

COMPRESSOR DEFINITION

Designation	EM X3140U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513300626

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 Back Pressure (Light Commercial) up to -40°C		
4.1 Evaporating temperature range	-40°C to 0°C	(-40°F to 32°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 pressures/temperature			
9.1 Operating (gauge)	18,4	[kgf/cm ²] (262 psig)	/ °C - °F
9.2 Peak (gauge)	20,6	[kgf/cm ²] (293 psig)	
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	9,50	[cm ³] (0.580 cu.in)
2.1 Bore [mm]	24,000	
2.2 Stroke [mm]	21,000	
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)	7,9	[kg] (17.42 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	8EA17C3/QPS2-A22MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	DRB44N61A2	
6 Start winding resistance	[Ω at 25°C (77°F)] +/- 8%	
7 Run winding resistance	[Ω at 25°C (77°F)] +/- 8%	
8 LRA - Locked rotor amperage (50 Hz)	12.50	[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 - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAEHBP46 Fan		Evaporating temperature (Condensing temperature	7,2°C (44,96°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]
4561	1149	1336	496	2,69	15,61	9,20	2,32	2,70

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]
1644	414	482	298	1,84	4,89	5,53	1,39	1,62

TEST CONDITIONS: @220V50Hz			ASHRAEMP46 Fan		Evaporating temperature (Condensing temperature	-6,7°C (19,94°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]
2855	719	837	417	2,31	6,85	1,73	2,01	

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]
-40	(-40)	940	237	275	139	1,31	2,77	6,01	1,52	1,76
-35	(-31)	1196	301	350	198	1,49	3,54	6,03	1,52	1,77
-30	(-22)	1551	391	454	239	1,62	4,60	6,57	1,66	1,93
-25	(-13)	1984	500	581	267	1,72	5,90	7,51	1,89	2,20
-20	(- 4)	2473	623	725	285	1,78	7,39	8,71	2,20	2,55
-15	(+ 5)	2999	756	879	298	1,83	8,99	10,03	2,53	2,94
-10	(+14)	3540	892	1037	310	1,88	10,65	11,33	2,86	3,32
-5	(+23)	4074	1027	1194	324	1,93	12,32	12,48	3,14	3,66
0	(+32)	4581	1154	1342	345	2,00	13,93	13,33	3,36	3,91

E - PERFORMANCE - CURVES

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]
-40	(-40)	880	222	258	166	1,41	2,60	4,91	1,24	1,44
-35	(-31)	1047	264	307	226	1,59	3,10	4,66	1,17	1,37
-30	(-22)	1332	336	390	271	1,73	3,95	4,97	1,25	1,46
-25	(-13)	1714	432	502	302	1,83	5,10	5,69	1,43	1,67
-20	(- 4)	2171	547	636	325	1,92	6,48	6,68	1,68	1,96
-15	(+ 5)	2683	676	786	343	1,99	8,04	7,81	1,97	2,29
-10	(+14)	3229	814	946	360	2,07	9,72	8,95	2,25	2,62
-5	(+23)	3787	954	1110	381	2,15	11,45	9,94	2,50	2,91
0	(+32)	4337	1093	1271	409	2,26	13,18	10,66	2,69	3,12

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]
-40	(-40)	852	215	250	163	1,40	2,52	4,53	1,14	1,33
-35	(-31)	922	232	270	229	1,60	2,73	4,03	1,01	1,18
-30	(-22)	1128	284	331	278	1,75	3,34	4,10	1,03	1,20
-25	(-13)	1450	365	425	316	1,88	4,31	4,59	1,16	1,35
-20	(- 4)	1867	470	547	346	2,00	5,57	5,39	1,36	1,58
-15	(+ 5)	2357	594	691	371	2,11	7,06	6,33	1,60	1,86
-10	(+14)	2899	731	850	397	2,22	8,72	7,30	1,84	2,14
-5	(+23)	3473	875	1018	427	2,35	10,50	8,15	2,05	2,39
0	(+32)	4058	1023	1189	464	2,51	12,33	8,74	2,20	2,56

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]
-40	(-40)	855	215	250	151	1,35	2,54	4,32	1,09	1,26
-35	(-31)	819	206	240	225	1,57	2,43	3,56	0,90	1,04
-30	(-22)	939	237	275	282	1,76	2,78	3,39	0,86	0,99
-25	(-13)	1193	301	349	329	1,92	3,54	3,67	0,93	1,08
-20	(- 4)	1560	393	457	368	2,08	4,65	4,27	1,08	1,25
-15	(+ 5)	2020	509	592	404	2,23	6,05	5,03	1,27	1,47
-10	(+14)	2551	643	747	440	2,39	7,67	5,83	1,47	1,71
-5	(+23)	3132	789	918	482	2,57	9,47	6,53	1,65	1,91
0	(+32)	3743	943	1097	531	2,79	11,38	6,99	1,76	2,05

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	8,2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 40° up + 45° to Back		
3.2 DISCHARGE	6,1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6,2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
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		