EVGA

EVGA SuperNOVA 1000 G3

Serial Number 1703441015899001

Lab ID 214

Certification ID 25214

Test Result Report ID:

Certificate Issue Date: Nov 13, 2018

115V

Scheme: ETA-EMI PSU



115V



Scheme: LAMBDA PSU



Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	EVGA
Model	SuperNOVA 1000 G3
OEM/ODM	Super Flower
Serial Number	1703441015899001
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15
Rated Frequency (Hz)	50-60

Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	130mm Hydraulic Dynamic Bearing Fan (ED142512W-CA)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	214
Date of receipt	Nov 2, 2018
Testing Date	Nov 11, 2018
Report Issued Date	Nov 13, 2018
DUT Notes	Retested on 11/14/17
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18-22AWG	Yes
4+4 pin EPS12V (700mm)	2	2	18-22AWG	Yes
6+2 pin PCIe (700mm)	2	2	18-20AWG	Yes
6+2 pin PCIe (700mm+150mm)	3	6	18-20AWG	Yes
SATA (550mm+100mm+100mm)	3	12	18-20AWG	No
4 pin Molex (550mm+100mm+100mm+100mm)	1	4	18AWG	No
FDD Adapter (+100mm)	1	1	20AWG	No

AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	No	

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	24	24	83.3	3	0.5
	Watts	120		999.6	15	6
Total Max. Power (W)		1000				

Parts Description

General Data	
Manufacturer (OEM)	CWT
Platform Model	-
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Diode
Bridge Rectifier(s)	2x GBU1006 (600V, 10A @ 100°C)
APFC MOSFETS	2x Infineon IPW50R280CE (550V, 11.4A @ 100°C, 0.28Ohm)
APFC Boost Diode	1x Power Integrations QH08TZ600 (600V, 8A @ 150°C)
Hold-up Cap(s)	1x Nichicon (400V, 390uF, 2000h @ 105 °C, GG)
Main Switchers	2x Vishay SiHG20N50C (560V, 11A @ 100°C, 0.27Ohm)
Combo APFC/PWM Controller	Champion CM6800TX & CM03X Green PFC controller
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x APEC AP9990GH-HF (60V, 100A @ 25°C, 6mOhm)
5V & 3.3V	DC-DC Converters: 6x APEC AP72T03GP (30V, 47A @ 100°C, 9.5mOhm) PWM Controller: APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (1-5,000 @ 105°C, KZE), Suscon (2-5,000h @ 105°C, MF), TAICON (105°C) Polymers: APAQ, EneSol
Supervisor IC	Weltrend WT7502 (OVP, UVP, SCP, PG)
Fan Model	Power Logic PLA13525S12M (12V, 0.40A, 111.1CFM, 41.6 dBA, Hydro Dynamic Bearing)

5VSB Circuit	
Rectifier	1x MBR2045CT SBR (45V, 20A) & CEF04N7G (700V, 4A, 3.3Ohm)
Standby PWM Controller	On-Bright OB5269CP
-12V Circuit	
Rectifier	UTC 2SB834L

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	ErP Lot 3/6 2010: ✓ ErP Lot 3/6 2013: Partially ErP Lot 3/6 2014, CEC: Partially
(EU) No 617/2013 Compliance	✓

Performance Summary 115V

Accredited	
Average Efficiency (>1450 load combinations)	89.652%
Average Noise Output (>1450 Load Combinations)	33.81dBA
Average PF (>1450 Load Combinations)	0.987
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.258%
Standby Power Consumption	0.1344W
Non-Accredited	
12V Ripple (Full Load)	11.85mV
5V Ripple (Full Load)	6.68mV
3.3V Ripple (Full Load)	9.18mV
5VSB Ripple (Full Load)	25.31mV
12V Load Regulation	0.16%
5V Load Regulation	0.10%
3.3V Load Regulation	0.15%
5VSB Load Regulation	1.85%

