

### COMPRESSOR DEFINITION

Designation	EM C3130U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513301749

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50-60	[ 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)	Fan	198 to 255 V	198 to 255 V
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 <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	6.92	[cm <sup>3</sup> ] (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)	8.46	[kg] (18.65 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50-60 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	5(350)	[µF(VAC minimum)]
5 Motor protection	4TM319NFBYY-53	
6 Start winding resistance	13.76	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	7.62	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	11.70/10.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.78/2.49	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.11/2.79	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

### 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]
1155	291	338	206	1.25	3.44	5.62	1.42	1.65

TEST CONDITIONS: @220V60Hz			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]
1427	360	418	238	1.15	4.25	6.00	1.51	1.76

### 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)	736	186	216	149	1.06	2.18	5.05	1.27	1.48
-30	(-22)	1158	292	339	163	1.11	3.45	6.61	1.67	1.94
-25	(-13)	1365	344	400	176	1.16	4.07	7.40	1.86	2.17
-20	(- 4)	1497	377	439	188	1.20	4.46	7.92	2.00	2.32
-15	(+ 5)	1696	427	497	200	1.24	5.07	8.69	2.19	2.55
-10	(+14)	2103	530	616	211	1.28	6.32	10.23	2.58	3.00
-5	(+23)	2859	720	838	222	1.31	8.65	13.04	3.29	3.82
0	(+32)	4105	1034	1203	233	1.33	12.48	17.64	4.45	5.17

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)	684	172	200	149	1.08	2.02	4.79	1.21	1.40
-30	(-22)	1101	278	323	165	1.14	3.28	6.36	1.60	1.86
-25	(-13)	1299	327	381	180	1.20	3.87	7.04	1.77	2.06
-20	(- 4)	1419	358	416	195	1.26	4.23	7.34	1.85	2.15
-15	(+ 5)	1601	404	469	211	1.32	4.79	7.79	1.96	2.28
-10	(+14)	1988	501	583	227	1.37	5.98	8.89	2.24	2.60
-5	(+23)	2720	686	797	243	1.43	8.23	11.16	2.81	3.27
0	(+32)	3939	993	1154	261	1.48	11.97	15.11	3.81	4.43

### 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)	664	167	195	163	1.09	1.96	3.95	1.00	1.16	
-30 (-22)	1041	262	305	181	1.15	3.10	5.48	1.38	1.60	
-25 (-13)	1194	301	350	199	1.22	3.56	6.01	1.51	1.76	
-20 (- 4)	1265	319	371	218	1.30	3.77	6.06	1.53	1.77	
-15 (+ 5)	1396	352	409	237	1.37	4.17	6.14	1.55	1.80	
-10 (+14)	1727	435	506	258	1.45	5.19	6.77	1.70	1.98	
-5 (+23)	2400	605	703	280	1.53	7.26	8.45	2.13	2.48	
0 (+32)	3555	896	1042	304	1.61	10.81	11.72	2.95	3.43	

TEST CONDITIONS: @220V60Hz		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)	857	216	251	162	0.81	2.53	5.48	1.38	1.61	
-30 (-22)	1178	297	345	181	0.89	3.50	6.21	1.57	1.82	
-25 (-13)	1387	350	407	200	0.97	4.13	6.70	1.69	1.96	
-20 (- 4)	1604	404	470	218	1.05	4.78	7.30	1.84	2.14	
-15 (+ 5)	1945	490	570	235	1.13	5.82	8.37	2.11	2.45	
-10 (+14)	2527	637	741	249	1.20	7.60	10.27	2.59	3.01	
-5 (+23)	3469	874	1016	261	1.26	10.50	13.37	3.37	3.92	
0 (+32)	4887	1231	1432	270	1.31	14.86	18.01	4.54	5.28	

TEST CONDITIONS: @220V60Hz		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)	915	231	268	170	0.84	2.71	5.41	1.36	1.58	
-30 (-22)	1261	318	370	193	0.94	3.75	6.22	1.57	1.82	
-25 (-13)	1472	371	431	217	1.05	4.38	6.60	1.66	1.94	
-20 (- 4)	1664	419	488	240	1.16	4.96	6.93	1.75	2.03	
-15 (+ 5)	1955	493	573	262	1.26	5.85	7.54	1.90	2.21	
-10 (+14)	2462	621	722	282	1.35	7.40	8.81	2.22	2.58	
-5 (+23)	3304	833	968	299	1.44	9.99	11.08	2.79	3.25	
0 (+32)	4597	1158	1347	313	1.50	13.97	14.73	3.71	4.32	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	764	193	224	172	0.85	2.26	4.48	1.13	1.31
-30	(-22)	1181	298	346	201	0.98	3.52	5.62	1.42	1.65
-25	(-13)	1438	362	421	231	1.12	4.28	6.15	1.55	1.80
-20	(- 4)	1650	416	484	260	1.25	4.92	6.44	1.62	1.89
-15	(+ 5)	1937	488	568	288	1.38	5.79	6.84	1.72	2.00
-10	(+14)	2415	609	708	315	1.51	7.26	7.71	1.94	2.26
-5	(+23)	3202	807	938	338	1.62	9.68	9.41	2.37	2.76
0	(+32)	4414	1112	1294	358	1.71	13.42	12.31	3.10	3.61

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +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		