

COMPRESSOR DEFINITION

Designation	VEM X7C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513903018

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	7.23	[cm ³] (0.441 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	16.000	
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	CE - UKCA - 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]
114	29	33	27	0.44	0.43	4.27	1.08	1.25

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]
154	39	45	33	0.54	0.59	4.61	1.16	1.35

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]
200	50	59	41	0.65	0.76	4.84	1.22	1.42

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]
302	76	88	61	0.94	1.15	4.96	1.25	1.45

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]
456	115	134	94	1.40	1.74	4.87	1.23	1.43

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)	90	23	26	17	0.25	0.29	5.41	1.36	1.58	
-30 (-22)	124	31	36	20	0.29	0.40	6.21	1.57	1.82	
-25 (-13)	165	42	48	23	0.34	0.53	7.14	1.80	2.09	
-20 (- 4)	214	54	63	26	0.38	0.69	8.23	2.07	2.41	
-15 (+ 5)	273	69	80	29	0.42	0.88	9.52	2.40	2.79	
-10 (+14)	341	86	100	31	0.46	1.10	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)	73	18	21	17	0.25	0.25	4.32	1.09	1.26	
-30 (-22)	105	26	31	21	0.30	0.36	4.96	1.25	1.45	
-25 (-13)	143	36	42	25	0.36	0.50	5.64	1.42	1.65	
-20 (- 4)	187	47	55	29	0.42	0.65	6.42	1.62	1.88	
-15 (+ 5)	241	61	71	33	0.48	0.84	7.33	1.85	2.15	
-10 (+14)	304	77	89	36	0.53	1.07	8.42	2.12	2.47	

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)	51	13	15	17	0.25	0.20	3.06	0.77	0.90	
-30 (-22)	80	20	23	22	0.31	0.30	3.69	0.93	1.08	
-25 (-13)	113	29	33	27	0.38	0.43	4.29	1.08	1.26	
-20 (- 4)	154	39	45	31	0.45	0.59	4.92	1.24	1.44	
-15 (+ 5)	202	51	59	36	0.52	0.77	5.61	1.41	1.64	
-10 (+14)	259	65	76	40	0.59	0.99	6.41	1.61	1.88	

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)	126	32	37	21	0.31	0.40	5.89	1.48	1.73	
-30 (-22)	173	44	51	25	0.36	0.55	6.75	1.70	1.98	
-25 (-13)	228	57	67	30	0.42	0.73	7.68	1.93	2.25	
-20 (- 4)	294	74	86	34	0.48	0.94	8.73	2.20	2.56	
-15 (+ 5)	372	94	109	37	0.54	1.20	9.96	2.51	2.92	
-10 (+14)	463	117	136	41	0.59	1.49	11.44	2.88	3.35	

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)	106	27	31	22	0.33	0.37	4.77	1.20	1.40
-30	(-22)	148	37	43	27	0.39	0.51	5.48	1.38	1.61
-25	(-13)	199	50	58	32	0.46	0.69	6.18	1.56	1.81
-20	(- 4)	259	65	76	37	0.54	0.90	6.93	1.75	2.03
-15	(+ 5)	330	83	97	42	0.61	1.15	7.79	1.96	2.28
-10	(+14)	414	104	121	47	0.68	1.45	8.82	2.22	2.58

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)	74	19	22	23	0.33	0.28	3.30	0.83	0.97
-30	(-22)	111	28	33	28	0.41	0.42	4.01	1.01	1.18
-25	(-13)	155	39	45	34	0.49	0.59	4.64	1.17	1.36
-20	(- 4)	208	52	61	40	0.58	0.79	5.25	1.32	1.54
-15	(+ 5)	272	68	80	46	0.67	1.04	5.90	1.49	1.73
-10	(+14)	347	87	102	52	0.76	1.33	6.64	1.67	1.95

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)	159	40	47	27	0.38	0.51	5.89	1.48	1.73
-30	(-22)	216	54	63	32	0.46	0.69	6.74	1.70	1.97
-25	(-13)	284	71	83	37	0.54	0.91	7.65	1.93	2.24
-20	(- 4)	365	92	107	42	0.61	1.17	8.70	2.19	2.55
-15	(+ 5)	461	116	135	47	0.67	1.48	9.96	2.51	2.92
-10	(+14)	574	145	168	50	0.72	1.85	11.51	2.90	3.37

