



EVGA SuperNOVA 550 G3

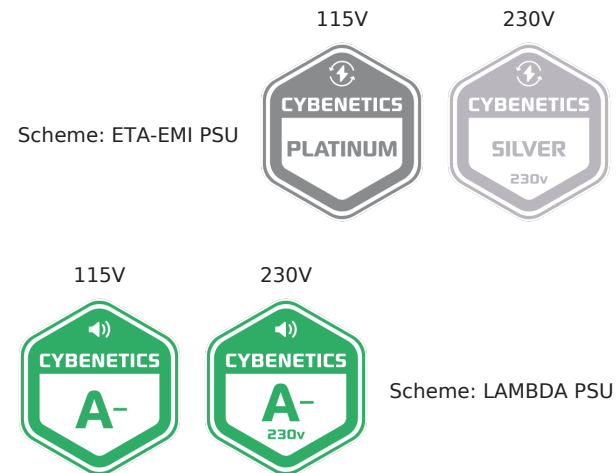
Serial Number 1703470515899011

Lab ID 224

Certification ID 25224

Test Result Report ID:

Certificate Issue Date: Nov 24, 2018



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 550 G3
OEM/ODM	Super Flower
Serial Number	1703470515899011
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60

Rated Power (W)	550
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 (H1282412L)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	224
Date of receipt	Nov 11, 2018
Testing Date	Nov 20, 2018
Report Issued Date	Nov 24, 2018
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)	1	1	18-22AWG	Yes
6+2 pin PCIe (700mm)	1	1	18-22AWG	Yes
6+2 pin PCIe (600mm+150mm)	1	2	18-22AWG	Yes
SATA (500mm+100mm+100mm)	2	6	18-20AWG	No
4 pin Molex (500mm+100mm+100mm+100mm)	1	4	18AWG	No
FDD Adapter (+100mm)	1	1	20AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	No

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	45.8	3	0.5
	Watts	110		549.6	15	6
Total Max. Power (W)		550				

Test Results

Temperature & Compliance Info

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

Performance Summary

115V	
Accredited	
Average Efficiency (>1450 load combinations)	89.362%
Average Noise Output (>1450 Load Combinations)	26.53dBA
Average PF (>1450 Load Combinations)	0.982
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0697W
Non-Accredited	
12V Ripple (Full Load)	9.96mV
5V Ripple (Full Load)	11.51mV
3.3V Ripple (Full Load)	9.90mV
5VSB Ripple (Full Load)	22.69mV
12V Load Regulation	0.29%
5V Load Regulation	0.12%
3.3V Load Regulation	0.24%

5VSB Load Regulation	1.82%
Inrush Current	36.281A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.214%	
Average Noise Output (>1450 Load Combinations)	26.41dBA	
Average PF (>1450 Load Combinations)	0.926	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1473W	
Non-Accredited		
12V Ripple (Full Load)	10.27mV	
5V Ripple (Full Load)	13.31mV	
3.3V Ripple (Full Load)	10.13mV	
5VSB Ripple (Full Load)	19.70mV	
12V Load Regulation	0.41%	
5V Load Regulation	0.22%	
3.3V Load Regulation	0.30%	
5VSB Load Regulation	1.73%	
Inrush Current	44.106A	
Hold-Up Time & PWR_OK Signal	18.26ms	
AC Loss to PWR_OK Hold Up Time	15.70ms	
PWR_OK Inactive to DC Loss Delay	2.56ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

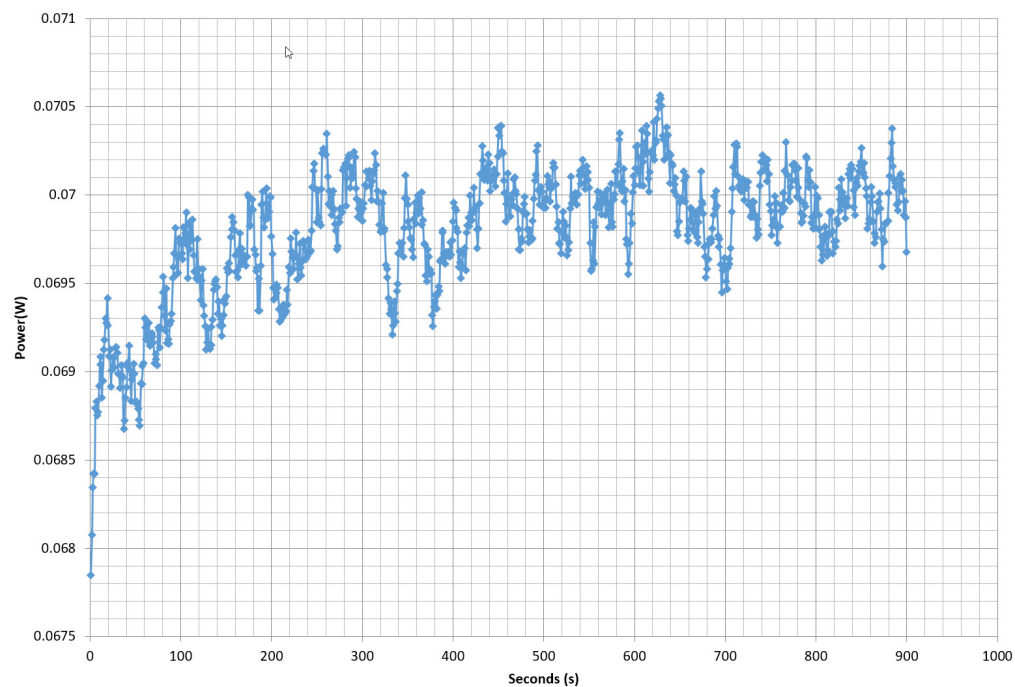
Hold-Up Time (ms)	18.26
AC Loss to PWR_OK Hold Up Time (ms)	15.70
PWR_OK Inactive to DC Loss Delay (ms)	2.56



