

COMPRESSOR DEFINITION

Designation	EM X6181U
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	721BA80

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-290		
3 Nominal voltage and frequency	220-240 / 50	[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 (gauge)	18.4	[kgf/cm ²] (262 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/3	[hp]
2 Displacement	6.92	[cm ³] (0.422 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	20.000	
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)	8	[kg] (17.64 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	MTRPH-0027-65	
3 Start capacitor	43-53(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM319NFBYY-153	
6 Start winding resistance	17.70	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	7.85	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	13.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			EN12900MBP Fan		Evaporating temperature (Condensing temperature		-10°C (14°F) 45°C (113°F))	
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]
1816	458	532	252	1.74	6.54	7.20	1.81	2.11

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			EN12900 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)	1396	352	409	199	1.58	4.52	7.02	1.77	2.06
-15	(+ 5)	1741	439	510	214	1.62	5.68	8.12	2.05	2.38
-10	(+14)	2109	531	618	225	1.66	6.92	9.36	2.36	2.74
-5	(+23)	2520	635	738	234	1.68	8.32	10.81	2.72	3.17
0	(+32)	2992	754	877	239	1.70	9.96	12.54	3.16	3.68
+5	(+41)	3546	894	1039	242	1.72	11.92	14.65	3.69	4.29
+10	(+50)	4201	1059	1231	243	1.74	14.29	17.21	4.34	5.04

TEST CONDITIONS: @220V50Hz			EN12900 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)	1203	303	352	216	1.63	4.27	5.59	1.41	1.64
-15	(+ 5)	1510	381	443	236	1.69	5.40	6.40	1.61	1.87
-10	(+14)	1832	462	537	252	1.74	6.59	7.24	1.82	2.12
-5	(+23)	2187	551	641	266	1.78	7.93	8.19	2.06	2.40
0	(+32)	2594	654	760	277	1.82	9.50	9.33	2.35	2.73
+5	(+41)	3073	774	901	286	1.86	11.37	10.73	2.70	3.14
+10	(+50)	3644	918	1068	293	1.90	13.64	12.48	3.14	3.66

TEST CONDITIONS: @220V50Hz			EN12900 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)	984	248	288	229	1.67	3.90	4.28	1.08	1.25
-15	(+ 5)	1264	319	370	254	1.74	5.02	5.00	1.26	1.46
-10	(+14)	1549	390	454	275	1.81	6.20	5.65	1.42	1.66
-5	(+23)	1857	468	544	295	1.87	7.51	6.31	1.59	1.85
0	(+32)	2208	556	647	312	1.93	9.03	7.06	1.78	2.07
+5	(+41)	2622	661	768	328	2.00	10.86	7.97	2.01	2.34
+10	(+50)	3118	786	914	342	2.06	13.06	9.12	2.30	2.67

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
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		