Seasonic Prime Titanium Ultra 750W

R1709AA183710034

Lab ID 231

Certification ID 25231

Test Result Report ID:

Certificate Issue Date: Apr 12, 2018

Scheme: ETA-EMI PSU

115V



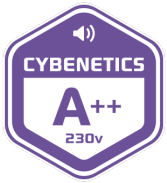
230V



115V



230V



Scheme: LAMBDA PSU



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	Prime Titanium Ultra 750W
OEM/ODM	Seasonic
Serial Number	R1709AA183710034
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	9.5-4.5
□□□□ (Hz)	50-60

□□□□ (W)	750
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Fluid Dynamic Bearing Fan (HA13525L12F-Z)
□□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	231
Date of receipt	Mar 30, 2018
Testing Date	Apr 10, 2018
Report Issued Date	Apr 12, 2018
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (600mm)	1	1	18-22AWG	□
4+4 pin EPS 12V □□ (660mm)	2	2	18AWG	□
6+2pin PCIe□□ (760mm)	4	4	18AWG	□
SATA□□ (350mm+150mm+150mm+150mm)	1	4	18AWG	□
SATA□□ (410mm+110mm+110mm+110mm)	1	4	18AWG	□
SATA□□ (300mm+150mm)	1	2	18AWG	□
□ 4pin Molex□□ (450mm+120mm+120mm)	1	3	18AWG	□
□ 4pin Molex□□ (350mm+120mm)	1	2	18AWG	□

4-pin Molex Adapter / SATA□□ (150mm+150mm)	1	2	18AWG	□
□ 4pin □□ (+100mm)	1	1	22AWG	□
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	62	3	0.3
	□	100		744	15	3.6
□□□□□ (W)		750				

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	91.787%
Average Noise Output (>1450 Load Combinations)	11.73dBA
PF□□□ (>1450 Load Combinations)	0.988
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
□□□□□□	0.0578W
Non-Accredited	
12V Ripple (Full Load)	16.17mV
5V Ripple (Full Load)	5.53mV
3.3V Ripple (Full Load)	7.64mV

5VSB Ripple (Full Load)	6.02mV
12V Load Regulation	0.10%
5V Load Regulation	0.08%
3.3V Load Regulation	0.24%
5VSB Load Regulation	1.09%
Inrush Current	24.793A

230V

Accredited		
□□□□ (>1450 load combinations)		93.787%
Average Noise Output (>1450 Load Combinations)		10.26dBA
PF□□□ (>1450 Load Combinations)		0.941
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
□□□□□□		0.0827W
Non-Accredited		
12V Ripple (Full Load)		16.60mV
5V Ripple (Full Load)		5.21mV
3.3V Ripple (Full Load)		7.72mV
5VSB Ripple (Full Load)		6.15mV
12V Load Regulation		0.10%
5V Load Regulation		0.08%
3.3V Load Regulation		0.24%
5VSB Load Regulation		1.11%
Inrush Current		60.084A
□□□□ & PG□□		28.10ms
AC Loss to PWR_OK Hold Up Time		23.40ms
PWR_OK Inactive to DC Loss Delay		4.70ms
OPP (0.00°C / 0.00°C)	-	-

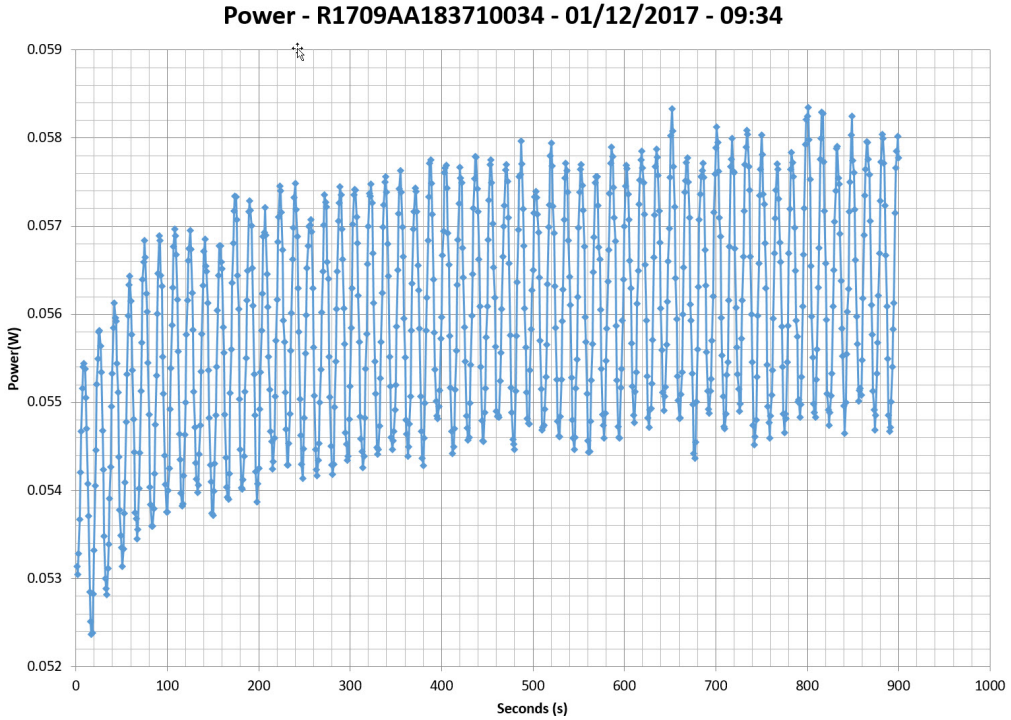
□□□□ & PG□□

Hold-Up Time (ms)	28.1
AC Loss to PWR_OK Hold Up Time (ms)	23.4
PWR_OK Inactive to DC Loss Delay (ms)	4.7

