EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

SeaSonic Prime Platinum 650W

Lab ID#: 197
Receipt Date: Oct 8, 2018
Test Date: Oct 14, 2018

Report:
Report Date: Oct 17, 2018

DUT INFORMATION

Brand	SeaSonic
Manufacturer (OEM)	Seasonic
Series	Prime Platinum
Model Number	SSR-650PD
Serial Number	R1701TA101410009
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	8.5-4
Rated Frequency (Hz)	50-60
Rated Power (W)	650
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	54	2.5	0.3
	Watts	100		648	12.5	3.6
Total Max. Power (W)		650				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (610mm)	1	1	18-22AWG
4+4 pin EPS12V (650mm)	1	1	18AWG
6+2 pin PCIe (680mm+80mm)	2	4	18AWG
SATA (460mm+110mm+110mm+110mm)	1	4	18AWG
SATA (360mm+110mm)	1	2	18AWG
4 pin Molex (460mm+130mm+130mm)	1	3	18AWG
FDD Adapter (+110mm)	1	1	22AWG

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

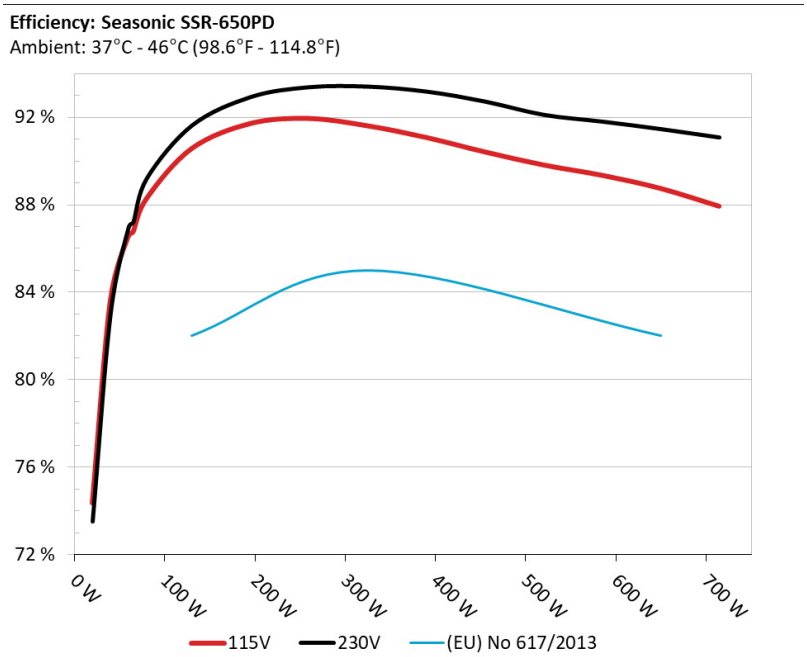
115V

Average Efficiency	90.776%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	79.811%
Standby Power Consumption (W)	0.0568295
Average PF	0.987
Avg Noise Output	33.19 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	S++

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	

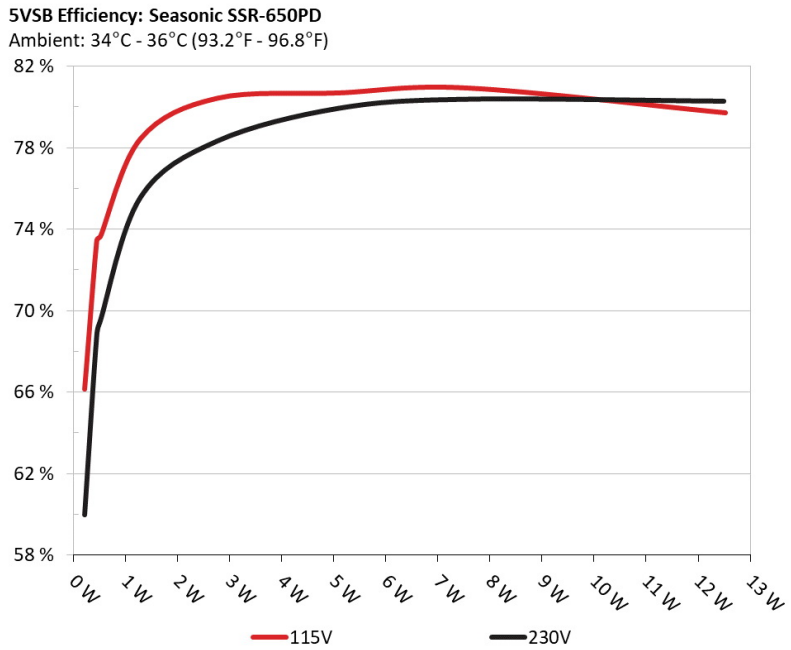
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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



