SILVERSTONE

SilverStone SFX Platinum 750W

Lab ID SL19750123

Certification ID 25868

Test Result Report ID:

Certificate Issue Date: Oct 15, 2019

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	SilverStone
Model	SFX Platinum 750W
OEM/ODM	Enhance Electronics
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	9-4
□□□□ (Hz)	50-60

□□□□ (W)	750
Operating Temperature (Continuous Full Load) (°C)	
□□	SFX
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	92mm Double Ball Bearing Fan (B0921512HB)
□□□□□	✓
Cybenetics Testing Information	
Lab ID	SL19750123
Date of receipt	Sep 30, 2019
Testing Date	Jul 10, 2019
Report Issued Date	Oct 15, 2019
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (300-340mm)	1	1	16-22AWG	□
4+4 pin EPS 12V □□ (400mm)	1	1	16AWG	□
6+2pin PCIe□□ (400mm+150mm)	2	4	16-18AWG	□
SATA□□ (300mm+190mm+90mm+90mm)	2	8	18AWG	□
4-pin Molex (310mm+200mm+200mm)	1	3	18AWG	□

		3.3V	5V	12V	5VSB	-12V
		20	20	62.5	3	0.3
		120		750	15	3.6
(W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Enhance Electronics
PCB Type	Double Sided
Primary Side	
Transient Filter	6x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor
Bridge Rectifier(s)	1x
APFC MOSFETS	2x Infineon IPP60R080P7 (650V, 23A @ 100°C, 0.08Ohm)
APFC Boost Diode	1x UnitedSiC UJ3D06516TS (650V, 16A @ 152°C)
Hold-up Cap(s)	1x Rubycon (420V, 470uF, 3,000h @ 105°C, MXK)
Main Switchers	4x Oriental Semiconductor OSG55R140FF (550V, 14.5A @ 100°C, 0.14Ohm)
IC Driver	2x Silicon Labs Si8230BD
APFC Controller	ATK AT6101L & CM03X Green PFC Controller
Resonant Controllers	Champion CM6901T6
Topology	Primary side: Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Infineon BSC014N04LS (40V, 100A @ 100°C, 1.4mOhm)
5V & 3.3V	DC-DC Converters:4x Infineon BSC018NE2LS (25V, 97A @ 100°C, 1.8mOhm) PWM Controllers: ANPEC APW7159C
Filtering Capacitors	Electrolytics: 3x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Rubycon (3-6,000h @ 105°C, YXG) Polymers: 3x FPCAP, 19x Nichicon
Supervisor IC	SITI PS223 (OCP, OTP, OVP, UVP, SCP, PG)
Fan Model	Globe Fan B0921512HB (92mm, 12V, 0.45A, Ball Bearing Fan)

5VSB Circuit	
Rectifier	1xPFC PFR10V45CT SBR (45V, 10A) & Silan Microelectronics SVF2N70M FET (700V, 1.3A @ 100°C, 6.5Ohm)
Standby PWM Controller	ATK AT6002H

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓
ALPM (Alternative Low Power Mode) compatible	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	90.014%
Average Noise Output (>1450 Load Combinations)	38.49dBA
PF□□□ (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	70.293%
□□□□□	0.1002W
Non-Accredited	
12V Ripple (Full Load)	57.51mV
5V Ripple (Full Load)	9.57mV
3.3V Ripple (Full Load)	21.47mV
5VSB Ripple (Full Load)	29.41mV
12V Load Regulation	0.58%
5V Load Regulation	1.94%
3.3V Load Regulation	2.66%
5VSB Load Regulation	2.85%
Inrush Current	22.557A

230V

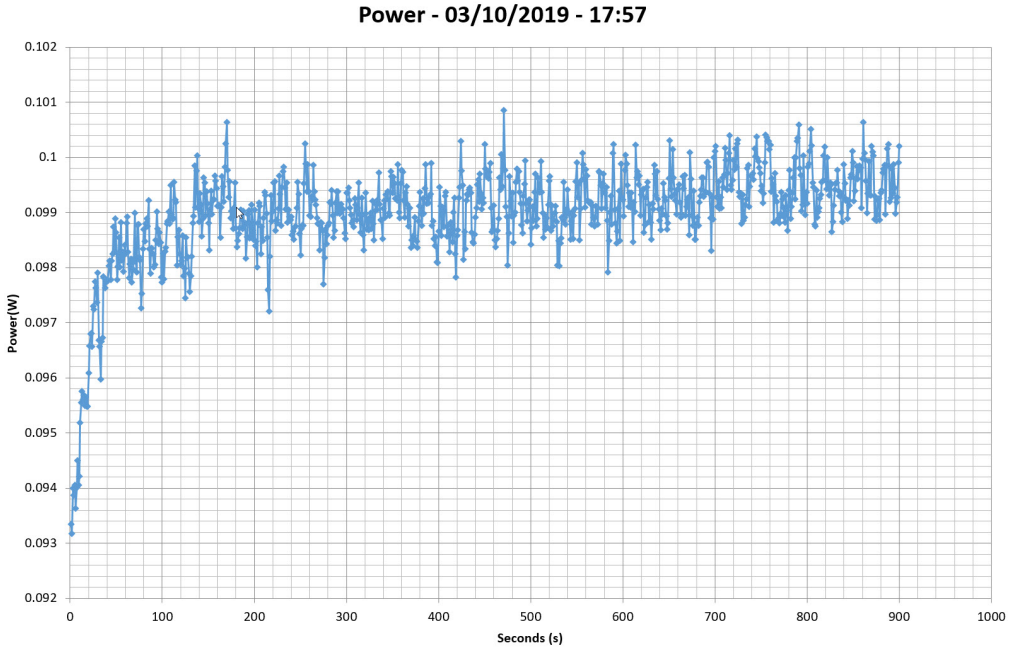
Accredited		
□□□□ (>1450 load combinations)		91.353%
Average Noise Output (>1450 Load Combinations)		39.09dBA
PF□□□ (>1450 Load Combinations)		0.959
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
□□□□□□		0.1227W
Non-Accredited		
12V Ripple (Full Load)		58.63mV
5V Ripple (Full Load)		9.47mV
3.3V Ripple (Full Load)		22.49mV
5VSB Ripple (Full Load)		28.78mV
12V Load Regulation		0.60%
5V Load Regulation		1.90%
3.3V Load Regulation		2.63%
5VSB Load Regulation		2.83%
Inrush Current		10.046A
□□□□ & PG□□		8.80ms
AC Loss to PWR_OK Hold Up Time		9.40ms
PWR_OK Inactive to DC Loss Delay		-0.60ms
PSU Timings: T1 (20% / 100%)	328.0ms	328.0ms
PSU Timings: T3 (20% / 100%)	110.0ms	116.0ms
OPP (0.00°C / 0.00°C)	135.20%	-