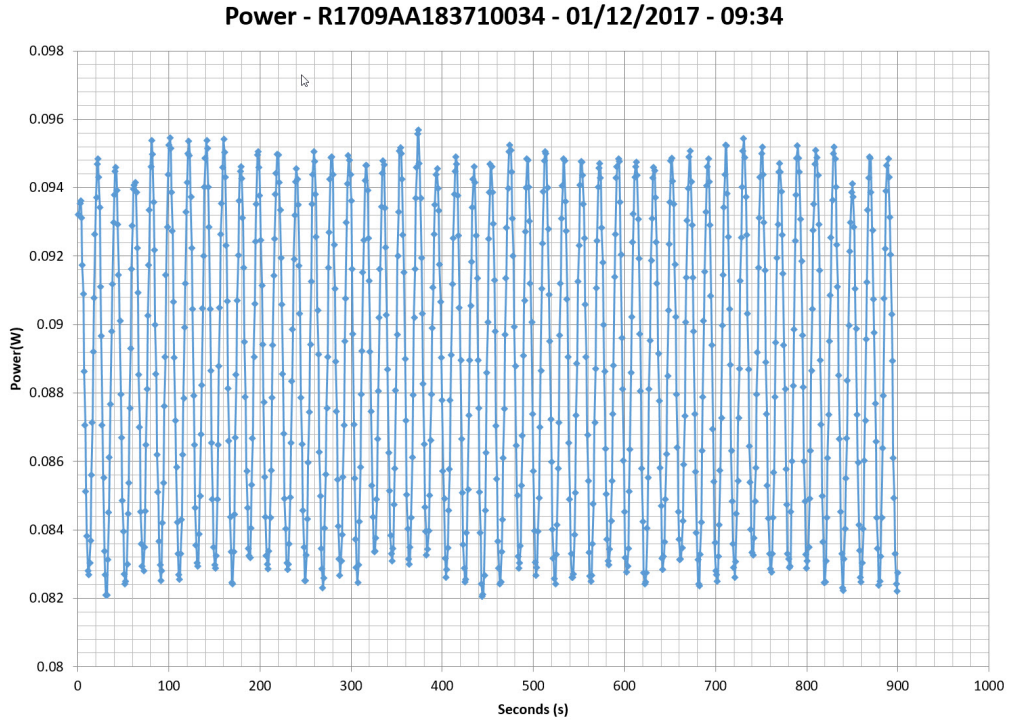
□□□□

Graphs

115V



230V



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