

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 - 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(158)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM743KDBYY-53	
6 Start winding resistance	26.40	[Ωat 25°C (77°F)] +/- 8%
7 Run winding resistance	13.50	[Ωat 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	10.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.59	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.79	[A] - Measured according to UL 984
11 Approval boards certification	IMTRO - 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]
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 +/- 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]
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 +/- 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)	452	114	132	105	0.96	2.56	4.37	1.10	1.28
-30	(-22)	371	93	109	86	0.81	2.07	4.63	1.17	1.36
-25	(-13)	649	164	190	104	0.87	3.67	5.95	1.50	1.74
-20	(- 4)	1112	280	326	142	1.04	6.34	7.70	1.94	2.26
-15	(+ 5)	1584	399	464	182	1.21	9.07	9.24	2.33	2.71
-10	(+14)	1890	476	554	206	1.29	10.85	9.93	2.50	2.91
-5	(+23)	1856	468	544	195	1.18	10.67	9.13	2.30	2.68
0	(+32)	1307	329	383	132	0.78	7.52	6.22	1.57	1.82

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)	431	109	126	109	0.97	2.44	3.86	0.97	1.13
-30	(-22)	325	82	95	95	0.84	1.81	3.86	0.97	1.13
-25	(-13)	585	147	171	116	0.91	3.30	5.00	1.26	1.47
-20	(- 4)	1037	261	304	157	1.08	5.91	6.65	1.68	1.95
-15	(+ 5)	1506	380	441	198	1.26	8.62	8.16	2.06	2.39
-10	(+14)	1817	458	532	221	1.34	10.43	8.91	2.24	2.61
-5	(+23)	1795	452	526	208	1.23	10.32	8.25	2.08	2.42
0	(+32)	1265	319	371	141	0.82	7.28	5.56	1.40	1.63

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)	388	98	114	111	0.98	2.20	3.33	0.84	0.98
-30	(-22)	259	65	76	102	0.87	1.44	3.09	0.78	0.91
-25	(-13)	504	127	148	128	0.95	2.84	4.07	1.03	1.19
-20	(- 4)	948	239	278	170	1.13	5.40	5.64	1.42	1.65
-15	(+ 5)	1416	357	415	212	1.31	8.11	7.15	1.80	2.09
-10	(+14)	1734	437	508	235	1.39	9.95	7.98	2.01	2.34
-5	(+23)	1726	435	506	220	1.27	9.92	7.48	1.89	2.19
0	(+32)	1218	307	357	150	0.85	7.01	5.03	1.27	1.47

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)	324	82	95	112	0.99	1.84	2.75	0.69	0.81
-30	(-22)	174	44	51	108	0.89	0.96	2.29	0.58	0.67
-25	(-13)	406	102	119	138	0.99	2.28	3.13	0.79	0.92
-20	(- 4)	845	213	247	183	1.18	4.81	4.64	1.17	1.36
-15	(+ 5)	1315	331	385	225	1.36	7.53	6.17	1.56	1.81
-10	(+14)	1642	414	481	248	1.44	9.42	7.10	1.79	2.08
-5	(+23)	1650	416	484	231	1.31	9.49	6.79	1.71	1.99
0	(+32)	1167	294	342	158	0.88	6.71	4.60	1.16	1.35

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		

