



EVGA SuperNOVA 750 GA

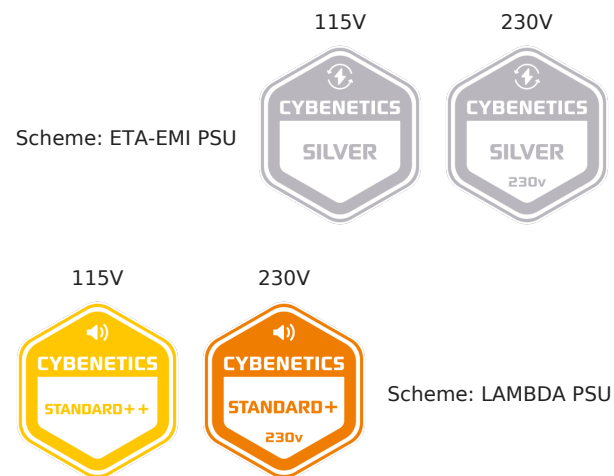
Serial Number 2101240707804773

Lab ID EV75001970

Certification ID 251970

Test Result Report ID: 22PS1970A

Certificate Issue Date: Feb 2, 2022



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	Cybernetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	EVGA
Model	SuperNOVA 750 GA
OEM/ODM	Andyson
Serial Number	2101240707804773
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	9-4.5
Rated Frequency (Hz)	50-60

Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Double Ball Bearing Fan (RL4Z B1352512EH)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	EV75001970
Date of receipt	Oct 8, 2021
Testing Date	Feb 1, 2022
Report Issued Date	Feb 2, 2022
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 (590mm)	1	1	16-18AWG	No
4+4 pin EPS12V (700mm)	2	2	18-22AWG	Yes
6+2 pin PCIe (700mm+150mm)	2	4	18-22AWG	Yes
6+2 pin PCIe (700mm)	2	2	18-22AWG	Yes
SATA (560mm+105mm+105mm)	3	9	18AWG	No
4-pin Molex (550mm+100mm+100mm+100mm)	1	4	18AWG	No
FDD Adapter (100mm)	1	1	22AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	120		750	15	3.6
Total Max. Power (W)		750				

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	✓
ALPM (Alternative Low Power Mode) compatible	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	88.713%
Average Noise Output (>1450 Load Combinations)	31.34dBA
Average PF (>1450 Load Combinations)	0.968
Efficiency With 10W (≤500W) or 2% (>500W) Load	65.623%
Standby Power Consumption	0.0779W
Non-Accredited	
12V Ripple (Full Load)	24.36mV
5V Ripple (Full Load)	11.83mV
3.3V Ripple (Full Load)	21.28mV
5VSB Ripple (Full Load)	16.50mV
12V Load Regulation	0.47%
5V Load Regulation	0.78%

3.3V Load Regulation	0.63%
5VSB Load Regulation	3.53%
Inrush Current	24.970A

230V

Accredited		
Average Efficiency (>1450 load combinations)	90.691%	
Average Noise Output (>1450 Load Combinations)	31.34dBA	
Average PF (>1450 Load Combinations)	0.920	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1762W	
Non-Accredited		
12V Ripple (Full Load)	24.37mV	
5V Ripple (Full Load)	12.60mV	
3.3V Ripple (Full Load)	20.10mV	
5VSB Ripple (Full Load)	25.95mV	
12V Load Regulation	0.44%	
5V Load Regulation	0.82%	
3.3V Load Regulation	0.78%	
5VSB Load Regulation	3.49%	
Inrush Current	88.670A	
Hold-Up Time & PWR_OK Signal	12.50ms	
AC Loss to PWR_OK Hold Up Time	10.70ms	
PWR_OK Inactive to DC Loss Delay	1.80ms	
PSU Timings: T1 (20% / 100%)	38.0ms	38.0ms
PSU Timings: T3 (20% / 100%)	133.0ms	134.0ms
OPP (28.08°C / 43.05°C)	142.92%	134.01%

Hold-Up Time & PWR_OK Signal

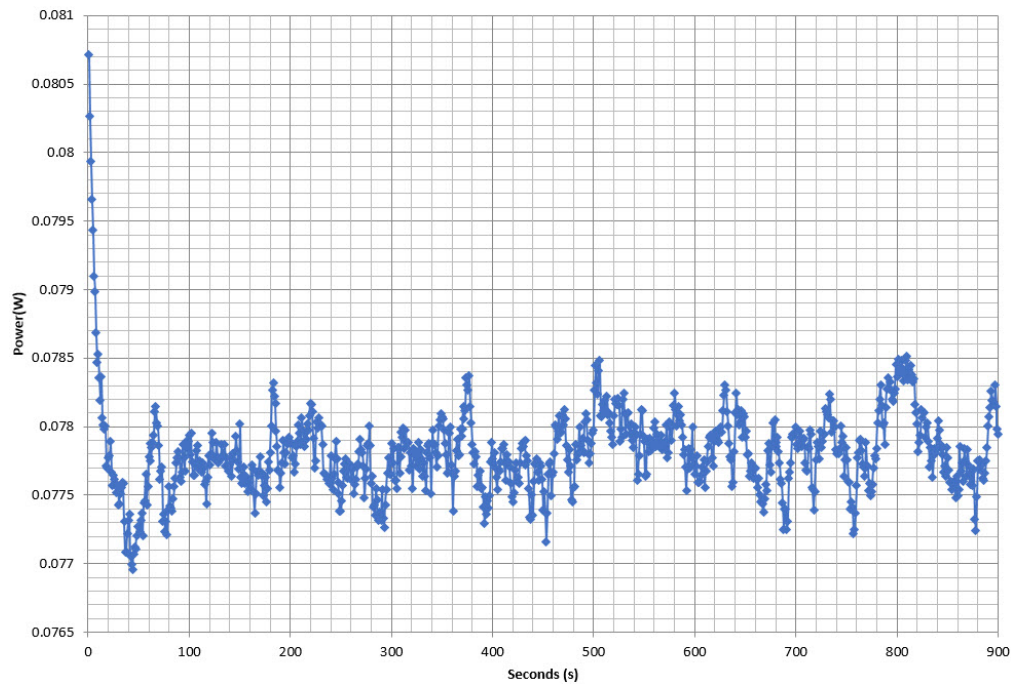
Hold-Up Time (ms)	12.5
AC Loss to PWR_OK Hold Up Time (ms)	10.7
PWR_OK Inactive to DC Loss Delay (ms)	1.8