Graphs

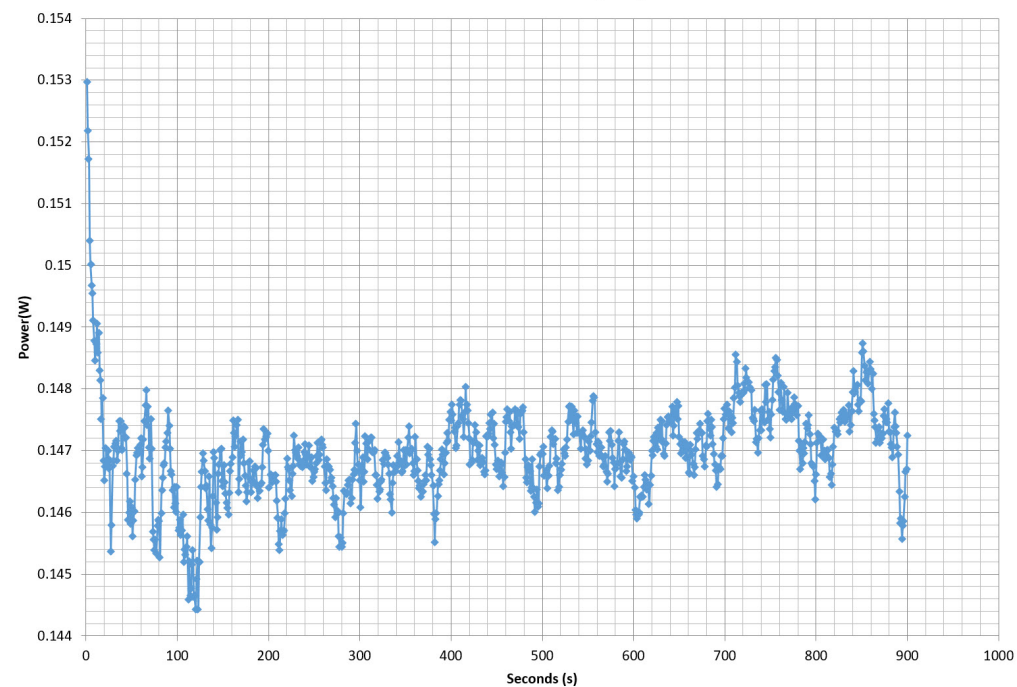
115V

Power - 1703470515899011 - 23/11/2017 - 09:45



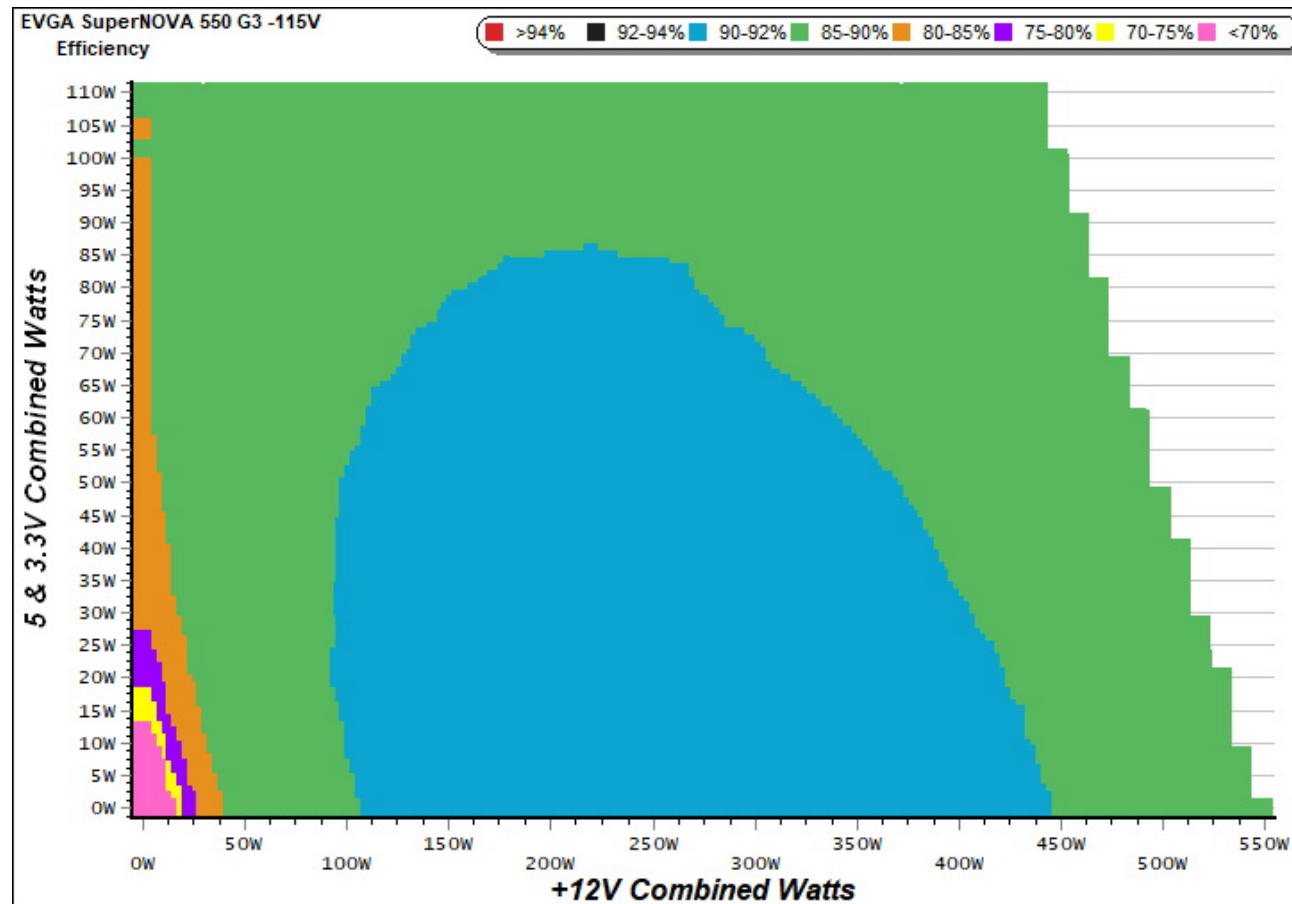
230V

