

### COMPRESSOR DEFINITION

Designation	EM I45HER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513307012

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 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	187 to 255 V	191 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	191 to 242 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/8	[hp]
2 Displacement	3.77	[cm <sup>3</sup> ] (0.230 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	13.300	
3 Lubricant charge	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.69	[kg] (16.95 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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514016	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718KFBYY-53	
6 Start winding resistance	33.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	20.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	10.00/9.30	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.95/0.83	[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	CE - IRAM - TUV - UKCA - 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]
340	86	100	86	0.74	1.93	3.97	1.00	1.16

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]
420	106	123	99	0.68	2.39	4.25	1.07	1.25

### 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)	190	48	56	61	0.68	1.07	3.09	0.78	0.91
-30 (-22)	262	66	77	70	0.70	1.48	3.74	0.94	1.10
-25 (-13)	349	88	102	79	0.72	1.98	4.42	1.11	1.30
-20 (- 4)	456	115	134	88	0.74	2.59	5.17	1.30	1.51
-15 (+ 5)	588	148	172	98	0.76	3.36	6.01	1.52	1.76
-10 (+14)	752	190	220	107	0.78	4.31	6.99	1.76	2.05

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)	145	37	43	60	0.68	0.82	2.47	0.62	0.72
-30 (-22)	221	56	65	70	0.69	1.25	3.17	0.80	0.93
-25 (-13)	310	78	91	80	0.71	1.76	3.85	0.97	1.13
-20 (- 4)	417	105	122	91	0.74	2.37	4.55	1.15	1.33
-15 (+ 5)	548	138	161	103	0.76	3.13	5.30	1.34	1.55
-10 (+14)	707	178	207	115	0.80	4.05	6.14	1.55	1.80

### 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)	114	29	33	57	0.67	0.64	1.97	0.50	0.58	
-30 (-22)	186	47	55	68	0.69	1.06	2.71	0.68	0.79	
-25 (-13)	269	68	79	80	0.71	1.53	3.38	0.85	0.99	
-20 (- 4)	368	93	108	92	0.73	2.10	4.02	1.01	1.18	
-15 (+ 5)	489	123	143	105	0.77	2.79	4.66	1.17	1.36	
-10 (+14)	636	160	186	119	0.81	3.64	5.33	1.34	1.56	

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)	212	53	62	67	0.57	1.20	3.17	0.80	0.93	
-30 (-22)	308	78	90	80	0.60	1.74	3.90	0.98	1.14	
-25 (-13)	425	107	125	92	0.64	2.41	4.67	1.18	1.37	
-20 (- 4)	563	142	165	103	0.68	3.20	5.46	1.38	1.60	
-15 (+ 5)	720	181	211	115	0.73	4.11	6.26	1.58	1.83	
-10 (+14)	896	226	262	127	0.77	5.13	7.04	1.77	2.06	

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)	157	40	46	65	0.57	0.89	2.40	0.61	0.70	
-30 (-22)	254	64	74	79	0.61	1.44	3.21	0.81	0.94	
-25 (-13)	372	94	109	92	0.65	2.11	4.02	1.01	1.18	
-20 (- 4)	512	129	150	106	0.70	2.91	4.82	1.22	1.41	
-15 (+ 5)	670	169	196	120	0.75	3.83	5.59	1.41	1.64	
-10 (+14)	848	214	248	135	0.81	4.86	6.30	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)	112	28	33	62	0.56	0.63	1.81	0.46	0.53	
-30 (-22)	206	52	60	77	0.59	1.17	2.67	0.67	0.78	
-25 (-13)	321	81	94	92	0.64	1.82	3.48	0.88	1.02	
-20 (- 4)	458	115	134	108	0.69	2.60	4.25	1.07	1.25	
-15 (+ 5)	614	155	180	124	0.75	3.50	4.95	1.25	1.45	
-10 (+14)	789	199	231	142	0.83	4.52	5.55	1.40	1.63	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
2 Tray holder	Yes		
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		