

COMPRESSOR DEFINITION

Designation	EM 3Z70HLT
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301601

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 pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	5.96	[cm ³] (0.364 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	15.000	
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)	7.6	[kg] (16.75 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	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)/15(180)	[µF(VAC minimum)]
5 Motor protection	4TM427KFBYY-53	
6 Start winding resistance	9.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.71	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	12.21	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.19	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.60	[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]
750	189	220	127	1.18	4.26	5.93	1.49	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)	410	103	120	80	0.79	2.32	5.13	1.29	1.50
-30	(-22)	575	145	169	95	0.90	3.26	6.08	1.53	1.78
-25	(-13)	757	191	222	108	1.00	4.30	7.05	1.78	2.07
-20	(- 4)	967	244	283	120	1.11	5.50	8.07	2.03	2.36
-15	(+ 5)	1216	306	356	132	1.22	6.94	9.15	2.31	2.68
-10	(+14)	1516	382	444	146	1.34	8.69	10.34	2.60	3.03

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)	379	96	111	83	0.79	2.14	4.54	1.15	1.33
-30	(-22)	551	139	161	101	0.92	3.12	5.44	1.37	1.59
-25	(-13)	736	185	216	117	1.05	4.18	6.31	1.59	1.85
-20	(- 4)	946	238	277	132	1.19	5.38	7.19	1.81	2.11
-15	(+ 5)	1193	301	349	147	1.33	6.81	8.10	2.04	2.37
-10	(+14)	1487	375	436	163	1.48	8.52	9.06	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)	308	78	90	79	0.75	1.74	3.89	0.98	1.14
-30	(-22)	488	123	143	101	0.91	2.76	4.79	1.21	1.40
-25	(-13)	678	171	199	121	1.08	3.85	5.63	1.42	1.65
-20	(- 4)	890	224	261	139	1.25	5.07	6.43	1.62	1.89
-15	(+ 5)	1136	286	333	158	1.42	6.48	7.22	1.82	2.12
-10	(+14)	1427	359	418	178	1.61	8.17	8.02	2.02	2.35

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)	197	50	58	66	0.67	1.11	3.03	0.76	0.89
-30	(-22)	387	97	113	93	0.87	2.19	4.00	1.01	1.17
-25	(-13)	584	147	171	118	1.07	3.32	4.87	1.23	1.43
-20	(- 4)	800	202	235	141	1.28	4.55	5.66	1.43	1.66
-15	(+ 5)	1047	264	307	165	1.49	5.98	6.40	1.61	1.87
-10	(+14)	1335	337	391	189	1.72	7.65	7.10	1.79	2.08

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	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		