Power - 1703470515899011 - 23/11/2017 - 09:45



Efficiency Graph

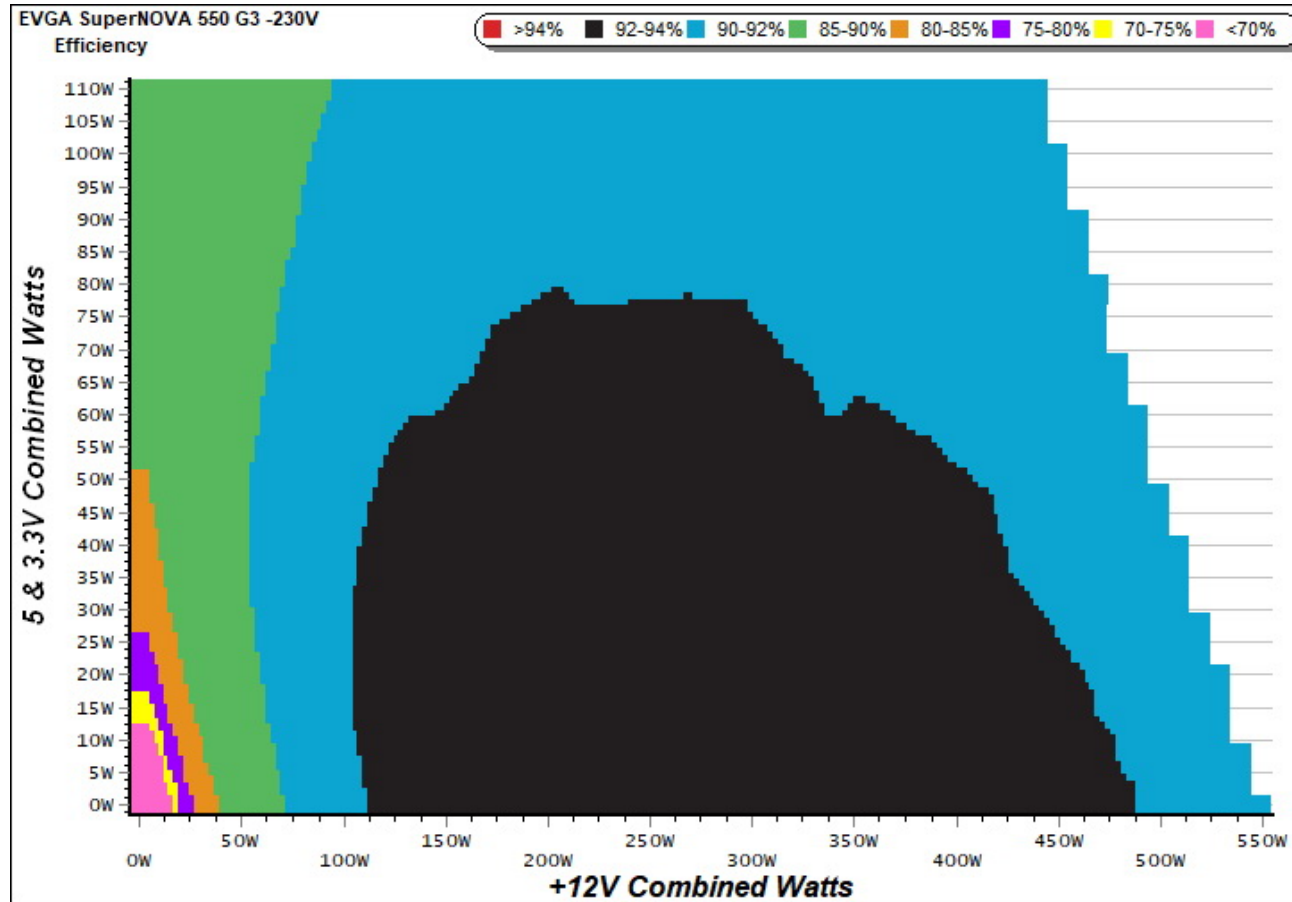
115V



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.

