Seasonic Prime Titanium 750W

R1606TA106430003

Lab ID 48

Certification ID 2548

Test Result Report ID:

Certificate Issue Date: Jan 22, 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 750W
OEM/ODM	Seasonic
Serial Number	R1606TA106430003
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 (HA13525M12F-Z)
□□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	48
Date of receipt	Jan 5, 2018
Testing Date	Jan 18, 2018
Report Issued Date	Jan 22, 2018
□□□□□	Retested on 4/7/17
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□□ (Non-accredited measurements)

□□□□□			
□□	□□□□	□□□□□□	Gauge
ATX □□ 20+4 pin (620mm)	1	1	18-22AWG
4+4 pin EPS 12V □□ (650mm)	2	2	18AWG
6+2pin PCIe□□ (680mm+80mm)	4	4	18AWG
SATA□□ (450mm+110mm+110mm+110mm)	2	8	18AWG
SATA□□ (350mm+110mm)	1	2	18AWG
□ 4pin Molex□□ (350mm+120mm)	1	2	18AWG
□ 4pin Molex□□ (450mm+120mm+120mm)	1	3	18AWG

□ 4pin □□ (+110mm)	1	1	22AWG

□□□□

□		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)	92.387%
Average Noise Output (>1450 Load Combinations)	16.89dBA
PF□□□ (>1450 Load Combinations)	0.989
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
□□□□□□	0.0576W
Non-Accredited	
12V Ripple (Full Load)	-
5V Ripple (Full Load)	-
3.3V Ripple (Full Load)	-
5VSB Ripple (Full Load)	-
12V Load Regulation	-

5V Load Regulation	-
3.3V Load Regulation	-
5VSB Load Regulation	-
Inrush Current	-

230V

Accredited	
□□□□ (>1450 load combinations)	94.199%
Average Noise Output (>1450 Load Combinations)	16.59dBA
PF□□□ (>1450 Load Combinations)	0.945
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
□□□□□□	0.0996W
Non-Accredited	
12V Ripple (Full Load)	-
5V Ripple (Full Load)	-
3.3V Ripple (Full Load)	-
5VSB Ripple (Full Load)	-
12V Load Regulation	-
5V Load Regulation	-
3.3V Load Regulation	-
5VSB Load Regulation	-
Inrush Current	-
□□□□ & PG□□	0.00ms
AC Loss to PWR_OK Hold Up Time	0.00ms
PWR_OK Inactive to DC Loss Delay	0.00ms
OPP (0.00°C / 0.00°C)	- -