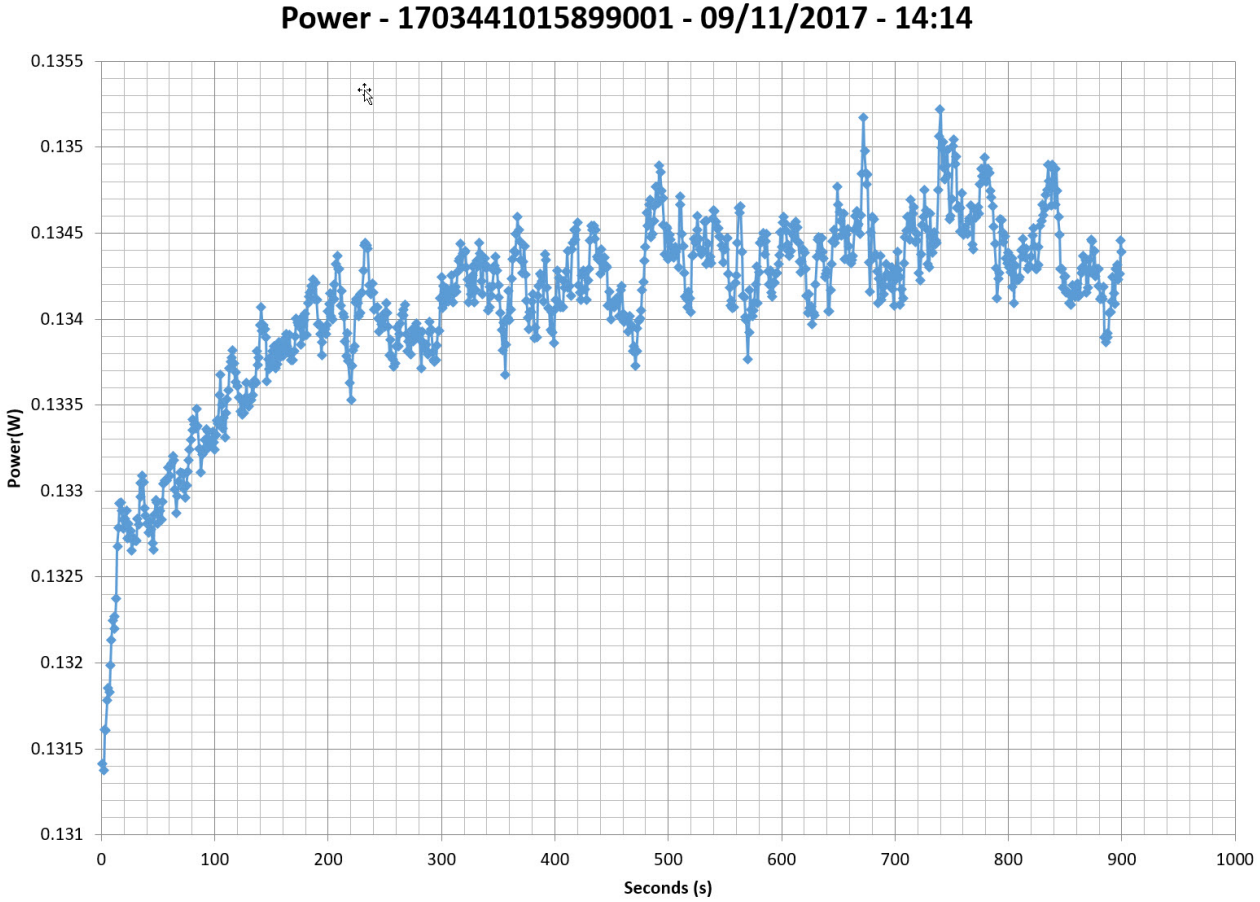
Inrush Current	42.862A

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	22.52
AC Loss to PWR_OK Hold Up Time (ms)	20.90
PWR_OK Inactive to DC Loss Delay (ms)	1.62

