COMPRESSOR DEFINITION

Designation	**EM X4140U**
Nominal Voltage/Frequency	**115-127 V 60 Hz**
Engineering Number	**513300900**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low-Medium Back Pressure LC Restricted		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	CSIR		
6 Starting torque	HST - Hight starting torque		
7 Expantion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	-	-	-
8.2 LBP (43ºC Ambient temperature)	Fan	-	103 to 140 V
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm²] (262 psig)	/ ºC - ºF
9.2 Peak	20.6	[kgf/cm²] (293 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/2	[hp]
2 Displacement	9.50	[cm³] (0.580 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	21.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO22	
4 Weight (with oil charge)	7.9	[kg] (17.42 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	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	QL2-13.5	
3 Start capacitor	189-227(210)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	5TM801KFBZZ-53	
6 Start winding resistance	5.85	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	1.77	[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	30.50	[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	UL	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS:			**ASHRAELBP32**			Evaporating temperature		**-23.3°C (-9.94°F)**
@115V60Hz			**Fan**			(Condensing temperature		**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]
1931	487	566	359	4.10	5.75	5.38	1.36	1.58

E - PERFORMANCE - CURVES

TEST CONDITIONS:		**ASHRAE32**					(Condensing temperature **35ºC (+95ºF))**			
@115V60Hz		**Fan**								
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)**	1237	312	362	245	3.01	3.66	5.04	1.27	1.48
-30	**(-22)**	1559	393	457	273	3.27	4.62	5.71	1.44	1.67
-25	**(-13)**	1950	491	571	302	3.54	5.80	6.45	1.63	1.89
-20	**(- 4)**	2408	607	706	331	3.82	7.19	7.26	1.83	2.13
-15	**(+ 5)**	2932	739	859	359	4.09	8.78	8.16	2.06	2.39
-10	**(+14)**	3521	887	1032	384	4.33	10.60	9.17	2.31	2.69
-5	**(+23)**	4172	1051	1223	406	4.53	12.62	10.30	2.60	3.02
0	**(+32)**	4885	1231	1431	422	4.68	14.85	11.57	2.92	3.39

TEST CONDITIONS:		**ASHRAE32**					(Condensing temperature **45ºC (+113ºF))**			
@115V60Hz		**Fan**								
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)**	1166	294	342	256	3.12	3.45	4.56	1.15	1.34
-30	**(-22)**	1491	376	437	290	3.42	4.42	5.15	1.30	1.51
-25	**(-13)**	1882	474	551	326	3.75	5.60	5.78	1.46	1.69
-20	**(- 4)**	2338	589	685	362	4.09	6.98	6.45	1.63	1.89
-15	**(+ 5)**	2858	720	837	397	4.43	8.56	7.18	1.81	2.10
-10	**(+14)**	3439	867	1008	430	4.75	10.35	7.99	2.01	2.34
-5	**(+23)**	4081	1028	1196	459	5.04	12.34	8.89	2.24	2.61
0	**(+32)**	4781	1205	1401	483	5.28	14.53	9.90	2.49	2.90

TEST CONDITIONS:		**ASHRAE32**					(Condensing temperature **55ºC (+131ºF))**			
@115V60Hz		**Fan**								
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)**	1073	270	314	262	3.16	3.17	4.08	1.03	1.20
-30	**(-22)**	1395	352	409	302	3.53	4.14	4.63	1.17	1.36
-25	**(-13)**	1781	449	522	345	3.93	5.29	5.18	1.30	1.52
-20	**(- 4)**	2229	562	653	389	4.35	6.65	5.74	1.45	1.68
-15	**(+ 5)**	2738	690	802	432	4.77	8.20	6.34	1.60	1.86
-10	**(+14)**	3305	833	969	473	5.19	9.94	6.98	1.76	2.04
-5	**(+23)**	3931	991	1152	512	5.57	11.88	7.68	1.94	2.25
0	**(+32)**	4613	1162	1352	545	5.92	14.02	8.46	2.13	2.48

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-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		