SILVERSTONE

SilverStone SFX 300W

□□ 162991300BR31F02001073

Lab ID 403

□□ ID 25403

□□□□□□ ID:

□□□□□□ : Aug 6, 2018

□□□□□ ETA-EMI PSU

115V



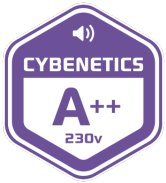
230V



115V



230V



□□□□□ LAMBDA PSU



Aristeidis Bitziopoulos, □□□□□□□

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 300W
OEM/ODM	Sirfa
Serial Number	162991300BR31F02001073
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	5.5

□□□□ (Hz)	50-60
□□□□ (W)	300
□□□□□□□□□□ (°C)	
□□	SFX
□□□□	Fixed cables
□□	-
Cybenetics Measurements	
Dimensions (W x H x D)	
□□	
□□	92mm Duro Bearing Fan (RL4Z S0921512M)
□□□□□	✗
Cybenetics Testing Information	
Lab ID	403
Date of receipt	Jul 30, 2018
Testing Date	Aug 3, 2018
Report Issued Date	Aug 6, 2018
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□□
(Non-accredited measurements)

Captive Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300mm)	1	1	20-22AWG	No
4+4 pin EPS12V (400mm)	1	1	20AWG	No
6+2 pin PCIe (400mm)	1	1	20AWG	No
SATA (300mm+200mm+100mm)	1	3	20AWG	No
4 pin Molex (300mm+200mm) / FDD(+200mm)	1	2 / 1	20-22AWG	No

AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

□□□□

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	16	16	25	3	0.3
	Watts	90		300	15	3.6
Total Max. Power (W)		300				

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot 3/6	ErP Lot 6 2010: ✓ ErP Lot 6 2013: ✓ ErP Lot 3 2014 & CEC: Partially
□□ (EU) No 617/2013□□	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	84.575%
Average Noise Output (>1450 Load Combinations)	16.28dBA
PF□□□ (>1450 Load Combinations)	0.981
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
□□□□	0.0760W
Non-Accredited	
12V Ripple (Full Load)	34.46mV
5V Ripple (Full Load)	27.16mV
3.3V Ripple (Full Load)	27.06mV
5VSB Ripple (Full Load)	27.95mV

12V Load Regulation	0.74%
5V Load Regulation	1.35%
3.3V Load Regulation	1.52%
5VSB Load Regulation	2.67%
Inrush Current	86.748A

230V

Accredited		
□□□□ (>1450 load combinations)		86.497%
Average Noise Output (>1450 Load Combinations)		14.02dBA
PF□□□ (>1450 Load Combinations)		0.922
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
□□□□		0.1841W
Non-Accredited		
12V Ripple (Full Load)		33.10mV
5V Ripple (Full Load)		27.77mV
3.3V Ripple (Full Load)		33.85mV
5VSB Ripple (Full Load)		23.00mV
12V Load Regulation		0.74%
5V Load Regulation		1.31%
3.3V Load Regulation		1.49%
5VSB Load Regulation		2.58%
Inrush Current		53.585A
□□□□ & PWR_OK □□		14.30ms
AC Loss to PWR_OK Hold Up Time		13.20ms
PWR_OK Inactive to DC Loss Delay		1.10ms
OPP (0.00°C / 0.00°C)	-	-

□□□□ & PWR_OK □□

Hold-Up Time (ms)	14.3
AC Loss to PWR_OK Hold Up Time (ms)	13.2
PWR_OK Inactive to DC Loss Delay (ms)	1.1

