643	-	
Current consum	ption in A									
30	5.06	4.79	4.73	4.78	4.86	4.87	4.71	4.30	-	
35	5.66	5.23	5.06	5.05	5.10	5.12	5.02	4.70	-	
40	-	5.78	5.48	5.38	5.39	5.40	5.34	5.10	-	
45	-	-	6.00	5.80	5.75	5.75	5.70	5.52	-	
50	-	-	-	6.33	6.20	6.16	6.12	5.99	-	
55	-	-	-	-	6.76	6.67	6.62	6.52	-	
60	-	-	-	-	-	7.28	7.21	7.12	-	
65	-	-	-	-	-	-	7.91	7.82	-	
Maga flow in ka/l	.									
Mass flow in kg/l	91	105	126	152	184	221	262	308		
35	88	103	124	150	182	218	258	302		
		100		148				 		
40 45	-		121 117	144	180	216 212	255	298	-	
45	-	-	-	+	176	209	252 248	294	-	
50		-		139	172			291		
55	-	-	-	-	165	203	244	287	-	
60 6F	-	-	-	-	-	196	238	281	-	
65	-	-	-	-	-	-	229	275	-	
Coefficient of pe	rformance (C.C).P.)								
30	2.04	2.40	2.91	3.59	4.44	5.51	6.86	8.64	-	
35	1.65	1.98	2.44	3.03	3.74	4.60	5.62	6.87	-	
40	-	1.60	2.01	2.53	3.15	3.86	4.67	5.62	-	
45	-	-	1.62	2.08	2.62	3.23	3.91	4.66	-	
50	-	-	-	1.67	2.14	2.68	3.26	3.88	-	
55	-	-	-	-	1.72	2.19	2.69	3.22	-	
60	-	-	-	-	-	1.75	2.19	2.65	-	
65	-	-	-	-	-	-	1.75	2.16	_	

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

tronnia portormanos arto o o, to	•• •	
Cooling capacity	10 444	W
Power input	3 207	W
Current consumption	6.12	Α
Mass flow	248	kg/h
C.O.P.	3.26	

to: Evaporating temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

Pressure switch settings

M	aximum HP switch setting	29	bar(g)
M	inimum LP switch setting	0.5	bar(g)
LF	pump down setting	1.3	bar(g)

Sound power data

Sound power level	67	dB(A)	
With accoustic hood	62	dB(A)	

All performance data +/- 5%

tc: Condensing temperature at dew point



Danfoss scroll compressor. HRM047U4

Performance data at 50 Hz, ARI rating conditions

R22

Cond. temp. in	Evaporating temperature in °C (to)									
°C (tc)	-25	-20	-15	-10	-5	0	5	10	15	
Cooling capacity	in W									
30	4 442	5 184	6 276	7 695	9 418	11 424	13 691	16 196	_	
35	-	4 906	5 970	7 339	8 990	10 902	13 052	15 418	_	
40			5 619	6 956	8 553	10 389	12 441	14 687		
45		_	5 200	6 524	8 086	9 864	11 836	13 980		
			5 200					t		
50	-	-	-	6 020	7 565	9 303	11 214	13 274	-	
55	-	-	-	-	6 968	8 686	10 553	12 548	-	
60	-	-	-	-	-	7 988	9 831	11 779	-	
65	-	-	-	-	-	-	9 024	10 944	-	
Power input in W	1									
30	2 053	2 038	2 032	2 023	2 003	1 961	1 888	1 774	-	
35	-	2 323	2 295	2 277	2 261	2 235	2 191	2 118	-	
40	-	-	2 612	2 574	2 549	2 528	2 501	2 458	-	
45	-	-	2 998	2 928	2 884	2 856	2 834	2 809	-	
50	-	-	-	3 355	3 280	3 234	3 207	3 188	-	
55	-	-	-	-	3 754	3 678	3 633	3 610	-	
60	-	-	-	-	-	4 203	4 129	4 090	-	
65	-	_	-	_	_	-	4 711	4 643	_	
		1	1	1						
Current consump	otion in A	1	1	ı		_	1			
30	5.06	4.79	4.73	4.78	4.86	4.87	4.71	4.30	-	
35	-	5.23	5.06	5.05	5.10	5.12	5.02	4.70	-	
40	-	-	5.48	5.38	5.39	5.40	5.34	5.10	-	
45	-	-	6.00	5.80	5.75	5.75	5.70	5.52	-	
50	-	-	-	6.33	6.20	6.16	6.12	5.99	-	
55	-	-	-	-	6.76	6.67	6.62	6.52	-	
60	-	-	-	-	-	7.28	7.21	7.12	-	
65	-	-	-	-	-	-	7.91	7.82	-	
Mass flow in kg/h		T	T	T	ī	1	T	1		
30	90	105	125	152	183	220	261	306	-	
35	-	103	123	150	181	217	257	301	-	
40	-	-	120	147	179	214	254	296	-	
45	-	-	116	143	175	211	251	293	-	
50	-	-	-	138	171	207	247	289	-	
55	-	-	-	-	164	202	242	285	-	
60	-	-	-	-	-	195	236	280	-	
65	-	-	-	-	-	-	228	273	-	
Coefficient of per	formance (C C) P)								
30	2.16	2.54	3.09	3.80	4.70	5.83	7.25	9.13	_	
35	-	2.11	2.60	3.22	3.98	4.88	5.96	7.28	_	
40	-	-	2.00	2.70	3.36	4.11	4.97	5.98		
45		_	1.73	2.23	2.80	3.45	4.18	4.98		
50				1.79	2.80	2.88	3.50			
	-	-	-	+				4.16	-	
55	-	-	-	-	1.86	2.36	2.90	3.48	-	
60	-	-	-	-	-	1.90	2.38	2.88	-	
65	-	-	-	-	-	-	1.92	2.36	-	

