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	RSCR		
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	8EA14C3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	8(170)	[µF(VAC minimum)]
5 Motor protection	4TM319NFBYY-53	
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 (50 Hz)	9.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.20	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	1.40	[A] - Measured according to UL 984
11 Approval boards certification	CE - UKCA - UL - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: **@100V50Hz**			**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]
334	84	98	59	0.76	1.05	5.64	1.42	1.65

E - PERFORMANCE - CURVES

TEST CONDITIONS: **@100V50Hz** — **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)**	208	52	61	39	0.61	0.65	5.28	1.33	1.55
-30	**(-22)**	273	69	80	46	0.66	0.86	5.93	1.49	1.74
-25	**(-13)**	362	91	106	53	0.72	1.14	6.82	1.72	2.00
-20	**(- 4)**	473	119	139	60	0.77	1.49	7.93	2.00	2.32
-15	**(+ 5)**	607	153	178	66	0.82	1.91	9.20	2.32	2.70
-10	**(+14)**	763	192	224	72	0.87	2.41	10.61	2.67	3.11
-5	**(+23)**	942	237	276	78	0.92	2.98	12.11	3.05	3.55
0	**(+32)**	1144	288	335	84	0.97	3.63	13.67	3.45	4.01

TEST CONDITIONS: **@100V50Hz** — **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)**	192	48	56	41	0.62	0.60	4.66	1.17	1.36
-30	**(-22)**	253	64	74	49	0.68	0.79	5.23	1.32	1.53
-25	**(-13)**	337	85	99	56	0.74	1.06	6.01	1.51	1.76
-20	**(- 4)**	444	112	130	64	0.80	1.39	6.95	1.75	2.04
-15	**(+ 5)**	574	145	168	71	0.87	1.81	8.01	2.02	2.35
-10	**(+14)**	726	183	213	79	0.94	2.29	9.15	2.31	2.68
-5	**(+23)**	901	227	264	87	1.01	2.85	10.35	2.61	3.03
0	**(+32)**	1099	277	322	95	1.08	3.49	11.55	2.91	3.39

TEST CONDITIONS: **@100V50Hz** — **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)**	166	42	49	41	0.63	0.52	3.99	1.01	1.17
-30	**(-22)**	224	56	66	49	0.69	0.70	4.57	1.15	1.34
-25	**(-13)**	305	77	89	58	0.76	0.96	5.29	1.33	1.55
-20	**(- 4)**	408	103	120	67	0.83	1.28	6.12	1.54	1.79
-15	**(+ 5)**	535	135	157	76	0.91	1.68	7.04	1.77	2.06
-10	**(+14)**	685	173	201	86	0.99	2.16	7.99	2.01	2.34
-5	**(+23)**	857	216	251	96	1.08	2.71	8.94	2.25	2.62
0	**(+32)**	1053	265	308	107	1.17	3.34	9.85	2.48	2.89

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		