Graphs

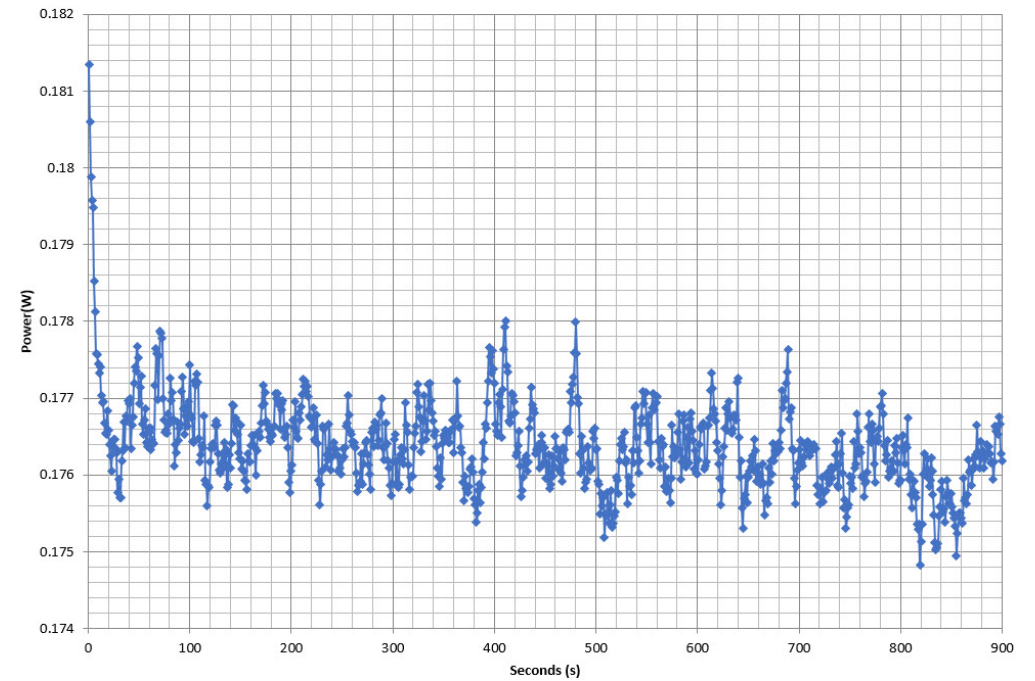
115V

Power - 2101240707804773 - 26/01/2022 - 10:40



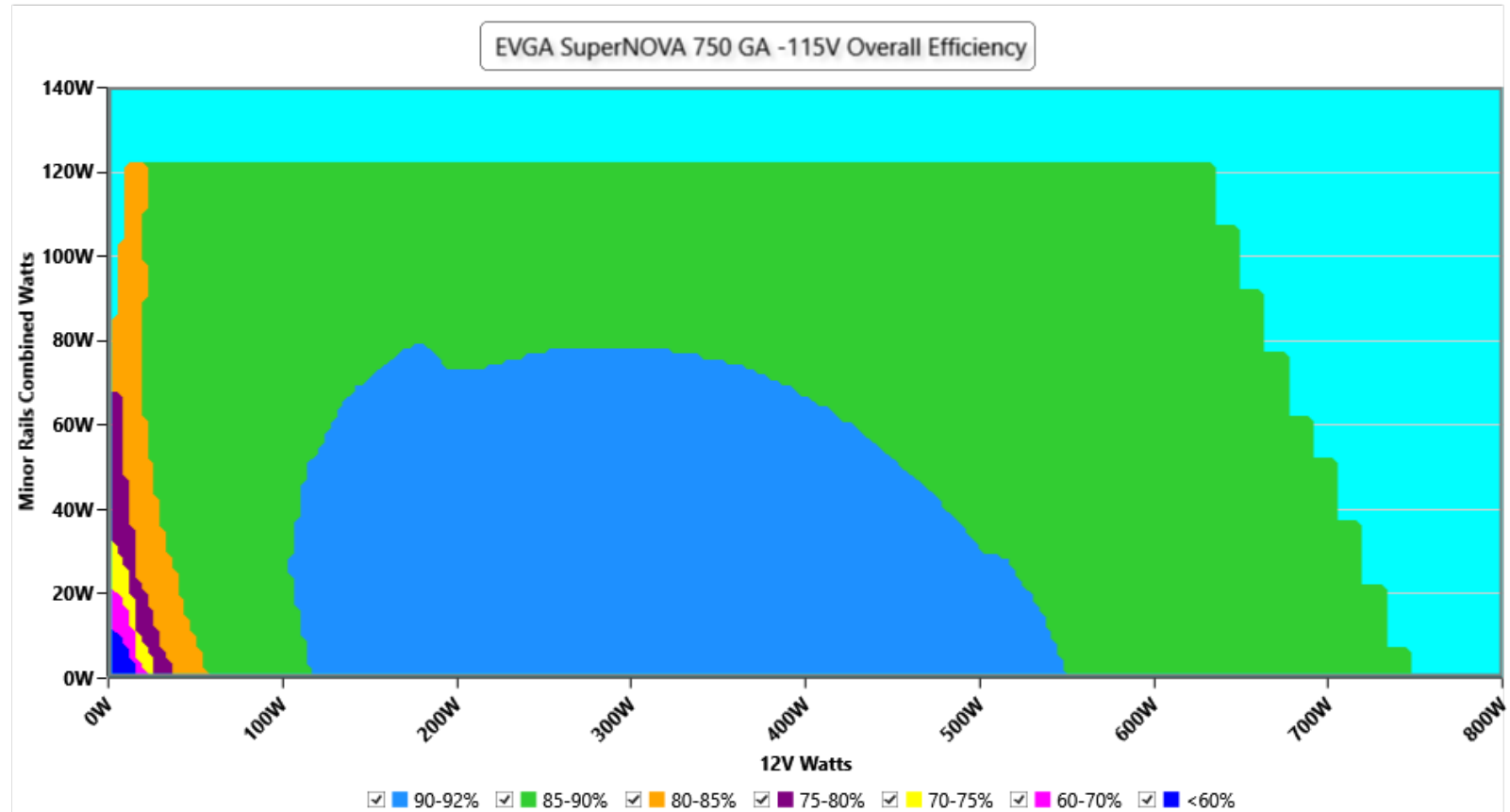
230V

