

### COMPRESSOR DEFINITION

Designation	EM U40CLP
Nominal Voltage/Frequency	220 V 50 Hz 60 Hz
Engineering Number	513306145

### A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	220 / 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	198 to 242 V	198 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	198 to 242 V	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	6.9	[kgf/cm <sup>2</sup> ] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm <sup>2</sup> ] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/8	[hp]
2 Displacement	5.96	[cm <sup>3</sup> ] (0.364 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	180	[ml] (6.09 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	8.6	[kg] (18.96 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 50/60 Hz 1 ~ (Single phase)	
2 Starting device type	Combo	
2.1 Starting device	8EA17E62/8EA17E63/QPS2-C22MD3J6/QPS2-C22MD3J8	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM189NFBYY-73	
6 Start winding resistance	24.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	32.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	8.52/7.66	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	1.21/1.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.33/1.24	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			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]
346	87	101	89	0.80	1.09	3.90	0.98	1.14

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]
408	103	120	89	0.67	1.28	4.57	1.15	1.34

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			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)	208	53	61	68	0.78	0.65	3.08	0.78	0.90
-30 (-22)	286	72	84	69	0.78	0.90	4.15	1.05	1.22
-25 (-13)	376	95	110	69	0.78	1.18	5.41	1.36	1.58
-20 (- 4)	481	121	141	70	0.78	1.51	6.90	1.74	2.02
-15 (+ 5)	602	152	176	70	0.78	1.90	8.68	2.19	2.54
-10 (+14)	743	187	218	69	0.78	2.34	10.80	2.72	3.16

TEST CONDITIONS: @220V50Hz			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)	190	48	56	80	0.79	0.59	2.39	0.60	0.70
-30 (-22)	262	66	77	82	0.79	0.82	3.24	0.82	0.95
-25 (-13)	348	88	102	83	0.79	1.09	4.22	1.06	1.24
-20 (- 4)	450	113	132	84	0.79	1.41	5.36	1.35	1.57
-15 (+ 5)	569	143	167	84	0.79	1.79	6.73	1.70	1.97
-10 (+14)	709	179	208	85	0.79	2.24	8.38	2.11	2.46

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		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)	162	41	47	93	0.81	0.51	1.72	0.43	0.50	
-30 (-22)	230	58	67	95	0.81	0.72	2.43	0.61	0.71	
-25 (-13)	313	79	92	98	0.81	0.98	3.20	0.81	0.94	
-20 (- 4)	412	104	121	100	0.82	1.29	4.07	1.03	1.19	
-15 (+ 5)	530	134	155	103	0.82	1.67	5.10	1.29	1.50	
-10 (+14)	670	169	196	105	0.82	2.12	6.35	1.60	1.86	

TEST CONDITIONS: @220V50Hz		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)	128	32	37	103	0.82	0.40	1.22	0.31	0.36	
-30 (-22)	192	48	56	107	0.83	0.60	1.86	0.47	0.55	
-25 (-13)	272	69	80	112	0.84	0.85	2.49	0.63	0.73	
-20 (- 4)	369	93	108	118	0.85	1.16	3.17	0.80	0.93	
-15 (+ 5)	488	123	143	123	0.86	1.54	3.94	0.99	1.15	
-10 (+14)	629	158	184	128	0.87	1.98	4.86	1.22	1.42	

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)	253	64	74	63	0.63	0.79	4.01	1.01	1.17	
-30 (-22)	333	84	97	70	0.63	1.04	4.80	1.21	1.41	
-25 (-13)	428	108	125	76	0.63	1.34	5.60	1.41	1.64	
-20 (- 4)	544	137	159	84	0.63	1.71	6.46	1.63	1.89	
-15 (+ 5)	685	173	201	92	0.63	2.16	7.38	1.86	2.16	
-10 (+14)	857	216	251	102	0.62	2.70	8.40	2.12	2.46	

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)	229	58	67	65	0.65	0.72	3.48	0.88	1.02	
-30 (-22)	309	78	90	73	0.66	0.97	4.23	1.07	1.24	
-25 (-13)	403	102	118	81	0.66	1.26	4.96	1.25	1.45	
-20 (- 4)	516	130	151	90	0.66	1.62	5.71	1.44	1.67	
-15 (+ 5)	652	164	191	100	0.66	2.05	6.51	1.64	1.91	
-10 (+14)	817	206	239	110	0.66	2.58	7.37	1.86	2.16	

### E - PERFORMANCE - CURVES

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)	196	49	57	64	0.69	0.61	3.09	0.78	0.90
-30	(-22)	277	70	81	73	0.70	0.87	3.80	0.96	1.11
-25	(-13)	370	93	109	83	0.71	1.16	4.48	1.13	1.31
-20	(- 4)	481	121	141	94	0.71	1.51	5.14	1.30	1.51
-15	(+ 5)	613	154	180	106	0.72	1.93	5.82	1.47	1.70
-10	(+14)	772	194	226	118	0.73	2.43	6.53	1.65	1.91

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)	161	41	47	58	0.74	0.50	2.72	0.69	0.80
-30	(-22)	244	61	71	70	0.76	0.76	3.42	0.86	1.00
-25	(-13)	337	85	99	83	0.77	1.06	4.05	1.02	1.19
-20	(- 4)	445	112	130	96	0.79	1.40	4.64	1.17	1.36
-15	(+ 5)	574	145	168	110	0.80	1.81	5.22	1.32	1.53
-10	(+14)	727	183	213	125	0.81	2.29	5.80	1.46	1.70

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal 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 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		