

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	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)	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	8EA17C1	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[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)	6.00	[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)	4.20	[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]
735	185	215	141	0.93	4.18	5.21	1.31	1.53

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)	432	109	127	92	0.78	2.44	4.67	1.18	1.37
-30 (-22)	590	149	173	108	0.82	3.34	5.47	1.38	1.60
-25 (-13)	780	197	229	125	0.87	4.43	6.28	1.58	1.84
-20 (- 4)	1009	254	296	142	0.92	5.74	7.14	1.80	2.09
-15 (+ 5)	1283	323	376	159	0.98	7.32	8.09	2.04	2.37
-10 (+14)	1608	405	471	175	1.04	9.21	9.17	2.31	2.69

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)	373	94	109	94	0.79	2.11	3.98	1.00	1.17
-30 (-22)	533	134	156	111	0.83	3.02	4.78	1.21	1.40
-25 (-13)	725	183	212	130	0.89	4.11	5.53	1.39	1.62
-20 (- 4)	955	241	280	151	0.95	5.44	6.28	1.58	1.84
-15 (+ 5)	1230	310	360	174	1.03	7.02	7.05	1.78	2.07
-10 (+14)	1557	392	456	197	1.12	8.92	7.89	1.99	2.31

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)	314	79	92	94	0.79	1.77	3.36	0.85	0.98
-30 (-22)	469	118	137	111	0.84	2.66	4.21	1.06	1.23
-25 (-13)	656	165	192	132	0.90	3.73	4.95	1.25	1.45
-20 (- 4)	882	222	259	156	0.98	5.02	5.62	1.42	1.65
-15 (+ 5)	1153	291	338	184	1.07	6.58	6.25	1.58	1.83
-10 (+14)	1475	372	432	213	1.19	8.45	6.89	1.74	2.02

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)	254	64	74	93	0.79	1.44	2.71	0.68	0.80
-30	(-22)	399	101	117	109	0.84	2.26	3.65	0.92	1.07
-25	(-13)	576	145	169	131	0.91	3.27	4.42	1.11	1.30
-20	(- 4)	791	199	232	158	1.00	4.50	5.06	1.27	1.48
-15	(+ 5)	1051	265	308	189	1.11	6.00	5.60	1.41	1.64
-10	(+14)	1363	343	399	224	1.24	7.81	6.08	1.53	1.78

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		