

### COMPRESSOR DEFINITION

Designation	<b>VES D9C</b>
Nominal Voltage/Frequency	<b>230 V 40-150 Hz</b>
Engineering Number	<b>800CY02</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 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	187 to 254 V	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	1/5	[hp]
2 Displacement	9.04	[cm <sup>3</sup> ] (0.552 cu.in)
2.1 Bore [mm]	24.000	
2.2 Stroke [mm]	20.000	
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)	6.75	[kg] (14.88 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	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	9.60	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.60	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (40/150 Hz)	2.10	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (40/150 Hz)	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: <b>@220V1300RPM</b>			<b>CECOMAFLBP-NOFAN</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]
166	42	49	33	0.29	0.63	4.97	1.25	1.46

TEST CONDITIONS: <b>@220V1600RPM</b>			<b>CECOMAFLBP-NOFAN</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]
208	52	61	41	0.36	0.79	5.07	1.28	1.49

TEST CONDITIONS: <b>@220V2000RPM</b>			<b>CECOMAFLBP-NOFAN</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]
258	65	76	50	0.46	0.98	5.12	1.29	1.50

TEST CONDITIONS: <b>@220V3000RPM</b>			<b>CECOMAFLBP-NOFAN</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]
392	99	115	79	0.64	1.49	4.99	1.26	1.46

TEST CONDITIONS: <b>@220V4500RPM</b>			<b>CECOMAFLBP-NOFAN</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]
556	140	163	118	0.99	2.12	4.72	1.19	1.38

### E - PERFORMANCE - CURVES

TEST CONDITIONS:		CECOMAF-NOFAN			(Condensing temperature 35°C (+95°F))					
@220V1300RPM		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)	134	34	39	22	0.20	0.43	6.17	1.56	1.81	
-30 (-22)	183	46	54	25	0.23	0.59	7.20	1.82	2.11	
-25 (-13)	238	60	70	29	0.26	0.77	8.17	2.06	2.39	
-20 (- 4)	303	76	89	33	0.29	0.98	9.20	2.32	2.70	
-15 (+ 5)	382	96	112	37	0.32	1.23	10.41	2.62	3.05	
-10 (+14)	478	120	140	40	0.35	1.54	11.91	3.00	3.49	

TEST CONDITIONS:		CECOMAF-NOFAN			(Condensing temperature 45°C (+113°F))					
@220V1300RPM		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)	109	28	32	23	0.21	0.38	4.84	1.22	1.42	
-30 (-22)	152	38	45	27	0.25	0.53	5.66	1.43	1.66	
-25 (-13)	201	51	59	31	0.28	0.70	6.38	1.61	1.87	
-20 (- 4)	260	66	76	36	0.32	0.91	7.13	1.80	2.09	
-15 (+ 5)	333	84	98	41	0.36	1.16	8.03	2.02	2.35	
-10 (+14)	422	106	124	46	0.39	1.48	9.19	2.32	2.69	

TEST CONDITIONS:		CECOMAF-NOFAN			(Condensing temperature 55°C (+131°F))					
@220V1300RPM		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)	84	21	25	23	0.22	0.32	3.70	0.93	1.08	
-30 (-22)	122	31	36	28	0.26	0.46	4.39	1.11	1.29	
-25 (-13)	166	42	49	34	0.31	0.63	4.96	1.25	1.45	
-20 (- 4)	219	55	64	40	0.35	0.84	5.52	1.39	1.62	
-15 (+ 5)	286	72	84	46	0.40	1.10	6.18	1.56	1.81	
-10 (+14)	370	93	108	52	0.46	1.42	7.08	1.79	2.08	

TEST CONDITIONS:		CECOMAF-NOFAN			(Condensing temperature 35°C (+95°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)	165	42	48	27	0.24	0.53	6.14	1.55	1.80	
-30 (-22)	225	57	66	31	0.28	0.72	7.13	1.80	2.09	
-25 (-13)	293	74	86	36	0.31	0.94	8.14	2.05	2.38	
-20 (- 4)	373	94	109	41	0.34	1.20	9.23	2.33	2.70	
-15 (+ 5)	470	119	138	45	0.38	1.51	10.49	2.64	3.07	
-10 (+14)	588	148	172	49	0.41	1.90	11.99	3.02	3.51	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1600RPM		CECOMAF-NOFAN 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)	135	34	40	27	0.26	0.47	4.96	1.25	1.45
-30	(-22)	190	48	56	33	0.30	0.66	5.76	1.45	1.69
-25	(-13)	251	63	74	38	0.34	0.87	6.52	1.64	1.91
-20	(- 4)	323	81	95	44	0.38	1.13	7.31	1.84	2.14
-15	(+ 5)	411	104	120	50	0.42	1.43	8.22	2.07	2.41
-10	(+14)	519	131	152	55	0.47	1.82	9.31	2.35	2.73

