



Seasonic Focus Plus Platinum 550W

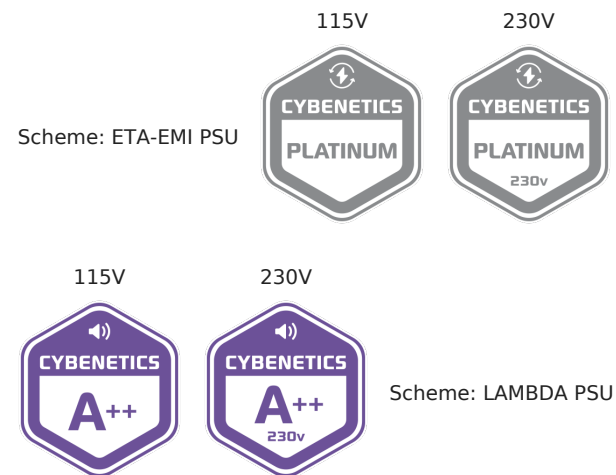
Serial Number R1707AA170390277

Lab ID 245

Certification ID 25245

Test Result Report ID:

Certificate Issue Date: Dec 13, 2018



A handwritten signature in blue ink, appearing to read 'A. Bitziopoulos', written over a faint circular stamp.

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	Seasonic
Model	Focus Plus Platinum 550W
OEM/ODM	Seasonic
Serial Number	R1707AA170390277
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	8-4
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	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	245
Date of receipt	Dec 6, 2018
Testing Date	Dec 11, 2018
Report Issued Date	Dec 13, 2018
DUT Notes	Retested on 04/10/2018
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 (650mm)	1	1	18AWG	Yes
6+2 pin PCIe (680mm+80mm)	1	2	18AWG	Yes
SATA (450mm+110mm+110mm+110mm)	1	4	18AWG	No
SATA (450mm+110mm)	1	2	18AWG	No
4 pin Molex (450mm+120mm+120mm)	1	3	18AWG	No
FDD Adapter (+105mm)	1	1	22AWG	No

AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	No
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Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	45	3	0.3
	Watts	100		540	15	3.6
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)	90.023%
Average Noise Output (>1450 Load Combinations)	14.83dBA
Average PF (>1450 Load Combinations)	0.985
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0495W
Non-Accredited	
12V Ripple (Full Load)	23.16mV
5V Ripple (Full Load)	12.50mV
3.3V Ripple (Full Load)	10.91mV
5VSB Ripple (Full Load)	8.24mV
12V Load Regulation	0.04%

5V Load Regulation	0.18%
3.3V Load Regulation	0.51%
5VSB Load Regulation	2.38%
Inrush Current	26.761A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.674%	
Average Noise Output (>1450 Load Combinations)	14.17dBA	
Average PF (>1450 Load Combinations)	0.935	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0825W	
Non-Accredited		
12V Ripple (Full Load)	22.91mV	
5V Ripple (Full Load)	12.14mV	
3.3V Ripple (Full Load)	10.96mV	
5VSB Ripple (Full Load)	6.04mV	
12V Load Regulation	0.03%	
5V Load Regulation	0.18%	
3.3V Load Regulation	0.54%	
5VSB Load Regulation	2.32%	
Inrush Current	62.631A	
Hold-Up Time & PWR_OK Signal	24.20ms	
AC Loss to PWR_OK Hold Up Time	19.50ms	
PWR_OK Inactive to DC Loss Delay	4.70ms	
OPP (0.00°C / 0.00°C)	-	-

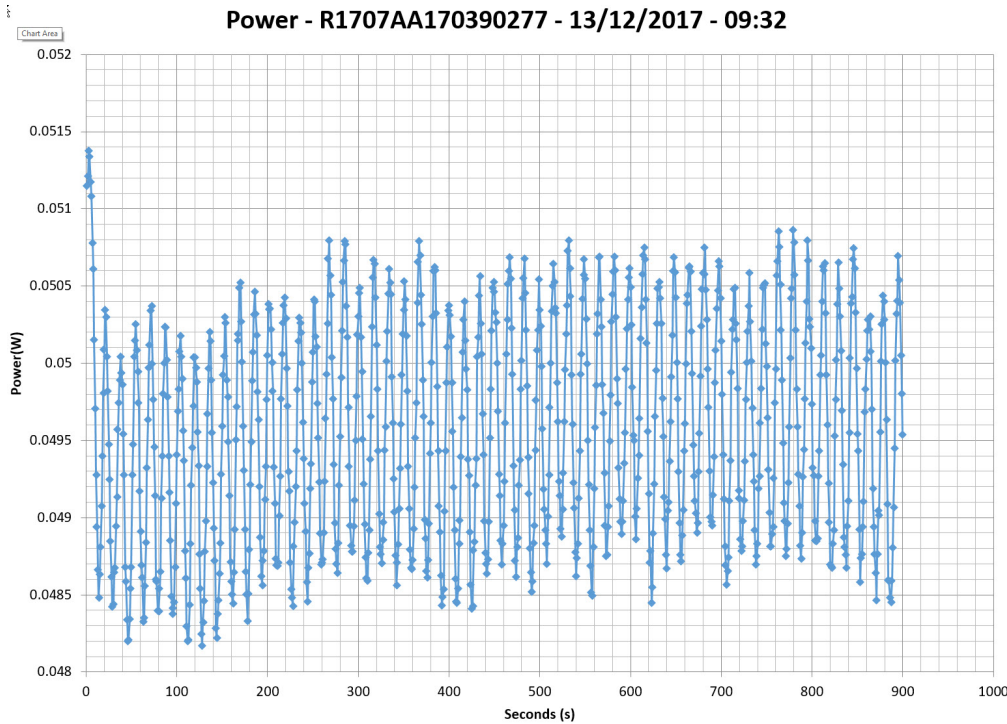
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	24.2
AC Loss to PWR_OK Hold Up Time (ms)	19.5

