

COMPRESSOR DEFINITION

Designation	FF US70HAK
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513209006

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Light Commercial)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°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	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static/Fan	-	103 to 140 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 ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	6.36	[cm ³] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	230	[ml] (7.78 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	10.09	[kg] (22.24 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	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516272/213516583	
3 Start capacitor	233-280(120)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM762MFBZZ-53	
6 Start winding resistance	7.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.80	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	24.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.91	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	4.35	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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	151	2.00	4.26	4.97	1.25	1.46

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]
783	197	229	151	2.00	4.45	5.20	1.31	1.52

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		ASHRAE32 Fan				(Condensing temperature 35°C (+95°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)	440	111	129	101	1.78	2.49	4.35	1.10	1.28
-30	(-22)	601	152	176	117	1.84	3.41	5.17	1.30	1.52
-25	(-13)	807	203	236	133	1.93	4.58	6.09	1.53	1.78
-20	(- 4)	1060	267	311	150	2.03	6.03	7.11	1.79	2.08
-15	(+ 5)	1366	344	400	166	2.14	7.80	8.22	2.07	2.41
-10	(+14)	1729	436	507	183	2.25	9.90	9.43	2.38	2.76
-5	(+23)	2152	542	630	200	2.36	12.38	10.74	2.71	3.15
0	(+32)	2639	665	773	217	2.47	15.26	12.15	3.06	3.56

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)	394	99	116	102	1.79	2.23	3.87	0.97	1.13
-30	(-22)	555	140	163	120	1.85	3.15	4.62	1.16	1.35
-25	(-13)	759	191	222	140	1.94	4.31	5.44	1.37	1.59
-20	(- 4)	1009	254	296	159	2.06	5.74	6.32	1.59	1.85
-15	(+ 5)	1310	330	384	180	2.20	7.48	7.26	1.83	2.13
-10	(+14)	1666	420	488	201	2.35	9.54	8.26	2.08	2.42
-5	(+23)	2081	524	610	223	2.52	11.97	9.32	2.35	2.73
0	(+32)	2559	645	750	246	2.69	14.79	10.44	2.63	3.06

E - PERFORMANCE - CURVES

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)	338	85	99	99	1.80	1.91	3.43	0.86	1.01
-30	(-22)	498	125	146	120	1.86	2.82	4.15	1.05	1.22
-25	(-13)	699	176	205	143	1.97	3.97	4.89	1.23	1.43
-20	(- 4)	945	238	277	167	2.10	5.38	5.66	1.43	1.66
-15	(+ 5)	1240	313	363	192	2.27	7.08	6.45	1.62	1.89
-10	(+14)	1589	400	466	219	2.47	9.10	7.26	1.83	2.13
-5	(+23)	1995	503	585	246	2.69	11.48	8.10	2.04	2.37
0	(+32)	2462	620	722	275	2.92	14.23	8.96	2.26	2.63

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)	271	68	79	90	1.81	1.53	3.00	0.76	0.88
-30	(-22)	429	108	126	115	1.87	2.44	3.70	0.93	1.09
-25	(-13)	627	158	184	142	1.99	3.56	4.40	1.11	1.29
-20	(- 4)	868	219	254	171	2.15	4.94	5.08	1.28	1.49
-15	(+ 5)	1157	292	339	202	2.35	6.60	5.75	1.45	1.68
-10	(+14)	1498	377	439	235	2.59	8.58	6.40	1.61	1.88
-5	(+23)	1894	477	555	269	2.86	10.89	7.04	1.77	2.06
0	(+32)	2350	592	689	306	3.16	13.58	7.66	1.93	2.25

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		