□□□□ & PG□□

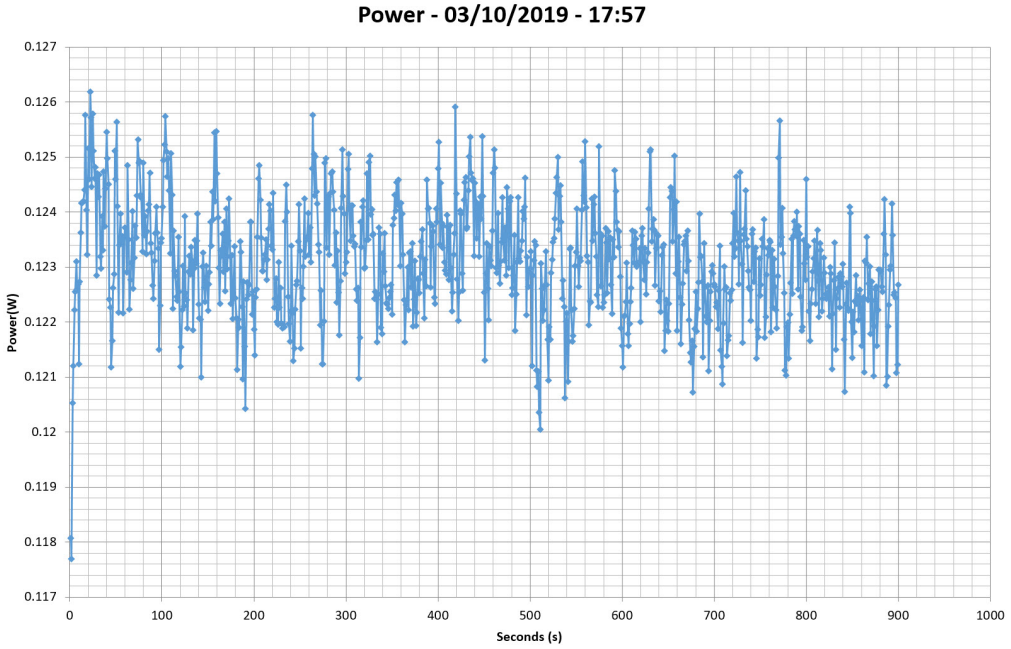
Hold-Up Time (ms)	8.8
AC Loss to PWR_OK Hold Up Time (ms)	9.4
PWR_OK Inactive to DC Loss Delay (ms)	-0.6