230V

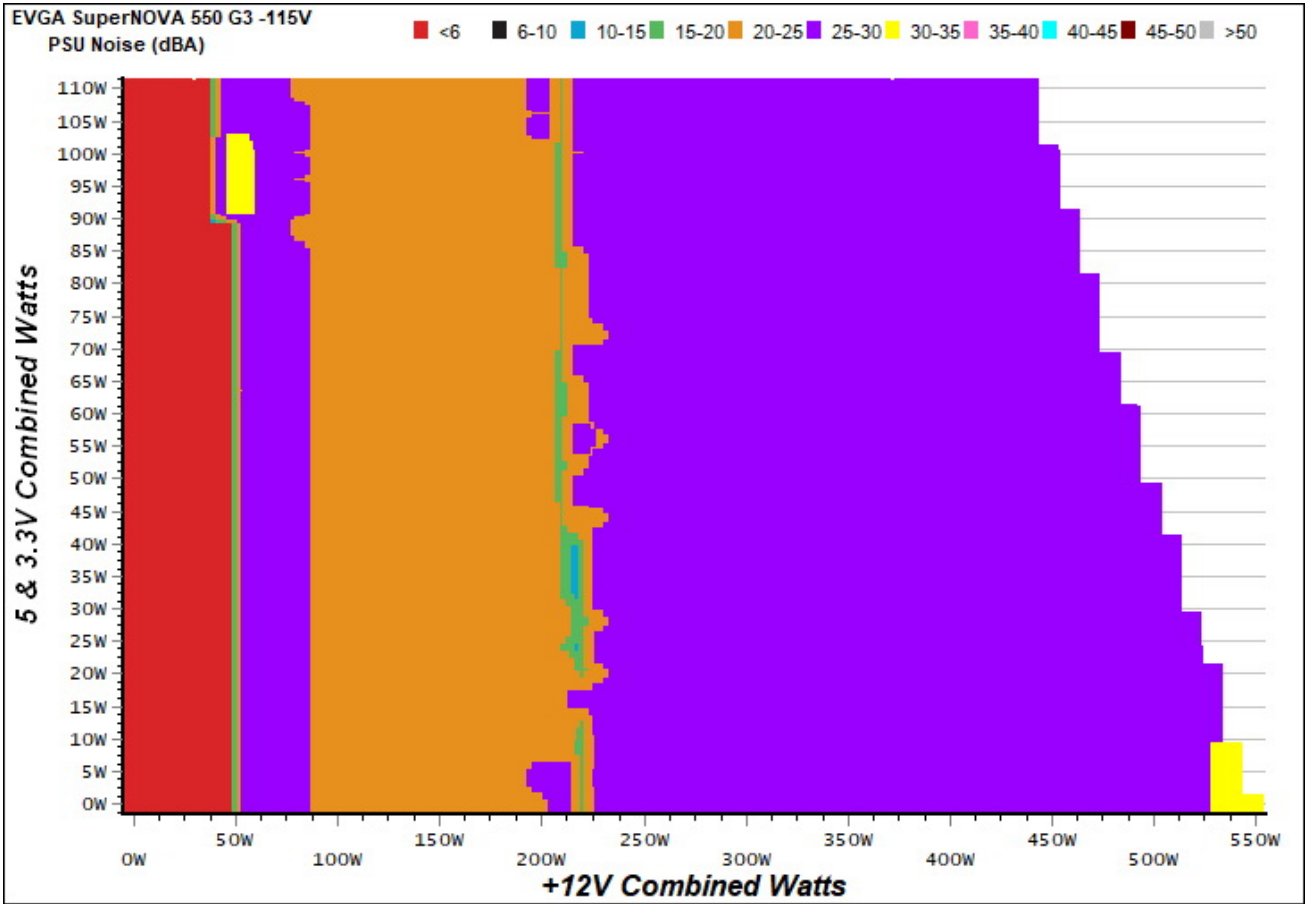


INFO

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Noise Graph

