

### COMPRESSOR DEFINITION

Designation	VES C7C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513907161

### 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	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	1/5	[hp]
2 Displacement	7.23	[cm <sup>3</sup> ] (0.441 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	190	[ml] (6.42 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	6.45	[kg] (14.22 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig)

### 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	VCC3 1156 XXXXX/VES 2456 XX X X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	VCC32456XXXXX	
6 Start winding resistance	13.40	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	13.40	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (46/133 Hz)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (46/133 Hz)	2.10/2.10	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (46/133 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - VDE	

### D - PERFORMANCE - CHECK POINT DATA

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]
247	62	72	40	0.32	0.94	6.18	1.56	1.81

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		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)	104	26	30	18	0.12	0.33	5.84	1.47	1.71
-30	(-22)	139	35	41	20	0.15	0.45	6.77	1.71	1.98
-25	(-13)	182	46	53	24	0.18	0.58	7.75	1.95	2.27
-20	(- 4)	235	59	69	27	0.20	0.75	8.85	2.23	2.59
-15	(+ 5)	299	75	88	30	0.22	0.96	10.15	2.56	2.97
-10	(+14)	377	95	111	32	0.24	1.22	11.73	2.95	3.44

TEST CONDITIONS: @220V1300RPM		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)	82	21	24	18	0.14	0.28	4.53	1.14	1.33
-30	(-22)	114	29	33	21	0.16	0.39	5.35	1.35	1.57
-25	(-13)	153	38	45	25	0.19	0.53	6.13	1.54	1.80
-20	(- 4)	200	50	59	29	0.22	0.70	6.94	1.75	2.04
-15	(+ 5)	258	65	75	33	0.24	0.90	7.88	1.99	2.31
-10	(+14)	327	82	96	36	0.27	1.15	9.01	2.27	2.64

TEST CONDITIONS: @220V1300RPM		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)	55	14	16	17	0.14	0.21	3.15	0.79	0.92
-30	(-22)	86	22	25	21	0.17	0.32	4.00	1.01	1.17
-25	(-13)	122	31	36	26	0.20	0.46	4.74	1.19	1.39
-20	(- 4)	165	42	48	30	0.23	0.63	5.42	1.37	1.59
-15	(+ 5)	217	55	64	35	0.26	0.83	6.15	1.55	1.80
-10	(+14)	281	71	82	40	0.29	1.08	6.98	1.76	2.05

### 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)	124	31	36	22	0.16	0.40	5.69	1.43	1.67	
-30 (-22)	171	43	50	25	0.19	0.55	6.73	1.70	1.97	
-25 (-13)	227	57	66	29	0.21	0.73	7.78	1.96	2.28	
-20 (- 4)	293	74	86	33	0.24	0.94	8.92	2.25	2.62	
-15 (+ 5)	374	94	109	37	0.26	1.20	10.23	2.58	3.00	
-10 (+14)	470	118	138	40	0.29	1.51	11.79	2.97	3.45	

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)	99	25	29	22	0.17	0.35	4.57	1.15	1.34	
-30 (-22)	143	36	42	26	0.20	0.50	5.45	1.37	1.60	
-25 (-13)	193	49	57	31	0.23	0.67	6.27	1.58	1.84	
-20 (- 4)	253	64	74	36	0.26	0.88	7.10	1.79	2.08	
-15 (+ 5)	324	82	95	40	0.30	1.13	8.02	2.02	2.35	
-10 (+14)	409	103	120	45	0.33	1.43	9.11	2.30	2.67	

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)	71	18	21	21	0.15	0.27	3.38	0.85	0.99	
-30 (-22)	112	28	33	26	0.19	0.42	4.26	1.07	1.25	
-25 (-13)	158	40	46	32	0.24	0.60	4.98	1.26	1.46	
-20 (- 4)	211	53	62	38	0.28	0.81	5.64	1.42	1.65	
-15 (+ 5)	274	69	80	43	0.32	1.05	6.31	1.59	1.85	
-10 (+14)	349	88	102	49	0.36	1.34	7.07	1.78	2.07	

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)	155	39	45	27	0.20	0.49	5.64	1.42	1.65	
-30 (-22)	211	53	62	32	0.23	0.68	6.59	1.66	1.93	
-25 (-13)	281	71	82	37	0.26	0.90	7.63	1.92	2.23	
-20 (- 4)	367	92	107	42	0.30	1.18	8.78	2.21	2.57	
-15 (+ 5)	468	118	137	47	0.33	1.51	10.10	2.54	2.96	
-10 (+14)	587	148	172	51	0.36	1.89	11.62	2.93	3.40	

