

COMPRESSOR DEFINITION

Designation	VES G11C
Nominal Voltage/Frequency	230 V 32-150 Hz
Engineering Number	513907342

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 32-150	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Fullmotion Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°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)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
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	1/5	[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	205	[ml] (6.93 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	6.7	[kg] (14.77 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 31.7-150 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	PFC CF02D02 M	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	PFC CF02D02 M	
6 Start winding resistance	9.30	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	9.30	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (32/150 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (32/150 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (32/150 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CCC - VDE	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V950RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°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]
216	54	63	33	0.29	0.68	6.49	1.64	1.90

TEST CONDITIONS: @220V1300RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°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]
294	74	86	44	0.36	0.92	6.76	1.70	1.98

TEST CONDITIONS: @220V2000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°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]
454	114	133	66	0.53	1.43	6.90	1.74	2.02

TEST CONDITIONS: @220V3000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°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]
686	173	201	102	0.79	2.15	6.73	1.70	1.97

TEST CONDITIONS: @220V4000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°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]
867	218	254	135	1.03	2.72	6.42	1.62	1.88

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		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)	179	45	52	26	0.26	0.56	6.83	1.72	2.00	
-30 (-22)	238	60	70	31	0.28	0.75	7.70	1.94	2.26	
-25 (-13)	309	78	91	35	0.31	0.97	8.70	2.19	2.55	
-20 (- 4)	394	99	116	40	0.35	1.24	9.86	2.48	2.89	
-15 (+ 5)	497	125	146	44	0.38	1.56	11.21	2.83	3.29	
-10 (+14)	620	156	182	48	0.41	1.96	12.80	3.23	3.75	
-5 (+23)	766	193	224	52	0.43	2.42	14.66	3.70	4.30	
0 (+32)	938	236	275	55	0.44	2.97	16.83	4.24	4.93	

TEST CONDITIONS: @220V1300RPM		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)	166	42	49	28	0.26	0.52	6.03	1.52	1.77	
-30 (-22)	223	56	65	33	0.29	0.70	6.76	1.70	1.98	
-25 (-13)	292	74	86	39	0.33	0.92	7.56	1.90	2.21	
-20 (- 4)	375	95	110	44	0.37	1.18	8.45	2.13	2.48	
-15 (+ 5)	475	120	139	50	0.42	1.50	9.48	2.39	2.78	
-10 (+14)	595	150	174	56	0.46	1.88	10.68	2.69	3.13	
-5 (+23)	738	186	216	61	0.50	2.33	12.09	3.05	3.54	
0 (+32)	906	228	266	66	0.53	2.87	13.75	3.47	4.03	

TEST CONDITIONS: @220V1300RPM		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)	149	38	44	28	0.26	0.47	5.29	1.33	1.55	
-30 (-22)	205	52	60	34	0.29	0.64	5.98	1.51	1.75	
-25 (-13)	272	69	80	41	0.34	0.85	6.66	1.68	1.95	
-20 (- 4)	353	89	103	48	0.39	1.11	7.39	1.86	2.16	
-15 (+ 5)	450	113	132	55	0.44	1.42	8.18	2.06	2.40	
-10 (+14)	567	143	166	62	0.50	1.79	9.09	2.29	2.66	
-5 (+23)	706	178	207	70	0.55	2.23	10.14	2.56	2.97	
0 (+32)	871	219	255	77	0.59	2.76	11.37	2.87	3.33	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1600RPM		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]
-35	(-31)	217	55	64	33	0.29	0.68	6.59	1.66	1.93
-30	(-22)	286	72	84	38	0.32	0.90	7.48	1.88	2.19
-25	(-13)	371	93	109	44	0.36	1.16	8.47	2.13	2.48
-20	(- 4)	474	120	139	49	0.40	1.49	9.61	2.42	2.81
-15	(+ 5)	601	152	176	55	0.44	1.89	10.94	2.76	3.21
-10	(+14)	755	190	221	60	0.48	2.38	12.53	3.16	3.67
-5	(+23)	940	237	275	65	0.53	2.97	14.41	3.63	4.22
0	(+32)	1160	292	340	70	0.58	3.68	16.62	4.19	4.87