Graphs

115V



230V



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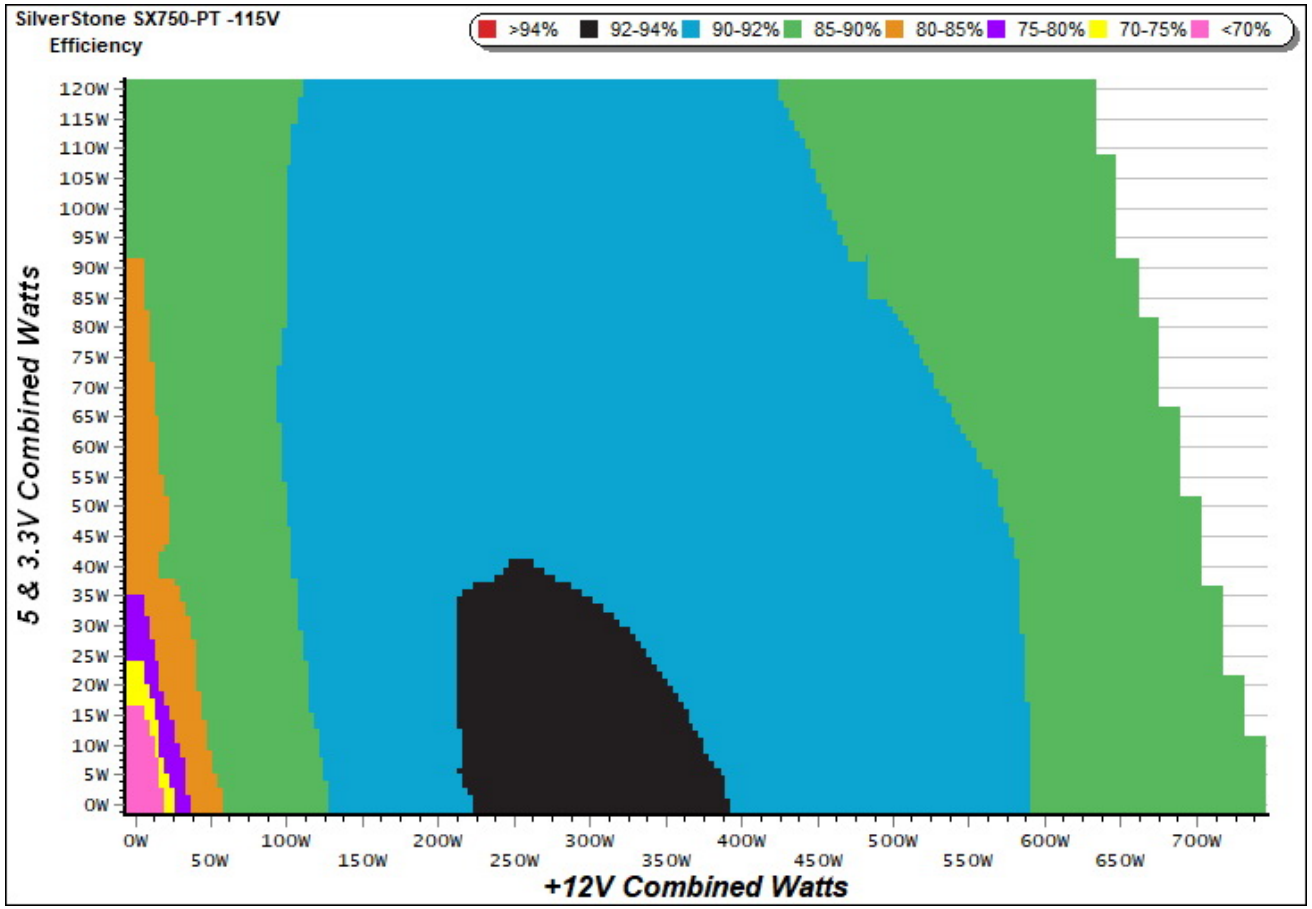
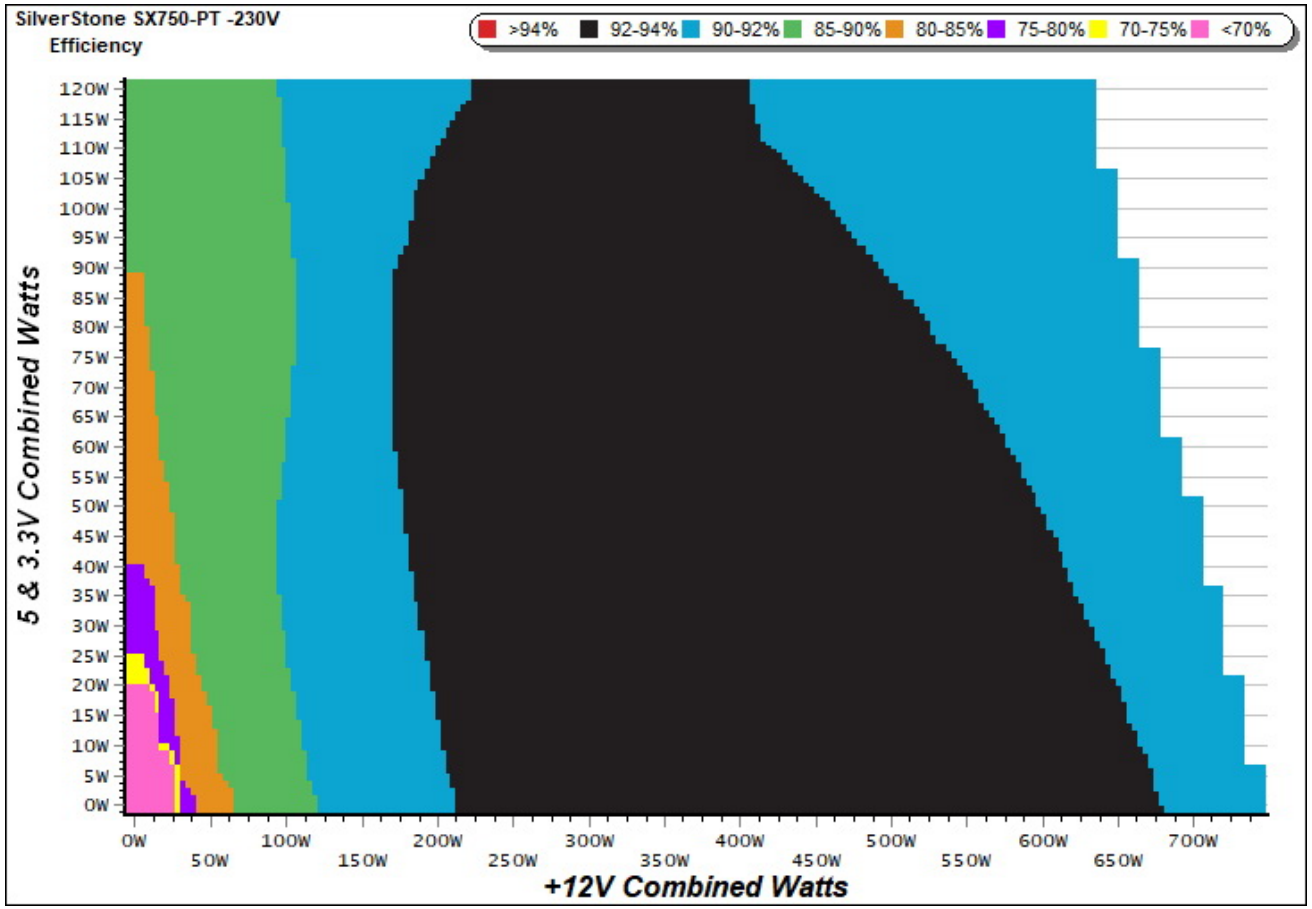
115V