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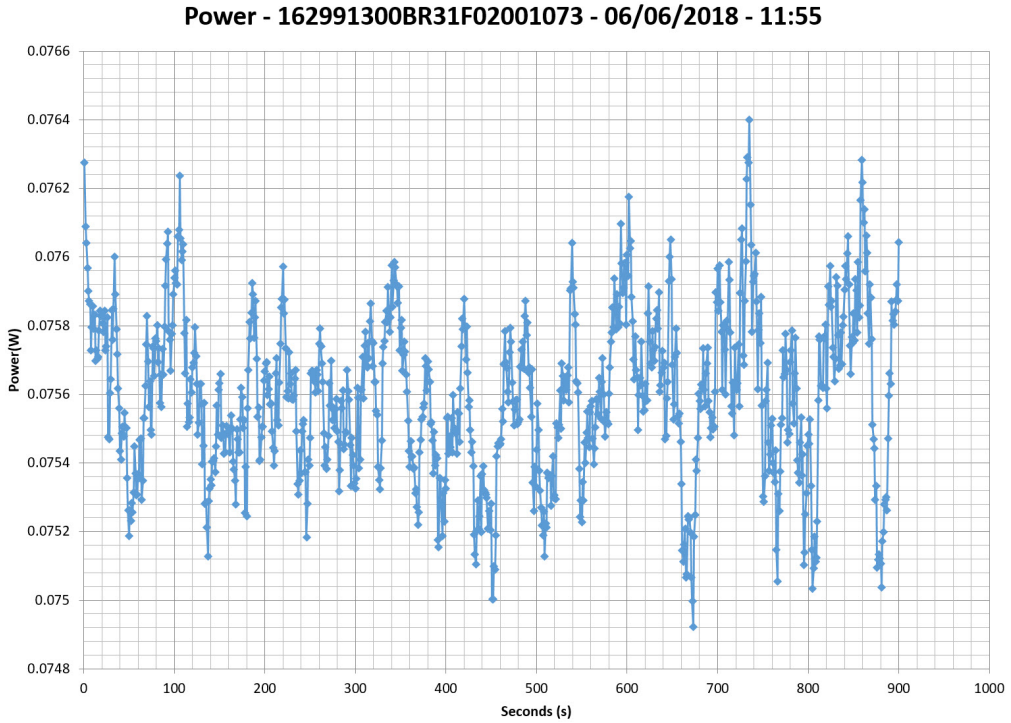
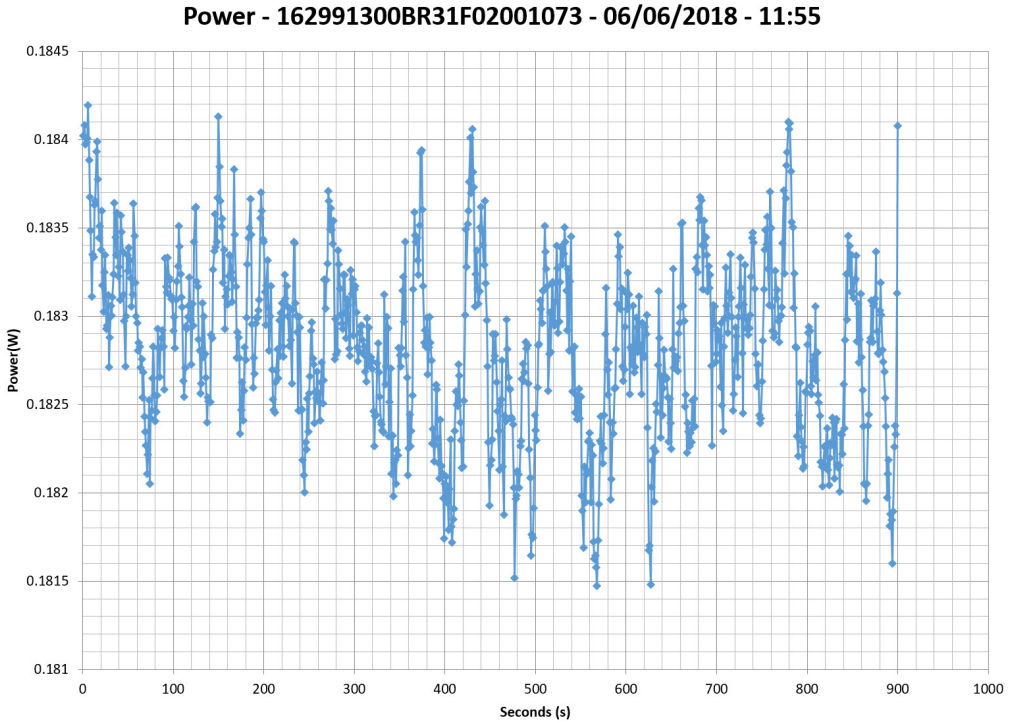
Graphs

115V



230V



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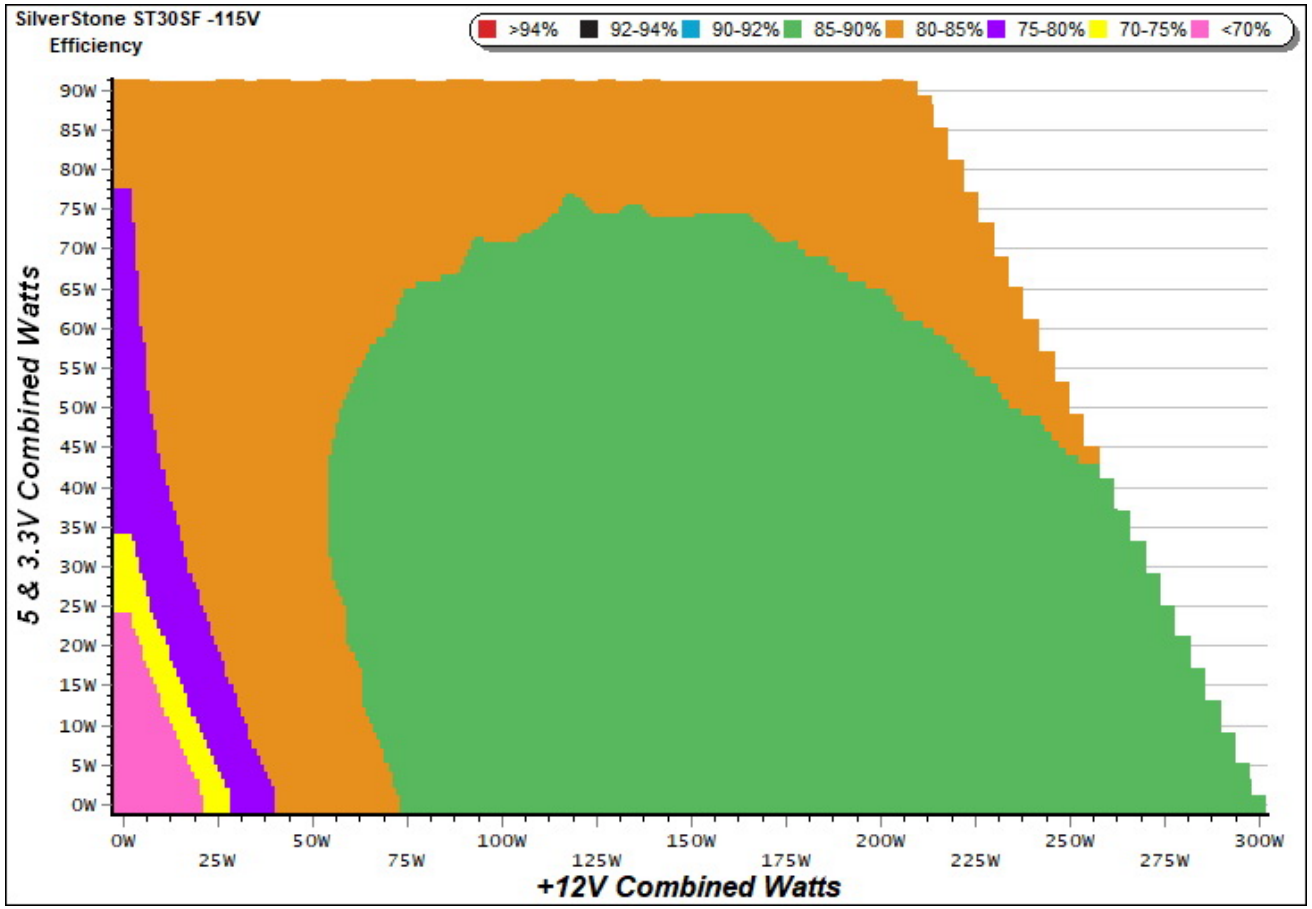
115V



