

COMPRESSOR DEFINITION

Designation	EM 2U3125U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513304141

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 ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/3+	[hp]
2 Displacement	6.09	[cm ³] (0.372 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	17.600	
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)	7.84	[kg] (17.28 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	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	4TM283NFBYY-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]
1012	255	297	185	0.88	3.01	5.48	1.38	1.61

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]
1042	262	305	184	0.88	3.10	5.68	1.43	1.66

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	546	137	160	117	0.60	1.61	4.63	1.17	1.36
-35	(-31)	692	174	203	131	0.65	2.05	5.28	1.33	1.55
-30	(-22)	876	221	257	145	0.71	2.60	6.02	1.52	1.76
-25	(-13)	1097	277	322	160	0.77	3.26	6.87	1.73	2.01
-20	(- 4)	1359	342	398	174	0.83	4.05	7.83	1.97	2.29
-15	(+ 5)	1662	419	487	187	0.89	4.98	8.92	2.25	2.61
-10	(+14)	2007	506	588	199	0.95	6.04	10.14	2.56	2.97
-5	(+23)	2397	604	702	209	0.99	7.25	11.51	2.90	3.37
0	(+32)	2832	714	830	216	1.02	8.61	13.03	3.28	3.82

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	500	126	147	121	0.61	1.48	4.15	1.05	1.22
-35	(-31)	642	162	188	136	0.67	1.90	4.72	1.19	1.38
-30	(-22)	819	206	240	152	0.74	2.43	5.36	1.35	1.57
-25	(-13)	1034	261	303	169	0.81	3.08	6.06	1.53	1.78
-20	(- 4)	1289	325	378	187	0.89	3.85	6.84	1.72	2.01
-15	(+ 5)	1584	399	464	204	0.97	4.74	7.71	1.94	2.26
-10	(+14)	1921	484	563	221	1.04	5.78	8.68	2.19	2.54
-5	(+23)	2302	580	675	236	1.12	6.96	9.76	2.46	2.86
0	(+32)	2729	688	800	250	1.18	8.30	10.96	2.76	3.21

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	454	114	133	122	0.62	1.34	3.73	0.94	1.09
-35	(-31)	588	148	172	138	0.68	1.74	4.27	1.08	1.25
-30	(-22)	756	191	222	157	0.76	2.24	4.82	1.22	1.41
-25	(-13)	962	243	282	177	0.85	2.86	5.41	1.36	1.59
-20	(- 4)	1207	304	354	198	0.94	3.60	6.05	1.52	1.77
-15	(+ 5)	1492	376	437	220	1.04	4.47	6.73	1.70	1.97
-10	(+14)	1819	458	533	242	1.14	5.47	7.48	1.89	2.19
-5	(+23)	2188	551	641	263	1.24	6.62	8.30	2.09	2.43
0	(+32)	2603	656	763	284	1.33	7.91	9.21	2.32	2.70

TEST CONDITIONS: @220V50Hz		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]
-40	(-40)	408	103	120	121	0.62	1.20	3.32	0.84	0.97
-35	(-31)	531	134	155	139	0.68	1.57	3.84	0.97	1.13
-30	(-22)	688	173	202	160	0.77	2.04	4.36	1.10	1.28
-25	(-13)	882	222	258	183	0.87	2.62	4.86	1.23	1.43
-20	(- 4)	1114	281	326	208	0.99	3.32	5.38	1.36	1.58
-15	(+ 5)	1386	349	406	235	1.11	4.15	5.91	1.49	1.73
-10	(+14)	1699	428	498	262	1.23	5.11	6.48	1.63	1.90
-5	(+23)	2055	518	602	290	1.36	6.21	7.07	1.78	2.07
0	(+32)	2455	619	719	317	1.48	7.46	7.72	1.95	2.26

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		