

COMPRESSOR DEFINITION

Designation	EM X3117U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513300691

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 (Plus) Back Pressure		
4.1 Evaporating temperature range	-35°C to 5°C	(-31°F to 41°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)	-	-	-
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		[hp]
2 Displacement	4.50	[cm ³] (0.275 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	13.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	6.9	[kg] (15.21 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

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	QP2-4.7	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	12(179)	[μF(VAC minimum)]
5 Motor protection	DRB42M61A2	
6 Start winding resistance	6.39	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.26	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	22.82	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - 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]
850	214	249	149	1.37	2.53	5.70	1.44	1.67

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)	550	139	161	105	0.93	1.70	5.20	1.31	1.52
-30	(-22)	722	182	212	119	1.05	1.50	6.04	1.52	1.77
-25	(-13)	926	233	271	132	1.16	2.35	6.99	1.76	2.05
-20	(- 4)	1162	293	341	144	1.27	3.71	8.06	2.03	2.36
-15	(+ 5)	1435	361	420	155	1.37	5.07	9.29	2.34	2.72
-10	(+14)	1745	440	511	165	1.44	5.92	10.71	2.70	3.14
-5	(+23)	2096	528	614	172	1.50	5.73	12.37	3.12	3.62
0	(+32)	2490	627	730	176	1.54	3.98	14.28	3.60	4.18
+5	(+41)	2929	738	858	176	1.54	0.16	16.48	4.15	4.83

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)	489	123	143	108	0.95	1.56	4.57	1.15	1.34
-30	(-22)	654	165	192	123	1.08	1.28	5.33	1.34	1.56
-25	(-13)	851	214	249	138	1.21	2.07	6.12	1.54	1.79
-20	(- 4)	1082	273	317	153	1.34	3.41	6.99	1.76	2.05
-15	(+ 5)	1350	340	396	168	1.47	4.78	7.96	2.01	2.33
-10	(+14)	1657	418	486	182	1.59	5.66	9.07	2.29	2.66
-5	(+23)	2006	505	588	194	1.69	5.52	10.35	2.61	3.03
0	(+32)	2398	604	703	203	1.78	3.86	11.83	2.98	3.47
+5	(+41)	2836	715	831	210	1.85	0.16	13.55	3.41	3.97

E - PERFORMANCE - CURVES

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)	429	108	126	108	0.95	1.41	4.03	1.02	1.18
-30	(-22)	584	147	171	124	1.09	1.05	4.76	1.20	1.39
-25	(-13)	772	194	226	141	1.24	1.78	5.47	1.38	1.60
-20	(- 4)	995	251	291	160	1.40	3.09	6.20	1.56	1.82
-15	(+ 5)	1255	316	368	178	1.56	4.46	6.98	1.76	2.05
-10	(+14)	1556	392	456	197	1.72	5.37	7.84	1.98	2.30
-5	(+23)	1899	479	557	214	1.88	5.29	8.81	2.22	2.58
0	(+32)	2287	576	670	230	2.02	3.72	9.93	2.50	2.91
+5	(+41)	2722	686	798	244	2.15	0.13	11.23	2.83	3.29

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)	358	90	105	103	0.91	1.22	3.40	0.86	0.99
-30	(-22)	500	126	147	121	1.07	0.77	4.17	1.05	1.22
-25	(-13)	676	170	198	141	1.24	1.45	4.87	1.23	1.43
-20	(- 4)	888	224	260	163	1.43	2.73	5.53	1.39	1.62
-15	(+ 5)	1139	287	334	185	1.62	4.09	6.18	1.56	1.81
-10	(+14)	1430	360	419	209	1.83	5.03	6.85	1.73	2.01
-5	(+23)	1765	445	517	232	2.04	5.01	7.59	1.91	2.22
0	(+32)	2146	541	629	254	2.24	3.52	8.41	2.12	2.46
+5	(+41)	2575	649	754	275	2.44	0.04	9.35	2.36	2.74

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	Yes		
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 40° up + 45° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 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 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		