

COMPRESSOR DEFINITION

Designation	EM 2U3121Z
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513305598

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 Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°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)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	8.41	[cm ³] (0.513 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	18.600	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	8.08	[kg] (17.81 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	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	15(250)	[µF(VAC minimum)]
5 Motor protection	4TM762MFBYY-53	
6 Start winding resistance	6.02	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.15	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

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]
972	245	285	181	1.93	5.52	5.37	1.35	1.57

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)	591	149	173	124	1.11	3.34	4.76	1.20	1.39
-30	(-22)	801	202	235	143	1.15	4.54	5.57	1.40	1.63
-25	(-13)	1048	264	307	164	1.21	5.95	6.37	1.61	1.87
-20	(- 4)	1345	339	394	187	1.28	7.66	7.23	1.82	2.12
-15	(+ 5)	1705	430	500	209	1.36	9.73	8.18	2.06	2.40
-10	(+14)	2140	539	627	231	1.44	12.26	9.27	2.34	2.72
-5	(+23)	2662	671	780	252	1.52	15.32	10.56	2.66	3.09
0	(+32)	3284	827	962	271	1.60	18.98	12.09	3.05	3.54

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)	539	136	158	127	1.11	3.05	4.25	1.07	1.25
-30	(-22)	749	189	219	150	1.17	4.25	4.98	1.26	1.46
-25	(-13)	994	250	291	175	1.24	5.64	5.68	1.43	1.66
-20	(- 4)	1286	324	377	201	1.33	7.32	6.38	1.61	1.87
-15	(+ 5)	1639	413	480	229	1.43	9.36	7.15	1.80	2.10
-10	(+14)	2065	520	605	257	1.53	11.83	8.03	2.02	2.35
-5	(+23)	2576	649	755	284	1.64	14.82	9.08	2.29	2.66
0	(+32)	3184	802	933	309	1.75	18.41	10.33	2.60	3.03

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)	473	119	139	125	1.11	2.67	3.80	0.96	1.11
-30	(-22)	681	172	200	151	1.17	3.86	4.48	1.13	1.31
-25	(-13)	922	232	270	181	1.26	5.24	5.10	1.29	1.50
-20	(- 4)	1210	305	354	212	1.37	6.88	5.70	1.44	1.67
-15	(+ 5)	1555	392	456	245	1.49	8.87	6.33	1.60	1.86
-10	(+14)	1971	497	578	279	1.62	11.29	7.04	1.77	2.06
-5	(+23)	2470	622	724	313	1.76	14.21	7.88	1.99	2.31
0	(+32)	3064	772	898	345	1.90	17.71	8.90	2.24	2.61

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)	392	99	115	118	1.08	2.22	3.31	0.83	0.97
-30	(-22)	598	151	175	149	1.16	3.39	3.99	1.01	1.17
-25	(-13)	835	210	245	183	1.27	4.74	4.58	1.15	1.34
-20	(- 4)	1116	281	327	220	1.39	6.35	5.11	1.29	1.50
-15	(+ 5)	1452	366	426	259	1.54	8.29	5.64	1.42	1.65
-10	(+14)	1857	468	544	299	1.70	10.64	6.22	1.57	1.82
-5	(+23)	2343	590	687	339	1.86	13.48	6.89	1.74	2.02
0	(+32)	2922	736	856	379	2.04	16.89	7.71	1.94	2.26

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	No		
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	Slanted 42° up + 45° to Back		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted parallel BP+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		