

Anex

EVGA SuperNOVA 1000 G6

Lab ID#: EV10001868
Receipt Date: Jun 10, 2021
Test Date: Jul 9, 2021

Report: 21PS1868A

Report Date: Jul 12, 2021

DUT INFORMATION

Brand	EVGA
Manufacturer (OEM)	Seasonic
Series	SuperNOVA G6
Model Number	
Serial Number	2104041000830069
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6.5
Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	88.912%
Efficiency With 10W (≤500W) or 2% (>500W)	77.006
Average Efficiency 5VSB	77.006%
Standby Power Consumption (W)	0.0619324
Average PF	0.982
Avg Noise Output	27.69 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	91.032%
Average Efficiency 5VSB	75.708%
Standby Power Consumption (W)	0.1240570
Average PF	0.937
Avg Noise Output	28.13 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	83.3	3	0.5
	Watts	125		1000	15	6
Total Max. Power (W)		1000				

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

Hold-Up Time (ms)	22.8
AC Loss to PWR_OK Hold Up Time (ms)	18.4
PWR_OK Inactive to DC Loss Delay (ms)	4.4

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	No
4+4 pin EPS12V (700mm)	2	2	16AWG	No
6+2 pin PCIe (700mm+125mm)	3	6	16-18AWG	No
6+2 pin PCIe (700mm)	2	2	18AWG	No
SATA (560mm+110mm+110mm)	4	12	18AWG	No
4-pin Molex (560mm+100mm+100mm+100mm)	1	4	18AWG	No
FDD Adapter (105mm)	1	1	22AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

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General Data	
Manufacturer (OEM)	Seasonic
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x Discharge IC
Inrush Protection	NTC Thermistor MF72-5D20L (5 Ohm) & Relay
Bridge Rectifier(s)	2x GBUE2560 (600V, 25A @ 140°C)
APFC MOSFETs	2x Infineon IPA60R099P6 (600V, 24A @ 100°C, Rds(on): 0.099Ohm)
APFC Boost Diode	1x STMicroelectronics STPSC10H065 (650V, 10A @ 135°C)
Bulk Cap(s)	2x Nippon Chemi-Con (420V, 470uF each or 940uF combined, 2,000h @ 105°C, KMZ)
Main Switchers	4x Infineon IPA60R190P6 (600V, 12.7A @ 100°C, Rds(on): 0.19Ohm)
APFC Controller	Champion CM6500UN
Resonant Controller	Champion CU6901V
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	6x Nexperia PSMN1R4-40YLD (40V, 220A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 6x Nexperia PSMN4R0-30YLD (30V, 67A @ 100°C, Rds(on): 4mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 6x Nippon Chemi-Con (2-5,000h @ 105°C, KZE), 2x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Nippon Chemi-Con (2,000h @ 105°C, KZH), 3x Rubycon (3-6,000h @ 105°C, YXG) Polymer: 21x Nippon Chemi-Con, 13x FPCAP
Supervisor IC	Weltrend WT7527RA (OCP, OVP, UVP, SCP, PG) & Weltrend WT51F104 (Firmware OPP)
Fan Controller	Weltrend WT51F104
Fan Model	Hong Hua HA13525H12F-Z (135mm, 12V, 0.50A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	1x M.C.C. MBR1045ULPS SBR (45V, 10A)
Standby PWM Controller	Excelliance MOS EM8569C

