

COMPRESSOR DEFINITION

Designation	EM X3115U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301818

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 (Light Commercial)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°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)	-	-	-
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 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	ESTER / ISO10	
4 Weight (with oil charge)	6.8	[kg] (14.99 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

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	8EA14C3/QPS2-A4R7MD3	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	12(176)	[μF(VAC minimum)]
5 Motor protection	4TM319NFBYY-53	
6 Start winding resistance	6.72	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	5.08	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	11.45	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.73	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.89	[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]	
756	191	222	127	1.17	2.25	5.95	1.50	1.74	

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)	475	120	139	87	0.84	1.40	5.44	1.37	1.60
-30	(-22)	636	160	186	99	0.94	1.89	6.36	1.60	1.86
-25	(-13)	817	206	239	112	1.04	2.43	7.30	1.84	2.14
-20	(- 4)	1021	257	299	123	1.14	3.05	8.33	2.10	2.44
-15	(+ 5)	1253	316	367	133	1.22	3.75	9.51	2.40	2.79
-10	(+14)	1518	383	445	141	1.29	4.57	10.89	2.74	3.19
-5	(+23)	1822	459	534	146	1.34	5.51	12.54	3.16	3.67
0	(+32)	2168	546	635	148	1.36	6.59	14.50	3.66	4.25

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)	429	108	126	89	0.85	1.27	4.79	1.21	1.40
-30	(-22)	582	147	171	103	0.96	1.73	5.60	1.41	1.64
-25	(-13)	757	191	222	117	1.08	2.25	6.39	1.61	1.87
-20	(- 4)	957	241	281	131	1.20	2.86	7.21	1.82	2.11
-15	(+ 5)	1189	300	348	145	1.32	3.56	8.13	2.05	2.38
-10	(+14)	1455	367	426	158	1.43	4.38	9.20	2.32	2.70
-5	(+23)	1762	444	516	168	1.53	5.33	10.49	2.64	3.07
0	(+32)	2114	533	619	176	1.61	6.43	12.05	3.04	3.53

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)	356	90	104	89	0.85	1.05	4.11	1.04	1.21
-30	(-22)	498	126	146	103	0.97	1.48	4.88	1.23	1.43
-25	(-13)	663	167	194	119	1.10	1.97	5.58	1.41	1.63
-20	(- 4)	857	216	251	137	1.25	2.56	6.26	1.58	1.83
-15	(+ 5)	1084	273	318	154	1.40	3.25	6.99	1.76	2.05
-10	(+14)	1348	340	395	171	1.55	4.06	7.82	1.97	2.29
-5	(+23)	1655	417	485	187	1.69	5.00	8.81	2.22	2.58
0	(+32)	2010	506	589	202	1.83	6.11	10.02	2.53	2.94

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		ASHRAE32 Fan			(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]
-35	(-31)	305	77	89	86	0.83	0.90	3.50	0.88	1.03
-30	(-22)	432	109	127	101	0.95	1.28	4.30	1.08	1.26
-25	(-13)	585	147	171	119	1.11	1.74	4.97	1.25	1.46
-20	(- 4)	768	194	225	139	1.27	2.29	5.57	1.40	1.63
-15	(+ 5)	987	249	289	160	1.46	2.96	6.17	1.56	1.81
-10	(+14)	1246	314	365	182	1.64	3.75	6.82	1.72	2.00
-5	(+23)	1550	391	454	203	1.83	4.69	7.59	1.91	2.22
0	(+32)	1904	480	558	224	2.02	5.78	8.52	2.15	2.50

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		