Power - 2101240707804773 - 26/01/2022 - 10:40



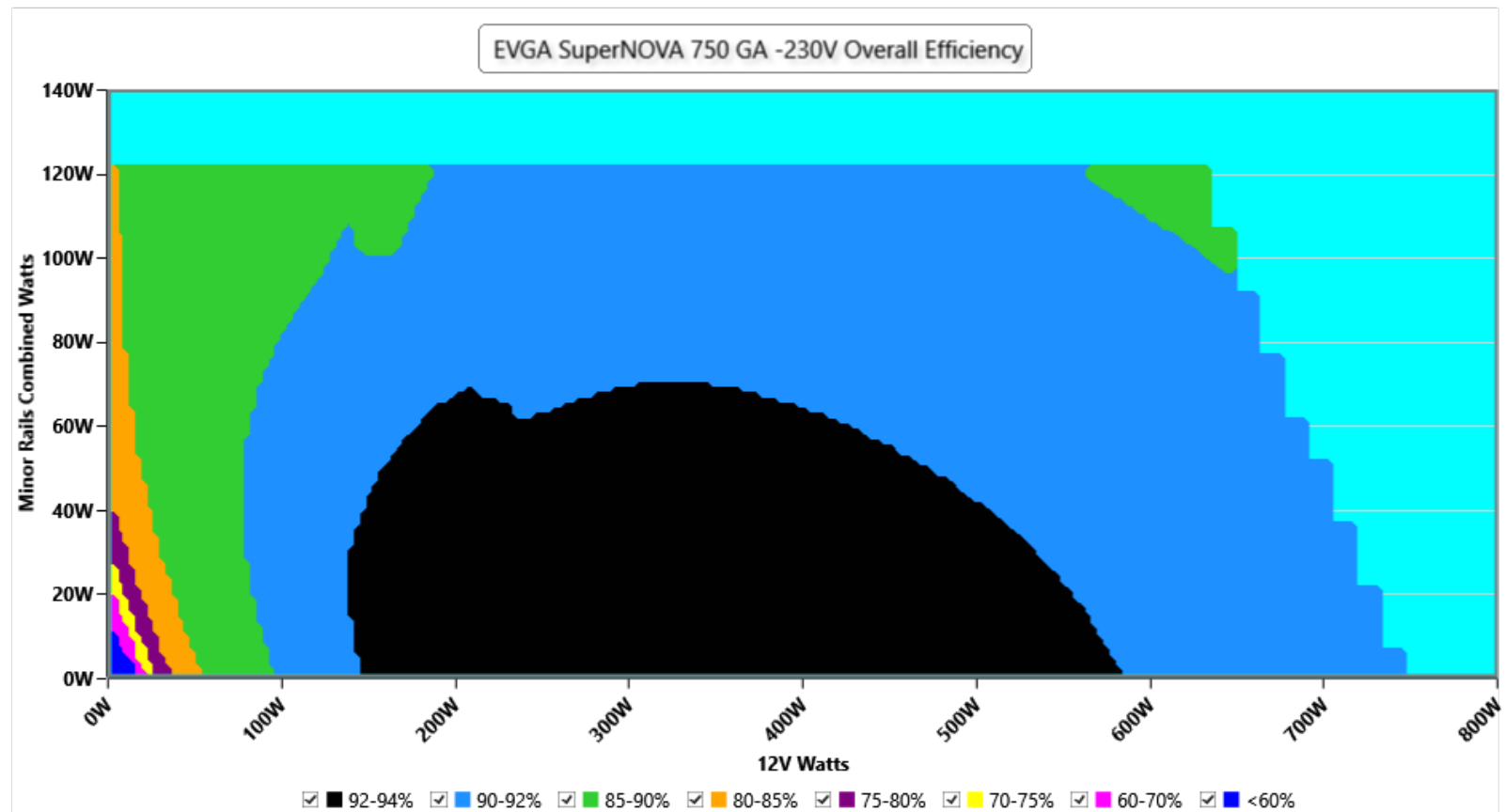
Efficiency Graph

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

