

### COMPRESSOR DEFINITION

Designation	EM 2U60HLP
Nominal Voltage/Frequency	220 V 60 Hz
Engineering Number	513305523

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	220 / 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	-	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	-	198 to 242 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	1/5	[hp]
2 Displacement	5.54	[cm <sup>3</sup> ] (0.338 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	16.000	
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)	7.53	[kg] (16.60 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	220 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	QPS2-A4R7MG1/QPS2-C4R7MD3J6/QPS2-C4R7MD3J8	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	CP4TMC291K61	
6 Start winding resistance	26.16	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	19.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.00/6.65	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.36/1.16	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	1.53/1.35	[A] - Measured according to UL 984
11 Approval boards certification	IMTRO - TUV	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V60Hz			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]
621	156	182	124	0.80	3.53	5.01	1.26	1.47

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	381	96	112	83	0.67	2.16	4.57	1.15	1.34
-30 (-22)	520	131	152	96	0.70	2.95	5.39	1.36	1.58
-25 (-13)	687	173	201	111	0.74	3.90	6.21	1.56	1.82
-20 (- 4)	890	224	261	126	0.80	5.06	7.06	1.78	2.07
-15 (+ 5)	1137	287	333	143	0.87	6.49	7.98	2.01	2.34
-10 (+14)	1437	362	421	160	0.94	8.23	9.00	2.27	2.64

TEST CONDITIONS: @220V60Hz		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)	338	85	99	84	0.71	1.91	4.06	1.02	1.19
-30 (-22)	470	118	138	98	0.73	2.67	4.79	1.21	1.40
-25 (-13)	629	159	184	114	0.77	3.57	5.50	1.39	1.61
-20 (- 4)	823	207	241	132	0.83	4.68	6.22	1.57	1.82
-15 (+ 5)	1060	267	311	152	0.90	6.05	6.97	1.76	2.04
-10 (+14)	1348	340	395	173	0.98	7.72	7.78	1.96	2.28

TEST CONDITIONS: @220V60Hz		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)	294	74	86	82	0.72	1.66	3.58	0.90	1.05
-30 (-22)	419	106	123	98	0.74	2.38	4.25	1.07	1.25
-25 (-13)	570	144	167	117	0.78	3.24	4.88	1.23	1.43
-20 (- 4)	755	190	221	137	0.85	4.30	5.49	1.38	1.61
-15 (+ 5)	981	247	287	161	0.93	5.60	6.10	1.54	1.79
-10 (+14)	1257	317	368	186	1.03	7.20	6.74	1.70	1.98

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		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)	247	62	72	80	0.69	1.40	3.08	0.78	0.90
-30	(-22)	366	92	107	97	0.71	2.07	3.74	0.94	1.09
-25	(-13)	509	128	149	118	0.77	2.89	4.31	1.09	1.26
-20	(- 4)	684	172	200	142	0.85	3.89	4.83	1.22	1.42
-15	(+ 5)	900	227	264	169	0.96	5.14	5.33	1.34	1.56
-10	(+14)	1165	293	341	200	1.09	6.67	5.84	1.47	1.71

### F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate EUEM		
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 30° up + 24° to Back		
3.3 PROCESS	6.35 +0.08/-0.08	[mm]	(0.250" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		