

COMPRESSOR DEFINITION

Designation	EM Y3109Z
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	170AA77

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	Low-Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°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 temperature			
9.1 Operating	14.2	[kgf/cm ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.97	[cm ³] (0.242 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	14.000	
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)	7.3	[kg] (16.09 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	V230	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	AE64FS	
6 Start winding resistance	20.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	30.80	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	4.00	[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	VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Static		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]
357	90	105	78	0.55	2.03	4.56	1.15	1.34

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(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)	214	54	63	53	0.50	1.21	3.99	1.00	1.17
-30 (-22)	282	71	83	63	0.52	1.60	4.51	1.14	1.32
-25 (-13)	377	95	111	73	0.54	2.14	5.18	1.31	1.52
-20 (- 4)	499	126	146	83	0.56	2.84	5.99	1.51	1.76
-15 (+ 5)	649	163	190	94	0.60	3.70	6.90	1.74	2.02
-10 (+14)	825	208	242	105	0.64	4.73	7.88	1.98	2.31
-5 (+23)	1028	259	301	116	0.70	5.92	8.88	2.24	2.60
0 (+32)	1259	317	369	127	0.77	7.28	9.90	2.49	2.90

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(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)	184	46	54	53	0.51	1.04	3.47	0.87	1.02
-30 (-22)	251	63	73	64	0.53	1.42	3.96	1.00	1.16
-25 (-13)	344	87	101	75	0.55	1.95	4.58	1.15	1.34
-20 (- 4)	463	117	136	87	0.58	2.63	5.28	1.33	1.55
-15 (+ 5)	608	153	178	100	0.61	3.47	6.03	1.52	1.77
-10 (+14)	779	196	228	114	0.66	4.46	6.81	1.72	1.99
-5 (+23)	976	246	286	129	0.72	5.61	7.58	1.91	2.22
0 (+32)	1199	302	351	145	0.79	6.93	8.30	2.09	2.43

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(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)	163	41	48	52	0.49	0.92	3.11	0.78	0.91
-30 (-22)	225	57	66	63	0.52	1.28	3.60	0.91	1.05
-25 (-13)	313	79	92	75	0.56	1.78	4.15	1.05	1.22
-20 (- 4)	425	107	125	89	0.60	2.42	4.75	1.20	1.39
-15 (+ 5)	563	142	165	105	0.64	3.21	5.37	1.35	1.57
-10 (+14)	725	183	212	122	0.70	4.15	5.96	1.50	1.75
-5 (+23)	912	230	267	141	0.77	5.25	6.50	1.64	1.90
0 (+32)	1125	283	330	161	0.85	6.50	6.95	1.75	2.04

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42°		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 46°		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		