

### COMPRESSOR DEFINITION

Designation	VEM Z5C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513903502

### 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	187 to 255 V	187 to 255 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 255 V	187 to 255 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 <sup>2</sup> ] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm <sup>2</sup> ] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation	1/10	[hp]
2 Displacement	5.19	[cm <sup>3</sup> ] (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 <sup>2</sup> ]

### 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	VCC32456XXXX	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC32456XXXXX	
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)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (53/15 Hz)	2.10/2.10	[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	VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V1600RPM			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]	
117	29	34	26		0.45	4.50	1.13	1.32	

TEST CONDITIONS: @220V3000RPM			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]	
222	56	65	47		0.85	4.70	1.18	1.38	

TEST CONDITIONS: @220V4500RPM			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]	
341	86	100	77		1.30	4.46	1.12	1.31	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1600RPM			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)	80	20	24	16	0.15	0.26	5.00	1.26	1.46
-30	(-22)	125	32	37	20	0.18	0.41	6.27	1.58	1.84
-25	(-13)	167	42	49	23	0.20	0.54	7.39	1.86	2.17
-20	(- 4)	211	53	62	25	0.21	0.68	8.49	2.14	2.49
-15	(+ 5)	263	66	77	27	0.23	0.85	9.67	2.44	2.83
-10	(+14)	329	83	96	30	0.24	1.06	11.06	2.79	3.24

TEST CONDITIONS: @220V1600RPM			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	0.15	0.24	3.90	0.98	1.14
-30	(-22)	101	25	30	20	0.18	0.35	4.89	1.23	1.43
-25	(-13)	132	33	39	23	0.20	0.46	5.72	1.44	1.68
-20	(- 4)	169	43	50	26	0.22	0.59	6.50	1.64	1.90
-15	(+ 5)	216	54	63	29	0.24	0.75	7.34	1.85	2.15
-10	(+14)	279	70	82	33	0.27	0.97	8.38	2.11	2.46

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1600RPM		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)	49	12	14	17	0.15	0.19	2.86	0.72	0.84	
-30 (-22)	77	19	22	21	0.18	0.29	3.75	0.95	1.10	
-25 (-13)	107	27	31	24	0.21	0.40	4.45	1.12	1.30	
-20 (- 4)	144	36	42	29	0.24	0.55	5.08	1.28	1.49	
-15 (+ 5)	195	49	57	33	0.27	0.75	5.76	1.45	1.69	
-10 (+14)	264	66	77	39	0.32	1.01	6.61	1.67	1.94	

TEST CONDITIONS: @220V2000RPM		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)	111	28	33	21	0.18	0.36	5.27	1.33	1.54	
-30 (-22)	150	38	44	24	0.21	0.48	6.22	1.57	1.82	
-25 (-13)	201	51	59	28	0.23	0.64	7.31	1.84	2.14	
-20 (- 4)	264	67	77	31	0.25	0.85	8.55	2.15	2.51	
-15 (+ 5)	341	86	100	34	0.28	1.10	9.93	2.50	2.91	
-10 (+14)	432	109	126	38	0.30	1.39	11.45	2.89	3.36	

TEST CONDITIONS: @220V2000RPM		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)	89	22	26	21	0.19	0.31	4.18	1.05	1.22	
-30 (-22)	125	32	37	25	0.22	0.44	4.93	1.24	1.45	
-25 (-13)	170	43	50	29	0.24	0.59	5.77	1.45	1.69	
-20 (- 4)	224	56	66	34	0.27	0.78	6.68	1.68	1.96	
-15 (+ 5)	289	73	85	38	0.30	1.01	7.69	1.94	2.25	
-10 (+14)	366	92	107	42	0.33	1.28	8.77	2.21	2.57	

