

COMPRESSOR DEFINITION

Designation	EM X6165U
Nominal Voltage/Frequency	220-240 V 50-60 Hz
Engineering Number	721HI52

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 ²] (262 psig)	/ °C - °F
9.2 Peak	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	6.09	[cm ³] (0.372 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	17.600	
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 ²]

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	MTRPH-0025-65	
3 Start capacitor	64-77(330)	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM319NFBYY-53	
6 Start winding resistance	13.75	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	13.00	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	11.00/11.00	[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: @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]
2858	720	837	308	1.78	9.78	9.28	2.34	2.72

TEST CONDITIONS: @220V60Hz			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]
3369	849	987	377	1.96	11.53	8.93	2.25	2.62

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			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)	1340	338	393	185	1.40	3.78	7.24	1.83	2.12
-15 (+ 5)	1635	412	479	197	1.43	4.63	8.30	2.09	2.43
-10 (+14)	1992	502	584	207	1.46	5.67	9.60	2.42	2.81
-5 (+23)	2412	608	707	216	1.49	6.89	11.17	2.82	3.27
0 (+32)	2895	730	848	223	1.51	8.32	13.01	3.28	3.81
+5 (+41)	3440	867	1008	228	1.53	9.95	15.11	3.81	4.43
+10 (+50)	4047	1020	1186	231	1.54	11.79	17.49	4.41	5.12

TEST CONDITIONS: @220V50Hz			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)	1148	289	336	201	1.44	3.50	5.75	1.45	1.69
-15 (+ 5)	1417	357	415	217	1.48	4.34	6.54	1.65	1.92
-10 (+14)	1741	439	510	232	1.53	5.36	7.50	1.89	2.20
-5 (+23)	2121	534	621	245	1.57	6.56	8.63	2.17	2.53
0 (+32)	2555	644	749	256	1.61	7.95	9.94	2.50	2.91
+5 (+41)	3044	767	892	266	1.64	9.54	11.43	2.88	3.35
+10 (+50)	3587	904	1051	274	1.67	11.33	13.12	3.31	3.84

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)	971	245	285	213	1.47	3.24	4.54	1.14	1.33
-15	(+ 5)	1208	304	354	234	1.53	4.04	5.18	1.30	1.52
-10	(+14)	1493	376	437	254	1.59	5.02	5.90	1.49	1.73
-5	(+23)	1825	460	535	272	1.66	6.17	6.71	1.69	1.97
0	(+32)	2204	556	646	289	1.72	7.50	7.62	1.92	2.23
+5	(+41)	2631	663	771	305	1.78	9.02	8.62	2.17	2.53
+10	(+50)	3104	782	910	319	1.83	10.74	9.73	2.45	2.85

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)	1582	399	464	202	1.26	4.47	7.81	1.97	2.29
-15	(+ 5)	1927	486	565	220	1.32	5.46	8.77	2.21	2.57
-10	(+14)	2352	593	689	236	1.38	6.69	9.98	2.52	2.93
-5	(+23)	2856	720	837	250	1.44	8.16	11.42	2.88	3.35
0	(+32)	3440	867	1008	264	1.49	9.88	13.06	3.29	3.83
+5	(+41)	4103	1034	1202	276	1.54	11.87	14.90	3.75	4.36
+10	(+50)	4845	1221	1420	286	1.58	14.12	16.91	4.26	4.95

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)	1373	346	402	221	1.32	4.19	6.24	1.57	1.83
-15	(+ 5)	1679	423	492	243	1.41	5.14	6.92	1.75	2.03
-10	(+14)	2056	518	602	264	1.49	6.33	7.78	1.96	2.28
-5	(+23)	2503	631	733	284	1.57	7.74	8.80	2.22	2.58
0	(+32)	3020	761	885	303	1.65	9.40	9.95	2.51	2.92
+5	(+41)	3608	909	1057	321	1.73	11.31	11.24	2.83	3.29
+10	(+50)	4267	1075	1250	338	1.81	13.47	12.64	3.19	3.70

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)	1182	298	346	239	1.39	3.94	4.92	1.24	1.44
-15	(+ 5)	1448	365	424	267	1.49	4.85	5.44	1.37	1.59
-10	(+14)	1775	447	520	293	1.60	5.97	6.06	1.53	1.78
-5	(+23)	2164	545	634	320	1.71	7.32	6.78	1.71	1.99
0	(+32)	2614	659	766	345	1.82	8.90	7.57	1.91	2.22
+5	(+41)	3125	787	916	371	1.93	10.72	8.43	2.13	2.47
+10	(+50)	3697	932	1083	395	2.04	12.79	9.34	2.35	2.74

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	No		
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		