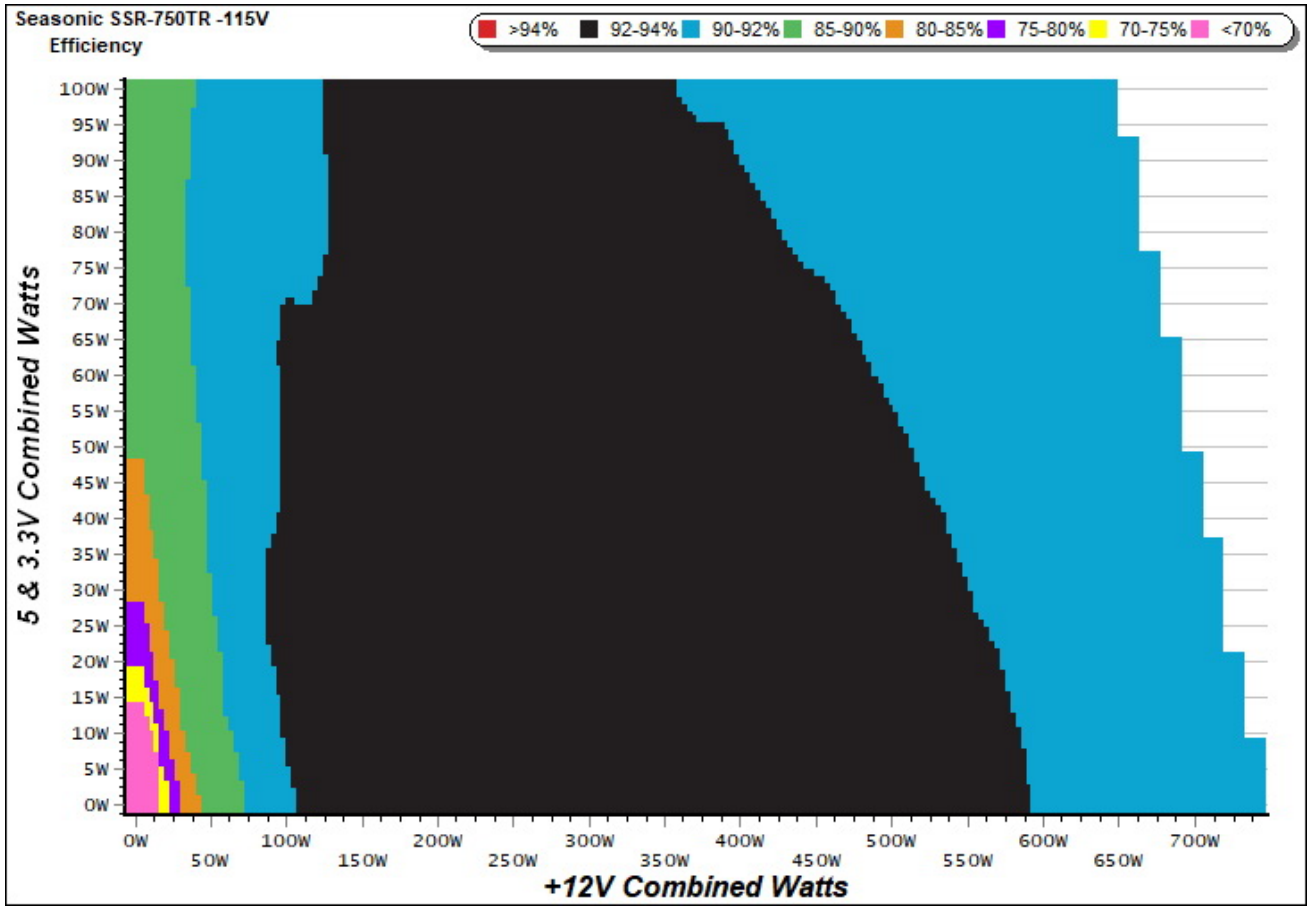
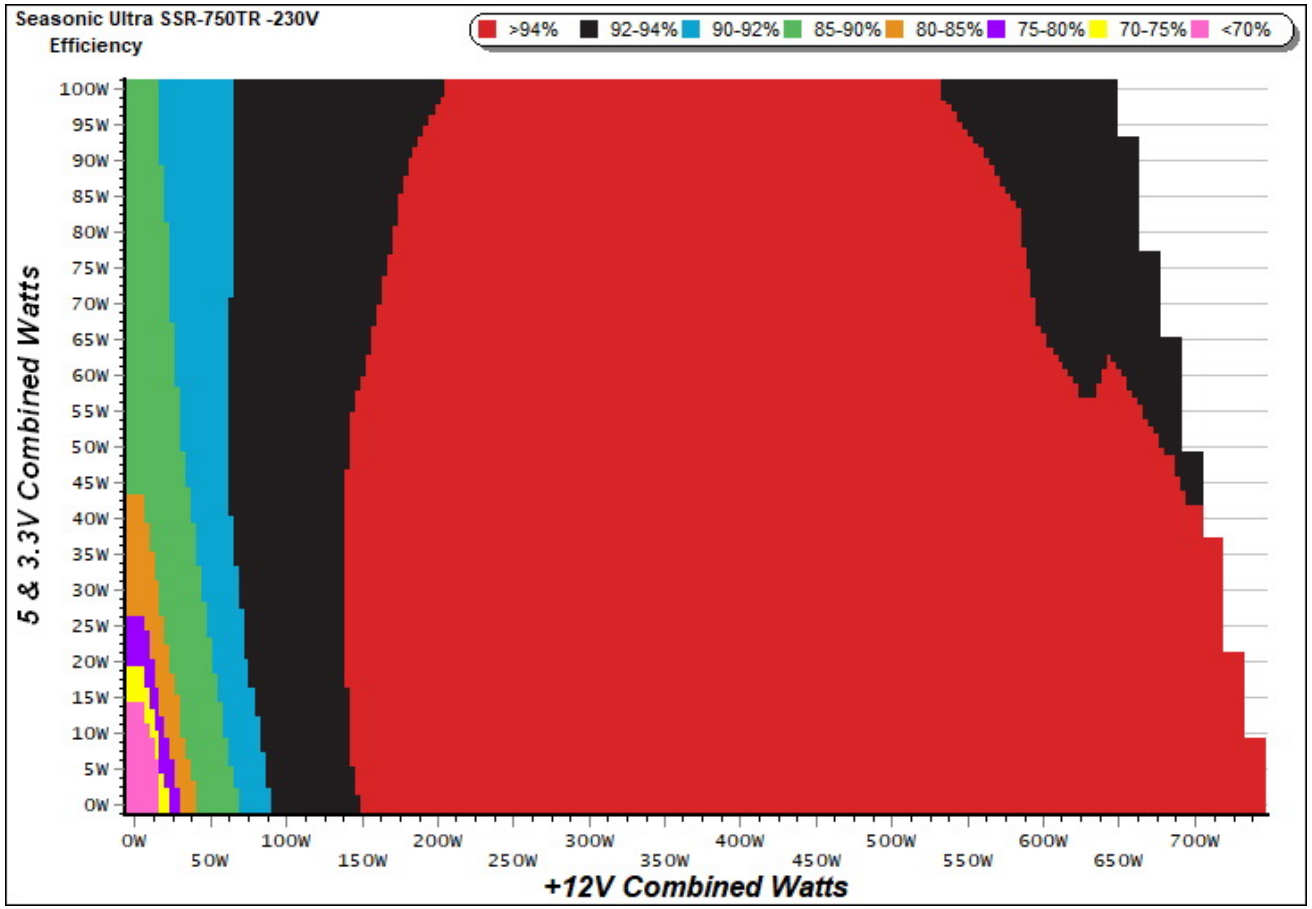
115V



□□

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.

