

### COMPRESSOR DEFINITION

Designation	F FU70HAK
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513201006

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50-60	[ V / Hz ]	
4 Application type	Low-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°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/Fan	187 to 255 V	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	187 to 255 V	187 to 242 V
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 <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	6.36	[cm <sup>3</sup> ] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	10.84	[kg] (23.90 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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516159/213516353	
3 Start capacitor	64-77(220)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM283NFBYY-53	
6 Start winding resistance	43.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	10.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	12.80/11.90	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.70/1.50	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

### D - PERFORMANCE - CHECK POINT DATA

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]	
630	159	185	129	1.07	3.58	4.88	1.23	1.43	

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]	
630	159	185	129	1.07	3.58	4.88	1.23	1.43	

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]	
750	189	220	147	1.00	4.26	5.10	1.29	1.49	

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]	
750	189	220	147	1.00	4.26	5.10	1.29	1.49	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	343	86	100	92	0.98	1.94	3.74	0.94	1.10
-30	(-22)	470	118	138	108	1.01	2.66	4.37	1.10	1.28
-25	(-13)	628	158	184	123	1.04	3.57	5.12	1.29	1.50
-20	(- 4)	823	207	241	138	1.07	4.68	5.99	1.51	1.76
-15	(+ 5)	1059	267	310	151	1.11	6.05	6.99	1.76	2.05
-10	(+14)	1342	338	393	165	1.16	7.69	8.13	2.05	2.38
-5	(+23)	1677	423	491	178	1.20	9.65	9.39	2.37	2.75

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	270	68	79	82	0.98	1.53	3.29	0.83	0.96	
-30 (-22)	403	101	118	103	1.01	2.28	3.91	0.98	1.15	
-25 (-13)	564	142	165	122	1.05	3.20	4.59	1.16	1.34	
-20 (- 4)	759	191	222	142	1.10	4.32	5.33	1.34	1.56	
-15 (+ 5)	994	251	291	161	1.15	5.67	6.15	1.55	1.80	
-10 (+14)	1274	321	373	181	1.21	7.30	7.04	1.77	2.06	
-5 (+23)	1604	404	470	201	1.27	9.22	8.00	2.02	2.34	

TEST CONDITIONS: @220V50Hz		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)	210	53	62	83	0.97	1.19	2.54	0.64	0.74	
-30 (-22)	342	86	100	105	1.01	1.94	3.26	0.82	0.95	
-25 (-13)	502	126	147	126	1.05	2.85	3.98	1.00	1.17	
-20 (- 4)	693	175	203	147	1.11	3.94	4.72	1.19	1.38	
-15 (+ 5)	922	232	270	169	1.18	5.26	5.47	1.38	1.60	
-10 (+14)	1194	301	350	192	1.25	6.84	6.23	1.57	1.83	
-5 (+23)	1514	381	444	215	1.32	8.71	7.01	1.77	2.05	

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)	380	96	111	97	0.86	2.15	3.92	0.99	1.15	
-30 (-22)	550	138	161	117	0.92	3.11	4.71	1.19	1.38	
-25 (-13)	750	189	220	137	0.97	4.26	5.50	1.39	1.61	
-20 (- 4)	988	249	290	157	1.04	5.62	6.30	1.59	1.85	
-15 (+ 5)	1271	320	372	178	1.11	7.26	7.14	1.80	2.09	
-10 (+14)	1606	405	471	199	1.18	9.20	8.04	2.03	2.36	
-5 (+23)	1999	504	586	221	1.27	11.50	9.03	2.28	2.65	

### 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)	315	79	92	94	0.85	1.78	3.33	0.84	0.98
-30	(-22)	478	121	140	116	0.91	2.71	4.10	1.03	1.20
-25	(-13)	672	169	197	139	0.98	3.81	4.83	1.22	1.41
-20	(- 4)	902	227	264	163	1.05	5.13	5.54	1.39	1.62
-15	(+ 5)	1177	297	345	188	1.14	6.72	6.25	1.58	1.83
-10	(+14)	1502	379	440	214	1.24	8.61	7.00	1.76	2.05
-5	(+23)	1887	475	553	242	1.35	10.85	7.80	1.96	2.28

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)	250	63	73	88	0.84	1.42	2.85	0.72	0.84
-30	(-22)	410	103	120	112	0.91	2.32	3.63	0.92	1.06
-25	(-13)	598	151	175	138	0.99	3.40	4.34	1.09	1.27
-20	(- 4)	824	208	241	165	1.07	4.69	5.00	1.26	1.47
-15	(+ 5)	1092	275	320	194	1.17	6.24	5.64	1.42	1.65
-10	(+14)	1412	356	414	225	1.29	8.09	6.27	1.58	1.84
-5	(+23)	1789	451	524	258	1.43	10.29	6.92	1.74	2.03

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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		
3.1.2 Shape	Slanted		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-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		