

COMPRESSOR DEFINITION

Designation	EM C3130U
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301709

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 (Light Commercial)		
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)	Fan	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Fan	-	103 to 140 V
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	1/3	[hp]
2 Displacement	6.92	[cm ³] (0.422 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	6.8	[kg] (14.99 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/QPS2-A4R7MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	4TM771RFBZZ-53	
6 Start winding resistance	7.36	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.34	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	20.90	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	4.83	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	5.10	[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]
1426	359	418	246		4.24	5.81	1.46	1.70

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)	899	227	263	168	1.64	2.66	5.35	1.35	1.57
-30	(-22)	1155	291	338	188	1.80	3.42	6.13	1.55	1.80
-25	(-13)	1448	365	424	208	1.97	4.31	6.97	1.76	2.04
-20	(- 4)	1787	450	524	227	2.14	5.33	7.88	1.99	2.31
-15	(+ 5)	2178	549	638	246	2.29	6.53	8.89	2.24	2.61
-10	(+14)	2628	662	770	263	2.44	7.91	10.03	2.53	2.94
-5	(+23)	3145	792	921	278	2.56	9.51	11.32	2.85	3.32
0	(+32)	3734	941	1094	291	2.66	11.35	12.78	3.22	3.75

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)	847	213	248	175	1.70	2.50	4.83	1.22	1.41
-30	(-22)	1100	277	322	199	1.89	3.26	5.50	1.39	1.61
-25	(-13)	1389	350	407	223	2.10	4.13	6.19	1.56	1.81
-20	(- 4)	1723	434	505	247	2.30	5.14	6.94	1.75	2.03
-15	(+ 5)	2107	531	618	271	2.51	6.31	7.75	1.95	2.27
-10	(+14)	2549	642	747	294	2.70	7.67	8.67	2.18	2.54
-5	(+23)	3056	770	896	315	2.88	9.24	9.70	2.44	2.84
0	(+32)	3634	916	1065	335	3.04	11.05	10.88	2.74	3.19

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)	763	192	224	178	1.73	2.26	4.32	1.09	1.27
-30	(-22)	1012	255	297	206	1.95	3.00	4.93	1.24	1.44
-25	(-13)	1296	327	380	235	2.20	3.85	5.53	1.39	1.62
-20	(- 4)	1623	409	476	264	2.44	4.84	6.15	1.55	1.80
-15	(+ 5)	1999	504	586	293	2.69	5.99	6.81	1.72	2.00
-10	(+14)	2431	613	712	322	2.94	7.31	7.55	1.90	2.21
-5	(+23)	2927	738	858	349	3.18	8.85	8.37	2.11	2.45
0	(+32)	3493	880	1023	376	3.41	10.62	9.32	2.35	2.73

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	671	169	197	176	1.71	1.98	3.79	0.96	1.11
-30	(-22)	914	230	268	208	1.97	2.71	4.38	1.10	1.28
-25	(-13)	1190	300	349	242	2.25	3.54	4.93	1.24	1.44
-20	(- 4)	1508	380	442	276	2.55	4.50	5.47	1.38	1.60
-15	(+ 5)	1874	472	549	311	2.85	5.61	6.03	1.52	1.77
-10	(+14)	2295	578	672	346	3.16	6.90	6.63	1.67	1.94
-5	(+23)	2778	700	814	380	3.46	8.40	7.30	1.84	2.14
0	(+32)	3329	839	975	413	3.75	10.12	8.05	2.03	2.36

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		