

COMPRESSOR DEFINITION

Designation	EM C3140U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301877

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 (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°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	1/2	[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	ALQUILB / ISO22	
4 Weight (with oil charge)	7.8	[kg] (17.20 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	8EA14C3/QP2-4.7/QPS2-A4R7MD3	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	20(180)	[μF(VAC minimum)]
5 Motor protection	4TM795KFBZZ-53	
6 Start winding resistance	5.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.74	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	26.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	6.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	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]	
1991	502	583	339	3.31	5.93	5.87	1.48	1.72	

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]
-35	(-31)	1279	322	375	233	2.45	3.79	5.50	1.39	1.61
-30	(-22)	1612	406	472	259	2.66	4.78	6.23	1.57	1.82
-25	(-13)	2017	508	591	287	2.88	6.00	7.02	1.77	2.06
-20	(- 4)	2491	628	730	315	3.10	7.43	7.91	1.99	2.32
-15	(+ 5)	3033	764	889	341	3.32	9.09	8.90	2.24	2.61
-10	(+14)	3641	918	1067	365	3.52	10.96	10.00	2.52	2.93
-5	(+23)	4315	1087	1264	385	3.69	13.05	11.24	2.83	3.30
0	(+32)	5052	1273	1480	399	3.81	15.36	12.63	3.18	3.70

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]
-35	(-31)	1206	304	353	243	2.54	3.57	4.97	1.25	1.46
-30	(-22)	1542	389	452	275	2.78	4.57	5.62	1.42	1.65
-25	(-13)	1946	491	570	309	3.05	5.79	6.30	1.59	1.85
-20	(- 4)	2418	609	709	343	3.33	7.22	7.04	1.77	2.06
-15	(+ 5)	2955	745	866	376	3.60	8.85	7.84	1.98	2.30
-10	(+14)	3556	896	1042	407	3.86	10.70	8.73	2.20	2.56
-5	(+23)	4220	1063	1236	435	4.10	12.76	9.71	2.45	2.85
0	(+32)	4944	1246	1449	458	4.30	15.03	10.81	2.73	3.17

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]
-35	(-31)	1110	280	325	248	2.57	3.28	4.47	1.13	1.31
-30	(-22)	1443	364	423	286	2.87	4.28	5.06	1.28	1.48
-25	(-13)	1842	464	540	327	3.19	5.48	5.66	1.43	1.66
-20	(- 4)	2305	581	675	368	3.54	6.88	6.28	1.58	1.84
-15	(+ 5)	2831	713	829	409	3.88	8.48	6.93	1.75	2.03
-10	(+14)	3418	861	1002	448	4.22	10.28	7.62	1.92	2.23
-5	(+23)	4065	1024	1191	484	4.53	12.29	8.39	2.11	2.46
0	(+32)	4770	1202	1398	517	4.82	14.50	9.23	2.33	2.71

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
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	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
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	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		