TEST CONDITIONS: @220V2000RPM		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)	67	17	20	21	0.19	0.26	3.18	0.80	0.93	
-30 (-22)	101	25	29	26	0.22	0.38	3.85	0.97	1.13	
-25 (-13)	140	35	41	31	0.26	0.53	4.55	1.15	1.33	
-20 (- 4)	187	47	55	35	0.29	0.71	5.28	1.33	1.55	
-15 (+ 5)	241	61	71	40	0.32	0.92	6.02	1.52	1.77	
-10 (+14)	306	77	90	45	0.36	1.17	6.80	1.71	1.99	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		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)	169	43	49	33	0.24	0.54	5.22	1.32	1.53
-30	(-22)	228	58	67	37	0.29	0.73	6.22	1.57	1.82
-25	(-13)	307	77	90	42	0.34	0.98	7.33	1.85	2.15
-20	(- 4)	402	101	118	47	0.38	1.29	8.52	2.15	2.50
-15	(+ 5)	512	129	150	52	0.41	1.65	9.79	2.47	2.87
-10	(+14)	636	160	186	57	0.44	2.05	11.12	2.80	3.26

TEST CONDITIONS: @220V3000RPM		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)	140	35	41	33	0.27	0.49	4.24	1.07	1.24
-30	(-22)	192	48	56	38	0.32	0.67	4.99	1.26	1.46
-25	(-13)	259	65	76	45	0.36	0.90	5.82	1.47	1.70
-20	(- 4)	342	86	100	51	0.41	1.19	6.71	1.69	1.97
-15	(+ 5)	438	110	128	57	0.45	1.53	7.65	1.93	2.24
-10	(+14)	546	138	160	64	0.49	1.91	8.62	2.17	2.52

TEST CONDITIONS: @220V3000RPM		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)	107	27	31	32	0.26	0.41	3.39	0.85	0.99
-30	(-22)	156	39	46	39	0.32	0.59	4.03	1.01	1.18
-25	(-13)	219	55	64	46	0.37	0.84	4.72	1.19	1.38
-20	(- 4)	296	74	87	54	0.42	1.13	5.44	1.37	1.59
-15	(+ 5)	384	97	112	62	0.48	1.47	6.18	1.56	1.81
-10	(+14)	481	121	141	69	0.53	1.84	6.94	1.75	2.03

TEST CONDITIONS: @220V4500RPM		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)	267	67	78	52	0.40	0.85	5.12	1.29	1.50
-30	(-22)	357	90	105	60	0.46	1.15	5.94	1.50	1.74
-25	(-13)	453	114	133	67	0.51	1.45	6.79	1.71	1.99
-20	(- 4)	562	142	165	73	0.56	1.81	7.70	1.94	2.26
-15	(+ 5)	696	175	204	79	0.61	2.24	8.73	2.20	2.56
-10	(+14)	863	217	253	86	0.65	2.78	9.92	2.50	2.91

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4500RPM		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)	218	55	64	53	0.45	0.75	4.07	1.03	1.19
-30	(-22)	308	78	90	64	0.52	1.07	4.80	1.21	1.41
-25	(-13)	397	100	116	72	0.57	1.38	5.50	1.39	1.61
-20	(- 4)	495	125	145	80	0.63	1.73	6.23	1.57	1.83
-15	(+ 5)	610	154	179	87	0.68	2.13	7.03	1.77	2.06
-10	(+14)	752	189	220	94	0.73	2.63	7.96	2.00	2.33

TEST CONDITIONS: @220V4500RPM		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)	169	43	50	52	0.43	0.65	3.31	0.83	0.97
-30	(-22)	263	66	77	65	0.51	1.00	3.99	1.00	1.17
-25	(-13)	349	88	102	75	0.58	1.33	4.60	1.16	1.35
-20	(- 4)	438	110	128	84	0.64	1.67	5.20	1.31	1.52
-15	(+ 5)	538	136	158	93	0.70	2.06	5.82	1.47	1.71
-10	(+14)	659	166	193	101	0.75	2.53	6.53	1.64	1.91

### 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	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 42° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		