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	0.042A	0.215	66.154%	0.036
	5.125V	0.325		115.10V
2	0.087A	0.448	73.443%	0.066
	5.123V	0.610		115.10V
3	0.542A	2.766	80.430%	0.278
	5.100V	3.439		115.09V
4	1.002A	5.089	80.688%	0.372
	5.077V	6.307		115.09V
5	1.502A	7.590	80.925%	0.422
	5.054V	9.379		115.09V
6	2.502A	12.524	79.715%	0.471
	5.006V	15.711		115.09V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.216	60.000%	0.012
	5.125V	0.360		230.25V
2	0.087A	0.448	68.817%	0.022
	5.123V	0.651		230.25V
3	0.542A	2.765	78.351%	0.110
	5.098V	3.529		230.25V
4	1.002A	5.085	79.953%	0.181
	5.073V	6.360		230.25V
5	1.502A	7.578	80.403%	0.240
	5.046V	9.425		230.25V
6	2.501A	12.491	80.307%	0.316
	4.994V	15.554		230.25V

115V

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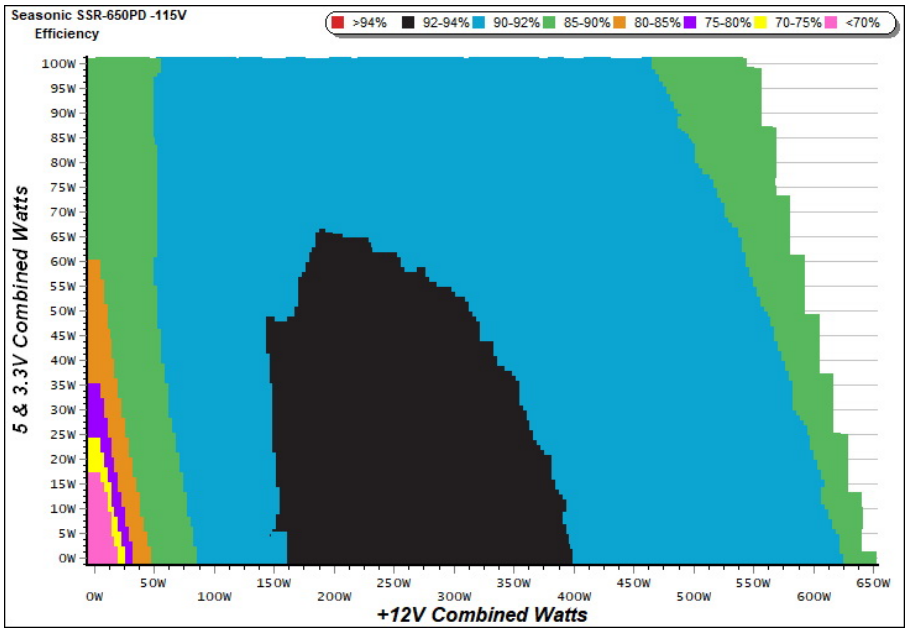
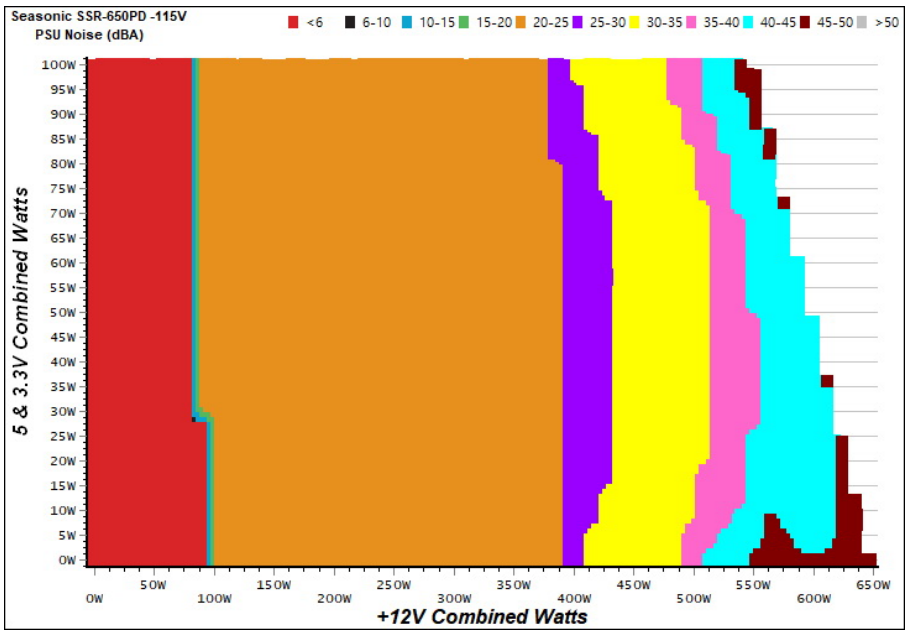
EFFICIENCY GRAPH 115V



