

COMPRESSOR DEFINITION

Designation	VEM X11C+
Nominal Voltage/Frequency	230 V 40-150 Hz
Engineering Number	513906104

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 255 V	187 to 255 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 pressures/temperature			
9.1 Operating (gauge)	7.7	[kgf/cm ²] (109 psig)	/ °C - °F
9.2 Peak (gauge)	9.8	[kgf/cm ²] (139 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation		[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	210	[ml] (7.10 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	7.4	[kg] (16.31 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	CF02D01 M 0.0 X/VCC32456XXXX	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	VCC32456XXXXX	
6 Start winding resistance	8.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	8.10	[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

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@230V1200RPM		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)	166	42	49	27	0.21	0.52	6.25	1.58	1.83	
-30 (-22)	221	56	65	29	0.22	0.69	7.51	1.89	2.20	
-25 (-13)	286	72	84	33	0.24	0.90	8.57	2.16	2.51	
-20 (- 4)	364	92	107	38	0.27	1.14	9.57	2.41	2.80	
-15 (+ 5)	456	115	134	43	0.30	1.44	10.63	2.68	3.12	
-10 (+14)	566	143	166	48	0.33	1.79	11.91	3.00	3.49	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@230V1200RPM		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)	148	37	43	25	0.19	0.46	5.91	1.49	1.73	
-30 (-22)	202	51	59	30	0.22	0.63	6.68	1.68	1.96	
-25 (-13)	266	67	78	36	0.26	0.84	7.32	1.85	2.15	
-20 (- 4)	343	87	101	43	0.30	1.08	7.96	2.01	2.33	
-15 (+ 5)	435	110	128	50	0.34	1.37	8.74	2.20	2.56	
-10 (+14)	545	137	160	56	0.38	1.72	9.79	2.47	2.87	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@230V1200RPM		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)	135	34	39	26	0.20	0.42	5.12	1.29	1.50	
-30 (-22)	187	47	55	33	0.25	0.59	5.67	1.43	1.66	
-25 (-13)	250	63	73	41	0.29	0.78	6.16	1.55	1.80	
-20 (- 4)	325	82	95	48	0.34	1.02	6.70	1.69	1.96	
-15 (+ 5)	416	105	122	55	0.38	1.31	7.45	1.88	2.18	
-10 (+14)	525	132	154	61	0.42	1.66	8.52	2.15	2.50	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@230V1200RPM		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)	126	32	37	28	0.21	0.39	4.43	1.12	1.30	
-30 (-22)	176	44	52	35	0.25	0.55	5.02	1.27	1.47	
-25 (-13)	236	60	69	42	0.29	0.74	5.60	1.41	1.64	
-20 (- 4)	310	78	91	49	0.34	0.97	6.31	1.59	1.85	
-15 (+ 5)	398	100	117	55	0.37	1.25	7.28	1.84	2.13	
-10 (+14)	505	127	148	59	0.40	1.59	8.65	2.18	2.53	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @230V2000RPM		ASHRAE32 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)	280	71	82	43	0.33	0.88	6.43	1.62	1.88	
-30 (-22)	348	88	102	49	0.38	1.09	7.06	1.78	2.07	
-25 (-13)	446	112	131	56	0.43	1.40	8.00	2.01	2.34	
-20 (- 4)	575	145	169	63	0.48	1.81	9.15	2.31	2.68	
-15 (+ 5)	736	186	216	71	0.54	2.32	10.43	2.63	3.06	
-10 (+14)	930	234	272	79	0.60	2.93	11.76	2.96	3.44	

TEST CONDITIONS: @230V2000RPM		ASHRAE32 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)	250	63	73	44	0.34	0.78	5.70	1.44	1.67	
-30 (-22)	323	81	95	52	0.40	1.01	6.22	1.57	1.82	
-25 (-13)	429	108	126	61	0.46	1.35	7.02	1.77	2.06	
-20 (- 4)	568	143	167	70	0.53	1.79	8.03	2.02	2.35	
-15 (+ 5)	742	187	218	81	0.61	2.34	9.15	2.31	2.68	
-10 (+14)	951	240	279	93	0.70	3.00	10.29	2.59	3.01	

TEST CONDITIONS: @230V2000RPM		ASHRAE32 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)	198	50	58	43	0.33	0.62	4.87	1.23	1.43	
-30 (-22)	270	68	79	53	0.41	0.85	5.28	1.33	1.55	
-25 (-13)	377	95	111	63	0.48	1.18	5.97	1.50	1.75	
-20 (- 4)	521	131	153	76	0.57	1.64	6.84	1.72	2.00	
-15 (+ 5)	702	177	206	89	0.68	2.21	7.81	1.97	2.29	
-10 (+14)	920	232	270	104	0.80	2.90	8.78	2.21	2.57	

