

COMPRESSOR DEFINITION

Designation	EM Y45CLP
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513300076

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	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	85 to 110 V	90 to 110 V
8.2 LBP (43°C Ambient temperature)	Static	85 to 110 V	90 to 110 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	1/7	[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	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.7	[kg] (16.98 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	7M4R7MD3/8EA14B3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	12(180)	[µF(VAC minimum)]
5 Motor protection	4TM232NFBYY-53	
6 Start winding resistance		[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance		[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[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	CCC	

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]
338	85	99	64	0.73	1.06	5.28	1.33	1.55

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]
389	98	114	70	0.73	1.22	5.56	1.40	1.63

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz			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)	195	49	57	42	0.58	0.61	4.59	1.16	1.35
-30 (-22)	270	68	79	49	0.63	0.85	5.54	1.40	1.62
-25 (-13)	355	90	104	55	0.68	1.11	6.47	1.63	1.90
-20 (- 4)	454	114	133	61	0.73	1.43	7.46	1.88	2.19
-15 (+ 5)	570	144	167	67	0.78	1.79	8.57	2.16	2.51
-10 (+14)	707	178	207	72	0.83	2.23	9.86	2.49	2.89

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)	164	41	48	43	0.58	0.51	3.87	0.98	1.14
-30 (-22)	239	60	70	50	0.63	0.75	4.78	1.20	1.40
-25 (-13)	324	82	95	57	0.70	1.02	5.63	1.42	1.65
-20 (- 4)	423	107	124	65	0.76	1.33	6.50	1.64	1.90
-15 (+ 5)	540	136	158	72	0.83	1.70	7.45	1.88	2.18
-10 (+14)	680	171	199	79	0.90	2.15	8.54	2.15	2.50

E - PERFORMANCE - CURVES

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)	139	35	41	42	0.57	0.44	3.34	0.84	0.98	
-30 (-22)	210	53	62	50	0.63	0.66	4.23	1.07	1.24	
-25 (-13)	292	74	86	58	0.70	0.92	5.03	1.27	1.47	
-20 (- 4)	390	98	114	67	0.78	1.23	5.80	1.46	1.70	
-15 (+ 5)	506	128	148	76	0.87	1.59	6.61	1.67	1.94	
-10 (+14)	646	163	189	86	0.95	2.04	7.53	1.90	2.21	

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)	118	30	35	41	0.57	0.37	2.82	0.71	0.83	
-30 (-22)	183	46	54	49	0.63	0.57	3.72	0.94	1.09	
-25 (-13)	261	66	76	59	0.71	0.82	4.48	1.13	1.31	
-20 (- 4)	354	89	104	69	0.80	1.11	5.18	1.31	1.52	
-15 (+ 5)	467	118	137	79	0.90	1.47	5.88	1.48	1.72	
-10 (+14)	604	152	177	91	1.00	1.91	6.65	1.67	1.95	

TEST CONDITIONS: @100V60Hz		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)	226	57	66	47	0.51	0.71	4.76	1.20	1.39	
-30 (-22)	311	78	91	55	0.58	0.97	5.69	1.43	1.67	
-25 (-13)	414	104	121	62	0.66	1.30	6.66	1.68	1.95	
-20 (- 4)	538	136	158	70	0.73	1.69	7.70	1.94	2.26	
-15 (+ 5)	686	173	201	78	0.81	2.16	8.83	2.23	2.59	
-10 (+14)	860	217	252	85	0.89	2.71	10.07	2.54	2.95	

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)	212	53	62	49	0.52	0.66	4.39	1.11	1.29	
-30 (-22)	294	74	86	57	0.60	0.92	5.21	1.31	1.53	
-25 (-13)	393	99	115	65	0.68	1.23	6.04	1.52	1.77	
-20 (- 4)	512	129	150	74	0.77	1.61	6.91	1.74	2.02	
-15 (+ 5)	653	164	191	83	0.87	2.05	7.82	1.97	2.29	
-10 (+14)	819	206	240	93	0.97	2.58	8.81	2.22	2.58	

E - PERFORMANCE - CURVES

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)	190	48	56	49	0.52	0.60	3.91	0.99	1.15
-30	(-22)	268	68	79	57	0.61	0.84	4.67	1.18	1.37
-25	(-13)	362	91	106	67	0.70	1.14	5.40	1.36	1.58
-20	(- 4)	474	120	139	77	0.81	1.49	6.13	1.55	1.80
-15	(+ 5)	609	153	178	88	0.92	1.92	6.88	1.73	2.02
-10	(+14)	767	193	225	100	1.04	2.42	7.66	1.93	2.24

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)	157	39	46	46	0.50	0.49	3.35	0.84	0.98
-30	(-22)	230	58	67	56	0.60	0.72	4.09	1.03	1.20
-25	(-13)	318	80	93	67	0.71	1.00	4.76	1.20	1.40
-20	(- 4)	424	107	124	79	0.83	1.33	5.40	1.36	1.58
-15	(+ 5)	550	139	161	92	0.96	1.73	6.01	1.52	1.76
-10	(+14)	700	176	205	106	1.10	2.21	6.63	1.67	1.94

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 40° up + 45° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° 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 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		