

COMPRESSOR DEFINITION

Designation	FF US130HAX
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513209004

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 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	CSIR		
6 Starting torque	LST/HST - Low/High starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	1/3+	[hp]
2 Displacement	10.61	[cm ³] (0.647 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	280	[ml] (9.47 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	10.54	[kg] (23.24 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	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213516584	
3 Start capacitor	88-108(250)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM762MDBYY-53	
6 Start winding resistance	11.95	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.95	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	18.30	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	UL	

D - PERFORMANCE - CHECK POINT DATA

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]
1269	320	372	279	2.60	7.21	4.55	1.15	1.33

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			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)	672	169	197	204	2.50	3.80	3.29	0.83	0.96
-30	(-22)	954	240	280	229	2.52	5.41	4.15	1.05	1.22
-25	(-13)	1284	324	376	256	2.55	7.29	5.00	1.26	1.47
-20	(- 4)	1676	422	491	286	2.60	9.54	5.88	1.48	1.72
-15	(+ 5)	2146	541	629	315	2.66	12.25	6.82	1.72	2.00
-10	(+14)	2708	682	793	345	2.73	15.51	7.87	1.98	2.30
-5	(+23)	3376	851	989	373	2.81	19.43	9.05	2.28	2.65
0	(+32)	4166	1050	1221	400	2.89	24.09	10.41	2.62	3.05

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)	622	157	182	206	2.53	3.52	3.03	0.76	0.89
-30	(-22)	903	228	265	232	2.54	5.12	3.87	0.98	1.13
-25	(-13)	1230	310	360	263	2.57	6.98	4.67	1.18	1.37
-20	(- 4)	1616	407	473	296	2.63	9.20	5.46	1.38	1.60
-15	(+ 5)	2077	523	609	330	2.70	11.85	6.29	1.58	1.84
-10	(+14)	2627	662	770	366	2.79	15.05	7.18	1.81	2.10
-5	(+23)	3281	827	961	401	2.89	18.88	8.18	2.06	2.40
0	(+32)	4054	1022	1188	435	3.00	23.43	9.33	2.35	2.73

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)	525	132	154	210	2.58	2.97	2.51	0.63	0.73
-30	(-22)	805	203	236	238	2.57	4.56	3.37	0.85	0.99
-25	(-13)	1127	284	330	271	2.60	6.40	4.16	1.05	1.22
-20	(- 4)	1507	380	441	307	2.65	8.57	4.91	1.24	1.44
-15	(+ 5)	1958	493	574	346	2.73	11.17	5.66	1.43	1.66
-10	(+14)	2496	629	731	386	2.84	14.30	6.45	1.63	1.89
-5	(+23)	3135	790	919	428	2.96	18.04	7.32	1.84	2.14
0	(+32)	3890	980	1140	470	3.10	22.49	8.29	2.09	2.43

E - PERFORMANCE - CURVES

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)	381	96	112	219	2.63	2.16	1.73	0.44	0.51
-30	(-22)	659	166	193	247	2.62	3.74	2.66	0.67	0.78
-25	(-13)	977	246	286	281	2.63	5.55	3.48	0.88	1.02
-20	(- 4)	1349	340	395	319	2.69	7.67	4.24	1.07	1.24
-15	(+ 5)	1790	451	525	362	2.77	10.21	4.96	1.25	1.45
-10	(+14)	2315	583	678	407	2.88	13.26	5.69	1.43	1.67
-5	(+23)	2939	741	861	454	3.02	16.91	6.46	1.63	1.89
0	(+32)	3676	926	1077	503	3.19	21.25	7.31	1.84	2.14

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		