

COMPRESSOR DEFINITION

Designation	EM X3117U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513300709

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	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)	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	10(300)	[μF(VAC minimum)]
5 Motor protection	BT53-105	
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)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[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]
676	170	198	123	0.57	2.01	5.50	1.39	1.61

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)	473	119	138	88	0.41	1.43	5.29	1.33	1.55
-30	(-22)	597	151	175	97	0.45	1.24	6.13	1.54	1.80
-25	(-13)	751	189	220	106	0.49	1.92	7.09	1.79	2.08
-20	(- 4)	938	236	275	114	0.53	3.03	8.20	2.07	2.40
-15	(+ 5)	1161	292	340	122	0.57	4.15	9.51	2.40	2.79
-10	(+14)	1424	359	417	129	0.60	4.85	11.07	2.79	3.24
-5	(+23)	1731	436	507	135	0.62	4.70	12.90	3.25	3.78
0	(+32)	2086	526	611	139	0.64	3.29	15.04	3.79	4.41
+5	(+41)	2493	628	730	142	0.65	0.19	17.55	4.42	5.14

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)	417	105	122	90	0.42	1.34	4.69	1.18	1.37
-30	(-22)	549	138	161	102	0.47	1.10	5.43	1.37	1.59
-25	(-13)	704	178	206	113	0.52	1.73	6.23	1.57	1.82
-20	(- 4)	889	224	260	124	0.58	2.82	7.11	1.79	2.08
-15	(+ 5)	1106	279	324	135	0.63	3.92	8.13	2.05	2.38
-10	(+14)	1359	342	398	145	0.67	4.63	9.31	2.35	2.73
-5	(+23)	1652	416	484	154	0.71	4.52	10.71	2.70	3.14
0	(+32)	1988	501	583	161	0.74	3.15	12.37	3.12	3.62
+5	(+41)	2373	598	695	166	0.77	0.11	14.31	3.61	4.19

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)	365	92	107	91	0.42	1.21	4.08	1.03	1.20
-30	(-22)	501	126	147	105	0.49	0.91	4.82	1.21	1.41
-25	(-13)	657	166	193	119	0.55	1.51	5.54	1.40	1.62
-20	(- 4)	838	211	245	133	0.62	2.58	6.28	1.58	1.84
-15	(+ 5)	1047	264	307	147	0.68	3.69	7.09	1.79	2.08
-10	(+14)	1288	325	377	160	0.74	4.42	8.01	2.02	2.35
-5	(+23)	1565	394	459	171	0.79	4.34	9.07	2.29	2.66
0	(+32)	1882	474	551	182	0.84	3.03	10.32	2.60	3.02
+5	(+41)	2242	565	657	190	0.88	0.06	11.79	2.97	3.45

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)	299	75	88	88	0.41	1.02	3.30	0.83	0.97
-30	(-22)	437	110	128	105	0.49	0.69	4.12	1.04	1.21
-25	(-13)	591	149	173	122	0.57	1.27	4.86	1.23	1.42
-20	(- 4)	767	193	225	139	0.65	2.34	5.56	1.40	1.63
-15	(+ 5)	966	243	283	156	0.72	3.46	6.26	1.58	1.83
-10	(+14)	1193	301	350	172	0.79	4.22	6.99	1.76	2.05
-5	(+23)	1453	366	426	186	0.86	4.19	7.80	1.97	2.29
0	(+32)	1748	440	512	200	0.92	2.94	8.74	2.20	2.56
+5	(+41)	2082	525	610	212	0.98	0.05	9.83	2.48	2.88

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		