

COMPRESSOR DEFINITION

Designation	EM 2X3125U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513304163

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 (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/Fan	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	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 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	ESTER / 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 - 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	20.68	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	14.06	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	8.10/7.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.00/0.72	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	1.29/0.98	[A] - Measured according to UL 984
11 Approval boards certification	CE - IRAM - 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]
1058	267	310	181	0.90	3.15	5.86	1.48	1.72

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]
1045	263	306	181	0.91	3.11	5.77	1.45	1.69

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]
1306	329	383	217	0.99	3.89	6.03	1.52	1.77

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]
1289	325	378	217	0.99	3.84	5.94	1.50	1.74

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan				(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]
-40	(-40)	605	152	177	118	0.65	1.79	5.13	1.29	1.50
-35	(-31)	744	188	218	131	0.70	2.20	5.68	1.43	1.66
-30	(-22)	921	232	270	145	0.76	2.73	6.36	1.60	1.86
-25	(-13)	1139	287	334	159	0.81	3.39	7.18	1.81	2.10
-20	(- 4)	1398	352	410	172	0.87	4.17	8.14	2.05	2.39
-15	(+ 5)	1701	429	498	185	0.92	5.10	9.26	2.33	2.71
-10	(+14)	2050	517	601	196	0.96	6.17	10.54	2.66	3.09
-5	(+23)	2446	616	717	205	1.00	7.40	12.00	3.02	3.52
0	(+32)	2892	729	847	211	1.03	8.79	13.63	3.43	3.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(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]
-40	(-40)	559	141	164	120	0.66	1.65	4.66	1.18	1.37
-35	(-31)	694	175	203	135	0.72	2.05	5.15	1.30	1.51
-30	(-22)	866	218	254	150	0.78	2.57	5.73	1.44	1.68
-25	(-13)	1077	271	316	167	0.85	3.20	6.40	1.61	1.88
-20	(- 4)	1330	335	390	184	0.92	3.97	7.18	1.81	2.10
-15	(+ 5)	1626	410	476	201	0.99	4.87	8.07	2.03	2.36
-10	(+14)	1967	496	576	216	1.06	5.92	9.08	2.29	2.66
-5	(+23)	2355	593	690	231	1.12	7.12	10.22	2.58	3.00
0	(+32)	2792	704	818	244	1.18	8.49	11.51	2.90	3.37

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(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]
-40	(-40)	513	129	150	124	0.67	1.51	4.17	1.05	1.22
-35	(-31)	641	162	188	139	0.73	1.90	4.65	1.17	1.36
-30	(-22)	807	203	236	156	0.80	2.39	5.18	1.30	1.52
-25	(-13)	1011	255	296	175	0.88	3.01	5.76	1.45	1.69
-20	(- 4)	1256	316	368	195	0.96	3.75	6.41	1.61	1.88
-15	(+ 5)	1544	389	452	215	1.05	4.62	7.13	1.80	2.09
-10	(+14)	1876	473	550	236	1.14	5.64	7.93	2.00	2.32
-5	(+23)	2254	568	661	255	1.23	6.82	8.82	2.22	2.58
0	(+32)	2681	676	786	274	1.31	8.15	9.80	2.47	2.87

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(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]
-40	(-40)	467	118	137	128	0.69	1.38	3.60	0.91	1.05
-35	(-31)	588	148	172	143	0.75	1.74	4.12	1.04	1.21
-30	(-22)	745	188	218	162	0.82	2.21	4.65	1.17	1.36
-25	(-13)	941	237	276	182	0.91	2.80	5.20	1.31	1.52
-20	(- 4)	1177	297	345	205	1.01	3.51	5.77	1.45	1.69
-15	(+ 5)	1455	367	426	229	1.11	4.36	6.37	1.61	1.87
-10	(+14)	1777	448	521	253	1.22	5.35	7.02	1.77	2.06
-5	(+23)	2145	540	628	278	1.33	6.48	7.71	1.94	2.26
0	(+32)	2560	645	750	302	1.44	7.78	8.46	2.13	2.48

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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]	[W/W]
-40	(-40)	714	180	209	134	0.61	2.11	5.29	1.33	1.55
-35	(-31)	884	223	259	152	0.69	2.62	5.84	1.47	1.71
-30	(-22)	1095	276	321	169	0.77	3.25	6.50	1.64	1.90
-25	(-13)	1348	340	395	186	0.85	4.01	7.27	1.83	2.13
-20	(- 4)	1648	415	483	203	0.93	4.92	8.16	2.06	2.39
-15	(+ 5)	1997	503	585	218	1.00	5.98	9.17	2.31	2.69
-10	(+14)	2400	605	703	233	1.07	7.22	10.30	2.60	3.02
-5	(+23)	2860	721	838	247	1.13	8.65	11.56	2.91	3.39
0	(+32)	3379	852	990	261	1.19	10.27	12.94	3.26	3.79

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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]
-40	(-40)	653	164	191	137	0.62	1.93	4.78	1.21	1.40
-35	(-31)	830	209	243	157	0.71	2.46	5.29	1.33	1.55
-30	(-22)	1043	263	306	177	0.81	3.09	5.87	1.48	1.72
-25	(-13)	1297	327	380	198	0.90	3.86	6.53	1.64	1.91
-20	(- 4)	1594	402	467	219	1.00	4.75	7.25	1.83	2.13
-15	(+ 5)	1937	488	568	239	1.09	5.80	8.06	2.03	2.36
-10	(+14)	2330	587	683	260	1.19	7.01	8.95	2.25	2.62
-5	(+23)	2776	700	813	280	1.28	8.40	9.92	2.50	2.91
0	(+32)	3279	826	961	300	1.37	9.97	10.98	2.77	3.22

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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]
-40	(-40)	586	148	172	138	0.63	1.73	4.29	1.08	1.26
-35	(-31)	769	194	225	160	0.73	2.28	4.80	1.21	1.41
-30	(-22)	984	248	288	184	0.84	2.92	5.33	1.34	1.56
-25	(-13)	1237	312	362	209	0.95	3.68	5.90	1.49	1.73
-20	(- 4)	1528	385	448	234	1.07	4.56	6.50	1.64	1.91
-15	(+ 5)	1863	470	546	260	1.19	5.58	7.14	1.80	2.09
-10	(+14)	2245	566	658	286	1.31	6.75	7.83	1.97	2.29
-5	(+23)	2676	674	784	313	1.44	8.09	8.55	2.16	2.51
0	(+32)	3161	797	926	340	1.56	9.61	9.32	2.35	2.73

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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]
-40	(-40)	514	130	151	136	0.63	1.52	3.75	0.95	1.10
-35	(-31)	700	176	205	162	0.75	2.07	4.30	1.08	1.26
-30	(-22)	916	231	268	190	0.87	2.72	4.82	1.22	1.41
-25	(-13)	1165	294	341	219	1.00	3.46	5.35	1.35	1.57
-20	(- 4)	1450	366	425	249	1.14	4.33	5.86	1.48	1.72
-15	(+ 5)	1776	447	520	280	1.28	5.32	6.37	1.61	1.87
-10	(+14)	2144	540	628	313	1.43	6.45	6.89	1.74	2.02
-5	(+23)	2559	645	750	346	1.59	7.74	7.40	1.87	2.17
0	(+32)	3024	762	886	380	1.76	9.19	7.92	2.00	2.32

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	Straight		
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	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		