

COMPRESSOR DEFINITION

Designation	F GS80LAS
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513200993

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	HFO		
3 Nominal voltage and frequency	100 / 50-60	[V / Hz]	
4 Application type	Low-Medium (Plus) Back Pressure		
4.1 Evaporating temperature range	-35°C to 5°C	(-31°F to 41°F)	
5 Motor type	RSCR-CSCR		
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/Fan	85 to 110 V	85 to 110 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	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 temperature			
9.1 Operating	15.72	[kgf/cm ²] (224 psig)	/ °C - °F
9.2 Peak	19.82	[kgf/cm ²] (282 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	7.15	[cm ³] (0.436 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	18.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	11.52	[kg] (25.40 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	8EA14B11/8EA14C3	
3 Start capacitor	378-454(150)	[µF(VAC minimum)]
4 Run capacitor	12(150)	[µF(VAC minimum)]
5 Motor protection	5TM777MFBYY-53	
6 Start winding resistance	4.93	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.86	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	21.00/19.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	3.92/3.50	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	4.51/4.08	[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]
787	198	231	156	2.47	4.47	5.04	1.27	1.48

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]
915	231	268	176	2.22	5.20	5.20	1.31	1.52

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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)	466	117	137	116	2.36	0.00	4.00	1.01	1.17
-30	(-22)	599	151	176	128	2.43	0.00	4.71	1.19	1.38
-25	(-13)	775	195	227	141	2.50	0.00	5.54	1.40	1.62
-20	(- 4)	997	251	292	154	2.59	0.00	6.50	1.64	1.90
-15	(+ 5)	1270	320	372	168	2.69	0.00	7.58	1.91	2.22
-10	(+14)	1598	403	468	181	2.79	0.00	8.80	2.22	2.58
-5	(+23)	1984	500	581	195	2.91	0.00	10.16	2.56	2.98
0	(+32)	2433	613	713	208	3.04	0.00	11.67	2.94	3.42
+5	(+41)	2948	743	864	221	3.18	0.00	13.34	3.36	3.91

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	114	2.35	0.00	3.71	0.93	1.09
-30	(-22)	565	142	165	129	2.42	0.00	4.39	1.11	1.29
-25	(-13)	746	188	219	145	2.50	0.00	5.15	1.30	1.51
-20	(- 4)	969	244	284	162	2.59	0.00	5.98	1.51	1.75
-15	(+ 5)	1237	312	363	179	2.69	0.00	6.90	1.74	2.02
-10	(+14)	1556	392	456	196	2.81	0.00	7.91	1.99	2.32
-5	(+23)	1928	486	565	214	2.94	0.00	9.01	2.27	2.64
0	(+32)	2358	594	691	231	3.09	0.00	10.21	2.57	2.99
+5	(+41)	2850	718	835	248	3.25	0.00	11.53	2.90	3.38

E - PERFORMANCE - CURVES

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)	355	89	104	110	2.34	0.00	3.24	0.82	0.95
-30	(-22)	507	128	149	128	2.42	0.00	3.95	0.99	1.16
-25	(-13)	692	174	203	147	2.52	0.00	4.68	1.18	1.37
-20	(- 4)	914	230	268	167	2.63	0.00	5.45	1.37	1.60
-15	(+ 5)	1177	297	345	188	2.75	0.00	6.25	1.58	1.83
-10	(+14)	1485	374	435	209	2.90	0.00	7.10	1.79	2.08
-5	(+23)	1842	464	540	230	3.05	0.00	8.00	2.02	2.35
0	(+32)	2253	568	660	251	3.22	0.00	8.96	2.26	2.63
+5	(+41)	2720	685	797	273	3.41	0.00	9.98	2.52	2.92

