

COMPRESSOR DEFINITION

Designation	EM Y3117U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513300797

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[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	RSIR		
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	1/4	[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)	7.5	[kg] (16.53 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	QP2-20A	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM197NFBYY-53	
6 Start winding resistance	19.75	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	20.56	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	6.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	2.40	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	2.50	[A] - Measured according to UL 984
11 Approval boards certification	CCC	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
696	175	204	133	0.84	2.07	5.23	1.32	1.53

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	472	119	138	92	0.71	1.42	5.07	1.28	1.49
-30	(-22)	604	152	177	103	0.74	1.27	5.81	1.46	1.70
-25	(-13)	755	190	221	113	0.77	1.94	6.64	1.67	1.95
-20	(- 4)	932	235	273	123	0.81	3.02	7.60	1.91	2.23
-15	(+ 5)	1143	288	335	131	0.83	4.09	8.74	2.20	2.56
-10	(+14)	1395	351	409	138	0.86	4.76	10.11	2.55	2.96
-5	(+23)	1694	427	496	145	0.88	4.60	11.76	2.96	3.45
0	(+32)	2049	516	600	150	0.90	3.22	13.74	3.46	4.03
+5	(+41)	2467	622	723	153	0.92	0.20	16.09	4.06	4.72

TEST CONDITIONS: @220V50Hz		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)	419	105	123	96	0.72	1.35	4.42	1.11	1.30
-30	(-22)	557	140	163	109	0.76	1.13	5.11	1.29	1.50
-25	(-13)	711	179	208	122	0.80	1.76	5.81	1.46	1.70
-20	(- 4)	887	224	260	134	0.84	2.81	6.57	1.66	1.93
-15	(+ 5)	1093	275	320	145	0.88	3.87	7.45	1.88	2.18
-10	(+14)	1335	337	391	156	0.92	4.55	8.48	2.14	2.49
-5	(+23)	1622	409	475	166	0.96	4.42	9.73	2.45	2.85
0	(+32)	1961	494	575	174	0.99	3.09	11.22	2.83	3.29
+5	(+41)	2358	594	691	182	1.03	0.13	13.03	3.28	3.82

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	353	89	104	96	0.72	1.18	3.78	0.95	1.11
-30	(-22)	495	125	145	112	0.77	0.91	4.47	1.13	1.31
-25	(-13)	647	163	190	127	0.82	1.49	5.11	1.29	1.50
-20	(- 4)	818	206	240	143	0.87	2.52	5.74	1.45	1.68
-15	(+ 5)	1015	256	297	158	0.93	3.59	6.42	1.62	1.88
-10	(+14)	1245	314	365	172	0.98	4.28	7.18	1.81	2.10
-5	(+23)	1515	382	444	186	1.04	4.19	8.08	2.04	2.37
0	(+32)	1833	462	537	199	1.09	2.91	9.16	2.31	2.68
+5	(+41)	2207	556	647	211	1.14	0.03	10.48	2.64	3.07

TEST CONDITIONS: @220V50Hz		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)	302	76	89	93	0.71	1.03	3.11	0.78	0.91
-30	(-22)	443	112	130	112	0.77	0.71	3.88	0.98	1.14
-25	(-13)	590	149	173	131	0.84	1.27	4.52	1.14	1.32
-20	(- 4)	752	190	220	150	0.91	2.29	5.08	1.28	1.49
-15	(+ 5)	936	236	274	169	0.98	3.37	5.62	1.42	1.65
-10	(+14)	1150	290	337	188	1.05	4.09	6.17	1.56	1.81
-5	(+23)	1400	353	410	206	1.12	4.04	6.79	1.71	1.99
0	(+32)	1693	427	496	224	1.20	2.82	7.53	1.90	2.21
+5	(+41)	2038	514	597	241	1.27	0.03	8.43	2.12	2.47

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
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	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
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		