

COMPRESSOR DEFINITION

Designation	VEM X5C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513903001

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	85 to 140 V	85 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	85 to 140 V	85 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	5.19	[cm ³] (0.317 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	220	[ml] (7.44 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.59	[kg] (16.73 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	16.07	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	16.07	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	2.10/2.10	[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	UL	

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]
81	20	24	20	0.33	0.31	4.13	1.04	1.21

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]
111	28	33	25	0.40	0.42	4.39	1.11	1.29

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]
144	36	42	31	0.48	0.55	4.60	1.16	1.35

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]
225	57	66	47	0.71	0.86	4.78	1.20	1.40

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]
343	86	101	75	1.09	1.31	4.56	1.15	1.34

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)	64	16	19	12	0.17	0.20	5.26	1.32	1.54	
-30 (-22)	89	22	26	14	0.21	0.28	6.17	1.55	1.81	
-25 (-13)	119	30	35	17	0.25	0.38	7.15	1.80	2.10	
-20 (- 4)	155	39	45	19	0.28	0.50	8.26	2.08	2.42	
-15 (+ 5)	198	50	58	21	0.30	0.64	9.54	2.40	2.80	
-10 (+14)	248	62	73	22	0.33	0.80	11.05	2.78	3.24	

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)	51	13	15	13	0.19	0.18	4.09	1.03	1.20	
-30 (-22)	74	19	22	15	0.23	0.26	4.86	1.22	1.42	
-25 (-13)	102	26	30	18	0.27	0.35	5.62	1.42	1.65	
-20 (- 4)	135	34	40	21	0.31	0.47	6.43	1.62	1.88	
-15 (+ 5)	174	44	51	24	0.35	0.61	7.34	1.85	2.15	
-10 (+14)	220	55	64	26	0.38	0.77	8.40	2.12	2.46	

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)	38	10	11	13	0.19	0.14	2.92	0.74	0.85	
-30 (-22)	59	15	17	16	0.24	0.22	3.70	0.93	1.09	
-25 (-13)	84	21	25	19	0.29	0.32	4.41	1.11	1.29	
-20 (- 4)	114	29	34	23	0.33	0.44	5.09	1.28	1.49	
-15 (+ 5)	150	38	44	26	0.38	0.58	5.79	1.46	1.70	
-10 (+14)	192	48	56	29	0.43	0.74	6.57	1.66	1.93	

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)	86	22	25	16	0.23	0.27	5.40	1.36	1.58	
-30 (-22)	120	30	35	19	0.28	0.38	6.33	1.60	1.86	
-25 (-13)	160	40	47	22	0.32	0.51	7.32	1.84	2.14	
-20 (- 4)	209	53	61	25	0.37	0.67	8.42	2.12	2.47	
-15 (+ 5)	267	67	78	28	0.41	0.86	9.70	2.44	2.84	
-10 (+14)	335	84	98	30	0.44	1.08	11.23	2.83	3.29	

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)	69	17	20	17	0.25	0.24	4.13	1.04	1.21
-30	(-22)	100	25	29	20	0.29	0.35	4.96	1.25	1.45
-25	(-13)	138	35	40	24	0.35	0.48	5.76	1.45	1.69
-20	(- 4)	182	46	53	28	0.40	0.64	6.59	1.66	1.93
-15	(+ 5)	235	59	69	31	0.46	0.82	7.52	1.89	2.20
-10	(+14)	298	75	87	35	0.51	1.04	8.60	2.17	2.52

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)	51	13	15	17	0.25	0.19	2.93	0.74	0.86
-30	(-22)	80	20	23	21	0.30	0.30	3.79	0.96	1.11
-25	(-13)	114	29	33	25	0.36	0.43	4.55	1.15	1.33
-20	(- 4)	155	39	45	30	0.43	0.59	5.24	1.32	1.54
-15	(+ 5)	203	51	59	34	0.50	0.78	5.95	1.50	1.74
-10	(+14)	260	65	76	39	0.57	1.00	6.72	1.69	1.97

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)	112	28	33	20	0.29	0.36	5.70	1.44	1.67
-30	(-22)	154	39	45	23	0.35	0.49	6.56	1.65	1.92
-25	(-13)	204	51	60	27	0.40	0.66	7.48	1.89	2.19
-20	(- 4)	264	67	77	31	0.45	0.85	8.52	2.15	2.50
-15	(+ 5)	335	85	98	35	0.50	1.08	9.74	2.46	2.85
-10	(+14)	419	106	123	38	0.54	1.35	11.20	2.82	3.28

