



SilverStone Strider Essential 500W

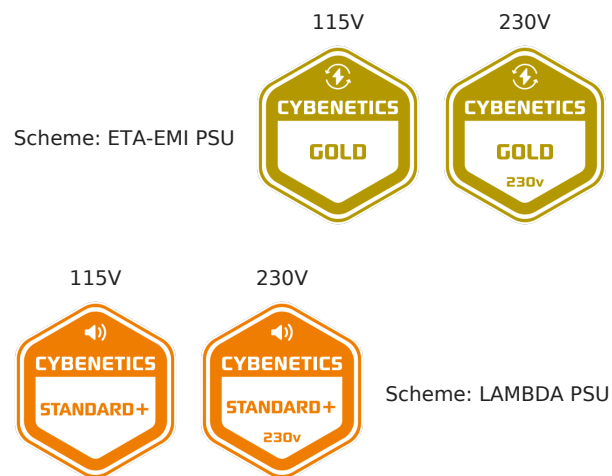
Serial Number S3501000442

Lab ID SL50001973

Certification ID 251973

Test Result Report ID: 22PS1973A

Certificate Issue Date: Feb 8, 2022



A handwritten signature in blue ink, appearing to read "A. Bitziopoulos", is positioned above the name of the Certification Body General Manager.

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	Strider Essential 500W
OEM/ODM	FSP
Serial Number	S3501000442
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	8-4
Rated Frequency (Hz)	50-60

Rated Power (W)	500
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Sleeve Bearing Fan (D12SM-12)
Semi-Passive Operation	X
Cybenetics Testing Information	
Lab ID	SL50001973
Date of receipt	Oct 13, 2021
Testing Date	Feb 8, 2022
Report Issued Date	Feb 8, 2022
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Captive Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (530mm)	1	1	18-24AWG	No
4+4 pin EPS12V (610mm)	1	1	18AWG	No
6+2 pin PCIe (510mm+150mm)	1	2	18AWG	No
SATA (550mm+155mm+155mm+155mm)	1	4	18AWG	No
SATA (550mm+55mm+55mm+55mm)	1	4	18AWG	No
SATA (550mm) / 4-pin Molex (+155mm+155mm+155mm) / FDD (+100mm)	1	1 / 3 / 1	18-22AWG	No
Modular Cables				
AC Power Cord (1720mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	24	20	39	3	0.3
	Watts	120		468	15	3.6
Total Max. Power (W)		500				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	88.628%
Average Noise Output (>1450 Load Combinations)	35.39dBA
Average PF (>1450 Load Combinations)	0.993
Efficiency With 10W (≤500W) or 2% (>500W) Load	64.559%
Standby Power Consumption	0.0972W
Non-Accredited	
12V Ripple (Full Load)	68.44mV
5V Ripple (Full Load)	58.22mV
3.3V Ripple (Full Load)	36.75mV
5VSB Ripple (Full Load)	20.37mV
12V Load Regulation	2.81%
5V Load Regulation	1.04%
3.3V Load Regulation	2.96%

5VSB Load Regulation	3.02%
Inrush Current	35.740A

230V

Accredited		
Average Efficiency (>1450 load combinations)	90.252%	
Average Noise Output (>1450 Load Combinations)	35.37dBA	
Average PF (>1450 Load Combinations)	0.977	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1568W	
Non-Accredited		
12V Ripple (Full Load)	70.00mV	
5V Ripple (Full Load)	61.90mV	
3.3V Ripple (Full Load)	36.41mV	
5VSB Ripple (Full Load)	21.26mV	
12V Load Regulation	2.65%	
5V Load Regulation	0.90%	
3.3V Load Regulation	2.74%	
5VSB Load Regulation	2.99%	
Inrush Current	79.960A	
Hold-Up Time & PWR_OK Signal	21.20ms	
AC Loss to PWR_OK Hold Up Time	19.40ms	
PWR_OK Inactive to DC Loss Delay	1.80ms	
PSU Timings: T1 (20% / 100%)	57.0ms	52.0ms
PSU Timings: T3 (20% / 100%)	273.0ms	275.0ms
OPP (24.86°C / 39.00°C)	113.91%	113.89%