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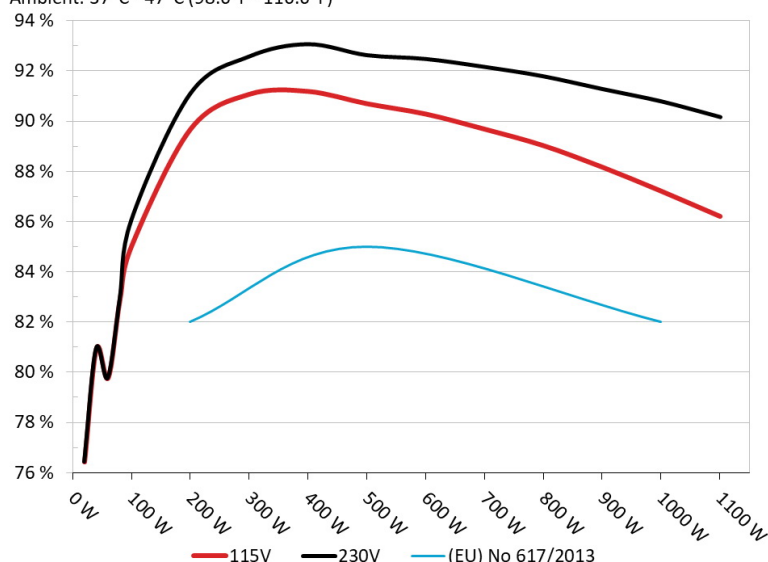
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: EVGA SuperNOVA 1000 G6

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



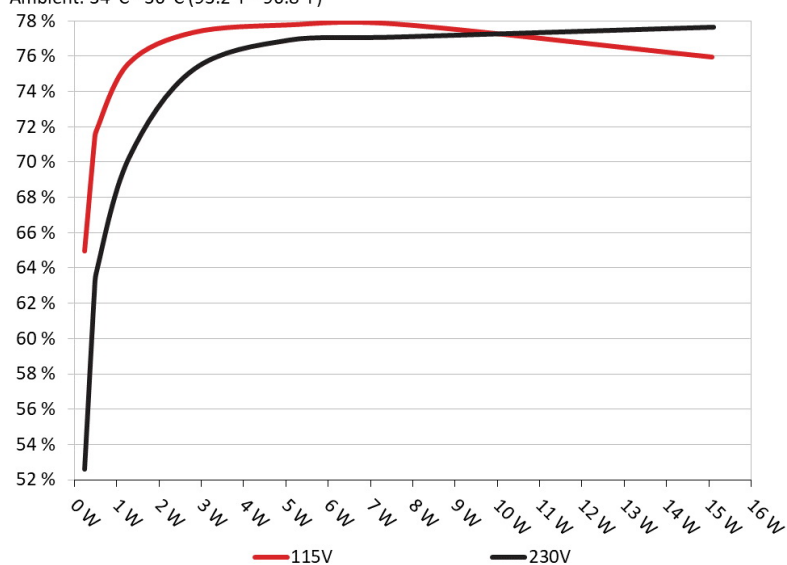
INFO

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 G6

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	64.954%	0.035
	5.099V	0.354W		115.16V
2	0.09A	0.459W	71.082%	0.064
	5.098V	0.646W		115.16V
3	0.55A	2.799W	77.333%	0.27
	5.088V	3.619W		115.16V
4	1A	5.08W	77.764%	0.366
	5.079V	6.533W		115.16V
5	1.5A	7.604W	77.814%	0.42
	5.068V	9.772W		115.16V
6	3A	15.078W	75.943%	0.49
	5.025V	19.854W		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	52.605%	0.013
	5.099V	0.437W		230.35V
2	0.09A	0.459W	62.567%	0.022
	5.098V	0.734W		230.34V
3	0.55A	2.799W	75.246%	0.108
	5.088V	3.719W		230.3V
4	1A	5.08W	76.934%	0.181
	5.079V	6.604W		230.24V
5	1.5A	7.603W	77.102%	0.247
	5.067V	9.861W		230.25V
6	3A	15.107W	77.659%	0.39
	5.035V	19.449W		230.06V

