

### COMPRESSOR DEFINITION

Designation	EM X6144U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	721FI57

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50-60	[ V / Hz ]	
4 Application type	Medium Back Pressure (Commercial Compressors)		
4.1 Evaporating temperature range	-20°C to 10°C	(-4°F to 50°F)	
5 Motor type	CSIR		
6 Starting torque	HST - High starting torque		
7 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	18.4	[kgf/cm <sup>2</sup> ] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm <sup>2</sup> ] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/5	[hp]
2 Displacement	4.53	[cm <sup>3</sup> ] (0.276 cu.in)
2.1 Bore [mm]	19.000	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.65	[kg] (16.87 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	MTRP-34	
3 Start capacitor	53-64(330)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	OLP 4TM317KDBYY-153	
6 Start winding resistance	15.23	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	15.03	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	9.00/9.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: <b>@220V50Hz</b>			<b>ASHRAEHBP46 Fan</b>		Evaporating temperature (Condensing temperature	<b>7.2°C (44.96°F) 54.4°C (129.92°F)</b>		
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]
2186	551	641	227	1.40	7.48	9.63	2.43	2.82

TEST CONDITIONS: <b>@220V60Hz</b>			<b>ASHRAEHBP46 Fan</b>		Evaporating temperature (Condensing temperature	<b>7.2°C (44.96°F) 54.4°C (129.92°F)</b>		
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]
2616	659	767	292	1.54	8.95	8.97	2.26	2.63

### E - PERFORMANCE - CURVES

TEST CONDITIONS: <b>@220V50Hz</b>			<b>ASHRAE46 Fan</b>		(Condensing temperature <b>35°C (+95°F)</b> )				
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]
<b>-20 (- 4)</b>	1033	260	303	138	1.10	2.92	7.47	1.88	2.19
<b>-15 (+ 5)</b>	1254	316	368	146	1.11	3.55	8.60	2.17	2.52
<b>-10 (+14)</b>	1523	384	446	152	1.14	4.33	10.02	2.53	2.94
<b>-5 (+23)</b>	1839	463	539	157	1.16	5.25	11.75	2.96	3.44
<b>0 (+32)</b>	2202	555	645	160	1.19	6.33	13.80	3.48	4.04
<b>+5 (+41)</b>	2612	658	765	162	1.21	7.56	16.18	4.08	4.74
<b>+10 (+50)</b>	3070	774	900	162	1.21	8.95	18.89	4.76	5.54

TEST CONDITIONS: <b>@220V50Hz</b>			<b>ASHRAE46 Fan</b>		(Condensing temperature <b>45°C (+113°F)</b> )				
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]
<b>-20 (- 4)</b>	901	227	264	149	1.15	2.75	6.08	1.53	1.78
<b>-15 (+ 5)</b>	1100	277	322	161	1.17	3.37	6.84	1.72	2.00
<b>-10 (+14)</b>	1340	338	393	171	1.20	4.12	7.80	1.96	2.28
<b>-5 (+23)</b>	1621	409	475	180	1.24	5.01	8.96	2.26	2.63
<b>0 (+32)</b>	1944	490	570	187	1.27	6.05	10.35	2.61	3.03
<b>+5 (+41)</b>	2307	581	676	193	1.29	7.23	11.96	3.01	3.50
<b>+10 (+50)</b>	2711	683	794	197	1.30	8.56	13.81	3.48	4.05

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE46 Fan			(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]
-20	(- 4)	774	195	227	159	1.18	2.58	4.84	1.22	1.42
-15	(+ 5)	949	239	278	175	1.21	3.18	5.44	1.37	1.59
-10	(+14)	1159	292	340	189	1.25	3.90	6.15	1.55	1.80
-5	(+23)	1403	354	411	202	1.30	4.74	6.96	1.75	2.04
0	(+32)	1683	424	493	213	1.34	5.73	7.90	1.99	2.31
+5	(+41)	1997	503	585	223	1.37	6.85	8.95	2.26	2.62
+10	(+50)	2346	591	688	231	1.38	8.12	10.15	2.56	2.97

TEST CONDITIONS: @220V60Hz		ASHRAE46 Fan			(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]
-20	(- 4)	1241	313	364	157	1.00	3.50	7.88	1.99	2.31
-15	(+ 5)	1507	380	442	173	1.05	4.27	8.72	2.20	2.56
-10	(+14)	1829	461	536	185	1.10	5.20	9.87	2.49	2.89
-5	(+23)	2206	556	646	195	1.14	6.30	11.32	2.85	3.32
0	(+32)	2639	665	773	202	1.17	7.58	13.10	3.30	3.84
+5	(+41)	3128	788	916	206	1.19	9.05	15.22	3.84	4.46
+10	(+50)	3672	925	1076	207	1.19	10.70	17.68	4.46	5.18

TEST CONDITIONS: @220V60Hz		ASHRAE46 Fan			(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]
-20	(- 4)	1089	274	319	171	1.05	3.32	6.42	1.62	1.88
-15	(+ 5)	1332	336	390	189	1.12	4.08	7.05	1.78	2.07
-10	(+14)	1623	409	476	206	1.18	4.99	7.86	1.98	2.30
-5	(+23)	1962	494	575	220	1.24	6.07	8.85	2.23	2.59
0	(+32)	2350	592	688	233	1.29	7.31	10.05	2.53	2.94
+5	(+41)	2785	702	816	243	1.34	8.73	11.46	2.89	3.36
+10	(+50)	3269	824	958	251	1.37	10.32	13.09	3.30	3.84

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE46 Fan			(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]
-20	(- 4)	937	236	275	183	1.09	3.12	5.07	1.28	1.49
-15	(+ 5)	1155	291	338	205	1.17	3.87	5.66	1.43	1.66
-10	(+14)	1413	356	414	225	1.26	4.75	6.30	1.59	1.85
-5	(+23)	1712	431	502	245	1.34	5.79	7.01	1.77	2.05
0	(+32)	2051	517	601	263	1.41	6.98	7.80	1.97	2.29
+5	(+41)	2431	613	712	280	1.48	8.34	8.67	2.19	2.54
+10	(+50)	2852	719	836	295	1.55	9.87	9.65	2.43	2.83

### 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 42°		
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	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 46°		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		