Hold-Up Time & PWR_OK Signal

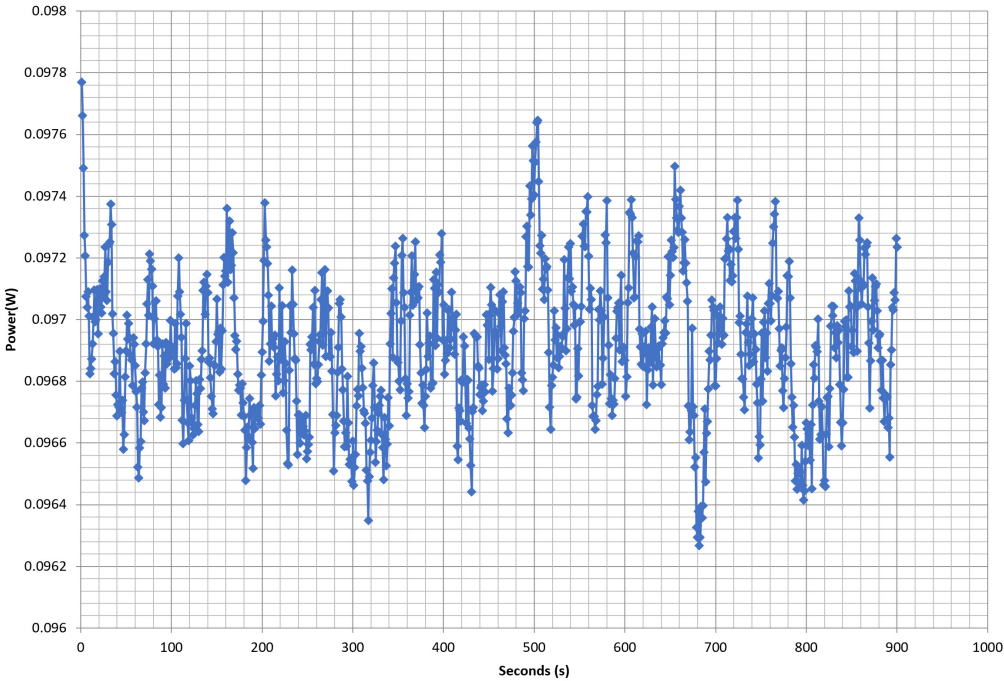
Hold-Up Time (ms)	21.2
AC Loss to PWR_OK Hold Up Time (ms)	19.4



