

COMPRESSOR DEFINITION

Designation	EM R70HLR
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513400004

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 (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)	-	-	-
8.2 LBP (43°C Ambient temperature)	Static	-	103 to 140 V
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)	7.46	[kg] (16.45 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	213515007	
3 Start capacitor	233-280(111)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	DRB230M61B*F	
6 Start winding resistance	8.12	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.61	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	20.20	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.45	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.83	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

D - PERFORMANCE - CHECK POINT DATA

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]	
665	168	195	129	1.80	3.78	5.16	1.30	1.51	

TEST CONDITIONS: @127V60Hz			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]	
679	171	199	129	1.80	3.86	5.26	1.33	1.54	

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)	394	99	115	94	1.75	2.23	4.20	1.06	1.23
-30	(-22)	314	79	92	79	1.52	1.76	4.39	1.11	1.28
-25	(-13)	561	141	164	95	1.60	3.17	5.76	1.45	1.69
-20	(- 4)	976	246	286	127	1.85	5.57	7.64	1.92	2.24
-15	(+ 5)	1402	353	411	159	2.10	8.03	9.33	2.35	2.73
-10	(+14)	1681	424	493	178	2.19	9.65	10.16	2.56	2.98
-5	(+23)	1655	417	485	168	1.98	9.51	9.42	2.37	2.76
0	(+32)	1167	294	342	113	1.31	6.71	6.43	1.62	1.89

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)	365	92	107	93	1.74	2.07	3.82	0.96	1.12
-30	(-22)	265	67	78	84	1.54	1.47	3.69	0.93	1.08
-25	(-13)	496	125	145	104	1.64	2.80	4.84	1.22	1.42
-20	(- 4)	903	228	265	138	1.90	5.15	6.59	1.66	1.93
-15	(+ 5)	1327	335	389	172	2.16	7.60	8.25	2.08	2.42
-10	(+14)	1611	406	472	191	2.26	9.25	9.13	2.30	2.67
-5	(+23)	1597	402	468	178	2.04	9.18	8.53	2.15	2.50
0	(+32)	1127	284	330	120	1.35	6.48	5.78	1.46	1.69

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)	328	83	96	89	1.72	1.86	3.50	0.88	1.03
-30	(-22)	207	52	61	86	1.55	1.15	3.07	0.77	0.90
-25	(-13)	425	107	125	110	1.67	2.40	4.02	1.01	1.18
-20	(- 4)	825	208	242	148	1.95	4.70	5.65	1.42	1.65
-15	(+ 5)	1249	315	366	184	2.21	7.15	7.28	1.83	2.13
-10	(+14)	1539	388	451	202	2.31	8.84	8.22	2.07	2.41
-5	(+23)	1538	388	451	189	2.09	8.84	7.78	1.96	2.28
0	(+32)	1088	274	319	128	1.38	6.26	5.27	1.33	1.54

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)	279	70	82	81	1.70	1.58	3.20	0.81	0.94
-30	(-22)	139	35	41	84	1.55	0.76	2.48	0.63	0.73
-25	(-13)	345	87	101	114	1.70	1.94	3.23	0.81	0.95
-20	(- 4)	739	186	217	155	1.99	4.21	4.75	1.20	1.39
-15	(+ 5)	1165	293	341	193	2.27	6.67	6.36	1.60	1.86
-10	(+14)	1463	369	429	212	2.37	8.39	7.37	1.86	2.16
-5	(+23)	1476	372	432	198	2.14	8.48	7.10	1.79	2.08
0	(+32)	1047	264	307	134	1.42	6.02	4.85	1.22	1.42

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal AMEM		
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		