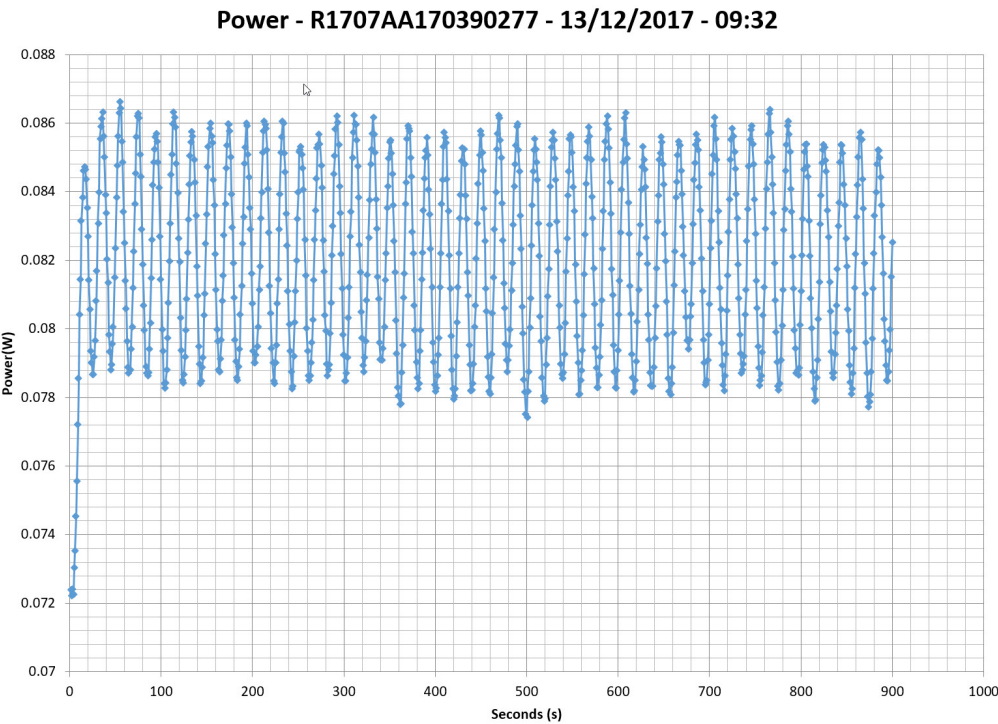
Vampire Power

Graphs

115V

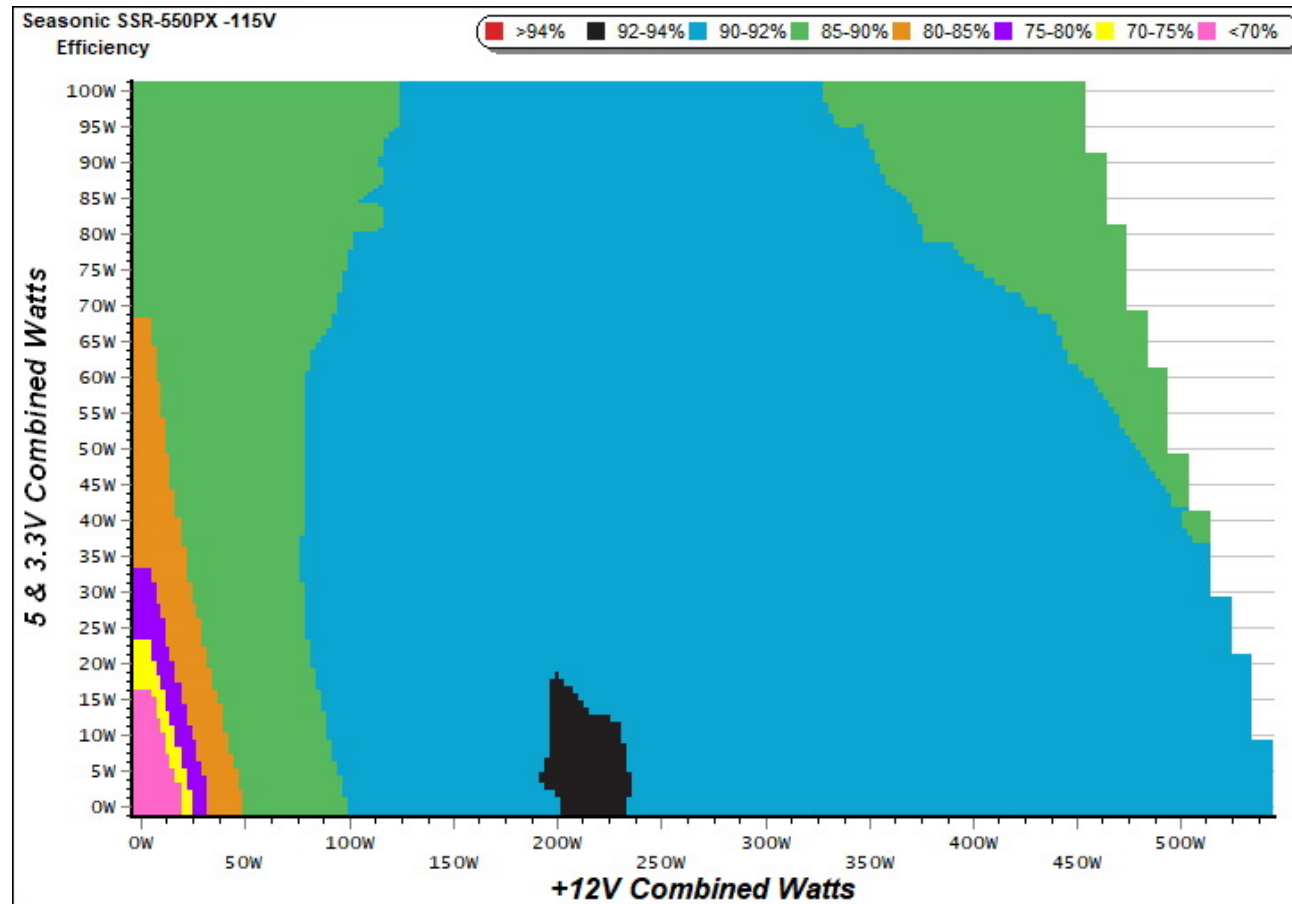


230V



Efficiency Graph

