

### COMPRESSOR DEFINITION

Designation	<b>VES D5C</b>
Nominal Voltage/Frequency	<b>230 V 40-150 Hz</b>
Engineering Number	<b>800AY02</b>

### 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-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°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 254 V	187 to 254 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 254 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		[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	190	[ml] (6.42 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	6.48	[kg] (14.29 lb.)
5 Nitrogen charge	-	[kgf/cm <sup>2</sup> ]

### 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	INVERTER VES 2456X	
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]
10 FLA - Full Load Amperage HBP (46/133 Hz)	-	[A]
11 Approval boards certification	VDE	

### D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: <b>@220V1300RPM</b>			<b>CECOMAFLBP</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-25°C (-13°F)</b> <b>55°C (131°F)</b>		
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]
85	21	25	18	0.17	0.32	4.67	1.18	1.37

TEST CONDITIONS: <b>@220V1600RPM</b>			<b>CECOMAFLBP</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-25°C (-13°F)</b> <b>55°C (131°F)</b>		
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]
105	26	31	22	0.20	0.40	4.75	1.20	1.39

TEST CONDITIONS: <b>@220V2000RPM</b>			<b>CECOMAFLBP</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-25°C (-13°F)</b> <b>55°C (131°F)</b>		
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]
137	35	40	28	0.24	0.52	4.89	1.23	1.43

TEST CONDITIONS: <b>@220V3000RPM</b>			<b>CECOMAFLBP</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-25°C (-13°F)</b> <b>55°C (131°F)</b>		
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]
209	53	61	44	0.36	0.80	4.80	1.21	1.41

TEST CONDITIONS: <b>@220V4500RPM</b>			<b>CECOMAFLBP</b> <b>Static</b>		Evaporating temperature (Condensing temperature	<b>-25°C (-13°F)</b> <b>55°C (131°F)</b>		
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]
317	80	93	69	0.54	1.21	4.60	1.16	1.35

### 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)	73	18	21	13	0.12	0.23	5.39	1.36	1.58
-30	(-22)	96	24	28	15	0.14	0.31	6.26	1.58	1.83
-25	(-13)	125	32	37	17	0.16	0.40	7.27	1.83	2.13
-20	(- 4)	163	41	48	19	0.18	0.52	8.47	2.13	2.48
-15	(+ 5)	209	53	61	21	0.19	0.67	9.92	2.50	2.91
-10	(+14)	265	67	78	23	0.20	0.86	11.68	2.94	3.42
-5	(+23)	333	84	98	24	0.21	1.08	13.81	3.48	4.05

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)	55	14	16	12	0.12	0.19	4.49	1.13	1.32
-30	(-22)	78	20	23	15	0.14	0.27	5.24	1.32	1.53
-25	(-13)	106	27	31	18	0.16	0.37	6.00	1.51	1.76
-20	(- 4)	140	35	41	20	0.19	0.49	6.84	1.72	2.00
-15	(+ 5)	182	46	53	23	0.21	0.64	7.81	1.97	2.29
-10	(+14)	233	59	68	26	0.23	0.81	8.97	2.26	2.63
-5	(+23)	293	74	86	28	0.24	1.03	10.36	2.61	3.04

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)	35	9	10	12	0.12	0.13	2.96	0.75	0.87
-30	(-22)	58	15	17	15	0.14	0.22	3.86	0.97	1.13
-25	(-13)	85	21	25	18	0.17	0.32	4.66	1.17	1.37
-20	(- 4)	116	29	34	22	0.20	0.44	5.41	1.36	1.59
-15	(+ 5)	154	39	45	25	0.22	0.59	6.18	1.56	1.81
-10	(+14)	199	50	58	28	0.25	0.77	7.00	1.77	2.05
-5	(+23)	253	64	74	32	0.27	0.97	7.95	2.00	2.33

### 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)	85	21	25	15	0.14	0.27	5.49	1.38	1.61
-30	(-22)	114	29	34	18	0.17	0.37	6.30	1.59	1.85
-25	(-13)	153	39	45	21	0.19	0.49	7.33	1.85	2.15
-20	(- 4)	202	51	59	24	0.21	0.65	8.58	2.16	2.51
-15	(+ 5)	262	66	77	26	0.23	0.84	10.09	2.54	2.96
-10	(+14)	333	84	98	28	0.24	1.08	11.88	2.99	3.48
-5	(+23)	417	105	122	30	0.25	1.35	13.97	3.52	4.09

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)	72	18	21	15	0.14	0.25	4.73	1.19	1.39
-30	(-22)	98	25	29	18	0.17	0.34	5.33	1.34	1.56
-25	(-13)	132	33	39	22	0.19	0.46	6.05	1.52	1.77
-20	(- 4)	175	44	51	25	0.22	0.61	6.90	1.74	2.02
-15	(+ 5)	227	57	67	29	0.25	0.79	7.92	2.00	2.32
-10	(+14)	290	73	85	32	0.27	1.02	9.13	2.30	2.68
-5	(+23)	364	92	107	35	0.29	1.28	10.56	2.66	3.09

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)	52	13	15	15	0.13	0.20	3.48	0.88	1.02
-30	(-22)	75	19	22	18	0.16	0.29	4.11	1.04	1.21
-25	(-13)	106	27	31	22	0.20	0.40	4.77	1.20	1.40
-20	(- 4)	145	36	42	26	0.23	0.55	5.47	1.38	1.60
-15	(+ 5)	192	48	56	31	0.26	0.73	6.25	1.58	1.83
-10	(+14)	248	62	73	35	0.29	0.95	7.13	1.80	2.09
-5	(+23)	314	79	92	39	0.32	1.21	8.13	2.05	2.38

