

### COMPRESSOR DEFINITION

Designation	EG ZS90HLC
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513701311

### 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	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)	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 / ISO10	
4 Weight (with oil charge)	10.63	[kg] (23.43 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	8EA17C1/QPS2-A22MG1/QPS2-A22MG1 092	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM283NFBYY-53	
6 Start winding resistance	23.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	11.31	[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 - IRAM - UKCA	

### 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]
754	190	221	137	1.05	4.28	5.51	1.39	1.61

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]
943	238	276	165	1.03	5.36	5.72	1.44	1.68

### 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)	434	109	127	100	0.94	2.45	4.45	1.12	1.30
-30 (-22)	577	145	169	84	0.96	3.27	6.64	1.67	1.95
-25 (-13)	754	190	221	95	0.99	4.28	7.63	1.92	2.23
-20 (- 4)	975	246	286	122	1.02	5.55	8.02	2.02	2.35
-15 (+ 5)	1249	315	366	152	1.06	7.13	8.44	2.13	2.47
-10 (+14)	1585	399	464	171	1.11	9.08	9.47	2.39	2.78

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)	414	104	121	97	0.95	2.34	4.23	1.07	1.24
-30 (-22)	558	140	163	92	0.98	3.16	5.94	1.50	1.74
-25 (-13)	730	184	214	112	1.02	4.14	6.55	1.65	1.92
-20 (- 4)	941	237	276	144	1.06	5.36	6.66	1.68	1.95
-15 (+ 5)	1201	303	352	176	1.11	6.85	6.89	1.74	2.02
-10 (+14)	1518	382	445	194	1.16	8.70	7.83	1.97	2.29

### E - PERFORMANCE - CURVES

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)	362	91	106	93	0.94	2.05	3.83	0.96	1.12	
-30 (-22)	513	129	150	98	0.98	2.91	5.25	1.32	1.54	
-25 (-13)	689	174	202	125	1.03	3.91	5.67	1.43	1.66	
-20 (- 4)	898	226	263	160	1.09	5.11	5.70	1.44	1.67	
-15 (+ 5)	1151	290	337	191	1.15	6.57	5.93	1.50	1.74	
-10 (+14)	1457	367	427	206	1.22	8.35	6.99	1.76	2.05	

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)	276	70	81	90	0.92	1.56	3.04	0.77	0.89	
-30 (-22)	443	112	130	103	0.98	2.51	4.38	1.10	1.28	
-25 (-13)	630	159	185	133	1.04	3.58	4.82	1.21	1.41	
-20 (- 4)	846	213	248	169	1.11	4.81	4.95	1.25	1.45	
-15 (+ 5)	1100	277	322	198	1.19	6.28	5.39	1.36	1.58	
-10 (+14)	1402	353	411	207	1.28	8.03	6.75	1.70	1.98	

TEST CONDITIONS: @220V60Hz		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)	554	140	162	106	0.81	3.13	5.19	1.31	1.52	
-30 (-22)	740	187	217	123	0.84	4.20	6.04	1.52	1.77	
-25 (-13)	972	245	285	141	0.94	5.52	6.94	1.75	2.03	
-20 (- 4)	1254	316	367	159	1.07	7.13	7.91	1.99	2.32	
-15 (+ 5)	1590	401	466	177	1.19	9.08	8.98	2.26	2.63	
-10 (+14)	1986	501	582	195	1.25	11.38	10.16	2.56	2.98	

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)	487	123	143	105	0.84	2.75	4.62	1.16	1.35	
-30 (-22)	682	172	200	127	0.88	3.87	5.38	1.36	1.58	
-25 (-13)	921	232	270	150	0.99	5.23	6.15	1.55	1.80	
-20 (- 4)	1209	305	354	174	1.13	6.88	6.94	1.75	2.03	
-15 (+ 5)	1551	391	454	199	1.27	8.85	7.78	1.96	2.28	
-10 (+14)	1951	492	572	224	1.37	11.18	8.68	2.19	2.54	

### E - PERFORMANCE - CURVES

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)	401	101	118	100	0.83	2.27	4.04	1.02	1.18
-30	(-22)	601	151	176	125	0.87	3.40	4.80	1.21	1.41
-25	(-13)	843	212	247	153	0.99	4.78	5.51	1.39	1.61
-20	(- 4)	1132	285	332	183	1.15	6.44	6.19	1.56	1.81
-15	(+ 5)	1474	371	432	214	1.31	8.42	6.88	1.73	2.02
-10	(+14)	1873	472	549	247	1.44	10.73	7.58	1.91	2.22

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)	299	75	88	90	0.77	1.69	3.32	0.84	0.97
-30	(-22)	497	125	146	119	0.81	2.82	4.15	1.05	1.22
-25	(-13)	737	186	216	151	0.94	4.18	4.88	1.23	1.43
-20	(- 4)	1023	258	300	185	1.11	5.82	5.54	1.40	1.62
-15	(+ 5)	1361	343	399	222	1.30	7.77	6.15	1.55	1.80
-10	(+14)	1755	442	514	261	1.46	10.05	6.73	1.70	1.97

### 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		