

COMPRESSOR DEFINITION

Designation	EM X4121U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301788

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-Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	CSIR		
6 Starting torque	HST - High starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Fan	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	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 ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	5.19	[cm ³] (0.317 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	15.000	
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)	8.5	[kg] (18.74 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	QL2-9.1	
3 Start capacitor	189-227(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM762KFBZZ-53	
6 Start winding resistance	6.76	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.17	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	21.36	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.76	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	4.33	[A] - Measured according to UL 984
11 Approval boards certification	UL	

D - PERFORMANCE - CHECK POINT DATA

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]
1050	265	308	179	2.20	3.13	5.86	1.48	1.72

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			ASHRAE32 Fan		(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)	656	165	192	121	1.83	1.94	5.40	1.36	1.58
-30	(-22)	851	214	249	137	1.95	2.52	6.22	1.57	1.82
-25	(-13)	1082	273	317	151	2.07	3.22	7.15	1.80	2.09
-20	(- 4)	1351	340	396	165	2.20	4.03	8.19	2.06	2.40
-15	(+ 5)	1659	418	486	177	2.32	4.97	9.37	2.36	2.75
-10	(+14)	2007	506	588	188	2.43	6.04	10.70	2.70	3.14
-5	(+23)	2398	604	703	197	2.52	7.25	12.19	3.07	3.57
0	(+32)	2832	714	830	204	2.59	8.61	13.86	3.49	4.06

TEST CONDITIONS: @115V60Hz			ASHRAE32 Fan		(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)	592	149	174	124	1.90	1.75	4.82	1.21	1.41
-30	(-22)	783	197	229	142	2.01	2.32	5.53	1.39	1.62
-25	(-13)	1010	254	296	160	2.15	3.00	6.29	1.59	1.84
-20	(- 4)	1274	321	373	178	2.31	3.80	7.13	1.80	2.09
-15	(+ 5)	1577	397	462	195	2.47	4.72	8.05	2.03	2.36
-10	(+14)	1921	484	563	212	2.63	5.78	9.07	2.29	2.66
-5	(+23)	2307	581	676	226	2.79	6.98	10.20	2.57	2.99
0	(+32)	2736	689	802	239	2.94	8.32	11.46	2.89	3.36

TEST CONDITIONS: @115V60Hz			ASHRAE32 Fan		(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)	504	127	148	123	1.96	1.49	4.08	1.03	1.20
-30	(-22)	692	174	203	144	2.07	2.05	4.80	1.21	1.41
-25	(-13)	916	231	269	166	2.21	2.72	5.53	1.39	1.62
-20	(- 4)	1178	297	345	188	2.38	3.51	6.28	1.58	1.84
-15	(+ 5)	1478	372	433	209	2.57	4.43	7.06	1.78	2.07
-10	(+14)	1819	458	533	230	2.78	5.47	7.90	1.99	2.31
-5	(+23)	2201	555	645	250	2.99	6.66	8.79	2.22	2.58
0	(+32)	2627	662	770	269	3.21	7.98	9.76	2.46	2.86

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		