Anex

EVGA SuperNOVA 1000 G3

Lab ID#: 214
Receipt Date: -
Test Date: -

Report:
Report Date: Nov 13, 2018

DUT INFORMATION

Brand	EVGA
Manufacturer (OEM)	Super Flower
Series	SuperNOVA G3
Model Number	SuperNOVA 1000 G3
Serial Number	1703441015899001
DUT Notes	Retested on 11/14/17

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15
Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Type	ATX12V
Cooling	130mm Hydraulic Dynamic Bearing Fan (ED142512W-CA)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

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				

CABLES AND CONNECTORS

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

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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

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	89.652
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	76.748
Standby Power Consumption (W) -115V	0.1343900
Standby Power Consumption (W) -230V	0.2180430
Average PF	0.987
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	✓
Avg Noise Output	33.81
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard++

TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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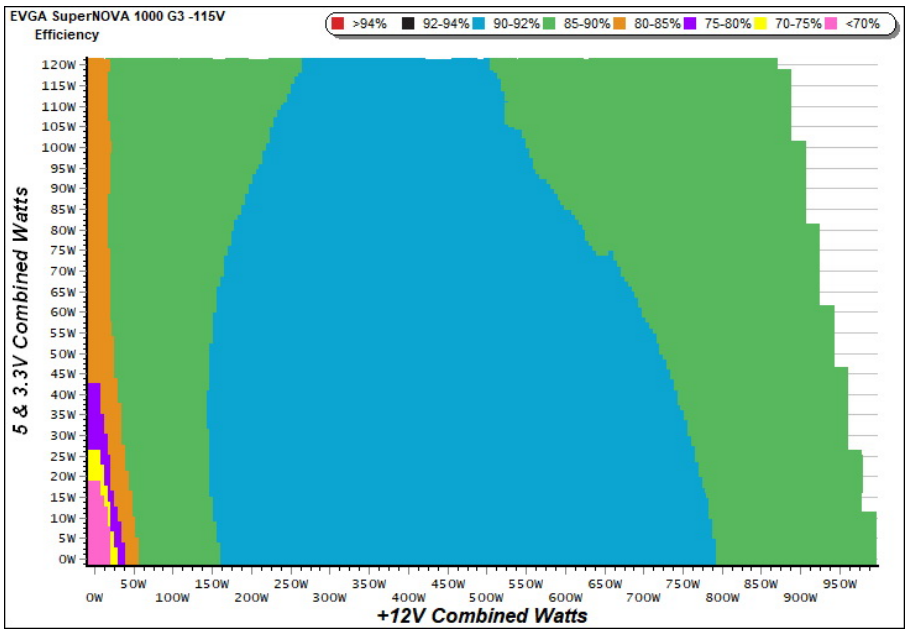
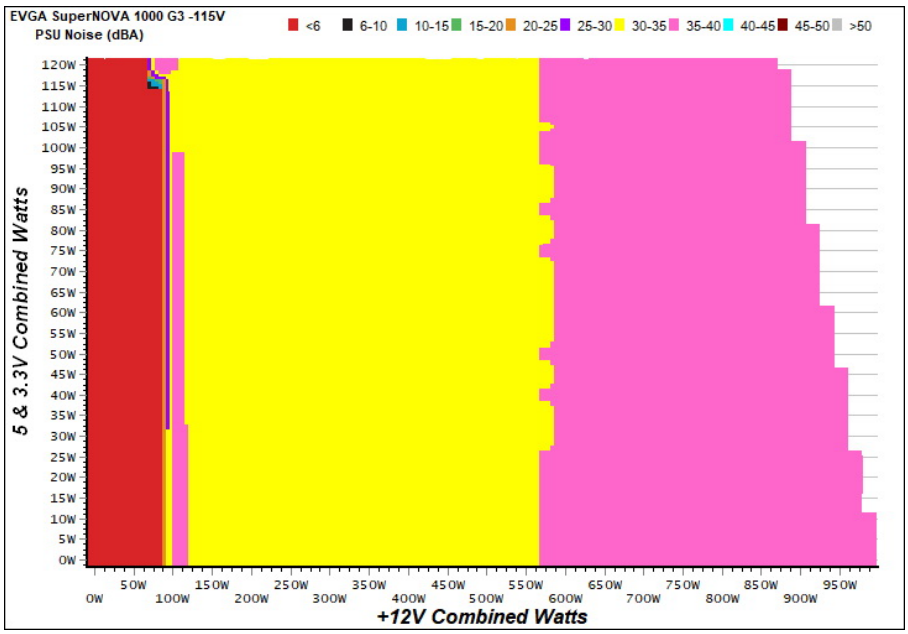
EFFICIENCY GRAPH



