

COMPRESSOR DEFINITION

Designation	VEM C9C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513906018

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 40-150	[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	BPM		
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	80 to 140 V	80 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	80 to 140 V	80 to 140 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	9.04	[cm ³] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
3 Lubricant charge	210	[ml] (7.10 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.8	[kg] (17.20 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 40-150 Hz 3 ~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	VCC31156XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC31156XXXXX	
6 Start winding resistance	8.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.10	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (40/150 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - UL - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V1200RPM			CECOMAFLBP Static		Evaporating temperature (Condensing temperature)	-25°C (-13°F) 55°C (131°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]
160	40	47	33	1.04	0.61	4.89	1.23	1.43

TEST CONDITIONS: @115V1600RPM			CECOMAFLBP Static		Evaporating temperature (Condensing temperature)	-25°C (-13°F) 55°C (131°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]
218	55	64	42	1.29	0.83	5.17	1.30	1.51

TEST CONDITIONS: @115V2000RPM			CECOMAFLBP Static		Evaporating temperature (Condensing temperature)	-25°C (-13°F) 55°C (131°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]
276	70	81	53	1.60	1.05	5.23	1.32	1.53

TEST CONDITIONS: @115V3000RPM			CECOMAFLBP Static		Evaporating temperature (Condensing temperature)	-25°C (-13°F) 55°C (131°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]
411	104	120	80	2.25	1.57	5.16	1.30	1.51

TEST CONDITIONS: @115V4500RPM			CECOMAFLBP Static		Evaporating temperature (Condensing temperature)	-25°C (-13°F) 55°C (131°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]
553	139	162	112	1.71	2.11	4.95	1.25	1.45

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1200RPM		CECOMAF 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)	119	30	35	20	0.30	0.38	5.84	1.47	1.71	
-30 (-22)	163	41	48	24	0.39	0.52	6.76	1.70	1.98	
-25 (-13)	215	54	63	28	0.43	0.69	7.80	1.97	2.29	
-20 (- 4)	277	70	81	31	0.46	0.89	9.01	2.27	2.64	
-15 (+ 5)	351	89	103	34	0.48	1.13	10.44	2.63	3.06	
-10 (+14)	439	111	129	36	0.52	1.41	12.12	3.05	3.55	

TEST CONDITIONS: @115V1200RPM		CECOMAF 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)	98	25	29	21	0.31	0.34	4.63	1.17	1.36	
-30 (-22)	138	35	41	26	0.38	0.48	5.35	1.35	1.57	
-25 (-13)	186	47	55	30	0.42	0.65	6.12	1.54	1.79	
-20 (- 4)	244	61	71	35	0.47	0.85	6.99	1.76	2.05	
-15 (+ 5)	312	79	91	39	0.54	1.09	8.00	2.02	2.34	
-10 (+14)	392	99	115	43	0.64	1.37	9.20	2.32	2.70	

TEST CONDITIONS: @115V1200RPM		CECOMAF 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)	77	19	23	21	0.34	0.29	3.59	0.90	1.05	
-30 (-22)	114	29	33	27	0.39	0.43	4.26	1.07	1.25	
-25 (-13)	158	40	46	32	0.44	0.60	4.91	1.24	1.44	
-20 (- 4)	210	53	62	38	0.52	0.80	5.57	1.40	1.63	
-15 (+ 5)	272	69	80	43	0.64	1.04	6.31	1.59	1.85	
-10 (+14)	345	87	101	48	0.82	1.32	7.16	1.81	2.10	

TEST CONDITIONS: @115V1600RPM		CECOMAF 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)	165	42	48	26	0.49	0.53	6.23	1.57	1.83	
-30 (-22)	223	56	65	31	0.53	0.72	7.08	1.78	2.08	
-25 (-13)	293	74	86	36	0.56	0.94	8.05	2.03	2.36	
-20 (- 4)	377	95	111	41	0.60	1.21	9.18	2.31	2.69	
-15 (+ 5)	477	120	140	45	0.64	1.53	10.52	2.65	3.08	
-10 (+14)	594	150	174	49	0.69	1.92	12.11	3.05	3.55	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1600RPM		CECOMAF 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)	138	35	40	28	0.43	0.48	4.97	1.25	1.46
-30	(-22)	192	48	56	34	0.48	0.67	5.69	1.43	1.67
-25	(-13)	256	65	75	40	0.53	0.89	6.43	1.62	1.89
-20	(- 4)	334	84	98	46	0.60	1.16	7.26	1.83	2.13
-15	(+ 5)	426	107	125	52	0.67	1.49	8.21	2.07	2.41
-10	(+14)	533	134	156	57	0.76	1.87	9.33	2.35	2.73

TEST CONDITIONS: @115V1600RPM		CECOMAF 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)	110	28	32	29	0.42	0.42	3.83	0.97	1.12
-30	(-22)	160	40	47	35	0.49	0.61	4.55	1.15	1.33
-25	(-13)	219	55	64	42	0.58	0.83	5.22	1.32	1.53
-20	(- 4)	289	73	85	49	0.68	1.10	5.88	1.48	1.72
-15	(+ 5)	373	94	109	57	0.80	1.43	6.59	1.66	1.93
-10	(+14)	471	119	138	64	0.94	1.81	7.37	1.86	2.16

