

COMPRESSOR DEFINITION

Designation	EM R100HLC
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	513400002

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50-60	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	RSCR		
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/Fan	198 to 255 V	198 to 255 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	1/3	[hp]
2 Displacement	8.41	[cm ³] (0.513 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	18.600	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.96	[kg] (17.55 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	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(450)	[µF(VAC minimum)]
5 Motor protection	4TM319KFBYY-53	
6 Start winding resistance	20.04	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.89	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
822	207	241	159	0.95	4.67	5.16	1.30	1.51

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]
977	246	286	178	0.84	5.55	5.48	1.38	1.61

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	472	119	138	108	0.77	2.67	4.35	1.10	1.28
-30	(-22)	683	172	200	126	0.81	3.87	5.37	1.35	1.57
-25	(-13)	906	228	266	144	0.86	5.15	6.29	1.58	1.84
-20	(- 4)	1158	292	339	162	0.92	6.59	7.20	1.81	2.11
-15	(+ 5)	1453	366	426	180	0.99	8.30	8.17	2.06	2.39
-10	(+14)	1809	456	530	196	1.06	10.36	9.26	2.33	2.71
-5	(+23)	2240	564	656	212	1.13	12.89	10.57	2.66	3.10
0	(+32)	2762	696	809	226	1.20	15.97	12.15	3.06	3.56

TEST CONDITIONS: @220V50Hz		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)	427	108	125	109	0.77	2.41	3.91	0.98	1.14
-30	(-22)	628	158	184	128	0.81	3.56	4.84	1.22	1.42
-25	(-13)	843	212	247	149	0.87	4.79	5.66	1.43	1.66
-20	(- 4)	1087	274	318	170	0.95	6.18	6.43	1.62	1.88
-15	(+ 5)	1375	347	403	191	1.04	7.85	7.22	1.82	2.11
-10	(+14)	1724	435	505	212	1.13	9.88	8.11	2.04	2.38
-5	(+23)	2149	542	630	234	1.22	12.37	9.17	2.31	2.69
0	(+32)	2667	672	781	256	1.31	15.41	10.47	2.64	3.07

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	372	94	109	105	0.77	2.10	3.52	0.89	1.03
-30	(-22)	563	142	165	126	0.82	3.19	4.43	1.12	1.30
-25	(-13)	769	194	225	148	0.89	4.37	5.19	1.31	1.52
-20	(- 4)	1004	253	294	172	0.97	5.71	5.86	1.48	1.72
-15	(+ 5)	1285	324	376	197	1.07	7.33	6.53	1.65	1.91
-10	(+14)	1627	410	477	223	1.18	9.32	7.26	1.83	2.13
-5	(+23)	2045	515	599	251	1.30	11.77	8.13	2.05	2.38
0	(+32)	2556	644	749	279	1.42	14.78	9.21	2.32	2.70

TEST CONDITIONS: @220V50Hz		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)	292	74	86	104	0.76	1.65	2.82	0.71	0.83
-30	(-22)	473	119	139	125	0.82	2.68	3.76	0.95	1.10
-25	(-13)	669	169	196	149	0.89	3.80	4.50	1.14	1.32
-20	(- 4)	895	225	262	175	0.99	5.09	5.14	1.29	1.51
-15	(+ 5)	1167	294	342	204	1.11	6.66	5.73	1.44	1.68
-10	(+14)	1501	378	440	235	1.24	8.60	6.35	1.60	1.86
-5	(+23)	1912	482	560	269	1.37	11.00	7.07	1.78	2.07
0	(+32)	2416	609	708	304	1.52	13.97	7.97	2.01	2.34

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)	550	139	161	114	0.55	3.11	4.80	1.21	1.41
-30	(-22)	743	187	218	133	0.63	4.22	5.61	1.41	1.64
-25	(-13)	991	250	290	154	0.72	5.63	6.46	1.63	1.89
-20	(- 4)	1298	327	380	177	0.83	7.39	7.36	1.85	2.16
-15	(+ 5)	1671	421	490	201	0.94	9.54	8.32	2.10	2.44
-10	(+14)	2115	533	620	226	1.06	12.12	9.34	2.35	2.74
-5	(+23)	2636	664	772	253	1.18	15.17	10.43	2.63	3.06
0	(+32)	3239	816	949	279	1.31	18.73	11.60	2.92	3.40

E - PERFORMANCE - CURVES

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)	499	126	146	117	0.56	2.82	4.28	1.08	1.25
-30	(-22)	687	173	201	137	0.65	3.89	5.01	1.26	1.47
-25	(-13)	926	233	271	161	0.76	5.26	5.76	1.45	1.69
-20	(- 4)	1223	308	358	187	0.88	6.96	6.54	1.65	1.92
-15	(+ 5)	1582	399	464	215	1.01	9.03	7.35	1.85	2.15
-10	(+14)	2011	507	589	245	1.15	11.52	8.20	2.07	2.40
-5	(+23)	2514	633	737	276	1.29	14.46	9.10	2.29	2.67
0	(+32)	3097	780	907	309	1.44	17.90	10.05	2.53	2.94

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)	438	110	128	115	0.56	2.48	3.80	0.96	1.11
-30	(-22)	622	157	182	138	0.66	3.53	4.50	1.13	1.32
-25	(-13)	855	215	250	165	0.78	4.85	5.19	1.31	1.52
-20	(- 4)	1142	288	335	194	0.91	6.50	5.89	1.48	1.73
-15	(+ 5)	1491	376	437	226	1.06	8.51	6.59	1.66	1.93
-10	(+14)	1906	480	559	261	1.22	10.92	7.31	1.84	2.14
-5	(+23)	2393	603	701	297	1.39	13.77	8.05	2.03	2.36
0	(+32)	2958	745	867	335	1.57	17.10	8.82	2.22	2.58

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)	366	92	107	112	0.54	2.07	3.28	0.83	0.96
-30	(-22)	548	138	160	137	0.65	3.11	3.98	1.00	1.17
-25	(-13)	776	196	227	166	0.78	4.41	4.65	1.17	1.36
-20	(- 4)	1057	266	310	199	0.93	6.02	5.30	1.34	1.55
-15	(+ 5)	1397	352	409	236	1.10	7.97	5.94	1.50	1.74
-10	(+14)	1801	454	528	275	1.28	10.31	6.56	1.65	1.92
-5	(+23)	2274	573	666	317	1.48	13.08	7.19	1.81	2.11
0	(+32)	2823	711	827	361	1.69	16.32	7.82	1.97	2.29

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	Slanted 42° up + 45° to Back		
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	Slanted parallel BP+24°to Back		
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	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		