

### COMPRESSOR DEFINITION

Designation	EM I30HEP
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513303580

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	100 / 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		
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	85 to 110 V	85 to 110 V
8.2 LBP (43°C Ambient temperature)	Static	85 to 110 V	85 to 110 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)	7.09	[kg] (15.63 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	100 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	4R7MD	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM276RFBYY-53	
6 Start winding resistance	7.90	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	6.50	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	6.90/6.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.45/1.30	[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		

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @100V50Hz			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]
230	58	67	67	1.21	1.31	3.45	0.87	1.01

TEST CONDITIONS: @100V60Hz			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]
275	69	81	76	1.12	1.56	3.62	0.91	1.06

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz			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)	91	23	27	49	1.14	0.52	1.83	0.46	0.54
-30	(-22)	169	43	50	60	1.18	0.96	2.77	0.70	0.81
-25	(-13)	247	62	72	68	1.21	1.40	3.65	0.92	1.07
-20	(- 4)	332	84	97	74	1.25	1.89	4.51	1.14	1.32
-15	(+ 5)	432	109	127	80	1.29	2.47	5.40	1.36	1.58
-10	(+14)	555	140	163	87	1.34	3.18	6.35	1.60	1.86

TEST CONDITIONS: @100V50Hz			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)	56	14	16	47	1.12	0.31	1.19	0.30	0.35
-30	(-22)	135	34	40	58	1.16	0.76	2.24	0.56	0.66
-25	(-13)	212	53	62	67	1.20	1.20	3.16	0.80	0.93
-20	(- 4)	294	74	86	74	1.25	1.68	4.01	1.01	1.17
-15	(+ 5)	390	98	114	81	1.30	2.23	4.81	1.21	1.41
-10	(+14)	508	128	149	90	1.36	2.91	5.62	1.42	1.65

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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)	20	5	6	45	1.10	0.11	0.47	0.12	0.14	
-30 (-22)	100	25	29	56	1.14	0.57	1.66	0.42	0.49	
-25 (-13)	176	44	52	65	1.19	1.00	2.68	0.67	0.78	
-20 (- 4)	256	65	75	73	1.24	1.46	3.54	0.89	1.04	
-15 (+ 5)	348	88	102	81	1.30	1.98	4.31	1.09	1.26	
-10 (+14)	458	115	134	91	1.37	2.63	5.02	1.27	1.47	

TEST CONDITIONS: @100V60Hz		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)	118	30	35	52	0.97	0.67	2.29	0.58	0.67	
-30 (-22)	200	50	59	64	1.05	1.13	3.17	0.80	0.93	
-25 (-13)	290	73	85	74	1.12	1.65	3.96	1.00	1.16	
-20 (- 4)	395	100	116	84	1.20	2.25	4.72	1.19	1.38	
-15 (+ 5)	520	131	152	93	1.28	2.97	5.52	1.39	1.62	
-10 (+14)	670	169	196	103	1.36	3.84	6.41	1.62	1.88	

TEST CONDITIONS: @100V60Hz		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)	60	15	18	43	0.93	0.34	1.39	0.35	0.41	
-30 (-22)	146	37	43	57	1.01	0.83	2.51	0.63	0.73	
-25 (-13)	239	60	70	70	1.09	1.36	3.43	0.87	1.01	
-20 (- 4)	346	87	101	82	1.18	1.97	4.23	1.07	1.24	
-15 (+ 5)	471	119	138	95	1.28	2.69	4.96	1.25	1.45	
-10 (+14)	620	156	182	108	1.40	3.55	5.69	1.43	1.67	

TEST CONDITIONS: @100V60Hz		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)	11	3	3	35	0.90	0.06	0.31	0.08	0.09	
-30 (-22)	95	24	28	51	0.98	0.54	1.71	0.43	0.50	
-25 (-13)	186	47	54	65	1.06	1.06	2.82	0.71	0.83	
-20 (- 4)	289	73	85	79	1.16	1.64	3.70	0.93	1.08	
-15 (+ 5)	409	103	120	94	1.28	2.34	4.40	1.11	1.29	
-10 (+14)	553	139	162	111	1.42	3.17	5.01	1.26	1.47	

### 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	Straight		
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		