

COMPRESSOR DEFINITION

Designation	EM 2X3117U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513300733

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 - Curves until T.Evap -4		
4.1 Evaporating temperature range	-40°C to 0°C	(-40°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)	-	-	-
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	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)	8.1	[kg] (17.86 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	QP2-4.7	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	20(180)	[μF(VAC minimum)]
5 Motor protection	DRB44N61A2	
6 Start winding resistance	4.81	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	15.30	[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]	
856	216	251	149	1.30	2.55	5.76	1.45	1.69	

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]
-40	(-40)	522	132	153	99	0.90	1.54	5.25	1.32	1.54
-35	(-31)	651	164	191	108	0.98	1.93	6.02	1.52	1.76
-30	(-22)	828	209	243	118	1.07	2.46	6.96	1.75	2.04
-25	(-13)	1050	265	308	129	1.15	3.12	8.07	2.03	2.37
-20	(- 4)	1317	332	386	140	1.24	3.93	9.37	2.36	2.74
-15	(+ 5)	1625	409	476	150	1.32	4.87	10.84	2.73	3.18
-10	(+14)	1973	497	578	159	1.39	5.94	12.49	3.15	3.66
-5	(+23)	2359	595	691	166	1.45	7.14	14.33	3.61	4.20
0	(+32)	2782	701	815	170	1.49	8.46	16.35	4.12	4.79

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]
-40	(-40)	431	109	126	101	0.89	1.27	4.37	1.10	1.28
-35	(-31)	541	136	159	111	0.99	1.60	4.96	1.25	1.45
-30	(-22)	695	175	204	124	1.10	2.06	5.66	1.43	1.66
-25	(-13)	891	224	261	137	1.22	2.65	6.49	1.63	1.90
-20	(- 4)	1126	284	330	151	1.33	3.36	7.43	1.87	2.18
-15	(+ 5)	1399	353	410	164	1.44	4.19	8.50	2.14	2.49
-10	(+14)	1709	431	501	176	1.54	5.14	9.70	2.44	2.84
-5	(+23)	2053	517	602	187	1.64	6.21	11.01	2.78	3.23
0	(+32)	2430	612	712	195	1.72	7.39	12.46	3.14	3.65

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]
-40	(-40)	383	97	112	100	0.87	1.13	3.68	0.93	1.08
-35	(-31)	485	122	142	114	1.00	1.44	4.23	1.07	1.24
-30	(-22)	626	158	183	129	1.13	1.86	4.85	1.22	1.42
-25	(-13)	805	203	236	145	1.27	2.39	5.53	1.39	1.62
-20	(- 4)	1020	257	299	162	1.42	3.04	6.27	1.58	1.84
-15	(+ 5)	1269	320	372	179	1.56	3.80	7.08	1.78	2.07
-10	(+14)	1550	391	454	195	1.70	4.66	7.95	2.00	2.33
-5	(+23)	1863	469	546	210	1.83	5.63	8.89	2.24	2.60
0	(+32)	2204	555	646	223	1.95	6.70	9.90	2.49	2.90

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]
-40	(-40)	216	54	63	90	0.80	0.64	2.40	0.60	0.70
-35	(-31)	319	80	94	106	0.95	0.94	3.06	0.77	0.90
-30	(-22)	458	115	134	125	1.11	1.36	3.73	0.94	1.09
-25	(-13)	631	159	185	144	1.28	1.88	4.40	1.11	1.29
-20	(- 4)	836	211	245	165	1.46	2.49	5.08	1.28	1.49
-15	(+ 5)	1071	270	314	186	1.64	3.21	5.76	1.45	1.69
-10	(+14)	1335	336	391	207	1.81	4.01	6.46	1.63	1.89
-5	(+23)	1625	410	476	227	1.99	4.91	7.17	1.81	2.10
0	(+32)	1941	489	569	245	2.15	5.90	7.89	1.99	2.31

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		