□□

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



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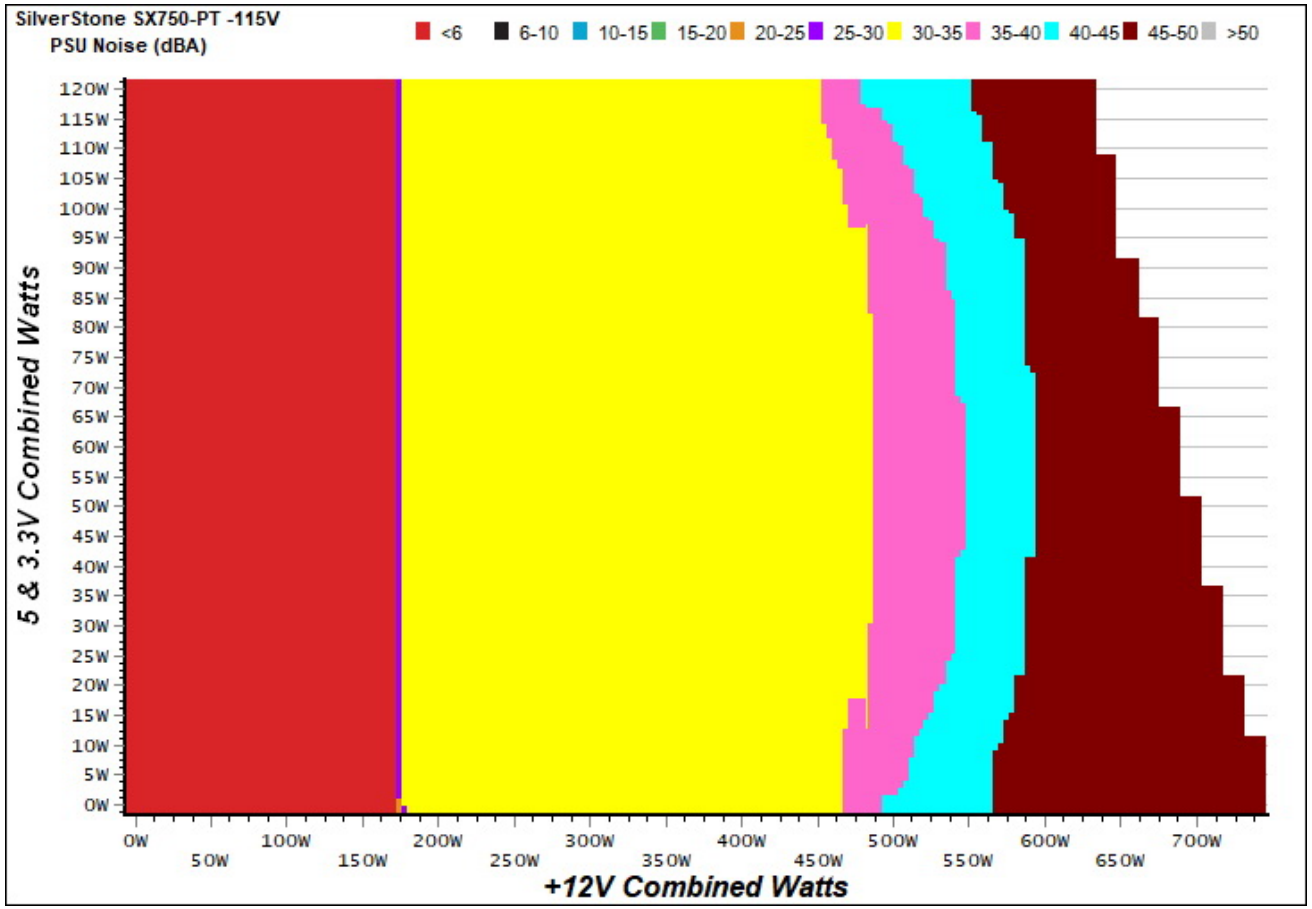
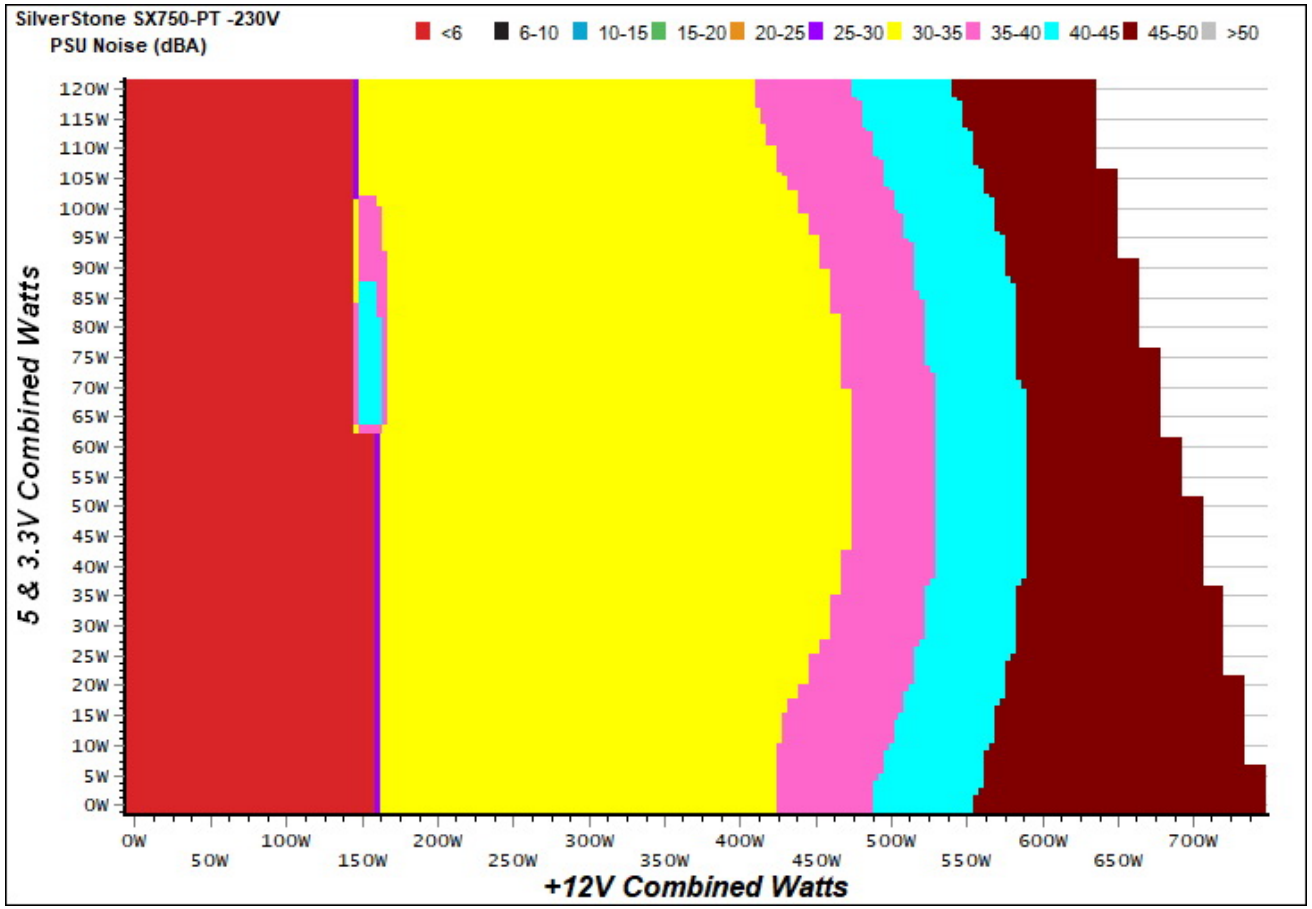
115V



