

COMPRESSOR DEFINITION

Designation	EM 2S80HLR
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301025

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 pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 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)	7.13	[kg] (15.72 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	IMTRO - TUV	

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]
776	196	227	145	1.89	4.41	5.37	1.35	1.57

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	94	1.68	2.40	4.54	1.14	1.33
-30	(-22)	585	147	171	108	1.74	3.31	5.41	1.36	1.59
-25	(-13)	784	198	230	124	1.80	4.45	6.31	1.59	1.85
-20	(- 4)	1028	259	301	141	1.88	5.85	7.26	1.83	2.13
-15	(+ 5)	1321	333	387	158	1.96	7.54	8.31	2.09	2.43
-10	(+14)	1670	421	489	176	2.05	9.57	9.46	2.38	2.77

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)	391	99	115	96	1.69	2.21	4.04	1.02	1.18
-30	(-22)	549	138	161	114	1.76	3.11	4.86	1.22	1.42
-25	(-13)	743	187	218	132	1.84	4.22	5.66	1.43	1.66
-20	(- 4)	979	247	287	152	1.93	5.57	6.48	1.63	1.90
-15	(+ 5)	1261	318	370	172	2.03	7.20	7.35	1.85	2.15
-10	(+14)	1595	402	468	192	2.15	9.14	8.29	2.09	2.43

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)	321	81	94	91	1.67	1.82	3.48	0.88	1.02
-30	(-22)	485	122	142	113	1.75	2.75	4.29	1.08	1.26
-25	(-13)	682	172	200	135	1.85	3.87	5.06	1.27	1.48
-20	(- 4)	918	231	269	159	1.97	5.22	5.80	1.46	1.70
-15	(+ 5)	1197	302	351	183	2.10	6.83	6.56	1.65	1.92
-10	(+14)	1526	384	447	208	2.25	8.74	7.35	1.85	2.15

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)	215	54	63	79	1.62	1.22	2.76	0.70	0.81
-30	(-22)	393	99	115	106	1.73	2.23	3.64	0.92	1.07
-25	(-13)	602	152	176	134	1.85	3.42	4.43	1.12	1.30
-20	(- 4)	846	213	248	164	2.00	4.81	5.16	1.30	1.51
-15	(+ 5)	1130	285	331	193	2.16	6.45	5.86	1.48	1.72
-10	(+14)	1461	368	428	223	2.34	8.37	6.56	1.65	1.92

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		