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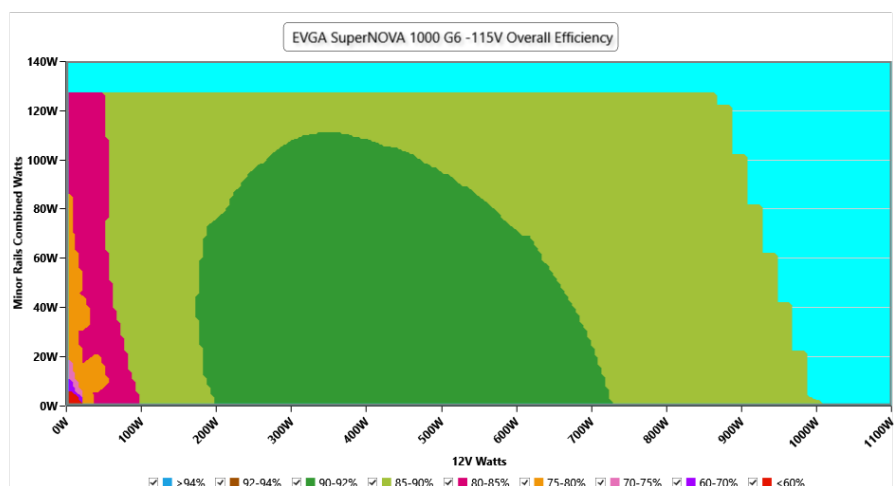
115V

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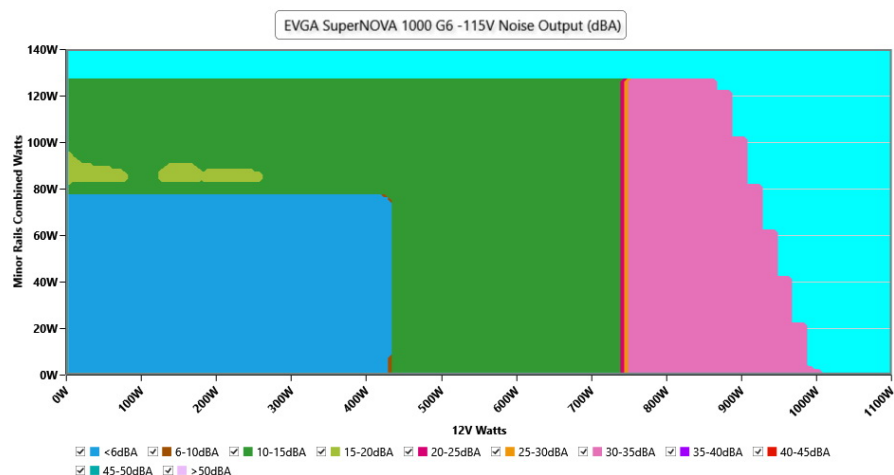
EFFICIENCY GRAPH 115V



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

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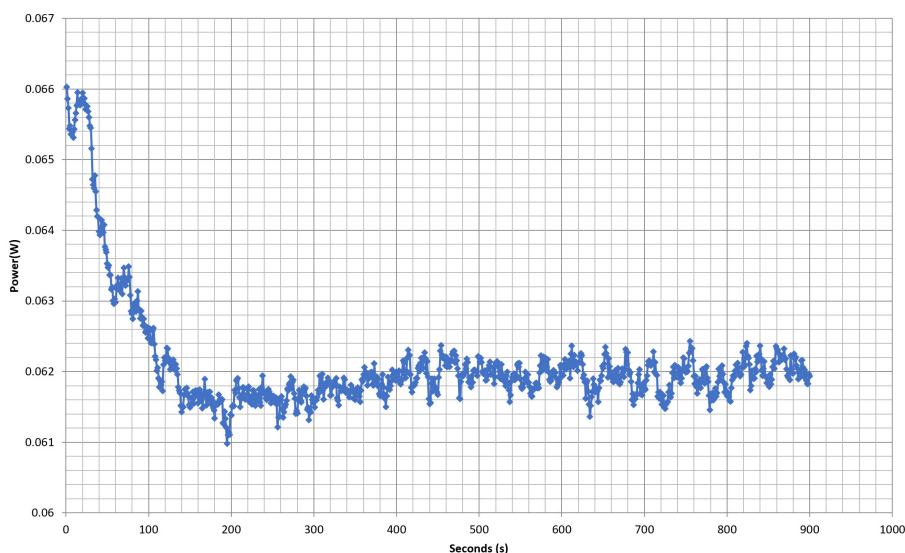
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VAMPIRE POWER -115V

