

COMPRESSOR DEFINITION

Designation	EM Z90HLC
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513304109

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 Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°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)	Static	198 to 255 V	-
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	1/3-	[hp]
2 Displacement	7.51	[cm ³] (0.458 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	16.600	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.68	[kg] (16.93 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	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3/8EA17E61/8EA17E62/8EA17E63/QPS2-A22MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(450)/4(450)	[µF(VAC minimum)]
5 Motor protection	4TM739KFBYY-53	
6 Start winding resistance	23.04	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	17.00	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	5.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	4.50	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	4.10	[A] - Measured according to UL 984
11 Approval boards certification	CE - UKCA - 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]
742	187	217	133	0.64	4.22	5.57	1.40	1.63

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)	439	111	129	89	0.45	2.48	4.89	1.23	1.43
-30 (-22)	600	151	176	104	0.51	3.40	5.77	1.45	1.69
-25 (-13)	792	200	232	119	0.58	4.50	6.67	1.68	1.95
-20 (- 4)	1024	258	300	135	0.65	5.83	7.63	1.92	2.24
-15 (+ 5)	1301	328	381	150	0.71	7.43	8.70	2.19	2.55
-10 (+14)	1632	411	478	165	0.78	9.35	9.92	2.50	2.91

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)	380	96	111	91	0.46	2.15	4.17	1.05	1.22
-30 (-22)	541	136	158	107	0.52	3.06	5.05	1.27	1.48
-25 (-13)	734	185	215	124	0.60	4.17	5.90	1.49	1.73
-20 (- 4)	967	244	283	143	0.68	5.51	6.75	1.70	1.98
-15 (+ 5)	1248	314	366	163	0.77	7.12	7.65	1.93	2.24
-10 (+14)	1582	399	464	183	0.86	9.06	8.63	2.18	2.53

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)	319	80	93	92	0.46	1.80	3.51	0.88	1.03
-30 (-22)	474	119	139	107	0.53	2.69	4.44	1.12	1.30
-25 (-13)	663	167	194	125	0.61	3.76	5.27	1.33	1.54
-20 (- 4)	893	225	262	147	0.71	5.08	6.05	1.52	1.77
-15 (+ 5)	1170	295	343	171	0.81	6.68	6.82	1.72	2.00
-10 (+14)	1502	379	440	197	0.93	8.61	7.62	1.92	2.23

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(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)	258	65	76	91	0.45	1.46	2.81	0.71	0.82
-30	(-22)	402	101	118	105	0.52	2.28	3.83	0.97	1.12
-25	(-13)	580	146	170	124	0.60	3.29	4.70	1.18	1.38
-20	(- 4)	801	202	235	148	0.71	4.56	5.45	1.37	1.60
-15	(+ 5)	1070	270	314	175	0.83	6.11	6.13	1.55	1.80
-10	(+14)	1395	352	409	206	0.96	7.99	6.79	1.71	1.99

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	Yes		
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	Slanted 42° up + 45° to Back		
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	Slanted parallel BP+24°to Back		
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	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		