TEST CONDITIONS: @115V2000RPM		CECOMAF 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)	208	52	61	33	0.51	0.67	6.30	1.59	1.85
-30	(-22)	280	71	82	39	0.60	0.90	7.14	1.80	2.09
-25	(-13)	368	93	108	46	0.67	1.18	8.07	2.03	2.36
-20	(- 4)	472	119	138	52	0.72	1.52	9.15	2.30	2.68
-15	(+ 5)	596	150	175	57	0.78	1.92	10.42	2.63	3.05
-10	(+14)	742	187	218	62	0.84	2.39	11.96	3.01	3.50

TEST CONDITIONS: @115V2000RPM		CECOMAF 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)	175	44	51	35	0.49	0.61	5.07	1.28	1.48
-30	(-22)	242	61	71	42	0.60	0.84	5.78	1.46	1.69
-25	(-13)	323	81	95	49	0.68	1.12	6.50	1.64	1.90
-20	(- 4)	419	105	123	57	0.76	1.46	7.28	1.84	2.13
-15	(+ 5)	533	134	156	65	0.84	1.86	8.18	2.06	2.40
-10	(+14)	667	168	195	72	0.94	2.34	9.26	2.33	2.71

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2000RPM		CECOMAF 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)	141	35	41	36	0.50	0.54	3.89	0.98	1.14
-30	(-22)	202	51	59	44	0.62	0.77	4.63	1.17	1.36
-25	(-13)	276	70	81	52	0.72	1.05	5.29	1.33	1.55
-20	(- 4)	363	92	106	62	0.83	1.39	5.93	1.49	1.74
-15	(+ 5)	467	118	137	71	0.94	1.79	6.60	1.66	1.93
-10	(+14)	590	149	173	80	1.07	2.26	7.35	1.85	2.16

TEST CONDITIONS: @115V3000RPM		CECOMAF 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)	307	77	90	50	0.76	0.98	6.11	1.54	1.79
-30	(-22)	416	105	122	60	0.86	1.33	6.87	1.73	2.01
-25	(-13)	548	138	160	71	0.98	1.76	7.73	1.95	2.27
-20	(- 4)	706	178	207	81	1.10	2.27	8.74	2.20	2.56
-15	(+ 5)	893	225	262	90	1.23	2.87	9.95	2.51	2.92
-10	(+14)	1113	281	326	98	1.36	3.59	11.41	2.87	3.34

TEST CONDITIONS: @115V3000RPM		CECOMAF 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)	256	64	75	52	0.74	0.89	4.98	1.26	1.46
-30	(-22)	357	90	105	64	0.88	1.24	5.61	1.41	1.64
-25	(-13)	478	120	140	76	1.02	1.66	6.26	1.58	1.84
-20	(- 4)	623	157	183	89	1.18	2.17	6.99	1.76	2.05
-15	(+ 5)	796	201	233	101	1.34	2.78	7.84	1.98	2.30
-10	(+14)	998	252	293	113	1.50	3.50	8.85	2.23	2.59

TEST CONDITIONS: @115V3000RPM		CECOMAF 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)	203	51	60	52	0.77	0.77	3.92	0.99	1.15
-30	(-22)	296	74	87	65	0.92	1.12	4.55	1.15	1.33
-25	(-13)	406	102	119	79	1.08	1.55	5.13	1.29	1.50
-20	(- 4)	538	136	158	95	1.24	2.06	5.71	1.44	1.67
-15	(+ 5)	695	175	204	110	1.41	2.66	6.34	1.60	1.86
-10	(+14)	880	222	258	125	1.59	3.38	7.05	1.78	2.07

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V4500RPM		CECOMAF 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)	447	113	131	78	1.18	1.43	5.74	1.45	1.68	
-30 (-22)	591	149	173	97	1.30	1.90	6.04	1.52	1.77	
-25 (-13)	769	194	225	109	1.47	2.47	7.07	1.78	2.07	
-20 (- 4)	983	248	288	116	1.68	3.16	8.49	2.14	2.49	
-15 (+ 5)	1237	312	362	124	1.91	3.98	9.95	2.51	2.92	
-10 (+14)	1533	386	449	138	2.14	4.95	11.11	2.80	3.25	

TEST CONDITIONS: @115V4500RPM		CECOMAF 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)	387	97	113	78	1.16	1.34	4.99	1.26	1.46	
-30 (-22)	518	131	152	97	1.35	1.80	5.34	1.35	1.57	
-25 (-13)	681	172	199	108	1.57	2.37	6.36	1.60	1.86	
-20 (- 4)	877	221	257	116	1.80	3.06	7.70	1.94	2.26	
-15 (+ 5)	1111	280	326	127	2.05	3.88	9.00	2.27	2.64	
-10 (+14)	1385	349	406	144	2.28	4.85	9.92	2.50	2.91	

TEST CONDITIONS: @115V4500RPM		CECOMAF 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)	320	81	94	86	1.17	1.22	3.68	0.93	1.08	
-30 (-22)	439	111	129	107	1.38	1.67	3.90	0.98	1.14	
-25 (-13)	586	148	172	123	1.62	2.23	4.72	1.19	1.38	
-20 (- 4)	766	193	224	136	1.85	2.92	5.77	1.46	1.69	
-15 (+ 5)	979	247	287	153	2.08	3.75	6.73	1.69	1.97	
-10 (+14)	1231	310	361	177	2.27	4.73	7.22	1.82	2.12	

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	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		