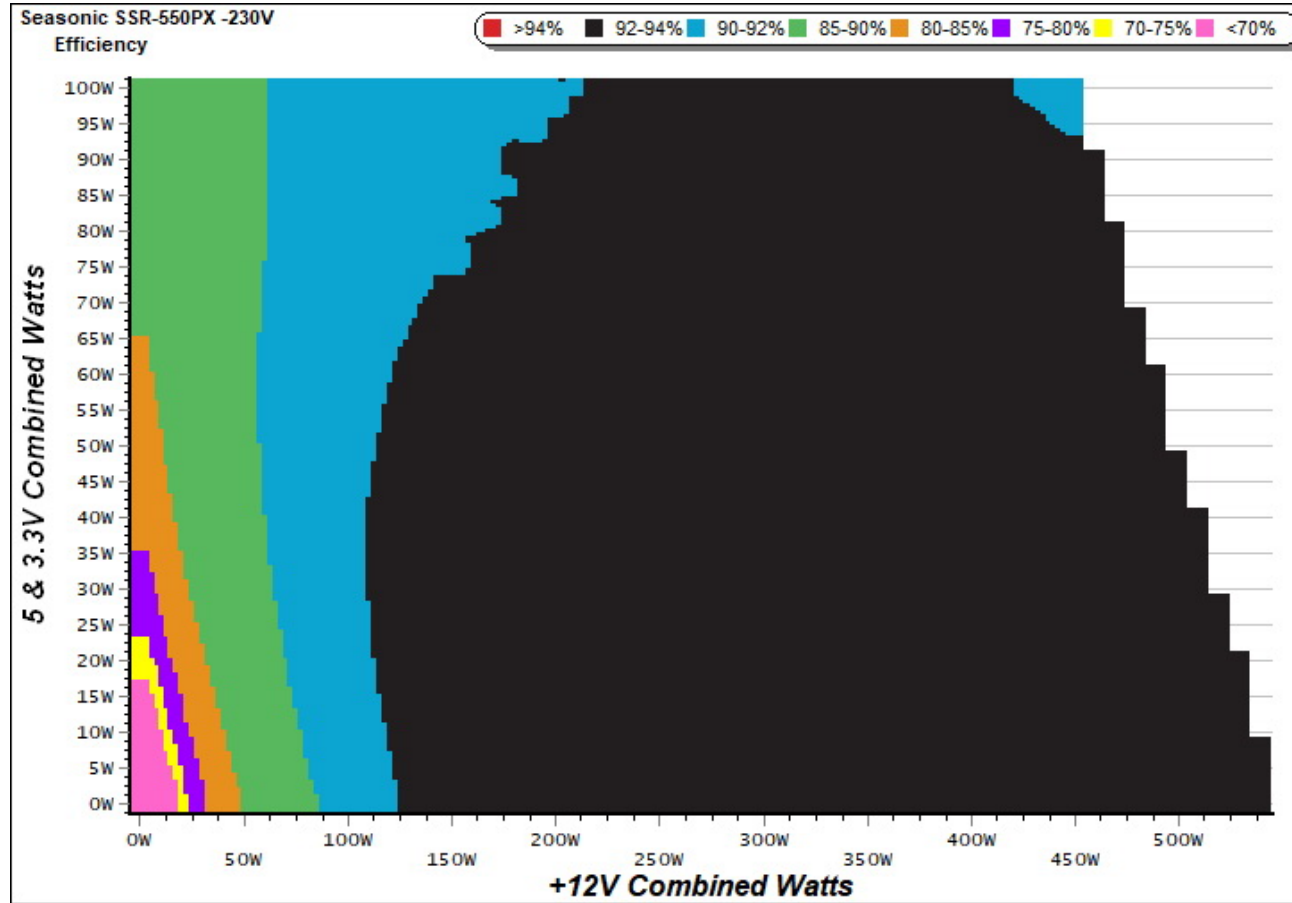
115V



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

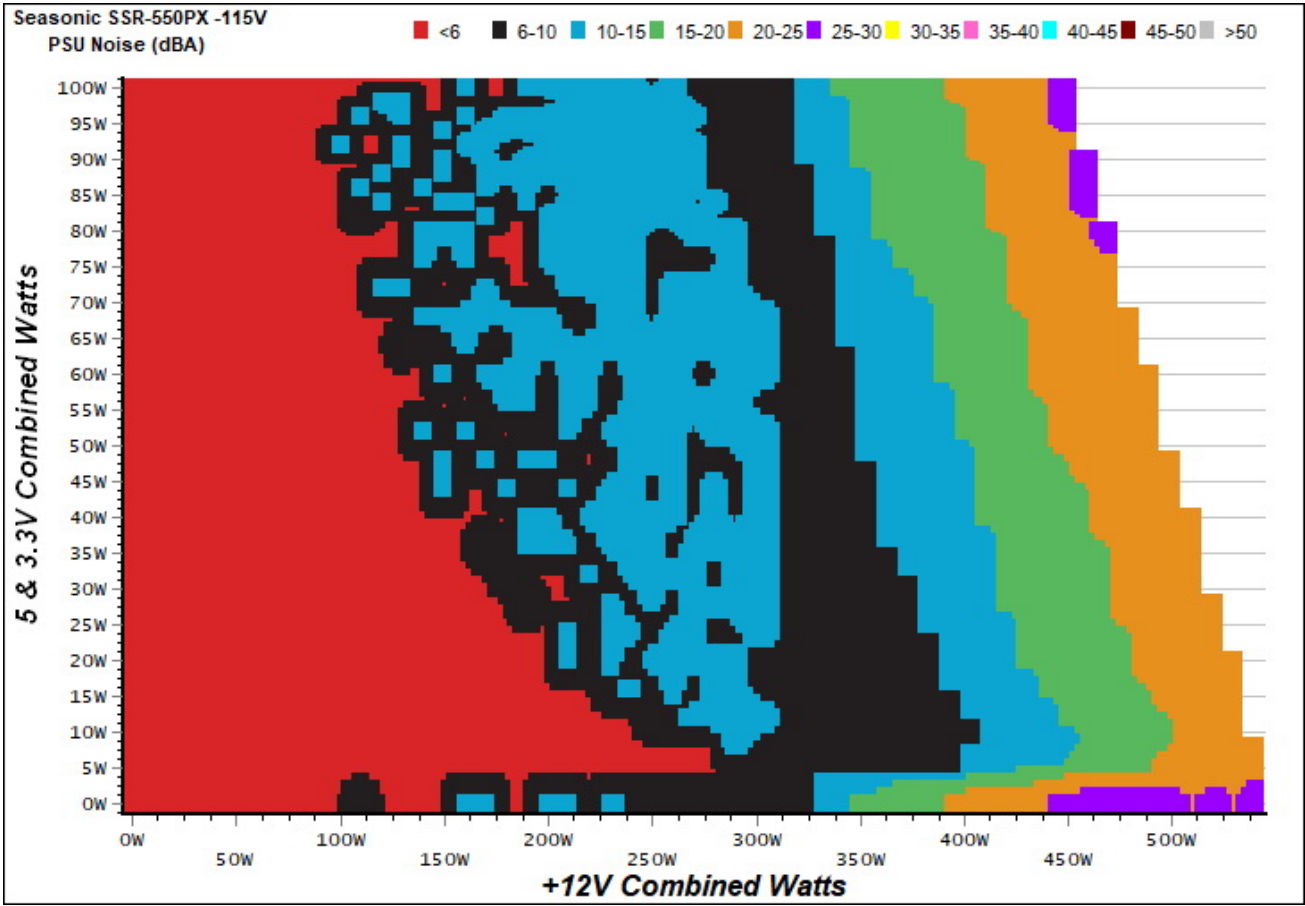


INFO