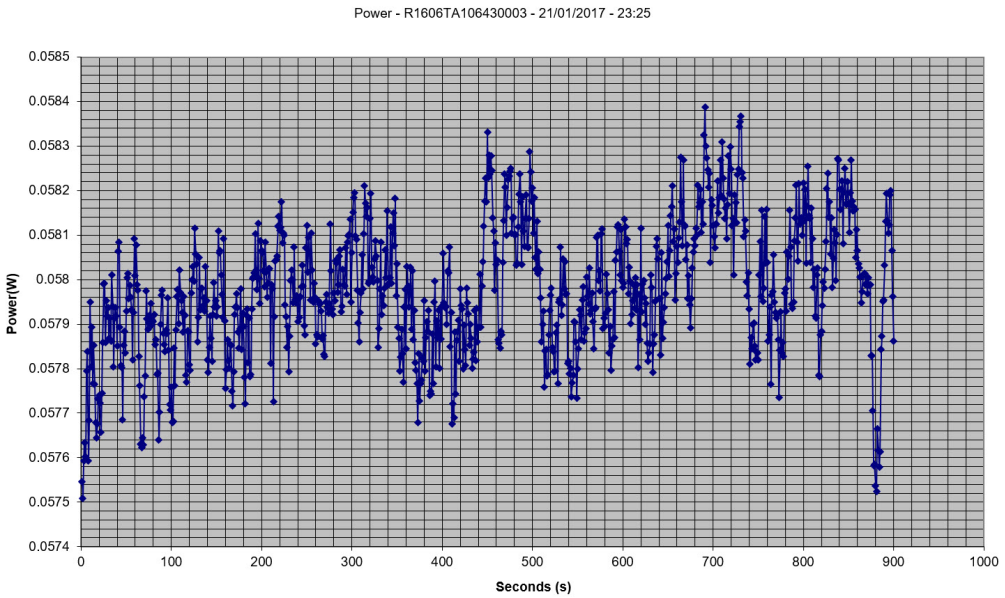
□□□□ & PG□□

Hold-Up Time (ms)	33.4
AC Loss to PWR_OK Hold Up Time (ms)	32.2

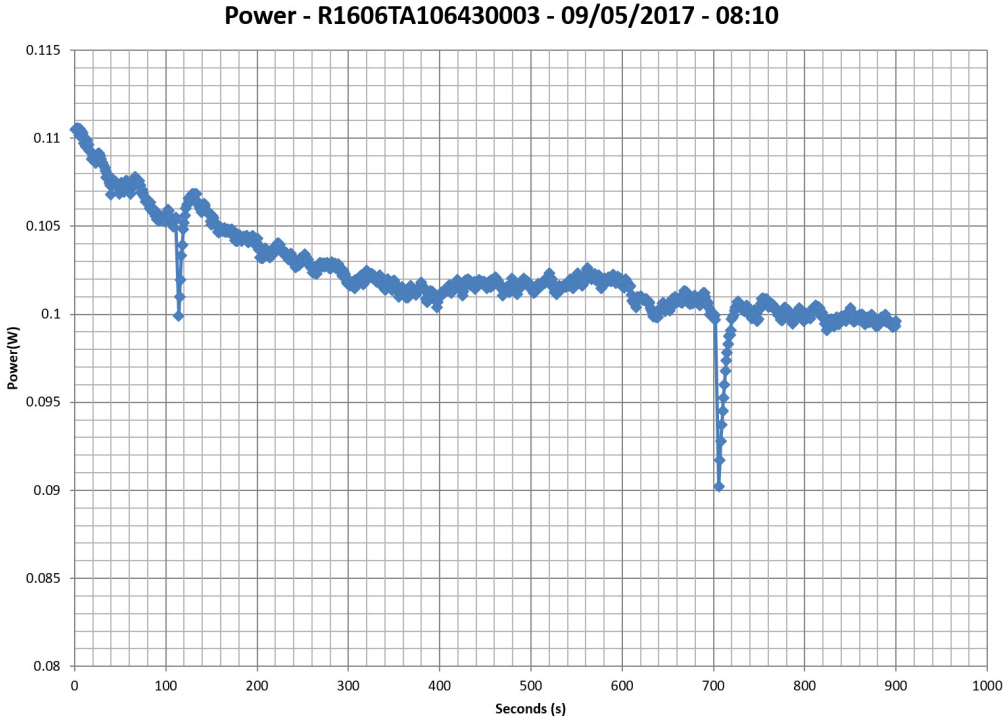
PWR_OK Inactive to DC Loss Delay (ms)	1.2

