

### COMPRESSOR DEFINITION

Designation	EM Y3130Z
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513300720

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50	[ V / Hz ]	
4 Application type	LowMedium BackPressure LightCO (Hot Gas Defrost Not Allowed)		
4.1 Evaporating temperature range	-35°C to 5°C	(-31°F to 41°F)	
5 Motor type	CSIR		
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	14.2	[kgf/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/3	[hp]
2 Displacement	11.14	[cm <sup>3</sup> ] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
3 Lubricant charge	210	[ml] (7.10 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.99	[kg] (17.61 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514016/213515052	
3 Start capacitor	88-108(310)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	BT70-120A61D3	
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)	15.04	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	4.22	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	4.58	[A] - Measured according to UL 984
11 Approval boards certification		

### 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]
1092	275	320	213	1.53	6.20	5.13	1.29	1.50

### 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)	656	165	192	137	1.32	3.71	4.76	1.20	1.39
-30	(-22)	813	205	238	155	1.35	4.60	5.43	1.37	1.59
-25	(-13)	1100	277	322	179	1.41	6.24	6.23	1.57	1.83
-20	(- 4)	1481	373	434	208	1.50	8.43	7.10	1.79	2.08
-15	(+ 5)	1917	483	562	238	1.60	10.95	7.97	2.01	2.34
-10	(+14)	2371	598	695	269	1.70	13.59	8.78	2.21	2.57
-5	(+23)	2806	707	822	298	1.80	16.14	9.47	2.39	2.78
0	(+32)	3184	802	933	321	1.89	18.41	9.97	2.51	2.92
+5	(+41)	3467	874	1016	338	1.96	20.16	10.23	2.58	3.00

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)	589	148	173	143	1.34	3.33	4.10	1.03	1.20
-30	(-22)	743	187	218	164	1.38	4.21	4.72	1.19	1.38
-25	(-13)	1029	259	302	191	1.45	5.84	5.46	1.38	1.60
-20	(- 4)	1409	355	413	223	1.55	8.02	6.29	1.58	1.84
-15	(+ 5)	1846	465	541	256	1.66	10.54	7.12	1.79	2.09
-10	(+14)	2301	580	674	290	1.78	13.18	7.90	1.99	2.32
-5	(+23)	2738	690	802	320	1.89	15.75	8.57	2.16	2.51
0	(+32)	3118	786	914	346	1.99	18.03	9.06	2.28	2.66
+5	(+41)	3405	858	998	365	2.07	19.80	9.31	2.35	2.73

### 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)	526	133	154	141	1.34	2.98	3.68	0.93	1.08
-30	(-22)	671	169	196	167	1.39	3.80	4.19	1.06	1.23
-25	(-13)	948	239	278	199	1.48	5.38	4.84	1.22	1.42
-20	(- 4)	1320	333	387	235	1.59	7.51	5.58	1.41	1.63
-15	(+ 5)	1749	441	513	273	1.72	9.99	6.33	1.60	1.86
-10	(+14)	2198	554	644	310	1.85	12.60	7.05	1.78	2.06
-5	(+23)	2630	663	771	345	1.98	15.13	7.65	1.93	2.24
0	(+32)	3006	757	881	374	2.10	17.37	8.09	2.04	2.37
+5	(+41)	3289	829	964	397	2.20	19.12	8.30	2.09	2.43

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]
-35	(-31)	467	118	137	132	1.30	2.64	3.47	0.87	1.02
-30	(-22)	594	150	174	164	1.38	3.36	3.84	0.97	1.12
-25	(-13)	855	216	251	202	1.49	4.85	4.35	1.10	1.28
-20	(- 4)	1212	305	355	244	1.62	6.90	4.96	1.25	1.45
-15	(+ 5)	1627	410	477	288	1.77	9.29	5.60	1.41	1.64
-10	(+14)	2063	520	605	331	1.93	11.82	6.20	1.56	1.82
-5	(+23)	2482	625	727	371	2.09	14.28	6.71	1.69	1.97
0	(+32)	2846	717	834	406	2.23	16.45	7.06	1.78	2.07
+5	(+41)	3119	786	914	433	2.36	18.13	7.19	1.81	2.11

### 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	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		