

### COMPRESSOR DEFINITION

Designation	F F112HBX
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513200535

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 60	[ 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)	Fan	-	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Fan	-	198 to 242 V
8.3 HBP (32°C Ambient temperature)	Fan	-	198 to 242 V
8.4 HBP (43°C Ambient temperature)	Fan	-	198 to 242 V
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	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	11.46	[kg] (25.26 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 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516485	
3 Start capacitor	64-77(250)/124-149(180)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	B143-110	
6 Start winding resistance	14.55	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.69	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	26.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	4.50	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V60Hz			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]
5300	1336	1553	682	3.68		7.77	1.96	2.28

TEST CONDITIONS: @220V60Hz			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]
1190	300	349	296	2.72	6.76	4.02	1.01	1.18

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			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)	665	168	195	208	2.61	3.76	3.13	0.79	0.92
-30 (-22)	878	221	257	239	2.63	4.99	3.72	0.94	1.09
-25 (-13)	1168	294	342	273	2.67	6.64	4.35	1.10	1.28
-20 (- 4)	1541	388	452	310	2.73	8.77	5.04	1.27	1.48
-15 (+ 5)	2001	504	586	349	2.81	11.41	5.75	1.45	1.69
-10 (+14)	2553	643	748	392	2.91	14.61	6.50	1.64	1.90
-5 (+23)	3201	807	938	439	3.04	18.41	7.26	1.83	2.13
0 (+32)	3952	996	1158	490	3.20	22.85	8.03	2.02	2.35
+5 (+41)	4808	1212	1409	545	3.38	27.98	8.80	2.22	2.58
+10 (+50)	5776	1456	1692	604	3.60	33.85	9.56	2.41	2.80
+15 (+59)	6860	1729	2010	668	3.84	40.49	10.30	2.59	3.02

TEST CONDITIONS: @220V60Hz			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)	525	132	154	206	2.64	2.96	2.52	0.64	0.74
-30 (-22)	753	190	221	243	2.66	4.28	3.12	0.79	0.91
-25 (-13)	1053	265	308	282	2.70	5.99	3.76	0.95	1.10
-20 (- 4)	1430	360	419	323	2.76	8.14	4.44	1.12	1.30
-15 (+ 5)	1890	476	554	367	2.85	10.78	5.15	1.30	1.51
-10 (+14)	2436	614	714	414	2.96	13.94	5.89	1.48	1.72
-5 (+23)	3074	775	901	463	3.11	17.67	6.63	1.67	1.94
0 (+32)	3809	960	1116	516	3.27	22.02	7.37	1.86	2.16
+5 (+41)	4645	1171	1361	572	3.47	27.03	8.11	2.04	2.38
+10 (+50)	5588	1408	1637	632	3.70	32.74	8.84	2.23	2.59
+15 (+59)	6641	1674	1946	696	3.96	39.20	9.54	2.40	2.79

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	395	100	116	177	2.59	2.23	2.24	0.57	0.66
-30	(-22)	630	159	185	226	2.62	3.59	2.78	0.70	0.81
-25	(-13)	933	235	273	276	2.68	5.31	3.36	0.85	0.98
-20	(- 4)	1308	330	383	328	2.77	7.45	3.96	1.00	1.16
-15	(+ 5)	1760	444	516	382	2.88	10.04	4.60	1.16	1.35
-10	(+14)	2295	578	672	438	3.01	13.13	5.24	1.32	1.54
-5	(+23)	2915	735	854	496	3.18	16.76	5.89	1.49	1.73
0	(+32)	3628	914	1063	557	3.38	20.97	6.54	1.65	1.92
+5	(+41)	4437	1118	1300	621	3.61	25.81	7.18	1.81	2.10
+10	(+50)	5347	1347	1567	688	3.87	31.33	7.79	1.96	2.28
+15	(+59)	6363	1603	1865	758	4.16	37.56	8.37	2.11	2.45

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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		
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	Slanted		
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	Slanted		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		