Graphs

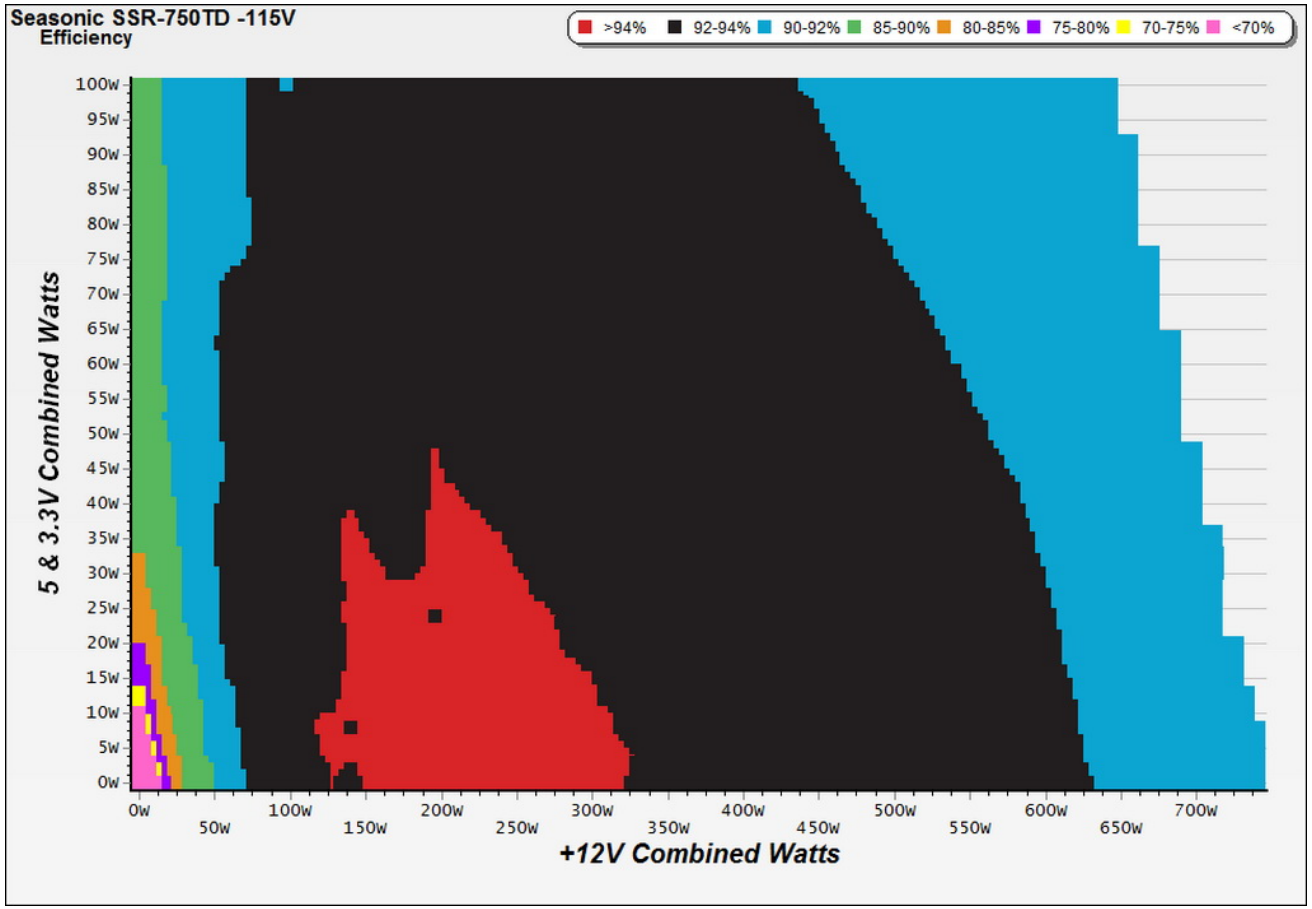
115V



230V



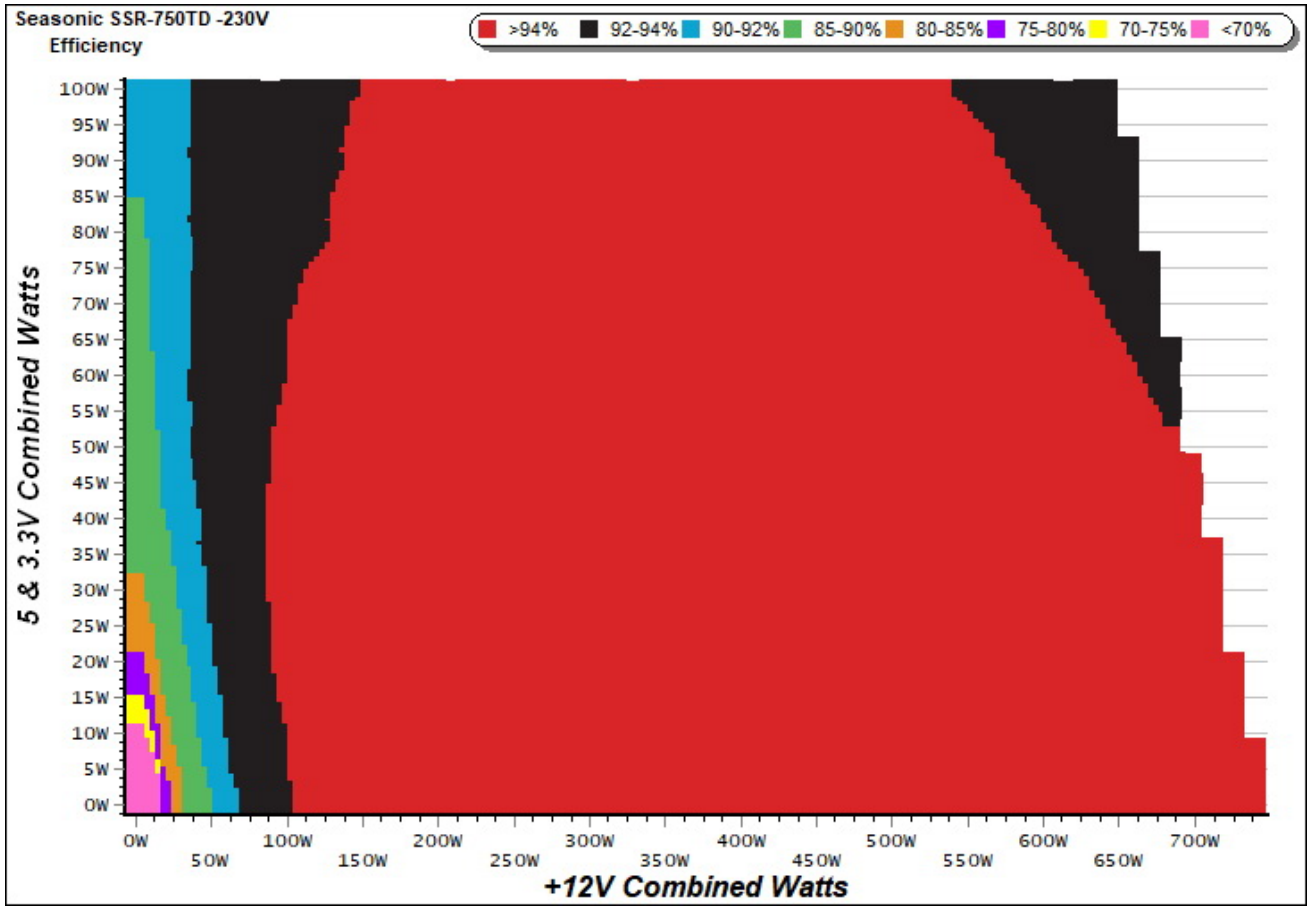
115V



□□

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.