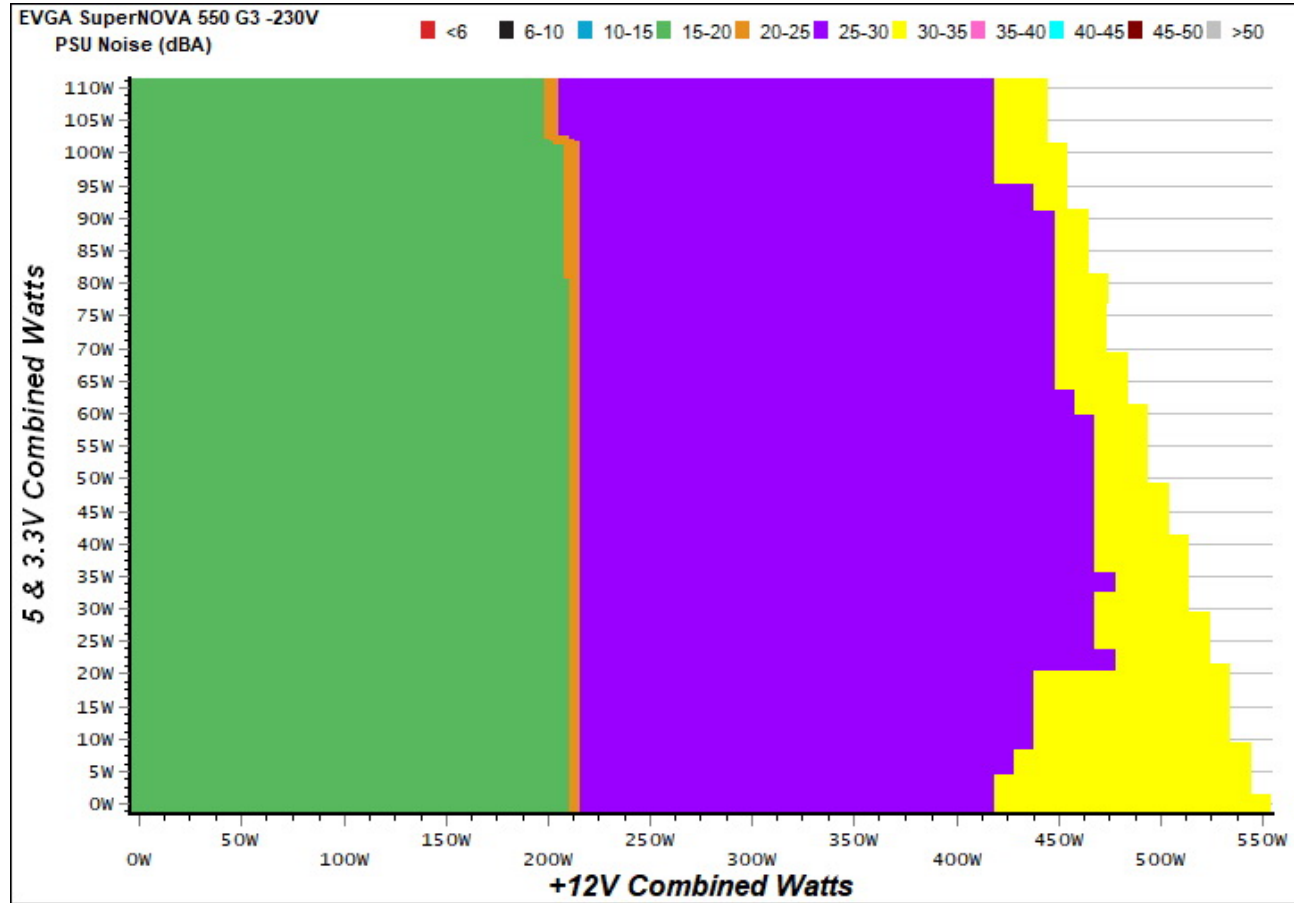
115V



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.

