

COMPRESSOR DEFINITION

Designation	EM 2S80HLR
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301019

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 Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	RSIR		
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)	Static	-	103 to 140 V
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	1/4+	[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	150	[ml] (5.07 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	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514083	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM762NFBZZ-53	
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)	24.35	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	2.20	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.87	[A] - Measured according to UL 984
11 Approval boards certification	CE - IMTRO - TUV - UKCA	

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]
739	186	217	149	1.97	4.20	4.96	1.25	1.45

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)	425	107	125	97	1.73	2.40	4.37	1.10	1.28
-30	(-22)	582	147	171	113	1.80	3.30	5.15	1.30	1.51
-25	(-13)	777	196	228	130	1.88	4.41	5.98	1.51	1.75
-20	(- 4)	1016	256	298	148	1.96	5.78	6.88	1.73	2.01
-15	(+ 5)	1305	329	382	166	2.05	7.45	7.87	1.98	2.31
-10	(+14)	1651	416	484	184	2.15	9.46	8.98	2.26	2.63

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)	381	96	112	102	1.75	2.16	3.76	0.95	1.10
-30	(-22)	536	135	157	118	1.83	3.04	4.54	1.14	1.33
-25	(-13)	726	183	213	136	1.91	4.12	5.32	1.34	1.56
-20	(- 4)	957	241	280	156	2.00	5.45	6.13	1.54	1.80
-15	(+ 5)	1236	311	362	177	2.11	7.06	6.98	1.76	2.04
-10	(+14)	1569	395	460	199	2.24	8.99	7.89	1.99	2.31

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)	323	81	95	105	1.77	1.83	3.07	0.77	0.90
-30	(-22)	477	120	140	122	1.84	2.70	3.90	0.98	1.14
-25	(-13)	663	167	194	142	1.93	3.77	4.68	1.18	1.37
-20	(- 4)	888	224	260	163	2.04	5.05	5.43	1.37	1.59
-15	(+ 5)	1158	292	339	187	2.17	6.61	6.17	1.56	1.81
-10	(+14)	1479	373	433	213	2.32	8.47	6.94	1.75	2.03

E - PERFORMANCE - CURVES

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)	250	63	73	108	1.79	1.41	2.30	0.58	0.67
-30	(-22)	405	102	119	126	1.86	2.29	3.21	0.81	0.94
-25	(-13)	589	148	173	146	1.96	3.34	4.03	1.01	1.18
-20	(- 4)	809	204	237	170	2.08	4.60	4.76	1.20	1.40
-15	(+ 5)	1071	270	314	197	2.23	6.11	5.44	1.37	1.59
-10	(+14)	1382	348	405	227	2.41	7.91	6.09	1.54	1.79

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EG/F/AMEM Version 2		
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	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 30° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		