

COMPRESSOR DEFINITION

Designation	EM R80HLR
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513400001

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)	-	-	-
8.2 LBP (43°C Ambient temperature)	Static	-	198 to 242 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	1/4+	[hp]
2 Displacement	6.60	[cm ³] (0.403 cu.in)
2.1 Bore [mm]	22.500	
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 - ELECTRICAL 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(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM743KDBYY-53	
6 Start winding resistance	26.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	13.50	[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	CE - IMTRO - TUV - UKCA	

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 (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
757	191	222	148	1.05	4.30	5.11	1.29	1.50

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Fan		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
781	197	229	148	1.05	4.44	5.27	1.33	1.54

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	455	115	133	100	0.92	2.57	4.54	1.14	1.33
-30	(-22)	621	157	182	113	0.96	3.52	5.48	1.38	1.60
-25	(-13)	822	207	241	129	1.00	4.67	6.39	1.61	1.87
-20	(- 4)	1065	268	312	146	1.05	6.06	7.34	1.85	2.15
-15	(+ 5)	1358	342	398	163	1.10	7.75	8.34	2.10	2.44
-10	(+14)	1709	431	501	181	1.16	9.79	9.45	2.38	2.77
-5	(+23)	2126	536	623	198	1.22	12.23	10.70	2.70	3.14
0	(+32)	2618	660	767	215	1.28	15.12	12.14	3.06	3.56

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	408	103	120	107	0.94	2.31	3.83	0.96	1.12
-30	(-22)	573	144	168	120	0.97	3.25	4.77	1.20	1.40
-25	(-13)	770	194	226	136	1.02	4.37	5.64	1.42	1.65
-20	(- 4)	1006	253	295	155	1.07	5.72	6.49	1.64	1.90
-15	(+ 5)	1290	325	378	175	1.14	7.36	7.36	1.85	2.16
-10	(+14)	1629	411	477	197	1.22	9.33	8.27	2.08	2.42
-5	(+23)	2032	512	596	219	1.30	11.69	9.28	2.34	2.72
0	(+32)	2507	632	735	242	1.39	14.49	10.42	2.63	3.05

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	348	88	102	113	0.96	1.97	3.10	0.78	0.91
-30	(-22)	512	129	150	125	0.99	2.90	4.09	1.03	1.20
-25	(-13)	705	178	207	142	1.03	4.00	4.96	1.25	1.45
-20	(- 4)	936	236	274	162	1.10	5.32	5.75	1.45	1.68
-15	(+ 5)	1211	305	355	186	1.18	6.91	6.51	1.64	1.91
-10	(+14)	1540	388	451	212	1.27	8.82	7.26	1.83	2.13
-5	(+23)	1931	487	566	240	1.38	11.11	8.07	2.03	2.36
0	(+32)	2390	602	700	269	1.50	13.81	8.95	2.26	2.62

TEST CONDITIONS: @220V60Hz		ASHRAE32 Fan			(Condensing temperature 65°C (+149°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	273	69	80	117	0.98	1.55	2.32	0.59	0.68
-30	(-22)	438	110	128	129	1.00	2.48	3.39	0.85	0.99
-25	(-13)	629	158	184	147	1.05	3.57	4.29	1.08	1.26
-20	(- 4)	855	215	250	169	1.12	4.86	5.06	1.28	1.48
-15	(+ 5)	1123	283	329	196	1.21	6.41	5.75	1.45	1.68
-10	(+14)	1443	364	423	226	1.33	8.26	6.39	1.61	1.87
-5	(+23)	1821	459	534	259	1.46	10.47	7.02	1.77	2.06
0	(+32)	2266	571	664	295	1.61	13.09	7.68	1.94	2.25

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal AMEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +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		