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

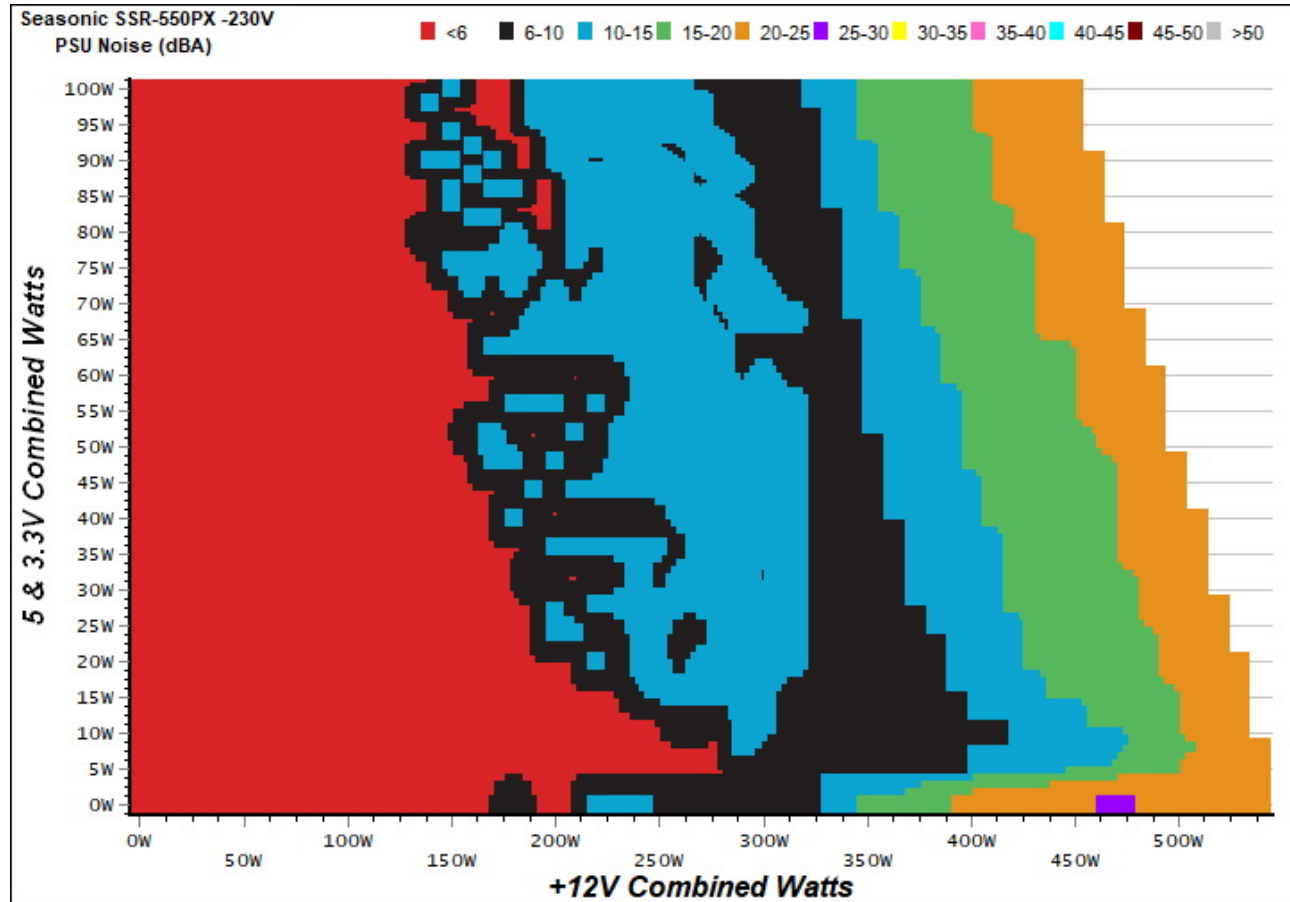
115V



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.