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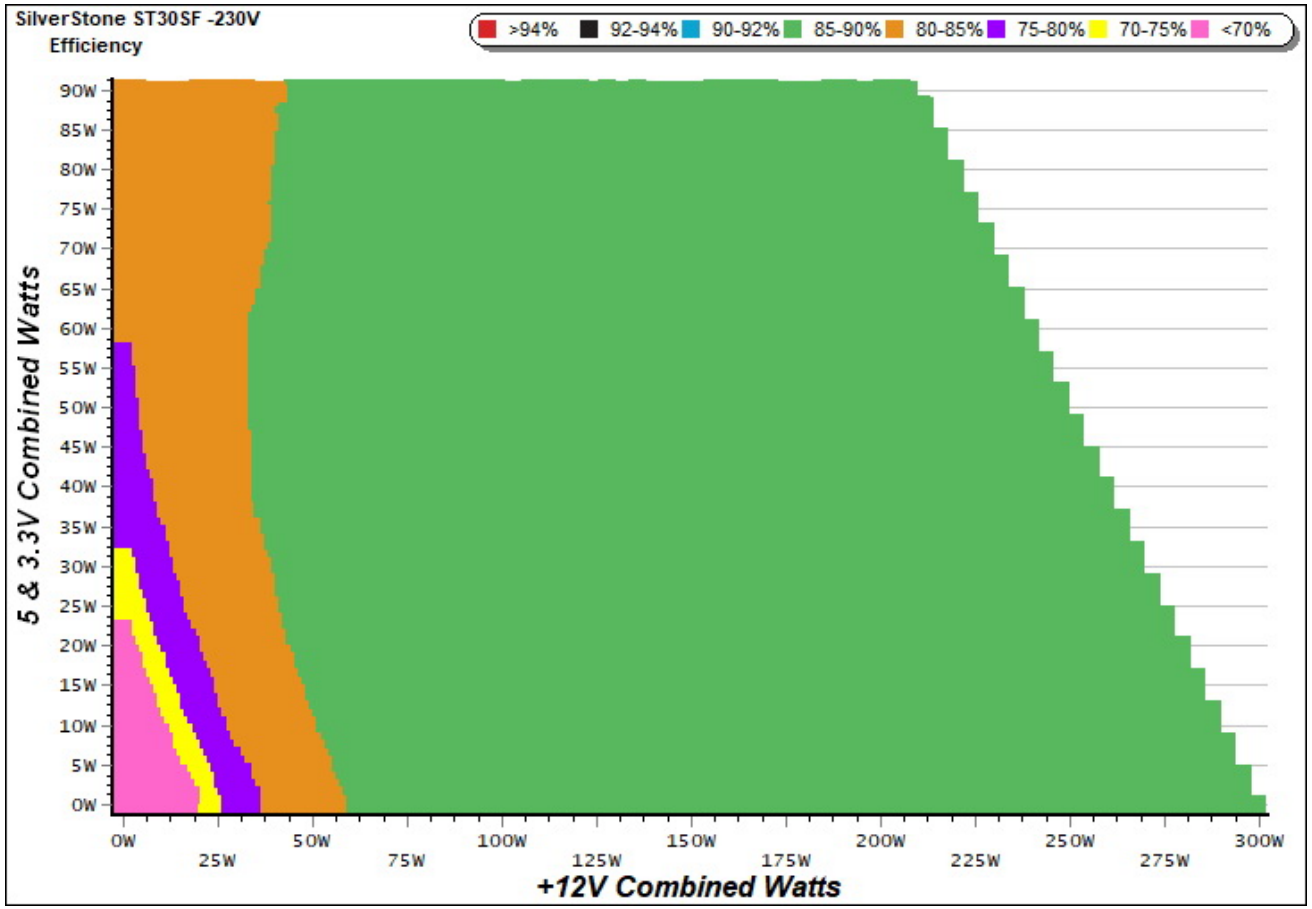
This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations.

