

### COMPRESSOR DEFINITION

Designation	EM 2U3121U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513304140

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[ V / Hz ]	
4 Application type	Low-Medium Back Pressure (Light Commercial - Curves until T.Evap -		
4.1 Evaporating temperature range	-40°C to 0°C	(-40°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)	Static	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/3	[hp]
2 Displacement	5.54	[cm <sup>3</sup> ] (0.338 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO22	
4 Weight (with oil charge)	8.05	[kg] (17.75 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3/QPS2-A22MG1/QPS2-A22MG1 092	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(346)	[µF(VAC minimum)]
5 Motor protection	4TM283KFBYY-53	
6 Start winding resistance		[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance		[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	6.77	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	0.87	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	1.05	[A] - Measured according to UL 984
11 Approval boards certification		

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
909	229	266	169	0.81	2.71	5.37	1.35	1.57

TEST CONDITIONS: @220V50Hz			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]
945	238	277	170	0.82	2.81	5.56	1.40	1.63

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	475	120	139	108	0.56	1.40	4.39	1.11	1.29
-35	(-31)	604	152	177	121	0.61	1.79	4.99	1.26	1.46
-30	(-22)	766	193	224	134	0.66	2.27	5.71	1.44	1.67
-25	(-13)	963	243	282	147	0.72	2.86	6.56	1.65	1.92
-20	(- 4)	1197	302	351	159	0.77	3.57	7.55	1.90	2.21
-15	(+ 5)	1469	370	431	170	0.82	4.40	8.68	2.19	2.54
-10	(+14)	1783	449	522	180	0.86	5.37	9.97	2.51	2.92
-5	(+23)	2140	539	627	188	0.90	6.47	11.40	2.87	3.34
0	(+32)	2542	641	745	194	0.92	7.73	13.00	3.28	3.81

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	433	109	127	112	0.58	1.28	3.90	0.98	1.14
-35	(-31)	556	140	163	126	0.63	1.65	4.42	1.12	1.30
-30	(-22)	712	179	209	141	0.69	2.11	5.03	1.27	1.48
-25	(-13)	903	228	265	156	0.76	2.68	5.74	1.45	1.68
-20	(- 4)	1131	285	331	171	0.82	3.37	6.54	1.65	1.92
-15	(+ 5)	1397	352	409	186	0.89	4.19	7.45	1.88	2.18
-10	(+14)	1704	430	499	201	0.96	5.13	8.48	2.14	2.48
-5	(+23)	2055	518	602	214	1.01	6.21	9.62	2.42	2.82
0	(+32)	2450	617	718	226	1.07	7.45	10.88	2.74	3.19

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	395	100	116	114	0.59	1.17	3.50	0.88	1.03
-35	(-31)	509	128	149	129	0.64	1.51	3.99	1.00	1.17
-30	(-22)	655	165	192	145	0.71	1.94	4.52	1.14	1.32
-25	(-13)	836	211	245	163	0.79	2.49	5.11	1.29	1.50
-20	(- 4)	1053	265	309	181	0.87	3.14	5.76	1.45	1.69
-15	(+ 5)	1309	330	384	200	0.95	3.92	6.49	1.63	1.90
-10	(+14)	1606	405	471	219	1.04	4.83	7.29	1.84	2.14
-5	(+23)	1946	490	570	238	1.12	5.88	8.17	2.06	2.39
0	(+32)	2330	587	683	256	1.20	7.08	9.14	2.30	2.68

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	363	91	106	114	0.59	1.07	3.12	0.79	0.91
-35	(-31)	463	117	136	130	0.65	1.37	3.60	0.91	1.05
-30	(-22)	595	150	174	148	0.72	1.76	4.09	1.03	1.20
-25	(-13)	761	192	223	168	0.81	2.26	4.60	1.16	1.35
-20	(- 4)	964	243	283	189	0.90	2.88	5.14	1.29	1.51
-15	(+ 5)	1206	304	353	212	1.00	3.61	5.71	1.44	1.67
-10	(+14)	1488	375	436	235	1.11	4.48	6.32	1.59	1.85
-5	(+23)	1813	457	531	259	1.22	5.48	6.98	1.76	2.04
0	(+32)	2183	550	640	283	1.32	6.63	7.68	1.94	2.25

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal 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	6.5 +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		