

COMPRESSOR DEFINITION

Designation	EM YS45CLP
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513300026

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 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	1/7	[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)	7.4	[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	8EA14C3	
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

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)	190	48	56	42	0.60	0.60	4.49	1.13	1.32	
-30 (-22)	263	66	77	48	0.64	0.82	5.43	1.37	1.59	
-25 (-13)	351	88	103	55	0.69	1.10	6.41	1.62	1.88	
-20 (- 4)	456	115	134	61	0.74	1.43	7.47	1.88	2.19	
-15 (+ 5)	581	146	170	67	0.80	1.83	8.65	2.18	2.53	
-10 (+14)	726	183	213	73	0.85	2.29	9.96	2.51	2.92	

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)	177	45	52	43	0.60	0.55	4.10	1.03	1.20	
-30 (-22)	246	62	72	50	0.65	0.77	4.95	1.25	1.45	
-25 (-13)	331	83	97	57	0.71	1.04	5.81	1.46	1.70	
-20 (- 4)	433	109	127	65	0.78	1.36	6.70	1.69	1.96	
-15 (+ 5)	554	140	162	73	0.85	1.74	7.65	1.93	2.24	
-10 (+14)	696	175	204	80	0.92	2.20	8.70	2.19	2.55	

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)	146	37	43	42	0.60	0.46	3.47	0.87	1.02	
-30 (-22)	213	54	62	50	0.65	0.67	4.31	1.09	1.26	
-25 (-13)	295	74	86	58	0.72	0.93	5.11	1.29	1.50	
-20 (- 4)	395	100	116	67	0.80	1.24	5.89	1.49	1.73	
-15 (+ 5)	514	129	151	76	0.89	1.62	6.70	1.69	1.96	
-10 (+14)	654	165	192	86	0.97	2.06	7.57	1.91	2.22	

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)	116	29	34	41	0.59	0.36	2.80	0.70	0.82	
-30 (-22)	181	46	53	49	0.65	0.57	3.70	0.93	1.08	
-25 (-13)	262	66	77	58	0.72	0.82	4.52	1.14	1.32	
-20 (- 4)	360	91	105	68	0.81	1.13	5.28	1.33	1.55	
-15 (+ 5)	477	120	140	79	0.91	1.50	6.02	1.52	1.76	
-10 (+14)	616	155	180	91	1.02	1.94	6.76	1.70	1.98	

E - PERFORMANCE - CURVES

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]
-35	(-31)	239	60	70	49	0.54	0.75	4.92	1.24	1.44
-30	(-22)	322	81	94	56	0.60	1.01	5.80	1.46	1.70
-25	(-13)	421	106	124	63	0.67	1.32	6.74	1.70	1.98
-20	(- 4)	542	137	159	70	0.73	1.70	7.76	1.95	2.27
-15	(+ 5)	687	173	201	77	0.80	2.16	8.86	2.23	2.60
-10	(+14)	858	216	251	85	0.88	2.71	10.08	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]
-35	(-31)	213	54	63	49	0.54	0.67	4.39	1.11	1.29
-30	(-22)	296	74	87	57	0.61	0.93	5.23	1.32	1.53
-25	(-13)	394	99	115	65	0.69	1.24	6.08	1.53	1.78
-20	(- 4)	512	129	150	74	0.77	1.61	6.95	1.75	2.04
-15	(+ 5)	651	164	191	83	0.86	2.05	7.86	1.98	2.30
-10	(+14)	817	206	239	92	0.96	2.58	8.83	2.23	2.59

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]
-35	(-31)	179	45	53	47	0.52	0.56	3.78	0.95	1.11
-30	(-22)	263	66	77	57	0.61	0.82	4.63	1.17	1.36
-25	(-13)	361	91	106	66	0.71	1.13	5.44	1.37	1.59
-20	(- 4)	476	120	140	77	0.81	1.50	6.23	1.57	1.82
-15	(+ 5)	613	155	180	88	0.91	1.93	7.00	1.76	2.05
-10	(+14)	774	195	227	99	1.03	2.44	7.79	1.96	2.28

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]
-35	(-31)	129	33	38	43	0.48	0.40	3.02	0.76	0.89
-30	(-22)	215	54	63	54	0.58	0.67	3.95	0.99	1.16
-25	(-13)	314	79	92	65	0.70	0.99	4.78	1.20	1.40
-20	(- 4)	429	108	126	78	0.81	1.35	5.53	1.39	1.62
-15	(+ 5)	564	142	165	91	0.94	1.78	6.22	1.57	1.82
-10	(+14)	721	182	211	105	1.08	2.28	6.88	1.73	2.02

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		