230V



INFO

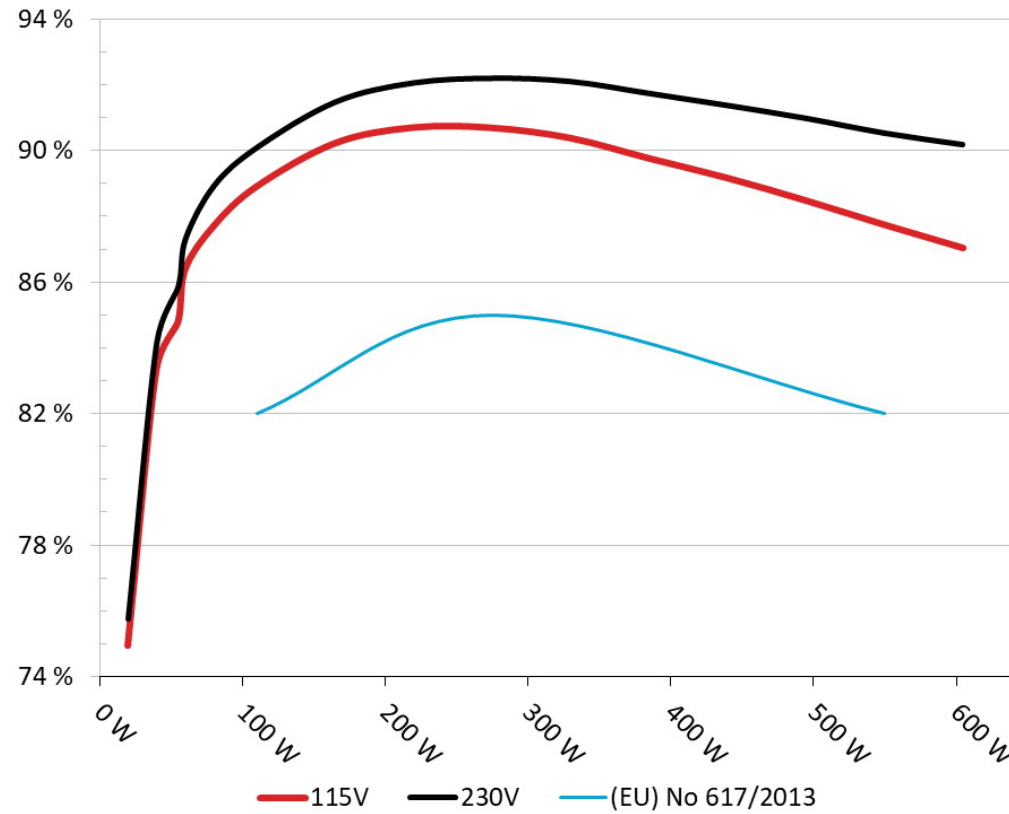
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: EVGA SuperNOVA 550 G3

Ambient: 37°C - 46°C (98.6°F - 114.8°F)



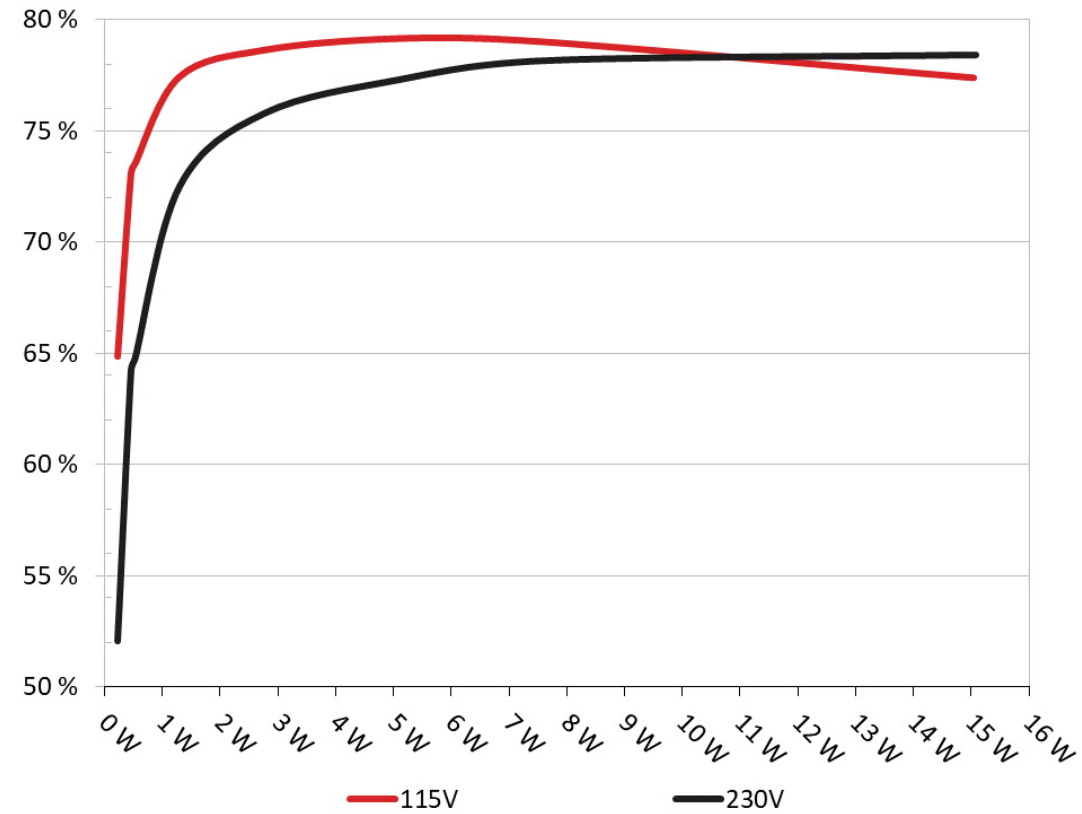
INFO

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 550 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.

