

COMPRESSOR DEFINITION

Designation	EM X4115U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301917

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	1/5	[hp]
2 Displacement	3.97	[cm ³] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
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)	8.5	[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	QL2-6.4 **	
3 Start capacitor	189-227(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM757KFBYY-53	
6 Start winding resistance	6.78	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.21	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	17.09	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	4.35	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	4.39	[A] - Measured according to UL 984
11 Approval boards certification		

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]
782	197	229	134	1.60	2.33	5.82	1.47	1.71

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)	488	123	143	99	1.46	1.44	4.91	1.24	1.44
-30	(-22)	654	165	192	111	1.58	1.94	5.88	1.48	1.72
-25	(-13)	832	210	244	123	1.71	2.48	6.75	1.70	1.98
-20	(- 4)	1032	260	302	135	1.83	3.08	7.62	1.92	2.23
-15	(+ 5)	1259	317	369	147	1.93	3.77	8.60	2.17	2.52
-10	(+14)	1521	383	446	156	2.01	4.58	9.80	2.47	2.87
-5	(+23)	1825	460	535	162	2.05	5.52	11.33	2.85	3.32
0	(+32)	2180	549	639	164	2.05	6.63	13.30	3.35	3.90

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)	425	107	125	101	1.43	1.26	4.24	1.07	1.24
-30	(-22)	589	148	173	113	1.58	1.75	5.21	1.31	1.53
-25	(-13)	768	193	225	128	1.75	2.28	6.02	1.52	1.76
-20	(- 4)	968	244	284	142	1.91	2.89	6.77	1.71	1.98
-15	(+ 5)	1198	302	351	157	2.07	3.59	7.57	1.91	2.22
-10	(+14)	1464	369	429	170	2.21	4.41	8.54	2.15	2.50
-5	(+23)	1774	447	520	181	2.32	5.36	9.78	2.46	2.86
0	(+32)	2135	538	626	188	2.39	6.49	11.40	2.87	3.34

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)	371	93	109	101	1.45	1.10	3.60	0.91	1.06
-30	(-22)	521	131	153	115	1.62	1.54	4.56	1.15	1.34
-25	(-13)	686	173	201	131	1.81	2.04	5.30	1.34	1.55
-20	(- 4)	875	221	256	149	2.00	2.61	5.93	1.49	1.74
-15	(+ 5)	1095	276	321	167	2.20	3.28	6.56	1.65	1.92
-10	(+14)	1352	341	396	184	2.38	4.07	7.29	1.84	2.14
-5	(+23)	1655	417	485	199	2.54	5.00	8.24	2.08	2.41
0	(+32)	2011	507	589	212	2.66	6.11	9.52	2.40	2.79

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		