

### COMPRESSOR DEFINITION

Designation	F F112HBK
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513307552

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
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	CSIR		
6 Starting torque	HST - Hight starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	1/3+	[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	270	[ml] (9.13 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	9.2	[kg] (20.28 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELECTRICAL 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	213515052	
3 Start capacitor	130-156(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	DRB210M52A2F	
6 Start winding resistance	[Ω at 25°C (77°F)] +/- 8%	
7 Run winding resistance	[Ω at 25°C (77°F)] +/- 8%	
8 LRA - Locked rotor amperage (50 Hz)	18.80	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	4.99	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	4.95	[A] - Measured according to UL 984
11 Approval boards certification	CCC	

### 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 (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
4300	1084	1260	442	2.59		9.73	2.45	2.85	

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
1090	275	319	256	1.96	6.19	4.26	1.07	1.25	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Fan		(Condensing temperature 35°C (+95°F))				
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	585	147	171	162	1.80	3.31	3.77	0.95	1.10
-30 (-22)	782	197	229	158	1.81	4.44	4.70	1.19	1.38
-25 (-13)	1056	266	309	170	1.84	6.00	5.64	1.42	1.65
-20 (- 4)	1404	354	411	195	1.90	7.99	6.55	1.65	1.92
-15 (+ 5)	1827	460	535	232	1.96	10.42	7.42	1.87	2.17
-10 (+14)	2321	585	680	276	2.05	13.29	8.24	2.08	2.41
-5 (+23)	2886	727	846	327	2.14	16.60	8.98	2.26	2.63
0 (+32)	3519	887	1031	380	2.24	20.35	9.64	2.43	2.82
+5 (+41)	4220	1063	1237	435	2.34	24.56	10.19	2.57	2.99
+10 (+50)	4986	1257	1461	487	2.45	29.22	10.62	2.68	3.11
+15 (+59)	5817	1466	1705	535	2.55	34.34	10.90	2.75	3.19

TEST CONDITIONS: @220V50Hz			ASHRAE32 Fan		(Condensing temperature 45°C (+113°F))				
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	516	130	151	116	1.81	2.91	3.14	0.79	0.92
-30 (-22)	701	177	205	121	1.82	3.98	3.97	1.00	1.16
-25 (-13)	962	242	282	139	1.86	5.47	4.83	1.22	1.42
-20 (- 4)	1298	327	380	170	1.92	7.39	5.72	1.44	1.67
-15 (+ 5)	1708	430	501	209	2.00	9.74	6.60	1.66	1.93
-10 (+14)	2190	552	642	255	2.10	12.53	7.46	1.88	2.19
-5 (+23)	2741	691	803	306	2.21	15.76	8.29	2.09	2.43
0 (+32)	3361	847	985	357	2.33	19.44	9.06	2.28	2.66
+5 (+41)	4049	1020	1186	408	2.46	23.56	9.77	2.46	2.86
+10 (+50)	4801	1210	1407	456	2.59	28.14	10.39	2.62	3.04
+15 (+59)	5618	1416	1646	497	2.72	33.17	10.91	2.75	3.20

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F) )					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	471	119	138	147	1.79	2.66	2.94	0.74	0.86
-30	(-22)	644	162	189	159	1.81	3.66	3.59	0.90	1.05
-25	(-13)	893	225	262	183	1.85	5.08	4.31	1.09	1.26
-20	(- 4)	1217	307	357	218	1.92	6.93	5.09	1.28	1.49
-15	(+ 5)	1614	407	473	260	2.01	9.21	5.90	1.49	1.73
-10	(+14)	2083	525	610	307	2.12	11.92	6.73	1.70	1.97
-5	(+23)	2622	661	768	356	2.25	15.07	7.57	1.91	2.22
0	(+32)	3228	814	946	405	2.39	18.67	8.39	2.11	2.46
+5	(+41)	3902	983	1143	452	2.54	22.70	9.18	2.31	2.69
+10	(+50)	4641	1170	1360	493	2.69	27.19	9.92	2.50	2.91
+15	(+59)	5444	1372	1595	526	2.86	32.13	10.60	2.67	3.10

TEST CONDITIONS: @220V50Hz		ASHRAE32 Fan			(Condensing temperature 65°C (+149°F) )					
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	404	102	118	159	1.82	2.28	2.84	0.72	0.83
-30	(-22)	564	142	165	178	1.84	3.21	3.24	0.82	0.95
-25	(-13)	801	202	235	208	1.88	4.56	3.74	0.94	1.10
-20	(- 4)	1113	280	326	245	1.95	6.33	4.34	1.09	1.27
-15	(+ 5)	1497	377	439	289	2.05	8.54	5.01	1.26	1.47
-10	(+14)	1953	492	572	336	2.17	11.17	5.74	1.45	1.68
-5	(+23)	2478	624	726	384	2.31	14.24	6.50	1.64	1.91
0	(+32)	3071	774	900	430	2.47	17.75	7.30	1.84	2.14
+5	(+41)	3731	940	1093	471	2.64	21.71	8.09	2.04	2.37
+10	(+50)	4456	1123	1306	505	2.82	26.11	8.88	2.24	2.60
+15	(+59)	5245	1322	1537	531	3.01	30.96	9.64	2.43	2.82

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	Slanted 40° up + 45° to Back		
3.2 DISCHARGE	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		