

COMPRESSOR DEFINITION

Designation	F F10BK
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513207670

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	Blend		
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	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 255 V	-
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	-
8.3 HBP (32°C Ambient temperature)	Fan	198 to 255 V	-
8.4 HBP (43°C Ambient temperature)	Fan	198 to 255 V	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	14.5	[kgf/cm ²] (206 psig)	/ °C - °F
9.2 Peak (gauge)	18.2	[kgf/cm ²] (259 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4+	[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	350	[ml] (11.84 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	MINERAL / ISO32	
4 Weight (with oil charge)	10.65	[kg] (23.48 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	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516078/213516256	
3 Start capacitor	108-130(180)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRP59AML-5590	
6 Start winding resistance	31.95	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	14.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	2.00	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	IRAM - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAEHBP32 Static		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]	
2797	705	820	400	2.11	20.94	6.99	1.76	2.05	

TEST CONDITIONS: @220V50Hz			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]	
2797	705	820	400	2.11	20.94	6.99	1.76	2.05	

TEST CONDITIONS: @220V50Hz			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]	
793	200	232	208	1.33	5.80	3.81	0.96	1.12	

TEST CONDITIONS: @220V50Hz			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]	
793	200	232	208	1.33	5.80	3.81	0.96	1.12	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static				(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)	444	112	130	148	1.17	3.23	2.99	0.75	0.88
-30	(-22)	616	155	180	168	1.22	4.51	3.62	0.91	1.06
-25	(-13)	805	203	236	190	1.29	5.89	4.21	1.06	1.23
-20	(- 4)	1018	257	298	214	1.36	7.46	4.76	1.20	1.40
-15	(+ 5)	1264	319	370	239	1.45	9.28	5.31	1.34	1.56
-10	(+14)	1551	391	454	266	1.54	11.42	5.87	1.48	1.72
-5	(+23)	1887	476	553	294	1.65	13.96	6.45	1.63	1.89
0	(+32)	2280	575	668	322	1.76	16.95	7.08	1.79	2.08
+5	(+41)	2738	690	802	352	1.89	20.46	7.78	1.96	2.28
+10	(+50)	3270	824	958	382	2.02	24.58	8.55	2.16	2.51
+15	(+59)	3883	978	1138	411	2.15	29.36	9.43	2.38	2.76

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(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)	366	92	107	146	1.16	2.66	2.55	0.64	0.75
-30	(-22)	534	135	156	170	1.22	3.91	3.11	0.78	0.91
-25	(-13)	716	180	210	196	1.30	5.25	3.62	0.91	1.06
-20	(- 4)	920	232	270	224	1.40	6.75	4.10	1.03	1.20
-15	(+ 5)	1155	291	338	253	1.50	8.48	4.57	1.15	1.34
-10	(+14)	1427	360	418	284	1.62	10.51	5.04	1.27	1.48
-5	(+23)	1746	440	512	316	1.75	12.92	5.53	1.39	1.62
0	(+32)	2120	534	621	350	1.89	15.75	6.06	1.53	1.77
+5	(+41)	2556	644	749	383	2.04	19.10	6.64	1.67	1.95
+10	(+50)	3063	772	897	418	2.20	23.02	7.31	1.84	2.14
+15	(+59)	3649	919	1069	453	2.36	27.59	8.07	2.03	2.36

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(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)	319	80	94	141	1.17	2.32	2.29	0.58	0.67
-30	(-22)	478	121	140	168	1.23	3.51	2.80	0.70	0.82
-25	(-13)	649	164	190	198	1.31	4.76	3.24	0.82	0.95
-20	(- 4)	839	211	246	229	1.40	6.16	3.65	0.92	1.07
-15	(+ 5)	1057	266	310	263	1.50	7.77	4.04	1.02	1.18
-10	(+14)	1310	330	384	298	1.62	9.65	4.42	1.11	1.30
-5	(+23)	1607	405	471	334	1.75	11.89	4.82	1.22	1.41
0	(+32)	1956	493	573	372	1.89	14.54	5.26	1.32	1.54
+5	(+41)	2365	596	693	410	2.05	17.68	5.74	1.45	1.68
+10	(+50)	2843	716	833	450	2.21	21.37	6.30	1.59	1.85
+15	(+59)	3396	856	995	489	2.39	25.69	6.95	1.75	2.04

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper plated steel		
3.1.2 Shape	Slanted		
3.2 DISCHARGE	5 +0.18/-0.06	[mm]	(0.197" +0.007"/-0.002")
3.2.1 Material	Copper plated steel		
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 plated steel		
3.3.2 Shape	Slanted		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		