

### COMPRESSOR DEFINITION

Designation	EM 2X1121U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513304050

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	115-127 / 60	[ V / Hz ]	
4 Application type	Low Back Pressure R290		
4.1 Evaporating temperature range	-40°C to -10°C	(-40°F to 14°F)	
5 Motor type	CSCR		
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	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	-	103 to 140 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	5.54	[cm <sup>3</sup> ] (0.338 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	8.03	[kg] (17.70 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA14D7/QPS2-A4R7MB4	
3 Start capacitor	124-149(220)	[µF(VAC minimum)]
4 Run capacitor	20(250)	[µF(VAC minimum)]
5 Motor protection	CP4TMC460N61	
6 Start winding resistance	3.18	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.06	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	17.23	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.18	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.83	[A] - Measured according to UL 984
11 Approval boards certification	CCC - CE - IMTRO - TUV - UKCA - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]
1097	276	321	185	1.63	3.27	5.93	1.49	1.74

TEST CONDITIONS: @115V60Hz			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]
1097	276	321	185	1.63	3.27	5.93	1.49	1.74

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			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]
-40 (-40)	525	132	154	112	1.00	1.55	4.70	1.19	1.38
-35 (-31)	695	175	204	126	1.14	2.06	5.53	1.39	1.62
-30 (-22)	902	227	264	141	1.27	2.67	6.39	1.61	1.87
-25 (-13)	1146	289	336	157	1.39	3.41	7.31	1.84	2.14
-20 (- 4)	1430	360	419	172	1.51	4.27	8.33	2.10	2.44
-15 (+ 5)	1754	442	514	185	1.63	5.25	9.45	2.38	2.77
-10 (+14)	2119	534	621	198	1.76	6.38	10.72	2.70	3.14

TEST CONDITIONS: @115V60Hz			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]
-40 (-40)	467	118	137	112	1.01	1.38	4.12	1.04	1.21
-35 (-31)	634	160	186	132	1.18	1.88	4.81	1.21	1.41
-30 (-22)	834	210	244	151	1.34	2.47	5.51	1.39	1.61
-25 (-13)	1067	269	313	170	1.50	3.17	6.25	1.58	1.83
-20 (- 4)	1335	336	391	189	1.65	3.98	7.06	1.78	2.07
-15 (+ 5)	1639	413	480	206	1.81	4.91	7.96	2.01	2.33
-10 (+14)	1980	499	580	221	1.97	5.96	8.98	2.26	2.63

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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]
-40	(-40)	403	101	118	110	0.98	1.19	3.66	0.92	1.07
-35	(-31)	571	144	167	133	1.18	1.69	4.31	1.09	1.26
-30	(-22)	767	193	225	155	1.36	2.27	4.96	1.25	1.45
-25	(-13)	993	250	291	177	1.53	2.95	5.62	1.42	1.65
-20	(- 4)	1250	315	366	198	1.71	3.73	6.32	1.59	1.85
-15	(+ 5)	1538	388	451	217	1.90	4.61	7.09	1.79	2.08
-10	(+14)	1859	469	545	233	2.09	5.59	7.95	2.00	2.33

TEST CONDITIONS: @115V60Hz		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]
-40	(-40)	337	85	99	116	0.98	0.99	2.93	0.74	0.86
-35	(-31)	511	129	150	140	1.19	1.51	3.65	0.92	1.07
-30	(-22)	709	179	208	164	1.38	2.10	4.33	1.09	1.27
-25	(-13)	932	235	273	186	1.57	2.77	5.00	1.26	1.47
-20	(- 4)	1181	298	346	208	1.76	3.52	5.69	1.43	1.67
-15	(+ 5)	1459	368	427	227	1.96	4.37	6.43	1.62	1.88
-10	(+14)	1764	445	517	244	2.17	5.31	7.24	1.82	2.12

### 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	Straight		
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	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		