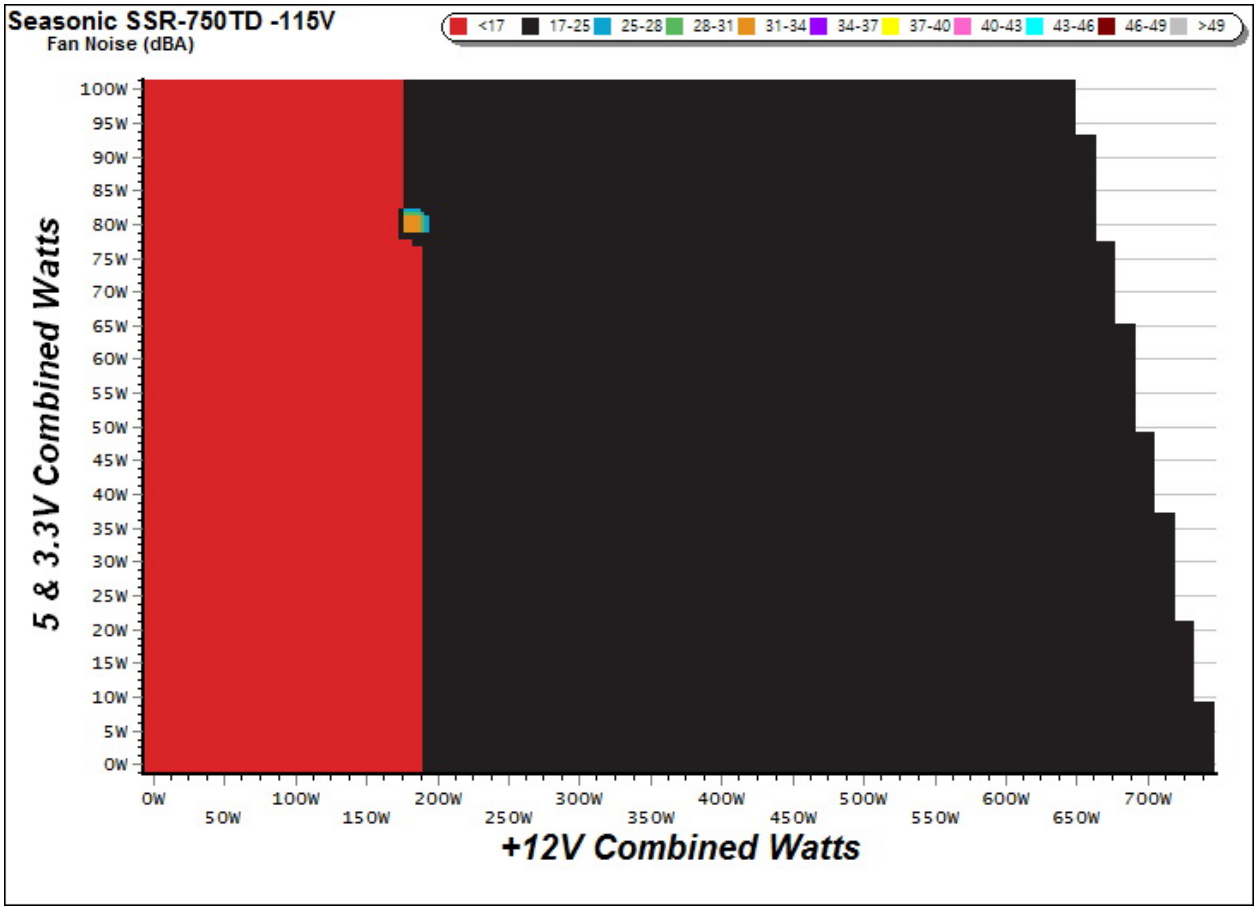
230V



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.

