

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		
2.1 Max Refrigerant Charge	150 [g]		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Medium-High 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 - Hight starting torque		
7 Expantion 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 pressures/temperature			
9.1 Operating (gauge)	19,1	[kgf/cm²] (272 psig)	/ °C - °F
9.2 Peak (gauge)	21,2	[kgf/cm²] (301 psig)	
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/3	[hp]
2 Displacement	6,92	[cm³] (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/cm²]

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	MTRPH0027-59	
3 Start capacitor	43-53(330)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM319NFBYY-53	
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)	16.00	[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			ASHRAEHBP46 Fan		Evaporating temperature (Condensing temperature		7,2°C (44,96°F) 54,4°C (129,92°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]
3328	839	975	337	2,02	11,39	9,88	2,49	2,90

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		ASHRAE46 Fan			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1562	394	458	199	1,57	4,41	7,85	1,98	2,30
-15	(+ 5)	1902	479	557	213	1,61	5,39	8,90	2,24	2,61
-10	(+14)	2317	584	679	225	1,64	6,59	10,29	2,59	3,01
-5	(+23)	2803	706	821	234	1,67	8,01	12,00	3,02	3,52
0	(+32)	3357	846	984	240	1,69	9,65	14,03	3,54	4,11
+5	(+41)	3977	1002	1165	243	1,72	11,50	16,39	4,13	4,80
+10	(+50)	4660	1174	1365	244	1,74	13,58	19,07	4,81	5,59

TEST CONDITIONS: @220V50Hz		ASHRAE46 Fan			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1370	345	402	216	1,63	4,18	6,38	1,61	1,87
-15	(+ 5)	1673	422	490	236	1,69	5,13	7,11	1,79	2,08
-10	(+14)	2043	515	599	252	1,74	6,29	8,07	2,03	2,36
-5	(+23)	2478	625	726	267	1,78	7,66	9,25	2,33	2,71
0	(+32)	2975	750	872	279	1,82	9,26	10,65	2,68	3,12
+5	(+41)	3532	890	1035	288	1,86	11,07	12,26	3,09	3,59
+10	(+50)	4145	1045	1215	295	1,90	13,09	14,10	3,55	4,13

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE46			(Condensing temperature 55°C (+131°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1182	298	346	230	1,68	3,94	5,09	1,28	1,49
-15	(+ 5)	1443	364	423	255	1,75	4,83	5,69	1,43	1,67
-10	(+14)	1766	445	517	277	1,82	5,94	6,41	1,62	1,88
-5	(+23)	2147	541	629	297	1,88	7,26	7,24	1,83	2,12
0	(+32)	2583	651	757	315	1,94	8,79	8,19	2,06	2,40
+5	(+41)	3073	774	900	331	2,00	10,54	9,26	2,33	2,71
+10	(+50)	3612	910	1059	346	2,07	12,50	10,44	2,63	3,06

TEST CONDITIONS:		EN12900			(Condensing temperature 35°C (+95°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 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:		EN12900			(Condensing temperature 45°C (+113°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 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

E - PERFORMANCE - CURVES

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		