

COMPRESSOR DEFINITION

Designation	EM 2U80HLP
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513305551

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	RSCR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	-	103 to 140 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	6.76	[cm ³] (0.413 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	17.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.82	[kg] (17.24 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	7M4R7MD3/8EA14C3/8EA14E63/8M4R7MD3/QPS2-A4R7MD3/	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)/15(180)	[µF(VAC minimum)]
5 Motor protection	4TM445KFBYY-53	
6 Start winding resistance	9.90	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.00	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	15.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.68	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.27	[A] - Measured according to UL 984
11 Approval boards certification	IMTRO - TUV	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @127V60Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
782	197	229	149	1.94	4.44	5.25	1.32	1.54

E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz		ASHRAE32 Static				(Condensing temperature 35°C (+95°F))			
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	459	116	134	98	1.71	2.60	4.67	1.18	1.37
-30 (-22)	604	152	177	113	1.77	3.42	5.40	1.36	1.58
-25 (-13)	799	201	234	128	1.84	4.54	6.24	1.57	1.83
-20 (- 4)	1049	264	307	145	1.92	5.97	7.20	1.81	2.11
-15 (+ 5)	1359	343	398	164	2.02	7.76	8.25	2.08	2.42
-10 (+14)	1734	437	508	184	2.13	9.94	9.40	2.37	2.75

TEST CONDITIONS: @127V60Hz		ASHRAE32 Static				(Condensing temperature 45°C (+113°F))			
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	420	106	123	102	1.73	2.38	4.12	1.04	1.21
-30 (-22)	566	143	166	119	1.80	3.21	4.80	1.21	1.41
-25 (-13)	756	190	221	137	1.88	4.29	5.55	1.40	1.63
-20 (- 4)	993	250	291	156	1.97	5.65	6.39	1.61	1.87
-15 (+ 5)	1284	324	376	176	2.08	7.33	7.29	1.84	2.14
-10 (+14)	1632	411	478	198	2.21	9.35	8.25	2.08	2.42

TEST CONDITIONS: @127V60Hz		ASHRAE32 Static				(Condensing temperature 55°C (+131°F))			
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	363	91	106	100	1.73	2.05	3.62	0.91	1.06
-30 (-22)	516	130	151	120	1.81	2.93	4.27	1.08	1.25
-25 (-13)	706	178	207	142	1.91	4.01	4.97	1.25	1.46
-20 (- 4)	938	236	275	165	2.02	5.34	5.72	1.44	1.67
-15 (+ 5)	1215	306	356	188	2.15	6.94	6.49	1.64	1.90
-10 (+14)	1544	389	453	212	2.30	8.85	7.30	1.84	2.14

E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	286	72	84	92	1.69	1.62	3.13	0.79	0.92
-30	(-22)	454	114	133	118	1.80	2.57	3.79	0.95	1.11
-25	(-13)	651	164	191	144	1.92	3.70	4.46	1.12	1.31
-20	(- 4)	883	223	259	171	2.06	5.03	5.14	1.30	1.51
-15	(+ 5)	1155	291	338	199	2.21	6.59	5.83	1.47	1.71
-10	(+14)	1471	371	431	227	2.39	8.42	6.51	1.64	1.91

F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate EUEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42° up + 45° to Back		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 30° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		