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



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

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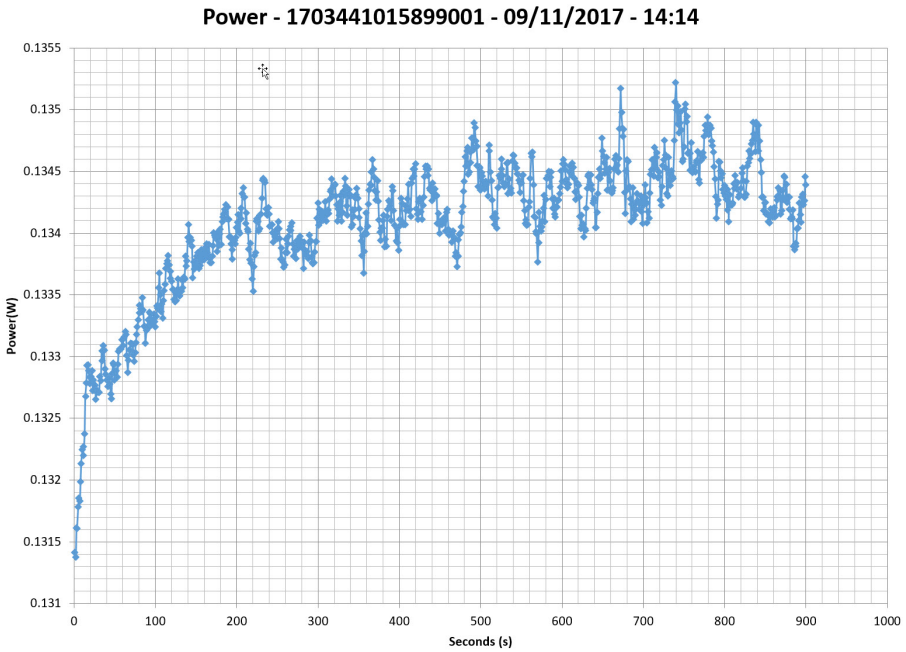
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

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

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.215	44.421%	0.011
	5.144V	0.484		230.26V
2	0.087A	0.449	58.085%	0.018
	5.143V	0.773		230.25V
3	0.542A	2.783	74.194%	0.084
	5.131V	3.751		230.24V
4	1.002A	5.133	76.270%	0.144
	5.122V	6.730		230.24V
5	1.502A	7.676	77.379%	0.197
	5.111V	9.920		230.25V
6	3.002A	15.242	78.088%	0.305
	5.078V	19.519		230.25V

VAMPIRE POWER -115V



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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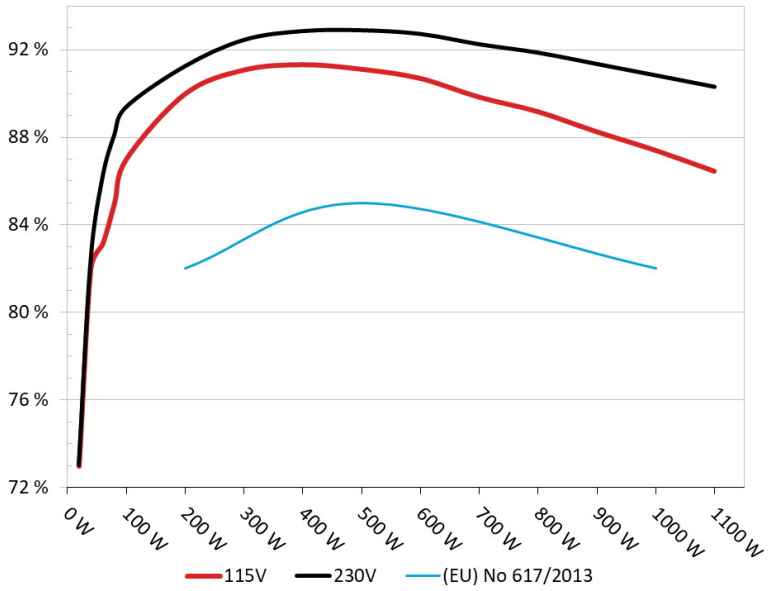
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: EVGA SuperNOVA 1000 G3
Ambient: 37°C - 48°C (98.6°F - 118.4°F)

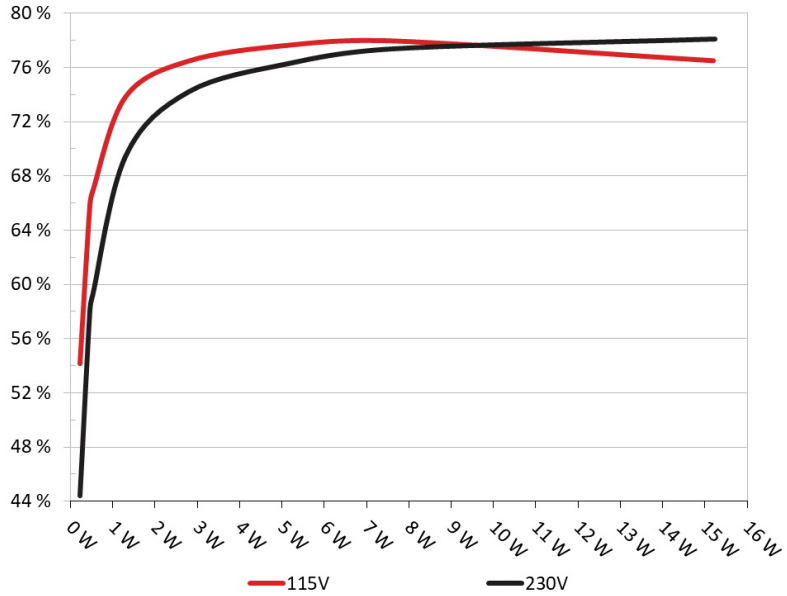


INFO

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

5VSB Efficiency: EVGA SuperNOVA 1000 G3
Ambient: 34°C - 36°C (93.2°F - 96.8°F)



INFO

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

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10-110% LOAD TESTS

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

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20-80W LOAD TESTS

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

RIPPLE MEASUREMENTS

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
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

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
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

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS PLATINUM

CYBENETICS STANDARD++