

COMPRESSOR DEFINITION

Designation	EM IS30HHR
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513305020

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low-Medium-High Back Pressure		
4.1 Evaporating temperature range	-35°C to 15°C	(-31°F to 59°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	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	-	103 to 140 V
8.3 HBP (32°C Ambient temperature)	Fan	-	103 to 140 V
8.4 HBP (43°C Ambient temperature)	Fan	-	103 to 140 V
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.00	[cm ³] (0.183 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.600	
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)	6.77	[kg] (14.93 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	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514091/213515003	
3 Start capacitor	88-108(150)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	MRA58130-5590	
6 Start winding resistance	14.15	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	6.55	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	16.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.99	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.23	[A] - Measured according to UL 984
11 Approval boards certification	TUV - UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @127V60Hz			ASHRAEHBP32 Fan		Evaporating temperature (Condensing temperature)		7.2°C (44.96°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]	
1480	373	434	164	1.83		9.03	2.28	2.65	

TEST CONDITIONS: @127V60Hz			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	97	1.50	1.93	3.51	0.88	1.03	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz			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)	191	48	56	64	1.27	1.08	2.98	0.75	0.87
-30 (-22)	260	65	76	72	1.30	1.48	3.57	0.90	1.04
-25 (-13)	345	87	101	82	1.34	1.96	4.21	1.06	1.23
-20 (- 4)	451	114	132	91	1.39	2.57	4.93	1.24	1.44
-15 (+ 5)	581	146	170	101	1.44	3.31	5.74	1.45	1.68
-10 (+14)	737	186	216	111	1.49	4.22	6.66	1.68	1.95
-5 (+23)	922	232	270	120	1.54	5.30	7.69	1.94	2.25
0 (+32)	1141	288	334	129	1.60	6.60	8.86	2.23	2.60
+5 (+41)	1396	352	409	138	1.65	8.13	10.19	2.57	2.99
+10 (+50)	1690	426	495	145	1.70	9.91	11.68	2.94	3.42
+15 (+59)	2027	511	594	151	1.75	11.96	13.35	3.36	3.91

TEST CONDITIONS: @127V60Hz			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)	158	40	46	64	1.28	0.89	2.52	0.64	0.74
-30 (-22)	226	57	66	72	1.31	1.29	3.14	0.79	0.92
-25 (-13)	311	78	91	82	1.35	1.77	3.77	0.95	1.11
-20 (- 4)	415	105	122	93	1.39	2.36	4.45	1.12	1.30
-15 (+ 5)	542	137	159	104	1.45	3.09	5.17	1.30	1.52
-10 (+14)	696	175	204	116	1.51	3.98	5.97	1.50	1.75
-5 (+23)	878	221	257	127	1.58	5.05	6.85	1.73	2.01
0 (+32)	1092	275	320	139	1.65	6.32	7.83	1.97	2.29
+5 (+41)	1342	338	393	151	1.73	7.81	8.92	2.25	2.61
+10 (+50)	1630	411	478	161	1.81	9.56	10.14	2.55	2.97
+15 (+59)	1961	494	575	171	1.89	11.57	11.50	2.90	3.37

E - PERFORMANCE - CURVES

TEST CONDITIONS: @127V60Hz		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)	116	29	34	60	1.28	0.65	1.99	0.50	0.58
-30	(-22)	182	46	53	70	1.30	1.03	2.64	0.67	0.77
-25	(-13)	263	66	77	80	1.34	1.50	3.28	0.83	0.96
-20	(- 4)	363	92	106	93	1.39	2.07	3.92	0.99	1.15
-15	(+ 5)	485	122	142	106	1.45	2.77	4.58	1.15	1.34
-10	(+14)	633	159	185	120	1.53	3.62	5.27	1.33	1.54
-5	(+23)	809	204	237	134	1.62	4.65	6.00	1.51	1.76
0	(+32)	1016	256	298	149	1.71	5.87	6.80	1.71	1.99
+5	(+41)	1258	317	369	164	1.82	7.32	7.67	1.93	2.25
+10	(+50)	1538	388	451	178	1.93	9.02	8.63	2.17	2.53
+15	(+59)	1859	469	545	192	2.05	10.98	9.70	2.44	2.84

TEST CONDITIONS: @127V60Hz		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)	89	22	26	56	1.26	0.50	1.48	0.37	0.43
-30	(-22)	149	37	44	66	1.28	0.85	2.18	0.55	0.64
-25	(-13)	224	56	66	78	1.32	1.28	2.84	0.72	0.83
-20	(- 4)	317	80	93	92	1.38	1.80	3.46	0.87	1.01
-15	(+ 5)	431	109	126	108	1.46	2.46	4.06	1.02	1.19
-10	(+14)	570	144	167	124	1.56	3.26	4.65	1.17	1.36
-5	(+23)	737	186	216	142	1.66	4.23	5.25	1.32	1.54
0	(+32)	935	235	274	160	1.79	5.40	5.87	1.48	1.72
+5	(+41)	1166	294	342	179	1.92	6.78	6.53	1.65	1.91
+10	(+50)	1435	362	421	198	2.07	8.41	7.25	1.83	2.12
+15	(+59)	1744	440	511	217	2.23	10.30	8.03	2.02	2.35

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		