COMPRESSOR DEFINITION

Designation	**EM X3109Y**
Nominal Voltage/Frequency	**100-127 V 60 Hz / 100 V 50 Hz**
Engineering Number	**513301863**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	100-127 / 60	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	RSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	-	-	-
8.2 LBP (43ºC Ambient temperature)	-	-	-
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm²] (98 psig)	/ ºC - ºF
9.2 Peak	7.8	[kgf/cm²] (111 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	6.20	[cm³] (0.378 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	15.600	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.7	[kg] (16.98 lb.)
5 Nitrogen charge	-	[kgf/cm²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	100-127 V 60 Hz / 100 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA14E62	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM 319NFBYY-73	
6 Start winding resistance	7.70	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	7.10	[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	9.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - UKCA - UL - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: **@115V60Hz**			**ASHRAE LBP-NOFAN Static**		Evaporating temperature (Condensing temperature	**-23.3°C (-9.94°F) 54.4°C (129.92°F))**		
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
416	105	122	74	1.01	1.31	5.63	1.42	1.65

E - PERFORMANCE - CURVES

TEST CONDITIONS: **@115V60Hz** — **ASHRAE32-NOFAN Static** — (Condensing temperature **35ºC (+95ºF))**

Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	244	61	71	50	0.88	0.76	4.92	1.24	1.44
-30	**(-22)**	319	80	94	57	0.91	1.00	5.63	1.42	1.65
-25	**(-13)**	421	106	123	65	0.95	1.32	6.53	1.65	1.91
-20	**(- 4)**	550	139	161	72	1.00	1.73	7.58	1.91	2.22
-15	**(+ 5)**	705	178	207	81	1.05	2.22	8.75	2.20	2.56
-10	**(+14)**	886	223	260	89	1.10	2.80	9.98	2.52	2.93
-5	**(+23)**	1095	276	321	97	1.16	3.46	11.25	2.84	3.30
0	**(+32)**	1330	335	390	106	1.22	4.22	12.52	3.16	3.67

TEST CONDITIONS: **@115V60Hz** — **ASHRAE32-NOFAN Static** — (Condensing temperature **45ºC (+113ºF))**

Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	223	56	65	51	0.88	0.70	4.40	1.11	1.29
-30	**(-22)**	294	74	86	59	0.92	0.92	5.00	1.26	1.46
-25	**(-13)**	392	99	115	68	0.97	1.23	5.76	1.45	1.69
-20	**(- 4)**	516	130	151	77	1.03	1.62	6.65	1.68	1.95
-15	**(+ 5)**	666	168	195	87	1.09	2.09	7.64	1.92	2.24
-10	**(+14)**	842	212	247	97	1.16	2.66	8.68	2.19	2.54
-5	**(+23)**	1045	263	306	107	1.24	3.30	9.74	2.45	2.85
0	**(+32)**	1274	321	373	118	1.32	4.04	10.78	2.72	3.16

TEST CONDITIONS: **@115V60Hz** — **ASHRAE32-NOFAN Static** — (Condensing temperature **55ºC (+131ºF))**

Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	203	51	59	51	0.88	0.64	4.00	1.01	1.17
-30	**(-22)**	268	68	79	60	0.92	0.84	4.48	1.13	1.31
-25	**(-13)**	359	91	105	70	0.98	1.13	5.12	1.29	1.50
-20	**(- 4)**	476	120	140	81	1.04	1.50	5.87	1.48	1.72
-15	**(+ 5)**	620	156	182	93	1.12	1.95	6.69	1.69	1.96
-10	**(+14)**	789	199	231	105	1.21	2.49	7.55	1.90	2.21
-5	**(+23)**	985	248	289	117	1.30	3.12	8.41	2.12	2.47
0	**(+32)**	1207	304	354	131	1.41	3.83	9.23	2.33	2.71

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 42º 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 0° up + 24° to Back		
3.3 PROCESS	6 +0.08/-0.08	[mm]	(0.236" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 43° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		