230V



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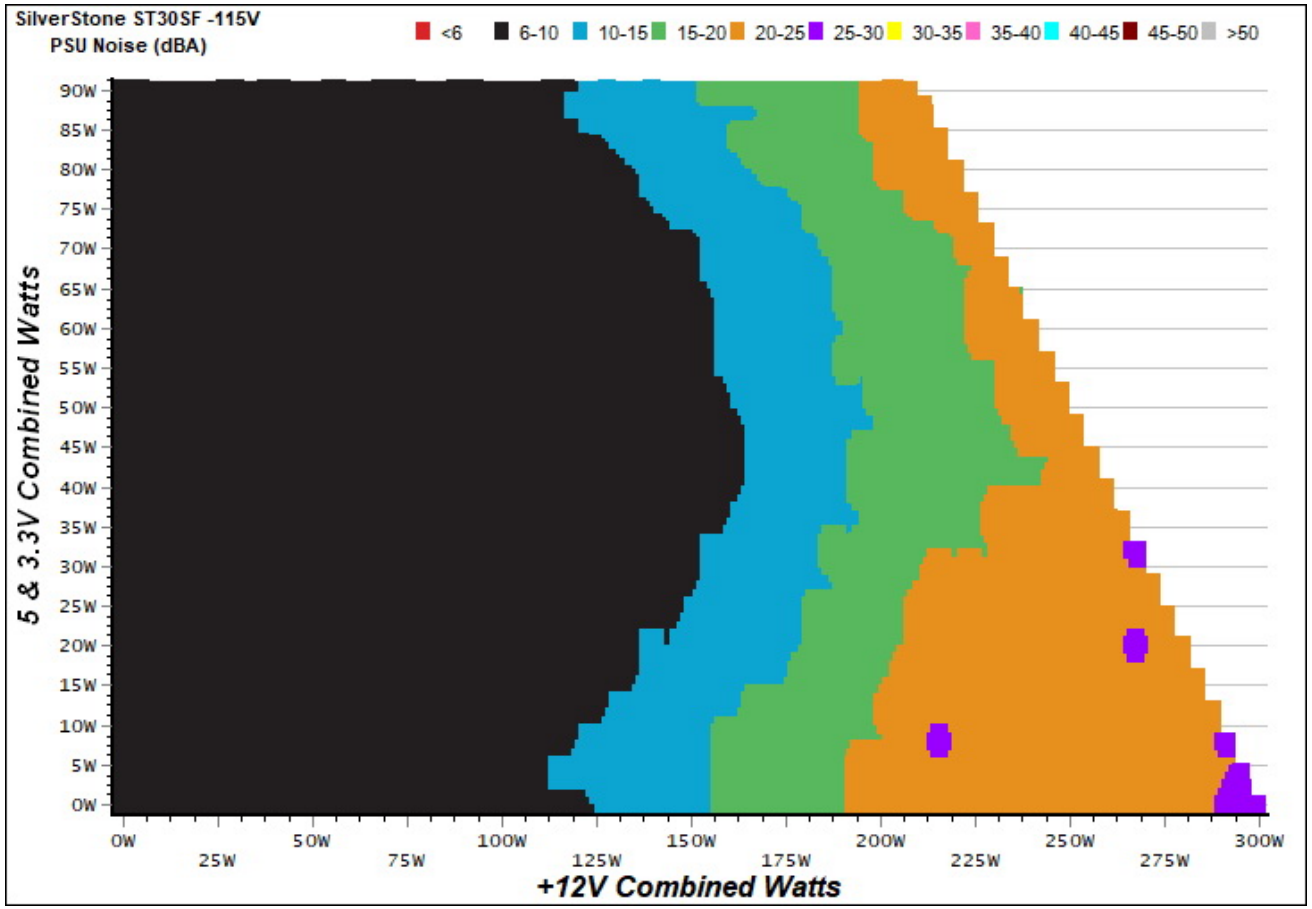
115V