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

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.216	64.865%	0.031
	5.102V	0.333		115.00V
2	0.088A	0.448	73.083%	0.057
	5.100V	0.613		115.00V
3	0.543A	2.762	78.645%	0.254
	5.089V	3.512		114.99V
4	1.003A	5.091	79.163%	0.352
	5.077V	6.431		114.99V
5	1.502A	7.608	79.011%	0.406
	5.065V	9.629		114.99V
6	3.002A	15.050	77.394%	0.476
	5.013V	19.446		114.99V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.216	52.048%	0.012
	5.102V	0.415		230.10V
2	0.088A	0.448	64.183%	0.020
	5.100V	0.698		230.11V
3	0.543A	2.761	75.768%	0.098
	5.089V	3.644		230.08V
4	1.003A	5.091	77.277%	0.164
	5.078V	6.588		230.09V
5	1.502A	7.607	78.133%	0.219
	5.065V	9.736		230.09V
6	3.002A	15.087	78.390%	0.321
	5.026V	19.246		230.09V

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	2.713A	1.975A	1.992A	0.985A	54.789	84.773%	1233	31.7	38.00°C	0.934
	12.235V	5.065V	3.310V	5.075V	64.630				39.93°C	115.09V
2	6.453A	2.960A	2.987A	1.181A	109.812	88.891%	1263	32.1	38.43°C	0.966
	12.232V	5.068V	3.312V	5.068V	123.535				40.73°C	115.09V
3	10.533A	3.457A	3.500A	1.381A	164.897	90.211%	1279	32.2	38.68°C	0.979
	12.229V	5.066V	3.311V	5.060V	182.790				41.51°C	115.09V
4	14.609A	3.943A	3.984A	1.581A	219.781	90.686%	1300	32.4	39.01°C	0.986
	12.227V	5.066V	3.311V	5.054V	242.354				42.29°C	115.09V
5	18.350A	4.939A	4.977A	1.781A	274.795	90.675%	1340	33.1	39.31°C	0.989
	12.223V	5.068V	3.312V	5.047V	303.056				43.25°C	115.09V
6	22.094A	5.917A	5.974A	1.982A	329.746	90.364%	1380	34.1	40.55°C	0.991
	12.219V	5.069V	3.314V	5.039V	364.908				44.73°C	115.09V
7	25.844A	6.908A	6.965A	2.185A	384.785	89.746%	1443	36.8	41.45°C	0.993
	12.215V	5.069V	3.315V	5.032V	428.748				46.55°C	115.10V
8	29.589A	7.892A	7.958A	2.386A	439.702	89.150%	1505	37.9	42.21°C	0.993
	12.211V	5.070V	3.316V	5.025V	493.218				48.26°C	115.10V
9	33.774A	8.388A	8.471A	2.386A	494.812	88.462%	1572	37.6	43.73°C	0.994
	12.205V	5.070V	3.316V	5.022V	559.349				50.38°C	115.10V
10	37.699A	8.877A	8.954A	2.996A	549.655	87.729%	1641	39.0	44.96°C	0.995
	12.201V	5.070V	3.316V	5.004V	626.536				52.23°C	115.10V
11	42.220A	8.883A	8.957A	2.997A	604.615	87.025%	1728	39.9	46.35°C	0.995
	12.196V	5.068V	3.315V	5.001V	694.759				54.53°C	115.10V
CL1	0.100A	13.020A	13.004A	0.005A	111.096	84.363%	1505	37.9	42.26°C	0.969
	12.219V	5.097V	3.344V	5.097V	131.688				46.13°C	115.12V

CL2	45.789A	1.002A	1.003A	1.002A	572.195	88.280%	1593	38.3	44.28°C	0.995
	12.203V	5.048V	3.293V	5.060V	648.157				51.95°C	115.10V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	2.689A	1.974A	1.992A	0.985A	54.483	86.741%	1233	31.7	40.11°C	0.662
	12.229V	5.067V	3.312V	5.076V	62.811				43.63°C	231.02V
2	6.420A	2.961A	2.988A	1.184A	109.391	90.573%	1233	31.7	40.97°C	0.834
	12.224V	5.069V	3.313V	5.070V	120.777				44.80°C	230.98V
3	10.548A	3.454A	3.470A	1.383A	164.902	91.397%	1368	33.9	41.13°C	0.903
	12.220V	5.069V	3.313V	5.063V	180.424				45.59°C	230.96V
4	14.615A	3.946A	3.984A	1.583A	219.726	91.961%	1406	34.4	41.81°C	0.941
	12.215V	5.069V	3.313V	5.056V	238.934				46.60°C	230.91V
5	18.352A	4.932A	4.978A	1.783A	274.631	92.129%	1380	34.1	42.17°C	0.954
	12.212V	5.071V	3.315V	5.050V	298.093				47.66°C	230.86V
6	22.098A	5.916A	5.971A	1.984A	329.516	92.006%	1462	37.8	42.75°C	0.963
	12.205V	5.072V	3.316V	5.042V	358.147				48.54°C	230.83V
7	25.872A	6.900A	6.962A	2.185A	384.824	91.624%	1485	37.8	43.09°C	0.969
	12.203V	5.074V	3.317V	5.036V	420.003				49.16°C	230.79V
8	29.661A	7.883A	7.954A	2.387A	440.126	91.250%	1527	37.0	43.72°C	0.973
	12.195V	5.075V	3.319V	5.029V	482.330				50.95°C	230.75V
9	33.808A	8.377A	8.437A	2.388A	494.639	90.861%	1560	37.3	44.12°C	0.978
	12.190V	5.075V	3.319V	5.027V	544.393				51.74°C	230.70V
10	37.772A	8.868A	8.949A	2.995A	549.851	90.391%	1625	38.7	45.52°C	0.980
	12.182V	5.075V	3.319V	5.010V	608.305				53.63°C	230.66V
11	42.321A	8.871A	8.951A	2.996A	605.048	90.029%	1716	39.6	46.14°C	0.983
	12.177V	5.074V	3.317V	5.008V	672.061				54.60°C	230.62V
CL1	0.139A	13.003A	13.000A	0.000A	111.448	85.496%	1485	37.8	43.34°C	0.853
	12.219V	5.097V	3.344V	5.098V	130.354				49.02°C	230.97V

