

COMPRESSOR DEFINITION

Designation	VEM Z7C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513902025

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 53-150	[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	98 to 140 V	98 to 140 V
8.2 LBP (43°C Ambient temperature)	Static	98 to 140 V	98 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 53-150 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 (53/15 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (53/15 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (53/15 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - UKCA - UL	

D - PERFORMANCE - CHECK POINT DATA

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]
179	45	52	38	0.58	0.68	4.69	1.18	1.37

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]
225	57	66	45	0.66	0.86	4.97	1.25	1.46

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]
349	88	102	69	0.98	1.33	5.03	1.27	1.47

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]
499	126	146	107	1.44	1.90	4.68	1.18	1.37

E - PERFORMANCE - CURVES

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%			
	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
°C (°F)	145	37	43	24	0.22	0.47	5.96	1.50	1.75	
-35 (-31)	195	49	57	29	0.25	0.63	6.82	1.72	2.00	
-30 (-22)	248	63	73	33	0.28	0.80	7.62	1.92	2.23	
-25 (-13)	311	78	91	37	0.30	1.00	8.49	2.14	2.49	
-20 (- 4)	390	98	114	41	0.32	1.25	9.55	2.41	2.80	
-15 (+ 5)	492	124	144	45	0.35	1.58	10.93	2.76	3.20	
-10 (+14)										

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)	112	28	33	26	0.23	0.39	4.42	1.11	1.30
-30	(-22)	163	41	48	30	0.27	0.57	5.33	1.34	1.56
-25	(-13)	213	54	63	35	0.30	0.74	6.09	1.53	1.78
-20	(- 4)	271	68	79	40	0.33	0.95	6.81	1.72	1.99
-15	(+ 5)	343	86	100	45	0.37	1.20	7.63	1.92	2.24
-10	(+14)	434	109	127	50	0.40	1.52	8.68	2.19	2.54

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)	85	22	25	26	0.22	0.33	3.28	0.83	0.96
-30	(-22)	135	34	39	32	0.27	0.51	4.19	1.06	1.23
-25	(-13)	181	46	53	38	0.32	0.69	4.85	1.22	1.42
-20	(- 4)	232	59	68	44	0.37	0.89	5.38	1.35	1.58
-15	(+ 5)	295	74	86	50	0.41	1.13	5.90	1.49	1.73
-10	(+14)	374	94	110	57	0.46	1.44	6.57	1.66	1.92

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)	176	44	51	30	0.28	0.56	5.79	1.46	1.70
-30	(-22)	239	60	70	35	0.30	0.77	6.78	1.71	1.99
-25	(-13)	311	78	91	40	0.33	1.00	7.75	1.95	2.27
-20	(- 4)	394	99	115	45	0.37	1.26	8.75	2.21	2.57
-15	(+ 5)	490	123	143	50	0.41	1.57	9.88	2.49	2.89
-10	(+14)	601	152	176	54	0.44	1.94	11.18	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)	144	36	42	32	0.27	0.50	4.57	1.15	1.34
-30	(-22)	200	50	59	37	0.31	0.69	5.40	1.36	1.58
-25	(-13)	263	66	77	43	0.35	0.92	6.16	1.55	1.81
-20	(- 4)	337	85	99	49	0.41	1.18	6.92	1.74	2.03
-15	(+ 5)	424	107	124	55	0.46	1.48	7.74	1.95	2.27
-10	(+14)	526	132	154	60	0.50	1.84	8.70	2.19	2.55

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)	111	28	33	32	0.27	0.42	3.41	0.86	1.00	
-30 (-22)	162	41	47	38	0.32	0.62	4.20	1.06	1.23	
-25 (-13)	219	55	64	45	0.37	0.84	4.86	1.23	1.42	
-20 (- 4)	286	72	84	52	0.44	1.09	5.48	1.38	1.61	
-15 (+ 5)	365	92	107	60	0.50	1.40	6.11	1.54	1.79	
-10 (+14)	459	116	135	67	0.55	1.76	6.83	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)	264	66	77	46	0.40	0.84	5.66	1.43	1.66	
-30 (-22)	358	90	105	54	0.46	1.15	6.56	1.65	1.92	
-25 (-13)	451	114	132	62	0.51	1.45	7.28	1.83	2.13	
-20 (- 4)	557	140	163	70	0.56	1.79	8.00	2.02	2.34	
-15 (+ 5)	694	175	203	78	0.61	2.23	8.89	2.24	2.61	
-10 (+14)	878	221	257	86	0.66	2.83	10.13	2.55	2.97	

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)	209	53	61	47	0.39	0.72	4.46	1.12	1.31	
-30 (-22)	302	76	89	56	0.46	1.05	5.35	1.35	1.57	
-25 (-13)	389	98	114	65	0.53	1.35	5.98	1.51	1.75	
-20 (- 4)	484	122	142	74	0.59	1.69	6.54	1.65	1.92	
-15 (+ 5)	605	152	177	84	0.66	2.11	7.19	1.81	2.11	
-10 (+14)	768	194	225	94	0.74	2.69	8.11	2.04	2.38	

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)	170	43	50	49	0.40	0.65	3.47	0.87	1.02	
-30 (-22)	260	65	76	58	0.47	0.98	4.39	1.11	1.29	
-25 (-13)	337	85	99	68	0.54	1.28	4.98	1.25	1.46	
-20 (- 4)	418	105	123	78	0.62	1.60	5.42	1.37	1.59	
-15 (+ 5)	520	131	153	89	0.71	2.00	5.88	1.48	1.72	
-10 (+14)	660	166	193	100	0.80	2.54	6.53	1.65	1.91	

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)	359	91	105	71	0.57	1.15	5.08	1.28	1.49	
-30 (-22)	486	122	142	80	0.64	1.56	6.03	1.52	1.77	
-25 (-13)	632	159	185	91	0.70	2.03	6.93	1.75	2.03	
-20 (- 4)	799	201	234	102	0.76	2.57	7.81	1.97	2.29	
-15 (+ 5)	989	249	290	113	0.83	3.18	8.73	2.20	2.56	
-10 (+14)	1204	303	353	124	0.90	3.88	9.74	2.45	2.85	

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)	300	76	88	70	0.54	1.04	4.24	1.07	1.24	
-30 (-22)	412	104	121	82	0.65	1.44	5.00	1.26	1.47	
-25 (-13)	542	137	159	95	0.75	1.89	5.69	1.43	1.67	
-20 (- 4)	689	174	202	109	0.85	2.40	6.35	1.60	1.86	
-15 (+ 5)	856	216	251	122	0.95	2.99	7.04	1.78	2.06	
-10 (+14)	1045	263	306	134	1.04	3.66	7.82	1.97	2.29	

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)	236	59	69	70	0.55	0.90	3.35	0.84	0.98	
-30 (-22)	342	86	100	85	0.68	1.30	4.01	1.01	1.18	
-25 (-13)	462	116	135	100	0.80	1.76	4.60	1.16	1.35	
-20 (- 4)	596	150	175	116	0.90	2.28	5.16	1.30	1.51	
-15 (+ 5)	747	188	219	130	1.00	2.86	5.75	1.45	1.68	
-10 (+14)	916	231	268	143	1.10	3.51	6.40	1.61	1.88	

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 28° up + 25° to Back		
3.2 DISCHARGE	5.1 +0.10/+0.00	[mm]	(0.201" +0.004"/+0.000")
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		