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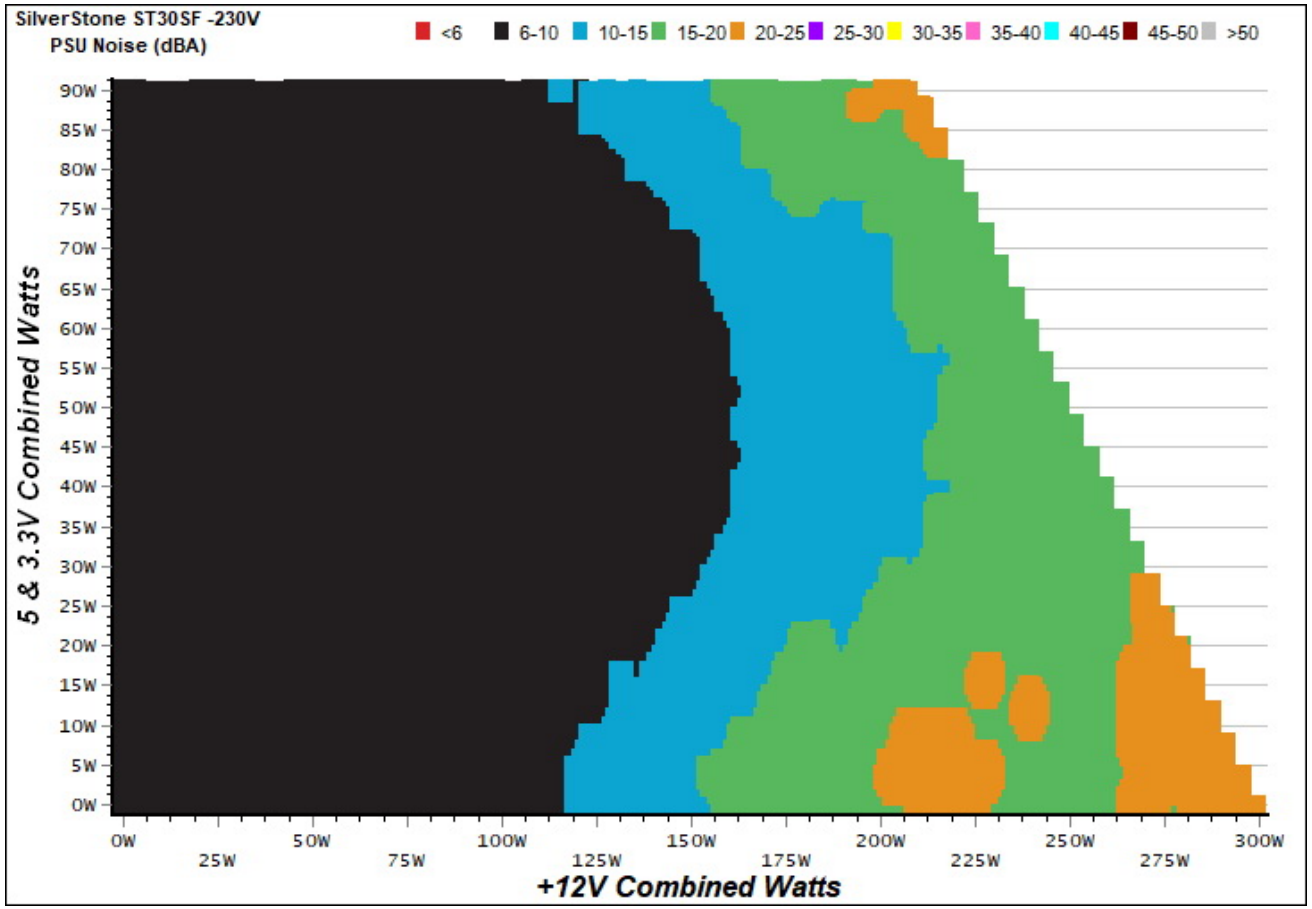
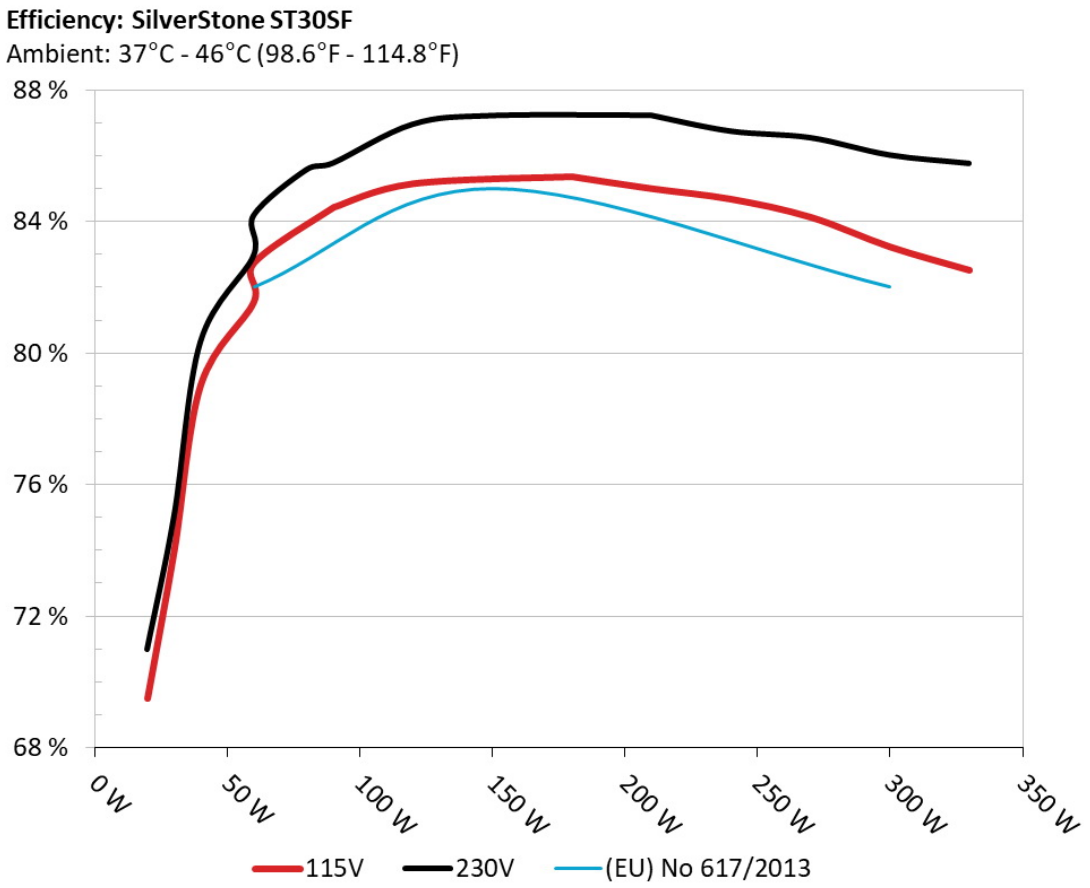
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

