

### COMPRESSOR DEFINITION

Designation	EM U60HEP
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513308008

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	100 / 50-60	[ 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	85 to 110 V	85 to 110 V
8.2 LBP (43°C Ambient temperature)	Static	85 to 110 V	85 to 110 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm <sup>2</sup> ] (202 psig)	/ °C - °F
9.2 Peak	15.9	[kgf/cm <sup>2</sup> ] (226 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/6	[hp]
2 Displacement	4.99	[cm <sup>3</sup> ] (0.305 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	14.400	
3 Lubricant charge	190	[ml] (6.42 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	7.57	[kg] (16.69 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	100 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA14C1/8EA1B1/QPS2-A4R7MG1	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM427NFBYY-53	
6 Start winding resistance	11.65	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	12.50/12.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	2.60/2.30	[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		

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @100V50Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°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]
485	122	142	115	2.06	2.76	4.22	1.06	1.24

TEST CONDITIONS: @100V60Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°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]
590	149	173	126	1.86	3.35	4.70	1.18	1.38

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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)	268	67	78	78	1.92	1.51	3.42	0.86	1.00
-30	(-22)	365	92	107	91	1.98	2.07	4.02	1.01	1.18
-25	(-13)	488	123	143	104	2.03	2.77	4.72	1.19	1.38
-20	(- 4)	640	161	188	116	2.08	3.64	5.51	1.39	1.61
-15	(+ 5)	823	207	241	129	2.14	4.70	6.35	1.60	1.86
-10	(+14)	1040	262	305	143	2.22	5.96	7.26	1.83	2.13

TEST CONDITIONS: @100V50Hz		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)	227	57	66	76	1.91	1.28	2.98	0.75	0.87
-30	(-22)	327	83	96	92	1.98	1.86	3.58	0.90	1.05
-25	(-13)	451	114	132	107	2.04	2.56	4.23	1.07	1.24
-20	(- 4)	599	151	176	122	2.10	3.41	4.91	1.24	1.44
-15	(+ 5)	775	195	227	138	2.18	4.42	5.62	1.42	1.65
-10	(+14)	981	247	287	154	2.28	5.62	6.35	1.60	1.86

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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)	182	46	53	73	1.89	1.03	2.50	0.63	0.73	
-30 (-22)	287	72	84	90	1.97	1.63	3.15	0.79	0.92	
-25 (-13)	411	104	120	107	2.04	2.33	3.81	0.96	1.12	
-20 (- 4)	556	140	163	125	2.12	3.17	4.47	1.13	1.31	
-15 (+ 5)	726	183	213	142	2.22	4.14	5.11	1.29	1.50	
-10 (+14)	922	232	270	161	2.34	5.28	5.72	1.44	1.68	

TEST CONDITIONS: @100V60Hz		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)	319	80	93	83	1.55	1.80	3.83	0.97	1.12	
-30 (-22)	446	112	131	101	1.67	2.53	4.42	1.11	1.30	
-25 (-13)	594	150	174	116	1.78	3.37	5.11	1.29	1.50	
-20 (- 4)	766	193	224	131	1.90	4.36	5.83	1.47	1.71	
-15 (+ 5)	964	243	282	147	2.02	5.50	6.54	1.65	1.92	
-10 (+14)	1192	300	349	166	2.18	6.83	7.17	1.81	2.10	

TEST CONDITIONS: @100V60Hz		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)	267	67	78	75	1.53	1.51	3.59	0.90	1.05	
-30 (-22)	394	99	115	98	1.67	2.23	4.04	1.02	1.18	
-25 (-13)	541	136	159	118	1.80	3.07	4.59	1.16	1.35	
-20 (- 4)	712	179	209	137	1.94	4.05	5.19	1.31	1.52	
-15 (+ 5)	910	229	267	157	2.09	5.19	5.79	1.46	1.70	
-10 (+14)	1137	287	333	180	2.28	6.52	6.32	1.59	1.85	

TEST CONDITIONS: @100V60Hz		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)	219	55	64	68	1.48	1.24	3.20	0.81	0.94	
-30 (-22)	339	85	99	95	1.65	1.92	3.56	0.90	1.04	
-25 (-13)	479	121	140	119	1.80	2.72	4.03	1.02	1.18	
-20 (- 4)	643	162	188	141	1.97	3.66	4.56	1.15	1.34	
-15 (+ 5)	833	210	244	164	2.15	4.75	5.10	1.29	1.49	
-10 (+14)	1053	265	308	189	2.37	6.03	5.59	1.41	1.64	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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	Straight		
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	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		