Power - 2104041000830069 - 05/07/2021 - 08:34



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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10-110% 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
10%	6.435A	1.994A	1.981A	0.987A	100.008	85.027%	0	<6.0	43.88°C	0.966
	12.184V	5.016V	3.332V	5.069V	117.619				40.28°C	115.19V
20%	13.877A	2.994A	2.976A	1.187A	199.965	89.663%	0	<6.0	45.21°C	0.975
	12.183V	5.011V	3.327V	5.056V	223.02				40.87°C	115.12V
30%	21.705A	3.495A	3.475A	1.388A	300.019	91.053%	0	<6.0	46.26°C	0.981
	12.161V	5.008V	3.324V	5.044V	329.499				41.28°C	115.12V
40%	29.489A	3.998A	3.975A	1.59A	399.833	91.168%	658	15.4	42.03°C	0.986
	12.161V	5.004V	3.321V	5.033V	438.569				47.54°C	115.12V
50%	36.953A	5.003A	4.979A	1.793A	499.539	90.681%	1482	40.7	42.11°C	0.988
	12.151V	4.998V	3.314V	5.02V	550.873				48.25°C	115.12V
60%	44.482A	6.011A	5.985A	1.997A	600.074	90.268%	1483	40.7	42.84°C	0.989
	12.146V	4.992V	3.308V	5.008V	664.768				49.91°C	115.11V
70%	51.940A	7.021A	6.994A	2.203A	699.815	89.67%	1481	40.7	43.59°C	0.99
	12.143V	4.986V	3.303V	4.994V	780.436				51.39°C	115.11V
80%	59.447A	8.003A	8.005A	2.308A	799.741	89.015%	1484	40.7	43.72°C	0.991
	12.145V	4.982V	3.298V	4.985V	898.431				52.28°C	115.11V
90%	67.297A	8.539A	8.498A	2.412A	899.666	88.163%	1850	46.4	44.2°C	0.992
	12.143V	4.978V	3.295V	4.975V	1020.457				53.63°C	115.1V
100%	74.925A	9.048A	9.023A	3.029A	999.692	87.21%	1850	46.4	45.71°C	0.992
	12.146V	4.975V	3.292V	4.954V	1146.311				55.76°C	115.09V
110%	82.480A	10.062A	10.133A	3.034A	1100.312	86.203%	1853	46.5	46.93°C	0.993
	12.148V	4.97V	3.286V	4.945V	1276.423				57.76°C	115.1V
CL1	0.115A	15.088A	15.106A	0A	126.316	81.409%	1490	40.9	42.11°C	0.982
	12.208V	4.991V	3.283V	5.069V	155.163				48.64°C	115.18V
CL2	0.115A	25.112A	0A	0A	126.4	79.477%	1838	46.2	43.56°C	0.98
	12.197V	4.978V	3.33V	5.082V	159.04				50.64°C	115.18V
CL3	0.115A	0A	25.342A	0A	83.897	72.862%	1837	46.2	44.53°C	0.964
	12.186V	5.017V	3.256V	5.067V	115.144				52.52°C	115.19V
CL4	82.450A	0A	0A	0.001A	1000.228	87.932%	1847	46.4	45.63°C	0.992
	12.131V	4.996V	3.327V	5.032V	1137.5				54.51°C	115.08V