230V



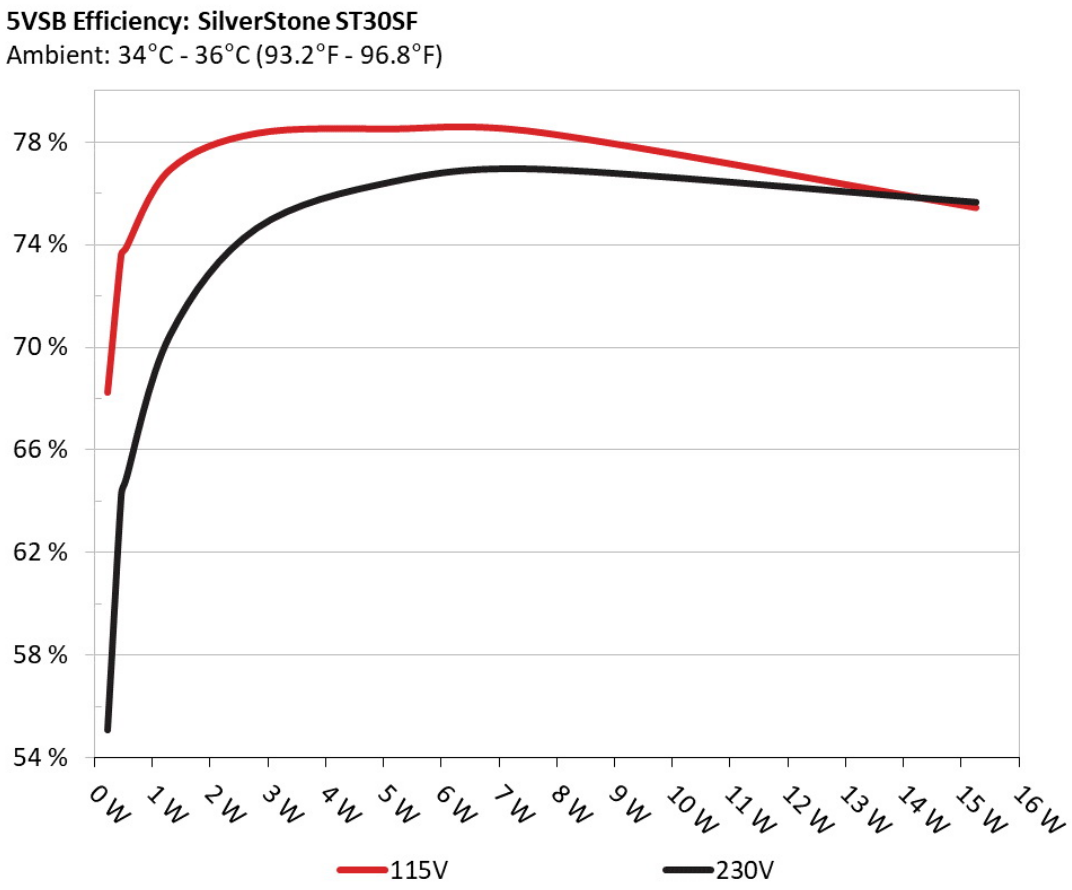
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

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□□



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

5VSB□□□ ERP LOT 3/6□ CEC□

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.217	68.239%	0.054
	5.172V	0.318		115.09V
2	0.087A	0.452	73.616%	0.099
	5.172V	0.614		115.09V
3	0.542A	2.798	78.353%	0.307
	5.159V	3.571		115.26V
4	1.002A	5.157	78.529%	0.359
	5.145V	6.567		115.29V
5	1.502A	7.705	78.390%	0.386
	5.130V	9.829		115.10V
6	3.001A	15.259	75.454%	0.425
	5.084V	20.223		115.30V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.217	55.076%	0.020
	5.173V	0.394		230.23V
2	0.088A	0.453	64.255%	0.036
	5.172V	0.705		230.23V
3	0.543A	2.799	74.640%	0.162
	5.159V	3.750		230.23V
4	1.002A	5.158	76.460%	0.236
	5.146V	6.746		230.23V
5	1.502A	7.706	76.945%	0.282
	5.131V	10.015		230.23V
6	3.001A	15.265	75.659%	0.345
	5.086V	20.176		230.23V

