

COMPRESSOR DEFINITION

Designation	EM I45HER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513307212

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	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	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 ²] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm ²] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/8	[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	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.69	[kg] (16.95 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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213515014	
3 Start capacitor	53-64(190)	[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)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[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 - TUV	

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	82	0.77	1.93	4.14	1.04	1.21

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	93	0.68	2.39	4.50	1.13	1.32

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	60	0.70	1.07	3.14	0.79	0.92
-30 (-22)	262	66	77	69	0.74	1.48	3.78	0.95	1.11
-25 (-13)	349	88	102	78	0.75	1.98	4.49	1.13	1.32
-20 (- 4)	456	115	134	86	0.76	2.59	5.29	1.33	1.55
-15 (+ 5)	588	148	172	95	0.76	3.36	6.17	1.56	1.81
-10 (+14)	752	190	220	105	0.79	4.31	7.16	1.80	2.10

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	59	0.70	0.82	2.51	0.63	0.74
-30 (-22)	221	56	65	69	0.75	1.25	3.19	0.80	0.94
-25 (-13)	310	78	91	79	0.77	1.76	3.90	0.98	1.14
-20 (- 4)	417	105	122	90	0.78	2.37	4.64	1.17	1.36
-15 (+ 5)	548	138	161	100	0.79	3.13	5.43	1.37	1.59
-10 (+14)	707	178	207	112	0.83	4.05	6.28	1.58	1.84

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	55	0.69	0.64	2.07	0.52	0.61	
-30 (-22)	186	47	55	67	0.74	1.06	2.76	0.70	0.81	
-25 (-13)	269	68	79	78	0.76	1.53	3.43	0.86	1.01	
-20 (- 4)	368	93	108	90	0.78	2.10	4.09	1.03	1.20	
-15 (+ 5)	489	123	143	103	0.80	2.79	4.75	1.20	1.39	
-10 (+14)	636	160	186	117	0.84	3.64	5.42	1.37	1.59	

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	64	0.59	1.20	3.29	0.83	0.96	
-30 (-22)	308	78	90	77	0.63	1.74	4.04	1.02	1.18	
-25 (-13)	425	107	125	89	0.67	2.41	4.81	1.21	1.41	
-20 (- 4)	563	142	165	101	0.70	3.20	5.59	1.41	1.64	
-15 (+ 5)	720	181	211	112	0.73	4.11	6.41	1.61	1.88	
-10 (+14)	896	226	262	123	0.77	5.13	7.25	1.83	2.12	

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	62	0.58	0.89	2.51	0.63	0.74	
-30 (-22)	254	64	74	76	0.63	1.44	3.36	0.85	0.98	
-25 (-13)	372	94	109	89	0.68	2.11	4.16	1.05	1.22	
-20 (- 4)	512	129	150	103	0.72	2.91	4.92	1.24	1.44	
-15 (+ 5)	670	169	196	118	0.77	3.83	5.65	1.42	1.66	
-10 (+14)	848	214	248	133	0.83	4.86	6.35	1.60	1.86	

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	59	0.57	0.63	1.92	0.48	0.56	
-30 (-22)	206	52	60	72	0.62	1.17	2.85	0.72	0.84	
-25 (-13)	321	81	94	87	0.68	1.82	3.68	0.93	1.08	
-20 (- 4)	458	115	134	104	0.73	2.60	4.41	1.11	1.29	
-15 (+ 5)	614	155	180	122	0.79	3.50	5.05	1.27	1.48	
-10 (+14)	789	199	231	141	0.86	4.52	5.60	1.41	1.64	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard 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	Slanted		
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		