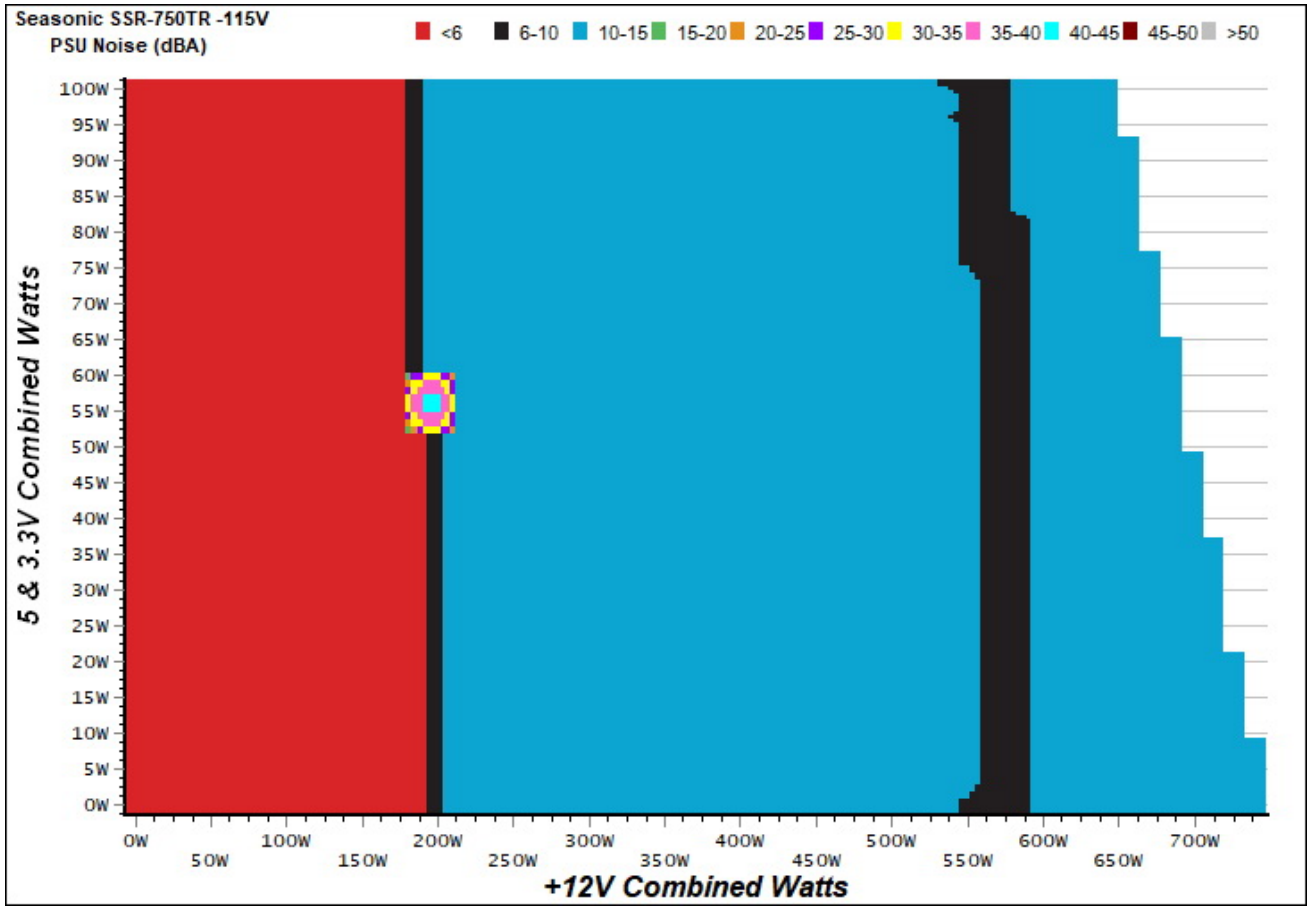
230V



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.

