

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 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	1/5	[hp]
2 Displacement	5.75	[cm ³] (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 ²] (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 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)	392	99	115	90	0.72	2.22	4.42	1.11	1.29
-30	(-22)	319	80	93	74	0.61	1.78	4.64	1.17	1.36
-25	(-13)	555	140	163	90	0.67	3.14	5.91	1.49	1.73
-20	(- 4)	951	240	279	123	0.82	5.42	7.61	1.92	2.23
-15	(+ 5)	1355	341	397	158	0.97	7.76	9.10	2.29	2.67
-10	(+14)	1618	408	474	178	1.05	9.28	9.77	2.46	2.86
-5	(+23)	1589	400	466	169	0.97	9.13	8.98	2.26	2.63
0	(+32)	1118	282	328	114	0.65	6.43	6.10	1.54	1.79

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]	[W/W]
-35	(-31)	357	90	105	87	0.72	2.02	3.98	1.00	1.17
-30	(-22)	267	67	78	78	0.62	1.49	3.92	0.99	1.15
-25	(-13)	492	124	144	99	0.70	2.77	4.98	1.26	1.46
-20	(- 4)	881	222	258	135	0.86	5.02	6.56	1.65	1.92
-15	(+ 5)	1285	324	377	172	1.03	7.36	8.03	2.02	2.35
-10	(+14)	1553	391	455	192	1.11	8.91	8.74	2.20	2.56
-5	(+23)	1536	387	450	181	1.02	8.83	8.09	2.04	2.37
0	(+32)	1082	273	317	123	0.68	6.23	5.45	1.37	1.60

E - PERFORMANCE - CURVES

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]	[W/W]
-35	(-31)	310	78	91	80	0.70	1.76	3.61	0.91	1.06
-30	(-22)	205	52	60	78	0.63	1.13	3.26	0.82	0.96
-25	(-13)	420	106	123	105	0.73	2.37	4.14	1.04	1.21
-20	(- 4)	805	203	236	146	0.91	4.59	5.61	1.41	1.64
-15	(+ 5)	1211	305	355	184	1.08	6.93	7.06	1.78	2.07
-10	(+14)	1487	375	436	205	1.16	8.53	7.84	1.98	2.30
-5	(+23)	1483	374	434	193	1.07	8.52	7.35	1.85	2.15
0	(+32)	1048	264	307	131	0.72	6.03	4.94	1.25	1.45

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)	236	60	69	68	0.66	1.34	3.19	0.80	0.94
-30	(-22)	118	30	35	74	0.62	0.64	2.58	0.65	0.76
-25	(-13)	325	82	95	107	0.74	1.83	3.28	0.83	0.96
-20	(- 4)	709	179	208	152	0.93	4.04	4.67	1.18	1.37
-15	(+ 5)	1119	282	328	194	1.11	6.41	6.11	1.54	1.79
-10	(+14)	1404	354	412	216	1.20	8.06	6.98	1.76	2.04
-5	(+23)	1415	357	415	202	1.10	8.14	6.65	1.68	1.95
0	(+32)	1002	252	294	139	0.75	5.77	4.50	1.13	1.32

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		