Graphs

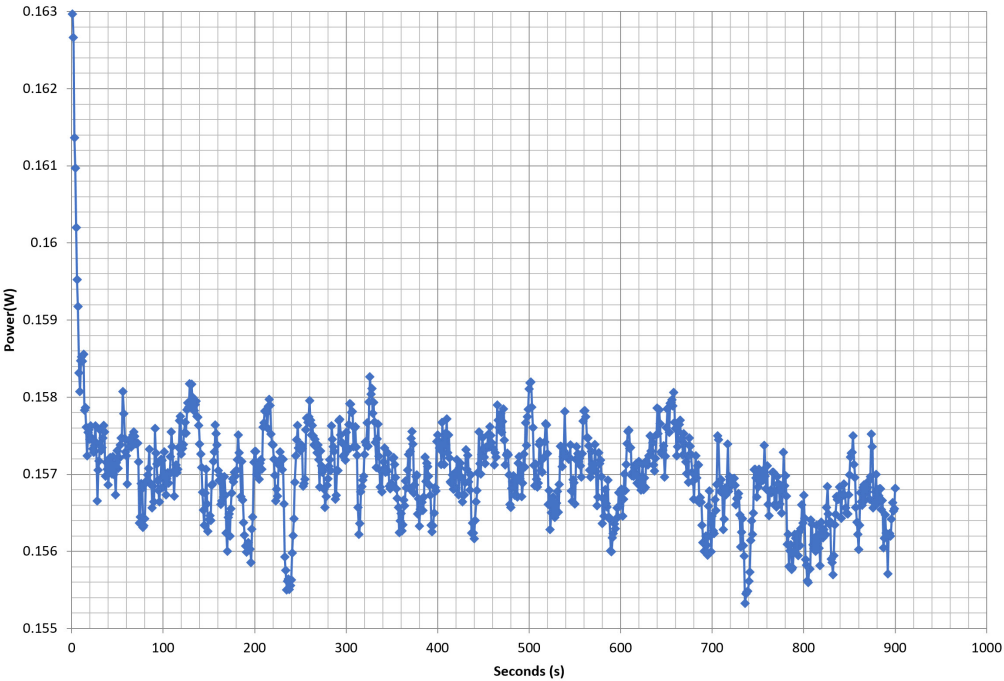
115V

Power - S3501000442 - 02/02/2022 - 11:10



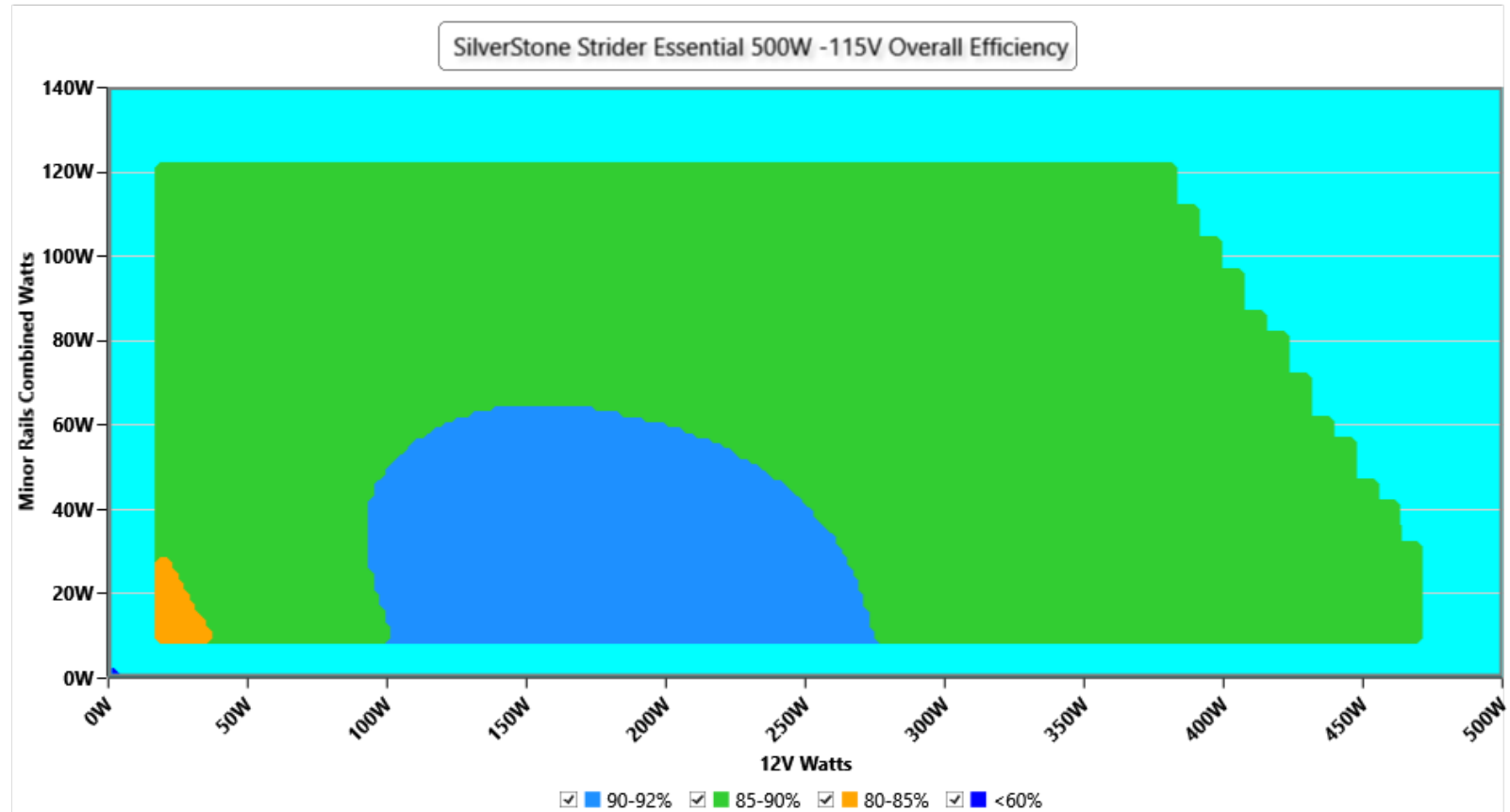
230V

