

COMPRESSOR DEFINITION

Designation	EG Y90HLC
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513700090

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	100 / 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	85 to 110 V	85 to 110 V
8.2 LBP (43°C Ambient temperature)	Static	85 to 110 V	85 to 110 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 ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	7.55	[cm ³] (0.461 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	19.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	11.4	[kg] (25.13 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	100 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	7M4R7MD3/8M4R7MD2/8M4R7MD3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	4TM445NFBYY-53	
6 Start winding resistance	5.90	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	2.75	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	15.50/14.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	2.60/2.30	[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		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @100V50Hz			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]
800	202	234	143	1.54	4.55	5.59	1.41	1.64

TEST CONDITIONS: @100V60Hz			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]
940	237	275	167	1.69	5.34	5.62	1.42	1.65

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz			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)	422	106	124	100	1.12	2.39	4.23	1.06	1.24
-30 (-22)	605	152	177	116	1.26	3.43	5.17	1.30	1.51
-25 (-13)	791	199	232	133	1.41	4.49	5.97	1.50	1.75
-20 (- 4)	1003	253	294	149	1.57	5.71	6.74	1.70	1.97
-15 (+ 5)	1263	318	370	166	1.74	7.21	7.60	1.92	2.23
-10 (+14)	1593	401	467	183	1.92	9.13	8.68	2.19	2.54

TEST CONDITIONS: @100V50Hz			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)	366	92	107	95	1.10	2.07	3.85	0.97	1.13
-30 (-22)	546	138	160	115	1.26	3.09	4.71	1.19	1.38
-25 (-13)	728	183	213	135	1.44	4.13	5.39	1.36	1.58
-20 (- 4)	934	235	274	156	1.63	5.32	6.02	1.52	1.76
-15 (+ 5)	1188	299	348	176	1.84	6.78	6.72	1.69	1.97
-10 (+14)	1510	381	442	198	2.06	8.65	7.60	1.92	2.23

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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)	315	79	92	91	1.06	1.78	3.45	0.87	1.01	
-30 (-22)	493	124	144	114	1.25	2.80	4.28	1.08	1.25	
-25 (-13)	672	169	197	137	1.45	3.82	4.90	1.24	1.44	
-20 (- 4)	875	221	256	161	1.68	4.98	5.45	1.37	1.60	
-15 (+ 5)	1124	283	329	186	1.93	6.41	6.04	1.52	1.77	
-10 (+14)	1440	363	422	211	2.19	8.25	6.79	1.71	1.99	

TEST CONDITIONS: @100V60Hz		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)	479	121	140	108	1.08	2.71	4.46	1.12	1.31	
-30 (-22)	674	170	198	129	1.31	3.82	5.22	1.32	1.53	
-25 (-13)	911	230	267	151	1.54	5.17	6.03	1.52	1.77	
-20 (- 4)	1196	301	350	174	1.77	6.81	6.88	1.73	2.02	
-15 (+ 5)	1536	387	450	197	2.00	8.77	7.79	1.96	2.28	
-10 (+14)	1937	488	568	221	2.24	11.10	8.76	2.21	2.57	

TEST CONDITIONS: @100V60Hz		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)	422	106	124	111	1.05	2.39	3.78	0.95	1.11	
-30 (-22)	612	154	179	133	1.30	3.47	4.55	1.15	1.33	
-25 (-13)	843	212	247	158	1.56	4.79	5.32	1.34	1.56	
-20 (- 4)	1123	283	329	184	1.83	6.39	6.09	1.54	1.79	
-15 (+ 5)	1458	367	427	211	2.12	8.32	6.89	1.74	2.02	
-10 (+14)	1856	468	544	241	2.44	10.63	7.71	1.94	2.26	

TEST CONDITIONS: @100V60Hz		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)	361	91	106	101	1.02	2.04	3.59	0.90	1.05	
-30 (-22)	536	135	157	125	1.28	3.04	4.29	1.08	1.26	
-25 (-13)	754	190	221	153	1.56	4.28	4.95	1.25	1.45	
-20 (- 4)	1020	257	299	184	1.86	5.80	5.57	1.40	1.63	
-15 (+ 5)	1342	338	393	218	2.21	7.66	6.17	1.56	1.81	
-10 (+14)	1727	435	506	255	2.59	9.90	6.76	1.70	1.98	

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		