CL2	45.835A	1.001A	1.000A	1.000A	571.872	91.136%	1527	37.0	45.93°C	0.982
	12.184V	5.054V	3.295V	5.064V	627.490				53.32°C	230.65V

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	1.196A	0.491A	0.480A	0.196A	19.712	74.948%	1165	29.1	0.770
	12.240V	5.063V	3.307V	5.097V	26.301				115.08V
2	2.412A	0.979A	0.996A	0.391A	39.760	83.339%	1186	29.5	0.893
	12.237V	5.064V	3.308V	5.092V	47.709				115.08V
3	3.632A	1.473A	1.509A	0.586A	59.874	86.380%	1197	29.9	0.949
	12.236V	5.064V	3.308V	5.086V	69.315				115.08V
4	4.841A	1.974A	1.992A	0.786A	79.808	87.691%	1220	30.9	0.954
	12.234V	5.065V	3.310V	5.079V	91.010				115.08V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.187A	0.494A	0.483A	0.196A	19.620	77.409%	1220	30.9	0.409
	12.234V	5.064V	3.309V	5.099V	25.346				231.03V
2	2.427A	0.988A	0.995A	0.393A	39.983	85.317%	1233	31.7	0.574
	12.231V	5.065V	3.309V	5.093V	46.864				231.04V
3	3.606A	1.481A	1.480A	0.590A	59.512	88.059%	1233	31.7	0.683
	12.232V	5.066V	3.310V	5.087V	67.582				231.03V
4	4.844A	1.974A	1.994A	0.787A	79.838	88.813%	1233	31.7	0.760
	12.229V	5.066V	3.311V	5.081V	89.895				231.01V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.6 mV	3.9 mV	4.7 mV	6.4 mV	Pass
20% Load	5.7 mV	4.7 mV	4.9 mV	7.6 mV	Pass
30% Load	7.7 mV	5.4 mV	5.4 mV	8.7 mV	Pass
40% Load	8.1 mV	6.1 mV	6.1 mV	9.8 mV	Pass
50% Load	8.3 mV	6.8 mV	6.5 mV	11.3 mV	Pass
60% Load	8.9 mV	7.6 mV	6.8 mV	12.7 mV	Pass
70% Load	8.9 mV	8.8 mV	7.7 mV	17.2 mV	Pass
80% Load	9.3 mV	9.9 mV	8.6 mV	19.1 mV	Pass
90% Load	9.5 mV	10.5 mV	8.8 mV	19.1 mV	Pass
100% Load	10.0 mV	11.5 mV	9.9 mV	22.7 mV	Pass
110% Load	10.5 mV	12.5 mV	10.6 mV	26.3 mV	Pass
Crossload 1	6.3 mV	6.2 mV	6.9 mV	21.0 mV	Pass
Crossload 2	9.8 mV	11.3 mV	8.9 mV	18.0 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	3.7 mV	4.3 mV	3.7 mV	5.9 mV	Pass
20% Load	4.9 mV	5.2 mV	4.4 mV	7.1 mV	Pass
30% Load	6.4 mV	5.9 mV	4.7 mV	8.0 mV	Pass
40% Load	7.5 mV	6.5 mV	5.4 mV	9.1 mV	Pass
50% Load	8.3 mV	8.1 mV	5.8 mV	10.4 mV	Pass
60% Load	8.9 mV	8.9 mV	6.8 mV	12.0 mV	Pass
70% Load	9.0 mV	10.0 mV	7.5 mV	14.0 mV	Pass
80% Load	9.0 mV	11.4 mV	8.6 mV	15.6 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	9.4 mV	12.0 mV	9.2 mV	17.2 mV	Pass
100% Load	10.3 mV	13.3 mV	10.1 mV	19.7 mV	Pass
110% Load	10.9 mV	14.1 mV	10.8 mV	20.8 mV	Pass
Crossload 1	4.6 mV	8.4 mV	8.6 mV	21.2 mV	Pass
Crossload 2	11.1 mV	11.8 mV	6.8 mV	16.0 mV	Pass

The results above are not used in the certification process

EVGA SuperNOVA 550 G3



Top side



Power specifications label

Cybenetics [REDACTED] ETA[REDACTED] LAMBDA[REDACTED] SAFE[REDACTED] DELTA[REDACTED] PHI[REDACTED]

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