

### COMPRESSOR DEFINITION

Designation	EM 2X1121U
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513304016

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220 / 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	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 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	198 to 242 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	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	TSD	
2.1 Starting device	TSD2-220V	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(350)	[µF(VAC minimum)]
5 Motor protection	DRB31K61A*	
6 Start winding resistance	15.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.90	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	10.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.60	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.90	[A] - Measured according to UL 984
11 Approval boards certification	IMTRO - TUV	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V60Hz			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]
1117	281	327	184	0.89	3.32	6.07	1.53	1.78

TEST CONDITIONS: @220V60Hz			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]
1120	282	328	184	0.89	3.33	6.07	1.53	1.78

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			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	0.55	1.55	4.66	1.17	1.36
-35 (-31)	695	175	204	127	0.62	2.06	5.50	1.39	1.61
-30 (-22)	902	227	264	142	0.69	2.67	6.39	1.61	1.87
-25 (-13)	1146	289	336	156	0.75	3.41	7.34	1.85	2.15
-20 (- 4)	1430	360	419	171	0.81	4.27	8.35	2.10	2.45
-15 (+ 5)	1754	442	514	186	0.88	5.25	9.41	2.37	2.76
-10 (+14)	2119	534	621	201	0.95	6.38	10.53	2.65	3.08

TEST CONDITIONS: @220V60Hz			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	116	0.56	1.38	4.00	1.01	1.17
-35 (-31)	634	160	186	133	0.64	1.88	4.78	1.20	1.40
-30 (-22)	834	210	244	150	0.72	2.47	5.57	1.40	1.63
-25 (-13)	1067	269	313	167	0.80	3.17	6.39	1.61	1.87
-20 (- 4)	1335	336	391	184	0.88	3.98	7.24	1.82	2.12
-15 (+ 5)	1639	413	480	202	0.96	4.91	8.11	2.04	2.38
-10 (+14)	1980	499	580	220	1.04	5.96	9.01	2.27	2.64

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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	117	0.57	1.19	3.44	0.87	1.01
-35	(-31)	571	144	167	136	0.66	1.69	4.18	1.05	1.22
-30	(-22)	767	193	225	156	0.75	2.27	4.91	1.24	1.44
-25	(-13)	993	250	291	176	0.85	2.95	5.63	1.42	1.65
-20	(- 4)	1250	315	366	197	0.94	3.73	6.35	1.60	1.86
-15	(+ 5)	1538	388	451	218	1.04	4.61	7.06	1.78	2.07
-10	(+14)	1859	469	545	240	1.14	5.59	7.77	1.96	2.28

TEST CONDITIONS: @220V60Hz		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	0.56	0.99	2.96	0.75	0.87
-35	(-31)	511	129	150	138	0.66	1.51	3.70	0.93	1.08
-30	(-22)	709	179	208	161	0.77	2.10	4.39	1.11	1.29
-25	(-13)	932	235	273	184	0.88	2.77	5.05	1.27	1.48
-20	(- 4)	1181	298	346	208	0.99	3.52	5.67	1.43	1.66
-15	(+ 5)	1459	368	427	233	1.10	4.37	6.25	1.58	1.83
-10	(+14)	1764	445	517	259	1.23	5.31	6.80	1.71	1.99

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EUEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42° up + 45° to Back		
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	Slanted parallel BP+24°to Back		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
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		