□□□□□

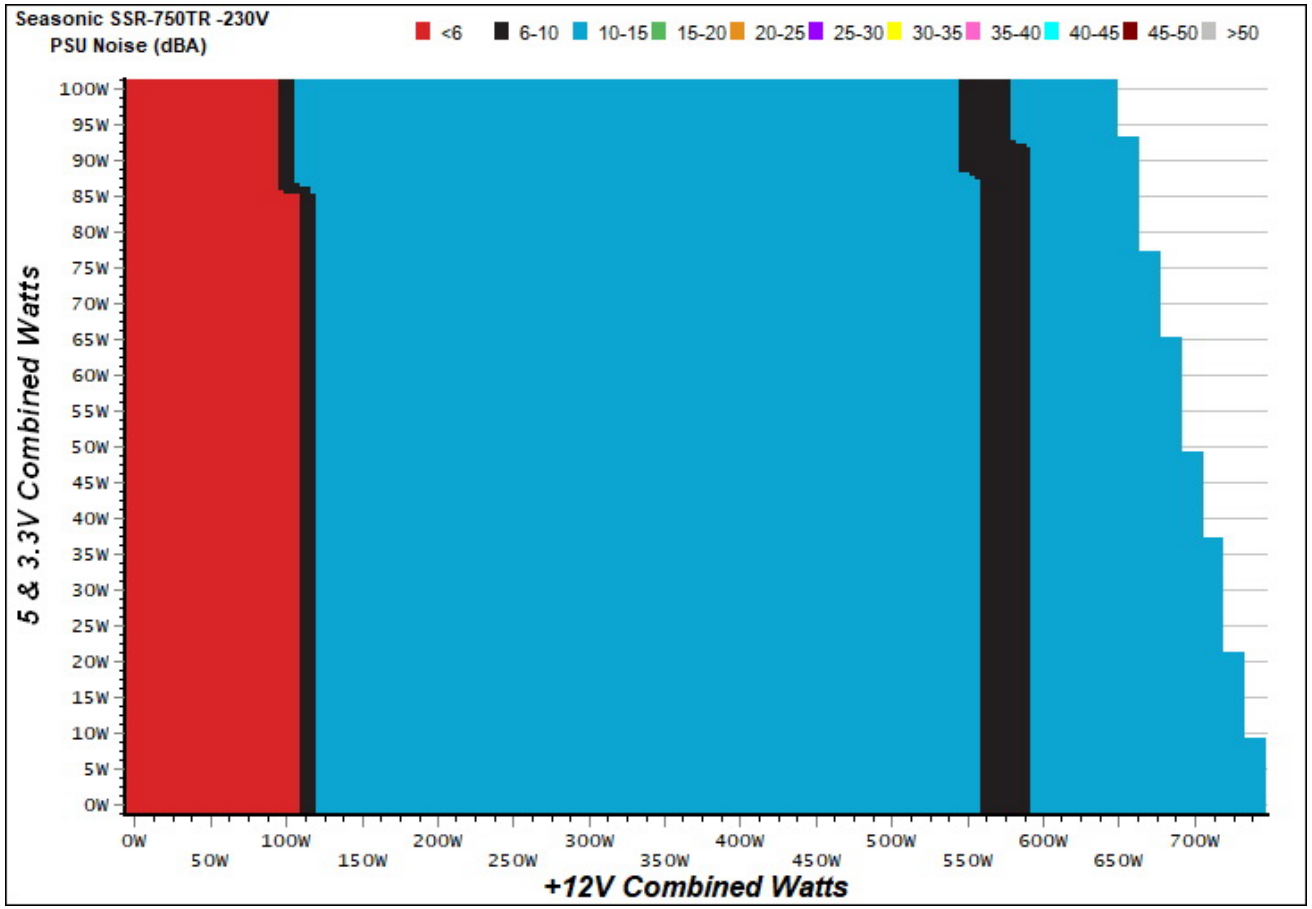
115V



□□

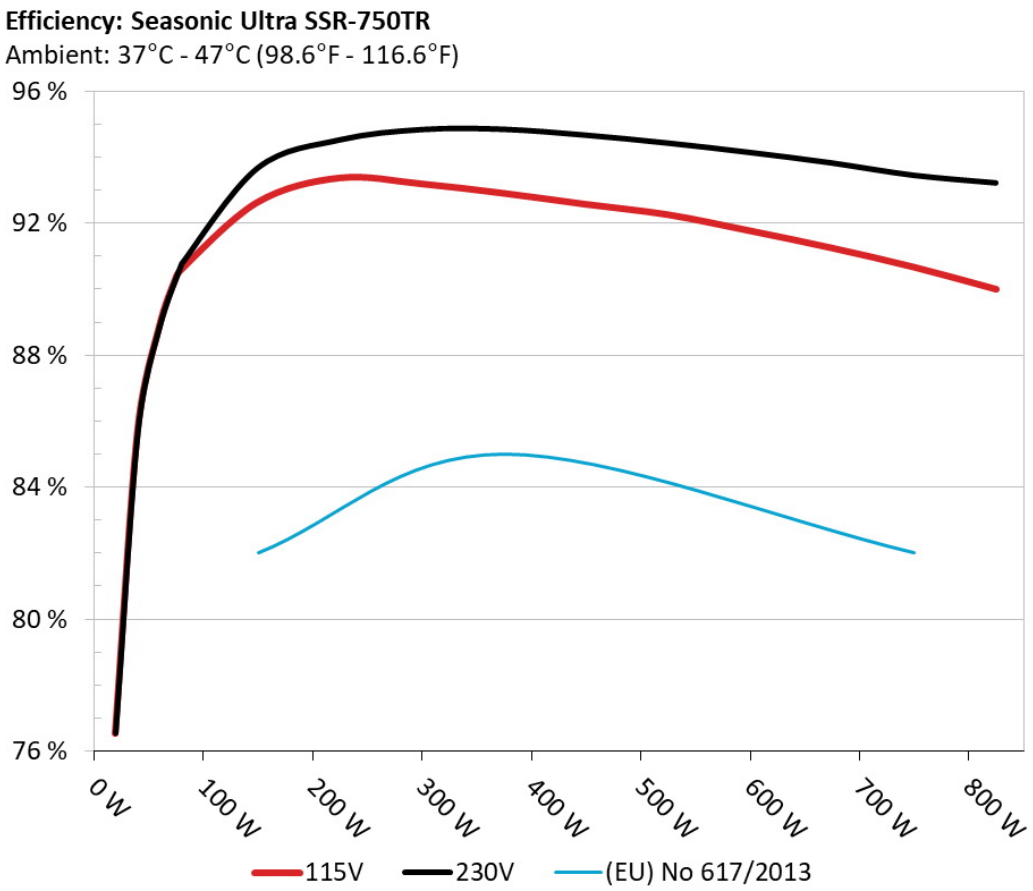
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

