

COMPRESSOR DEFINITION

Designation	F F110HBX
Nominal Voltage/Frequency	115 V 60 Hz
Engineering Number	513200528

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115 / 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	-	98 to 140 V
8.2 LBP (43°C Ambient temperature)	Fan	-	98 to 140 V
8.3 HBP (32°C Ambient temperature)	Fan	-	98 to 140 V
8.4 HBP (43°C Ambient temperature)	Fan	-	98 to 140 V
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	9.04	[cm ³] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
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)	11.38	[kg] (25.09 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	115 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516191	
3 Start capacitor	270-324(150)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRT20AGK-5590	
6 Start winding resistance	4.15	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.55	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	35.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	5.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	6.60	[A] - Measured according to UL 984
11 Approval boards certification	CE - ISI - NOM - UKCA - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]
4400	1109	1289	465	5.30		9.46	2.38	2.77

TEST CONDITIONS: @115V60Hz			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]
1065	268	312	246	4.02	6.05	4.33	1.09	1.27

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			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)	574	145	168	194	3.82	3.24	2.92	0.74	0.86
-30 (-22)	829	209	243	214	3.88	4.71	3.88	0.98	1.14
-25 (-13)	1125	284	330	236	3.96	6.40	4.81	1.21	1.41
-20 (- 4)	1470	371	431	259	4.08	8.37	5.72	1.44	1.68
-15 (+ 5)	1874	472	549	285	4.22	10.69	6.61	1.67	1.94
-10 (+14)	2344	591	687	314	4.38	13.42	7.50	1.89	2.20
-5 (+23)	2891	729	847	345	4.57	16.62	8.38	2.11	2.45
0 (+32)	3523	888	1032	379	4.78	20.37	9.26	2.33	2.71
+5 (+41)	4248	1071	1245	417	5.02	24.73	10.14	2.56	2.97
+10 (+50)	5077	1279	1488	459	5.28	29.75	11.04	2.78	3.23
+15 (+59)	6017	1516	1763	504	5.56	35.52	11.95	3.01	3.50

TEST CONDITIONS: @115V60Hz			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)	413	104	121	190	3.86	2.33	2.15	0.54	0.63
-30 (-22)	660	166	193	212	3.90	3.75	3.10	0.78	0.91
-25 (-13)	948	239	278	237	3.98	5.39	4.01	1.01	1.17
-20 (- 4)	1287	324	377	264	4.10	7.32	4.89	1.23	1.43
-15 (+ 5)	1685	425	494	294	4.25	9.61	5.75	1.45	1.69
-10 (+14)	2151	542	630	327	4.43	12.31	6.59	1.66	1.93
-5 (+23)	2695	679	790	363	4.65	15.49	7.42	1.87	2.17
0 (+32)	3324	838	974	402	4.89	19.22	8.24	2.08	2.41
+5 (+41)	4049	1020	1187	446	5.18	23.56	9.05	2.28	2.65
+10 (+50)	4878	1229	1429	493	5.49	28.59	9.87	2.49	2.89
+15 (+59)	5820	1467	1705	545	5.83	34.35	10.70	2.70	3.13

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	303	76	89	181	3.83	1.71	1.67	0.42	0.49
-30	(-22)	538	136	158	207	3.87	3.06	2.59	0.65	0.76
-25	(-13)	817	206	239	236	3.96	4.65	3.47	0.87	1.02
-20	(- 4)	1147	289	336	267	4.09	6.53	4.31	1.09	1.26
-15	(+ 5)	1538	388	451	301	4.26	8.77	5.12	1.29	1.50
-10	(+14)	1998	503	585	339	4.48	11.43	5.91	1.49	1.73
-5	(+23)	2536	639	743	381	4.73	14.58	6.67	1.68	1.95
0	(+32)	3162	797	927	426	5.03	18.28	7.41	1.87	2.17
+5	(+41)	3884	979	1138	476	5.37	22.60	8.14	2.05	2.39
+10	(+50)	4712	1187	1381	530	5.75	27.61	8.87	2.24	2.60
+15	(+59)	5653	1425	1656	589	6.17	33.37	9.60	2.42	2.81

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	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		