Supplementary Tests (For Reference)

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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	0.669A	1.985A	1.963A	0.971A	29.736	74.012%	795	7.1	40.18°C	0.943
	12.183V	5.045V	3.355V	5.134V	40.177				49.43°C	115.14V
2	2.376A	2.971A	2.953A	1.171A	59.771	81.547%	795	7.1	40.87°C	0.962
	12.172V	5.037V	3.349V	5.121V	73.296				50.52°C	115.15V
3	4.424A	3.478A	3.464A	1.366A	89.871	84.197%	830	7.2	41.08°C	0.970
	12.163V	5.031V	3.344V	5.110V	106.739				52.02°C	115.15V
4	6.468A	3.979A	3.950A	1.565A	119.765	85.135%	955	8.2	41.66°C	0.976
	12.152V	5.025V	3.340V	5.098V	140.676				52.86°C	115.15V
5	8.177A	4.981A	4.943A	1.765A	149.752	85.349%	1205	12.9	42.14°C	0.982
	12.143V	5.018V	3.335V	5.087V	175.459				53.77°C	115.16V
6	9.892A	5.986A	5.948A	1.969A	179.803	85.252%	1380	17.3	42.67°C	0.986
	12.133V	5.010V	3.329V	5.075V	210.907				54.63°C	115.15V
7	11.605A	7.003A	6.952A	2.170A	209.801	84.988%	1560	23.2	43.09°C	0.989
	12.123V	5.003V	3.321V	5.064V	246.861				55.63°C	115.15V
8	13.324A	8.012A	7.961A	2.374A	239.777	84.668%	1845	27.5	43.99°C	0.993
	12.112V	4.994V	3.315V	5.052V	283.198				56.89°C	115.14V
9	15.475A	8.522A	8.485A	2.375A	269.882	84.121%	2110	31.4	44.55°C	0.994
	12.103V	4.988V	3.311V	5.047V	320.827				57.72°C	115.13V
10	17.372A	9.040A	8.984A	2.984A	299.789	83.220%	2290	33.9	45.14°C	0.992
	12.093V	4.981V	3.305V	5.023V	360.237				58.77°C	115.12V
11	19.869A	9.051A	8.999A	2.986A	329.801	82.511%	2370	34.2	46.10°C	0.990
	12.083V	4.977V	3.300V	5.017V	399.706				60.31°C	115.11V
CL1	0.100A	11.018A	11.005A	0.005A	93.022	80.350%	1085	9.8	42.18°C	0.972
	12.156V	5.002V	3.332V	5.136V	115.771				53.38°C	115.18V

CL2	24.982A	1.003A	1.003A	1.002A	315.630	84.685%	2265	34.0	45.13°C	0.991
	12.095V	5.015V	3.325V	5.098V	372.709				58.90°C	115.11V

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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	0.670A	1.985A	1.965A	0.971A	29.756	75.016%	795	7.1	40.11°C	0.677
	12.184V	5.045V	3.355V	5.134V	39.666				48.58°C	230.37V
2	2.380A	2.970A	2.954A	1.171A	59.822	82.969%	795	7.1	40.78°C	0.847
	12.174V	5.036V	3.349V	5.123V	72.102				49.98°C	230.34V
3	4.424A	3.478A	3.465A	1.366A	89.885	85.794%	820	7.2	41.11°C	0.905
	12.165V	5.031V	3.344V	5.111V	104.768				51.51°C	230.40V
4	6.474A	3.984A	3.950A	1.565A	119.880	86.971%	910	7.7	41.76°C	0.926
	12.155V	5.025V	3.339V	5.099V	137.839				52.89°C	230.37V
5	8.179A	4.980A	4.945A	1.766A	149.793	87.236%	1103	10.2	42.23°C	0.939
	12.145V	5.018V	3.334V	5.087V	171.710				53.59°C	230.29V
6	9.891A	5.986A	5.947A	1.968A	179.797	87.245%	1320	16.0	42.78°C	0.948
	12.135V	5.010V	3.328V	5.076V	206.082				54.63°C	230.34V
7	11.606A	7.003A	6.951A	2.171A	209.828	87.063%	1550	23.1	43.25°C	0.954
	12.124V	5.003V	3.321V	5.065V	241.006				55.79°C	230.28V
8	13.325A	8.011A	7.960A	2.373A	239.796	86.762%	1860	27.7	43.97°C	0.959
	12.114V	4.993V	3.315V	5.053V	276.384				56.85°C	230.27V
9	15.478A	8.522A	8.487A	2.375A	269.934	86.563%	2000	29.5	44.56°C	0.963
	12.104V	4.988V	3.310V	5.048V	311.837				57.85°C	230.28V
10	17.372A	9.042A	8.984A	2.984A	299.822	86.037%	2290	33.9	45.42°C	0.967
	12.094V	4.981V	3.305V	5.025V	348.481				59.05°C	230.28V
11	19.869A	9.052A	8.999A	2.985A	329.807	85.782%	2390	35.0	46.19°C	0.971
	12.083V	4.977V	3.300V	5.019V	384.473				60.71°C	230.28V
CL1	0.100A	11.018A	11.003A	0.005A	93.016	81.949%	1060	9.6	42.26°C	0.912
	12.157V	5.002V	3.332V	5.136V	113.505				54.20°C	230.26V