230V



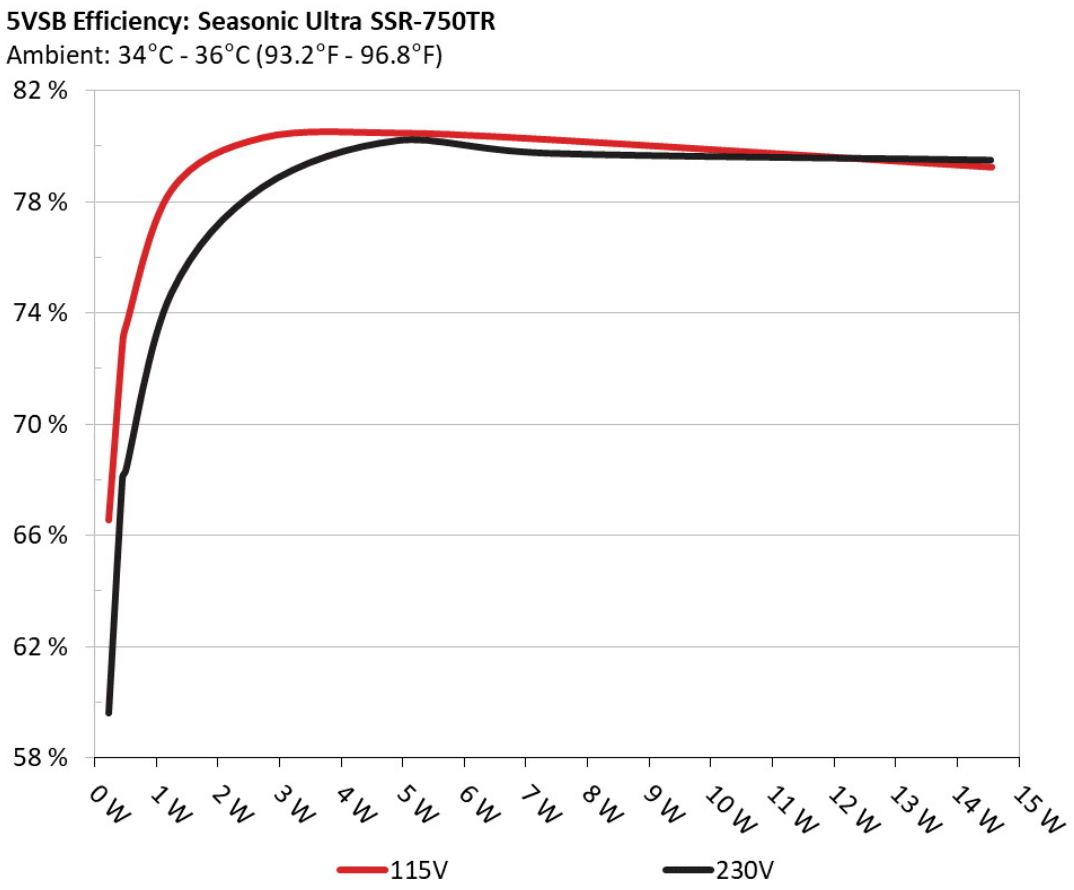
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance



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□□□□



□□

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input.

□□□□ □□ 5Vsb □□ (ErP Lot3/6 & CEC)

115V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.223	66.567%	0.029
	4.960V	0.335		115.27V
2	0.090A	0.446	72.876%	0.052
	4.958V	0.612		115.27V
3	0.550A	2.717	80.290%	0.238
	4.941V	3.384		115.26V
4	1.000A	4.924	80.458%	0.342
	4.924V	6.120		115.26V
5	1.500A	7.359	80.225%	0.405
	4.906V	9.173		115.26V
6	3.000A	14.558	79.236%	0.484
	4.853V	18.373		115.24V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.223	59.626%	0.010
	4.960V	0.374		230.83V
2	0.090A	0.446	68.092%	0.018
	4.958V	0.655		230.84V
3	0.550A	2.717	78.526%	0.092
	4.940V	3.460		230.83V
4	1.000A	4.923	80.205%	0.154
	4.923V	6.138		230.83V
5	1.500A	7.355	79.746%	0.213
	4.903V	9.223		230.82V
6	3.000A	14.536	79.497%	0.325
	4.845V	18.285		230.82V

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.349A	1.985A	1.984A	0.997A	74.359	90.309%	380	9.6	38.09°C	0.959
	12.133V	5.035V	3.325V	5.015V	82.338				43.03°C	115.28V
2	9.749A	2.980A	2.978A	1.198A	149.282	92.638%	380	9.6	38.38°C	0.987
	12.143V	5.034V	3.323V	5.011V	161.146				43.38°C	115.18V
3	15.551A	3.478A	3.460A	1.398A	224.804	93.378%	380	9.6	38.74°C	0.993
	12.141V	5.033V	3.322V	5.007V	240.745				44.79°C	115.07V
4	21.283A	3.974A	3.973A	1.599A	299.588	93.197%	395	10.5	38.99°C	0.992
	12.141V	5.032V	3.321V	5.003V	321.458				45.85°C	115.07V
5	26.692A	4.970A	4.968A	1.800A	374.544	92.913%	435	10.7	39.89°C	0.991
	12.140V	5.032V	3.320V	5.000V	403.112				46.96°C	114.98V
6	32.095A	5.963A	5.965A	2.002A	449.442	92.580%	485	12.8	40.56°C	0.992
	12.140V	5.032V	3.319V	4.997V	485.461				47.86°C	114.88V
7	37.534A	6.957A	6.959A	2.203A	524.761	92.264%	370	10.4	41.09°C	0.993
	12.140V	5.031V	3.319V	4.994V	568.758				48.69°C	114.86V
8	42.966A	7.951A	7.957A	2.405A	600.065	91.773%	460	11.9	42.50°C	0.994
	12.141V	5.032V	3.318V	4.991V	653.860				50.25°C	114.75V
9	48.773A	8.449A	8.440A	2.404A	674.607	91.256%	540	15.8	43.61°C	0.995
	12.140V	5.031V	3.317V	4.992V	739.246				51.74°C	114.64V
10	54.376A	8.946A	8.954A	3.014A	749.837	90.675%	635	19.6	45.07°C	0.996
	12.140V	5.031V	3.317V	4.978V	826.954				53.50°C	114.63V
11	60.582A	8.948A	8.957A	3.014A	825.067	90.005%	1020	32.2	46.78°C	0.996
	12.138V	5.031V	3.316V	4.978V	916.691				55.69°C	114.51V
CL1	0.735A	12.003A	12.000A	0.000A	109.269	89.256%	440	11.6	43.62°C	0.980
	12.139V	5.036V	3.325V	5.063V	122.422				50.82°C	115.22V