Power - S3501000442 - 02/02/2022 - 11:10



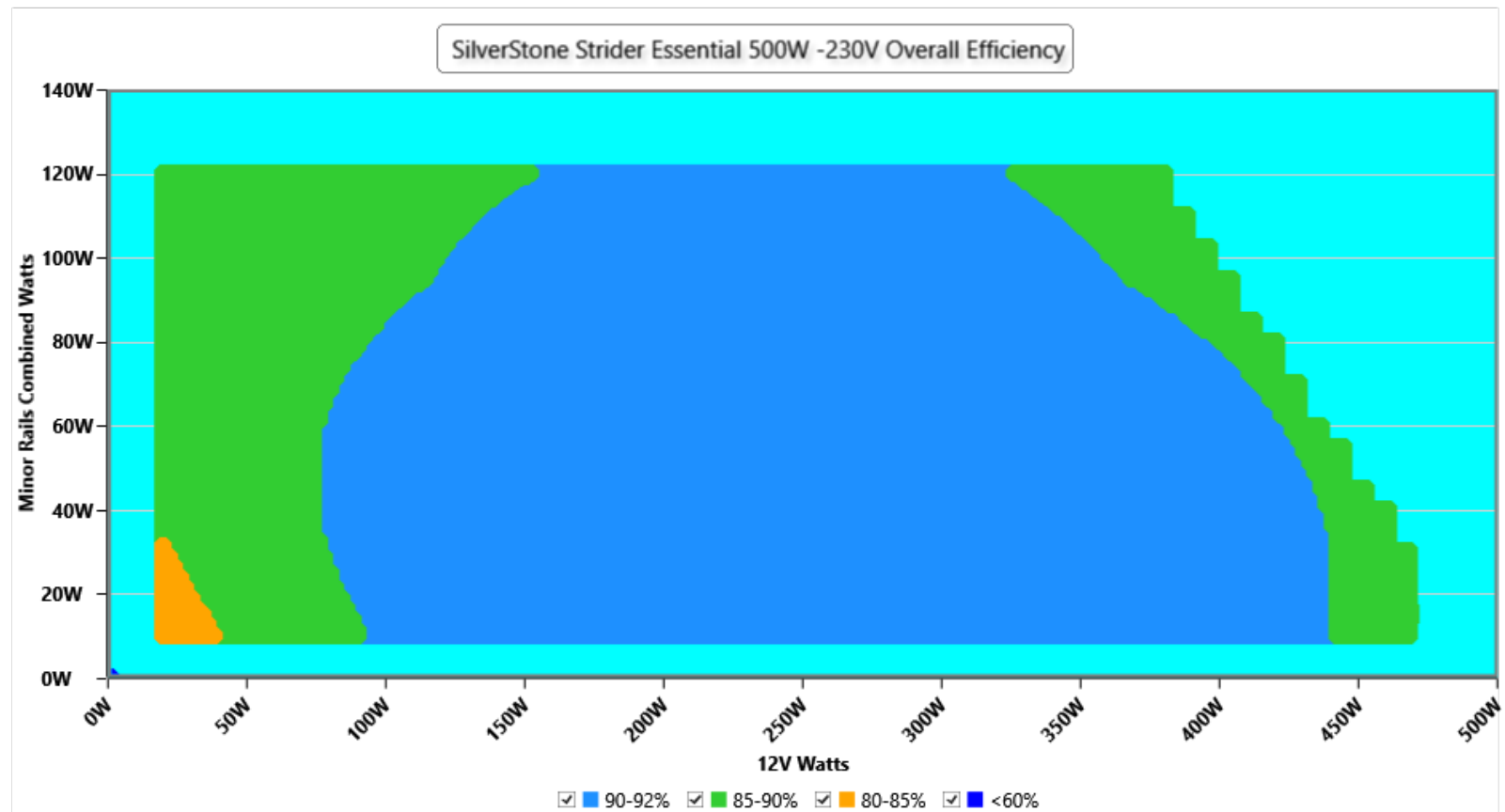
Efficiency Graph

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

