

COMPRESSOR DEFINITION

Designation	EM U40CLP
Nominal Voltage/Frequency	220 V 50 Hz 60 Hz
Engineering Number	513306176

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	RSCR		
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 ²] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm ²] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/8	[hp]
2 Displacement	5.96	[cm ³] (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 ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 50/60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C3/QPS2-A22MD3/QPS2-A22MD3 091	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	5(300)	[µF(VAC minimum)]
5 Motor protection	4TM189NFBYY-53	
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	CE - TUV - UKCA	

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	87	0.50	1.09	3.98	1.00	1.17

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	85	0.40	1.28	4.80	1.21	1.41

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)	199	50	58	69	0.45	0.62	2.86	0.72	0.84
-30	(-22)	275	69	81	74	0.46	0.86	3.70	0.93	1.08
-25	(-13)	365	92	107	80	0.48	1.14	4.59	1.16	1.34
-20	(- 4)	470	118	138	85	0.50	1.48	5.55	1.40	1.63
-15	(+ 5)	593	149	174	90	0.51	1.87	6.60	1.66	1.93
-10	(+14)	736	185	216	95	0.53	2.32	7.74	1.95	2.27

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)	178	45	52	70	0.46	0.56	2.55	0.64	0.75
-30	(-22)	252	64	74	76	0.47	0.79	3.32	0.84	0.97
-25	(-13)	340	86	100	82	0.49	1.07	4.14	1.04	1.21
-20	(- 4)	445	112	131	89	0.51	1.40	5.01	1.26	1.47
-15	(+ 5)	569	143	167	95	0.53	1.79	5.96	1.50	1.75
-10	(+14)	713	180	209	102	0.55	2.25	6.99	1.76	2.05

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)	158	40	46	70	0.47	0.50	2.28	0.58	0.67	
-30 (-22)	228	57	67	77	0.48	0.72	2.98	0.75	0.87	
-25 (-13)	313	79	92	84	0.50	0.98	3.72	0.94	1.09	
-20 (- 4)	416	105	122	92	0.52	1.31	4.50	1.13	1.32	
-15 (+ 5)	538	136	158	100	0.54	1.69	5.35	1.35	1.57	
-10 (+14)	681	172	200	109	0.57	2.15	6.27	1.58	1.84	

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)	140	35	41	69	0.48	0.44	2.01	0.51	0.59	
-30 (-22)	203	51	60	77	0.49	0.64	2.64	0.67	0.77	
-25 (-13)	283	71	83	86	0.51	0.89	3.30	0.83	0.97	
-20 (- 4)	380	96	111	95	0.53	1.20	3.99	1.01	1.17	
-15 (+ 5)	499	126	146	105	0.56	1.57	4.74	1.19	1.39	
-10 (+14)	639	161	187	115	0.59	2.02	5.55	1.40	1.63	

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)	242	61	71	66	0.31	0.76	3.68	0.93	1.08	
-30 (-22)	327	82	96	73	0.34	1.02	4.49	1.13	1.32	
-25 (-13)	427	108	125	79	0.37	1.34	5.39	1.36	1.58	
-20 (- 4)	549	138	161	86	0.40	1.72	6.40	1.61	1.87	
-15 (+ 5)	697	176	204	93	0.44	2.19	7.53	1.90	2.21	
-10 (+14)	876	221	257	99	0.47	2.76	8.81	2.22	2.58	

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)	222	56	65	66	0.32	0.70	3.39	0.85	0.99	
-30 (-22)	305	77	89	74	0.35	0.95	4.12	1.04	1.21	
-25 (-13)	402	101	118	82	0.38	1.26	4.89	1.23	1.43	
-20 (- 4)	519	131	152	90	0.42	1.63	5.73	1.44	1.68	
-15 (+ 5)	662	167	194	99	0.46	2.08	6.66	1.68	1.95	
-10 (+14)	835	210	245	108	0.50	2.63	7.70	1.94	2.26	

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)	207	52	61	67	0.33	0.65	3.09	0.78	0.90
-30	(-22)	287	72	84	75	0.36	0.90	3.79	0.96	1.11
-25	(-13)	380	96	111	84	0.40	1.19	4.51	1.14	1.32
-20	(- 4)	492	124	144	94	0.44	1.55	5.25	1.32	1.54
-15	(+ 5)	629	159	184	104	0.48	1.98	6.05	1.52	1.77
-10	(+14)	795	200	233	115	0.53	2.51	6.92	1.74	2.03

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)	181	46	53	69	0.34	0.57	2.59	0.65	0.76
-30	(-22)	257	65	75	77	0.37	0.81	3.34	0.84	0.98
-25	(-13)	346	87	101	86	0.41	1.08	4.06	1.02	1.19
-20	(- 4)	453	114	133	96	0.45	1.42	4.77	1.20	1.40
-15	(+ 5)	583	147	171	106	0.50	1.83	5.50	1.39	1.61
-10	(+14)	741	187	217	118	0.55	2.34	6.27	1.58	1.84

F - EXTERNAL CHARACTERISTICS

1 Base plate	New Base Plate EUEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +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	6.5 +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		