CL2	24.982A	1.002A	1.004A	1.002A	315.629	87.658%	2180	32.7	45.50°C	0.968
	12.095V	5.014V	3.325V	5.099V	360.069				59.00°C	230.28V

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115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.199A	0.492A	0.473A	0.191A	19.674	69.512%	793	7.1	0.916
	12.187V	5.054V	3.360V	5.161V	28.303				115.14V
2	2.421A	0.989A	0.981A	0.386A	39.763	79.033%	793	7.1	0.952
	12.181V	5.049V	3.356V	5.151V	50.312				115.14V
3	3.648A	1.477A	1.488A	0.580A	59.835	82.734%	793	7.1	0.962
	12.174V	5.044V	3.354V	5.143V	72.322				115.20V
4	4.862A	1.986A	1.970A	0.775A	79.742	84.420%	798	7.1	0.968
	12.167V	5.039V	3.350V	5.134V	94.459				115.22V

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230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.199A	0.493A	0.474A	0.191A	19.683	70.991%	793	7.1	0.483
	12.188V	5.053V	3.360V	5.162V	27.726				230.32V
2	2.424A	0.990A	0.981A	0.386A	39.810	80.353%	793	7.1	0.742
	12.182V	5.049V	3.356V	5.152V	49.544				230.32V
3	3.650A	1.475A	1.490A	0.581A	59.863	84.195%	793	7.1	0.843
	12.175V	5.044V	3.353V	5.144V	71.100				230.32V
4	4.866A	1.985A	1.970A	0.776A	79.809	85.591%	790	7.1	0.893
	12.171V	5.039V	3.348V	5.138V	93.245				230.32V

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115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.2 mV	9.9 mV	14.8 mV	6.9 mV	Pass
20% Load	15.0 mV	11.8 mV	15.6 mV	8.7 mV	Pass
30% Load	15.6 mV	13.1 mV	16.8 mV	10.1 mV	Pass
40% Load	17.1 mV	14.6 mV	17.3 mV	11.0 mV	Pass
50% Load	19.9 mV	17.6 mV	18.3 mV	12.7 mV	Pass
60% Load	21.9 mV	18.7 mV	20.6 mV	14.7 mV	Pass
70% Load	24.7 mV	21.7 mV	22.6 mV	18.1 mV	Pass
80% Load	27.2 mV	23.6 mV	22.1 mV	19.9 mV	Pass
90% Load	30.9 mV	25.3 mV	24.2 mV	22.0 mV	Pass
100% Load	34.5 mV	27.2 mV	27.1 mV	28.0 mV	Pass
110% Load	39.6 mV	28.3 mV	28.2 mV	27.0 mV	Pass
Crossload 1	17.4 mV	24.9 mV	26.6 mV	23.8 mV	Pass
Crossload 2	35.6 mV	16.4 mV	22.6 mV	13.6 mV	Pass

□□□□□□□□□□

230V

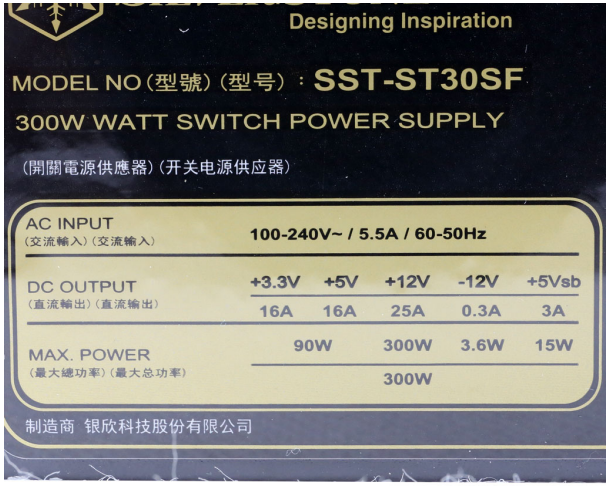
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.4 mV	10.8 mV	16.3 mV	7.2 mV	Pass
20% Load	14.1 mV	11.7 mV	17.2 mV	9.1 mV	Pass
30% Load	16.0 mV	13.3 mV	18.2 mV	10.0 mV	Pass
40% Load	18.4 mV	14.7 mV	18.6 mV	11.3 mV	Pass
50% Load	19.3 mV	16.7 mV	19.8 mV	12.3 mV	Pass
60% Load	21.9 mV	18.9 mV	22.4 mV	14.9 mV	Pass
70% Load	24.4 mV	21.0 mV	24.2 mV	16.8 mV	Pass
80% Load	26.7 mV	23.6 mV	25.0 mV	19.5 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	28.6 mV	25.3 mV	25.8 mV	20.4 mV	Pass
100% Load	33.1 mV	27.8 mV	33.9 mV	23.0 mV	Pass
110% Load	36.2 mV	28.5 mV	33.2 mV	24.1 mV	Pass
Crossload 1	19.2 mV	26.6 mV	29.0 mV	19.2 mV	Pass
Crossload 2	32.6 mV	15.5 mV	21.4 mV	11.2 mV	Pass

SilverStone SFX 300W



Top side



Power specifications label