

COMPRESSOR DEFINITION

Designation	EM 3Y60HLP
Nominal Voltage/Frequency	115-127 V 60 Hz
Engineering Number	513301610

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	5.19	[cm ³] (0.317 cu.in)
2.1 Bore [mm]	21.000	
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	Combo	
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)427KFX	
6 Start winding resistance	6.41	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	5.16	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	12.97	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.76	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	2.47	[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]
648	163	190	117	1.46	3.68	5.53	1.39	1.62

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)	368	93	108	77	1.27	2.08	4.78	1.20	1.40
-30 (-22)	497	125	146	88	1.31	2.82	5.69	1.43	1.67
-25 (-13)	652	164	191	99	1.37	3.70	6.61	1.66	1.94
-20 (- 4)	839	212	246	110	1.44	4.78	7.57	1.91	2.22
-15 (+ 5)	1066	269	312	123	1.53	6.09	8.62	2.17	2.53
-10 (+14)	1337	337	392	136	1.62	7.66	9.79	2.47	2.87

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)	336	85	98	79	1.27	1.90	4.26	1.07	1.25
-30 (-22)	469	118	137	92	1.33	2.66	5.10	1.28	1.49
-25 (-13)	622	157	182	106	1.40	3.53	5.90	1.49	1.73
-20 (- 4)	804	203	236	120	1.49	4.58	6.71	1.69	1.97
-15 (+ 5)	1020	257	299	135	1.60	5.82	7.55	1.90	2.21
-10 (+14)	1276	322	374	150	1.72	7.31	8.46	2.13	2.48

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)	270	68	79	73	1.24	1.53	3.65	0.92	1.07
-30 (-22)	414	104	121	91	1.32	2.34	4.50	1.13	1.32
-25 (-13)	574	145	168	109	1.42	3.26	5.26	1.33	1.54
-20 (- 4)	757	191	222	128	1.54	4.31	5.98	1.51	1.75
-15 (+ 5)	969	244	284	146	1.67	5.53	6.69	1.69	1.96
-10 (+14)	1218	307	357	165	1.82	6.98	7.41	1.87	2.17

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)	171	43	50	61	1.19	0.97	2.87	0.72	0.84
-30	(-22)	333	84	98	85	1.30	1.89	3.79	0.95	1.11
-25	(-13)	507	128	148	109	1.43	2.88	4.59	1.16	1.34
-20	(- 4)	699	176	205	132	1.58	3.98	5.29	1.33	1.55
-15	(+ 5)	915	231	268	155	1.74	5.22	5.93	1.49	1.74
-10	(+14)	1163	293	341	179	1.92	6.66	6.54	1.65	1.92

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal
2 Tray holder	Yes
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