

COMPRESSOR DEFINITION

Designation	EM IE30HER
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513306071

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 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		[hp]
2 Displacement	2.83	[cm ³] (0.173 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.000	
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 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	213514032/213515225	
3 Start capacitor	72-88(145)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM189KFBYY-53	
6 Start winding resistance	46.15	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	24.65	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.50/7.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	0.80/0.70	[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	

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]
250	63	73	63	0.56	1.42	3.95	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]
300	76	88	70	0.51	1.70	4.30	1.08	1.26

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)	124	31	36	44	0.53	0.70	2.78	0.70	0.82
-30	(-22)	185	47	54	52	0.54	1.05	3.56	0.90	1.04
-25	(-13)	258	65	76	59	0.55	1.47	4.41	1.11	1.29
-20	(- 4)	346	87	101	65	0.56	1.97	5.32	1.34	1.56
-15	(+ 5)	451	114	132	71	0.58	2.58	6.30	1.59	1.85
-10	(+14)	576	145	169	78	0.60	3.30	7.35	1.85	2.15
-5	(+23)	724	182	212	86	0.61	4.16	8.47	2.13	2.48

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)	86	22	25	45	0.52	0.49	1.92	0.49	0.56
-30	(-22)	148	37	43	53	0.53	0.84	2.77	0.70	0.81
-25	(-13)	220	55	64	61	0.55	1.25	3.63	0.91	1.06
-20	(- 4)	305	77	89	68	0.57	1.74	4.51	1.14	1.32
-15	(+ 5)	406	102	119	75	0.59	2.32	5.40	1.36	1.58
-10	(+14)	525	132	154	83	0.62	3.01	6.31	1.59	1.85
-5	(+23)	665	168	195	92	0.64	3.83	7.24	1.82	2.12

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]
-35	(-31)	45	11	13	38	0.52	0.25	1.20	0.30	0.35
-30	(-22)	104	26	30	48	0.53	0.59	2.08	0.52	0.61
-25	(-13)	172	43	50	58	0.54	0.98	2.93	0.74	0.86
-20	(- 4)	252	63	74	67	0.56	1.43	3.75	0.94	1.10
-15	(+ 5)	345	87	101	77	0.59	1.97	4.52	1.14	1.33
-10	(+14)	456	115	134	87	0.62	2.61	5.27	1.33	1.54
-5	(+23)	586	148	172	98	0.65	3.37	5.98	1.51	1.75

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]
-35	(-31)	147	37	43	47	0.45	0.83	3.14	0.79	0.92
-30	(-22)	220	55	64	56	0.47	1.24	3.91	0.98	1.15
-25	(-13)	306	77	90	65	0.50	1.74	4.69	1.18	1.37
-20	(- 4)	409	103	120	74	0.53	2.33	5.52	1.39	1.62
-15	(+ 5)	532	134	156	82	0.55	3.04	6.43	1.62	1.88
-10	(+14)	679	171	199	91	0.58	3.89	7.44	1.88	2.18
-5	(+23)	852	215	250	99	0.61	4.90	8.59	2.17	2.52

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]
-35	(-31)	110	28	32	46	0.44	0.62	2.37	0.60	0.69
-30	(-22)	181	46	53	56	0.47	1.03	3.22	0.81	0.94
-25	(-13)	265	67	78	66	0.50	1.51	4.02	1.01	1.18
-20	(- 4)	365	92	107	77	0.53	2.08	4.79	1.21	1.40
-15	(+ 5)	485	122	142	87	0.57	2.77	5.56	1.40	1.63
-10	(+14)	627	158	184	98	0.61	3.59	6.36	1.60	1.86
-5	(+23)	795	200	233	110	0.65	4.58	7.23	1.82	2.12

E - PERFORMANCE - CURVES

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)	56	14	16	39	0.43	0.32	1.44	0.36	0.42
-30	(-22)	128	32	38	51	0.45	0.73	2.47	0.62	0.72
-25	(-13)	213	54	62	63	0.48	1.21	3.37	0.85	0.99
-20	(- 4)	313	79	92	75	0.52	1.78	4.17	1.05	1.22
-15	(+ 5)	432	109	127	88	0.57	2.47	4.90	1.24	1.44
-10	(+14)	574	145	168	103	0.62	3.29	5.59	1.41	1.64
-5	(+23)	740	186	217	118	0.68	4.25	6.27	1.58	1.84

F - EXTERNAL CHARACTERISTICS

1 Base plate	NEW BASE PLATE		
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	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		