

COMPRESSOR DEFINITION

Designation	EM IS20HHR
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513305071

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	-	-
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	-	-
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	1/12	[hp]
2 Displacement	2.27	[cm ³] (0.139 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	8.000	
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	213514180/213515011	
3 Start capacitor	161-193(150)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	DRB180K61A*F	
6 Start winding resistance	18.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.80	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	11.62	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.43	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.58	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	132	33	39	50	1.13	0.75	2.62	0.66	0.77
-30	(-22)	183	46	54	58	1.13	1.04	3.16	0.80	0.92
-25	(-13)	250	63	73	65	1.15	1.42	3.77	0.95	1.11
-20	(- 4)	334	84	98	73	1.17	1.90	4.50	1.13	1.32
-15	(+ 5)	439	111	129	81	1.19	2.50	5.38	1.36	1.58
-10	(+14)	566	143	166	88	1.22	3.24	6.44	1.62	1.89
-5	(+23)	717	181	210	94	1.25	4.12	7.71	1.94	2.26
0	(+32)	895	225	262	99	1.27	5.17	9.22	2.32	2.70
+5	(+41)	1101	277	323	102	1.29	6.41	11.01	2.78	3.23
+10	(+50)	1338	337	392	103	1.30	7.84	13.11	3.30	3.84
+15	(+59)	1608	405	471	102	1.30	9.49	15.56	3.92	4.56

TEST CONDITIONS: @115V60Hz		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)	95	24	28	54	1.14	0.54	1.83	0.46	0.54
-30	(-22)	148	37	43	60	1.14	0.84	2.49	0.63	0.73
-25	(-13)	215	54	63	68	1.16	1.22	3.16	0.80	0.93
-20	(- 4)	298	75	87	76	1.18	1.70	3.88	0.98	1.14
-15	(+ 5)	400	101	117	84	1.21	2.28	4.68	1.18	1.37
-10	(+14)	523	132	153	92	1.24	2.99	5.59	1.41	1.64
-5	(+23)	669	169	196	99	1.27	3.85	6.65	1.67	1.95
0	(+32)	840	212	246	106	1.31	4.86	7.88	1.98	2.31
+5	(+41)	1039	262	304	112	1.34	6.05	9.31	2.35	2.73
+10	(+50)	1267	319	371	116	1.36	7.42	10.99	2.77	3.22
+15	(+59)	1526	385	447	119	1.38	9.01	12.95	3.26	3.79

TEST CONDITIONS: @115V60Hz		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)	53	13	16	57	1.16	0.30	0.97	0.24	0.28
-30	(-22)	108	27	32	63	1.16	0.61	1.80	0.45	0.53
-25	(-13)	175	44	51	69	1.17	1.00	2.58	0.65	0.76
-20	(- 4)	257	65	75	77	1.19	1.46	3.34	0.84	0.98
-15	(+ 5)	356	90	104	86	1.22	2.03	4.11	1.04	1.20
-10	(+14)	475	120	139	95	1.26	2.72	4.92	1.24	1.44
-5	(+23)	616	155	180	104	1.30	3.54	5.80	1.46	1.70
0	(+32)	780	197	229	113	1.34	4.51	6.80	1.71	1.99
+5	(+41)	970	244	284	121	1.38	5.65	7.93	2.00	2.32
+10	(+50)	1188	299	348	129	1.42	6.96	9.24	2.33	2.71
+15	(+59)	1437	362	421	135	1.46	8.48	10.75	2.71	3.15

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	8	2	2	60	1.18	0.04	- 0.02	- 0.01	- 0.01
-30	(-22)	63	16	19	64	1.17	0.36	1.03	0.26	0.30
-25	(-13)	130	33	38	71	1.18	0.74	1.97	0.50	0.58
-20	(- 4)	211	53	62	79	1.21	1.20	2.81	0.71	0.82
-15	(+ 5)	307	77	90	88	1.24	1.75	3.59	0.91	1.05
-10	(+14)	421	106	123	98	1.28	2.41	4.35	1.10	1.28
-5	(+23)	556	140	163	109	1.33	3.19	5.12	1.29	1.50
0	(+32)	713	180	209	120	1.38	4.12	5.92	1.49	1.73
+5	(+41)	895	225	262	131	1.43	5.20	6.80	1.71	1.99
+10	(+50)	1103	278	323	141	1.48	6.46	7.78	1.96	2.28
+15	(+59)	1340	338	393	150	1.53	7.91	8.89	2.24	2.61

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	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Straight		
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		