□□

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.

Noise under high ambient temperature (indicative)

115V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 38.3 °C	0 RPM · <6.0 dB(A) · 38.3 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 39.1 °C	0 RPM · <6.0 dB(A) · 39.1 °C	fan off in both
50%	1822 RPM · 30.6 dB(A) · 36.0 °C	1822 RPM · 30.6 dB(A) · 36.0 °C	**+0.0 dB(A)**
100%	3061 RPM · 45.4 dB(A) · 39.5 °C	3061 RPM · 45.4 dB(A) · 39.5 °C	**+0.0 dB(A)**

230V

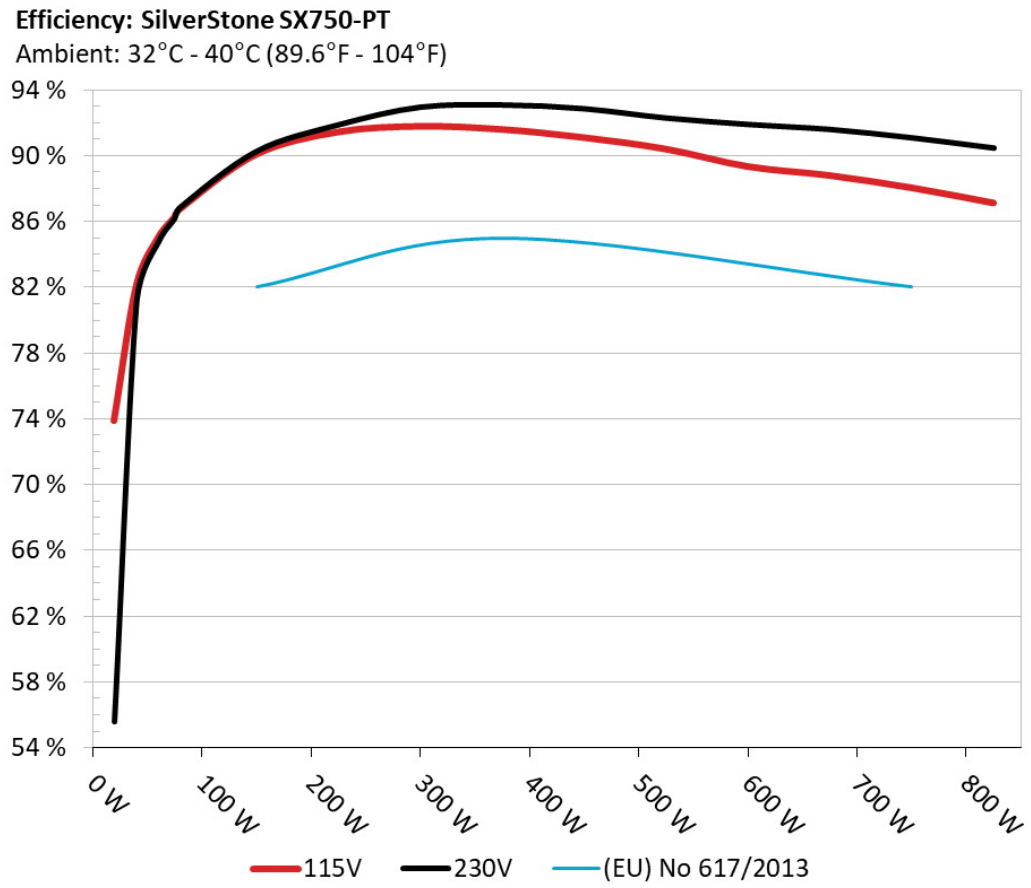
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 38.3 °C	0 RPM · <6.0 dB(A) · 38.3 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 39.3 °C	0 RPM · <6.0 dB(A) · 39.3 °C	fan off in both
50%	1825 RPM · 30.7 dB(A) · 36.2 °C	1825 RPM · 30.7 dB(A) · 36.2 °C	**+0.0 dB(A)**
100%	3037 RPM · 45.3 dB(A) · 39.3 °C	3037 RPM · 45.3 dB(A) · 39.3 °C	**+0.0 dB(A)**

INFO

Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter, with the fan stopped; with the fan stopped, the intake sensor can read higher than the chamber air.

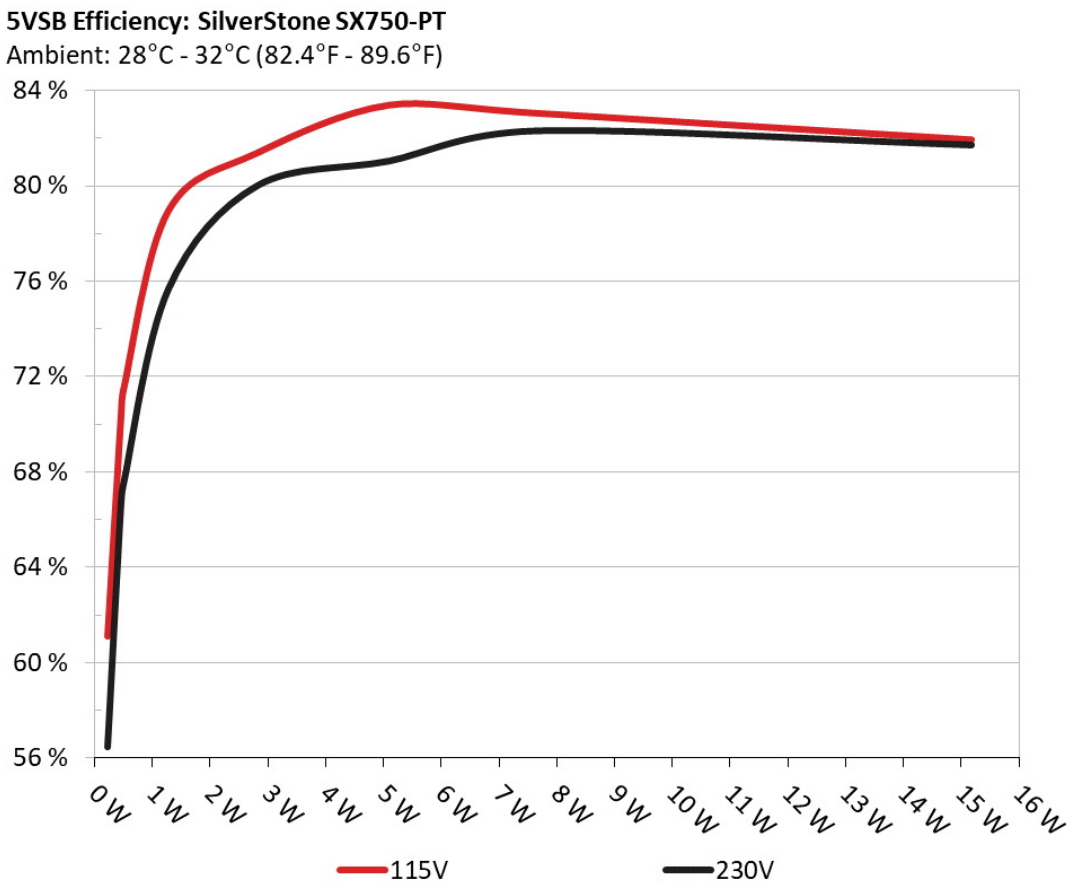
Informational. Not part of the ETA or LAMBDA rating.