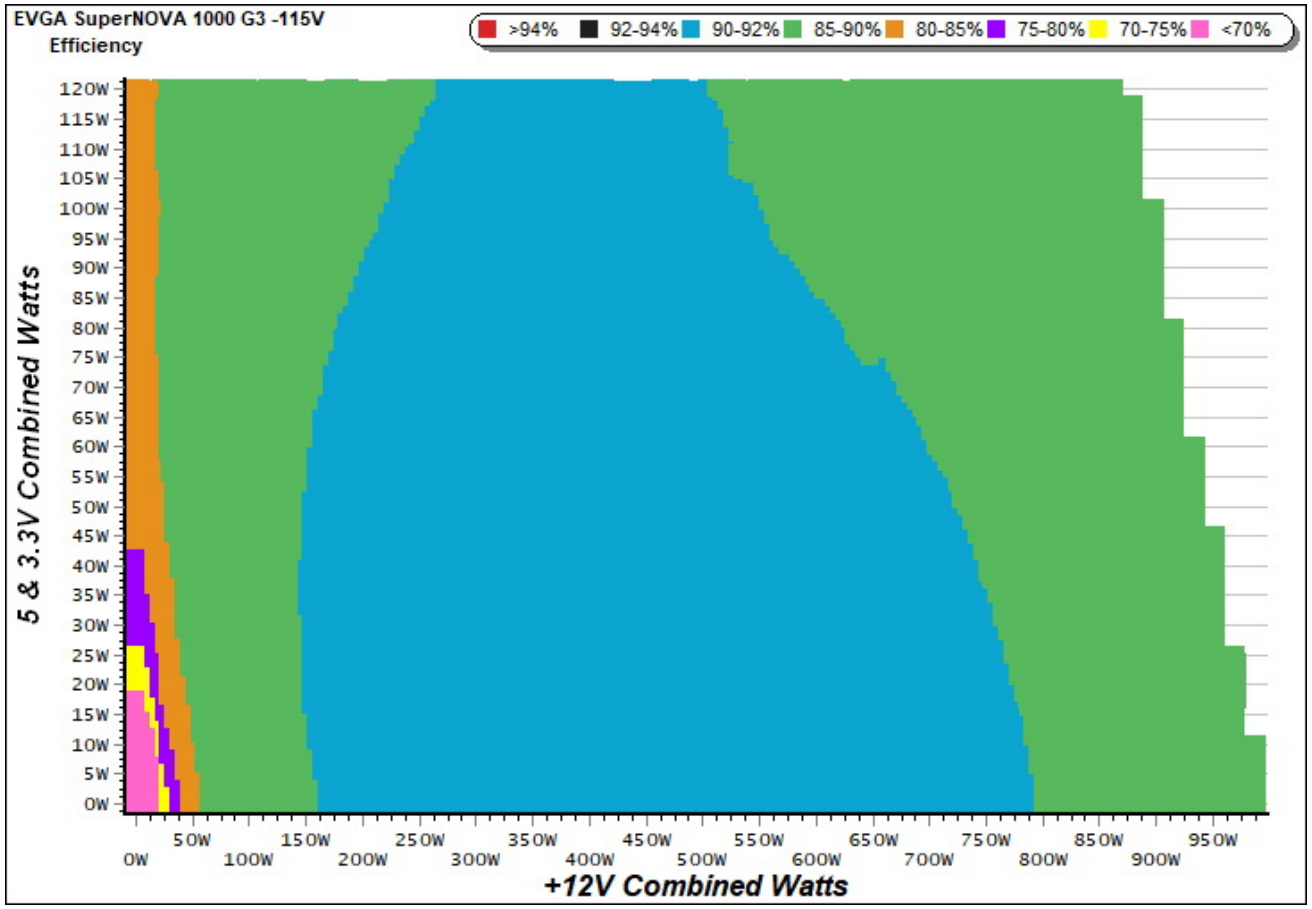
Vampire Power

Graphs 115V



Efficiency Graph

115V

