

### COMPRESSOR DEFINITION

Designation	<b>EM 2Z80HLC</b>
Nominal Voltage/Frequency	<b>220-240 V 50 Hz</b>
Engineering Number	<b>513304110</b>

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50	[ 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	RSIR		
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)	-	-	-
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 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 <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	6.99	[cm <sup>3</sup> ] (0.427 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	17.600	
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)	7.68	[kg] (16.93 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C1	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM739KFBYY-53	
6 Start winding resistance	20.57	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	20.44	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	5.15	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	3.90	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	3.70	[A] - Measured according to UL 984
11 Approval boards certification		

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
691	174	202	126	0.80	3.93	5.50	1.39	1.61

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			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)	402	101	118	80	0.63	2.28	5.01	1.26	1.47
-30 (-22)	546	138	160	95	0.67	3.09	5.80	1.46	1.70
-25 (-13)	723	182	212	110	0.72	4.10	6.64	1.67	1.94
-20 (- 4)	937	236	274	125	0.78	5.33	7.54	1.90	2.21
-15 (+ 5)	1192	300	349	140	0.84	6.80	8.51	2.15	2.49
-10 (+14)	1493	376	437	156	0.90	8.55	9.57	2.41	2.80

TEST CONDITIONS: @220V50Hz			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)	355	89	104	82	0.64	2.01	4.37	1.10	1.28
-30 (-22)	501	126	147	98	0.68	2.84	5.12	1.29	1.50
-25 (-13)	679	171	199	115	0.74	3.86	5.87	1.48	1.72
-20 (- 4)	894	225	262	134	0.81	5.09	6.63	1.67	1.94
-15 (+ 5)	1151	290	337	155	0.89	6.57	7.40	1.87	2.17
-10 (+14)	1454	366	426	177	0.98	8.33	8.21	2.07	2.41

TEST CONDITIONS: @220V50Hz			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)	307	77	90	83	0.65	1.74	3.75	0.94	1.10
-30 (-22)	448	113	131	99	0.69	2.54	4.51	1.14	1.32
-25 (-13)	621	157	182	118	0.75	3.53	5.22	1.31	1.53
-20 (- 4)	832	210	244	141	0.84	4.73	5.88	1.48	1.72
-15 (+ 5)	1083	273	317	166	0.94	6.18	6.51	1.64	1.91
-10 (+14)	1381	348	405	194	1.06	7.91	7.12	1.79	2.09

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	256	65	75	83	0.66	1.45	3.05	0.77	0.90
-30	(-22)	386	97	113	99	0.69	2.19	3.88	0.98	1.14
-25	(-13)	548	138	161	120	0.76	3.11	4.59	1.16	1.34
-20	(- 4)	747	188	219	145	0.85	4.25	5.20	1.31	1.52
-15	(+ 5)	987	249	289	173	0.97	5.64	5.73	1.44	1.68
-10	(+14)	1273	321	373	207	1.11	7.29	6.19	1.56	1.81

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	Yes		
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 parallel BP+24°to Back		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		