□□□□□

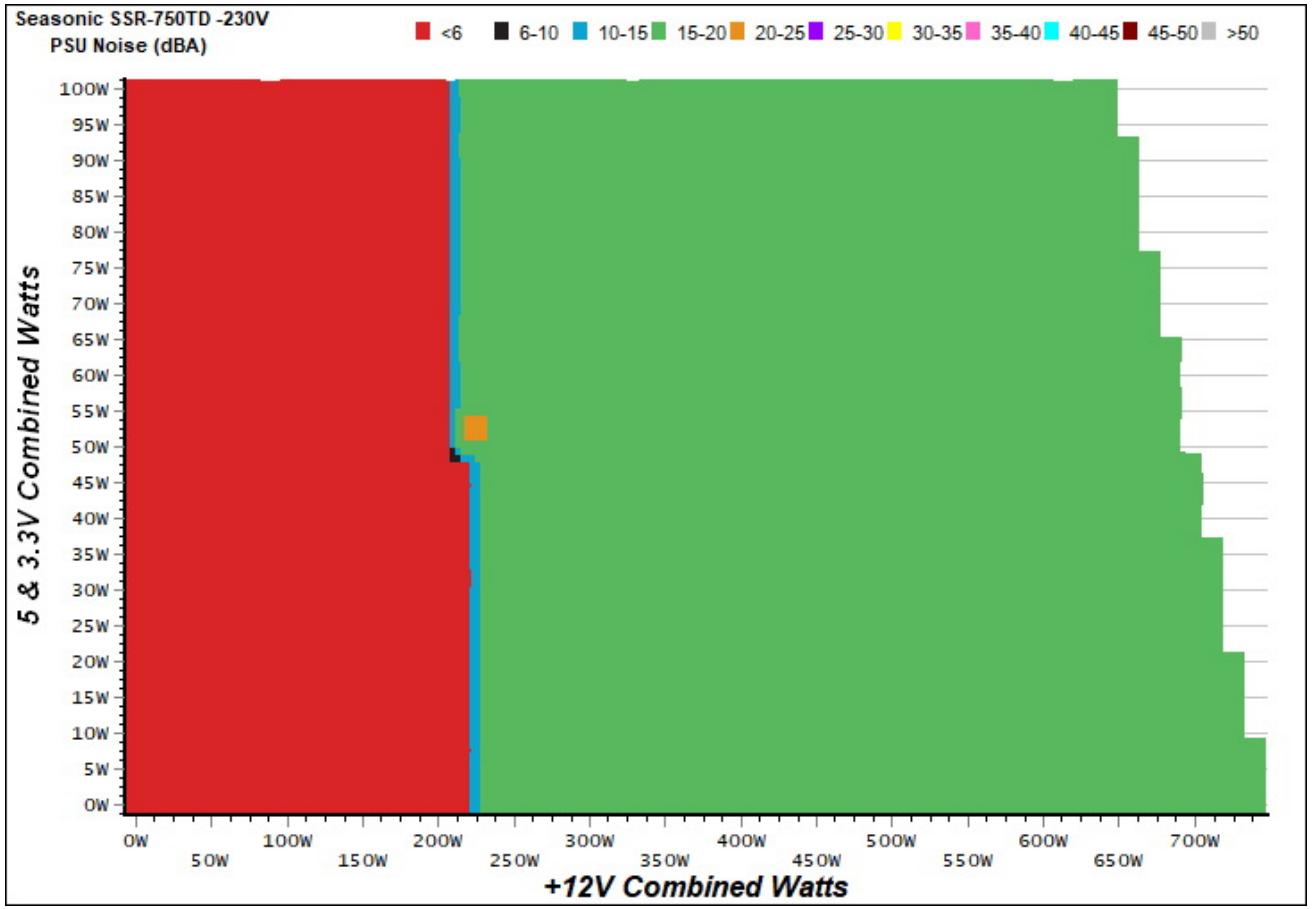
115V



□□

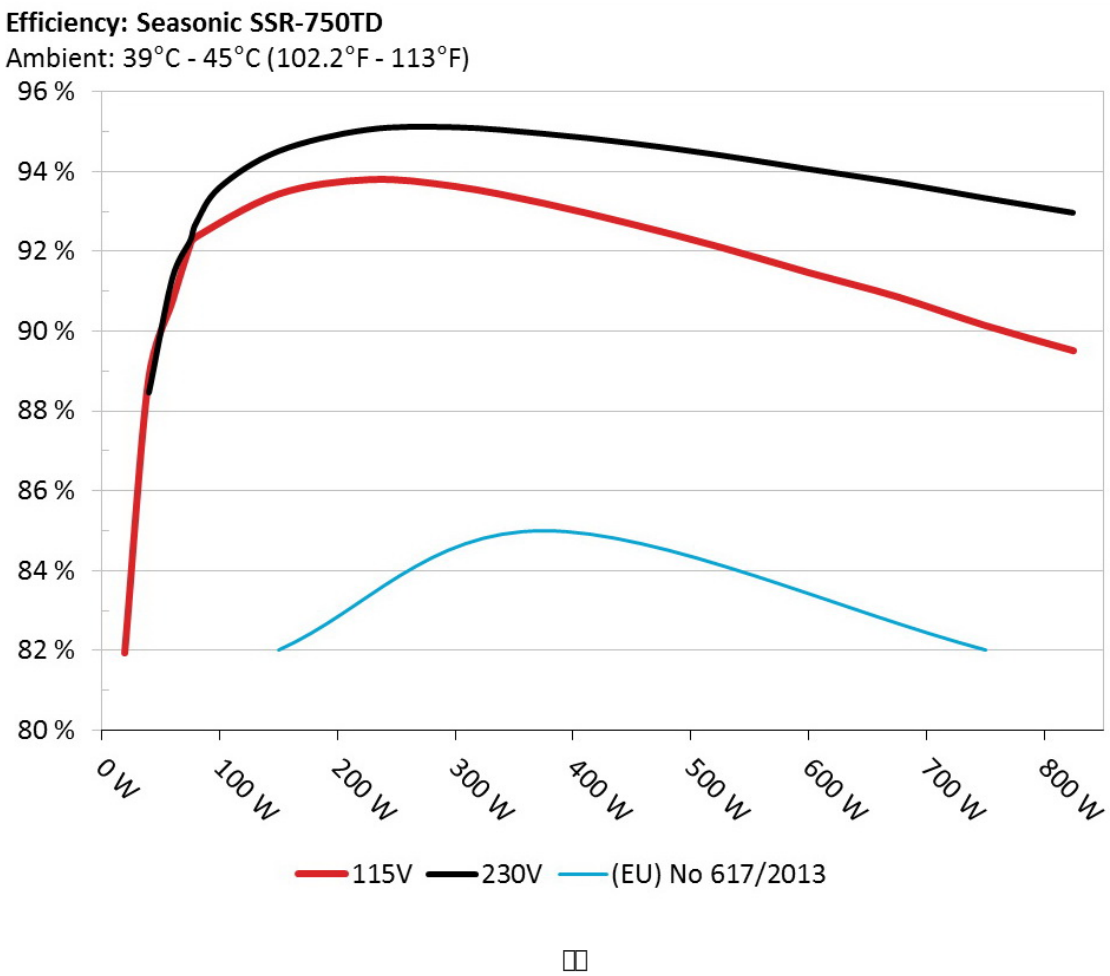
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