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20-80W 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
20W	1.222A	0.498A	0.494A	0.196A	20.004	76.442%	0	<6.0	39.37°C	0.617
	12.148V	5.023V	3.339V	5.093V	26.169				37.07°C	115.2V
40W	2.690A	0.697A	0.692A	0.295A	40.002	80.941%	0	<6.0	40.84°C	0.833
	12.151V	5.022V	3.338V	5.089V	49.428				38.08°C	115.23V
60W	4.148A	0.897A	0.89A	0.393A	60.001	79.783%	0	<6.0	41.28°C	0.92
	12.182V	5.02V	3.337V	5.085V	75.205				38.93°C	115.2V
80W	5.608A	1.096A	1.088A	0.492A	79.958	82.868%	0	<6.0	42.61°C	0.952
	12.185V	5.018V	3.336V	5.082V	96.488				39.62°C	115.21V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10%	9.04mV	5.06mV	4.45mV	6.58mV	Pass
20%	4.34mV	4.60mV	3.94mV	7.29mV	Pass
30%	6.38mV	5.27mV	4.35mV	7.75mV	Pass
40%	6.03mV	6.19mV	4.66mV	8.51mV	Pass
50%	6.95mV	7.98mV	6.04mV	10.60mV	Pass
60%	7.46mV	8.54mV	6.45mV	10.25mV	Pass
70%	8.63mV	8.80mV	6.09mV	13.56mV	Pass
80%	7.81mV	8.74mV	10.75mV	13.72mV	Pass
90%	9.66mV	9.82mV	12.18mV	12.54mV	Pass
100%	12.05mV	12.41mV	14.69mV	14.12mV	Pass
110%	12.98mV	15.51mV	15.86mV	14.75mV	Pass
CL1	11.18mV	7.56mV	12.44mV	7.42mV	Pass
CL2	6.39mV	7.17mV	4.69mV	7.61mV	Pass
CL3	8.96mV	5.40mV	14.53mV	7.77mV	Pass
CL4	11.51mV	10.94mV	9.33mV	13.88mV	Pass

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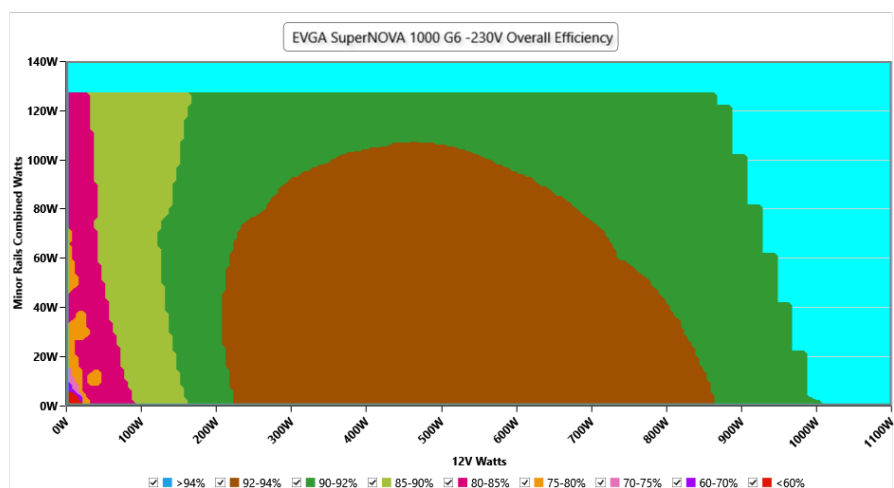
230V

