

COMPRESSOR DEFINITION

Designation	EM X3117U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513300773

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
2.1 Max Refrigerant Charge	150 [g]		
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		
Application	Ambient Temp.	Cooling	50 Hz 60 Hz
L/MBP	43 °C	Fan	198 to 255 V -
9 Maximum condensing temperature			
9.1 Operating	[60]	[°C]	
9.2 Peak	[70]	[°C]	
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:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 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:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 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		