

COMPRESSOR DEFINITION

Designation	EM 2Z70HLP
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513304095

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	6.36	[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)	8.19	[kg] (18.06 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	8EA14C3/8EA14E61/8EA14E62/8EA14E63/QPS2-A4R7MD3/Q	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)	[µF(VAC minimum)]
5 Motor protection	DRB44L61B*	
6 Start winding resistance	6.41	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.06	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	12.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.84	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.27	[A] - Measured according to UL 984
11 Approval boards certification		

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	128	1.15	4.32	5.94	1.50	1.74

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)	450	113	132	90	0.77	2.55	4.99	1.26	1.46
-30 (-22)	604	152	177	102	0.86	3.43	5.98	1.51	1.75
-25 (-13)	804	203	236	115	0.96	4.56	7.00	1.76	2.05
-20 (- 4)	1048	264	307	130	1.08	5.97	8.07	2.03	2.37
-15 (+ 5)	1338	337	392	146	1.20	7.64	9.20	2.32	2.70
-10 (+14)	1673	422	490	161	1.32	9.59	10.38	2.62	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)	395	100	116	89	0.76	2.23	4.45	1.12	1.30
-30 (-22)	549	138	161	103	0.87	3.11	5.32	1.34	1.56
-25 (-13)	748	189	219	120	1.00	4.25	6.20	1.56	1.82
-20 (- 4)	991	250	290	139	1.15	5.64	7.10	1.79	2.08
-15 (+ 5)	1278	322	374	159	1.31	7.30	8.02	2.02	2.35
-10 (+14)	1609	406	472	180	1.47	9.22	8.97	2.26	2.63

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)	342	86	100	87	0.74	1.94	3.96	1.00	1.16
-30 (-22)	491	124	144	103	0.87	2.78	4.79	1.21	1.40
-25 (-13)	683	172	200	122	1.02	3.88	5.59	1.41	1.64
-20 (- 4)	918	231	269	143	1.19	5.23	6.39	1.61	1.87
-15 (+ 5)	1197	302	351	166	1.37	6.83	7.18	1.81	2.10
-10 (+14)	1519	383	445	190	1.56	8.70	7.97	2.01	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)	293	74	86	84	0.73	1.66	3.46	0.87	1.01
-30	(-22)	430	108	126	100	0.85	2.44	4.30	1.08	1.26
-25	(-13)	609	154	178	120	1.01	3.46	5.10	1.28	1.49
-20	(- 4)	831	209	243	142	1.19	4.73	5.85	1.48	1.72
-15	(+ 5)	1095	276	321	167	1.38	6.25	6.57	1.66	1.93
-10	(+14)	1402	353	411	193	1.58	8.03	7.27	1.83	2.13

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		