

### COMPRESSOR DEFINITION

Designation	EM IE40HER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513306096

### 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-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°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	198 to 255 V	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 255 V	198 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	1/10	[hp]
2 Displacement	3.40	[cm <sup>3</sup> ] (0.207 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	12.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.24	[kg] (15.96 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	213514164	
3 Start capacitor	53-64(220)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM718KFBYY-53	
6 Start winding resistance	33.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	23.70	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	8.80/8.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.85/0.95	[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 - 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]
325	82	95	80	0.72	1.85	4.04	1.02	1.18

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]
400	101	117	89	0.64	2.27	4.50	1.13	1.32

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(Condensing temperature 35°C (+95°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)	161	41	47	56	0.68	0.91	2.86	0.72	0.84
-30 (-22)	243	61	71	65	0.69	1.38	3.74	0.94	1.10
-25 (-13)	341	86	100	72	0.70	1.94	4.73	1.19	1.39
-20 (- 4)	457	115	134	79	0.71	2.60	5.80	1.46	1.70
-15 (+ 5)	591	149	173	85	0.72	3.37	6.96	1.76	2.04
-10 (+14)	743	187	218	91	0.73	4.26	8.20	2.07	2.40
-5 (+23)	914	230	268	96	0.75	5.26	9.49	2.39	2.78

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)	156	39	46	58	0.68	0.88	2.69	0.68	0.79
-30 (-22)	231	58	68	67	0.69	1.31	3.46	0.87	1.01
-25 (-13)	323	81	95	75	0.70	1.83	4.31	1.09	1.26
-20 (- 4)	433	109	127	83	0.71	2.46	5.22	1.31	1.53
-15 (+ 5)	561	141	164	91	0.73	3.20	6.18	1.56	1.81
-10 (+14)	709	179	208	99	0.75	4.06	7.19	1.81	2.11
-5 (+23)	876	221	257	107	0.77	5.04	8.22	2.07	2.41

### E - PERFORMANCE - CURVES

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)	134	34	39	57	0.67	0.76	2.33	0.59	0.68	
-30 (-22)	203	51	60	67	0.69	1.15	3.05	0.77	0.89	
-25 (-13)	290	73	85	76	0.70	1.65	3.81	0.96	1.12	
-20 (- 4)	395	100	116	86	0.72	2.25	4.61	1.16	1.35	
-15 (+ 5)	519	131	152	95	0.74	2.96	5.44	1.37	1.59	
-10 (+14)	663	167	194	106	0.77	3.80	6.27	1.58	1.84	
-5 (+23)	827	208	242	116	0.80	4.76	7.11	1.79	2.08	

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)	95	24	28	54	0.67	0.54	1.77	0.45	0.52	
-30 (-22)	159	40	47	64	0.68	0.90	2.50	0.63	0.73	
-25 (-13)	242	61	71	75	0.70	1.37	3.24	0.82	0.95	
-20 (- 4)	343	86	101	86	0.72	1.95	3.99	1.01	1.17	
-15 (+ 5)	464	117	136	98	0.75	2.65	4.73	1.19	1.39	
-10 (+14)	606	153	177	111	0.78	3.47	5.46	1.38	1.60	
-5 (+23)	768	194	225	125	0.82	4.42	6.16	1.55	1.80	

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 35°C (+95°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)	218	55	64	56	0.56	1.23	3.90	0.98	1.14	
-30 (-22)	305	77	89	67	0.58	1.73	4.54	1.14	1.33	
-25 (-13)	411	104	121	77	0.60	2.34	5.33	1.34	1.56	
-20 (- 4)	540	136	158	86	0.63	3.07	6.28	1.58	1.84	
-15 (+ 5)	694	175	203	94	0.65	3.96	7.37	1.86	2.16	
-10 (+14)	876	221	257	102	0.68	5.02	8.59	2.16	2.52	
-5 (+23)	1089	274	319	110	0.71	6.26	9.93	2.50	2.91	

### E - PERFORMANCE - CURVES

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)	203	51	59	59	0.55	1.15	3.42	0.86	1.00
-30	(-22)	288	73	84	72	0.58	1.63	4.04	1.02	1.18
-25	(-13)	392	99	115	82	0.61	2.23	4.76	1.20	1.40
-20	(- 4)	517	130	151	93	0.64	2.94	5.58	1.41	1.64
-15	(+ 5)	665	168	195	102	0.68	3.80	6.49	1.64	1.90
-10	(+14)	841	212	246	112	0.71	4.82	7.48	1.88	2.19
-5	(+23)	1046	264	306	123	0.75	6.02	8.53	2.15	2.50

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)	171	43	50	58	0.55	0.97	2.92	0.74	0.86
-30	(-22)	257	65	75	72	0.58	1.46	3.56	0.90	1.04
-25	(-13)	359	91	105	84	0.61	2.04	4.25	1.07	1.25
-20	(- 4)	481	121	141	97	0.65	2.74	4.99	1.26	1.46
-15	(+ 5)	626	158	184	109	0.70	3.58	5.75	1.45	1.69
-10	(+14)	797	201	234	122	0.75	4.57	6.54	1.65	1.92
-5	(+23)	996	251	292	136	0.80	5.73	7.34	1.85	2.15

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)	118	30	35	51	0.54	0.67	2.36	0.59	0.69
-30	(-22)	205	52	60	66	0.57	1.17	3.06	0.77	0.90
-25	(-13)	308	78	90	82	0.61	1.75	3.76	0.95	1.10
-20	(- 4)	430	108	126	97	0.66	2.45	4.45	1.12	1.30
-15	(+ 5)	573	144	168	112	0.72	3.27	5.11	1.29	1.50
-10	(+14)	740	187	217	129	0.78	4.24	5.75	1.45	1.68
-5	(+23)	935	236	274	147	0.85	5.38	6.34	1.60	1.86

### F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate EUEM		
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	Slanted 42° up + 45° to Back		
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 30° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		