

### COMPRESSOR DEFINITION

Designation	EG ZS90HLC
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513701188

### 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 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	1/4+	[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 / ISO7	
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	TSD	
2.1 Starting device	TSD-220V0.6	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	4(330)/5(330)	[µF(VAC minimum)]
5 Motor protection	BT95-120	
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)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[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	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]	
770	194	226	127	0.71	4.38	6.08	1.53	1.78	

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	152	0.72	5.40	6.25	1.58	1.83	

### 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	84	0.48	2.29	4.81	1.21	1.41
-30 (-22)	572	144	167	100	0.56	3.24	5.71	1.44	1.67
-25 (-13)	758	191	222	117	0.65	4.30	6.50	1.64	1.90
-20 (- 4)	977	246	286	135	0.75	5.56	7.29	1.84	2.14
-15 (+ 5)	1245	314	365	152	0.85	7.10	8.17	2.06	2.39
-10 (+14)	1574	397	461	170	0.94	9.02	9.23	2.33	2.71

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	80	0.46	1.89	4.19	1.05	1.23
-30 (-22)	507	128	149	99	0.56	2.88	5.07	1.28	1.49
-25 (-13)	696	176	204	120	0.66	3.95	5.81	1.46	1.70
-20 (- 4)	915	231	268	142	0.78	5.21	6.48	1.63	1.90
-15 (+ 5)	1178	297	345	164	0.90	6.73	7.18	1.81	2.11
-10 (+14)	1500	378	439	186	1.02	8.59	8.03	2.02	2.35

### 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	72	0.42	1.45	3.58	0.90	1.05	
-30 (-22)	432	109	127	94	0.53	2.45	4.49	1.13	1.32	
-25 (-13)	620	156	182	119	0.66	3.52	5.19	1.31	1.52	
-20 (- 4)	834	210	244	145	0.80	4.74	5.77	1.45	1.69	
-15 (+ 5)	1088	274	319	172	0.95	6.21	6.34	1.60	1.86	
-10 (+14)	1397	352	409	200	1.10	8.00	6.98	1.76	2.05	

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	100	0.49	2.82	4.94	1.25	1.45	
-30 (-22)	704	177	206	120	0.57	3.99	5.86	1.48	1.72	
-25 (-13)	934	235	274	140	0.66	5.30	6.68	1.68	1.96	
-20 (- 4)	1205	304	353	161	0.76	6.86	7.49	1.89	2.20	
-15 (+ 5)	1535	387	450	183	0.86	8.77	8.40	2.12	2.46	
-10 (+14)	1942	489	569	204	0.95	11.13	9.50	2.39	2.78	

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	96	0.47	2.33	4.30	1.08	1.26	
-30 (-22)	626	158	183	119	0.57	3.55	5.22	1.31	1.53	
-25 (-13)	859	217	252	144	0.68	4.88	5.97	1.50	1.75	
-20 (- 4)	1130	285	331	170	0.80	6.43	6.66	1.68	1.95	
-15 (+ 5)	1454	366	426	196	0.92	8.30	7.39	1.86	2.17	
-10 (+14)	1851	466	542	223	1.04	10.60	8.26	2.08	2.42	

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	86	0.42	1.78	3.68	0.93	1.08	
-30 (-22)	533	134	156	113	0.54	3.02	4.62	1.16	1.35	
-25 (-13)	765	193	224	143	0.67	4.34	5.34	1.34	1.56	
-20 (- 4)	1029	259	302	174	0.81	5.86	5.94	1.50	1.74	
-15 (+ 5)	1343	339	394	206	0.96	7.67	6.52	1.64	1.91	
-10 (+14)	1724	435	505	239	1.12	9.88	7.19	1.81	2.11	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-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		