COMPRESSOR DEFINITION

Designation	**EM 2S30HLR**
Nominal Voltage/Frequency	**220 V 60 Hz**
Engineering Number	**513304606**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 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 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	Static	-	198 to 242 V
8.2 LBP (43ºC Ambient temperature)	Static	-	198 to 242 V
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm²] (202 psig)	/ ºC - ºF
9.2 Peak	15.9	[kgf/cm²] (226 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	3.00	[cm³] (0.183 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	10.600	
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)	7.13	[kg] (15.72 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm²] (2.84 to 4.27 psig)

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	213514164	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM283JDBYY	
6 Start winding resistance	32.83	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	27.20	[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	8.72	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	0.59	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	0.71	[A] - Measured according to UL 984
11 Approval boards certification	CE - TUV - UKCA	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: **@220V60Hz**			**ASHRAELBP32** **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]
330	83	97	72	0.54	1.88	4.60	1.16	1.35

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **35ºC (+95ºF))**
@220V60Hz **Static**

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)**	191	48	56	43	0.48	1.08	4.42	1.11	1.30
-30	**(-22)**	261	66	76	53	0.50	1.48	4.96	1.25	1.45
-25	**(-13)**	354	89	104	63	0.52	2.01	5.68	1.43	1.67
-20	**(- 4)**	472	119	138	72	0.54	2.69	6.60	1.66	1.93
-15	**(+ 5)**	618	156	181	80	0.57	3.53	7.69	1.94	2.25
-10	**(+14)**	793	200	233	88	0.59	4.55	8.97	2.26	2.63

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **45ºC (+113ºF))**
@220V60Hz **Static**

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	47	0.49	0.94	3.51	0.89	1.03
-30	**(-22)**	237	60	69	57	0.51	1.34	4.18	1.05	1.23
-25	**(-13)**	328	83	96	66	0.53	1.86	4.95	1.25	1.45
-20	**(- 4)**	441	111	129	76	0.55	2.51	5.81	1.47	1.70
-15	**(+ 5)**	579	146	170	85	0.58	3.31	6.77	1.71	1.98
-10	**(+14)**	743	187	218	95	0.62	4.26	7.82	1.97	2.29

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55ºC (+131ºF))**
@220V60Hz **Static**

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)**	127	32	37	50	0.49	0.72	2.55	0.64	0.75
-30	**(-22)**	201	51	59	59	0.51	1.14	3.39	0.85	0.99
-25	**(-13)**	292	74	86	68	0.53	1.66	4.24	1.07	1.24
-20	**(- 4)**	401	101	118	79	0.56	2.28	5.09	1.28	1.49
-15	**(+ 5)**	532	134	156	89	0.60	3.04	5.95	1.50	1.74
-10	**(+14)**	686	173	201	101	0.64	3.93	6.80	1.71	1.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65ºC (+149ºF))**
@220V60Hz **Static**

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)**	76	19	22	51	0.49	0.43	1.47	0.37	0.43
-30	**(-22)**	154	39	45	60	0.51	0.87	2.53	0.64	0.74
-25	**(-13)**	245	62	72	70	0.54	1.39	3.51	0.88	1.03
-20	**(- 4)**	352	89	103	81	0.57	2.00	4.39	1.11	1.29
-15	**(+ 5)**	477	120	140	93	0.61	2.72	5.19	1.31	1.52
-10	**(+14)**	622	157	182	106	0.66	3.56	5.89	1.48	1.72

F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate EUEM		
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 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 30° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		