CL2	62.011A	1.003A	0.999A	1.000A	765.999	90.858%	635	19.6	44.93°C	0.996
	12.137V	5.033V	3.317V	5.010V	843.072				53.14°C	114.61V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.356A	1.986A	1.983A	0.997A	74.427	90.778%	380	9.6	38.11°C	0.763
	12.130V	5.034V	3.324V	5.015V	81.988				43.85°C	230.64V
2	9.754A	2.980A	2.979A	1.198A	149.316	93.684%	380	9.6	38.48°C	0.883
	12.140V	5.034V	3.323V	5.011V	159.383				44.32°C	230.76V
3	15.555A	3.478A	3.462A	1.398A	224.812	94.539%	380	9.6	38.74°C	0.933
	12.138V	5.033V	3.322V	5.007V	237.797				45.01°C	230.82V
4	21.288A	3.973A	3.973A	1.599A	299.584	94.851%	395	10.5	39.20°C	0.955
	12.138V	5.033V	3.321V	5.003V	315.846				45.74°C	230.76V
5	26.697A	4.969A	4.968A	1.800A	374.520	94.857%	435	10.7	39.76°C	0.966
	12.137V	5.032V	3.320V	5.000V	394.825				46.36°C	230.71V
6	32.101A	5.962A	5.967A	2.002A	449.419	94.681%	485	12.8	40.57°C	0.974
	12.137V	5.032V	3.319V	4.997V	474.667				47.55°C	230.65V
7	37.537A	6.956A	6.960A	2.203A	524.729	94.442%	370	10.4	41.18°C	0.979
	12.138V	5.032V	3.319V	4.994V	555.608				48.73°C	230.59V
8	42.975A	7.950A	7.957A	2.405A	600.043	94.155%	460	11.9	42.29°C	0.982
	12.138V	5.032V	3.318V	4.992V	637.294				50.04°C	230.46V
9	48.779A	8.447A	8.440A	2.404A	674.573	93.839%	525	13.8	43.79°C	0.986
	12.138V	5.031V	3.317V	4.992V	718.861				51.83°C	230.58V
10	54.387A	8.947A	8.955A	3.014A	749.806	93.463%	625	19.5	45.07°C	0.987
	12.137V	5.031V	3.316V	4.978V	802.253				53.22°C	230.52V
11	60.585A	8.946A	8.956A	3.014A	825.029	93.234%	945	31.6	46.18°C	0.987
	12.137V	5.031V	3.316V	4.978V	884.897				54.69°C	230.29V
CL1	0.734A	12.002A	11.999A	0.000A	109.247	89.781%	460	11.9	44.28°C	0.839
	12.137V	5.036V	3.325V	5.063V	121.682				50.28°C	230.97V

CL2	62.008A	1.001A	0.999A	1.000A	765.894	93.783%	625	19.5	45.56°C	0.987
	12.136V	5.034V	3.317V	5.011V	816.666				51.88°C	230.51V

The results above are not used in the certification process

20-80□□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.178A	0.494A	0.480A	0.199A	19.377	76.550%	0	<6.0	0.779
	12.130V	5.037V	3.327V	5.033V	25.313				115.35V
2	2.432A	0.991A	0.991A	0.398A	39.787	85.707%	0	<6.0	0.899
	12.131V	5.034V	3.325V	5.027V	46.422				115.32V
3	3.623A	1.487A	1.473A	0.597A	59.334	88.834%	0	<6.0	0.945
	12.131V	5.035V	3.325V	5.023V	66.792				115.30V
4	4.875A	1.985A	1.983A	0.797A	79.733	90.603%	0	<6.0	0.961
	12.132V	5.035V	3.325V	5.020V	88.003				115.29V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.190A	0.495A	0.479A	0.199A	19.522	76.653%	0	<6.0	0.461
	12.128V	5.038V	3.327V	5.034V	25.468				230.84V
2	2.441A	0.993A	0.993A	0.398A	39.909	85.785%	0	<6.0	0.628
	12.129V	5.035V	3.325V	5.027V	46.522				230.83V
3	3.631A	1.488A	1.473A	0.597A	59.432	89.374%	0	<6.0	0.719
	12.130V	5.035V	3.324V	5.024V	66.498				230.82V
4	4.882A	1.986A	1.984A	0.797A	79.809	91.162%	380	9.6	0.775
	12.129V	5.035V	3.324V	5.020V	87.546				230.81V