230V



INFO

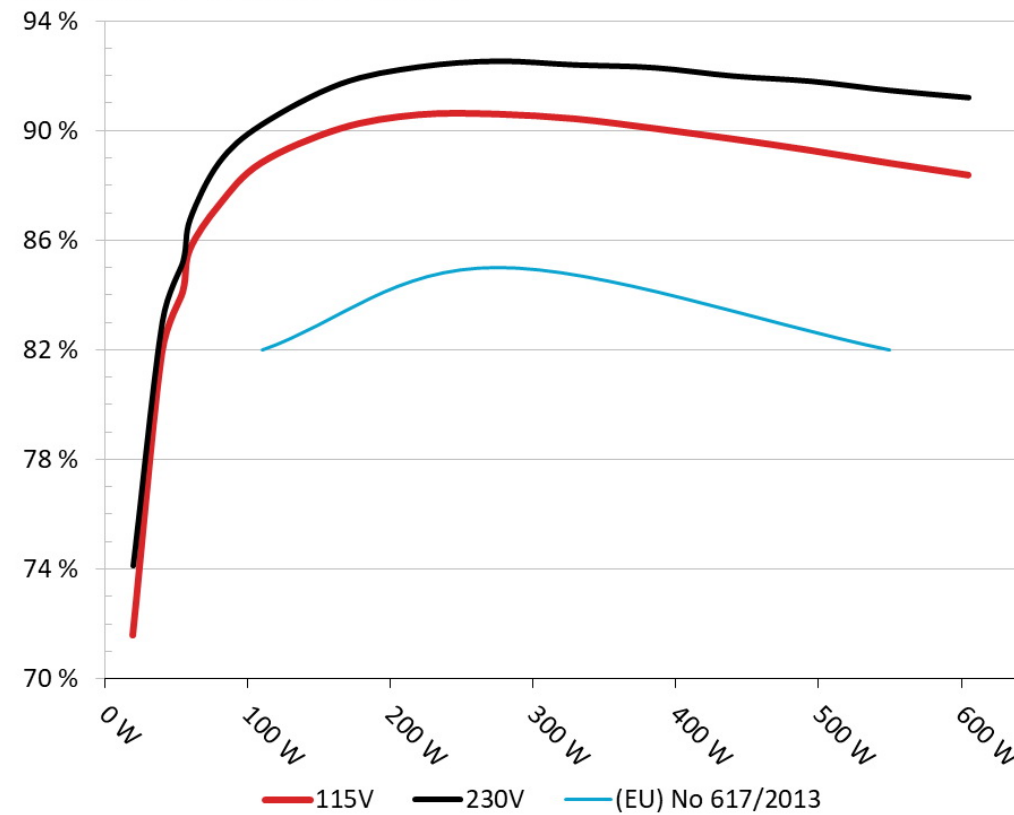
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Seasonic SSR-550PX