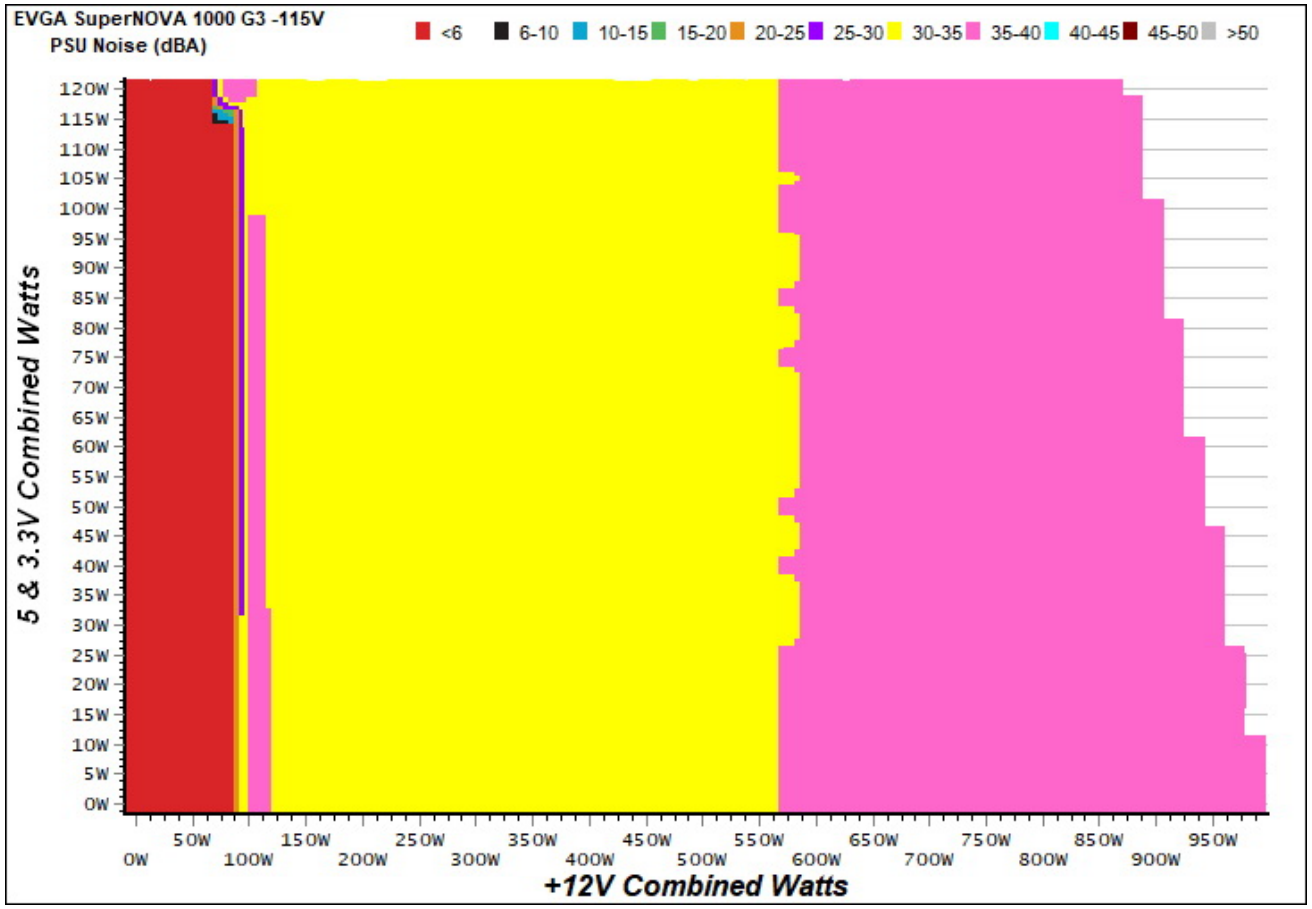


INFO

This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations.