### E - PERFORMANCE - CURVES

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)	124	31	36	27	0.21	0.43	4.56	1.15	1.34
-30	(-22)	176	44	51	33	0.24	0.61	5.37	1.35	1.57
-25	(-13)	240	60	70	39	0.28	0.83	6.18	1.56	1.81
-20	(- 4)	318	80	93	45	0.32	1.11	7.06	1.78	2.07
-15	(+ 5)	411	104	120	51	0.36	1.44	8.02	2.02	2.35
-10	(+14)	520	131	152	57	0.40	1.82	9.12	2.30	2.67

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)	95	24	28	27	0.21	0.36	3.51	0.89	1.03
-30	(-22)	141	36	41	33	0.24	0.54	4.29	1.08	1.26
-25	(-13)	198	50	58	40	0.28	0.76	5.02	1.26	1.47
-20	(- 4)	268	68	79	47	0.33	1.02	5.72	1.44	1.68
-15	(+ 5)	351	88	103	54	0.39	1.35	6.46	1.63	1.89
-10	(+14)	449	113	132	62	0.44	1.72	7.26	1.83	2.13

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	228	57	67	42	0.31	0.73	5.47	1.38	1.60
-30	(-22)	318	80	93	50	0.35	1.02	6.39	1.61	1.87
-25	(-13)	429	108	126	58	0.41	1.38	7.38	1.86	2.16
-20	(- 4)	561	141	164	66	0.47	1.80	8.47	2.14	2.48
-15	(+ 5)	718	181	210	74	0.52	2.31	9.68	2.44	2.84
-10	(+14)	901	227	264	82	0.58	2.91	11.03	2.78	3.23

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	190	48	56	42	0.32	0.66	4.54	1.14	1.33
-30	(-22)	268	67	78	51	0.37	0.93	5.27	1.33	1.54
-25	(-13)	365	92	107	60	0.43	1.27	6.05	1.52	1.77
-20	(- 4)	484	122	142	70	0.50	1.69	6.89	1.74	2.02
-15	(+ 5)	627	158	184	80	0.57	2.19	7.82	1.97	2.29
-10	(+14)	795	200	233	90	0.63	2.78	8.86	2.23	2.60

### E - PERFORMANCE - CURVES

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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35 (-31)	159	40	46	43	0.31	0.60	3.72	0.94	1.09	
-30 (-22)	221	56	65	51	0.37	0.84	4.33	1.09	1.27	
-25 (-13)	302	76	89	61	0.44	1.15	4.95	1.25	1.45	
-20 (- 4)	406	102	119	72	0.52	1.55	5.61	1.41	1.64	
-15 (+ 5)	532	134	156	84	0.60	2.04	6.32	1.59	1.85	
-10 (+14)	684	172	200	96	0.68	2.63	7.11	1.79	2.08	

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)	364	92	107	69	0.49	1.16	5.27	1.33	1.54	
-30 (-22)	485	122	142	79	0.56	1.56	6.11	1.54	1.79	
-25 (-13)	619	156	181	89	0.62	1.99	6.96	1.75	2.04	
-20 (- 4)	780	196	228	99	0.68	2.50	7.88	1.99	2.31	
-15 (+ 5)	980	247	287	110	0.74	3.15	8.92	2.25	2.61	
-10 (+14)	1233	311	361	121	0.81	3.97	10.12	2.55	2.97	

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)	298	75	87	68	0.49	1.04	4.40	1.11	1.29	
-30 (-22)	423	107	124	82	0.58	1.47	5.14	1.29	1.51	
-25 (-13)	555	140	163	95	0.66	1.93	5.85	1.47	1.71	
-20 (- 4)	706	178	207	107	0.73	2.46	6.59	1.66	1.93	
-15 (+ 5)	891	224	261	120	0.80	3.11	7.39	1.86	2.17	
-10 (+14)	1122	283	329	135	0.87	3.93	8.32	2.10	2.44	

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)	225	57	66	63	0.46	0.86	3.58	0.90	1.05	
-30 (-22)	348	88	102	80	0.58	1.32	4.27	1.08	1.25	
-25 (-13)	471	119	138	96	0.68	1.79	4.89	1.23	1.43	
-20 (- 4)	608	153	178	111	0.76	2.32	5.49	1.38	1.61	
-15 (+ 5)	772	195	226	127	0.85	2.96	6.11	1.54	1.79	
-10 (+14)	976	246	286	143	0.93	3.75	6.81	1.72	2.00	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal VES		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 45° up + 49° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
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	Slanted 47° up + 59° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		