

### COMPRESSOR DEFINITION

Designation	EM 2X3117U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513300648

### 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	L/MBP(CO Compressors) Hot Gas Defrost Not Allowed		
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)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	1/5	[hp]
2 Displacement	4.50	[cm <sup>3</sup> ] (0.275 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	13.000	
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)	8.2	[kg] (18.08 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### 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	7M220MD3/8EA17C3/8M220MD3/QP2-20A/QPS2-A22MD3/QPS2	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(350)	[µF(VAC minimum)]
5 Motor protection	BT95-105A61D3	
6 Start winding resistance	13.60	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	12.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - 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 +/- 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]
706	178	207	123	0.59	2.10	5.74	1.45	1.68

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]
722	182	212	124	0.60	2.15	5.82	1.47	1.71

### 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]
-35	(-31)	527	133	154	89	0.45	1.56	5.95	1.50	1.74
-30	(-22)	711	179	208	99	0.50	2.11	7.10	1.79	2.08
-25	(-13)	909	229	266	109	0.54	2.70	8.26	2.08	2.42
-20	(- 4)	1129	285	331	119	0.58	3.37	9.52	2.40	2.79
-15	(+ 5)	1384	349	406	127	0.61	4.15	10.95	2.76	3.21
-10	(+14)	1683	424	493	134	0.64	5.07	12.63	3.18	3.70
-5	(+23)	2037	513	597	140	0.67	6.16	14.65	3.69	4.29
0	(+32)	2457	619	720	143	0.69	7.47	17.10	4.31	5.01

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]
-35	(-31)	470	118	138	92	0.46	1.39	5.04	1.27	1.48
-30	(-22)	632	159	185	104	0.51	1.88	5.96	1.50	1.75
-25	(-13)	805	203	236	116	0.56	2.39	6.82	1.72	2.00
-20	(- 4)	997	251	292	128	0.62	2.98	7.72	1.94	2.26
-15	(+ 5)	1221	308	358	139	0.67	3.66	8.72	2.20	2.56
-10	(+14)	1487	375	436	150	0.71	4.47	9.93	2.50	2.91
-5	(+23)	1805	455	529	159	0.76	5.46	11.41	2.88	3.34
0	(+32)	2185	551	640	166	0.79	6.64	13.25	3.34	3.88

### 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]
-35	(-31)	361	91	106	94	0.46	1.07	3.98	1.00	1.17
-30	(-22)	504	127	148	106	0.52	1.49	4.79	1.21	1.40
-25	(-13)	655	165	192	120	0.58	1.95	5.48	1.38	1.61
-20	(- 4)	823	207	241	134	0.64	2.45	6.15	1.55	1.80
-15	(+ 5)	1020	257	299	148	0.71	3.05	6.86	1.73	2.01
-10	(+14)	1256	316	368	162	0.77	3.78	7.71	1.94	2.26
-5	(+23)	1541	388	452	175	0.83	4.66	8.78	2.21	2.57
0	(+32)	1887	475	553	186	0.89	5.73	10.15	2.56	2.97

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]
-35	(-31)	298	75	87	93	0.46	0.88	3.13	0.79	0.92
-30	(-22)	426	107	125	107	0.53	1.27	3.95	0.99	1.16
-25	(-13)	559	141	164	122	0.60	1.66	4.60	1.16	1.35
-20	(- 4)	707	178	207	139	0.67	2.11	5.16	1.30	1.51
-15	(+ 5)	881	222	258	155	0.74	2.64	5.71	1.44	1.67
-10	(+14)	1090	275	319	172	0.82	3.28	6.33	1.60	1.86
-5	(+23)	1347	339	395	188	0.90	4.07	7.11	1.79	2.08
0	(+32)	1661	418	487	204	0.97	5.05	8.14	2.05	2.38

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	Yes		
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 40° up + 45° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° 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 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		