

### COMPRESSOR DEFINITION

Designation	EM R70HLR
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513400005

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 60	[ V / Hz ]	
4 Application type	Low-Medium (Plus) Back Pressure		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	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 242 V
8.2 LBP (43°C Ambient temperature)	-	-	-
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	1/5	[hp]
2 Displacement	5.75	[cm <sup>3</sup> ] (0.351 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	16.600	
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)	7.44	[kg] (16.40 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 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213515005	
3 Start capacitor	88-108(180)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM739LDBYY-53	
6 Start winding resistance	33.65	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	15.83	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

### D - PERFORMANCE - CHECK POINT DATA

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]
647	163	190	125	0.81	3.68	5.18	1.31	1.52

TEST CONDITIONS: @220V60Hz			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]
662	167	194	126	0.81	3.76	5.26	1.33	1.54

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz			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)	388	98	114	85	0.70	2.19	4.53	1.14	1.33
-30 (-22)	528	133	155	98	0.73	2.99	5.38	1.36	1.58
-25 (-13)	699	176	205	113	0.78	3.97	6.26	1.58	1.83
-20 (- 4)	907	229	266	127	0.83	5.16	7.18	1.81	2.11
-15 (+ 5)	1160	292	340	142	0.89	6.62	8.18	2.06	2.40
-10 (+14)	1463	369	429	158	0.95	8.38	9.27	2.34	2.72
-5 (+23)	1825	460	535	174	1.01	10.50	10.48	2.64	3.07
0 (+32)	2251	567	660	190	1.07	13.02	11.83	2.98	3.47

TEST CONDITIONS: @220V60Hz			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)	340	86	100	85	0.70	1.93	4.00	1.01	1.17
-30 (-22)	483	122	141	100	0.74	2.74	4.80	1.21	1.41
-25 (-13)	653	165	191	117	0.80	3.71	5.59	1.41	1.64
-20 (- 4)	857	216	251	135	0.86	4.88	6.38	1.61	1.87
-15 (+ 5)	1103	278	323	153	0.93	6.29	7.20	1.81	2.11
-10 (+14)	1396	352	409	172	1.01	8.00	8.08	2.04	2.37
-5 (+23)	1745	440	511	192	1.09	10.04	9.03	2.27	2.64
0 (+32)	2155	543	631	213	1.18	12.46	10.07	2.54	2.95

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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)	277	70	81	80	0.70	1.56	3.46	0.87	1.01
-30	(-22)	423	107	124	98	0.74	2.40	4.27	1.08	1.25
-25	(-13)	595	150	174	118	0.80	3.38	5.02	1.26	1.47
-20	(- 4)	797	201	234	139	0.87	4.54	5.73	1.44	1.68
-15	(+ 5)	1038	261	304	162	0.95	5.92	6.43	1.62	1.88
-10	(+14)	1323	333	388	185	1.05	7.58	7.14	1.80	2.09
-5	(+23)	1660	418	486	210	1.16	9.55	7.89	1.99	2.31
0	(+32)	2056	518	602	236	1.27	11.89	8.69	2.19	2.55

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(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)	188	47	55	69	0.68	1.06	2.78	0.70	0.81
-30	(-22)	341	86	100	91	0.73	1.93	3.65	0.92	1.07
-25	(-13)	515	130	151	115	0.80	2.93	4.41	1.11	1.29
-20	(- 4)	717	181	210	140	0.88	4.08	5.10	1.28	1.49
-15	(+ 5)	955	241	280	167	0.98	5.45	5.73	1.44	1.68
-10	(+14)	1234	311	362	196	1.10	7.07	6.33	1.59	1.85
-5	(+23)	1562	394	458	226	1.23	8.98	6.92	1.74	2.03
0	(+32)	1945	490	570	258	1.37	11.25	7.53	1.90	2.21

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
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		