TEST CONDITIONS: @230V2000RPM		ASHRAE32 Static			(Condensing temperature 65°C (+149°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)	212	53	62	45	0.34	0.66	4.59	1.16	1.34	
-30 (-22)	277	70	81	56	0.43	0.87	4.91	1.24	1.44	
-25 (-13)	379	96	111	69	0.53	1.19	5.48	1.38	1.61	
-20 (- 4)	521	131	153	84	0.64	1.64	6.23	1.57	1.83	
-15 (+ 5)	702	177	206	100	0.77	2.21	7.06	1.78	2.07	
-10 (+14)	923	232	270	118	0.92	2.91	7.87	1.98	2.31	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @230V3000RPM		ASHRAE32 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)	381	96	112	65	0.48	1.19	5.88	1.48	1.72	
-30 (-22)	510	128	149	75	0.56	1.60	6.76	1.70	1.98	
-25 (-13)	662	167	194	87	0.65	2.08	7.62	1.92	2.23	
-20 (- 4)	843	213	247	100	0.77	2.65	8.48	2.14	2.48	
-15 (+ 5)	1057	266	310	114	0.89	3.33	9.30	2.34	2.72	
-10 (+14)	1309	330	383	130	1.01	4.13	10.08	2.54	2.95	

TEST CONDITIONS: @230V3000RPM		ASHRAE32 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)	359	90	105	68	0.52	1.12	5.32	1.34	1.56	
-30 (-22)	487	123	143	79	0.60	1.53	6.13	1.54	1.80	
-25 (-13)	641	162	188	92	0.69	2.01	6.97	1.76	2.04	
-20 (- 4)	825	208	242	105	0.80	2.59	7.82	1.97	2.29	
-15 (+ 5)	1042	263	305	120	0.92	3.28	8.68	2.19	2.54	
-10 (+14)	1299	327	381	136	1.04	4.10	9.52	2.40	2.79	

TEST CONDITIONS: @230V3000RPM		ASHRAE32 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)	327	83	96	69	0.53	1.03	4.76	1.20	1.39	
-30 (-22)	453	114	133	83	0.63	1.42	5.44	1.37	1.59	
-25 (-13)	605	152	177	98	0.74	1.90	6.18	1.56	1.81	
-20 (- 4)	788	199	231	113	0.87	2.48	6.97	1.76	2.04	
-15 (+ 5)	1006	254	295	129	1.00	3.17	7.78	1.96	2.28	
-10 (+14)	1265	319	371	147	1.13	3.99	8.62	2.17	2.53	

TEST CONDITIONS: @230V3000RPM		ASHRAE32 Static			(Condensing temperature 65°C (+149°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)	296	75	87	65	0.48	0.93	4.53	1.14	1.33	
-30 (-22)	415	105	122	83	0.62	1.30	5.01	1.26	1.47	
-25 (-13)	562	142	165	101	0.77	1.77	5.59	1.41	1.64	
-20 (- 4)	742	187	217	119	0.93	2.33	6.23	1.57	1.83	
-15 (+ 5)	959	242	281	138	1.09	3.02	6.94	1.75	2.03	
-10 (+14)	1217	307	357	158	1.25	3.84	7.70	1.94	2.26	

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@230V4500RPM		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)	542	137	159	99	0.73	1.70	5.44	1.37	1.59	
-30 (-22)	661	166	194	108	0.95	2.07	6.13	1.54	1.80	
-25 (-13)	866	218	254	129	1.19	2.71	6.70	1.69	1.96	
-20 (- 4)	1129	285	331	155	1.40	3.55	7.27	1.83	2.13	
-15 (+ 5)	1425	359	418	180	1.56	4.49	7.94	2.00	2.33	
-10 (+14)	1726	435	506	197	1.65	5.44	8.81	2.22	2.58	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@230V4500RPM		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)	499	126	146	100	0.77	1.56	5.02	1.27	1.47	
-30 (-22)	647	163	189	114	1.00	2.03	5.72	1.44	1.68	
-25 (-13)	868	219	254	138	1.23	2.72	6.32	1.59	1.85	
-20 (- 4)	1135	286	332	164	1.43	3.57	6.91	1.74	2.02	
-15 (+ 5)	1421	358	416	188	1.57	4.47	7.60	1.92	2.23	
-10 (+14)	1698	428	498	201	1.62	5.36	8.51	2.15	2.49	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 55°C (+131°F))					
@230V4500RPM		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)	455	115	133	101	0.77	1.42	4.53	1.14	1.33	
-30 (-22)	620	156	182	120	1.03	1.94	5.19	1.31	1.52	
-25 (-13)	845	213	247	147	1.28	2.65	5.74	1.45	1.68	
-20 (- 4)	1103	278	323	174	1.49	3.47	6.30	1.59	1.85	
-15 (+ 5)	1367	344	400	196	1.62	4.30	6.96	1.75	2.04	
-10 (+14)	1609	406	472	207	1.66	5.08	7.85	1.98	2.30	

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 65°C (+149°F))					
@230V4500RPM		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)	404	102	118	94	0.70	1.27	4.32	1.09	1.26	
-30 (-22)	574	145	168	118	1.01	1.80	4.87	1.23	1.43	
-25 (-13)	791	199	232	148	1.30	2.48	5.32	1.34	1.56	
-20 (- 4)	1028	259	301	177	1.54	3.23	5.78	1.46	1.69	
-15 (+ 5)	1259	317	369	198	1.69	3.96	6.36	1.60	1.86	
-10 (+14)	1454	366	426	205	1.74	4.59	7.16	1.80	2.10	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EUEM		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.2 +0.05/+0.05	[mm]	(0.244" +0.002"/+0.002")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 40° up + 0° to Back		
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 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		