

COMPRESSOR DEFINITION

Designation	EM I40HJP
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513303590

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 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	1/10	[hp]
2 Displacement	3.77	[cm ³] (0.230 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	13.300	
3 Lubricant charge	170	[ml] (5.75 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.25	[kg] (15.98 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	100 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	490C814R7/7M4R7MC1	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM319RFBYY-53	
6 Start winding resistance	5.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	4.24	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	9.70/9.90	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	2.00/1.75	[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]
320	81	94	88	1.60	1.82	3.64	0.92	1.07

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]
380	96	111	98	1.45	2.16	3.88	0.98	1.14

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)	174	44	51	66	1.50	0.98	2.64	0.66	0.77
-30 (-22)	238	60	70	73	1.51	1.35	3.28	0.83	0.96
-25 (-13)	324	82	95	82	1.54	1.84	3.96	1.00	1.16
-20 (- 4)	434	109	127	92	1.59	2.47	4.70	1.18	1.38
-15 (+ 5)	570	144	167	103	1.66	3.26	5.51	1.39	1.61
-10 (+14)	736	185	216	114	1.74	4.21	6.43	1.62	1.88

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)	119	30	35	63	1.47	0.67	1.89	0.48	0.55
-30 (-22)	191	48	56	72	1.50	1.08	2.68	0.68	0.79
-25 (-13)	281	71	82	82	1.55	1.60	3.43	0.87	1.01
-20 (- 4)	392	99	115	94	1.61	2.23	4.17	1.05	1.22
-15 (+ 5)	525	132	154	107	1.69	3.00	4.91	1.24	1.44
-10 (+14)	684	172	200	120	1.79	3.92	5.69	1.43	1.67

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)	52	13	15	56	1.45	0.29	0.92	0.23	0.27	
-30 (-22)	131	33	38	67	1.48	0.74	1.91	0.48	0.56	
-25 (-13)	225	57	66	80	1.54	1.28	2.80	0.70	0.82	
-20 (- 4)	335	84	98	94	1.61	1.91	3.59	0.90	1.05	
-15 (+ 5)	464	117	136	108	1.70	2.65	4.33	1.09	1.27	
-10 (+14)	615	155	180	123	1.80	3.52	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)	191	48	56	72	1.29	1.08	2.66	0.67	0.78	
-30 (-22)	273	69	80	81	1.32	1.55	3.40	0.86	1.00	
-25 (-13)	383	97	112	93	1.42	2.18	4.11	1.04	1.20	
-20 (- 4)	522	132	153	108	1.55	2.97	4.83	1.22	1.41	
-15 (+ 5)	689	174	202	123	1.69	3.93	5.58	1.41	1.64	
-10 (+14)	884	223	259	137	1.81	5.06	6.43	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)	140	35	41	68	1.26	0.79	2.09	0.53	0.61	
-30 (-22)	224	57	66	78	1.29	1.27	2.93	0.74	0.86	
-25 (-13)	336	85	98	92	1.39	1.91	3.67	0.93	1.08	
-20 (- 4)	474	120	139	109	1.54	2.70	4.35	1.10	1.28	
-15 (+ 5)	639	161	187	127	1.70	3.65	5.01	1.26	1.47	
-10 (+14)	829	209	243	146	1.87	4.75	5.67	1.43	1.66	

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)	74	19	22	58	1.20	0.42	1.22	0.31	0.36	
-30 (-22)	155	39	45	69	1.23	0.88	2.23	0.56	0.65	
-25 (-13)	261	66	76	85	1.34	1.48	3.07	0.77	0.90	
-20 (- 4)	392	99	115	104	1.51	2.23	3.78	0.95	1.11	
-15 (+ 5)	547	138	160	126	1.71	3.12	4.39	1.11	1.29	
-10 (+14)	726	183	213	148	1.91	4.16	4.94	1.25	1.45	

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		