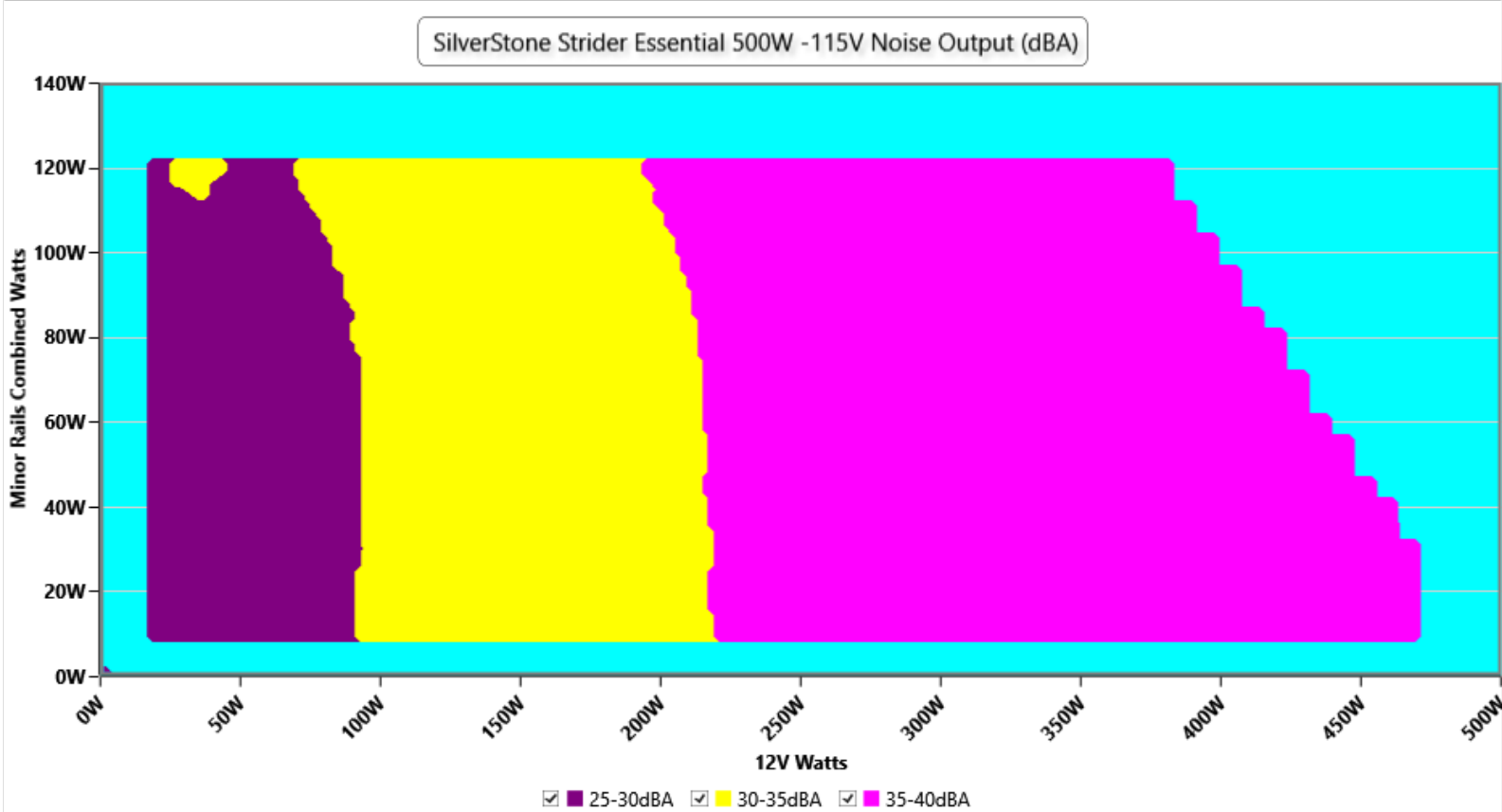


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This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

