

### COMPRESSOR DEFINITION

Designation	F F8,5HBK
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513200249

### 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	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)	Static	-	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	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	1/4	[hp]
2 Displacement	7.95	[cm <sup>3</sup> ] (0.485 cu.in)
2.1 Bore [mm]	22.500	
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)	10.8	[kg] (23.81 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	213516230/213516345	
3 Start capacitor	88-108(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRP61AMZ-5590	
6 Start winding resistance	24.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	7.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	18.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.40	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.80	[A] - Measured according to UL 984
11 Approval boards certification	TUV - 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]	
3140	791	920	410	2.31		7.66	1.93	2.24	

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Static		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]	
740	186	217	196	1.62	4.20	3.78	0.95	1.11	

### 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)	367	92	108	151	1.60	2.07	2.42	0.61	0.71
-30 (-22)	509	128	149	169	1.62	2.90	3.05	0.77	0.89
-25 (-13)	694	175	203	190	1.67	3.95	3.69	0.93	1.08
-20 (- 4)	927	234	272	215	1.74	5.28	4.35	1.10	1.28
-15 (+ 5)	1218	307	357	242	1.83	6.94	5.06	1.28	1.48
-10 (+14)	1572	396	461	270	1.93	8.99	5.82	1.47	1.71
-5 (+23)	1998	503	585	300	2.04	11.49	6.65	1.67	1.95
0 (+32)	2502	631	733	331	2.16	14.47	7.55	1.90	2.21
+5 (+41)	3093	779	906	361	2.29	18.01	8.56	2.16	2.51
+10 (+50)	3777	952	1107	390	2.41	22.14	9.67	2.44	2.83
+15 (+59)	4562	1150	1337	418	2.53	26.93	10.90	2.75	3.19

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)	348	88	102	138	1.52	1.97	2.46	0.62	0.72
-30 (-22)	492	124	144	159	1.55	2.80	3.04	0.77	0.89
-25 (-13)	670	169	196	184	1.61	3.81	3.61	0.91	1.06
-20 (- 4)	890	224	261	213	1.69	5.07	4.17	1.05	1.22
-15 (+ 5)	1159	292	340	245	1.80	6.61	4.73	1.19	1.39
-10 (+14)	1486	374	435	280	1.93	8.50	5.32	1.34	1.56
-5 (+23)	1876	473	550	317	2.08	10.78	5.94	1.50	1.74
0 (+32)	2338	589	685	354	2.24	13.51	6.61	1.66	1.94
+5 (+41)	2879	726	844	393	2.41	16.75	7.34	1.85	2.15
+10 (+50)	3506	884	1027	431	2.58	20.55	8.14	2.05	2.39
+15 (+59)	4226	1065	1238	469	2.76	24.95	9.04	2.28	2.65

### 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)	274	69	80	131	1.56	1.54	2.19	0.55	0.64
-30	(-22)	435	110	128	153	1.58	2.48	2.83	0.71	0.83
-25	(-13)	624	157	183	180	1.63	3.56	3.42	0.86	1.00
-20	(- 4)	848	214	249	212	1.72	4.84	3.97	1.00	1.16
-15	(+ 5)	1114	281	327	248	1.83	6.36	4.49	1.13	1.32
-10	(+14)	1430	360	419	286	1.97	8.18	5.01	1.26	1.47
-5	(+23)	1803	454	528	328	2.14	10.36	5.52	1.39	1.62
0	(+32)	2239	564	656	372	2.32	12.94	6.05	1.52	1.77
+5	(+41)	2748	692	805	417	2.52	15.99	6.61	1.66	1.94
+10	(+50)	3335	840	977	462	2.73	19.54	7.21	1.82	2.11
+15	(+59)	4009	1010	1175	508	2.95	23.66	7.87	1.98	2.30

### 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		