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



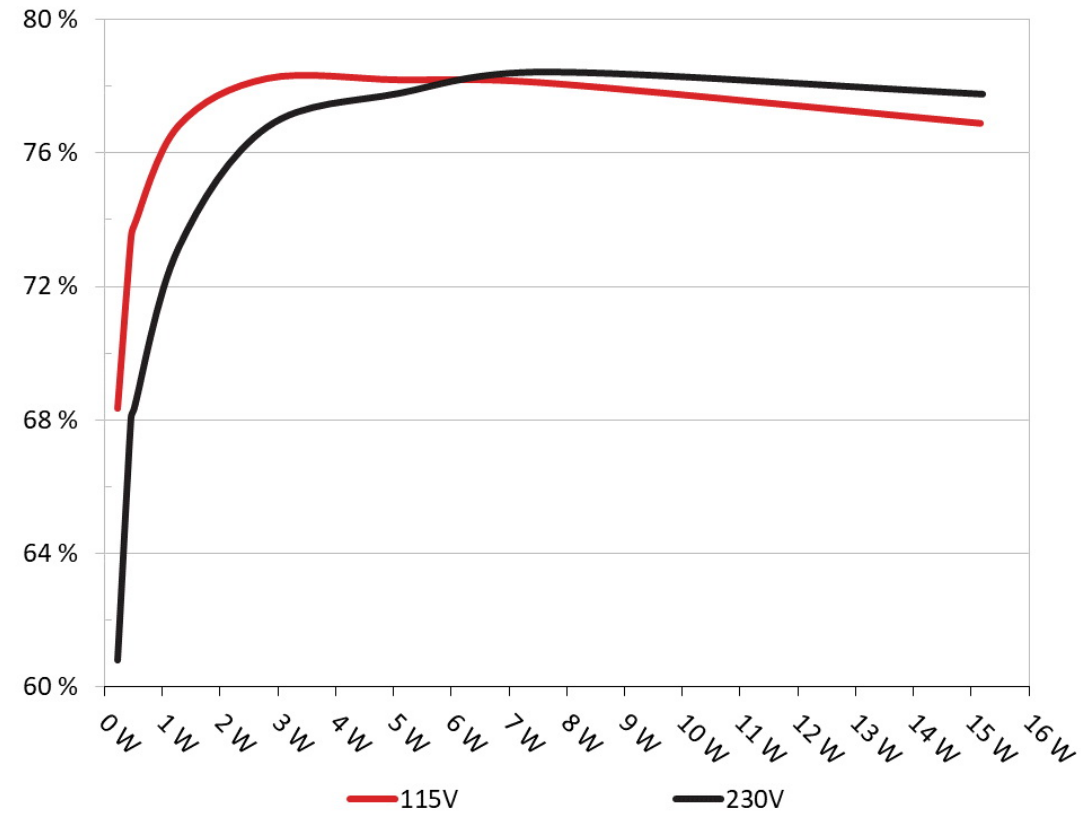
INFO

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: Seasonic SSR-550PX

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	0.231	68.343%	0.034
	5.136V	0.338		115.27V
2	0.090A	0.462	73.450%	0.062
	5.135V	0.629		115.27V
3	0.550A	2.818	78.234%	0.273
	5.124V	3.602		115.26V
4	1.000A	5.113	78.192%	0.367
	5.114V	6.539		115.25V
5	1.500A	7.653	78.100%	0.418
	5.102V	9.799		115.25V
6	3.000A	15.167	76.888%	0.479
	5.056V	19.726		115.24V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	60.789%	0.013
	5.136V	0.380		230.83V
2	0.090A	0.462	68.041%	0.023
	5.135V	0.679		230.82V
3	0.550A	2.818	76.764%	0.117
	5.124V	3.671		230.71V
4	1.000A	5.114	77.779%	0.191
	5.114V	6.575		230.76V
5	1.500A	7.654	78.414%	0.251
	5.103V	9.761		230.81V
6	3.000A	15.203	77.753%	0.351
	5.068V	19.553		230.81V

