

COMPRESSOR DEFINITION

Designation	EM 2Z70HLT
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513304003

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	6.36	[cm ³] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
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)	8.36	[kg] (18.43 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	Combo	
2.1 Starting device	3ARR5XM4BX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)/15(180)	[µF(VAC minimum)]
5 Motor protection	3ARR5XM4B	
6 Start winding resistance	5.80	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	14.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[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]
760	192	223	130	1.18	4.32	5.84	1.47	1.71

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)	438	110	128	76	0.77	2.48	5.77	1.45	1.69
-30	(-22)	569	143	167	94	0.91	3.22	6.11	1.54	1.79
-25	(-13)	756	190	221	111	1.06	4.29	6.85	1.73	2.01
-20	(- 4)	998	251	292	127	1.20	5.68	7.87	1.98	2.31
-15	(+ 5)	1297	327	380	143	1.34	7.40	9.08	2.29	2.66
-10	(+14)	1653	416	484	159	1.49	9.47	10.38	2.61	3.04

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)	409	103	120	79	0.79	2.31	5.19	1.31	1.52
-30	(-22)	537	135	157	98	0.93	3.04	5.50	1.39	1.61
-25	(-13)	718	181	210	116	1.08	4.08	6.15	1.55	1.80
-20	(- 4)	953	240	279	134	1.24	5.42	7.06	1.78	2.07
-15	(+ 5)	1242	313	364	153	1.40	7.09	8.11	2.04	2.38
-10	(+14)	1586	400	465	172	1.56	9.09	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)	388	98	114	84	0.78	2.20	4.66	1.17	1.36
-30	(-22)	508	128	149	103	0.93	2.88	4.93	1.24	1.44
-25	(-13)	678	171	199	122	1.09	3.85	5.51	1.39	1.62
-20	(- 4)	899	227	263	142	1.26	5.12	6.31	1.59	1.85
-15	(+ 5)	1172	295	343	162	1.44	6.69	7.23	1.82	2.12
-10	(+14)	1497	377	439	184	1.63	8.58	8.16	2.06	2.39

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)	377	95	111	91	0.79	2.13	4.15	1.05	1.22
-30	(-22)	481	121	141	110	0.96	2.73	4.40	1.11	1.29
-25	(-13)	634	160	186	129	1.14	3.60	4.92	1.24	1.44
-20	(- 4)	835	210	245	149	1.33	4.75	5.63	1.42	1.65
-15	(+ 5)	1086	274	318	170	1.54	6.20	6.41	1.62	1.88
-10	(+14)	1387	349	406	194	1.76	7.94	7.18	1.81	2.10

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	Yes		
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	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		