

COMPRESSOR DEFINITION

Designation	EM I45ER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513307073

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	Blend		
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/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)	14.5	[kgf/cm ²] (206 psig)	/ °C - °F
9.2 Peak (gauge)	18.2	[kgf/cm ²] (259 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	ALQUILB / ISO32	
4 Weight (with oil charge)	7.67	[kg] (16.91 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	213514016	
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)	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	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]
380	96	111	93	0.77	2.78	4.10	1.03	1.20

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]
485	122	142	111	0.71	3.55	4.37	1.10	1.28

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)	206	52	60	66	0.70	1.50	3.08	0.78	0.90
-30	(-22)	291	73	85	77	0.74	2.12	3.79	0.96	1.11
-25	(-13)	387	98	114	86	0.75	2.83	4.52	1.14	1.32
-20	(- 4)	504	127	148	96	0.76	3.70	5.29	1.33	1.55
-15	(+ 5)	648	163	190	106	0.76	4.76	6.14	1.55	1.80
-10	(+14)	826	208	242	116	0.79	6.09	7.08	1.78	2.08

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)	136	34	40	65	0.70	0.99	2.13	0.54	0.63
-30	(-22)	230	58	67	77	0.75	1.68	2.96	0.75	0.87
-25	(-13)	333	84	98	88	0.77	2.44	3.75	0.94	1.10
-20	(- 4)	455	115	133	99	0.78	3.33	4.54	1.14	1.33
-15	(+ 5)	600	151	176	111	0.79	4.41	5.35	1.35	1.57
-10	(+14)	778	196	228	124	0.83	5.74	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)	122	31	36	61	0.69	0.89	2.00	0.50	0.59	
-30 (-22)	207	52	61	74	0.74	1.51	2.77	0.70	0.81	
-25 (-13)	300	76	88	87	0.76	2.20	3.46	0.87	1.01	
-20 (- 4)	408	103	120	100	0.78	2.99	4.10	1.03	1.20	
-15 (+ 5)	538	136	158	115	0.80	3.96	4.72	1.19	1.38	
-10 (+14)	698	176	205	130	0.84	5.15	5.36	1.35	1.57	

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)	233	59	68	75	0.58	1.70	3.08	0.78	0.90	
-30 (-22)	338	85	99	87	0.61	2.47	3.93	0.99	1.15	
-25 (-13)	467	118	137	99	0.64	3.42	4.75	1.20	1.39	
-20 (- 4)	619	156	181	112	0.68	4.54	5.55	1.40	1.63	
-15 (+ 5)	792	200	232	125	0.72	5.82	6.34	1.60	1.86	
-10 (+14)	985	248	289	138	0.76	7.26	7.12	1.79	2.09	

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)	172	43	50	70	0.57	1.25	2.47	0.62	0.72	
-30 (-22)	279	70	82	84	0.60	2.04	3.31	0.84	0.97	
-25 (-13)	409	103	120	100	0.64	2.99	4.11	1.03	1.20	
-20 (- 4)	562	142	165	116	0.69	4.12	4.85	1.22	1.42	
-15 (+ 5)	737	186	216	132	0.75	5.42	5.56	1.40	1.63	
-10 (+14)	933	235	273	149	0.80	6.88	6.24	1.57	1.83	

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)	123	31	36	64	0.56	0.90	1.92	0.48	0.56	
-30 (-22)	226	57	66	82	0.60	1.65	2.77	0.70	0.81	
-25 (-13)	353	89	104	100	0.65	2.58	3.54	0.89	1.04	
-20 (- 4)	503	127	147	119	0.70	3.69	4.24	1.07	1.24	
-15 (+ 5)	675	170	198	138	0.76	4.96	4.89	1.23	1.43	
-10 (+14)	867	219	254	159	0.83	6.40	5.48	1.38	1.61	

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	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		