

### COMPRESSOR DEFINITION

Designation	<b>F FU80HAK</b>
Nominal Voltage/Frequency	<b>220-240 V 50-60 Hz</b>
Engineering Number	<b>513200500</b>

### 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 pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm <sup>2</sup> ] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	6.76	[cm <sup>3</sup> ] (0.413 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	17.000	
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)	11.42	[kg] (25.18 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	213516078/213516086	
3 Start capacitor	108-130(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM743KDBYY-53	
6 Start winding resistance	30.10	[ at 25°C (77°F) ] +/- 8%
7 Run winding resistance	8.52	[ at 25°C (77°F) ] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	15.20/14.40	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.90/1.66	[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	IRAM - TUV	

### D - PERFORMANCE - CHECK POINT DATA

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]	
815	205	239	160	1.18	4.63	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]	
815	205	239	160	1.18	4.63	5.10	1.29	1.49	

### 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]	[W/W]
-35	(-31)	374	94	110	102	1.26	2.12	3.67	0.92	1.07
-30	(-22)	526	133	154	117	1.28	2.98	4.46	1.12	1.31
-25	(-13)	689	174	202	132	1.30	3.91	5.22	1.31	1.53
-20	(- 4)	879	221	258	147	1.33	5.00	5.99	1.51	1.76
-15	(+ 5)	1113	280	326	162	1.37	6.35	6.86	1.73	2.01
-10	(+14)	1408	355	413	178	1.41	8.07	7.88	1.99	2.31
-5	(+23)	1780	448	521	195	1.45	10.24	9.13	2.30	2.68

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)	303	76	89	99	1.26	1.72	3.07	0.77	0.90
-30	(-22)	455	115	133	118	1.28	2.58	3.84	0.97	1.12
-25	(-13)	616	155	181	136	1.32	3.50	4.53	1.14	1.33
-20	(- 4)	805	203	236	155	1.36	4.58	5.21	1.31	1.53
-15	(+ 5)	1037	261	304	174	1.41	5.92	5.95	1.50	1.74
-10	(+14)	1329	335	389	194	1.46	7.61	6.82	1.72	2.00
-5	(+23)	1697	428	497	216	1.52	9.76	7.88	1.99	2.31

### E - PERFORMANCE - CURVES

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)	245	62	72	95	1.25	1.39	2.58	0.65	0.76	
-30 (-22)	396	100	116	116	1.28	2.24	3.37	0.85	0.99	
-25 (-13)	557	140	163	137	1.32	3.16	4.05	1.02	1.19	
-20 (- 4)	743	187	218	159	1.37	4.23	4.69	1.18	1.37	
-15 (+ 5)	973	245	285	182	1.43	5.55	5.36	1.35	1.57	
-10 (+14)	1262	318	370	206	1.49	7.23	6.12	1.54	1.79	
-5 (+23)	1628	410	477	231	1.56	9.36	7.04	1.77	2.06	

TEST CONDITIONS: @220V60Hz		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]	[W/W]
-35 (-31)	426	107	125	112	1.06	2.41	3.82	0.96	1.12	
-30 (-22)	594	150	174	130	1.08	3.37	4.58	1.15	1.34	
-25 (-13)	807	203	237	149	1.13	4.58	5.41	1.36	1.58	
-20 (- 4)	1068	269	313	170	1.19	6.08	6.30	1.59	1.85	
-15 (+ 5)	1376	347	403	191	1.26	7.86	7.24	1.83	2.12	
-10 (+14)	1733	437	508	211	1.35	9.93	8.22	2.07	2.41	
-5 (+23)	2140	539	627	231	1.44	12.31	9.23	2.32	2.70	

TEST CONDITIONS: @220V60Hz		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)	377	95	111	107	1.05	2.14	3.53	0.89	1.03	
-30 (-22)	530	134	155	127	1.09	3.01	4.17	1.05	1.22	
-25 (-13)	732	184	215	150	1.15	4.16	4.86	1.23	1.42	
-20 (- 4)	984	248	288	175	1.22	5.60	5.60	1.41	1.64	
-15 (+ 5)	1287	324	377	201	1.31	7.34	6.38	1.61	1.87	
-10 (+14)	1641	414	481	229	1.42	9.40	7.19	1.81	2.11	
-5 (+23)	2049	516	600	257	1.54	11.79	8.00	2.02	2.34	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	333	84	97	106	1.03	1.88	3.15	0.79	0.92
-30	(-22)	469	118	137	127	1.08	2.66	3.71	0.94	1.09
-25	(-13)	657	166	193	153	1.15	3.73	4.32	1.09	1.27
-20	(- 4)	899	226	263	181	1.24	5.11	4.96	1.25	1.45
-15	(+ 5)	1194	301	350	212	1.36	6.82	5.63	1.42	1.65
-10	(+14)	1545	389	453	245	1.48	8.85	6.31	1.59	1.85
-5	(+23)	1952	492	572	279	1.63	11.23	6.99	1.76	2.05

### 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		