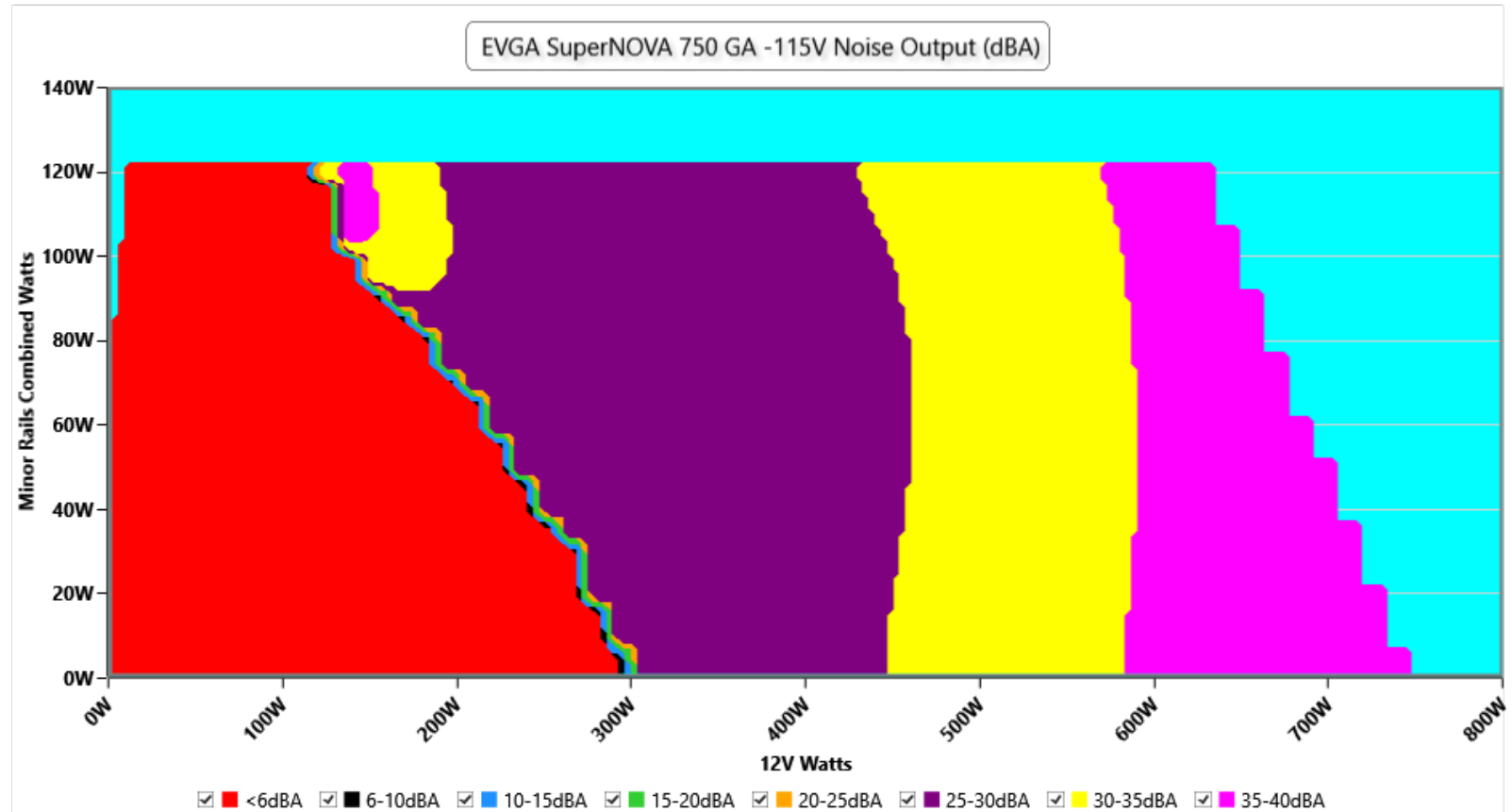


INFO

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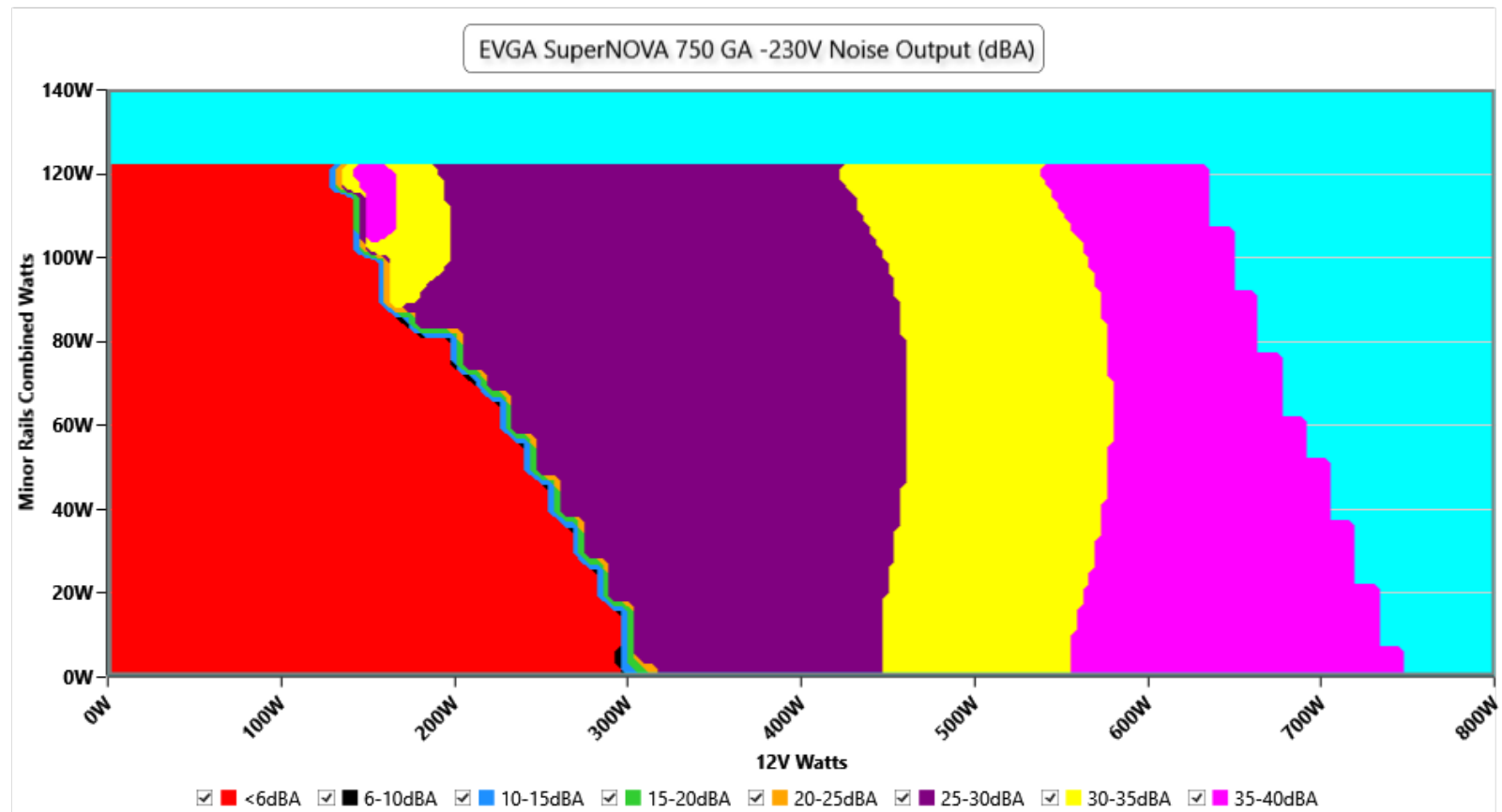
Noise Graph

