

COMPRESSOR DEFINITION

Designation	EM 3Y70HLP
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301623

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	5.96	[cm ³] (0.364 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	15.000	
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)	7.3	[kg] (16.09 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	PTC	
2.1 Starting device	4SP14X 115V	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4SP14/21(U/W)427NFX	
6 Start winding resistance	[Ω at 25°C (77°F)] +/- 8%	
7 Run winding resistance	[Ω at 25°C (77°F)] +/- 8%	
8 LRA - Locked rotor amperage (60 Hz)	17.05	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	3.27	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	3.77	[A] - Measured according to UL 984
11 Approval boards certification	UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V60Hz			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]
765	193	224	134	1.65	4.35	5.73	1.44	1.68

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	423	107	124	86	1.44	2.39	4.92	1.24	1.44
-30 (-22)	586	148	172	101	1.52	3.32	5.84	1.47	1.71
-25 (-13)	767	193	225	114	1.60	4.35	6.75	1.70	1.98
-20 (- 4)	976	246	286	127	1.68	5.56	7.68	1.94	2.25
-15 (+ 5)	1226	309	359	140	1.77	7.00	8.67	2.18	2.54
-10 (+14)	1529	385	448	156	1.88	8.76	9.73	2.45	2.85

TEST CONDITIONS: @115V60Hz		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)	386	97	113	88	1.46	2.18	4.38	1.10	1.28
-30 (-22)	557	140	163	106	1.55	3.16	5.26	1.32	1.54
-25 (-13)	741	187	217	123	1.65	4.21	6.08	1.53	1.78
-20 (- 4)	950	239	278	139	1.76	5.41	6.89	1.74	2.02
-15 (+ 5)	1195	301	350	155	1.87	6.82	7.70	1.94	2.26
-10 (+14)	1488	375	436	173	2.00	8.53	8.56	2.16	2.51

TEST CONDITIONS: @115V60Hz		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)	311	78	91	82	1.43	1.76	3.76	0.95	1.10
-30 (-22)	494	125	145	105	1.55	2.80	4.65	1.17	1.36
-25 (-13)	686	173	201	126	1.67	3.89	5.44	1.37	1.60
-20 (- 4)	898	226	263	147	1.80	5.11	6.18	1.56	1.81
-15 (+ 5)	1143	288	335	167	1.95	6.52	6.90	1.74	2.02
-10 (+14)	1431	361	419	188	2.11	8.20	7.61	1.92	2.23

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V60Hz		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)	198	50	58	69	1.36	1.12	2.93	0.74	0.86
-30	(-22)	398	100	117	98	1.51	2.26	3.90	0.98	1.14
-25	(-13)	602	152	176	125	1.67	3.42	4.73	1.19	1.39
-20	(- 4)	823	207	241	150	1.84	4.68	5.47	1.38	1.60
-15	(+ 5)	1071	270	314	176	2.02	6.11	6.14	1.55	1.80
-10	(+14)	1359	343	398	202	2.22	7.79	6.77	1.71	1.98

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal
2 Tray holder	No
3 Connectors	
3.1 SUCTION	6.5 +0.12/-0.08 [mm] (0.256" +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	6.5 +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