

### COMPRESSOR DEFINITION

Designation	EM I30HER
Nominal Voltage/Frequency	220 V 50-60 Hz
Engineering Number	513307113

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 50-60	[ V / Hz ]	
4 Application type	Low Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°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	187 to 255 V	187 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	187 to 255 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	1/10	[hp]
2 Displacement	3.00	[cm <sup>3</sup> ] (0.183 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.600	
3 Lubricant charge	170	[ml] (5.75 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.16	[kg] (15.78 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 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514032	
3 Start capacitor	72-88(145)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM189KFBYY-53	
6 Start winding resistance	46.15	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	24.65	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.50/7.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.80/0.70	[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 - UCIEE - VDE	

### 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]
245	62	72	64	0.56	1.39	3.84	0.97	1.13

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]
305	77	89	74	0.52	1.73	4.10	1.03	1.20

### 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)	109	28	32	45	0.52	0.62	2.44	0.61	0.71
-30	(-22)	164	41	48	53	0.54	0.93	3.14	0.79	0.92
-25	(-13)	245	62	72	61	0.56	1.39	4.06	1.02	1.19
-20	(- 4)	346	87	101	68	0.57	1.97	5.10	1.29	1.49
-15	(+ 5)	464	117	136	75	0.59	2.65	6.18	1.56	1.81
-10	(+14)	593	149	174	82	0.61	3.40	7.21	1.82	2.11

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)	76	19	22	42	0.52	0.43	1.78	0.45	0.52
-30	(-22)	130	33	38	52	0.54	0.74	2.53	0.64	0.74
-25	(-13)	208	52	61	61	0.56	1.18	3.44	0.87	1.01
-20	(- 4)	306	77	90	69	0.58	1.74	4.42	1.11	1.30
-15	(+ 5)	417	105	122	78	0.60	2.38	5.38	1.36	1.58
-10	(+14)	539	136	158	87	0.63	3.09	6.23	1.57	1.82

### 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)	34	9	10	40	0.52	0.19	0.88	0.22	0.26	
-30 (-22)	88	22	26	50	0.54	0.50	1.76	0.44	0.52	
-25 (-13)	165	42	48	59	0.56	0.94	2.75	0.69	0.81	
-20 (- 4)	259	65	76	69	0.58	1.47	3.75	0.94	1.10	
-15 (+ 5)	366	92	107	79	0.60	2.09	4.66	1.18	1.37	
-10 (+14)	480	121	141	90	0.63	2.75	5.41	1.36	1.58	

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)	162	41	47	56	0.48	0.92	2.88	0.73	0.85	
-30 (-22)	224	56	66	64	0.50	1.27	3.58	0.90	1.05	
-25 (-13)	316	80	93	72	0.53	1.80	4.44	1.12	1.30	
-20 (- 4)	434	109	127	80	0.56	2.47	5.40	1.36	1.58	
-15 (+ 5)	570	144	167	89	0.60	3.25	6.39	1.61	1.87	
-10 (+14)	720	181	211	98	0.64	4.12	7.36	1.85	2.16	

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)	108	27	32	54	0.45	0.61	2.02	0.51	0.59	
-30 (-22)	174	44	51	62	0.48	0.98	2.86	0.72	0.84	
-25 (-13)	268	68	79	71	0.52	1.52	3.78	0.95	1.11	
-20 (- 4)	385	97	113	81	0.57	2.19	4.70	1.18	1.38	
-15 (+ 5)	518	131	152	93	0.61	2.96	5.56	1.40	1.63	
-10 (+14)	662	167	194	105	0.66	3.79	6.31	1.59	1.85	

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)	54	14	16	47	0.44	0.31	1.16	0.29	0.34	
-30 (-22)	120	30	35	56	0.48	0.68	2.15	0.54	0.63	
-25 (-13)	212	53	62	67	0.52	1.20	3.12	0.79	0.91	
-20 (- 4)	323	81	95	80	0.57	1.84	4.01	1.01	1.18	
-15 (+ 5)	449	113	132	95	0.62	2.56	4.76	1.20	1.40	
-10 (+14)	583	147	171	111	0.67	3.34	5.31	1.34	1.56	

### 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 parallel B.Plate 15°		
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	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		