Noise Graph

115V

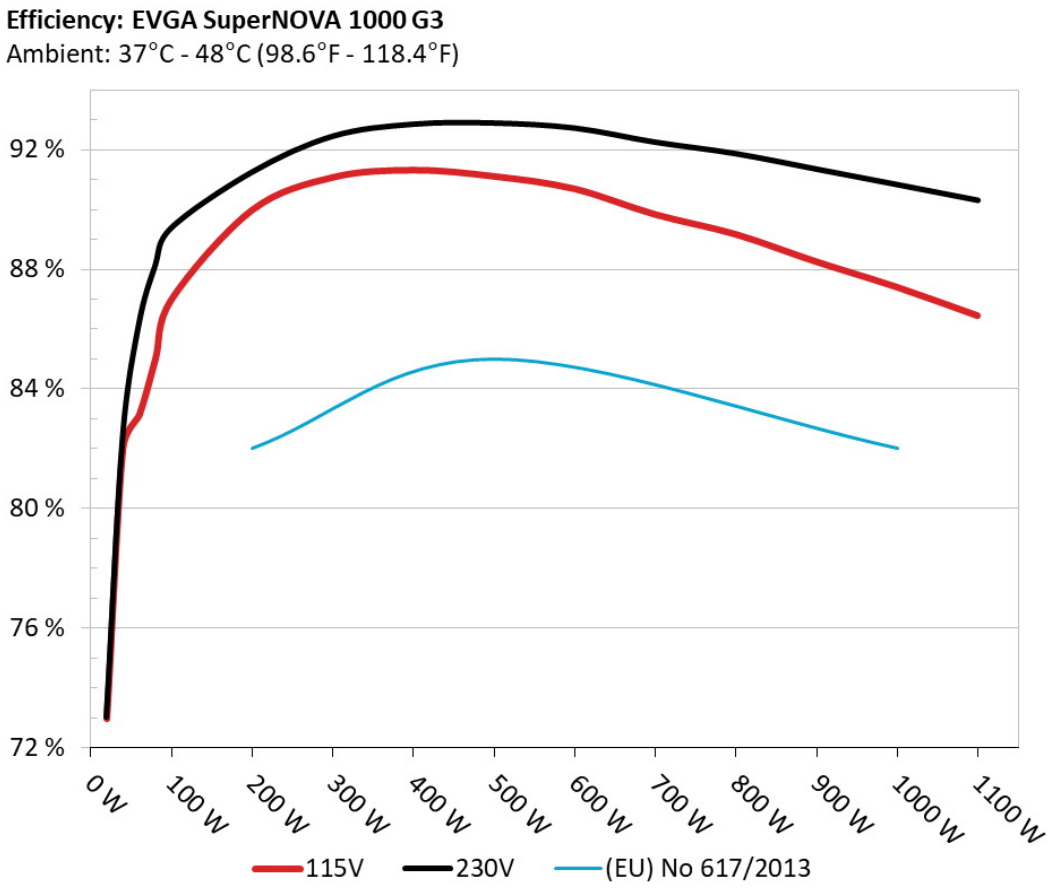


INFO

The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

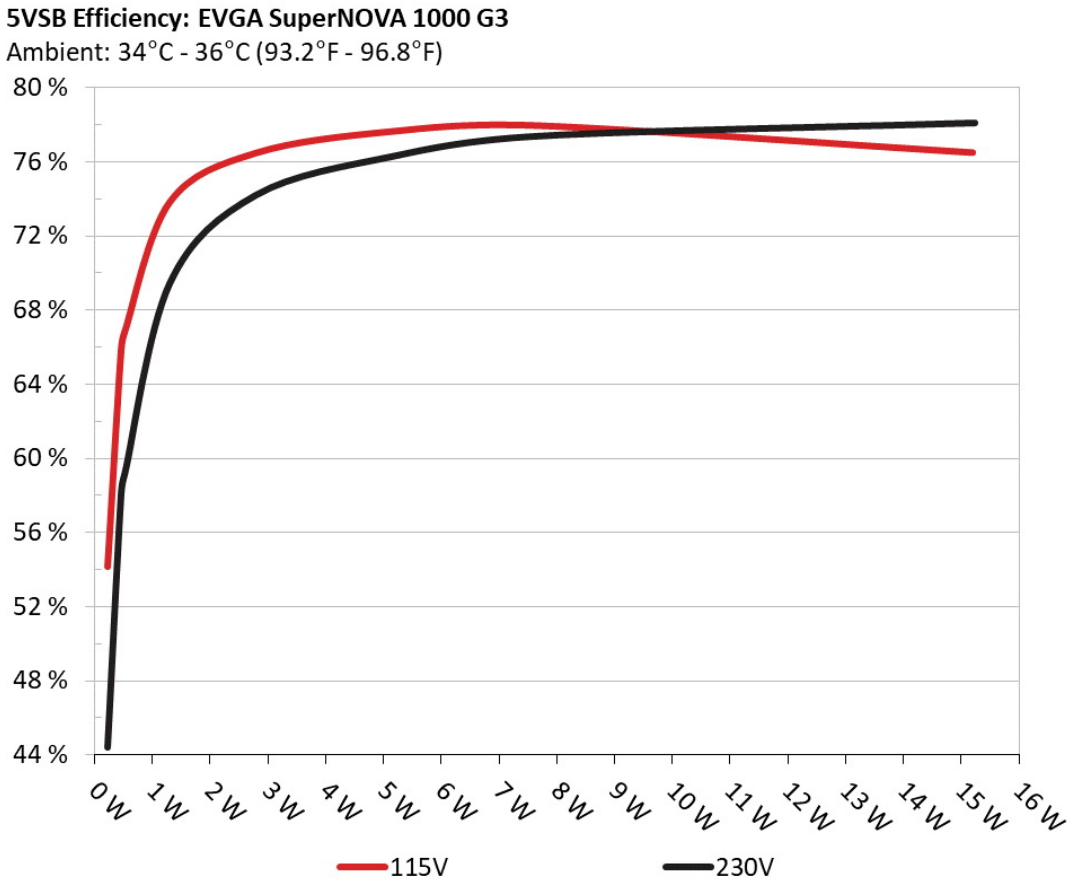
Efficiency under high ambient temperature



INFO

The PSU`s efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used.

5VSB Efficiency



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input.

5VSB Efficiency (ERP LOT 3/6 & CEC) 115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.215	54.156%	0.031
	5.143V	0.397		115.09V

2	0.087A	0.449	65.836%	0.052
	5.142V	0.682		115.09V
3	0.542A	2.781	76.443%	0.233
	5.131V	3.638		115.08V
4	1.002A	5.132	77.605%	0.336
	5.121V	6.613		115.08V
5	1.502A	7.675	77.919%	0.397
	5.110V	9.850		115.08V
6	3.002A	15.206	76.466%	0.478
	5.066V	19.886		115.08V

Supplementary Tests (For Reference)

Typical Load Tests 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	6.457A	1.994A	1.991A	0.976A	99.840	87.002%	1565	36.8	38.05°C	0.974
