

COMPRESSOR DEFINITION

Designation	EM 2Z80HLT
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513304012

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	-	98 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	-	98 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)	7.73	[kg] (17.04 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	TSD	
2.1 Starting device	TSD- 115V	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)	[µF(VAC minimum)]
5 Motor protection	CP4TMC481K61	
6 Start winding resistance	6.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.04	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	17.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.57	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.16	[A] - Measured according to UL 984
11 Approval boards certification	CE - UKCA - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]
815	205	239	138	1.39	4.63	5.92	1.49	1.73

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	474	119	139	92	1.02	2.68	5.14	1.29	1.51
-30 (-22)	647	163	190	107	1.13	3.67	6.05	1.53	1.77
-25 (-13)	860	217	252	122	1.25	4.88	7.04	1.77	2.06
-20 (- 4)	1112	280	326	138	1.38	6.33	8.07	2.03	2.36
-15 (+ 5)	1402	353	411	155	1.51	8.00	9.10	2.29	2.67
-10 (+14)	1730	436	507	172	1.66	9.91	10.08	2.54	2.95

TEST CONDITIONS: @115V60Hz		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)	415	105	122	93	1.04	2.35	4.46	1.12	1.31
-30 (-22)	587	148	172	110	1.17	3.32	5.31	1.34	1.56
-25 (-13)	803	202	235	128	1.31	4.56	6.25	1.57	1.83
-20 (- 4)	1064	268	312	146	1.45	6.06	7.24	1.82	2.12
-15 (+ 5)	1369	345	401	166	1.61	7.82	8.24	2.08	2.41
-10 (+14)	1717	433	503	186	1.79	9.84	9.22	2.32	2.70

TEST CONDITIONS: @115V60Hz		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	92	1.03	2.05	3.97	1.00	1.16
-30 (-22)	520	131	152	111	1.18	2.95	4.70	1.18	1.38
-25 (-13)	728	183	213	131	1.33	4.13	5.53	1.39	1.62
-20 (- 4)	985	248	289	152	1.50	5.61	6.44	1.62	1.89
-15 (+ 5)	1292	326	379	175	1.69	7.38	7.37	1.86	2.16
-10 (+14)	1647	415	483	199	1.89	9.44	8.30	2.09	2.43

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	317	80	93	87	0.99	1.79	3.61	0.91	1.06
-30	(-22)	448	113	131	109	1.15	2.54	4.17	1.05	1.22
-25	(-13)	634	160	186	131	1.33	3.60	4.86	1.23	1.42
-20	(- 4)	875	221	256	156	1.53	4.98	5.64	1.42	1.65
-15	(+ 5)	1171	295	343	181	1.74	6.68	6.46	1.63	1.89
-10	(+14)	1520	383	445	209	1.97	8.71	7.28	1.83	2.13

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal 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	Straight		
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	Straight		
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	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		