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)	267	67	78	105	2.28	0.00	2.56	0.65	0.75
-30	(-22)	426	107	125	126	2.39	0.00	3.35	0.84	0.98
-25	(-13)	614	155	180	147	2.51	0.00	4.12	1.04	1.21
-20	(- 4)	833	210	244	170	2.65	0.00	4.87	1.23	1.43
-15	(+ 5)	1090	275	319	194	2.81	0.00	5.62	1.42	1.65
-10	(+14)	1386	349	406	219	2.98	0.00	6.37	1.61	1.87
-5	(+23)	1727	435	506	244	3.18	0.00	7.13	1.80	2.09
0	(+32)	2115	533	620	269	3.38	0.00	7.89	1.99	2.31
+5	(+41)	2556	644	749	294	3.61	0.00	8.67	2.18	2.54

TEST CONDITIONS: @100V60Hz		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)	457	115	134	140	1.84	0.00	3.55	0.90	1.04
-30	(-22)	651	164	191	129	1.97	0.00	4.78	1.20	1.40
-25	(-13)	875	220	256	108	2.13	0.00	6.11	1.54	1.79
-20	(- 4)	1136	286	333	98	2.30	0.00	7.33	1.85	2.15
-15	(+ 5)	1444	364	423	119	2.49	0.00	8.19	2.06	2.40
-10	(+14)	1807	455	529	191	2.69	0.00	8.49	2.14	2.49
-5	(+23)	2233	563	654	334	2.91	0.00	8.00	2.02	2.34
0	(+32)	2730	688	800	569	3.15	0.00	6.49	1.63	1.90
+5	(+41)	3307	833	969	915	3.39	0.00	3.73	0.94	1.09

E - PERFORMANCE - CURVES

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)	506	127	148	169	1.85	0.00	3.52	0.89	1.03
-30	(-22)	699	176	205	201	1.98	0.00	4.20	1.06	1.23
-25	(-13)	922	232	270	207	2.14	0.00	5.19	1.31	1.52
-20	(- 4)	1185	299	347	205	2.32	0.00	6.27	1.58	1.84
-15	(+ 5)	1496	377	438	216	2.53	0.00	7.23	1.82	2.12
-10	(+14)	1862	469	546	261	2.75	0.00	7.84	1.98	2.30
-5	(+23)	2293	578	672	360	2.99	0.00	7.87	1.98	2.30
0	(+32)	2796	705	819	532	3.26	0.00	7.09	1.79	2.08
+5	(+41)	3379	852	990	799	3.54	0.00	5.29	1.33	1.55

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	58	1.84	0.00	4.23	1.06	1.24
-30	(-22)	605	153	177	130	1.99	0.00	4.34	1.09	1.27
-25	(-13)	821	207	241	158	2.16	0.00	5.00	1.26	1.46
-20	(- 4)	1077	271	315	161	2.37	0.00	5.96	1.50	1.75
-15	(+ 5)	1381	348	405	160	2.60	0.00	7.02	1.77	2.06
-10	(+14)	1742	439	511	175	2.86	0.00	7.93	2.00	2.32
-5	(+23)	2169	547	636	226	3.14	0.00	8.49	2.14	2.49
0	(+32)	2669	673	782	333	3.44	0.00	8.46	2.13	2.48
+5	(+41)	3251	819	953	516	3.77	0.00	7.62	1.92	2.23

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	94	1.77	0.00	3.47	0.88	1.02
-30	(-22)	526	133	154	204	1.95	0.00	3.04	0.77	0.89
-25	(-13)	725	183	212	251	2.16	0.00	3.36	0.85	0.99
-20	(- 4)	965	243	283	257	2.40	0.00	4.21	1.06	1.23
-15	(+ 5)	1255	316	368	240	2.67	0.00	5.36	1.35	1.57
-10	(+14)	1603	404	470	221	2.97	0.00	6.59	1.66	1.93
-5	(+23)	2017	508	591	221	3.30	0.00	7.68	1.94	2.25
0	(+32)	2506	632	734	259	3.66	0.00	8.40	2.12	2.46
+5	(+41)	3078	776	902	357	4.05	0.00	8.52	2.15	2.50

F - EXTERNAL CHARACTERISTICS

1 Base plate	Japanese Standard		
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		