

COMPRESSOR DEFINITION

Designation	EM YS46CLC
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513300065

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	90 to 110 V	90 to 110 V
8.2 LBP (43°C Ambient temperature)	Static	90 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	1/5	[hp]
2 Displacement	7.96	[cm ³] (0.486 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	17.600	
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)	7.5	[kg] (16.53 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	7M4R7MB3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	4TM427NFBYY-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]
474	119	139	89	1.02	1.49	5.36	1.35	1.57

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]
546	138	160	100	0.95	1.71	5.46	1.38	1.60

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)	266	67	78	58	0.81	0.83	4.54	1.14	1.33
-30 (-22)	360	91	105	66	0.86	1.13	5.48	1.38	1.61
-25 (-13)	465	117	136	73	0.92	1.46	6.33	1.59	1.85
-20 (- 4)	588	148	172	82	0.99	1.85	7.18	1.81	2.11
-15 (+ 5)	738	186	216	90	1.06	2.32	8.15	2.05	2.39
-10 (+14)	924	233	271	99	1.14	2.91	9.32	2.35	2.73

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)	246	62	72	61	0.83	0.77	4.08	1.03	1.20
-30 (-22)	345	87	101	69	0.89	1.08	5.04	1.27	1.48
-25 (-13)	450	113	132	78	0.96	1.41	5.84	1.47	1.71
-20 (- 4)	570	144	167	87	1.04	1.79	6.56	1.65	1.92
-15 (+ 5)	714	180	209	97	1.13	2.25	7.31	1.84	2.14
-10 (+14)	889	224	260	107	1.22	2.80	8.19	2.06	2.40

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)	204	52	60	61	0.83	0.64	3.34	0.84	0.98	
-30 (-22)	315	79	92	70	0.90	0.99	4.47	1.13	1.31	
-25 (-13)	429	108	126	81	0.99	1.35	5.35	1.35	1.57	
-20 (- 4)	554	140	162	92	1.09	1.74	6.08	1.53	1.78	
-15 (+ 5)	698	176	205	104	1.19	2.20	6.76	1.70	1.98	
-10 (+14)	870	219	255	116	1.31	2.75	7.48	1.89	2.19	

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)	102	26	30	59	0.82	0.32	1.73	0.44	0.51	
-30 (-22)	233	59	68	71	0.91	0.73	3.17	0.80	0.93	
-25 (-13)	363	92	106	83	1.01	1.14	4.27	1.08	1.25	
-20 (- 4)	501	126	147	97	1.13	1.57	5.15	1.30	1.51	
-15 (+ 5)	654	165	192	111	1.26	2.06	5.89	1.49	1.73	
-10 (+14)	831	209	244	126	1.40	2.62	6.61	1.67	1.94	

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)	304	77	89	64	0.66	0.95	4.72	1.19	1.38	
-30 (-22)	423	106	124	74	0.76	1.32	5.67	1.43	1.66	
-25 (-13)	561	141	164	86	0.87	1.76	6.56	1.65	1.92	
-20 (- 4)	725	183	212	98	0.99	2.28	7.45	1.88	2.18	
-15 (+ 5)	918	231	269	110	1.11	2.89	8.39	2.11	2.46	
-10 (+14)	1145	289	336	122	1.23	3.61	9.43	2.38	2.76	

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)	287	72	84	65	0.67	0.90	4.38	1.10	1.28	
-30 (-22)	399	100	117	76	0.78	1.25	5.22	1.31	1.53	
-25 (-13)	531	134	156	89	0.91	1.67	5.98	1.51	1.75	
-20 (- 4)	689	174	202	102	1.05	2.16	6.73	1.70	1.97	
-15 (+ 5)	877	221	257	117	1.19	2.76	7.52	1.89	2.20	
-10 (+14)	1101	277	323	131	1.35	3.47	8.39	2.11	2.46	

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)	254	64	74	66	0.68	0.79	3.89	0.98	1.14
-30	(-22)	358	90	105	77	0.79	1.12	4.65	1.17	1.36
-25	(-13)	483	122	142	90	0.93	1.52	5.34	1.34	1.56
-20	(- 4)	635	160	186	106	1.08	1.99	5.99	1.51	1.75
-15	(+ 5)	818	206	240	122	1.26	2.57	6.66	1.68	1.95
-10	(+14)	1037	261	304	140	1.44	3.27	7.40	1.86	2.17

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)	222	56	65	65	0.66	0.69	3.44	0.87	1.01
-30	(-22)	317	80	93	76	0.78	0.99	4.17	1.05	1.22
-25	(-13)	435	110	127	91	0.92	1.37	4.81	1.21	1.41
-20	(- 4)	580	146	170	107	1.10	1.82	5.40	1.36	1.58
-15	(+ 5)	757	191	222	126	1.29	2.39	6.00	1.51	1.76
-10	(+14)	971	245	285	146	1.49	3.07	6.65	1.67	1.95

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
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	Straight		
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	Straight		
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	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		