

COMPRESSOR DEFINITION

Designation	EM 3Z80HLT
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301622

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	1/3	[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)	7.1	[kg] (15.65 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	8EA14B3/8EA14C3/QPS2-A4R7MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	15(180)/12(150)	[µF(VAC minimum)]
5 Motor protection	4TM427NFBYY-53	
6 Start winding resistance	8.84	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.68	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	22.46	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.30	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.81	[A] - Measured according to UL 984
11 Approval boards certification	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]
850	214	249	143	1.32	4.83	5.96	1.50	1.75

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)	493	124	144	92	0.93	2.79	5.36	1.35	1.57
-30 (-22)	655	165	192	108	1.05	3.71	6.12	1.54	1.79
-25 (-13)	851	215	249	123	1.17	4.83	6.99	1.76	2.05
-20 (- 4)	1091	275	320	137	1.30	6.21	7.97	2.01	2.34
-15 (+ 5)	1382	348	405	152	1.43	7.89	9.07	2.29	2.66
-10 (+14)	1735	437	508	168	1.56	9.94	10.30	2.59	3.02

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)	436	110	128	94	0.95	2.47	4.64	1.17	1.36
-30 (-22)	610	154	179	113	1.09	3.46	5.40	1.36	1.58
-25 (-13)	814	205	239	131	1.23	4.62	6.22	1.57	1.82
-20 (- 4)	1057	266	310	149	1.39	6.02	7.09	1.79	2.08
-15 (+ 5)	1348	340	395	167	1.55	7.70	8.02	2.02	2.35
-10 (+14)	1696	427	497	187	1.72	9.71	9.03	2.28	2.65

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)	351	88	103	89	0.91	1.99	3.95	0.99	1.16
-30 (-22)	537	135	157	113	1.08	3.04	4.74	1.19	1.39
-25 (-13)	748	189	219	135	1.27	4.25	5.53	1.39	1.62
-20 (- 4)	994	250	291	158	1.46	5.66	6.32	1.59	1.85
-15 (+ 5)	1283	323	376	181	1.66	7.33	7.12	1.79	2.09
-10 (+14)	1625	410	476	205	1.88	9.31	7.94	2.00	2.33

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)	245	62	72	78	0.83	1.39	3.19	0.80	0.93
-30	(-22)	441	111	129	106	1.04	2.50	4.04	1.02	1.18
-25	(-13)	659	166	193	135	1.27	3.74	4.84	1.22	1.42
-20	(- 4)	908	229	266	163	1.51	5.16	5.58	1.41	1.63
-15	(+ 5)	1195	301	350	191	1.76	6.82	6.27	1.58	1.84
-10	(+14)	1531	386	449	222	2.03	8.77	6.93	1.75	2.03

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal
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	6.5 +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