

COMPRESSOR DEFINITION

Designation	F F112HBX
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513209710

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 - High 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 ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/3+	[hp]
2 Displacement	11.14	[cm ³] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
3 Lubricant charge	420	[ml] (14.20 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	10.19	[kg] (22.46 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	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516584	
3 Start capacitor	124-149(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM771RFBZZ-53	
6 Start winding resistance	21.76	[Ωat 25°C (77°F)] +/- 8%
7 Run winding resistance	4.89	[Ωat 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	24.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	6.60	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	7.20	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

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]	
5199	1310	1523	649	3.98		8.01	2.02	2.35	

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]	
1226	309	359	333	3.29	6.97	3.68	0.93	1.08	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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]
-35	(-31)	705	178	207	228	3.14	3.99	3.06	0.77	0.90
-30	(-22)	950	239	278	266	3.18	5.39	3.59	0.91	1.05
-25	(-13)	1276	321	374	305	3.23	7.25	4.23	1.06	1.24
-20	(- 4)	1685	425	494	343	3.29	9.59	4.94	1.25	1.45
-15	(+ 5)	2179	549	639	381	3.35	12.43	5.73	1.45	1.68
-10	(+14)	2760	695	809	419	3.43	15.80	6.59	1.66	1.93
-5	(+23)	3429	864	1005	457	3.51	19.72	7.50	1.89	2.20
0	(+32)	4188	1055	1227	495	3.61	24.22	8.45	2.13	2.48
+5	(+41)	5038	1270	1476	534	3.71	29.32	9.44	2.38	2.77
+10	(+50)	5982	1507	1753	572	3.83	35.06	10.45	2.63	3.06
+15	(+59)	7021	1769	2057	611	3.96	41.45	11.47	2.89	3.36

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]
-35	(-31)	638	161	187	242	3.15	3.61	2.64	0.66	0.77
-30	(-22)	878	221	257	277	3.19	4.99	3.21	0.81	0.94
-25	(-13)	1197	302	351	314	3.24	6.81	3.84	0.97	1.13
-20	(- 4)	1596	402	468	353	3.30	9.08	4.52	1.14	1.33
-15	(+ 5)	2078	524	609	394	3.37	11.85	5.25	1.32	1.54
-10	(+14)	2643	666	775	438	3.46	15.13	6.00	1.51	1.76
-5	(+23)	3295	830	965	483	3.55	18.94	6.78	1.71	1.99
0	(+32)	4033	1016	1182	531	3.66	23.32	7.57	1.91	2.22
+5	(+41)	4861	1225	1424	581	3.78	28.29	8.36	2.11	2.45
+10	(+50)	5779	1456	1693	634	3.92	33.86	9.14	2.30	2.68
+15	(+59)	6790	1711	1990	689	4.07	40.08	9.89	2.49	2.90

E - PERFORMANCE - CURVES

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)	528	133	155	252	3.18	2.98	2.11	0.53	0.62	
-30 (-22)	767	193	225	283	3.22	4.36	2.75	0.69	0.81	
-25 (-13)	1082	273	317	319	3.27	6.16	3.42	0.86	1.00	
-20 (- 4)	1476	372	432	359	3.33	8.40	4.11	1.04	1.20	
-15 (+ 5)	1949	491	571	404	3.41	11.11	4.80	1.21	1.41	
-10 (+14)	2503	631	733	452	3.50	14.32	5.50	1.39	1.61	
-5 (+23)	3140	791	920	506	3.61	18.05	6.18	1.56	1.81	
0 (+32)	3862	973	1132	563	3.73	22.33	6.84	1.72	2.01	
+5 (+41)	4671	1177	1369	626	3.86	27.18	7.47	1.88	2.19	
+10 (+50)	5567	1403	1631	692	4.01	32.62	8.05	2.03	2.36	
+15 (+59)	6553	1651	1920	764	4.18	38.69	8.59	2.16	2.52	

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)	375	95	110	257	3.21	2.11	1.44	0.36	0.42	
-30 (-22)	617	155	181	285	3.25	3.51	2.19	0.55	0.64	
-25 (-13)	933	235	273	320	3.30	5.31	2.93	0.74	0.86	
-20 (- 4)	1324	334	388	361	3.36	7.54	3.67	0.92	1.07	
-15 (+ 5)	1792	451	525	409	3.44	10.22	4.37	1.10	1.28	
-10 (+14)	2338	589	685	463	3.54	13.38	5.04	1.27	1.48	
-5 (+23)	2966	747	869	524	3.65	17.05	5.67	1.43	1.66	
0 (+32)	3675	926	1077	592	3.78	21.24	6.24	1.57	1.83	
+5 (+41)	4468	1126	1309	666	3.93	25.99	6.75	1.70	1.98	
+10 (+50)	5346	1347	1567	747	4.10	31.32	7.17	1.81	2.10	
+15 (+59)	6312	1591	1850	836	4.28	37.26	7.52	1.89	2.20	

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		