230V



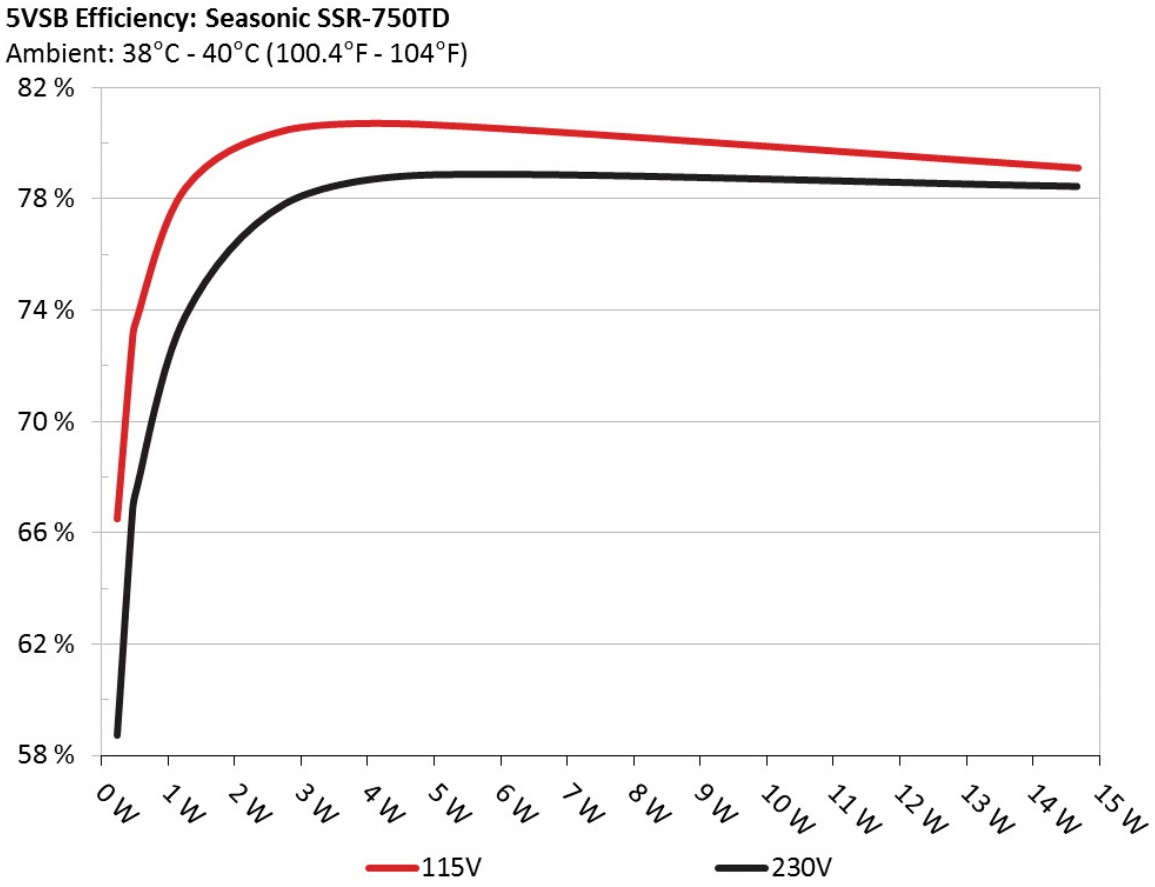
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

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	0.047A	0.236	66.479%	0.040
	5.013V	0.355		115.10V
2	0.092A	0.461	72.828%	0.070
	5.011V	0.633		115.10V
3	0.552A	2.756	80.444%	0.273
	4.992V	3.426		115.09V
4	3.002A	14.680	79.039%	0.476
	4.890V	18.573		115.08V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.047A	0.236	58.706%	0.014
	5.013V	0.402		230.24V
2	0.092A	0.461	66.618%	0.024
	5.011V	0.692		230.23V
3	0.552A	2.754	77.819%	0.112
	4.990V	3.539		230.24V
4	3.002A	14.659	78.445%	0.335
	4.883V	18.687		230.24V

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.367A	1.973A	1.973A	0.991A	74.748	92.137%	0	0	43.08°C	0.966
	12.178V	5.057V	3.344V	5.036V	81.127				38.25°C	115.05V
2	9.771A	2.958A	2.963A	1.191A	149.760	93.441%	0	0	43.56°C	0.986
	12.171V	5.053V	3.340V	5.032V	160.272				38.57°C	115.05V
3	15.522A	3.466A	3.474A	1.390A	224.873	92.807%	490	17.8	37.91°C	0.992
	12.163V	5.050V	3.336V	5.026V	242.302				39.74°C	115.05V
4	21.271A	3.963A	3.957A	1.593A	299.735	93.636%	490	17.8	38.26°C	0.994
	12.155V	5.047V	3.333V	5.019V	320.107				40.43°C	115.04V
5	26.696A	4.959A	4.954A	1.794A	374.770	93.213%	490	17.8	39.65°C	0.992
	12.147V	5.043V	3.329V	5.013V	402.058				42.27°C	115.02V
6	32.116A	5.952A	5.953A	1.995A	449.660	92.690%	510	18.2	40.32°C	0.992
	12.140V	5.039V	3.324V	5.008V	485.122				43.22°C	115.03V
7	37.545A	6.953A	6.954A	2.197A	524.597	92.114%	400	16.6	41.34°C	0.993
	12.132V	5.036V	3.321V	5.003V	569.508				44.53°C	115.02V
8	42.986A	7.947A	7.958A	2.402A	599.604	91.475%	510	18.2	42.53°C	0.994
	12.125V	5.033V	3.317V	4.998V	655.484				46.21°C	115.04V
9	48.867A	8.456A	8.475A	2.401A	674.680	90.869%	570	20.6	44.21°C	0.995
	12.116V	5.029V	3.314V	4.996V	742.477				48.45°C	115.07V
10	54.494A	8.959A	8.968A	3.012A	749.538	90.146%	670	21.6	44.60°C	0.996
	12.108V	5.025V	3.312V	4.981V	831.469				49.15°C	115.08V
11	60.719A	8.965A	8.978A	3.011A	824.347	89.514%	780	24.8	44.85°C	0.996
	12.099V	5.021V	3.309V	4.977V	920.915				49.85°C	115.09V
CL1	0.099A	12.012A	12.006A	0.004A	101.893	88.630%	510	18.2	43.93°C	0.979
	12.190V	5.049V	3.333V	5.092V	114.964				47.87°C	115.10V