	12.121V	5.008V	3.310V	5.120V	114.756				43.05°C	115.04V
2	13.933A	2.989A	2.987A	1.171A	199.683	89.988%	1592	37.2	38.35°C	0.978
	12.118V	5.009V	3.310V	5.111V	221.899				43.72°C	115.04V
3	21.778A	3.497A	3.499A	1.371A	299.956	91.085%	1615	37.5	38.75°C	0.987
	12.116V	5.009V	3.310V	5.103V	329.315				44.52°C	115.07V
4	29.599A	3.995A	3.983A	1.567A	399.738	91.327%	1653	38.1	39.12°C	0.992
	12.114V	5.008V	3.310V	5.096V	437.699				45.03°C	115.05V
5	37.075A	4.986A	4.981A	1.766A	499.690	91.119%	1698	38.9	40.06°C	0.994
	12.117V	5.009V	3.310V	5.090V	548.395				46.17°C	115.06V
6	44.545A	5.985A	5.977A	1.966A	599.615	90.700%	1750	39.3	40.58°C	0.995
	12.119V	5.010V	3.312V	5.083V	661.098				47.27°C	115.07V
7	52.021A	6.990A	6.972A	2.165A	699.644	89.844%	1850	41.7	42.16°C	0.995
	12.121V	5.010V	3.312V	5.075V	778.733				49.29°C	115.07V
8	59.486A	7.981A	7.963A	2.365A	799.515	89.181%	1924	43.2	43.76°C	0.995
	12.123V	5.012V	3.313V	5.067V	896.512				50.94°C	115.08V