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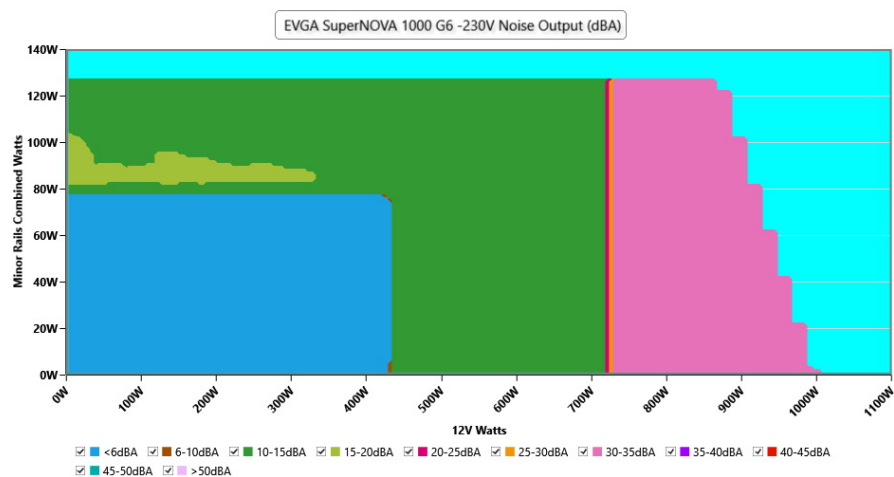
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



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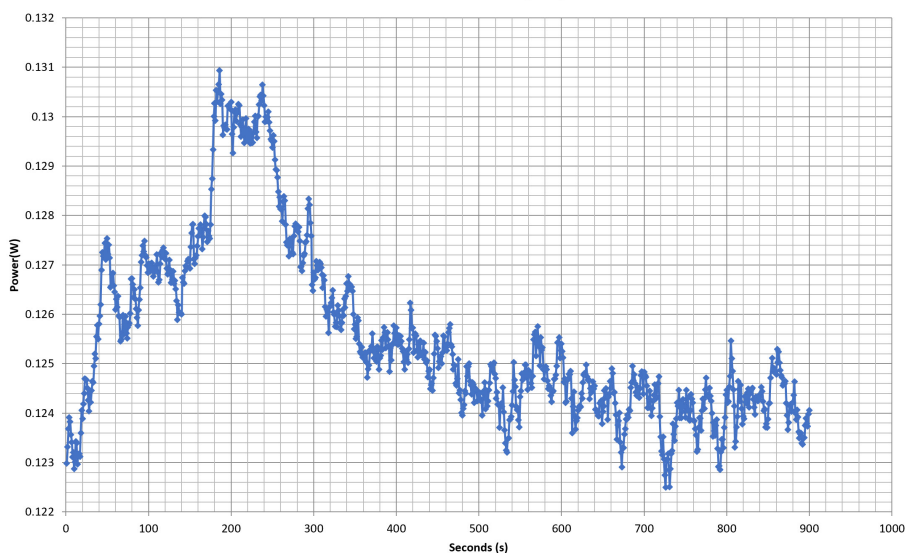
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10-110% LOAD TESTS 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	6.438A	1.996A	1.98A	0.987A	100.012	86.057%	0	<6.0	44.97°C	0.754
	12.179V	5.012V	3.334V	5.068V	116.216				40.53°C	230.48V
20%	13.886A	2.998A	2.974A	1.187A	199.981	91.083%	0	<6.0	45.97°C	0.901
	12.176V	5.005V	3.329V	5.055V	219.558				40.79°C	230.46V
30%	21.718A	3.501A	3.473A	1.388A	300.038	92.562%	0	<6.0	47.41°C	0.94
	12.155V	5V	3.326V	5.044V	324.147				41.5°C	230.45V
40%	29.519A	4.004A	3.972A	1.59A	399.848	93.052%	0	<6.0	48.3°C	0.956
	12.150V	4.996V	3.323V	5.032V	429.703				41.82°C	230.41V
50%	36.978A	5.014A	4.975A	1.794A	499.57	92.617%	1482	40.7	42.48°C	0.964
	12.144V	4.987V	3.317V	5.018V	539.392				49.3°C	230.41V
60%	44.510A	6.026A	5.978A	1.998A	600.132	92.464%	1483	40.7	42.8°C	0.97
	12.140V	4.98V	3.313V	5.006V	649.046				50.18°C	230.42V
70%	51.963A	7.041A	6.984A	2.204A	699.883	92.147%	1485	40.8	43.67°C	0.973
	12.139V	4.972V	3.308V	4.992V	759.529				51.74°C	230.41V
80%	59.481A	8.003A	7.991A	2.309A	799.675	91.775%	1485	40.8	44.35°C	0.975
	12.139V	4.966V	3.304V	4.982V	871.342				53.1°C	230.43V
90%	67.329A	8.569A	8.484A	2.414A	899.722	91.267%	1847	46.4	44.67°C	0.977
	12.138V	4.961V	3.3V	4.972V	985.811				54.09°C	230.39V
100%	74.985A	9.083A	9.009A	3.03A	999.731	90.777%	1846	46.4	45.21°C	0.979
	12.136V	4.955V	3.297V	4.951V	1101.311				55.21°C	230.39V
110%	82.513A	10.106A	10.116A	3.036A	1100.382	90.15%	1848	46.4	46.85°C	0.98
	12.144V	4.949V	3.292V	4.941V	1220.61				57.57°C	230.42V
CL1	0.115A	15.166A	15.038A	0A	126.311	82.518%	1486	46.4	41.9°C	0.832
	12.193V	4.965V	3.298V	5.068V	153.07				49.59°C	230.45V
CL2	0.115A	25.313A	0A	0A	126.4	79.941%	1831	46.1	42.72°C	0.837
	12.191V	4.938V	3.327V	5.081V	158.116				50.65°C	230.45V
CL3	0.115A	0A	25.147A	0A	83.897	74.206%	1832	46.1	43.74°C	0.746
	12.181V	5.016V	3.281V	5.066V	113.06				52.35°C	230.46V
CL4	82.508A	0A	0A	0.001A	1000.224	91.423%	1846	46.4	45.5°C	0.979
	12.122V	4.992V	3.322V	5.03V	1094.063				55.61°C	230.4V

