

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 Static			(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	100	1.70	2.49	4.39	1.11	1.29
-30	(-22)	594	150	174	115	1.94	3.37	5.20	1.31	1.52
-25	(-13)	792	200	232	131	2.04	4.50	6.04	1.52	1.77
-20	(- 4)	1038	261	304	149	2.07	5.91	6.97	1.76	2.04
-15	(+ 5)	1336	337	392	167	2.09	7.63	8.01	2.02	2.35
-10	(+14)	1693	427	496	184	2.15	9.70	9.19	2.32	2.69
-5	(+23)	2112	532	619	200	2.33	12.15	10.55	2.66	3.09
0	(+32)	2599	655	762	212	2.69	15.02	12.11	3.05	3.55

TEST CONDITIONS: @115V60Hz		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)	380	96	111	104	1.74	2.15	3.68	0.93	1.08
-30	(-22)	537	135	157	120	1.92	3.04	4.48	1.13	1.31
-25	(-13)	735	185	215	138	2.00	4.17	5.28	1.33	1.55
-20	(- 4)	979	247	287	160	2.04	5.57	6.10	1.54	1.79
-15	(+ 5)	1275	321	374	182	2.11	7.28	6.97	1.76	2.04
-10	(+14)	1627	410	477	205	2.28	9.32	7.92	2.00	2.32
-5	(+23)	2039	514	598	228	2.61	11.73	8.99	2.27	2.64
0	(+32)	2518	634	738	248	3.15	14.55	10.22	2.58	2.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	324	82	95	106	1.85	1.83	3.09	0.78	0.90
-30	(-22)	479	121	140	122	1.93	2.72	3.92	0.99	1.15
-25	(-13)	674	170	198	143	1.96	3.83	4.69	1.18	1.38
-20	(- 4)	913	230	268	168	2.00	5.20	5.42	1.37	1.59
-15	(+ 5)	1202	303	352	195	2.12	6.86	6.15	1.55	1.80
-10	(+14)	1545	389	453	223	2.36	8.85	6.91	1.74	2.02
-5	(+23)	1947	491	571	253	2.81	11.20	7.72	1.95	2.26
0	(+32)	2413	608	707	282	3.52	13.94	8.63	2.18	2.53

TEST CONDITIONS: @115V60Hz		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)	273	69	80	106	1.83	1.54	2.55	0.64	0.75
-30	(-22)	423	106	124	123	1.80	2.40	3.45	0.87	1.01
-25	(-13)	610	154	179	145	1.77	3.46	4.21	1.06	1.23
-20	(- 4)	840	212	246	173	1.78	4.78	4.89	1.23	1.43
-15	(+ 5)	1118	282	328	204	1.91	6.38	5.50	1.39	1.61
-10	(+14)	1448	365	424	239	2.22	8.30	6.08	1.53	1.78
-5	(+23)	1836	463	538	275	2.76	10.56	6.66	1.68	1.95
0	(+32)	2286	576	670	312	3.61	13.21	7.28	1.84	2.13

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		