reciminal performance at to 7.2 e, to	U-1 U	
Cooling capacity	11 501	W
Power input	3 567	W
Current consumption	6.52	Α
Mass flow	262	kg/h
C.O.P.	3.22	

to: Evaporating temperature at dew point

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

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

ſ	Sound power level	67	dB(A)
	With accoustic hood	62	dB(A)

All performance data +/- 5%

tc: Condensing temperature at dew point



Danfoss scroll compressor. HRM047U4

Performance data at 60 Hz, EN 12900 rating conditions

R22

Cond. temp. in		Evaporating temperature in °C (to)							
°C (tc)	-25	-20	-15	-10	-5	0	5	10	15
Caaling canacity	in M								
Cooling capacity 30	4 968	5 800	7 025	8 620	10 559	12 816	15 366	18 182	_
35	4 662	5 485	6 678	8 216	10 074	12 226	14 647	17 310	
40		5 104	6 285	7 786	9 584	11 651	13 963	16 494	
45	-	5 104	5 818	7 302	9 059	11 062	13 285	15 704	
50			3 6 16				+	1	
55	-	-	-	6 736	8 471 7 793	10 429 9 725	12 584 11 830	14 911 14 084	-
	-	-	-			+		1	-
60	-	-	-	-	-	8 922	10 996	13 196	-
65	-	-	-	-	-	-	10 054	12 217	-
Power input in W	ı	1	1	T	1	T	1	, ,	
30	2 454	2 438	2 430	2 419	2 395	2 345	2 258	2 124	-
35	2 829	2 773	2 740	2 719	2 699	2 668	2 615	2 529	-
40	-	3 183	3 111	3 066	3 037	3 012	2 979	2 928	-
45	-	-	3 562	3 479	3 427	3 394	3 368	3 338	-
50	-	-	-	3 977	3 888	3 834	3 801	3 779	-
55	-	-	-	-	4 439	4 348	4 295	4 268	-
60	-	-	-	-	-	4 957	4 870	4 823	-
65	-	-	-	-	-	-	5 543	5 463	-
Current consum	ntion in A								
30	5.46	5.17	5.10	5.16	5.24	5.25	5.08	4.64	_
35	6.10	5.64	5.46	5.44	5.50	5.52	5.41	5.07	
40	-	6.23	5.40	5.80	5.81	5.83	5.76	5.50	
45		-	6.47	6.26	6.20	6.20	6.15	5.96	
	-								-
50	-	-	-	6.82	6.68	6.64	6.60	6.46	-
55	-	-	-	-	7.28	7.19	7.14	7.03	-
60	-	-	-	-	-	7.85	7.77	7.68	-
65	-	-	-	-	-	-	8.53	8.43	-
Mass flow in kg/l	า								
30	108	125	149	181	219	263	311	365	-
35	105	123	148	179	217	260	308	360	-
40	-	119	145	177	215	258	305	356	-
45	-	-	140	173	212	255	302	353	-
50	-	-	-	167	207	251	299	351	-
55	-	-	-	-	200	246	295	347	-
60	-	-	-	-	-	238	289	342	-
65	-	-	-	-	-	-	280	335	-
Coefficient of pe	rformance (C C) P)							
30	2.02	2.38	2.89	3.56	4.41	5.47	6.80	8.56	_
35	1.65	1.98	2.44	3.02	3.73	4.58	5.60	6.84	_
40	-	1.60	2.02	2.54	3.16	3.87	4.69	5.63	-
45		-	1.63	2.10	2.64	3.26	3.94	4.70	_
50		-	-	1.69	2.18	2.72	3.31	3.95	
55		-	_	-	1.76	2.72	2.75	3.30	
55		-	-	-	-	1.80	2.75	2.74	-
60	-								

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

Cooling capacity	12 584	W
Power input	3 801	W
Current consumption	6.60	Α
Mass flow	299	kg/h
C.O.P.	3.31	

to: Evaporating temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

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 accoustic hood	66	dB(A)

