

COMPRESSOR DEFINITION

Designation	EM 2U3111Z
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513305604

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-Medium (Plus) Back Pressure		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	CSIR		
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)	-	-	-
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	1/5	[hp]
2 Displacement	5.75	[cm ³] (0.351 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	16.600	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.46	[kg] (16.45 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	Current Relay	
2.1 Starting device	213515007	
3 Start capacitor	233-280(111)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM762NFBZZ-53	
6 Start winding resistance	8.12	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.61	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	20.20	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.45	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.83	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @127V60Hz			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]
665	168	195	129	1.80	3.78	5.16	1.30	1.51

TEST CONDITIONS: @127V60Hz			ASHRAELBP32 Fan		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]
679	171	199	129	1.80	3.86	5.26	1.33	1.54

E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz		ASHRAE32 Fan				(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)	383	96	112	90	1.70	2.16	4.26	1.07	1.25
-30	(-22)	524	132	154	101	1.73	2.97	5.18	1.31	1.52
-25	(-13)	701	177	205	114	1.78	3.98	6.15	1.55	1.80
-20	(- 4)	918	231	269	127	1.84	5.23	7.19	1.81	2.11
-15	(+ 5)	1183	298	347	142	1.91	6.75	8.33	2.10	2.44
-10	(+14)	1502	378	440	156	1.99	8.60	9.58	2.41	2.81
-5	(+23)	1880	474	551	171	2.06	10.82	10.97	2.76	3.21
0	(+32)	2324	586	681	186	2.14	13.44	12.52	3.15	3.67

TEST CONDITIONS: @127V60Hz		ASHRAE32 Fan				(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)	346	87	101	89	1.70	1.96	3.88	0.98	1.14
-30	(-22)	485	122	142	104	1.75	2.75	4.67	1.18	1.37
-25	(-13)	656	165	192	120	1.80	3.72	5.48	1.38	1.60
-20	(- 4)	866	218	254	137	1.88	4.93	6.34	1.60	1.86
-15	(+ 5)	1121	282	328	154	1.96	6.39	7.27	1.83	2.13
-10	(+14)	1426	359	418	172	2.06	8.17	8.30	2.09	2.43
-5	(+23)	1790	451	524	189	2.16	10.30	9.44	2.38	2.77
0	(+32)	2217	559	650	207	2.26	12.82	10.72	2.70	3.14

E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz		ASHRAE32 Fan			(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)	296	75	87	85	1.70	1.67	3.47	0.87	1.02
-30	(-22)	434	109	127	104	1.75	2.46	4.17	1.05	1.22
-25	(-13)	602	152	176	124	1.82	3.42	4.87	1.23	1.43
-20	(- 4)	807	203	236	145	1.91	4.59	5.60	1.41	1.64
-15	(+ 5)	1054	266	309	166	2.01	6.01	6.39	1.61	1.87
-10	(+14)	1350	340	395	187	2.13	7.73	7.25	1.83	2.12
-5	(+23)	1700	428	498	207	2.26	9.78	8.21	2.07	2.40
0	(+32)	2112	532	619	227	2.40	12.21	9.28	2.34	2.72

TEST CONDITIONS: @127V60Hz		ASHRAE32 Fan			(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)	228	58	67	81	1.68	1.29	2.83	0.71	0.83
-30	(-22)	368	93	108	105	1.73	2.09	3.50	0.88	1.02
-25	(-13)	536	135	157	130	1.81	3.04	4.15	1.05	1.22
-20	(- 4)	737	186	216	154	1.92	4.20	4.81	1.21	1.41
-15	(+ 5)	979	247	287	179	2.04	5.58	5.50	1.39	1.61
-10	(+14)	1267	319	371	204	2.18	7.25	6.25	1.58	1.83
-5	(+23)	1607	405	471	228	2.34	9.25	7.08	1.78	2.07
0	(+32)	2007	506	588	251	2.51	11.60	8.00	2.02	2.34

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal AMEM		
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		