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	0.231	61.111%	0.026
	5.124V	0.378		115.17V
2	0.090A	0.462	70.320%	0.045
	5.123V	0.657		115.16V
3	0.550A	2.813	81.395%	0.198
	5.112V	3.456		115.16V
4	1.000A	5.104	83.412%	0.279
	5.102V	6.119		115.16V
5	1.500A	7.639	83.069%	0.332
	5.092V	9.196		115.16V
6	3.000A	15.178	81.955%	0.400
	5.059V	18.520		115.16V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.231	56.479%	0.009
	5.124V	0.409		230.35V
2	0.090A	0.462	66.667%	0.014
	5.123V	0.693		230.35V
3	0.550A	2.813	79.983%	0.071
	5.112V	3.517		230.36V
4	1.000A	5.104	81.029%	0.121
	5.103V	6.299		230.35V
5	1.500A	7.639	82.290%	0.167
	5.092V	9.283		230.35V
6	3.000A	15.179	81.700%	0.264
	5.059V	18.579		230.35V

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.382A	1.961A	1.997A	0.982A	74.522	86.218%	0	<6.0	38.33°C	0.974
	12.075V	5.104V	3.303V	5.095V	86.434				34.33°C	115.16V
2	9.823A	2.947A	3.005A	1.181A	149.433	90.062%	0	<6.0	39.05°C	0.992
	12.066V	5.093V	3.294V	5.082V	165.923				34.65°C	115.16V
3	15.663A	3.446A	3.500A	1.381A	224.969	91.435%	1823	30.6	35.36°C	0.997
	12.064V	5.081V	3.286V	5.070V	246.043				40.49°C	115.17V
4	21.446A	3.945A	4.027A	1.582A	299.768	91.775%	1823	30.6	35.42°C	0.998
	12.056V	5.073V	3.278V	5.058V	326.635				41.21°C	115.18V
5	26.909A	4.940A	5.048A	1.785A	374.715	91.590%	1822	30.6	36.02°C	0.999
	12.048V	5.063V	3.269V	5.044V	409.124				42.26°C	115.18V
6	32.380A	5.939A	6.075A	1.988A	449.670	91.095%	1834	30.9	36.80°C	0.999
	12.040V	5.053V	3.260V	5.031V	493.630				43.58°C	115.19V
7	37.893A	6.944A	7.108A	2.193A	525.005	90.398%	2559	40.8	37.05°C	0.999
	12.031V	5.042V	3.250V	5.017V	580.769				44.44°C	115.19V
8	43.413A	7.951A	8.149A	2.399A	600.318	89.332%	3081	45.6	37.59°C	1.000
	12.022V	5.031V	3.240V	5.003V	672.009				45.49°C	115.19V
9	49.307A	8.465A	8.664A	2.403A	674.841	88.792%	3078	45.5	38.55°C	1.000
	12.013V	5.022V	3.232V	4.995V	760.022				46.82°C	115.20V
10	55.000A	8.979A	9.215A	3.017A	750.044	88.046%	3061	45.4	39.46°C	1.000
	12.006V	5.013V	3.223V	4.973V	851.879				48.22°C	115.22V
11	61.306A	8.994A	9.240A	3.022A	825.284	87.123%	3036	45.3	40.36°C	0.999
	11.998V	5.005V	3.216V	4.965V	947.258				50.21°C	115.19V
CL1	0.154A	14.003A	14.001A	0.000A	118.594	84.234%	2370	37.8	36.47°C	0.990
	12.065V	5.066V	3.271V	5.093V	140.791				42.41°C	115.17V

CL2	62.532A	1.006A	1.000A	1.000A	764.481	88.460%	3076	45.5	39.97°C	1.000
	12.012V	5.038V	3.244V	5.034V	864.211				48.77°C	115.19V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.383A	1.960A	1.998A	0.980A	74.528	86.148%	0	<6.0	38.27°C	0.773
	12.077V	5.104V	3.302V	5.095V	86.512				34.07°C	230.36V
2	9.822A	2.946A	3.004A	1.181A	149.435	90.241%	0	<6.0	39.25°C	0.914
	12.068V	5.094V	3.293V	5.083V	165.596				34.45°C	230.37V
3	15.675A	3.445A	3.500A	1.381A	224.981	91.867%	1827	30.7	35.02°C	0.957
	12.056V	5.081V	3.285V	5.070V	244.898				40.23°C	230.37V
4	21.449A	3.944A	4.027A	1.582A	299.774	92.936%	1824	30.6	35.59°C	0.974
	12.055V	5.073V	3.277V	5.058V	322.558				41.50°C	230.38V
5	26.909A	4.939A	5.048A	1.785A	374.711	93.071%	1825	30.7	36.20°C	0.983
	12.048V	5.064V	3.268V	5.044V	402.608				42.48°C	230.39V
6	32.377A	5.940A	6.076A	1.988A	449.638	92.843%	1839	31.0	36.51°C	0.988
	12.040V	5.053V	3.259V	5.031V	484.298				43.43°C	230.39V
7	37.890A	6.943A	7.109A	2.193A	524.970	92.276%	2715	43.2	37.61°C	0.991
	12.031V	5.043V	3.249V	5.018V	568.910				44.81°C	230.39V
8	43.412A	7.951A	8.148A	2.399A	600.269	91.884%	3076	45.5	38.06°C	0.993
	12.021V	5.032V	3.240V	5.004V	653.293				45.82°C	230.39V
9	49.302A	8.463A	8.662A	2.403A	674.784	91.583%	3051	45.4	38.38°C	0.994
	12.013V	5.024V	3.232V	4.996V	736.797				46.84°C	230.37V
10	55.002A	8.974A	9.219A	3.017A	750.002	91.074%	3037	45.3	39.30°C	0.995
	12.005V	5.014V	3.222V	4.973V	823.509				48.27°C	230.37V
11	61.313A	8.993A	9.238A	3.022A	825.225	90.453%	3046	45.4	40.18°C	0.887
	11.996V	5.005V	3.215V	4.965V	912.321				49.45°C	230.36V
CL1	0.152A	14.002A	14.000A	0.000A	118.590	84.203%	2625	41.7	36.47°C	0.889
	12.067V	5.069V	3.270V	5.094V	140.839				42.16°C	230.36V

