

### COMPRESSOR DEFINITION

Designation	EM 2X2121U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513304014

### 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	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	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Static	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 <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	1/4+	[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)	8.19	[kg] (18.06 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	8EA17D7	
3 Start capacitor	88-108(330)	[µF(VAC minimum)]
4 Run capacitor	5(350)	[µF(VAC minimum)]
5 Motor protection	4TM283KFBYY-53	
6 Start winding resistance	12.60	[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)	8.40	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	2.45	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	3.00	[A] - Measured according to UL 984
11 Approval boards certification	CCC - CE - 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 +/- 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]
905	228	265	151		2.69	5.99	1.51	1.76

### 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]
-40	(-40)	418	105	122	101	0.44	1.50	4.24	1.07	1.24
-35	(-31)	619	156	181	105	0.63	1.86	5.66	1.43	1.66
-30	(-22)	763	192	224	119	0.58	2.18	6.32	1.59	1.85
-25	(-13)	913	230	267	136	0.45	2.62	6.75	1.70	1.98
-20	(- 4)	1132	285	332	154	0.37	3.32	7.47	1.88	2.19
-15	(+ 5)	1483	374	434	167	0.48	4.42	8.99	2.27	2.64
-10	(+14)	2029	511	595	170	0.91	6.08	11.84	2.98	3.47

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]
-40	(-40)	420	106	123	105	0.47	0.92	4.08	1.03	1.20
-35	(-31)	602	152	177	111	0.65	1.54	5.31	1.34	1.55
-30	(-22)	731	184	214	125	0.61	2.06	5.79	1.46	1.70
-25	(-13)	868	219	254	145	0.48	2.63	6.04	1.52	1.77
-20	(- 4)	1079	272	316	165	0.41	3.40	6.60	1.66	1.93
-15	(+ 5)	1425	359	417	179	0.53	4.52	7.97	2.01	2.34
-10	(+14)	1970	496	577	185	0.98	6.12	10.69	2.69	3.13

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]
-40	(-40)	394	99	115	108	0.50	1.27	3.68	0.93	1.08
-35	(-31)	559	141	164	115	0.68	1.81	4.78	1.20	1.40
-30	(-22)	673	170	197	132	0.63	2.20	5.14	1.30	1.51
-25	(-13)	801	202	235	153	0.51	2.57	5.29	1.33	1.55
-20	(- 4)	1005	253	294	174	0.44	3.08	5.75	1.45	1.69
-15	(+ 5)	1348	340	395	190	0.57	3.88	7.05	1.78	2.06
-10	(+14)	1894	477	555	197	1.04	5.11	9.69	2.44	2.84

### E - PERFORMANCE - CURVES

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]
-40	(-40)	351	88	103	111	0.53	- 0.06	3.13	0.79	0.92
-35	(-31)	501	126	147	119	0.70	0.08	4.16	1.05	1.22
-30	(-22)	604	152	177	137	0.65	0.00	4.47	1.13	1.31
-25	(-13)	724	182	212	159	0.52	- 0.15	4.59	1.16	1.34
-20	(- 4)	924	233	271	181	0.46	- 0.23	5.03	1.27	1.47
-15	(+ 5)	1266	319	371	198	0.60	- 0.08	6.30	1.59	1.85
-10	(+14)	1814	457	532	206	1.08	0.44	8.95	2.25	2.62

### 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		