### E - PERFORMANCE - CURVES

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)	109	28	32	19	0.17	0.35	5.59	1.41	1.64
-30	(-22)	146	37	43	23	0.20	0.47	6.40	1.61	1.88
-25	(-13)	194	49	57	26	0.23	0.62	7.40	1.86	2.17
-20	(- 4)	255	64	75	30	0.25	0.82	8.60	2.17	2.52
-15	(+ 5)	328	83	96	33	0.27	1.06	10.04	2.53	2.94
-10	(+14)	416	105	122	36	0.29	1.34	11.74	2.96	3.44
-5	(+23)	519	131	152	38	0.31	1.68	13.73	3.46	4.02

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)	91	23	27	20	0.17	0.32	4.69	1.18	1.38
-30	(-22)	125	31	37	23	0.21	0.43	5.34	1.35	1.57
-25	(-13)	168	42	49	27	0.24	0.59	6.09	1.53	1.78
-20	(- 4)	223	56	65	32	0.27	0.78	6.96	1.75	2.04
-15	(+ 5)	289	73	85	36	0.30	1.01	7.98	2.01	2.34
-10	(+14)	368	93	108	40	0.32	1.29	9.19	2.31	2.69
-5	(+23)	462	116	135	44	0.35	1.62	10.60	2.67	3.10

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)	70	18	20	19	0.17	0.26	3.61	0.91	1.06
-30	(-22)	99	25	29	23	0.21	0.38	4.25	1.07	1.25
-25	(-13)	137	34	40	28	0.24	0.52	4.90	1.23	1.43
-20	(- 4)	184	46	54	33	0.28	0.70	5.58	1.41	1.64
-15	(+ 5)	243	61	71	38	0.31	0.93	6.34	1.60	1.86
-10	(+14)	313	79	92	43	0.35	1.20	7.19	1.81	2.11
-5	(+23)	395	100	116	48	0.39	1.52	8.16	2.06	2.39

### 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]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	163	41	48	30	0.26	0.52	5.41	1.36	1.58
-30	(-22)	224	57	66	35	0.29	0.72	6.36	1.60	1.86
-25	(-13)	303	76	89	41	0.34	0.97	7.39	1.86	2.17
-20	(- 4)	399	100	117	47	0.38	1.28	8.53	2.15	2.50
-15	(+ 5)	511	129	150	52	0.42	1.65	9.80	2.47	2.87
-10	(+14)	641	161	188	57	0.45	2.07	11.25	2.83	3.30
-5	(+23)	787	198	231	61	0.48	2.54	12.90	3.25	3.78

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)	133	34	39	30	0.25	0.46	4.44	1.12	1.30
-30	(-22)	187	47	55	36	0.30	0.65	5.23	1.32	1.53
-25	(-13)	257	65	75	42	0.35	0.90	6.04	1.52	1.77
-20	(- 4)	344	87	101	49	0.40	1.20	6.92	1.74	2.03
-15	(+ 5)	446	112	131	56	0.45	1.56	7.90	1.99	2.31
-10	(+14)	564	142	165	63	0.49	1.98	9.00	2.27	2.64
-5	(+23)	698	176	205	68	0.53	2.45	10.26	2.59	3.01

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)	104	26	30	30	0.26	0.39	3.44	0.87	1.01
-30	(-22)	149	38	44	36	0.31	0.57	4.14	1.04	1.21
-25	(-13)	209	53	61	44	0.36	0.80	4.82	1.22	1.41
-20	(- 4)	285	72	84	52	0.42	1.09	5.52	1.39	1.62
-15	(+ 5)	376	95	110	60	0.47	1.44	6.27	1.58	1.84
-10	(+14)	482	121	141	68	0.53	1.85	7.10	1.79	2.08
-5	(+23)	603	152	177	75	0.58	2.32	8.05	2.03	2.36

### 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)	252	63	74	49	0.39	0.81	5.08	1.28	1.49
-30	(-22)	336	85	99	57	0.45	1.08	5.88	1.48	1.72
-25	(-13)	441	111	129	66	0.51	1.42	6.74	1.70	1.97
-20	(- 4)	571	144	167	74	0.57	1.83	7.69	1.94	2.25
-15	(+ 5)	728	184	213	83	0.63	2.34	8.78	2.21	2.57
-10	(+14)	918	231	269	91	0.69	2.96	10.06	2.53	2.95
-5	(+23)	1144	288	335	99	0.75	3.70	11.56	2.91	3.39

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)	206	52	60	50	0.39	0.71	4.17	1.05	1.22
-30	(-22)	287	72	84	58	0.46	1.00	4.93	1.24	1.44
-25	(-13)	385	97	113	68	0.53	1.34	5.68	1.43	1.66
-20	(- 4)	502	127	147	78	0.60	1.75	6.45	1.63	1.89
-15	(+ 5)	644	162	189	88	0.68	2.25	7.29	1.84	2.14
-10	(+14)	813	205	238	98	0.75	2.85	8.25	2.08	2.42
-5	(+23)	1014	255	297	108	0.82	3.56	9.36	2.36	2.74

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)	144	36	42	50	0.39	0.55	2.91	0.73	0.85
-30	(-22)	225	57	66	59	0.47	0.85	3.77	0.95	1.10
-25	(-13)	317	80	93	69	0.55	1.21	4.54	1.14	1.33
-20	(- 4)	425	107	125	81	0.62	1.62	5.28	1.33	1.55
-15	(+ 5)	553	139	162	92	0.70	2.12	6.01	1.51	1.76
-10	(+14)	705	178	206	104	0.79	2.71	6.79	1.71	1.99
-5	(+23)	883	223	259	115	0.87	3.40	7.65	1.93	2.24

### 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 45° up + 15° to Back		
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 0° up + 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 47° up + 59° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		