

COMPRESSOR DEFINITION

Designation	EM U45CLP
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513306059

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
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 pressures/temperature			
9.1 Operating (gauge)	7.7	[kgf/cm ²] (109 psig)	/ °C - °F
9.2 Peak (gauge)	9.8	[kgf/cm ²] (139 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	MINERAL / ISO10	
4 Weight (with oil charge)	7.4	[kg] (16.31 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

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	7M4R7MC1	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	4TM276RFBYY-53	
6 Start winding resistance	7.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	5.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	7.85/7.20	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.50/1.29	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	1.70/1.48	[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]
348	88	102	76	1.30	1.09	4.60	1.16	1.35

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]
412	104	121	84	1.22	1.29	4.92	1.24	1.44

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)	183	46	54	54	1.18	0.57	3.41	0.86	1.00
-30 (-22)	254	64	75	61	1.23	0.80	4.20	1.06	1.23
-25 (-13)	339	86	99	68	1.27	1.06	4.99	1.26	1.46
-20 (- 4)	440	111	129	76	1.31	1.38	5.78	1.46	1.70
-15 (+ 5)	556	140	163	84	1.35	1.75	6.63	1.67	1.94
-10 (+14)	690	174	202	91	1.40	2.18	7.53	1.90	2.21

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)	157	40	46	55	1.21	0.49	2.84	0.72	0.83
-30 (-22)	231	58	68	64	1.24	0.72	3.63	0.91	1.06
-25 (-13)	315	79	92	72	1.28	0.99	4.35	1.10	1.28
-20 (- 4)	411	103	120	81	1.33	1.29	5.04	1.27	1.48
-15 (+ 5)	518	131	152	91	1.38	1.63	5.72	1.44	1.68
-10 (+14)	640	161	187	100	1.45	2.02	6.41	1.62	1.88

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)	130	33	38	53	1.19	0.41	2.43	0.61	0.71	
-30 (-22)	206	52	60	63	1.23	0.65	3.25	0.82	0.95	
-25 (-13)	289	73	85	73	1.28	0.91	3.96	1.00	1.16	
-20 (- 4)	380	96	111	83	1.34	1.19	4.58	1.15	1.34	
-15 (+ 5)	479	121	140	94	1.42	1.51	5.13	1.29	1.50	
-10 (+14)	587	148	172	104	1.52	1.85	5.65	1.42	1.65	

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)	117	29	34	60	1.05	0.36	1.94	0.49	0.57	
-30 (-22)	241	61	71	66	1.10	0.76	3.58	0.90	1.05	
-25 (-13)	370	93	108	75	1.16	1.16	4.88	1.23	1.43	
-20 (- 4)	506	127	148	85	1.23	1.59	5.92	1.49	1.74	
-15 (+ 5)	652	164	191	97	1.30	2.05	6.81	1.72	1.99	
-10 (+14)	812	205	238	107	1.39	2.56	7.62	1.92	2.23	

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)	187	47	55	62	1.07	0.59	3.03	0.76	0.89	
-30 (-22)	273	69	80	68	1.12	0.86	4.06	1.02	1.19	
-25 (-13)	370	93	108	77	1.19	1.16	4.83	1.22	1.42	
-20 (- 4)	482	121	141	89	1.27	1.51	5.45	1.37	1.60	
-15 (+ 5)	611	154	179	102	1.36	1.92	6.01	1.51	1.76	
-10 (+14)	760	192	223	115	1.47	2.40	6.59	1.66	1.93	

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)	173	44	51	67	1.09	0.54	2.60	0.66	0.76	
-30 (-22)	237	60	69	72	1.14	0.74	3.32	0.84	0.97	
-25 (-13)	318	80	93	82	1.21	1.00	3.90	0.98	1.14	
-20 (- 4)	421	106	123	95	1.30	1.32	4.41	1.11	1.29	
-15 (+ 5)	549	138	161	109	1.40	1.73	4.96	1.25	1.45	
-10 (+14)	704	177	206	123	1.52	2.22	5.64	1.42	1.65	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard 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		