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	2.697A	1.979A	1.984A	0.979A	54.289	84.099%	0	<6.0	44.57°C	0.938
	12.130V	5.044V	3.323V	5.107V	64.554				38.04°C	115.30V
2	6.456A	2.972A	2.981A	1.177A	109.204	88.804%	0	<6.0	45.26°C	0.982
	12.131V	5.043V	3.321V	5.097V	122.972				38.54°C	115.23V
3	10.611A	3.470A	3.465A	1.376A	164.724	90.060%	450	9.9	38.69°C	0.989
	12.131V	5.043V	3.320V	5.087V	182.905				45.85°C	115.15V
4	14.700A	3.966A	3.977A	1.576A	219.534	90.566%	450	9.9	38.78°C	0.992
	12.132V	5.042V	3.318V	5.077V	242.403				46.65°C	115.07V
5	18.460A	4.960A	4.976A	1.776A	274.460	90.587%	445	9.6	39.42°C	0.993
	12.132V	5.041V	3.316V	5.067V	302.979				47.47°C	115.09V
6	22.220A	5.953A	5.976A	1.978A	329.397	90.416%	590	15.2	40.38°C	0.993
	12.133V	5.040V	3.313V	5.056V	364.312				49.24°C	115.01V
7	26.012A	6.947A	6.975A	2.181A	384.707	90.065%	985	23.9	41.40°C	0.992
	12.133V	5.039V	3.311V	5.045V	427.144				50.96°C	114.93V
8	29.804A	7.942A	7.977A	2.384A	440.014	89.679%	1495	32.0	42.16°C	0.992
	12.133V	5.037V	3.309V	5.034V	490.656				52.40°C	114.85V
9	33.960A	8.440A	8.463A	2.387A	494.538	89.261%	1915	40.7	44.94°C	0.993
	12.133V	5.036V	3.308V	5.028V	554.036				55.29°C	114.87V
10	37.918A	8.937A	8.984A	2.996A	549.762	88.798%	2005	41.1	45.22°C	0.993
	12.133V	5.035V	3.306V	5.008V	619.114				56.13°C	114.79V
11	42.466A	8.938A	8.985A	2.999A	604.982	88.363%	2025	41.2	46.67°C	0.993
	12.134V	5.035V	3.305V	5.002V	684.654				58.40°C	114.71V
CL1	0.733A	12.002A	11.999A	0.000A	109.145	86.395%	445	9.6	43.66°C	0.982
	12.130V	5.041V	3.313V	5.111V	126.332				51.72°C	115.22V

CL2	45.001A	1.001A	0.999A	1.000A	559.507	89.426%	2025	41.2	45.60°C	0.993
	12.135V	5.039V	3.315V	5.064V	625.668				56.45°C	114.79V

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	2.708A	1.982A	1.984A	0.979A	54.436	85.232%	0	<6.0	48.02°C	0.682
	12.129V	5.044V	3.323V	5.107V	63.868				38.02°C	230.81V
2	6.466A	2.973A	2.979A	1.177A	109.320	90.205%	450	9.9	38.19°C	0.861
	12.130V	5.044V	3.321V	5.096V	121.191				48.28°C	230.83V
3	10.619A	3.471A	3.464A	1.376A	164.820	91.695%	485	9.3	38.85°C	0.925
	12.131V	5.043V	3.319V	5.086V	179.749				49.09°C	230.84V
4	14.709A	3.965A	3.979A	1.576A	219.626	92.310%	445	9.6	39.08°C	0.951
	12.131V	5.042V	3.317V	5.077V	237.922				48.79°C	230.80V
5	18.466A	4.962A	4.976A	1.777A	274.536	92.521%	465	9.8	39.41°C	0.965
	12.132V	5.040V	3.315V	5.066V	296.727				49.56°C	230.75V
6	22.224A	5.954A	5.976A	1.979A	329.448	92.386%	565	14.1	40.43°C	0.973
	12.133V	5.039V	3.313V	5.055V	356.598				49.12°C	230.70V
7	26.015A	6.949A	6.977A	2.181A	384.753	92.284%	900	21.8	41.31°C	0.978
	12.133V	5.038V	3.311V	5.045V	416.923				48.04°C	230.66V
8	29.806A	7.944A	7.978A	2.385A	440.053	91.978%	1495	32.0	42.42°C	0.980
	12.133V	5.037V	3.309V	5.033V	478.435				48.10°C	230.72V
9	33.963A	8.441A	8.465A	2.387A	494.578	91.789%	1780	38.8	43.27°C	0.983
	12.133V	5.036V	3.307V	5.028V	538.823				48.14°C	230.68V
10	37.920A	8.939A	8.984A	2.996A	549.796	91.457%	2005	41.1	45.23°C	0.985
	12.133V	5.035V	3.306V	5.008V	601.153				49.71°C	230.64V
11	42.466A	8.942A	8.986A	2.999A	605.005	91.195%	2025	41.2	46.18°C	0.986
	12.134V	5.035V	3.305V	5.002V	663.419				50.94°C	230.59V
CL1	0.735A	12.002A	11.998A	0.000A	109.166	87.456%	445	9.6	43.37°C	0.867
	12.130V	5.041V	3.313V	5.111V	124.824				51.93°C	230.97V

CL2	45.003A	1.002A	0.999A	1.000A	559.535	92.123%	2005	41.1	44.87°C	0.985
	12.135V	5.039V	3.314V	5.064V	607.378				49.35°C	230.64V