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



INFO

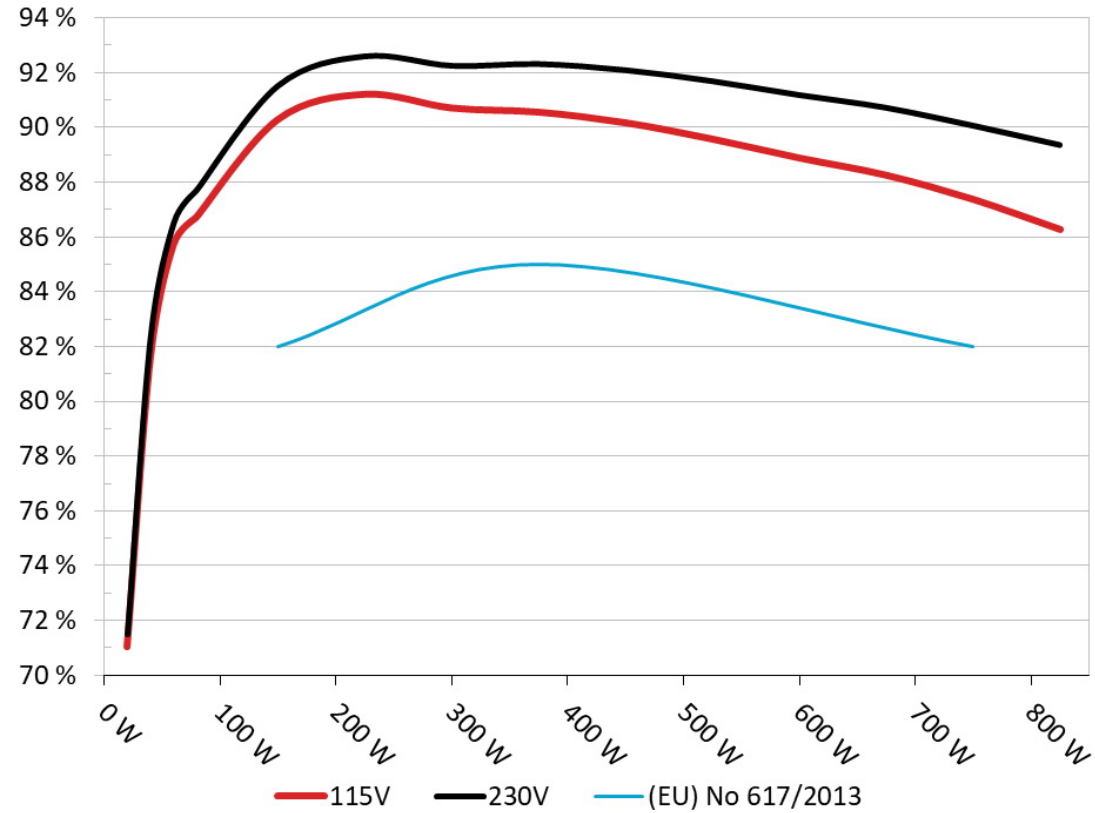
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: EVGA SuperNOVA 750 GA

