

COMPRESSOR DEFINITION

Designation	VES A5C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	800KY02

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	187 to 254 V	187 to 254 V
8.2 LBP (43°C Ambient temperature)	Static	-	-
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		[hp]
2 Displacement	5.19	[cm ³] (0.317 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	200	[ml] (6.76 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	6.1	[kg] (13.45 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

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	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	11.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	11.50	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	2.10/2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	2.10/2.10	[A]
10 FLA - Full Load Amperage HBP (40/150 Hz)	-	[A]
11 Approval boards certification	VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V1300RPM			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]
82	21	24	18	0.17	0.31	4.53	1.14	1.33

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]
104	26	30	22	0.20	0.40	4.66	1.17	1.37

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]
133	34	39	28	0.24	0.51	4.75	1.20	1.39

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]
199	50	58	43	0.35	0.76	4.68	1.18	1.37

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]
292	74	86	67	0.53	1.11	4.37	1.10	1.28

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)	55	14	16	13	0.12	0.17	4.46	1.12	1.31	
-30 (-22)	90	23	26	15	0.14	0.29	6.00	1.51	1.76	
-25 (-13)	124	31	36	17	0.16	0.40	7.17	1.81	2.10	
-20 (- 4)	160	40	47	19	0.18	0.51	8.22	2.07	2.41	
-15 (+ 5)	204	51	60	22	0.20	0.65	9.41	2.37	2.76	
-10 (+14)	261	66	76	24	0.21	0.84	10.99	2.77	3.22	

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)	46	12	13	13	0.12	0.16	3.63	0.91	1.06	
-30 (-22)	77	19	23	15	0.14	0.27	4.95	1.25	1.45	
-25 (-13)	106	27	31	18	0.17	0.37	5.83	1.47	1.71	
-20 (- 4)	137	34	40	21	0.19	0.48	6.52	1.64	1.91	
-15 (+ 5)	175	44	51	24	0.21	0.61	7.26	1.83	2.13	
-10 (+14)	225	57	66	27	0.23	0.79	8.33	2.10	2.44	

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)	31	8	9	12	0.12	0.12	2.60	0.65	0.76	
-30 (-22)	60	15	18	15	0.14	0.23	3.91	0.98	1.14	
-25 (-13)	85	22	25	18	0.17	0.33	4.69	1.18	1.37	
-20 (- 4)	113	28	33	22	0.20	0.43	5.21	1.31	1.53	
-15 (+ 5)	146	37	43	26	0.23	0.56	5.72	1.44	1.68	
-10 (+14)	191	48	56	29	0.27	0.74	6.47	1.63	1.90	

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)	76	19	22	16	0.15	0.24	4.88	1.23	1.43	
-30 (-22)	112	28	33	18	0.17	0.36	6.08	1.53	1.78	
-25 (-13)	153	38	45	21	0.19	0.49	7.24	1.83	2.12	
-20 (- 4)	201	51	59	24	0.21	0.65	8.46	2.13	2.48	
-15 (+ 5)	259	65	76	26	0.23	0.83	9.81	2.47	2.88	
-10 (+14)	330	83	97	29	0.25	1.06	11.41	2.88	3.34	

E - PERFORMANCE - CURVES

TEST CONDITIONS:		CECOMAF			(Condensing temperature 45°C (+113°F))					
@220V1600RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	58	15	17	15	0.14	0.20	3.82	0.96	1.12	
-30 (-22)	91	23	27	18	0.17	0.31	4.88	1.23	1.43	
-25 (-13)	127	32	37	22	0.19	0.44	5.81	1.46	1.70	
-20 (- 4)	171	43	50	25	0.22	0.59	6.70	1.69	1.96	
-15 (+ 5)	223	56	65	29	0.25	0.78	7.66	1.93	2.24	
-10 (+14)	286	72	84	33	0.27	1.00	8.77	2.21	2.57	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 55°C (+131°F))					
@220V1600RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	42	11	12	15	0.14	0.16	2.83	0.71	0.83	
-30 (-22)	71	18	21	18	0.17	0.27	3.87	0.98	1.13	
-25 (-13)	104	26	31	22	0.20	0.40	4.70	1.18	1.38	
-20 (- 4)	143	36	42	27	0.23	0.55	5.41	1.36	1.59	
-15 (+ 5)	190	48	56	31	0.26	0.73	6.10	1.54	1.79	
-10 (+14)	247	62	72	36	0.30	0.95	6.86	1.73	2.01	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 35°C (+95°F))					
@220V2000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	101	25	30	19	0.18	0.32	5.20	1.31	1.52	
-30 (-22)	142	36	42	23	0.21	0.46	6.20	1.56	1.82	
-25 (-13)	193	49	56	27	0.23	0.62	7.25	1.83	2.13	
-20 (- 4)	254	64	74	30	0.26	0.82	8.43	2.12	2.47	
-15 (+ 5)	328	83	96	33	0.28	1.05	9.79	2.47	2.87	
-10 (+14)	415	105	122	36	0.30	1.34	11.40	2.87	3.34	

