

COMPRESSOR DEFINITION

Designation	EH U4160U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513307561

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low-Medium (Plus) Back Pressure		
4.1 Evaporating temperature range	-35°C to 5°C	(-31°F to 41°F)	
5 Motor type	CSCR		
6 Starting torque	HST - High starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Fan	187 to 255 V	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	2/3+	[hp]
2 Displacement	14.16	[cm ³] (0.864 cu.in)
2.1 Bore [mm]	28.000	
2.2 Stroke [mm]	23.000	
3 Lubricant charge	270	[ml] (9.13 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	9.1	[kg] (20.06 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213515059	
3 Start capacitor	72-88(330)	[µF(VAC minimum)]
4 Run capacitor	12(400)	[µF(VAC minimum)]
5 Motor protection	DRB210R61A2F	
6 Start winding resistance	14.88	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	6.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	19.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	4.00	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	5.00	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			EN12900MBP Fan		Evaporating temperature (Condensing temperature		-10°C (14°F) 45°C (113°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
3583	903	1050	525	2.50	12.89	6.83	1.72	2.00

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		EN12900 Fan				(Condensing temperature 35°C (+95°F))				
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1457	367	427	302	1.54	5.67	4.82	1.21	1.41
-30	(-22)	1849	466	542	335	1.67	6.47	5.52	1.39	1.62
-25	(-13)	2340	590	686	370	1.81	7.69	6.33	1.59	1.85
-20	(- 4)	2934	739	860	405	1.95	9.35	7.26	1.83	2.13
-15	(+ 5)	3635	916	1065	438	2.10	11.48	8.33	2.10	2.44
-10	(+14)	4446	1120	1303	468	2.25	14.11	9.57	2.41	2.80
-5	(+23)	5373	1354	1574	493	2.40	17.25	10.97	2.76	3.22
0	(+32)	6419	1617	1881	513	2.53	20.95	12.57	3.17	3.68
+5	(+41)	7587	1912	2223	526	2.66	25.23	14.38	3.62	4.21

TEST CONDITIONS: @220V50Hz		EN12900 Fan				(Condensing temperature 45°C (+113°F))				
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1381	348	405	314	1.59	2.76	4.40	1.11	1.29
-30	(-22)	1774	447	520	352	1.74	4.79	5.02	1.27	1.47
-25	(-13)	2257	569	661	393	1.91	7.10	5.69	1.43	1.67
-20	(- 4)	2833	714	830	436	2.08	9.73	6.43	1.62	1.88
-15	(+ 5)	3507	884	1028	478	2.26	12.71	7.25	1.83	2.12
-10	(+14)	4283	1079	1255	520	2.44	16.05	8.18	2.06	2.40
-5	(+23)	5164	1301	1513	558	2.62	19.80	9.22	2.32	2.70
0	(+32)	6155	1551	1804	593	2.80	23.97	10.40	2.62	3.05
+5	(+41)	7260	1830	2127	622	2.97	28.59	11.74	2.96	3.44

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		EN12900 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1240	312	363	321	1.63	6.05	3.94	0.99	1.15
-30	(-22)	1635	412	479	364	1.81	7.75	4.55	1.15	1.33
-25	(-13)	2112	532	619	411	2.00	9.61	5.16	1.30	1.51
-20	(- 4)	2673	674	783	462	2.21	11.67	5.78	1.46	1.69
-15	(+ 5)	3322	837	974	514	2.44	13.94	6.43	1.62	1.88
-10	(+14)	4064	1024	1191	567	2.66	16.47	7.13	1.80	2.09
-5	(+23)	4903	1235	1437	618	2.89	19.27	7.89	1.99	2.31
0	(+32)	5842	1472	1712	668	3.12	22.36	8.73	2.20	2.56
+5	(+41)	6885	1735	2017	713	3.34	25.79	9.67	2.44	2.83

TEST CONDITIONS: @220V50Hz		EN12900 Fan			(Condensing temperature 65°C (+149°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	1110	280	325	329	1.62	- 0.16	3.32	0.84	0.97
-30	(-22)	1511	381	443	377	1.85	- 0.33	4.01	1.01	1.17
-25	(-13)	1983	500	581	430	2.09	- 0.46	4.63	1.17	1.36
-20	(- 4)	2531	638	742	489	2.35	- 0.52	5.22	1.31	1.53
-15	(+ 5)	3158	796	925	550	2.62	- 0.49	5.78	1.46	1.69
-10	(+14)	3868	975	1134	614	2.90	- 0.33	6.32	1.59	1.85
-5	(+23)	4666	1176	1367	679	3.19	- 0.03	6.88	1.73	2.02
0	(+32)	5555	1400	1628	743	3.48	0.45	7.47	1.88	2.19
+5	(+41)	6539	1648	1916	805	3.77	1.14	8.09	2.04	2.37

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 40° up + 45° to Back		
3.2 DISCHARGE	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		