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



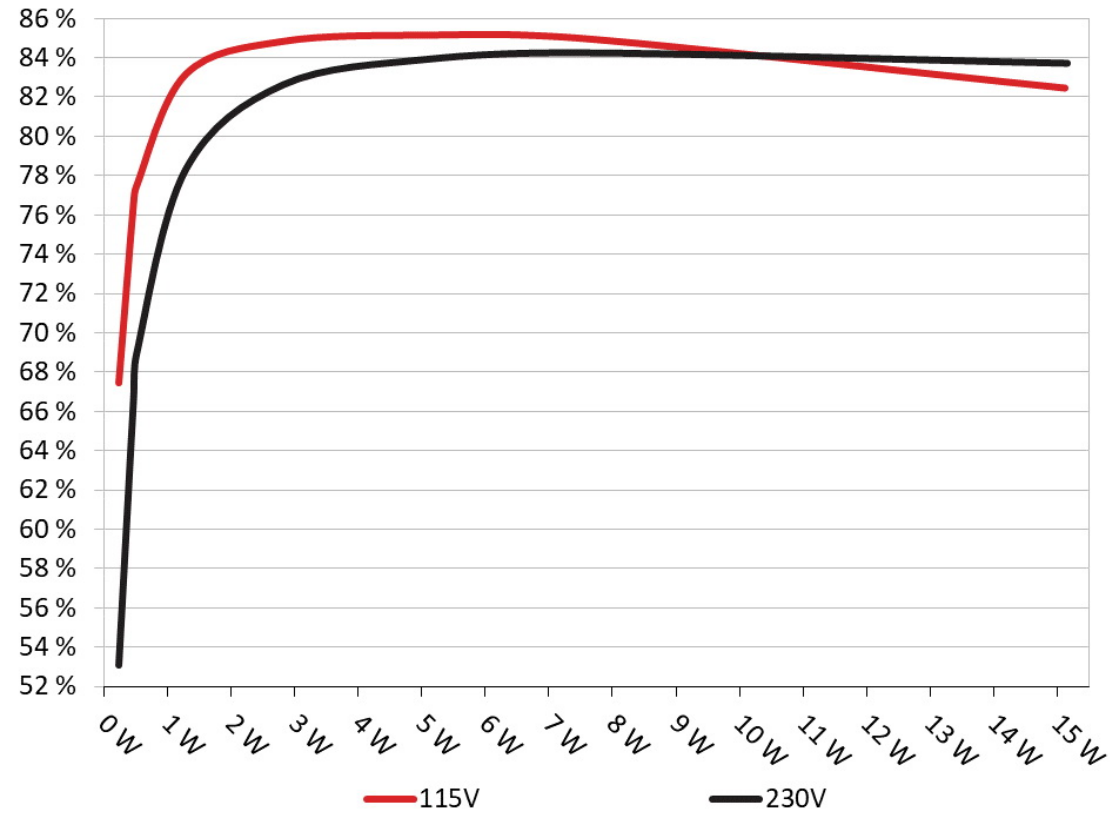
INFO

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 750 GA

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	0.045A	0.232W	67.472%	0.051
	5.147V	0.344W		115.1V
2	0.09A	0.463W	76.565%	0.088
	5.145V	0.605W		115.11V
3	0.55A	2.821W	84.842%	0.316
	5.128V	3.325W		115.09V
4	1A	5.111W	85.157%	0.395
	5.11V	6.002W		115.09V
5	1.5A	7.64W	84.959%	0.437
	5.092V	8.993W		115.09V
6	3A	15.118W	82.466%	0.488
	5.039V	18.332W		115.1V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.232W	53.102%	0.02
	5.146V	0.437W		230.31V
2	0.09A	0.463W	66.553%	0.031
	5.145V	0.696W		230.31V
3	0.55A	2.821W	82.605%	0.141
	5.128V	3.416W		230.28V
4	1A	5.115W	83.903%	0.219
	5.114V	6.096W		230.29V
5	1.5A	7.646W	84.22%	0.278
	5.096V	9.079W		230.3V
6	3A	15.152W	83.693%	0.367
	5.05V	18.104W		230.3V

