

COMPRESSOR DEFINITION

Designation	EM B46CLC
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513300471

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	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 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)	7.4	[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	7M4R7MB3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	4TM427KFBYY-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]
478	120	140	84	0.90	1.50	5.69	1.43	1.67

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	94	0.95	1.71	5.81	1.46	1.70

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)	245	62	72	56	0.65	0.77	4.63	1.17	1.36
-30	(-22)	340	86	100	64	0.70	1.06	5.54	1.40	1.62
-25	(-13)	471	119	138	72	0.77	1.48	6.60	1.66	1.94
-20	(- 4)	629	159	184	81	0.87	1.98	7.77	1.96	2.28
-15	(+ 5)	808	204	237	89	0.96	2.54	8.99	2.26	2.63
-10	(+14)	999	252	293	97	1.04	3.15	10.19	2.57	2.98

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)	308	78	90	56	0.65	0.97	4.94	1.24	1.45
-30	(-22)	382	96	112	65	0.71	1.20	5.62	1.42	1.65
-25	(-13)	487	123	143	74	0.81	1.53	6.40	1.61	1.87
-20	(- 4)	617	155	181	84	0.91	1.94	7.22	1.82	2.12
-15	(+ 5)	762	192	223	95	1.02	2.40	8.03	2.02	2.35
-10	(+14)	915	231	268	105	1.12	2.89	8.77	2.21	2.57

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)	192	48	56	55	0.63	0.60	3.71	0.94	1.09	
-30 (-22)	269	68	79	66	0.72	0.84	4.38	1.10	1.28	
-25 (-13)	373	94	109	77	0.84	1.17	5.09	1.28	1.49	
-20 (- 4)	498	125	146	88	0.96	1.56	5.79	1.46	1.70	
-15 (+ 5)	634	160	186	101	1.09	1.99	6.42	1.62	1.88	
-10 (+14)	775	195	227	113	1.21	2.44	6.93	1.75	2.03	

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)	176	44	52	53	0.61	0.55	3.40	0.86	1.00	
-30 (-22)	281	71	82	65	0.73	0.88	4.28	1.08	1.25	
-25 (-13)	410	103	120	77	0.87	1.29	5.14	1.30	1.51	
-20 (- 4)	554	139	162	91	1.02	1.74	5.94	1.50	1.74	
-15 (+ 5)	706	178	207	106	1.18	2.22	6.61	1.66	1.94	
-10 (+14)	858	216	251	121	1.32	2.71	7.09	1.79	2.08	

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)	322	81	94	63	0.65	1.01	5.09	1.28	1.49	
-30 (-22)	428	108	125	73	0.75	1.34	5.87	1.48	1.72	
-25 (-13)	558	141	163	83	0.84	1.75	6.74	1.70	1.97	
-20 (- 4)	716	181	210	93	0.95	2.25	7.66	1.93	2.24	
-15 (+ 5)	907	229	266	105	1.05	2.86	8.61	2.17	2.52	
-10 (+14)	1134	286	332	118	1.17	3.58	9.58	2.41	2.81	

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)	299	75	88	64	0.66	0.94	4.68	1.18	1.37	
-30 (-22)	403	101	118	75	0.76	1.26	5.41	1.36	1.59	
-25 (-13)	529	133	155	85	0.86	1.66	6.21	1.56	1.82	
-20 (- 4)	682	172	200	97	0.98	2.14	7.04	1.77	2.06	
-15 (+ 5)	867	218	254	109	1.11	2.73	7.89	1.99	2.31	
-10 (+14)	1086	274	318	124	1.25	3.43	8.73	2.20	2.56	

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)	277	70	81	65	0.67	0.87	4.24	1.07	1.24
-30	(-22)	378	95	111	77	0.77	1.18	4.93	1.24	1.45
-25	(-13)	501	126	147	88	0.89	1.57	5.67	1.43	1.66
-20	(- 4)	650	164	190	101	1.02	2.04	6.44	1.62	1.89
-15	(+ 5)	828	209	243	115	1.17	2.61	7.20	1.81	2.11
-10	(+14)	1041	262	305	131	1.33	3.28	7.93	2.00	2.33

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)	226	57	66	62	0.65	0.71	3.61	0.91	1.06
-30	(-22)	326	82	95	76	0.76	1.02	4.28	1.08	1.26
-25	(-13)	446	112	131	89	0.89	1.40	4.99	1.26	1.46
-20	(- 4)	591	149	173	104	1.04	1.86	5.69	1.43	1.67
-15	(+ 5)	765	193	224	120	1.21	2.41	6.38	1.61	1.87
-10	(+14)	970	245	284	138	1.40	3.06	7.03	1.77	2.06

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal 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 0° 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 0° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		