

COMPRESSOR DEFINITION

Designation	EM 3Y50HLT
Nominal Voltage/Frequency	115-127 V 60 Hz / 100 V 50 Hz
Engineering Number	513301651

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	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)	Static/Fan	-	-
8.2 LBP (43°C Ambient temperature)	Static/Fan	-	-
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	1/5	[hp]
2 Displacement	4.50	[cm ³] (0.275 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	13.000	
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)	6.98	[kg] (15.39 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 / 100 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	TSD	
2.1 Starting device	TSD2-115V0.6	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)	[µF(VAC minimum)]
5 Motor protection	4TM302KFBYY-53	
6 Start winding resistance	10.17	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	6.38	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	9.22	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.40	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.90	[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]
560	141	164	96	0.85	3.18	5.84	1.47	1.71

TEST CONDITIONS: @115V60Hz			ASHRAELBP32 Fan		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]
561	141	164	95	0.84	3.19	5.89	1.48	1.73

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)	393	99	115	70	0.52	2.22	5.62	1.42	1.65
-30 (-22)	455	115	133	74	0.58	2.58	6.16	1.55	1.80
-25 (-13)	568	143	166	82	0.66	3.23	6.94	1.75	2.03
-20 (- 4)	735	185	215	92	0.75	4.18	8.00	2.02	2.34
-15 (+ 5)	957	241	280	103	0.83	5.46	9.36	2.36	2.74
-10 (+14)	1235	311	362	112	0.90	7.08	11.05	2.79	3.24

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)	362	91	106	76	0.56	2.05	4.81	1.21	1.41
-30 (-22)	431	109	126	79	0.62	2.44	5.44	1.37	1.59
-25 (-13)	544	137	159	88	0.70	3.09	6.18	1.56	1.81
-20 (- 4)	701	177	206	99	0.80	3.99	7.04	1.77	2.06
-15 (+ 5)	905	228	265	112	0.90	5.17	8.07	2.03	2.37
-10 (+14)	1157	292	339	124	1.00	6.63	9.30	2.34	2.72

E - PERFORMANCE - CURVES

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)	301	76	88	80	0.59	1.70	3.80	0.96	1.11
-30	(-22)	383	97	112	83	0.65	2.17	4.63	1.17	1.36
-25	(-13)	499	126	146	92	0.73	2.83	5.41	1.36	1.59
-20	(- 4)	651	164	191	104	0.84	3.71	6.20	1.56	1.82
-15	(+ 5)	841	212	246	120	0.96	4.80	7.00	1.76	2.05
-10	(+14)	1070	270	314	136	1.08	6.13	7.86	1.98	2.30

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)	212	53	62	84	0.62	1.20	2.50	0.63	0.73
-30	(-22)	310	78	91	86	0.68	1.76	3.62	0.91	1.06
-25	(-13)	434	109	127	95	0.77	2.46	4.57	1.15	1.34
-20	(- 4)	585	147	171	110	0.89	3.33	5.37	1.35	1.57
-15	(+ 5)	765	193	224	127	1.02	4.37	6.05	1.53	1.77
-10	(+14)	976	246	286	147	1.17	5.59	6.65	1.68	1.95

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	Straight		
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	Straight		
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	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		