CL2	62.529A	1.002A	1.000A	1.000A	764.363	91.557%	3069	45.5	39.09°C	0.995
	12.011V	5.038V	3.244V	5.034V	834.846				48.20°C	230.36V

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	0.489A	0.482A	0.195A	19.591	73.900%	0	<6.0	0.605
	12.078V	5.115V	3.314V	5.119V	26.510				115.16V
2	2.460A	0.979A	0.996A	0.391A	40.009	82.103%	0	<6.0	0.807
	12.076V	5.112V	3.311V	5.112V	48.730				115.16V
3	3.653A	1.469A	1.481A	0.588A	59.506	84.954%	0	<6.0	0.950
	12.074V	5.107V	3.306V	5.106V	70.045				115.16V
4	4.913A	1.960A	1.998A	0.785A	79.921	86.755%	0	<6.0	0.977
	12.074V	5.103V	3.302V	5.099V	92.123				115.16V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.196A	0.489A	0.480A	0.195A	19.536	55.562%	0	<6.0	0.475
	12.079V	5.115V	3.314V	5.120V	35.161				230.36V
2	2.457A	0.978A	0.996A	0.391A	39.973	81.191%	0	<6.0	0.582
	12.079V	5.112V	3.310V	5.113V	49.233				230.36V
3	3.651A	1.467A	1.482A	0.588A	59.491	84.694%	0	<6.0	0.701
	12.078V	5.108V	3.306V	5.106V	70.242				230.34V
4	4.912A	1.961A	1.997A	0.785A	79.927	86.848%	0	<6.0	0.791
	12.077V	5.103V	3.302V	5.099V	92.031				230.35V

The results above are not used in the certification process

□□□□

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.4 mV	5.4 mV	12.9 mV	14.4 mV	Pass
20% Load	13.0 mV	5.9 mV	13.2 mV	15.3 mV	Pass
30% Load	22.8 mV	6.8 mV	14.7 mV	16.0 mV	Pass
40% Load	24.7 mV	6.5 mV	14.3 mV	16.5 mV	Pass
50% Load	29.0 mV	7.0 mV	14.9 mV	17.8 mV	Pass
60% Load	32.7 mV	7.2 mV	16.4 mV	18.7 mV	Pass
70% Load	37.4 mV	8.2 mV	18.0 mV	21.5 mV	Pass
80% Load	41.6 mV	8.5 mV	18.4 mV	23.3 mV	Pass
90% Load	44.9 mV	8.9 mV	19.7 mV	23.8 mV	Pass
100% Load	57.5 mV	9.6 mV	21.5 mV	29.4 mV	Pass
110% Load	81.9 mV	37.3 mV	118.2 mV	95.6 mV	Fail
Crossload 1	17.2 mV	7.5 mV	16.7 mV	12.2 mV	Pass
Crossload 2	57.5 mV	8.5 mV	20.4 mV	21.5 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.7 mV	5.4 mV	13.5 mV	15.2 mV	Pass
20% Load	38.4 mV	5.7 mV	13.5 mV	16.3 mV	Pass
30% Load	19.4 mV	5.8 mV	14.0 mV	16.6 mV	Pass
40% Load	28.1 mV	6.6 mV	14.9 mV	17.4 mV	Pass
50% Load	31.1 mV	9.2 mV	18.6 mV	17.9 mV	Pass
60% Load	32.8 mV	7.4 mV	17.3 mV	18.1 mV	Pass
70% Load	37.4 mV	7.6 mV	17.2 mV	21.7 mV	Pass
80% Load	41.3 mV	8.4 mV	18.9 mV	22.4 mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	45.4 mV	9.0 mV	19.8 mV	22.8 mV	Pass
100% Load	58.6 mV	9.5 mV	22.5 mV	28.8 mV	Pass
110% Load	61.9 mV	9.9 mV	23.1 mV	29.9 mV	Pass
Crossload 1	20.0 mV	7.5 mV	17.9 mV	13.5 mV	Pass
Crossload 2	58.1 mV	8.4 mV	22.1 mV	24.7 mV	Pass

The results above are not used in the certification process

SilverStone SFX Platinum 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

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