

### COMPRESSOR DEFINITION

Designation	<b>EM IS70HHR</b>
Nominal Voltage/Frequency	<b>115-127 V 60 Hz</b>
Engineering Number	<b>513305029</b>

### 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)	Fan	-	103 to 140 V
8.2 LBP (43°C Ambient temperature)	Fan	-	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 <sup>2</sup> ] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	5.96	[cm <sup>3</sup> ] (0.364 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.26	[kg] (16.01 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	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514067/213515250	
3 Start capacitor	270-324(150)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM762PFBZZ-53	
6 Start winding resistance	8.20	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.00	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	28.20	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.44	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.92	[A] - Measured according to UL 984
11 Approval boards certification	TUV - UL	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]	
2870	723	841	304	3.33		9.44	2.38	2.77	

TEST CONDITIONS: @115V60Hz			ASHRAELBP32 Fan		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]	
693	175	203	151	2.36	3.94	4.58	1.15	1.34	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz			ASHRAE32 Fan		(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)	407	103	119	102	2.19	2.30	3.97	1.00	1.16	
-30 (-22)	553	139	162	116	2.23	3.15	4.75	1.20	1.39	
-25 (-13)	730	184	214	131	2.28	4.15	5.60	1.41	1.64	
-20 (- 4)	945	238	277	145	2.34	5.38	6.51	1.64	1.91	
-15 (+ 5)	1205	304	353	161	2.41	6.87	7.48	1.88	2.19	
-10 (+14)	1518	383	445	178	2.50	8.69	8.50	2.14	2.49	
-5 (+23)	1890	476	554	196	2.61	10.87	9.59	2.42	2.81	
0 (+32)	2330	587	683	216	2.74	13.47	10.72	2.70	3.14	
+5 (+41)	2844	717	833	238	2.90	16.56	11.90	3.00	3.49	
+10 (+50)	3440	867	1008	262	3.08	20.16	13.14	3.31	3.85	
+15 (+59)	4124	1039	1208	288	3.30	24.34	14.42	3.63	4.22	

TEST CONDITIONS: @115V60Hz			ASHRAE32 Fan		(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)	368	93	108	105	2.21	2.08	3.56	0.90	1.04	
-30 (-22)	512	129	150	121	2.25	2.91	4.26	1.07	1.25	
-25 (-13)	687	173	201	137	2.31	3.91	5.02	1.26	1.47	
-20 (- 4)	898	226	263	155	2.38	5.11	5.82	1.47	1.70	
-15 (+ 5)	1153	291	338	173	2.47	6.57	6.67	1.68	1.95	
-10 (+14)	1459	368	428	193	2.57	8.35	7.56	1.90	2.21	
-5 (+23)	1824	460	535	214	2.70	10.49	8.49	2.14	2.49	
0 (+32)	2255	568	661	237	2.85	13.04	9.46	2.38	2.77	
+5 (+41)	2759	695	808	262	3.03	16.06	10.47	2.64	3.07	
+10 (+50)	3343	842	980	289	3.25	19.59	11.52	2.90	3.37	
+15 (+59)	4015	1012	1176	319	3.49	23.70	12.59	3.17	3.69	

### E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@115V60Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	326	82	96	104	2.21	1.84	3.16	0.80	0.92
-30	(-22)	467	118	137	123	2.27	2.66	3.80	0.96	1.11
-25	(-13)	636	160	186	142	2.34	3.62	4.48	1.13	1.31
-20	(- 4)	841	212	246	162	2.43	4.79	5.20	1.31	1.52
-15	(+ 5)	1089	274	319	184	2.53	6.21	5.95	1.50	1.74
-10	(+14)	1386	349	406	207	2.66	7.93	6.73	1.70	1.97
-5	(+23)	1741	439	510	231	2.81	10.01	7.54	1.90	2.21
0	(+32)	2161	545	633	258	2.99	12.49	8.37	2.11	2.45
+5	(+41)	2652	668	777	287	3.20	15.43	9.23	2.33	2.70
+10	(+50)	3222	812	944	318	3.45	18.89	10.11	2.55	2.96
+15	(+59)	3879	977	1137	352	3.74	22.90	11.00	2.77	3.22

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@115V60Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	274	69	80	100	2.17	1.55	2.67	0.67	0.78
-30	(-22)	409	103	120	121	2.25	2.33	3.28	0.83	0.96
-25	(-13)	571	144	167	144	2.34	3.25	3.91	0.99	1.15
-20	(- 4)	767	193	225	168	2.45	4.37	4.56	1.15	1.34
-15	(+ 5)	1004	253	294	193	2.58	5.73	5.24	1.32	1.53
-10	(+14)	1291	325	378	220	2.74	7.38	5.93	1.49	1.74
-5	(+23)	1633	412	479	248	2.93	9.38	6.63	1.67	1.94
0	(+32)	2039	514	597	279	3.14	11.78	7.35	1.85	2.15
+5	(+41)	2515	634	737	312	3.39	14.63	8.08	2.04	2.37
+10	(+50)	3069	773	899	348	3.68	17.99	8.82	2.22	2.58
+15	(+59)	3708	934	1087	387	4.01	21.89	9.56	2.41	2.80

### 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	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		