TEST CONDITIONS: @220V1600RPM		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]
-35	(-31)	206	52	60	34	0.31	0.64	6.02	1.52	1.76
-30	(-22)	276	69	81	41	0.35	0.86	6.76	1.70	1.98
-25	(-13)	359	90	105	48	0.39	1.13	7.55	1.90	2.21
-20	(- 4)	460	116	135	55	0.43	1.45	8.43	2.12	2.47
-15	(+ 5)	583	147	171	62	0.48	1.83	9.45	2.38	2.77
-10	(+14)	731	184	214	69	0.53	2.31	10.64	2.68	3.12
-5	(+23)	909	229	266	75	0.59	2.87	12.07	3.04	3.54
0	(+32)	1120	282	328	82	0.65	3.55	13.78	3.47	4.04

TEST CONDITIONS: @220V1600RPM		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]
-35	(-31)	184	46	54	35	0.31	0.58	5.28	1.33	1.55
-30	(-22)	254	64	75	42	0.36	0.80	6.00	1.51	1.76
-25	(-13)	337	85	99	50	0.41	1.06	6.70	1.69	1.96
-20	(- 4)	436	110	128	59	0.47	1.37	7.42	1.87	2.18
-15	(+ 5)	555	140	163	68	0.53	1.75	8.22	2.07	2.41
-10	(+14)	698	176	205	76	0.59	2.20	9.14	2.30	2.68
-5	(+23)	869	219	255	85	0.66	2.75	10.23	2.58	3.00
0	(+32)	1072	270	314	93	0.73	3.40	11.53	2.91	3.38

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		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)	272	69	80	42	0.34	0.85	6.53	1.65	1.91	
-30 (-22)	359	91	105	49	0.39	1.13	7.41	1.87	2.17	
-25 (-13)	467	118	137	56	0.44	1.47	8.40	2.12	2.46	
-20 (- 4)	599	151	175	63	0.49	1.88	9.53	2.40	2.79	
-15 (+ 5)	757	191	222	70	0.55	2.38	10.80	2.72	3.17	
-10 (+14)	946	238	277	77	0.60	2.98	12.23	3.08	3.58	
-5 (+23)	1169	295	343	84	0.65	3.70	13.83	3.49	4.05	
0 (+32)	1429	360	419	91	0.69	4.53	15.61	3.93	4.57	

TEST CONDITIONS: @220V2000RPM		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)	257	65	75	43	0.36	0.81	5.93	1.49	1.74	
-30 (-22)	343	87	101	52	0.41	1.08	6.66	1.68	1.95	
-25 (-13)	449	113	131	60	0.47	1.41	7.48	1.88	2.19	
-20 (- 4)	577	145	169	69	0.54	1.81	8.39	2.11	2.46	
-15 (+ 5)	731	184	214	78	0.60	2.30	9.40	2.37	2.76	
-10 (+14)	915	230	268	87	0.67	2.88	10.54	2.66	3.09	
-5 (+23)	1131	285	331	96	0.74	3.58	11.80	2.97	3.46	
0 (+32)	1384	349	406	105	0.80	4.39	13.21	3.33	3.87	

TEST CONDITIONS: @220V2000RPM		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)	232	58	68	44	0.36	0.73	5.28	1.33	1.55	
-30 (-22)	318	80	93	53	0.42	1.00	5.95	1.50	1.74	
-25 (-13)	422	106	124	63	0.49	1.32	6.66	1.68	1.95	
-20 (- 4)	548	138	161	74	0.57	1.72	7.43	1.87	2.18	
-15 (+ 5)	699	176	205	85	0.65	2.20	8.26	2.08	2.42	
-10 (+14)	879	221	257	96	0.73	2.77	9.18	2.31	2.69	
-5 (+23)	1090	275	319	107	0.82	3.45	10.18	2.57	2.98	
0 (+32)	1337	337	392	118	0.91	4.24	11.29	2.85	3.31	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		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)	389	98	114	65	0.51	1.22	5.99	1.51	1.76	
-30 (-22)	521	131	153	75	0.58	1.63	6.91	1.74	2.02	
-25 (-13)	683	172	200	87	0.66	2.14	7.87	1.98	2.31	
-20 (- 4)	878	221	257	99	0.75	2.76	8.88	2.24	2.60	
-15 (+ 5)	1112	280	326	112	0.85	3.50	9.94	2.51	2.91	
-10 (+14)	1388	350	407	126	0.95	4.38	11.06	2.79	3.24	
-5 (+23)	1711	431	501	140	1.06	5.41	12.25	3.09	3.59	
0 (+32)	2084	525	611	154	1.17	6.60	13.50	3.40	3.96	

