

### COMPRESSOR DEFINITION

Designation	EM 2X3125U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513304071

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50-60	[ 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)	Static	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	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	6.09	[cm <sup>3</sup> ] (0.372 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	17.600	
3 Lubricant charge	150	[ml] (5.07 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 <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3/8EA17E61/8EA17E62/8EA17E63/QPS2-A22MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(450)	[µF(VAC minimum)]
5 Motor protection	4TM283RFBYY-53	
6 Start winding resistance	20.80	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	11.70	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	8.20/7.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.80/1.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	2.00/1.90	[A] - Measured according to UL 984
11 Approval boards certification	CE - IMTRO - IRAM - ISI - TUV - UKCA - VDE	

### 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 (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1033	260	303	181	0.91	3.07	5.71	1.44	1.67

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1042	263	305	180	0.93	3.10	5.80	1.46	1.70

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1257	317	368	220	1.01	3.74	5.71	1.44	1.67

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1271	320	372	218		3.78	5.82	1.47	1.71

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static				(Condensing temperature 35°C (+95°F) )				
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	672	169	197	127	0.70	1.99	5.29	1.33	1.55
-30	(-22)	853	215	250	141	0.75	2.53	6.04	1.52	1.77
-25	(-13)	1073	270	314	156	0.81	3.19	6.89	1.74	2.02
-20	(- 4)	1332	336	390	170	0.87	3.98	7.85	1.98	2.30
-15	(+ 5)	1633	411	478	183	0.93	4.89	8.94	2.25	2.62
-10	(+14)	1975	498	579	195	0.98	5.95	10.19	2.57	2.99
-5	(+23)	2361	595	692	204	1.02	7.14	11.62	2.93	3.40
0	(+32)	2792	704	818	210	1.05	8.49	13.24	3.34	3.88

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	630	159	185	133	0.72	1.86	4.75	1.20	1.39
-30	(-22)	804	202	235	149	0.78	2.38	5.39	1.36	1.58
-25	(-13)	1016	256	298	166	0.85	3.02	6.09	1.53	1.78
-20	(- 4)	1267	319	371	183	0.92	3.78	6.87	1.73	2.01
-15	(+ 5)	1560	393	457	201	1.00	4.67	7.74	1.95	2.27
-10	(+14)	1895	477	555	217	1.07	5.70	8.73	2.20	2.56
-5	(+23)	2273	573	666	231	1.14	6.87	9.87	2.49	2.89
0	(+32)	2696	679	790	242	1.19	8.19	11.17	2.81	3.27

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	589	148	173	138	0.74	1.74	4.29	1.08	1.26
-30	(-22)	752	190	220	156	0.81	2.23	4.86	1.23	1.43
-25	(-13)	954	240	280	175	0.89	2.84	5.46	1.38	1.60
-20	(- 4)	1195	301	350	195	0.98	3.57	6.10	1.54	1.79
-15	(+ 5)	1478	372	433	216	1.07	4.43	6.79	1.71	1.99
-10	(+14)	1802	454	528	237	1.16	5.42	7.58	1.91	2.22
-5	(+23)	2170	547	636	256	1.25	6.56	8.47	2.13	2.48
0	(+32)	2582	651	757	273	1.33	7.85	9.48	2.39	2.78

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	549	138	161	142	0.76	1.62	3.82	0.96	1.12
-30	(-22)	700	176	205	161	0.83	2.08	4.37	1.10	1.28
-25	(-13)	889	224	260	183	0.92	2.64	4.91	1.24	1.44
-20	(- 4)	1117	282	327	206	1.03	3.33	5.45	1.37	1.60
-15	(+ 5)	1387	350	406	231	1.14	4.15	6.02	1.52	1.77
-10	(+14)	1698	428	498	255	1.25	5.11	6.64	1.67	1.95
-5	(+23)	2053	517	602	280	1.36	6.21	7.33	1.85	2.15
0	(+32)	2453	618	719	302	1.46	7.45	8.11	2.04	2.38

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 35°C (+95°F) )					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	778	196	228	149	0.69	2.30	5.24	1.32	1.54
-30	(-22)	1053	265	308	168	0.77	3.12	6.18	1.56	1.81
-25	(-13)	1320	333	387	186	0.85	3.93	7.04	1.77	2.06
-20	(- 4)	1601	404	469	203	0.93	4.78	7.90	1.99	2.32
-15	(+ 5)	1919	484	562	219	1.01	5.75	8.84	2.23	2.59
-10	(+14)	2294	578	672	233	1.08	6.90	9.94	2.51	2.91
-5	(+23)	2749	693	806	245	1.14	8.32	11.27	2.84	3.30
0	(+32)	3306	833	969	255	1.19	10.05	12.91	3.25	3.78

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 45°C (+113°F) )					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	775	195	227	159	0.72	2.29	4.90	1.23	1.44
-30	(-22)	1022	258	300	180	0.82	3.03	5.63	1.42	1.65
-25	(-13)	1268	320	372	201	0.92	3.77	6.27	1.58	1.84
-20	(- 4)	1533	386	449	222	1.02	4.57	6.90	1.74	2.02
-15	(+ 5)	1840	464	539	243	1.12	5.51	7.58	1.91	2.22
-10	(+14)	2211	557	648	263	1.22	6.65	8.41	2.12	2.46
-5	(+23)	2666	672	781	282	1.31	8.06	9.45	2.38	2.77
0	(+32)	3229	814	946	301	1.39	9.82	10.78	2.72	3.16

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 55°C (+131°F) )					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]				[kcal/h]	[W]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	715	180	210	164	0.74	2.12	4.38	1.10	1.28
-30	(-22)	935	236	274	187	0.85	2.77	4.99	1.26	1.46
-25	(-13)	1159	292	340	211	0.97	3.45	5.49	1.38	1.61
-20	(- 4)	1408	355	413	237	1.09	4.20	5.96	1.50	1.75
-15	(+ 5)	1705	430	500	263	1.22	5.11	6.47	1.63	1.90
-10	(+14)	2071	522	607	290	1.35	6.23	7.10	1.79	2.08
-5	(+23)	2527	637	740	317	1.47	7.64	7.93	2.00	2.32
0	(+32)	3096	780	907	344	1.59	9.41	9.03	2.28	2.65

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F) )					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	597	150	175	164	0.74	1.77	3.60	0.91	1.05
-30	(-22)	790	199	231	190	0.87	2.34	4.16	1.05	1.22
-25	(-13)	992	250	291	218	1.01	2.95	4.60	1.16	1.35
-20	(- 4)	1226	309	359	248	1.16	3.65	4.99	1.26	1.46
-15	(+ 5)	1512	381	443	280	1.32	4.53	5.41	1.36	1.58
-10	(+14)	1873	472	549	314	1.48	5.63	5.93	1.49	1.74
-5	(+23)	2330	587	683	349	1.64	7.05	6.63	1.67	1.94
0	(+32)	2906	732	851	385	1.80	8.83	7.58	1.91	2.22

### 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	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		