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Anex

EVGA SuperNOVA 1000 G6

20-80W LOAD TESTS 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.222A	0.498A	0.494A	0.196A	20.006	78.365%	0	<6.0	38.97°C	0.323
	12.153V	5.023V	3.34V	5.092V	25.528				36.66°C	230.44V
40W	2.690A	0.697A	0.692A	0.295A	40.004	83.198%	0	<6.0	40.57°C	0.503
	12.157V	5.021V	3.339V	5.089V	48.069				37.88°C	230.43V
60W	4.146A	0.897A	0.89A	0.393A	60.003	81.241%	0	<6.0	41.89°C	0.617
	12.187V	5.019V	3.338V	5.085V	73.856				38.64°C	230.44V
80W	5.607A	1.097A	1.088A	0.492A	79.964	84.11%	0	<6.0	42.64°C	0.707
	12.187V	5.017V	3.337V	5.081V	95.062				39.03°C	230.47V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10%	8.58mV	5.11mV	4.25mV	7.29mV	Pass
20%	6.23mV	4.7mV	4.2mV	6.99mV	Pass
30%	6.88mV	6.44mV	4.5mV	7.65mV	Pass
40%	6.37mV	5.78mV	4.5mV	8.56mV	Pass
50%	6.69mV	8.69mV	6.14mV	10.81mV	Pass
60%	7.35mV	8.23mV	6.81mV	10.4mV	Pass
70%	7.20mV	8.54mV	5.84mV	13.82mV	Pass
80%	7.70mV	8.9mV	11.46mV	14.02mV	Pass
90%	7.66mV	10.07mV	12.85mV	12.03mV	Pass
100%	12.49mV	13.56mV	14.71mV	14.16mV	Pass
110%	13.12mV	16.47mV	16.18mV	15.01mV	Pass
CL1	9.64mV	8.11mV	12.37mV	7.76mV	Pass
CL2	5.55mV	6.77mV	4.32mV	7.69mV	Pass
CL3	9.30mV	5.87mV	14.28mV	7.7mV	Pass
CL4	12.69mV	11.6mV	9.32mV	14.3mV	Pass

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Anex

EVGA SuperNOVA 1000 G6



Top side



Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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