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)	92	23	27	21	0.31	0.32	4.46	1.12	1.31
-30	(-22)	131	33	38	25	0.37	0.45	5.23	1.32	1.53
-25	(-13)	177	45	52	29	0.44	0.62	5.97	1.50	1.75
-20	(- 4)	232	58	68	34	0.50	0.81	6.75	1.70	1.98
-15	(+ 5)	297	75	87	39	0.57	1.04	7.62	1.92	2.23
-10	(+14)	375	94	110	43	0.63	1.31	8.64	2.18	2.53

E - PERFORMANCE - CURVES

TEST CONDITIONS:		CECOMAF			(Condensing temperature 55°C (+131°F))					
@115V2000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	71	18	21	22	0.33	0.27	3.23	0.82	0.95	
-30 (-22)	106	27	31	26	0.39	0.40	4.06	1.02	1.19	
-25 (-13)	148	37	43	31	0.46	0.57	4.77	1.20	1.40	
-20 (- 4)	198	50	58	37	0.53	0.76	5.43	1.37	1.59	
-15 (+ 5)	258	65	76	42	0.61	0.99	6.11	1.54	1.79	
-10 (+14)	328	83	96	48	0.69	1.26	6.84	1.72	2.00	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 35°C (+95°F))					
@115V3000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	172	43	50	30	0.44	0.55	5.66	1.43	1.66	
-30 (-22)	233	59	68	36	0.53	0.75	6.45	1.62	1.89	
-25 (-13)	307	77	90	42	0.61	0.99	7.33	1.85	2.15	
-20 (- 4)	396	100	116	47	0.69	1.27	8.35	2.10	2.45	
-15 (+ 5)	501	126	147	53	0.77	1.61	9.56	2.41	2.80	
-10 (+14)	624	157	183	57	0.83	2.01	11.01	2.77	3.23	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 45°C (+113°F))					
@115V3000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	143	36	42	32	0.46	0.50	4.52	1.14	1.32	
-30 (-22)	200	50	59	39	0.56	0.69	5.18	1.30	1.52	
-25 (-13)	268	68	79	46	0.67	0.93	5.85	1.48	1.72	
-20 (- 4)	349	88	102	53	0.77	1.22	6.60	1.66	1.93	
-15 (+ 5)	446	112	131	60	0.87	1.56	7.46	1.88	2.18	
-10 (+14)	559	141	164	66	0.96	1.96	8.47	2.13	2.48	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 55°C (+131°F))					
@115V3000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%						+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	114	29	34	33	0.48	0.43	3.49	0.88	1.02	
-30 (-22)	166	42	49	40	0.59	0.63	4.15	1.04	1.21	
-25 (-13)	228	58	67	48	0.71	0.87	4.75	1.20	1.39	
-20 (- 4)	302	76	89	57	0.83	1.16	5.34	1.35	1.57	
-15 (+ 5)	390	98	114	65	0.96	1.50	5.98	1.51	1.75	
-10 (+14)	494	124	145	74	1.08	1.90	6.69	1.69	1.96	

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)	257	65	75	48	0.69	0.82	5.37	1.35	1.57	
-30 (-22)	343	86	101	57	0.82	1.10	6.06	1.53	1.77	
-25 (-13)	447	113	131	66	0.95	1.43	6.80	1.71	1.99	
-20 (- 4)	571	144	167	75	1.09	1.83	7.67	1.93	2.25	
-15 (+ 5)	718	181	210	83	1.21	2.31	8.69	2.19	2.55	
-10 (+14)	890	224	261	90	1.32	2.87	9.93	2.50	2.91	

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)	220	55	64	51	0.75	0.76	4.33	1.09	1.27	
-30 (-22)	300	75	88	61	0.88	1.04	4.92	1.24	1.44	
-25 (-13)	395	100	116	71	1.04	1.37	5.52	1.39	1.62	
-20 (- 4)	509	128	149	82	1.20	1.77	6.15	1.55	1.80	
-15 (+ 5)	644	162	189	93	1.36	2.25	6.88	1.73	2.01	
-10 (+14)	803	202	235	104	1.51	2.81	7.73	1.95	2.27	

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)	183	46	54	55	0.80	0.70	3.32	0.84	0.97	
-30 (-22)	256	64	75	65	0.94	0.97	3.96	1.00	1.16	
-25 (-13)	342	86	100	76	1.11	1.30	4.51	1.14	1.32	
-20 (- 4)	446	112	131	89	1.29	1.70	5.04	1.27	1.48	
-15 (+ 5)	569	143	167	102	1.49	2.18	5.58	1.41	1.64	
-10 (+14)	714	180	209	115	1.68	2.74	6.19	1.56	1.81	

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 12° out + 79° up		
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	Slanted parallel BP+24° to Back		
3.3 PROCESS	6 +0.08/-0.08	[mm]	(0.236" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 42° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		