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
10%	4.383A	1.992A	1.971A	0.979A	75.008	86.748%	0	<6.0	44.81°C	0.964
	12.184V	5.023V	3.348V	5.108V	86.466				40.5°C	115.19V
20%	9.778A	2.989A	2.959A	1.179A	149.975	90.305%	0	<6.0	46.13°C	0.968
	12.178V	5.019V	3.347V	5.092V	166.075				41.13°C	115.18V
30%	15.522A	3.489A	3.452A	1.379A	224.987	91.233%	0	<6.0	47.07°C	0.973
	12.172V	5.017V	3.346V	5.078V	246.608				41.49°C	115.17V
40%	21.273A	3.992A	3.952A	1.58A	300.078	90.73%	1134	35.2	41.72°C	0.97
	12.169V	5.011V	3.34V	5.064V	330.737				47.82°C	115.17V
50%	26.652A	4.996A	4.946A	1.783A	374.726	90.58%	1065	32.9	41.91°C	0.97
	12.164V	5.006V	3.337V	5.049V	413.697				48.71°C	115.17V
60%	32.060A	5.999A	5.938A	1.987A	449.642	90.193%	1096	33.7	42.25°C	0.969
	12.159V	5.002V	3.335V	5.033V	498.531				49.38°C	115.16V
70%	37.477A	7.005A	6.933A	2.193A	524.608	89.596%	1187	37.0	43.02°C	0.968
	12.154V	4.998V	3.333V	5.017V	585.525				50.89°C	115.16V
80%	42.968A	8.004A	7.923A	2.299A	599.793	88.905%	1319	39.1	43.48°C	0.969
	12.146V	4.996V	3.332V	5.003V	674.648				51.86°C	115.16V
90%	48.796A	8.515A	8.407A	2.405A	674.867	88.273%	1365	39.8	44.08°C	0.97
	12.140V	4.992V	3.33V	4.99V	764.524				53.12°C	115.15V
100%	54.428A	9.022A	8.923A	3.024A	750.104	87.387%	1428	41.1	44.66°C	0.971
	12.133V	4.989V	3.329V	4.962V	858.374				54.45°C	115.15V
110%	59.942A	10.031A	10.007A	3.033A	825.137	86.289%	1501	42.5	46.55°C	0.973
	12.125V	4.985V	3.327V	4.946V	956.254				57.31°C	115.15V
CL1	0.115A	14.434A	14.279A	0A	121.317	83.648%	0	<6.0	48.48°C	0.969
	12.160V	5.003V	3.34V	5.101V	145.032				42.31°C	115.19V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.115A	19.998A	0A	0A	101.401	82.588%	0	<6.0	50.08°C	0.967
	12.169V	5.001V	3.353V	5.12V	122.779				43.02°C	115.19V
CL3	0.115A	0A	19.729A	0A	67.398	76.927%	0	<6.0	52.25°C	0.963
	12.166V	5.027V	3.345V	5.108V	87.612				44.05°C	115.19V
CL4	61.752A	0A	0.001A	0A	749.857	87.987%	1440	41.4	45.09°C	0.972
	12.143V	5.011V	3.343V	5.064V	852.237				55.17°C	115.14V

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
10%	4.383A	1.991A	1.971A	0.979A	75.002	87.731%	0	<6.0	45.19°C	0.821
	12.183V	5.023V	3.348V	5.107V	85.491				40.06°C	230.36V
20%	9.776A	2.989A	2.959A	1.179A	149.955	91.526%	0	<6.0	46.22°C	0.894
	12.177V	5.019V	3.346V	5.092V	163.839				40.66°C	230.36V
30%	15.519A	3.489A	3.453A	1.379A	224.957	92.602%	0	<6.0	47.4°C	0.917
	12.172V	5.017V	3.345V	5.078V	242.928				41.41°C	230.36V
40%	21.271A	3.993A	3.954A	1.58A	300.044	92.255%	1086	33.4	41.78°C	0.929
	12.169V	5.01V	3.339V	5.064V	325.235				48.57°C	230.36V
50%	26.640A	4.996A	4.947A	1.783A	374.602	92.319%	1075	33.2	42.37°C	0.934
	12.166V	5.006V	3.335V	5.049V	405.768				49.47°C	230.36V
60%	32.046A	6A	5.941A	1.987A	449.518	92.098%	1130	35.0	42.74°C	0.937
	12.161V	5.001V	3.333V	5.033V	488.088				50.18°C	230.36V
70%	37.459A	7.005A	6.936A	2.193A	524.429	91.697%	1160	36.1	43.33°C	0.939
	12.155V	4.998V	3.331V	5.017V	571.916				51.23°C	230.36V
80%	42.948A	8.003A	7.929A	2.299A	599.626	91.19%	1253	37.8	43.72°C	0.941
	12.149V	4.994V	3.329V	5.004V	657.554				52.29°C	230.36V
90%	48.765A	8.517A	8.414A	2.404A	674.699	90.725%	1349	39.5	44.65°C	0.943
	12.144V	4.991V	3.327V	4.991V	743.673				54.01°C	230.36V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	54.398A	9.022A	8.928A	3.022A	749.933	90.071%	1431	41.2	45.41°C	0.944
	12.137V	4.988V	3.326V	4.964V	832.598				55.5°C	230.36V
110%	59.903A	10.033A	10.016A	3.03A	824.95	89.364%	1490	42.3	46.96°C	0.946
	12.130V	4.984V	3.324V	4.951V	923.14				57.82°C	230.36V
CL1	0.115A	14.438A	14.295A	0A	121.298	84.62%	0	<6.0	49.08°C	0.883
	12.162V	5.001V	3.336V	5.101V	143.344				42.68°C	230.35V
CL2	0.115A	20.007A	0A	0A	101.394	83.63%	0	<6.0	50.69°C	0.868
	12.170V	4.998V	3.353V	5.12V	121.241				43.21°C	230.34V
CL3	0.115A	0A	19.756A	0A	67.388	77.665%	0	<6.0	52.53°C	0.823
	12.168V	5.027V	3.34V	5.109V	86.769				44.15°C	230.34V
CL4	61.733A	0A	0.001A	0A	749.72	90.659%	1487	42.3	45.19°C	0.944
	12.144V	5.013V	3.345V	5.064V	826.963				55.29°C	230.35V