TEST CONDITIONS: @220V3000RPM		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)	381	96	112	67	0.52	1.19	5.67	1.43	1.66	
-30 (-22)	507	128	149	79	0.60	1.59	6.40	1.61	1.87	
-25 (-13)	663	167	194	93	0.70	2.08	7.17	1.81	2.10	
-20 (- 4)	853	215	250	107	0.81	2.68	8.00	2.02	2.34	
-15 (+ 5)	1082	273	317	122	0.92	3.40	8.89	2.24	2.60	
-10 (+14)	1352	341	396	138	1.04	4.27	9.83	2.48	2.88	
-5 (+23)	1669	421	489	154	1.17	5.28	10.85	2.73	3.18	
0 (+32)	2036	513	597	171	1.29	6.45	11.93	3.01	3.50	

TEST CONDITIONS: @220V3000RPM		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)	349	88	102	68	0.53	1.09	5.17	1.30	1.51	
-30 (-22)	472	119	138	82	0.63	1.48	5.76	1.45	1.69	
-25 (-13)	625	157	183	98	0.74	1.96	6.41	1.62	1.88	
-20 (- 4)	812	205	238	114	0.87	2.55	7.12	1.79	2.09	
-15 (+ 5)	1037	261	304	131	1.00	3.27	7.88	1.99	2.31	
-10 (+14)	1304	329	382	150	1.14	4.12	8.72	2.20	2.55	
-5 (+23)	1618	408	474	168	1.28	5.12	9.62	2.42	2.82	
0 (+32)	1982	500	581	188	1.43	6.28	10.59	2.67	3.10	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4500RPM		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]
-35	(-31)	530	134	155	92	0.69	1.66	5.77	1.45	1.69
-30	(-22)	684	172	200	106	0.82	2.14	6.51	1.64	1.91
-25	(-13)	885	223	259	120	0.92	2.78	7.38	1.86	2.16
-20	(- 4)	1123	283	329	134	1.00	3.53	8.35	2.11	2.45
-15	(+ 5)	1388	350	407	148	1.08	4.37	9.41	2.37	2.76
-10	(+14)	1671	421	490	159	1.17	5.27	10.51	2.65	3.08
-5	(+23)	1963	495	575	169	1.27	6.21	11.63	2.93	3.41
0	(+32)	2253	568	660	175	1.40	7.14	12.74	3.21	3.73

TEST CONDITIONS: @220V4500RPM		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]
-35	(-31)	495	125	145	93	0.70	1.55	5.35	1.35	1.57
-30	(-22)	652	164	191	109	0.85	2.04	5.99	1.51	1.76
-25	(-13)	855	215	251	126	0.97	2.68	6.75	1.70	1.98
-20	(- 4)	1094	276	321	143	1.08	3.44	7.60	1.91	2.23
-15	(+ 5)	1359	342	398	159	1.18	4.28	8.51	2.14	2.49
-10	(+14)	1641	414	481	174	1.28	5.18	9.46	2.38	2.77
-5	(+23)	1930	486	566	186	1.41	6.10	10.41	2.62	3.05
0	(+32)	2217	559	650	194	1.57	7.03	11.34	2.86	3.32

TEST CONDITIONS: @220V4500RPM		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]
-35	(-31)	457	115	134	94	0.72	1.43	4.86	1.23	1.43
-30	(-22)	605	153	177	112	0.89	1.90	5.44	1.37	1.59
-25	(-13)	798	201	234	130	1.04	2.50	6.13	1.54	1.80
-20	(- 4)	1026	259	301	149	1.17	3.22	6.89	1.74	2.02
-15	(+ 5)	1279	322	375	166	1.29	4.03	7.70	1.94	2.26
-10	(+14)	1547	390	453	182	1.43	4.88	8.53	2.15	2.50
-5	(+23)	1822	459	534	195	1.58	5.76	9.36	2.36	2.74
0	(+32)	2093	527	613	204	1.76	6.64	10.15	2.56	2.97

F - EXTERNAL CHARACTERISTICS

1 Base plate	Japanese Standard		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 0° up + 29° 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	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 0° up + 59° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		