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)	134	34	39	28	0.40	0.47	4.76	1.20	1.39
-30	(-22)	186	47	54	34	0.49	0.65	5.46	1.38	1.60
-25	(-13)	248	62	73	40	0.58	0.86	6.14	1.55	1.80
-20	(- 4)	322	81	94	47	0.67	1.12	6.89	1.74	2.02
-15	(+ 5)	411	103	120	53	0.75	1.43	7.76	1.96	2.27
-10	(+14)	515	130	151	58	0.83	1.80	8.83	2.23	2.59

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	99	25	29	28	0.40	0.38	3.51	0.88	1.03	
-30 (-22)	145	37	42	34	0.50	0.55	4.22	1.06	1.24	
-25 (-13)	201	51	59	42	0.61	0.77	4.83	1.22	1.42	
-20 (- 4)	268	68	79	50	0.71	1.02	5.42	1.37	1.59	
-15 (+ 5)	349	88	102	58	0.82	1.34	6.06	1.53	1.78	
-10 (+14)	445	112	130	65	0.93	1.71	6.81	1.72	2.00	

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	239	60	70	41	0.57	0.76	5.89	1.48	1.73	
-30 (-22)	325	82	95	48	0.69	1.04	6.71	1.69	1.97	
-25 (-13)	428	108	125	56	0.81	1.38	7.58	1.91	2.22	
-20 (- 4)	551	139	162	65	0.92	1.77	8.54	2.15	2.50	
-15 (+ 5)	698	176	204	73	1.03	2.24	9.64	2.43	2.83	
-10 (+14)	870	219	255	80	1.12	2.81	10.94	2.76	3.20	

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	194	49	57	41	0.59	0.67	4.71	1.19	1.38	
-30 (-22)	270	68	79	50	0.72	0.94	5.41	1.36	1.59	
-25 (-13)	360	91	106	59	0.85	1.25	6.11	1.54	1.79	
-20 (- 4)	470	118	138	68	0.98	1.64	6.86	1.73	2.01	
-15 (+ 5)	600	151	176	78	1.11	2.10	7.71	1.94	2.26	
-10 (+14)	756	190	221	87	1.23	2.65	8.69	2.19	2.55	

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	147	37	43	41	0.61	0.56	3.55	0.89	1.04	
-30 (-22)	217	55	63	51	0.75	0.82	4.24	1.07	1.24	
-25 (-13)	300	76	88	61	0.90	1.14	4.88	1.23	1.43	
-20 (- 4)	400	101	117	72	1.06	1.53	5.52	1.39	1.62	
-15 (+ 5)	519	131	152	84	1.21	1.99	6.21	1.56	1.82	
-10 (+14)	662	167	194	95	1.37	2.54	6.99	1.76	2.05	

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)	352	89	103	62	0.88	1.13	5.70	1.44	1.67	
-30 (-22)	479	121	140	75	1.04	1.54	6.40	1.61	1.88	
-25 (-13)	633	159	185	88	1.21	2.03	7.18	1.81	2.10	
-20 (- 4)	816	206	239	101	1.40	2.62	8.07	2.03	2.36	
-15 (+ 5)	1033	260	303	114	1.57	3.33	9.10	2.29	2.67	
-10 (+14)	1287	324	377	125	1.73	4.15	10.30	2.60	3.02	

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)	285	72	83	63	0.88	0.99	4.53	1.14	1.33	
-30 (-22)	396	100	116	76	1.04	1.38	5.18	1.31	1.52	
-25 (-13)	532	134	156	91	1.25	1.85	5.84	1.47	1.71	
-20 (- 4)	695	175	204	106	1.46	2.42	6.55	1.65	1.92	
-15 (+ 5)	888	224	260	121	1.68	3.10	7.34	1.85	2.15	
-10 (+14)	1116	281	327	135	1.88	3.91	8.23	2.07	2.41	

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)	225	57	66	64	0.90	0.86	3.52	0.89	1.03	
-30 (-22)	330	83	97	78	1.09	1.26	4.21	1.06	1.23	
-25 (-13)	457	115	134	94	1.32	1.74	4.85	1.22	1.42	
-20 (- 4)	607	153	178	111	1.57	2.32	5.46	1.38	1.60	
-15 (+ 5)	786	198	230	129	1.84	3.01	6.09	1.53	1.78	
-10 (+14)	996	251	292	147	2.09	3.82	6.76	1.70	1.98	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +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		