

COMPRESSOR DEFINITION

Designation	EM U50HEP
Nominal Voltage/Frequency	220-240 V 50 Hz
Engineering Number	513306161

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220-240 / 50	[V / Hz]	
4 Application type	Low Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	RSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	160 to 260 V	-
8.2 LBP (43°C Ambient temperature)	Static	160 to 260 V	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 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	1/5	[hp]
2 Displacement	4.85	[cm ³] (0.296 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	14.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO22	
4 Weight (with oil charge)	7.32	[kg] (16.14 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	7M220MC1	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM189NFBYY-53	
6 Start winding resistance	25.57	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	21.87	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	5.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	1.19	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	1.33	[A] - Measured according to UL 984
11 Approval boards certification	VDE	

D - PERFORMANCE - CHECK POINT DATA

E - PERFORMANCE - CURVES

TEST CONDITIONS: @50V50Hz		ASHRAE32 Static			(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]
-35 (-31)	273	69	80	69	0.72	1.54	3.93	0.99	1.15	
-30 (-22)	366	92	107	79	0.72	2.07	4.65	1.17	1.36	
-25 (-13)	484	122	142	89	0.74	2.75	5.47	1.38	1.60	
-20 (- 4)	632	159	185	99	0.77	3.59	6.41	1.61	1.88	
-15 (+ 5)	812	205	238	109	0.80	4.64	7.46	1.88	2.19	
-10 (+14)	1029	259	301	119	0.83	5.90	8.64	2.18	2.53	

TEST CONDITIONS: @50V50Hz		ASHRAE32 Static			(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]
-35 (-31)	239	60	70	70	0.71	1.35	3.44	0.87	1.01	
-30 (-22)	332	84	97	80	0.71	1.88	4.12	1.04	1.21	
-25 (-13)	450	113	132	92	0.73	2.56	4.87	1.23	1.43	
-20 (- 4)	597	150	175	104	0.77	3.40	5.69	1.44	1.67	
-15 (+ 5)	776	196	227	117	0.81	4.43	6.60	1.66	1.93	
-10 (+14)	992	250	291	131	0.86	5.68	7.60	1.91	2.23	

TEST CONDITIONS: @50V50Hz		ASHRAE32 Static			(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]
-35 (-31)	201	51	59	68	0.70	1.14	2.97	0.75	0.87	
-30 (-22)	291	73	85	80	0.70	1.65	3.64	0.92	1.07	
-25 (-13)	405	102	119	93	0.73	2.30	4.34	1.09	1.27	
-20 (- 4)	547	138	160	107	0.78	3.11	5.07	1.28	1.49	
-15 (+ 5)	721	182	211	123	0.83	4.11	5.85	1.47	1.71	
-10 (+14)	930	234	273	139	0.89	5.33	6.68	1.68	1.96	

TEST CONDITIONS: @50V50Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°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]
-35 (-31)	161	41	47	65	0.70	0.91	2.46	0.62	0.72	
-30 (-22)	243	61	71	78	0.70	1.37	3.13	0.79	0.92	
-25 (-13)	348	88	102	92	0.73	1.98	3.79	0.95	1.11	
-20 (- 4)	481	121	141	109	0.78	2.74	4.45	1.12	1.30	
-15 (+ 5)	646	163	189	127	0.84	3.69	5.12	1.29	1.50	
-10 (+14)	846	213	248	146	0.91	4.85	5.81	1.46	1.70	

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	Slanted 42° up + 45° to Back
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	Slanted parallel BP+24°to Back
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	Slanted 45° up + 45° to Back
3.4 Oil cooler (Copper)	No [mm]
3.5 Connector sealing	Rubber Plugs