The results above are not used in the certification process

□□□□

115V

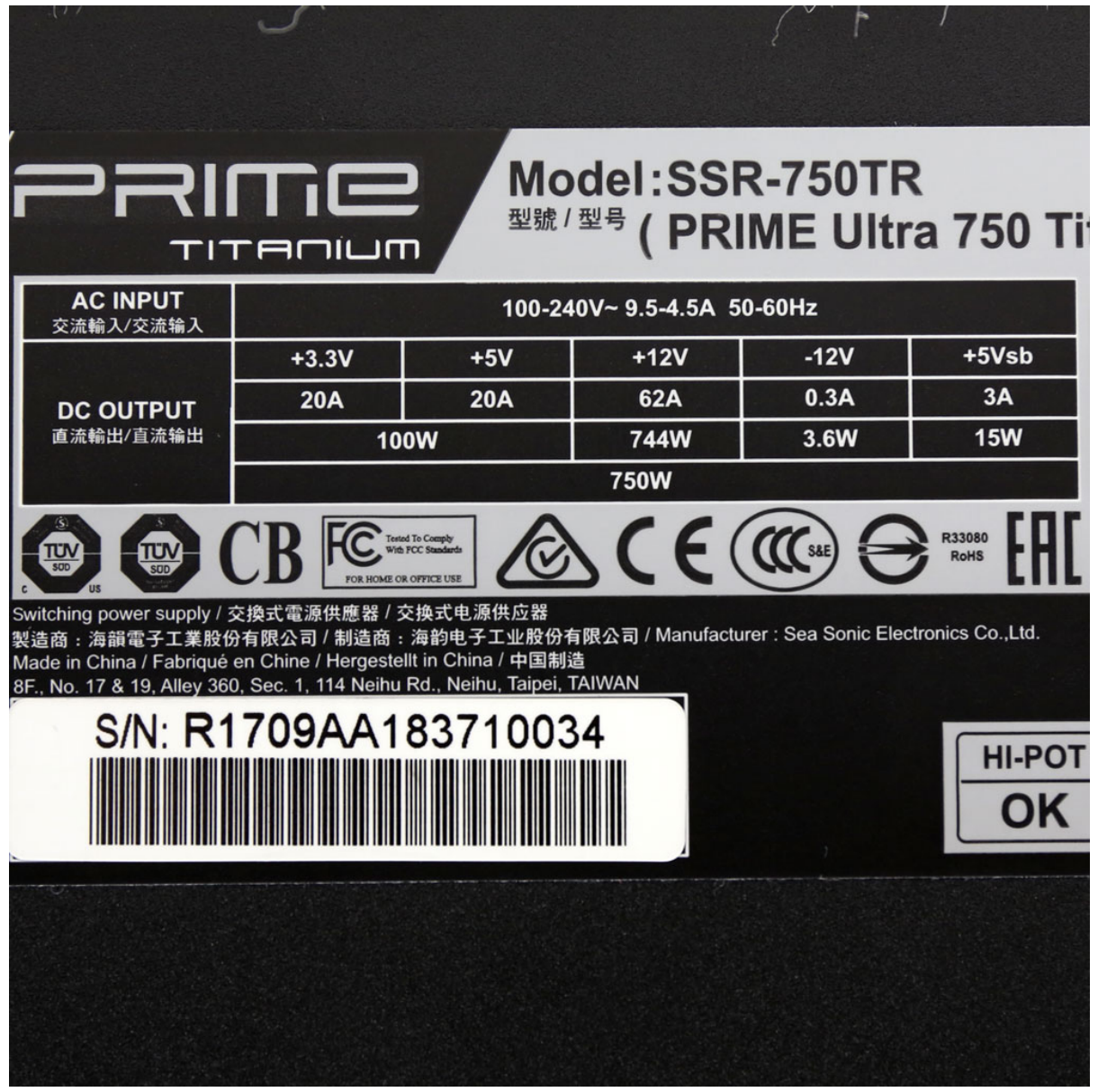
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.4 mV	2.5 mV	3.6 mV	2.6 mV	Pass
20% Load	21.2 mV	3.2 mV	4.7 mV	3.1 mV	Pass
30% Load	10.2 mV	3.2 mV	4.8 mV	2.9 mV	Pass
40% Load	10.2 mV	3.6 mV	4.7 mV	3.4 mV	Pass
50% Load	11.6 mV	4.1 mV	5.3 mV	3.8 mV	Pass
60% Load	12.2 mV	4.7 mV	5.9 mV	4.5 mV	Pass
70% Load	13.8 mV	4.8 mV	6.4 mV	5.0 mV	Pass
80% Load	14.9 mV	4.6 mV	7.1 mV	5.1 mV	Pass
90% Load	14.8 mV	4.5 mV	7.0 mV	5.0 mV	Pass
100% Load	16.2 mV	5.5 mV	7.6 mV	6.0 mV	Pass
110% Load	17.4 mV	5.7 mV	8.3 mV	6.6 mV	Pass
Crossload 1	21.0 mV	5.2 mV	7.1 mV	3.1 mV	Pass
Crossload 2	16.7 mV	3.3 mV	5.0 mV	5.1 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.2 mV	2.5 mV	3.6 mV	2.4 mV	Pass
20% Load	23.3 mV	3.3 mV	5.0 mV	3.3 mV	Pass
30% Load	10.4 mV	3.0 mV	4.6 mV	2.9 mV	Pass
40% Load	10.5 mV	3.4 mV	4.9 mV	3.3 mV	Pass
50% Load	11.9 mV	3.9 mV	5.4 mV	3.8 mV	Pass
60% Load	12.4 mV	4.7 mV	5.9 mV	4.6 mV	Pass
70% Load	13.7 mV	4.5 mV	6.1 mV	4.8 mV	Pass
80% Load	15.5 mV	4.3 mV	6.9 mV	4.9 mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	15.5 mV	4.7 mV	7.5 mV	5.4 mV	Pass
100% Load	16.6 mV	5.2 mV	7.7 mV	6.2 mV	Pass
110% Load	17.6 mV	5.4 mV	8.1 mV	6.4 mV	Pass
Crossload 1	25.0 mV	5.3 mV	7.3 mV	3.3 mV	Pass
Crossload 2	16.5 mV	2.8 mV	4.7 mV	5.3 mV	Pass

The results above are not used in the certification process

Seasonic Prime Titanium Ultra 750W

Top side

Power specifications label

本测试报告中包含的所有数据和图表均可在以下条件下由任何人使用：使用过程需提及测试结果由 Cybenetics提供。
在任何情况下都应提供原始测试结果文档的网站链接

Cybenetics 提供自愿性认证计划：电源方面有 ETA (效率)、 LAMBDA (噪声) 与 SAFE (安全与正确运行)；散热产品方面有 DELTA (机箱隔音) 与 PHI (风扇风量与静压)