CL2	62.453A	1.003A	1.002A	1.002A	768.774	90.408%	700	22.7	44.76°C	0.996
	12.095V	5.034V	3.324V	5.015V	850.336				49.37°C	115.07V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.369A	1.974A	1.970A	0.991A	74.792	92.352%	400	16.6	40.14°C	0.781
	12.181V	5.059V	3.347V	5.038V	80.986				43.81°C	230.25V
2	9.764A	2.959A	2.954A	1.191A	149.770	94.641%	400	16.6	40.61°C	0.896
	12.180V	5.058V	3.345V	5.035V	158.250				44.59°C	230.26V
3	15.504A	3.465A	3.470A	1.391A	224.937	95.224%	430	17.3	41.11°C	0.940
	12.179V	5.056V	3.343V	5.029V	236.218				45.79°C	230.26V
4	21.236A	3.953A	3.945A	1.591A	299.769	95.345%	430	17.3	41.78°C	0.959
	12.178V	5.055V	3.341V	5.025V	314.403				46.78°C	230.26V
5	26.630A	4.949A	4.938A	1.791A	374.772	95.212%	490	18.0	42.26°C	0.971
	12.177V	5.054V	3.340V	5.021V	393.617				47.76°C	230.26V
6	32.022A	5.935A	5.929A	1.991A	449.677	95.003%	520	18.5	42.89°C	0.977
	12.176V	5.053V	3.339V	5.018V	473.331				48.80°C	230.26V
7	37.416A	6.930A	6.917A	2.192A	524.672	94.712%	422	17.5	43.07°C	0.982
	12.176V	5.053V	3.338V	5.013V	553.968				49.29°C	230.27V
8	42.812A	7.918A	7.910A	2.395A	599.621	94.380%	505	18.1	43.67°C	0.984
	12.175V	5.052V	3.336V	5.009V	635.326				50.50°C	230.27V
9	48.641A	8.422A	8.425A	2.395A	674.730	94.052%	555	19.5	44.09°C	0.987
	12.173V	5.050V	3.335V	5.008V	717.402				51.27°C	230.27V
10	54.209A	8.919A	8.908A	3.000A	749.543	93.664%	700	22.7	45.05°C	0.989
	12.172V	5.049V	3.334V	4.993V	800.246				52.69°C	230.27V
11	60.362A	8.920A	8.912A	3.003A	824.329	93.275%	850	27.7	46.92°C	0.989
	12.170V	5.048V	3.333V	4.992V	883.763				54.86°C	230.28V
CL1	0.101A	12.013A	12.004A	0.005A	102.194	90.234%	440	17.3	42.53°C	0.841
	12.186V	5.059V	3.346V	5.089V	113.254				48.60°C	230.26V

CL2	61.948A	1.002A	1.002A	1.002A	767.411	93.970%	670	21.6	45.16°C	0.989
	12.171V	5.050V	3.337V	5.028V	816.659				52.18°C	230.28V

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	1.200A	0.491A	0.477A	0.195A	19.683	81.934%	0	0	0.796
	12.179V	5.060V	3.348V	5.055V	24.023				115.03V
2	2.421A	0.978A	0.985A	0.396A	39.723	88.768%	0	0	0.910
	12.178V	5.058V	3.345V	5.049V	44.749				115.03V
3	3.647A	1.477A	1.494A	0.591A	59.861	90.734%	0	0	0.950
	12.178V	5.057V	3.345V	5.045V	65.974				115.04V
4	4.861A	1.974A	1.971A	0.791A	79.747	92.360%	0	0	0.966
	12.177V	5.055V	3.343V	5.041V	86.344				115.04V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.200A	0.491A	0.476A	0.196A	19.686	80.240%	400	16.6	0.484
	12.179V	5.062V	3.350V	5.057V	24.534				230.25V
2	2.424A	0.978A	0.986A	0.396A	39.769	88.344%	400	16.6	0.651
	12.179V	5.059V	3.347V	5.049V	45.016				230.25V
3	3.650A	1.476A	1.490A	0.591A	59.893	91.370%	400	16.6	0.737
	12.180V	5.059V	3.347V	5.047V	65.550				230.24V
4	4.860A	1.976A	1.970A	0.791A	79.771	92.718%	400	16.6	0.794
	12.180V	5.058V	3.347V	5.042V	86.036				230.25V