All performance data +/- 5%

tc: Condensing temperature at dew point



Danfoss scroll compressor. HRM047U4

Performance data at 60 Hz, ARI rating conditions

R22

Cond. temp. in		Evaporating temperature in °C (to)							
°C (tc)	-25	-20	-15	-10	-5	0	5	10	15
Cooling consoits	in M								
Cooling capacity 30	5 277	6 155	7 449	9 134	11 180	13 560	16 246	19 211	
35	-	5 841	7 106	8 735	10 702	12 978	15 536	18 348	
40	-	-	6 713	8 309	10 218	12 412	14 864	17 544	
45	-	-	6 241	7 826	9 699	11 833	14 199	16 770	-
50	-	-	-	7 255	9 114	11 209	13 512	15 995	-
55	-	-	-	-	8 432	10 510	12 772	15 189	-
60	-	-	-	-	-	9 706	11 948	14 321	-
65	-	-	-	-	-	-	11 010	13 361	-
Power input in W	1								
30	2 454	2 438	2 430	2 419	2 395	2 345	2 258	2 124	-
35	-	2 773	2 740	2 719	2 699	2 668	2 615	2 529	-
40	-	-	3 111	3 066	3 037	3 012	2 979	2 928	-
45	-	-	3 562	3 479	3 427	3 394	3 368	3 338	-
50	-	-	-	3 977	3 888	3 834	3 801	3 779	-
55	-	-	-	-	4 439	4 348	4 295	4 268	-
60	-	-	-	-	-	4 957	4 870	4 823	-
65	-	-	-	-	-	-	5 543	5 463	-
urrent concum	ntion in A								
30	5.46	5.17	5.10	5.16	5.24	5.25	5.08	4.64	_
35	-	5.64	5.46	5.44	5.50	5.52	5.41	5.07	
40	-	5.04	5.40	5.80	5.81	5.83	5.76	5.50	
45		+	6.47	6.26	6.20	6.20	6.15	5.96	
	-	-				6.64		t	-
50	-	-	-	6.82	6.68		6.60	6.46	-
55		-		-	7.28	7.19	7.14	7.03	
60	-	-	-	-	-	7.85	7.77	7.68	-
65	-	-	-	-	-	-	8.53	8.43	-
Mass flow in kg/h	n							<u> </u>	
30	107	124	149	180	218	261	310	363	-
35	-	122	147	178	216	258	306	358	-
40	-	-	144	176	213	256	303	354	-
45	-	-	139	172	210	254	301	351	-
50	-	-	-	166	206	250	298	349	-
55	-	-	-	-	199	244	293	345	-
60	-	-	-	-	-	237	287	340	-
65	-	-	-	-	-	-	278	333	-
Coefficient of pe	rformance (C.C).P.)							
30	2.15	2.52	3.07	3.78	4.67	5.78	7.19	9.05	_
35	-	2.11	2.59	3.21	3.97	4.86	5.94	7.25	-
40	-	-	2.16	2.71	3.36	4.12	4.99	5.99	-
45	_	-	1.75	2.25	2.83	3.49	4.22	5.02	_
50		_	-	1.82	2.34	2.92	3.55	4.23	_
55		_	_	-	1.90	2.42	2.97	3.56	_
			-	_	-	1.96	2.45	2.97	
60	-	-							

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

	-,		
Cooling capacity	13 913	W	
Power input	4 218	W	
Current consumption	7.03	Α	
Mass flow	316	kg/h	
C.O.P.	3.30		

to: Evaporating temperature at dew point

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

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)

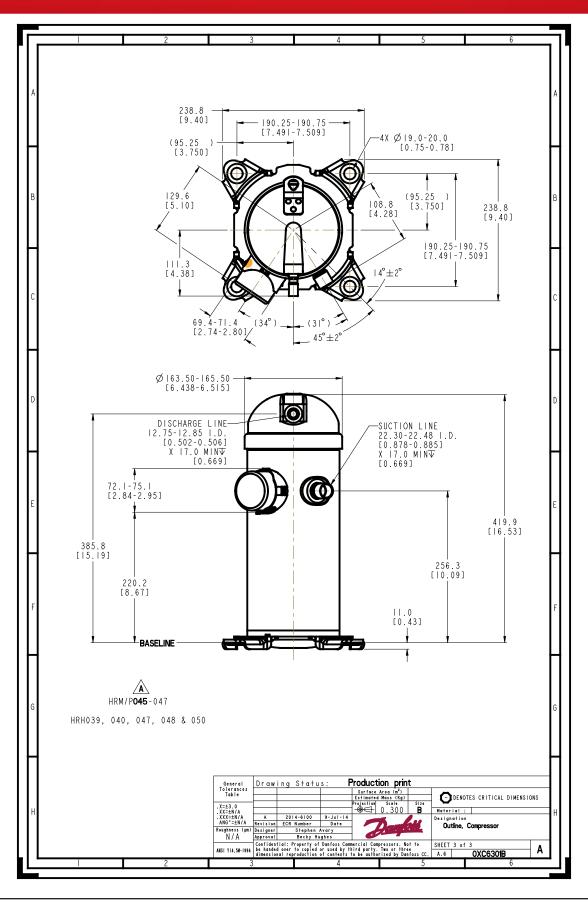
Sound power data

Sound power level	71	dB(A)
With accoustic hood	66	dB(A)

All performance data +/- 5%

tc: Condensing temperature at dew point





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