TEST CONDITIONS:		CECOMAF			(Condensing temperature 45°C (+113°F))					
@220V2000RPM		Static								
Evaporating temperature	Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE			
	+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	76	19	22	19	0.17	0.26	4.04	1.02	1.18	
-30 (-22)	115	29	34	23	0.20	0.40	4.99	1.26	1.46	
-25 (-13)	162	41	47	27	0.24	0.56	5.88	1.48	1.72	
-20 (- 4)	218	55	64	32	0.27	0.76	6.78	1.71	1.99	
-15 (+ 5)	285	72	84	36	0.30	1.00	7.77	1.96	2.28	
-10 (+14)	364	92	107	41	0.33	1.27	8.89	2.24	2.60	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	55	14	16	19	0.17	0.21	2.88	0.73	0.84	
-30 (-22)	91	23	27	23	0.20	0.34	3.89	0.98	1.14	
-25 (-13)	133	33	39	28	0.24	0.51	4.73	1.19	1.39	
-20 (- 4)	182	46	53	34	0.28	0.70	5.48	1.38	1.61	
-15 (+ 5)	241	61	71	39	0.32	0.92	6.20	1.56	1.82	
-10 (+14)	310	78	91	45	0.36	1.19	6.95	1.75	2.04	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	153	38	45	30	0.25	0.49	5.12	1.29	1.50	
-30 (-22)	216	54	63	35	0.29	0.69	6.09	1.54	1.78	
-25 (-13)	296	75	87	41	0.34	0.95	7.13	1.80	2.09	
-20 (- 4)	392	99	115	48	0.38	1.26	8.26	2.08	2.42	
-15 (+ 5)	505	127	148	53	0.42	1.63	9.54	2.40	2.79	
-10 (+14)	635	160	186	58	0.46	2.05	10.98	2.77	3.22	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	124	31	36	30	0.26	0.43	4.11	1.04	1.20	
-30 (-22)	178	45	52	36	0.30	0.62	4.95	1.25	1.45	
-25 (-13)	248	63	73	43	0.35	0.86	5.80	1.46	1.70	
-20 (- 4)	334	84	98	50	0.40	1.17	6.68	1.68	1.96	
-15 (+ 5)	437	110	128	57	0.45	1.53	7.65	1.93	2.24	
-10 (+14)	556	140	163	64	0.49	1.95	8.74	2.20	2.56	

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%			+/- 5%	+/- 5%	+/- 5%	+/- 7%			
°C (°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
-35 (-31)	95	24	28	30	0.26	0.36	3.15	0.79	0.92	
-30 (-22)	139	35	41	36	0.30	0.53	3.94	0.99	1.15	
-25 (-13)	199	50	58	43	0.35	0.76	4.67	1.18	1.37	
-20 (- 4)	275	69	81	51	0.41	1.05	5.39	1.36	1.58	
-15 (+ 5)	366	92	107	60	0.47	1.40	6.13	1.55	1.80	
-10 (+14)	474	119	139	68	0.53	1.82	6.94	1.75	2.03	

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)	223	56	65	47	0.38	0.71	4.69	1.18	1.37
-30	(-22)	311	78	91	56	0.43	1.00	5.58	1.41	1.63
-25	(-13)	419	105	123	65	0.50	1.35	6.47	1.63	1.89
-20	(- 4)	550	139	161	74	0.57	1.77	7.41	1.87	2.17
-15	(+ 5)	712	179	209	83	0.64	2.29	8.50	2.14	2.49
-10	(+14)	910	229	267	93	0.70	2.93	9.78	2.46	2.87

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)	184	46	54	49	0.40	0.64	3.78	0.95	1.11
-30	(-22)	265	67	78	57	0.46	0.92	4.65	1.17	1.36
-25	(-13)	361	91	106	67	0.52	1.26	5.42	1.37	1.59
-20	(- 4)	477	120	140	77	0.60	1.66	6.18	1.56	1.81
-15	(+ 5)	619	156	181	88	0.68	2.16	6.98	1.76	2.05
-10	(+14)	793	200	232	100	0.75	2.77	7.91	1.99	2.32

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)	122	31	36	48	0.38	0.46	2.52	0.63	0.74
-30	(-22)	202	51	59	57	0.45	0.77	3.52	0.89	1.03
-25	(-13)	293	74	86	68	0.54	1.12	4.34	1.09	1.27
-20	(- 4)	400	101	117	79	0.63	1.53	5.06	1.27	1.48
-15	(+ 5)	529	133	155	92	0.72	2.02	5.74	1.45	1.68
-10	(+14)	685	172	201	106	0.81	2.63	6.46	1.63	1.89

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		