

COMPRESSOR DEFINITION

Designation	VES D11C
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513907313

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 (Curves until T.Evap -10°C)		
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	1/4+	[hp]
2 Displacement	11.14	[cm ³] (0.680 cu.in)
2.1 Bore [mm]	26.000	
2.2 Stroke [mm]	21.000	
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 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	15.60	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	15.60	[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] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (40/150 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - 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]
220	55	64	44	0.40	0.84	5.00	1.26	1.47

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]
272	69	80	53	0.47	1.04	5.17	1.30	1.51

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]
345	87	101	66	0.61	1.32	5.23	1.32	1.53

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]
525	132	154	103	0.92	2.00	5.10	1.29	1.49

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]
690	174	202	145	1.09	2.63	4.76	1.20	1.39

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)	178	45	52	28	0.27	0.57	6.35	1.60	1.86	
-30 (-22)	230	58	67	33	0.32	0.74	7.05	1.78	2.06	
-25 (-13)	297	75	87	37	0.37	0.95	7.93	2.00	2.32	
-20 (- 4)	382	96	112	42	0.41	1.23	9.01	2.27	2.64	
-15 (+ 5)	485	122	142	47	0.44	1.56	10.28	2.59	3.01	
-10 (+14)	609	153	178	52	0.44	1.96	11.75	2.96	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)	150	38	44	29	0.29	0.52	5.16	1.30	1.51	
-30 (-22)	198	50	58	35	0.34	0.69	5.68	1.43	1.66	
-25 (-13)	259	65	76	41	0.39	0.90	6.32	1.59	1.85	
-20 (- 4)	335	84	98	47	0.44	1.17	7.09	1.79	2.08	
-15 (+ 5)	428	108	125	54	0.48	1.49	7.98	2.01	2.34	
-10 (+14)	538	136	158	60	0.50	1.89	8.99	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)	123	31	36	30	0.29	0.47	4.13	1.04	1.21	
-30 (-22)	166	42	49	36	0.34	0.63	4.56	1.15	1.34	
-25 (-13)	220	55	64	44	0.40	0.84	5.04	1.27	1.48	
-20 (- 4)	287	72	84	52	0.45	1.10	5.58	1.41	1.64	
-15 (+ 5)	368	93	108	60	0.50	1.41	6.18	1.56	1.81	
-10 (+14)	466	117	136	68	0.54	1.79	6.83	1.72	2.00	

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)	215	54	63	34	0.33	0.69	6.29	1.59	1.84	
-30 (-22)	283	71	83	40	0.39	0.91	7.04	1.77	2.06	
-25 (-13)	369	93	108	46	0.45	1.18	7.97	2.01	2.34	
-20 (- 4)	473	119	139	52	0.50	1.52	9.06	2.28	2.65	
-15 (+ 5)	594	150	174	58	0.53	1.91	10.27	2.59	3.01	
-10 (+14)	730	184	214	63	0.52	2.35	11.57	2.92	3.39	

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)	184	46	54	36	0.35	0.64	5.15	1.30	1.51
-30	(-22)	245	62	72	43	0.41	0.85	5.75	1.45	1.69
-25	(-13)	323	81	95	50	0.47	1.12	6.46	1.63	1.89
-20	(- 4)	417	105	122	57	0.53	1.46	7.26	1.83	2.13
-15	(+ 5)	527	133	154	65	0.58	1.84	8.11	2.04	2.38
-10	(+14)	651	164	191	73	0.59	2.28	8.98	2.26	2.63

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)	151	38	44	36	0.35	0.57	4.16	1.05	1.22
-30	(-22)	203	51	60	44	0.40	0.77	4.65	1.17	1.36
-25	(-13)	272	69	80	53	0.47	1.04	5.19	1.31	1.52
-20	(- 4)	356	90	104	62	0.54	1.36	5.73	1.44	1.68
-15	(+ 5)	453	114	133	72	0.59	1.73	6.26	1.58	1.83
-10	(+14)	563	142	165	83	0.62	2.16	6.74	1.70	1.97

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)	268	68	79	43	0.41	0.86	6.23	1.57	1.83
-30	(-22)	353	89	103	50	0.48	1.13	7.02	1.77	2.06
-25	(-13)	456	115	134	58	0.54	1.46	7.91	1.99	2.32
-20	(- 4)	581	146	170	65	0.60	1.87	8.92	2.25	2.61
-15	(+ 5)	732	184	214	73	0.67	2.36	10.05	2.53	2.95
-10	(+14)	913	230	268	81	0.74	2.95	11.33	2.85	3.32

