COMPRESSOR DEFINITION

Designation	**VES D11C**
Nominal Voltage/Frequency	**230 V 40-150 Hz**
Engineering Number	**513907285**

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 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	Static	187 to 255 V	187 to 255 V
8.2 LBP (43ºC Ambient temperature)	Static	187 to 255 V	187 to 255 V
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm²] (98 psig)	/ ºC - ºF
9.2 Peak	7.8	[kgf/cm²] (111 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4+	[hp]
2 Displacement	11.14	[cm³] (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)	6.5	[kg] (14.33 lb.)
5 Nitrogen charge	-	[kgf/cm²]

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 25ºC (77ºF)] +/- 8%
7 Run winding resistance	15.60	[Ω at 25ºC (77ºF)] +/- 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: **CECOMAF** (Condensing temperature **35ºC (+95ºF))**
@220V1300RPM **Static**

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: **CECOMAF** (Condensing temperature **45ºC (+113ºF))**
@220V1300RPM **Static**

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: **CECOMAF** (Condensing temperature **55ºC (+131ºF))**
@220V1300RPM **Static**

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: **CECOMAF** (Condensing temperature **35ºC (+95ºF))**
@220V1600RPM **Static**

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: **CECOMAF** (Condensing temperature **45ºC (+113ºF))**
@220V1600RPM **Static**

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: **CECOMAF** (Condensing temperature **55ºC (+131ºF))**
@220V1600RPM **Static**

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: **CECOMAF** (Condensing temperature **35ºC (+95ºF))**
@220V2000RPM **Static**

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: **CECOMAF** (Condensing temperature **45ºC (+113ºF))**
@220V2000RPM **Static**

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 **55ºC (+131ºF)**)
@220V2000RPM **Static**

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)**	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 **35ºC (+95ºF)**)
@220V3000RPM **Static**

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)**	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 **45ºC (+113ºF)**)
@220V3000RPM **Static**

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)**	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 **55ºC (+131ºF)**)
@220V3000RPM **Static**

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)**	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: **CECOMAF** (Condensing temperature **35ºC (+95ºF))**
@220V4500RPM **Static**

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: **CECOMAF** (Condensing temperature **45ºC (+113ºF))**
@220V4500RPM **Static**

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: **CECOMAF** (Condensing temperature **55ºC (+131ºF))**
@220V4500RPM **Static**

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	European Standard 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 45° up + 15° to Back		
3.2 DISCHARGE	5.1 +0.10/+0.00	[mm]	(0.201" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 47° 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		