

COMPRESSOR DEFINITION

Designation	F GS70HA
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513209630

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	1/5+	[hp]
2 Displacement	6.36	[cm ³] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	350	[ml] (11.84 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	11.45	[kg] (25.24 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	490D314R7/7M4R7MD3/8EA14C3/8EA21C3/8EA3B3/8EA4B3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	4TM427NFBYY-53	
6 Start winding resistance	3.90	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	13.20/12.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.20/2.00	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (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]
605	152	177	119	1.30	3.44	5.08	1.28	1.49

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]
705	178	207	135	1.36	4.01	5.22	1.32	1.53

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)	302	76	89	83	0.93	1.71	3.65	0.92	1.07
-30 (-22)	446	112	131	96	1.06	2.53	4.64	1.17	1.36
-25 (-13)	615	155	180	111	1.21	3.49	5.55	1.40	1.63
-20 (- 4)	812	205	238	126	1.36	4.62	6.44	1.62	1.89
-15 (+ 5)	1040	262	305	142	1.51	5.94	7.33	1.85	2.15
-10 (+14)	1302	328	382	157	1.66	7.46	8.25	2.08	2.42

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)	229	58	67	78	0.90	1.29	2.93	0.74	0.86
-30 (-22)	371	93	109	95	1.06	2.10	3.90	0.98	1.14
-25 (-13)	538	135	158	113	1.24	3.05	4.77	1.20	1.40
-20 (- 4)	732	184	215	131	1.43	4.17	5.58	1.41	1.63
-15 (+ 5)	958	241	281	151	1.62	5.47	6.36	1.60	1.86
-10 (+14)	1218	307	357	170	1.81	6.98	7.15	1.80	2.09

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)	162	41	47	69	0.82	0.92	2.35	0.59	0.69	
-30 (-22)	303	76	89	90	1.01	1.72	3.34	0.84	0.98	
-25 (-13)	468	118	137	111	1.21	2.66	4.20	1.06	1.23	
-20 (- 4)	661	167	194	133	1.44	3.76	4.96	1.25	1.45	
-15 (+ 5)	886	223	259	157	1.66	5.05	5.67	1.43	1.66	
-10 (+14)	1144	288	335	180	1.89	6.55	6.35	1.60	1.86	

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)	343	86	100	92	0.90	1.94	3.72	0.94	1.09	
-30 (-22)	509	128	149	109	1.08	2.88	4.67	1.18	1.37	
-25 (-13)	704	177	206	127	1.26	4.00	5.56	1.40	1.63	
-20 (- 4)	934	235	274	146	1.45	5.32	6.41	1.62	1.88	
-15 (+ 5)	1205	304	353	166	1.65	6.88	7.25	1.83	2.12	
-10 (+14)	1522	384	446	187	1.86	8.72	8.11	2.04	2.38	

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)	291	73	85	89	0.88	1.64	3.24	0.82	0.95	
-30 (-22)	445	112	130	108	1.08	2.52	4.13	1.04	1.21	
-25 (-13)	629	159	184	128	1.29	3.57	4.93	1.24	1.44	
-20 (- 4)	849	214	249	150	1.51	4.83	5.67	1.43	1.66	
-15 (+ 5)	1110	280	325	174	1.75	6.33	6.38	1.61	1.87	
-10 (+14)	1418	357	415	200	2.01	8.12	7.09	1.79	2.08	

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)	217	55	64	84	0.80	1.23	2.60	0.65	0.76	
-30 (-22)	359	90	105	103	1.02	2.04	3.48	0.88	1.02	
-25 (-13)	532	134	156	125	1.26	3.02	4.24	1.07	1.24	
-20 (- 4)	741	187	217	150	1.52	4.21	4.93	1.24	1.44	
-15 (+ 5)	991	250	290	178	1.79	5.66	5.56	1.40	1.63	
-10 (+14)	1290	325	378	209	2.09	7.39	6.17	1.55	1.81	

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		