

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 Static			(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)	430	108	126	97	0.92	2.43	4.42	1.11	1.30
-30	(-22)	591	149	173	112	0.95	3.35	5.29	1.33	1.55
-25	(-13)	785	198	230	128	0.99	4.46	6.17	1.55	1.81
-20	(- 4)	1022	258	300	144	1.04	5.82	7.10	1.79	2.08
-15	(+ 5)	1311	330	384	162	1.09	7.49	8.11	2.04	2.38
-10	(+14)	1661	419	487	180	1.15	9.52	9.25	2.33	2.71
-5	(+23)	2082	525	610	197	1.22	11.98	10.54	2.66	3.09
0	(+32)	2583	651	757	215	1.30	14.92	12.03	3.03	3.53

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(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)	395	99	116	103	0.94	2.23	3.82	0.96	1.12
-30	(-22)	554	140	162	118	0.97	3.14	4.67	1.18	1.37
-25	(-13)	743	187	218	135	1.01	4.22	5.48	1.38	1.61
-20	(- 4)	971	245	285	154	1.06	5.53	6.29	1.58	1.84
-15	(+ 5)	1248	314	366	175	1.13	7.12	7.12	1.80	2.09
-10	(+14)	1582	399	464	197	1.21	9.07	8.03	2.02	2.35
-5	(+23)	1984	500	581	220	1.30	11.41	9.04	2.28	2.65
0	(+32)	2462	620	722	244	1.40	14.22	10.19	2.57	2.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(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)	339	85	99	109	0.96	1.92	3.13	0.79	0.92
-30	(-22)	498	125	146	123	0.99	2.82	4.03	1.01	1.18
-25	(-13)	683	172	200	141	1.03	3.88	4.82	1.22	1.41
-20	(- 4)	905	228	265	163	1.09	5.15	5.56	1.40	1.63
-15	(+ 5)	1171	295	343	186	1.17	6.68	6.28	1.58	1.84
-10	(+14)	1492	376	437	213	1.27	8.55	7.01	1.77	2.05
-5	(+23)	1876	473	550	241	1.38	10.79	7.79	1.96	2.28
0	(+32)	2334	588	684	271	1.51	13.48	8.66	2.18	2.54

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(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)	263	66	77	113	0.98	1.49	2.32	0.59	0.68
-30	(-22)	423	107	124	127	1.00	2.40	3.31	0.83	0.97
-25	(-13)	607	153	178	146	1.05	3.45	4.15	1.05	1.22
-20	(- 4)	823	207	241	169	1.12	4.68	4.88	1.23	1.43
-15	(+ 5)	1081	272	317	196	1.21	6.17	5.53	1.39	1.62
-10	(+14)	1390	350	407	227	1.32	7.96	6.14	1.55	1.80
-5	(+23)	1759	443	516	260	1.45	10.12	6.75	1.70	1.98
0	(+32)	2198	554	644	297	1.60	12.70	7.39	1.86	2.17

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		