The results above are not used in the certification process

□□□□

115V

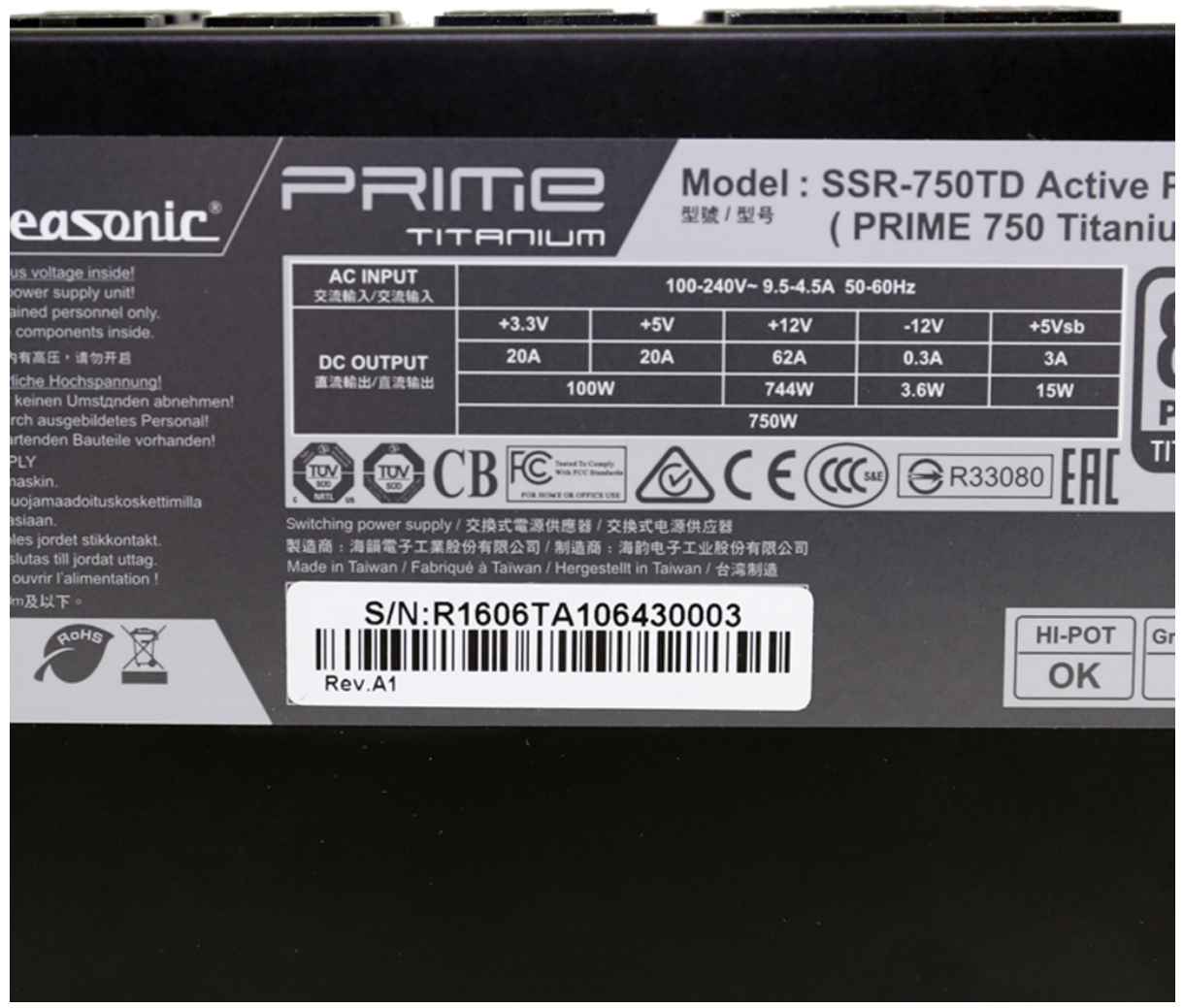
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.5 mV	3.7 mV	3.8 mV	3.5 mV	Pass
20% Load	9.5 mV	3.9 mV	4.1 mV	3.5 mV	Pass
30% Load	10.8 mV	4.4 mV	4.5 mV	3.8 mV	Pass
40% Load	11.2 mV	4.4 mV	5.1 mV	4.2 mV	Pass
50% Load	8.3 mV	4.9 mV	5.5 mV	4.6 mV	Pass
60% Load	7.9 mV	5.4 mV	6.2 mV	4.9 mV	Pass
70% Load	8.4 mV	5.3 mV	6.6 mV	5.5 mV	Pass
80% Load	9.1 mV	5.6 mV	6.0 mV	6.9 mV	Pass
90% Load	10.2 mV	5.7 mV	6.2 mV	7.4 mV	Pass
100% Load	11.0 mV	5.7 mV	6.6 mV	7.3 mV	Pass
113% Load	12.0 mV	6.1 mV	7.7 mV	8.0 mV	Pass
Crossload 1	8.2 mV	5.2 mV	5.4 mV	4.0 mV	Pass
Crossload 2	11.3 mV	4.3 mV	5.9 mV	6.5 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.0 mV	5.2 mV	11.1 mV	5.6 mV	Pass
20% Load	10.8 mV	5.0 mV	10.9 mV	5.6 mV	Pass
30% Load	12.5 mV	5.2 mV	11.5 mV	6.1 mV	Pass
40% Load	12.1 mV	5.1 mV	11.9 mV	6.5 mV	Pass
50% Load	9.6 mV	4.7 mV	9.9 mV	6.9 mV	Pass
60% Load	9.4 mV	5.7 mV	11.7 mV	7.4 mV	Pass
70% Load	9.5 mV	5.4 mV	12.8 mV	8.4 mV	Pass
80% Load	10.7 mV	6.6 mV	12.1 mV	9.3 mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	11.3 mV	6.5 mV	13.7 mV	10.0 mV	Pass
100% Load	12.8 mV	6.1 mV	13.7 mV	11.4 mV	Pass
110% Load	14.3 mV	6.3 mV	14.2 mV	12.0 mV	Pass
Crossload 1	10.4 mV	6.1 mV	12.4 mV	6.8 mV	Pass
Crossload 2	12.1 mV	5.1 mV	12.9 mV	10.6 mV	Pass

The results above are not used in the certification process

Seasonic Prime Titanium 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。
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