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)	231	58	68	45	0.42	0.80	5.15	1.30	1.51
-30	(-22)	308	78	90	53	0.50	1.07	5.75	1.45	1.69
-25	(-13)	400	101	117	62	0.58	1.39	6.42	1.62	1.88
-20	(- 4)	513	129	150	71	0.66	1.79	7.17	1.81	2.10
-15	(+ 5)	649	164	190	81	0.74	2.27	8.01	2.02	2.35
-10	(+14)	813	205	238	91	0.83	2.85	8.94	2.25	2.62

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)	192	48	56	46	0.43	0.73	4.20	1.06	1.23	
-30 (-22)	262	66	77	56	0.52	0.99	4.69	1.18	1.37	
-25 (-13)	345	87	101	66	0.61	1.31	5.21	1.31	1.53	
-20 (- 4)	446	112	131	77	0.71	1.70	5.77	1.45	1.69	
-15 (+ 5)	568	143	166	89	0.81	2.18	6.37	1.61	1.87	
-10 (+14)	716	180	210	102	0.91	2.75	7.04	1.77	2.06	

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)	396	100	116	67	0.61	1.27	5.92	1.49	1.74	
-30 (-22)	523	132	153	78	0.71	1.68	6.69	1.69	1.96	
-25 (-13)	671	169	197	90	0.81	2.15	7.48	1.88	2.19	
-20 (- 4)	849	214	249	102	0.92	2.73	8.30	2.09	2.43	
-15 (+ 5)	1067	269	313	116	1.03	3.43	9.19	2.32	2.69	
-10 (+14)	1334	336	391	131	1.16	4.31	10.16	2.56	2.98	

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)	339	85	99	69	0.63	1.18	4.93	1.24	1.44	
-30 (-22)	465	117	136	83	0.75	1.62	5.57	1.40	1.63	
-25 (-13)	605	152	177	97	0.87	2.11	6.22	1.57	1.82	
-20 (- 4)	769	194	225	112	1.00	2.68	6.88	1.73	2.02	
-15 (+ 5)	967	244	283	128	1.13	3.38	7.58	1.91	2.22	
-10 (+14)	1208	304	354	145	1.27	4.23	8.35	2.10	2.45	

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)	281	71	82	70	0.64	1.07	4.04	1.02	1.18	
-30 (-22)	399	101	117	86	0.78	1.52	4.58	1.15	1.34	
-25 (-13)	525	132	154	103	0.92	2.00	5.10	1.29	1.49	
-20 (- 4)	668	168	196	119	1.06	2.55	5.62	1.42	1.65	
-15 (+ 5)	839	212	246	137	1.20	3.22	6.16	1.55	1.80	
-10 (+14)	1048	264	307	155	1.36	4.02	6.73	1.70	1.97	

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)	547	138	160	101	0.76	1.75	5.40	1.36	1.58	
-30 (-22)	686	173	201	113	0.83	2.19	6.11	1.54	1.79	
-25 (-13)	895	226	262	130	0.96	2.87	6.86	1.73	2.01	
-20 (- 4)	1151	290	337	150	1.12	3.70	7.65	1.93	2.24	
-15 (+ 5)	1431	361	419	169	1.30	4.61	8.48	2.14	2.48	
-10 (+14)	1710	431	501	183	1.48	5.52	9.34	2.35	2.74	

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)	459	116	134	102	0.78	1.59	4.50	1.13	1.32	
-30 (-22)	598	151	175	119	0.89	2.08	5.10	1.28	1.49	
-25 (-13)	793	200	232	139	1.02	2.77	5.74	1.45	1.68	
-20 (- 4)	1019	257	299	159	1.15	3.56	6.42	1.62	1.88	
-15 (+ 5)	1253	316	367	176	1.27	4.38	7.15	1.80	2.09	
-10 (+14)	1472	371	431	186	1.36	5.15	7.90	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)	375	95	110	100	0.74	1.43	3.75	0.95	1.10	
-30 (-22)	513	129	150	122	0.92	1.96	4.23	1.07	1.24	
-25 (-13)	690	174	202	145	1.09	2.63	4.75	1.20	1.39	
-20 (- 4)	883	223	259	165	1.23	3.37	5.32	1.34	1.56	
-15 (+ 5)	1069	269	313	180	1.33	4.09	5.93	1.49	1.74	
-10 (+14)	1224	308	359	187	1.36	4.70	6.56	1.65	1.92	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal VES		
2 Tray holder	No		
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 5° out + 63° up		
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	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
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		