9	67.379A	8.482A	8.482A	2.368A	899.502	88.264%	2007	44.5	44.90°C	0.996
	12.124V	5.012V	3.313V	5.062V	1019.102				52.29°C	115.09V
10	75.026A	8.988A	8.964A	2.970A	999.392	87.415%	2096	45.3	46.37°C	0.996
	12.125V	5.010V	3.312V	5.045V	1143.269				54.23°C	115.09V
11	83.267A	8.988A	8.971A	2.972A	1099.312	86.461%	2124	45.5	47.73°C	0.996
	12.125V	5.009V	3.310V	5.042V	1271.453				56.90°C	115.05V
CL1	0.100A	14.025A	14.006A	0.005A	118.927	82.902%	1890	42.6	43.32°C	0.969
	12.105V	5.046V	3.350V	5.141V	143.455				47.82°C	115.09V
CL2	83.264A	1.002A	1.002A	1.002A	1023.383	87.714%	2045	44.7	46.07°C	0.996
	12.130V	4.984V	3.288V	5.092V	1166.729				53.15°C	115.09V

The results above are not used in the certification process

Light Load Tests 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.198A	0.489A	0.481A	0.197A	19.653	73.258%	0	<6.0	0.745
	12.191V	5.017V	3.310V	5.083V	26.827				115.04V
2	2.421A	0.988A	0.996A	0.391A	39.745	82.438%	0	<6.0	0.866
	12.187V	5.017V	3.310V	5.078V	48.212				115.04V
3	3.648A	1.485A	1.510A	0.592A	59.903	83.524%	0	<6.0	0.924
	12.184V	5.018V	3.312V	5.073V	71.719				115.05V
4	4.854A	1.994A	1.989A	0.785A	79.767	85.020%	1760	39.6	0.945
	12.195V	5.018V	3.312V	5.069V	93.821				115.05V

The results above are not used in the certification process

Ripple Measurements 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.3 mV	3.6 mV	7.9 mV	8.4 mV	Pass
20% Load	6.6 mV	4.3 mV	4.7 mV	10.3 mV	Pass
30% Load	7.4 mV	4.3 mV	5.1 mV	12.2 mV	Pass
40% Load	8.0 mV	4.7 mV	5.5 mV	13.0 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	8.1 mV	4.3 mV	5.9 mV	14.4 mV	Pass
60% Load	8.3 mV	4.3 mV	6.5 mV	15.8 mV	Pass
70% Load	9.2 mV	5.1 mV	7.1 mV	18.9 mV	Pass
80% Load	10.2 mV	5.8 mV	7.6 mV	20.3 mV	Pass
90% Load	10.7 mV	5.7 mV	8.5 mV	22.1 mV	Pass
100% Load	11.9 mV	6.7 mV	9.2 mV	25.3 mV	Pass
110% Load	12.8 mV	8.3 mV	9.9 mV	28.3 mV	Pass
Crossload 1	5.9 mV	3.6 mV	4.6 mV	18.9 mV	Pass
Crossload 2	10.3 mV	5.7 mV	8.3 mV	22.5 mV	Pass

The results above are not used in the certification process

EVGA SuperNOVA 1000 G3



Top side



Power specifications label

All data and graphs included in this test report can be used by any individual on the following conditions:

› It should be mentioned that the test results are provided by Cybenetics

› The link to the original test results document should be provided in any case

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

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