

### COMPRESSOR DEFINITION

Designation	EG ZS90HLC
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513701009

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50-60	[ 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)	Static	198 to 255 V	198 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	198 to 255 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm <sup>2</sup> ] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	7.15	[cm <sup>3</sup> ] (0.436 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	18.000	
3 Lubricant charge	230	[ml] (7.78 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	11.29	[kg] (24.89 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	7M220MD3/8EA17C3/8M220MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	4(330)/5(330)	[µF(VAC minimum)]
5 Motor protection	4TM283NFBYY-53	
6 Start winding resistance	21.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	10.40	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	10.00/9.30	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.40/1.30	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	IRAM - OFT - TUV - 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]
770	194	226	129	0.71	4.38	5.96	1.50	1.75

TEST CONDITIONS: @220V60Hz			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]
950	239	278	155	0.72	5.40	6.15	1.55	1.80

### E - PERFORMANCE - CURVES

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)	405	102	119	85	0.48	2.29	4.72	1.19	1.38
-30 (-22)	572	144	167	102	0.56	3.24	5.60	1.41	1.64
-25 (-13)	758	191	222	119	0.65	4.30	6.37	1.61	1.87
-20 (- 4)	977	246	286	137	0.75	5.56	7.15	1.80	2.09
-15 (+ 5)	1245	314	365	155	0.85	7.10	8.01	2.02	2.35
-10 (+14)	1574	397	461	173	0.94	9.02	9.06	2.28	2.65

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)	334	84	98	82	0.46	1.89	4.10	1.03	1.20
-30 (-22)	507	128	149	101	0.56	2.88	4.98	1.25	1.46
-25 (-13)	696	176	204	122	0.66	3.95	5.69	1.44	1.67
-20 (- 4)	915	231	268	144	0.78	5.21	6.35	1.60	1.86
-15 (+ 5)	1178	297	345	167	0.90	6.73	7.05	1.78	2.06
-10 (+14)	1500	378	439	190	1.02	8.59	7.87	1.98	2.31

### 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)	256	64	75	73	0.42	1.45	3.51	0.88	1.03	
-30 (-22)	432	109	127	96	0.53	2.45	4.40	1.11	1.29	
-25 (-13)	620	156	182	121	0.66	3.52	5.09	1.28	1.49	
-20 (- 4)	834	210	244	148	0.80	4.74	5.66	1.43	1.66	
-15 (+ 5)	1088	274	319	175	0.95	6.21	6.22	1.57	1.82	
-10 (+14)	1397	352	409	204	1.10	8.00	6.85	1.73	2.01	

TEST CONDITIONS: @220V60Hz		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)	499	126	146	102	0.49	2.82	4.86	1.22	1.42	
-30 (-22)	704	177	206	122	0.57	3.99	5.77	1.45	1.69	
-25 (-13)	934	235	274	143	0.66	5.30	6.57	1.66	1.93	
-20 (- 4)	1205	304	353	164	0.76	6.86	7.37	1.86	2.16	
-15 (+ 5)	1535	387	450	186	0.86	8.77	8.26	2.08	2.42	
-10 (+14)	1942	489	569	207	0.95	11.13	9.34	2.35	2.74	

TEST CONDITIONS: @220V60Hz		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)	412	104	121	98	0.47	2.33	4.24	1.07	1.24	
-30 (-22)	626	158	183	121	0.57	3.55	5.14	1.29	1.50	
-25 (-13)	859	217	252	146	0.68	4.88	5.88	1.48	1.72	
-20 (- 4)	1130	285	331	173	0.80	6.43	6.56	1.65	1.92	
-15 (+ 5)	1454	366	426	200	0.92	8.30	7.27	1.83	2.13	
-10 (+14)	1851	466	542	227	1.04	10.60	8.12	2.05	2.38	

TEST CONDITIONS: @220V60Hz		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)	316	80	92	87	0.42	1.78	3.62	0.91	1.06	
-30 (-22)	533	134	156	115	0.54	3.02	4.54	1.14	1.33	
-25 (-13)	765	193	224	145	0.67	4.34	5.25	1.32	1.54	
-20 (- 4)	1029	259	302	177	0.81	5.86	5.84	1.47	1.71	
-15 (+ 5)	1343	339	394	210	0.96	7.67	6.42	1.62	1.88	
-10 (+14)	1724	435	505	243	1.12	9.88	7.07	1.78	2.07	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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	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	6.5 +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		