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])	Temps (In/Out)	PF/AC Volts
20W	1.218A	0.497A	0.492A	0.195A	20.007	71.025%	0	<6.0	39.88°C	0.878
	12.190V	5.028V	3.35V	5.137V	28.169				36.86°C	115.19V
40W	2.682A	0.697A	0.69A	0.292A	40.005	81.568%	0	<6.0	40.92°C	0.941
	12.189V	5.025V	3.349V	5.132V	49.045				37.61°C	115.19V
60W	4.146A	0.896A	0.887A	0.39A	60.004	85.735%	0	<6.0	42.09°C	0.956
	12.187V	5.024V	3.349V	5.127V	69.988				38.36°C	115.19V
80W	5.608A	1.095A	1.084A	0.488A	79.971	87.814%	0	<6.0	43.77°C	0.964
	12.185V	5.024V	3.349V	5.122V	91.068				39.68°C	115.19V

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
20W	1.218A	0.497A	0.492A	0.195A	19.999	71.499%	0	<6.0	40.31°C	0.538
	12.190V	5.029V	3.352V	5.137V	27.971				37.15°C	230.36V
40W	2.682A	0.696A	0.69A	0.292A	39.999	82.386%	0	<6.0	41.18°C	0.696
	12.189V	5.026V	3.35V	5.132V	48.55				37.8°C	230.36V
60W	4.146A	0.896A	0.887A	0.39A	59.998	86.531%	0	<6.0	41.59°C	0.779
	12.187V	5.025V	3.349V	5.127V	69.337				38.07°C	230.36V
80W	5.606A	1.095A	1.084A	0.488A	79.954	88.766%	0	<6.0	42.41°C	0.83
	12.185V	5.024V	3.349V	5.122V	90.073				38.59°C	230.36V

The results above are not used in the certification process

Ripple Measurements**115V**

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.13mV	5.42mV	4.66mV	6.32mV	Pass
20% Load	11.10mV	6.19mV	5.89mV	6.93mV	Pass
30% Load	12.23mV	6.39mV	6.81mV	7.55mV	Pass
40% Load	13.04mV	7.72mV	8.60mV	8.77mV	Pass
50% Load	13.86mV	8.28mV	9.88mV	8.77mV	Pass
60% Load	14.98mV	8.44mV	10.44mV	8.31mV	Pass
70% Load	16.10mV	9.46mV	11.72mV	8.57mV	Pass
80% Load	16.77mV	9.87mV	16.68mV	9.38mV	Pass
90% Load	17.53mV	10.58mV	17.86mV	11.88mV	Pass
100% Load	24.36mV	11.83mV	21.28mV	16.50mV	Pass
110% Load	25.43mV	13.50mV	22.20mV	30.65mV	Pass
Crossload1	14.29mV	10.28mV	12.55mV	10.07mV	Pass
Crossload2	11.20mV	10.53mV	5.01mV	8.62mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	10.30mV	6.09mV	12.54mV	7.95mV	Pass
Crossload4	23.62mV	10.28mV	16.26mV	15.31mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.18mV	5.83mV	4.71mV	6.58mV	Pass
20% Load	12.02mV	6.49mV	5.94mV	7.19mV	Pass
30% Load	13.30mV	6.44mV	6.55mV	7.34mV	Pass
40% Load	15.34mV	7.98mV	9.01mV	8.97mV	Pass
50% Load	15.29mV	8.44mV	9.88mV	8.77mV	Pass
60% Load	16.92mV	9.20mV	10.90mV	7.95mV	Pass
70% Load	17.79mV	9.72mV	12.23mV	8.87mV	Pass
80% Load	17.94mV	10.69mV	16.89mV	8.92mV	Pass
90% Load	18.81mV	10.59mV	18.32mV	10.25mV	Pass
100% Load	24.37mV	12.60mV	20.10mV	25.95mV	Pass
110% Load	26.14mV	14.24mV	24.10mV	28.54mV	Pass
Crossload1	14.46mV	9.43mV	12.28mV	9.84mV	Pass
Crossload2	11.71mV	11.35mV	5.68mV	8.57mV	Pass
Crossload3	10.03mV	5.73mV	13.05mV	8.00mV	Pass
Crossload4	23.98mV	10.37mV	15.86mV	9.68mV	Pass

The results above are not used in the certification process

EVGA SuperNOVA 750 GA



Top side



Power specifications label

[illegible]ETA LAMBDA [illegible]DELTA

PHI[]

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