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 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	Static/Fan	198 to 255 V	198 to 255 V
8.2 LBP (43ºC Ambient temperature)	Static/Fan	198 to 255 V	198 to 255 V
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm²] (262 psig)	/ ºC - ºF
9.2 Peak	20.6	[kgf/cm²] (293 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/3+	[hp]
2 Displacement	6.09	[cm³] (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/cm²] (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 25ºC (77ºF)] +/- 8%
7 Run winding resistance	14.06	[Ω at 25ºC (77ºF)] +/- 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:			**ASHRAELBP32**		Evaporating temperature	**-23.3°C (-9.94°F)**		
@220V50Hz			**Static**		(Condensing temperature	**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:			**ASHRAELBP32**		Evaporating temperature	**-23.3°C (-9.94°F)**		
@220V50Hz			**Fan**		(Condensing temperature	**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:			**ASHRAELBP32**		Evaporating temperature	**-23.3°C (-9.94°F)**		
@220V60Hz			**Static**		(Condensing temperature	**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:			**ASHRAELBP32**		Evaporating temperature	**-23.3°C (-9.94°F)**		
@220V60Hz			**Fan**		(Condensing temperature	**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:		**ASHRAE32**			(Condensing temperature **35ºC (+95ºF))**					
@220V50Hz		**Static**								
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)**	594	150	174	117	0.65	1.75	5.07	1.28	1.49
-35	**(-31)**	730	184	214	130	0.70	2.16	5.61	1.41	1.64
-30	**(-22)**	906	228	266	144	0.75	2.69	6.28	1.58	1.84
-25	**(-13)**	1122	283	329	158	0.81	3.34	7.10	1.79	2.08
-20	**(- 4)**	1379	348	404	172	0.86	4.12	8.07	2.03	2.36
-15	**(+ 5)**	1679	423	492	184	0.92	5.03	9.18	2.31	2.69
-10	**(+14)**	2023	510	593	195	0.97	6.09	10.44	2.63	3.06
-5	**(+23)**	2412	608	707	204	1.00	7.29	11.85	2.99	3.47
0	**(+32)**	2847	717	834	211	1.03	8.66	13.41	3.38	3.93

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V50Hz **Static**

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)**	538	136	158	118	0.66	1.59	4.59	1.16	1.34
-35	**(-31)**	670	169	196	133	0.71	1.98	5.04	1.27	1.48
-30	**(-22)**	841	212	246	149	0.77	2.49	5.60	1.41	1.64
-25	**(-13)**	1052	265	308	166	0.84	3.13	6.27	1.58	1.84
-20	**(- 4)**	1303	328	382	183	0.91	3.89	7.05	1.78	2.07
-15	**(+ 5)**	1598	403	468	200	0.98	4.79	7.94	2.00	2.33
-10	**(+14)**	1936	488	567	216	1.05	5.83	8.95	2.26	2.62
-5	**(+23)**	2319	584	680	231	1.12	7.01	10.07	2.54	2.95
0	**(+32)**	2749	693	805	244	1.18	8.36	11.31	2.85	3.31

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V50Hz **Static**

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)**	496	125	145	120	0.68	1.46	4.15	1.04	1.22
-35	**(-31)**	619	156	181	137	0.73	1.83	4.56	1.15	1.34
-30	**(-22)**	781	197	229	155	0.80	2.32	5.04	1.27	1.48
-25	**(-13)**	983	248	288	175	0.87	2.92	5.60	1.41	1.64
-20	**(- 4)**	1226	309	359	195	0.96	3.66	6.24	1.57	1.83
-15	**(+ 5)**	1511	381	443	216	1.05	4.53	6.95	1.75	2.04
-10	**(+14)**	1840	464	539	237	1.14	5.54	7.74	1.95	2.27
-5	**(+23)**	2214	558	649	257	1.23	6.69	8.61	2.17	2.52
0	**(+32)**	2634	664	772	276	1.32	8.01	9.57	2.41	2.80

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65ºC (+149ºF))**
@220V50Hz **Static**

