

### COMPRESSOR DEFINITION

Designation	F F112BK
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513200233

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	Blend		
3 Nominal voltage and frequency	220-240 / 50	[ V / Hz ]	
4 Application type	Low-Medium-High Back Pressure		
4.1 Evaporating temperature range	-35°C to 15°C	(-31°F to 59°F)	
5 Motor type	RSIR/CSIR		
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)	Fan	198 to 255 V	-
8.2 LBP (43°C Ambient temperature)	Fan	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	Fan	198 to 255 V	-
8.4 HBP (43°C Ambient temperature)	Fan	198 to 255 V	-
9 Maximum condensing temperature			
9.1 Operating	14.5	[kgf/cm <sup>2</sup> ] (206 psig)	/ °C - °F
9.2 Peak	18.2	[kgf/cm <sup>2</sup> ] (259 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/3+	[hp]
2 Displacement	11.14	[cm <sup>3</sup> ] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
3 Lubricant charge	350	[ml] (11.84 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	MINERAL / ISO32	
4 Weight (with oil charge)	11.25	[kg] (24.80 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 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516035/213516043	
3 Start capacitor	88-108(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRP40APN-5590	
6 Start winding resistance	29.90	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	5.70	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	20.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	2.50	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	3.00	[A] - Measured according to UL 984
11 Approval boards certification	IRAM	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAEHBP32 Fan		Evaporating temperature (Condensing temperature)		7.2°C (44.96°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]
4000	1008	1172	524	2.90	29.95	7.63	1.92	2.24

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Fan		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]
1150	290	337	275	2.10	8.42	4.18	1.05	1.22

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Fan		(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)	850	214	249	202	1.55	6.19	4.22	1.06	1.24
-30 (-22)	964	243	283	229	1.71	7.05	4.28	1.08	1.26
-25 (-13)	1173	296	344	257	1.88	8.59	4.60	1.16	1.35
-20 (- 4)	1467	370	430	285	2.05	10.76	5.12	1.29	1.50
-15 (+ 5)	1841	464	539	315	2.23	13.53	5.79	1.46	1.70
-10 (+14)	2286	576	670	346	2.40	16.85	6.55	1.65	1.92
-5 (+23)	2795	704	819	380	2.57	20.67	7.34	1.85	2.15
0 (+32)	3361	847	985	416	2.74	24.97	8.11	2.04	2.38
+5 (+41)	3976	1002	1165	456	2.90	29.70	8.80	2.22	2.58
+10 (+50)	4633	1168	1358	499	3.06	34.81	9.35	2.36	2.74
+15 (+59)	5326	1342	1561	546	3.20	40.27	9.72	2.45	2.85

TEST CONDITIONS: @220V50Hz			ASHRAE32 Fan		(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)	805	203	236	205	1.52	5.87	3.86	0.97	1.13
-30 (-22)	882	222	258	235	1.71	6.45	3.81	0.96	1.12
-25 (-13)	1059	267	310	265	1.90	7.76	4.04	1.02	1.18
-20 (- 4)	1331	335	390	296	2.10	9.76	4.49	1.13	1.32
-15 (+ 5)	1690	426	495	327	2.29	12.41	5.12	1.29	1.50
-10 (+14)	2127	536	623	360	2.48	15.68	5.86	1.48	1.72
-5 (+23)	2637	664	773	395	2.66	19.51	6.66	1.68	1.95
0 (+32)	3211	809	941	432	2.84	23.86	7.47	1.88	2.19
+5 (+41)	3842	968	1126	472	3.00	28.70	8.22	2.07	2.41
+10 (+50)	4523	1140	1325	515	3.16	33.99	8.86	2.23	2.60
+15 (+59)	5247	1322	1537	561	3.29	39.67	9.33	2.35	2.73

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(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)	691	174	202	205	1.48	5.03	3.37	0.85	0.99
-30	(-22)	735	185	215	238	1.71	5.37	3.22	0.81	0.94
-25	(-13)	888	224	260	270	1.94	6.51	3.38	0.85	0.99
-20	(- 4)	1144	288	335	303	2.16	8.38	3.79	0.95	1.11
-15	(+ 5)	1493	376	437	336	2.38	10.97	4.40	1.11	1.29
-10	(+14)	1929	486	565	371	2.59	14.22	5.14	1.30	1.51
-5	(+23)	2445	616	717	406	2.79	18.10	5.97	1.50	1.75
0	(+32)	3034	764	889	444	2.98	22.55	6.83	1.72	2.00
+5	(+41)	3687	929	1080	484	3.15	27.56	7.66	1.93	2.24
+10	(+50)	4398	1108	1289	527	3.31	33.06	8.40	2.12	2.46
+15	(+59)	5159	1300	1512	573	3.46	39.02	9.00	2.27	2.64

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F		
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 plated steel		
3.1.2 Shape	Straight		
3.2 DISCHARGE	5 +0.18/-0.06	[mm]	(0.197" +0.007"/-0.002")
3.2.1 Material	Copper plated steel		
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 plated steel		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		