TEST CONDITIONS: @220V1600RPM		CECOMAF-NOFAN 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)	107	27	31	28	0.26	0.41	3.79	0.96	1.11
-30	(-22)	154	39	45	34	0.31	0.59	4.50	1.14	1.32
-25	(-13)	207	52	61	41	0.35	0.79	5.12	1.29	1.50
-20	(- 4)	269	68	79	47	0.40	1.03	5.72	1.44	1.68
-15	(+ 5)	346	87	101	54	0.45	1.33	6.38	1.61	1.87
-10	(+14)	441	111	129	61	0.51	1.70	7.17	1.81	2.10

TEST CONDITIONS: @220V2000RPM		CECOMAF-NOFAN 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)	207	52	61	33	0.29	0.66	6.24	1.57	1.83
-30	(-22)	279	70	82	39	0.35	0.89	7.06	1.78	2.07
-25	(-13)	366	92	107	46	0.40	1.17	7.97	2.01	2.33
-20	(- 4)	470	118	138	52	0.45	1.51	8.99	2.27	2.63
-15	(+ 5)	594	150	174	59	0.50	1.91	10.17	2.56	2.98
-10	(+14)	739	186	217	64	0.54	2.38	11.56	2.91	3.39

TEST CONDITIONS: @220V2000RPM		CECOMAF-NOFAN 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)	171	43	50	35	0.31	0.60	4.97	1.25	1.46
-30	(-22)	234	59	69	41	0.37	0.81	5.68	1.43	1.66
-25	(-13)	312	79	91	49	0.43	1.09	6.41	1.61	1.88
-20	(- 4)	406	102	119	56	0.48	1.41	7.20	1.81	2.11
-15	(+ 5)	519	131	152	64	0.54	1.81	8.09	2.04	2.37
-10	(+14)	652	164	191	71	0.60	2.28	9.12	2.30	2.67

### E - PERFORMANCE - CURVES

TEST CONDITIONS:		CECOMAF-NOFAN			(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)	138	35	40	35	0.33	0.52	3.87	0.97	1.13	
-30 (-22)	191	48	56	42	0.39	0.73	4.52	1.14	1.33	
-25 (-13)	258	65	76	50	0.45	0.98	5.15	1.30	1.51	
-20 (- 4)	341	86	100	59	0.51	1.30	5.77	1.45	1.69	
-15 (+ 5)	442	111	130	69	0.58	1.69	6.44	1.62	1.89	
-10 (+14)	563	142	165	78	0.66	2.16	7.19	1.81	2.11	

TEST CONDITIONS:		CECOMAF-NOFAN			(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)	298	75	87	52	0.44	0.95	5.75	1.45	1.68	
-30 (-22)	404	102	118	62	0.52	1.30	6.54	1.65	1.92	
-25 (-13)	535	135	157	72	0.60	1.72	7.40	1.87	2.17	
-20 (- 4)	692	174	203	83	0.69	2.23	8.35	2.10	2.45	
-15 (+ 5)	877	221	257	94	0.78	2.82	9.35	2.36	2.74	
-10 (+14)	1091	275	320	105	0.87	3.52	10.41	2.62	3.05	

TEST CONDITIONS:		CECOMAF-NOFAN			(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)	251	63	74	54	0.46	0.87	4.69	1.18	1.38	
-30 (-22)	347	87	102	65	0.53	1.21	5.36	1.35	1.57	
-25 (-13)	466	117	136	76	0.62	1.62	6.10	1.54	1.79	
-20 (- 4)	608	153	178	88	0.72	2.12	6.91	1.74	2.02	
-15 (+ 5)	777	196	228	100	0.83	2.71	7.77	1.96	2.28	
-10 (+14)	973	245	285	112	0.93	3.41	8.68	2.19	2.54	

TEST CONDITIONS:		CECOMAF-NOFAN			(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)	207	52	61	54	0.47	0.79	3.85	0.97	1.13	
-30 (-22)	289	73	85	66	0.55	1.10	4.36	1.10	1.28	
-25 (-13)	391	99	115	79	0.65	1.49	4.94	1.24	1.45	
-20 (- 4)	516	130	151	93	0.76	1.97	5.57	1.40	1.63	
-15 (+ 5)	665	167	195	107	0.87	2.55	6.25	1.58	1.83	
-10 (+14)	839	211	246	121	0.99	3.22	6.97	1.76	2.04	

### F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard VES		
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		