

COMPRESSOR DEFINITION

Designation	VEM Z7C
Nominal Voltage/Frequency	230 V 53-150 Hz
Engineering Number	513902032

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 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	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	CE - UKCA - 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]
185	47	54	38	0.32	0.71	4.82	1.21	1.41

TEST CONDITIONS: @220V2000RPM			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]
224	56	66	46	0.38	0.85	4.91	1.24	1.44

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]
337	85	99	69	0.55	1.28	4.92	1.24	1.44

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]
469	118	137	100	0.79	1.79	4.69	1.18	1.37

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]
-35	(-31)	133	34	39	24	0.21	0.43	5.47	1.38	1.60
-30	(-22)	179	45	52	29	0.25	0.57	6.23	1.57	1.83
-25	(-13)	233	59	68	33	0.28	0.75	7.10	1.79	2.08
-20	(- 4)	299	75	88	37	0.31	0.96	8.13	2.05	2.38
-15	(+ 5)	376	95	110	40	0.33	1.21	9.36	2.36	2.74
-10	(+14)	468	118	137	43	0.35	1.51	10.83	2.73	3.17

E - PERFORMANCE - CURVES

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)	113	29	33	25	0.22	0.39	4.47	1.13	1.31
-30	(-22)	156	39	46	31	0.26	0.54	5.05	1.27	1.48
-25	(-13)	206	52	60	36	0.30	0.72	5.68	1.43	1.66
-20	(- 4)	266	67	78	41	0.34	0.93	6.40	1.61	1.87
-15	(+ 5)	337	85	99	46	0.38	1.18	7.25	1.83	2.12
-10	(+14)	421	106	123	51	0.41	1.47	8.28	2.09	2.43

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)	92	23	27	26	0.22	0.35	3.57	0.90	1.05
-30	(-22)	131	33	38	32	0.27	0.50	4.10	1.03	1.20
-25	(-13)	177	45	52	39	0.32	0.67	4.62	1.16	1.35
-20	(- 4)	232	58	68	45	0.37	0.89	5.16	1.30	1.51
-15	(+ 5)	297	75	87	51	0.41	1.14	5.77	1.45	1.69
-10	(+14)	373	94	109	57	0.46	1.43	6.49	1.64	1.90

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)	169	43	50	30	0.25	0.54	5.63	1.42	1.65
-30	(-22)	226	57	66	35	0.30	0.73	6.37	1.60	1.87
-25	(-13)	295	74	86	41	0.34	0.95	7.22	1.82	2.12
-20	(- 4)	378	95	111	46	0.38	1.21	8.25	2.08	2.42
-15	(+ 5)	476	120	140	50	0.41	1.53	9.46	2.39	2.77
-10	(+14)	591	149	173	54	0.44	1.91	10.92	2.75	3.20

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)	144	36	42	31	0.26	0.50	4.60	1.16	1.35
-30	(-22)	197	50	58	38	0.32	0.68	5.18	1.30	1.52
-25	(-13)	261	66	76	45	0.37	0.91	5.81	1.46	1.70
-20	(- 4)	337	85	99	51	0.42	1.17	6.53	1.65	1.91
-15	(+ 5)	427	108	125	58	0.47	1.49	7.38	1.86	2.16
-10	(+14)	533	134	156	63	0.51	1.87	8.40	2.12	2.46

E - PERFORMANCE - CURVES

TEST CONDITIONS:		CECOMAF			(Condensing temperature 55°C (+131°F))					
@220V2000RPM		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)	119	30	35	32	0.27	0.45	3.66	0.92	1.07	
-30 (-22)	167	42	49	40	0.33	0.63	4.21	1.06	1.23	
-25 (-13)	225	57	66	48	0.39	0.86	4.74	1.20	1.39	
-20 (- 4)	294	74	86	56	0.45	1.12	5.30	1.34	1.55	
-15 (+ 5)	377	95	110	64	0.51	1.44	5.92	1.49	1.73	
-10 (+14)	473	119	139	71	0.57	1.82	6.63	1.67	1.94	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 35°C (+95°F))					
@220V3000RPM		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)	255	64	75	45	0.35	0.82	5.70	1.44	1.67	
-30 (-22)	343	86	100	53	0.42	1.10	6.40	1.61	1.88	
-25 (-13)	448	113	131	63	0.49	1.44	7.17	1.81	2.10	
-20 (- 4)	575	145	168	71	0.56	1.85	8.06	2.03	2.36	
-15 (+ 5)	725	183	212	80	0.63	2.33	9.12	2.30	2.67	
-10 (+14)	901	227	264	87	0.69	2.91	10.40	2.62	3.05	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 45°C (+113°F))					
@220V3000RPM		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)	215	54	63	47	0.37	0.75	4.62	1.17	1.35	
-30 (-22)	297	75	87	57	0.45	1.03	5.23	1.32	1.53	
-25 (-13)	394	99	115	67	0.53	1.37	5.83	1.47	1.71	
-20 (- 4)	510	129	149	78	0.62	1.78	6.48	1.63	1.90	
-15 (+ 5)	648	163	190	89	0.71	2.26	7.23	1.82	2.12	
-10 (+14)	810	204	237	100	0.79	2.84	8.12	2.05	2.38	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 55°C (+131°F))					
@220V3000RPM		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)	175	44	51	49	0.38	0.67	3.59	0.90	1.05	
-30 (-22)	250	63	73	59	0.46	0.95	4.23	1.07	1.24	
-25 (-13)	339	85	99	71	0.56	1.29	4.79	1.21	1.40	
-20 (- 4)	444	112	130	84	0.66	1.70	5.32	1.34	1.56	
-15 (+ 5)	570	144	167	97	0.77	2.18	5.87	1.48	1.72	
-10 (+14)	718	181	210	110	0.88	2.76	6.50	1.64	1.90	

E - PERFORMANCE - CURVES

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	369	93	108	69	0.50	1.18	5.34	1.34	1.56	
-30 (-22)	496	125	145	83	0.62	1.59	5.95	1.50	1.74	
-25 (-13)	651	164	191	98	0.75	2.09	6.62	1.67	1.94	
-20 (- 4)	836	211	245	113	0.87	2.69	7.39	1.86	2.16	
-15 (+ 5)	1056	266	309	127	0.99	3.40	8.31	2.09	2.43	
-10 (+14)	1314	331	385	140	1.10	4.24	9.42	2.37	2.76	

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)	309	78	91	72	0.52	1.07	4.34	1.09	1.27	
-30 (-22)	428	108	125	87	0.65	1.49	4.89	1.23	1.43	
-25 (-13)	570	144	167	105	0.80	1.99	5.43	1.37	1.59	
-20 (- 4)	741	187	217	123	0.95	2.58	6.00	1.51	1.76	
-15 (+ 5)	943	238	276	141	1.11	3.29	6.64	1.67	1.95	
-10 (+14)	1181	298	346	159	1.26	4.13	7.41	1.87	2.17	

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)	249	63	73	74	0.55	0.95	3.34	0.84	0.98	
-30 (-22)	358	90	105	91	0.68	1.36	3.95	1.00	1.16	
-25 (-13)	488	123	143	109	0.84	1.86	4.48	1.13	1.31	
-20 (- 4)	643	162	188	130	1.01	2.46	4.96	1.25	1.45	
-15 (+ 5)	827	208	242	152	1.20	3.17	5.45	1.37	1.60	
-10 (+14)	1044	263	306	174	1.39	4.01	5.99	1.51	1.75	

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		