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	1.171A	0.492A	0.478A	0.195A	19.278	71.575%	0	<6.0	0.730
	12.128V	5.049V	3.327V	5.130V	26.934				115.25V
2	2.425A	0.990A	0.991A	0.390A	39.695	81.872%	0	<6.0	0.890
	12.128V	5.043V	3.323V	5.123V	48.484				115.23V
3	3.616A	1.485A	1.472A	0.586A	59.236	85.644%	0	<6.0	0.943
	12.129V	5.043V	3.323V	5.117V	69.165				115.19V
4	4.869A	1.981A	1.986A	0.783A	79.650	87.263%	0	<6.0	0.967
	12.130V	5.043V	3.322V	5.110V	91.276				115.27V

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	1.190A	0.494A	0.480A	0.195A	19.526	74.136%	0	<6.0	0.442
	12.130V	5.050V	3.328V	5.129V	26.338				230.84V
2	2.441A	0.990A	0.993A	0.391A	39.905	83.014%	0	<6.0	0.584
	12.129V	5.045V	3.324V	5.122V	48.070				230.83V
3	3.630A	1.486A	1.474A	0.587A	59.429	86.773%	0	<6.0	0.705
	12.130V	5.044V	3.323V	5.116V	68.488				230.81V
4	4.882A	1.981A	1.986A	0.783A	79.809	88.838%	0	<6.0	0.793
	12.130V	5.044V	3.322V	5.109V	89.837				230.80V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.6 mV	6.2 mV	4.8 mV	3.4 mV	Pass
20% Load	9.9 mV	7.0 mV	5.6 mV	3.5 mV	Pass
30% Load	12.7 mV	7.1 mV	5.9 mV	3.6 mV	Pass
40% Load	14.3 mV	7.6 mV	6.1 mV	4.1 mV	Pass
50% Load	16.4 mV	8.4 mV	7.1 mV	4.8 mV	Pass
60% Load	17.9 mV	9.9 mV	7.4 mV	5.0 mV	Pass
70% Load	19.5 mV	10.4 mV	8.5 mV	6.0 mV	Pass
80% Load	20.4 mV	11.0 mV	9.8 mV	7.5 mV	Pass
90% Load	22.3 mV	11.2 mV	10.3 mV	7.5 mV	Pass
100% Load	23.2 mV	12.5 mV	10.9 mV	8.2 mV	Pass
110% Load	23.9 mV	12.5 mV	11.3 mV	10.0 mV	Pass
Crossload 1	10.7 mV	11.2 mV	9.7 mV	4.4 mV	Pass
Crossload 2	23.0 mV	7.8 mV	6.0 mV	6.9 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.0 mV	6.0 mV	4.6 mV	3.3 mV	Pass
20% Load	9.6 mV	6.5 mV	5.3 mV	3.4 mV	Pass
30% Load	11.9 mV	7.1 mV	5.7 mV	3.5 mV	Pass
40% Load	14.1 mV	7.4 mV	6.2 mV	3.8 mV	Pass
50% Load	16.0 mV	8.8 mV	6.9 mV	3.9 mV	Pass
60% Load	17.5 mV	9.3 mV	7.4 mV	4.2 mV	Pass
70% Load	19.3 mV	10.1 mV	8.1 mV	4.2 mV	Pass
80% Load	20.3 mV	11.0 mV	9.6 mV	4.8 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	22.0 mV	11.5 mV	10.1 mV	5.0 mV	Pass
100% Load	22.9 mV	12.1 mV	11.0 mV	6.0 mV	Pass
110% Load	24.8 mV	12.8 mV	11.4 mV	6.1 mV	Pass
Crossload 1	9.9 mV	11.4 mV	10.0 mV	4.0 mV	Pass
Crossload 2	23.1 mV	7.9 mV	6.2 mV	4.4 mV	Pass

The results above are not used in the certification process

Seasonic Focus Plus Platinum 550W

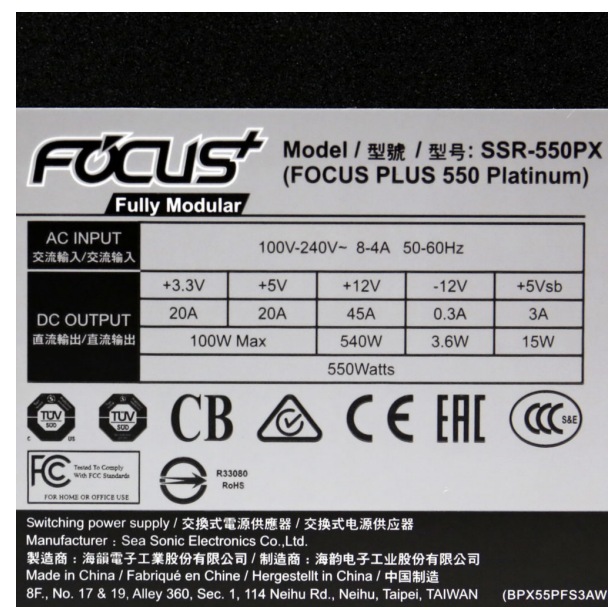


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All data and graphs included in this test report can be used by any individual on the following conditions:

- › 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 LTD Syrou 6, Latsia, 2231, Nicosia Cyprus



Power specifications label

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

www.cybenetics.com - info@cybenetics.com