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	124	0.70	1.38	3.71	0.93	1.09
-35	**(-31)**	578	146	169	141	0.75	1.71	4.12	1.04	1.21
-30	**(-22)**	728	183	213	161	0.82	2.16	4.56	1.15	1.34
-25	**(-13)**	917	231	269	183	0.91	2.72	5.05	1.27	1.48
-20	**(- 4)**	1147	289	336	207	1.01	3.42	5.58	1.41	1.63
-15	**(+ 5)**	1419	358	416	231	1.11	4.25	6.15	1.55	1.80
-10	**(+14)**	1735	437	508	257	1.23	5.22	6.76	1.70	1.98
-5	**(+23)**	2096	528	614	282	1.34	6.34	7.43	1.87	2.18
0	**(+32)**	2502	631	733	307	1.46	7.60	8.14	2.05	2.38

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V60Hz **Static**

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)**	703	177	206	134	0.60	2.08	5.24	1.32	1.53
-35	**(-31)**	877	221	257	151	0.68	2.60	5.82	1.47	1.71
-30	**(-22)**	1087	274	318	168	0.76	3.22	6.49	1.64	1.90
-25	**(-13)**	1336	337	391	185	0.84	3.97	7.26	1.83	2.13
-20	**(- 4)**	1629	410	477	201	0.92	4.86	8.13	2.05	2.38
-15	**(+ 5)**	1970	497	577	217	0.99	5.90	9.12	2.30	2.67
-10	**(+14)**	2365	596	693	232	1.06	7.12	10.23	2.58	3.00
-5	**(+23)**	2817	710	825	246	1.12	8.52	11.47	2.89	3.36
0	**(+32)**	3330	839	976	258	1.18	10.13	12.86	3.24	3.77

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V60Hz **Static**

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)**	639	161	187	135	0.61	1.89	4.75	1.20	1.39
-35	**(-31)**	816	206	239	155	0.70	2.42	5.28	1.33	1.55
-30	**(-22)**	1026	259	301	175	0.79	3.04	5.84	1.47	1.71
-25	**(-13)**	1274	321	373	196	0.89	3.79	6.47	1.63	1.90
-20	**(- 4)**	1563	394	458	217	0.99	4.66	7.16	1.80	2.10
-15	**(+ 5)**	1898	478	556	239	1.09	5.69	7.92	2.00	2.32
-10	**(+14)**	2283	575	669	260	1.19	6.87	8.77	2.21	2.57
-5	**(+23)**	2724	686	798	280	1.28	8.24	9.72	2.45	2.85
0	**(+32)**	3224	812	945	301	1.38	9.80	10.77	2.71	3.16

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V60Hz **Static**

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)**	572	144	168	136	0.62	1.69	4.24	1.07	1.24
-35	**(-31)**	751	189	220	158	0.72	2.22	4.75	1.20	1.39
-30	**(-22)**	960	242	281	182	0.83	2.85	5.27	1.33	1.54
-25	**(-13)**	1204	304	353	207	0.94	3.58	5.80	1.46	1.70
-20	**(- 4)**	1488	375	436	233	1.06	4.44	6.36	1.60	1.86
-15	**(+ 5)**	1815	457	532	260	1.19	5.43	6.96	1.75	2.04
-10	**(+14)**	2190	552	642	287	1.31	6.59	7.60	1.92	2.23
-5	**(+23)**	2617	660	767	315	1.44	7.91	8.30	2.09	2.43
0	**(+32)**	3102	782	909	343	1.58	9.43	9.07	2.29	2.66

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65ºC (+149ºF))**
@220V60Hz **Static**

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)**	494	124	145	136	0.63	1.46	3.62	0.91	1.06
-35	**(-31)**	673	170	197	161	0.74	1.99	4.17	1.05	1.22
-30	**(-22)**	880	222	258	188	0.86	2.61	4.69	1.18	1.37
-25	**(-13)**	1119	282	328	217	0.99	3.33	5.18	1.31	1.52
-20	**(- 4)**	1395	352	409	248	1.13	4.16	5.66	1.43	1.66
-15	**(+ 5)**	1712	431	502	280	1.28	5.13	6.14	1.55	1.80
-10	**(+14)**	2075	523	608	314	1.44	6.24	6.63	1.67	1.94
-5	**(+23)**	2488	627	729	349	1.60	7.52	7.14	1.80	2.09
0	**(+32)**	2955	745	866	384	1.77	8.98	7.67	1.93	2.25

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		