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

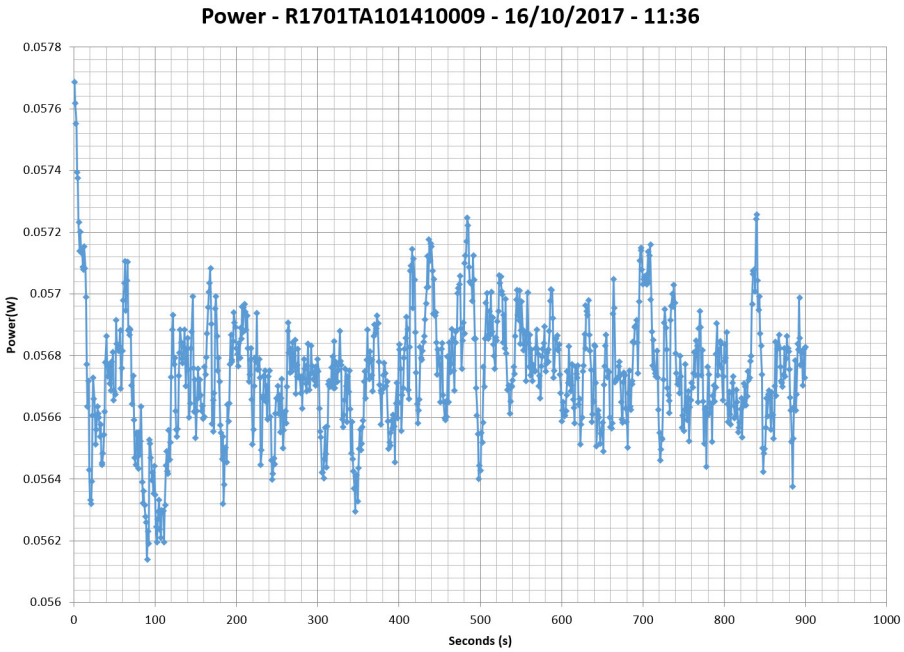
NOISE GRAPH 115V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-2 °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

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

COMMISSION REGULATION (EU) NO 617/2013 TESTING 115V

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Top side

Power specifications label

CERTIFICATIONS 115V

CYBENETICS PLATINUM

CYBENETICS STANDARD++

Aris Mpitsiopoulos
Lab Director