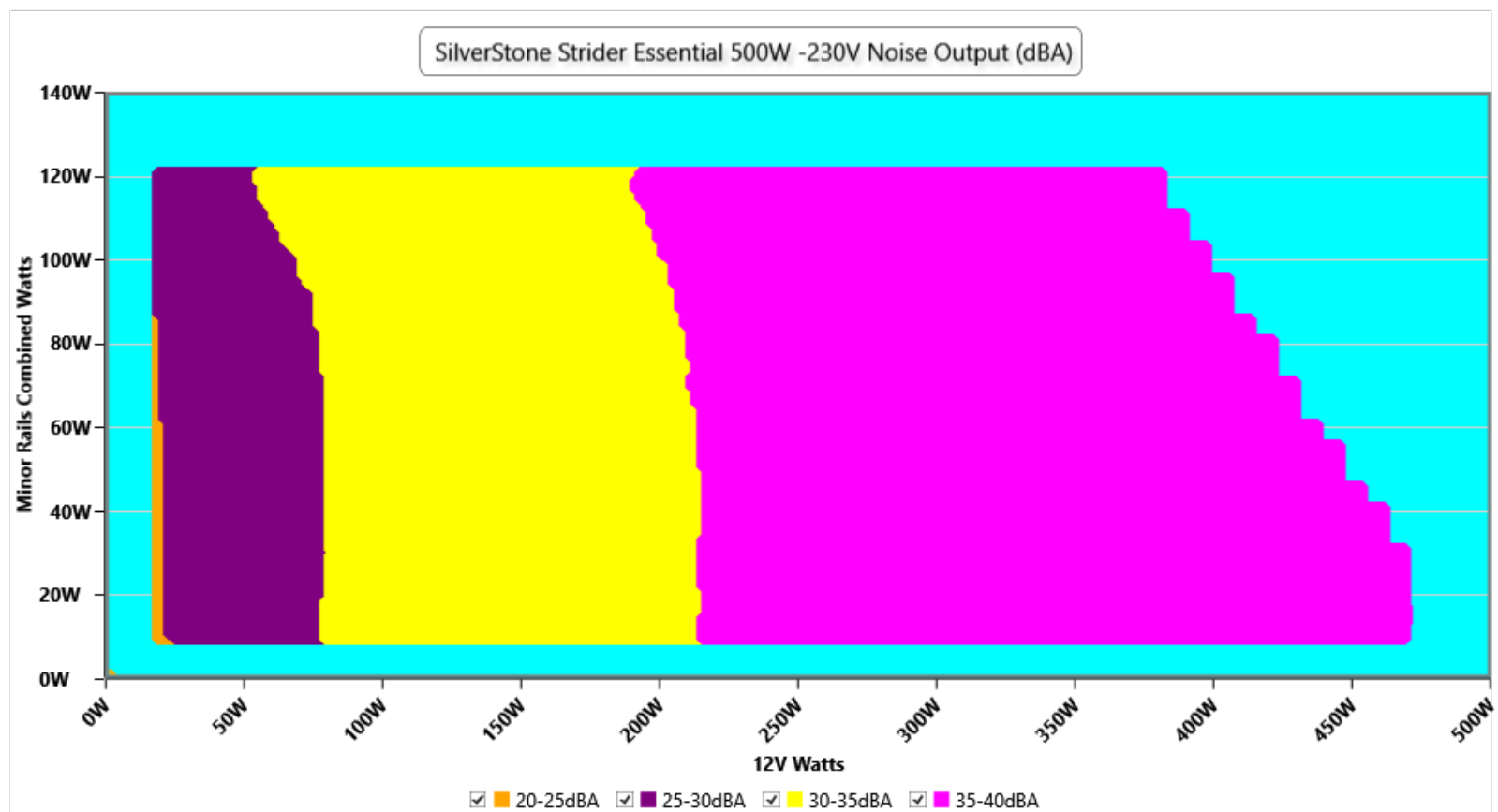
Noise Graph

115V



INFO

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



INFO

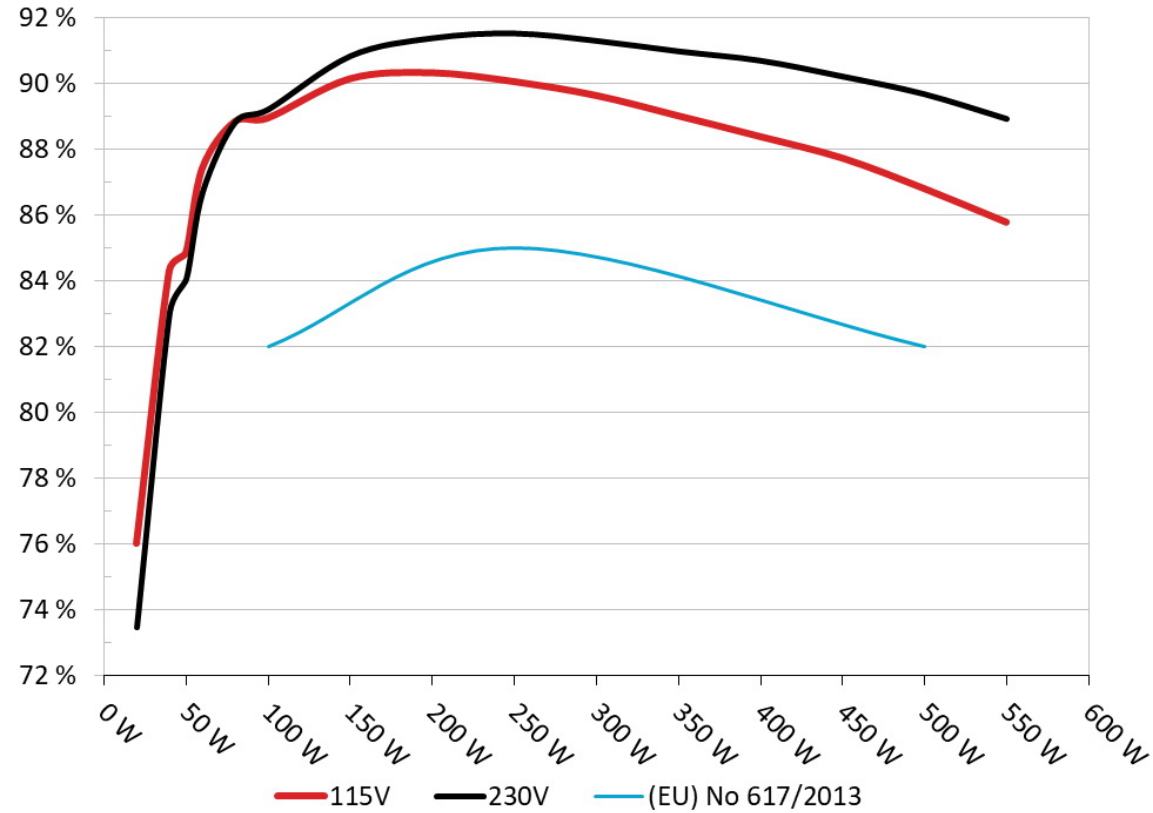
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: SilverStone Strider Essential 500W

Ambient: 32°C - 40°C (89.6°F - 104°F)



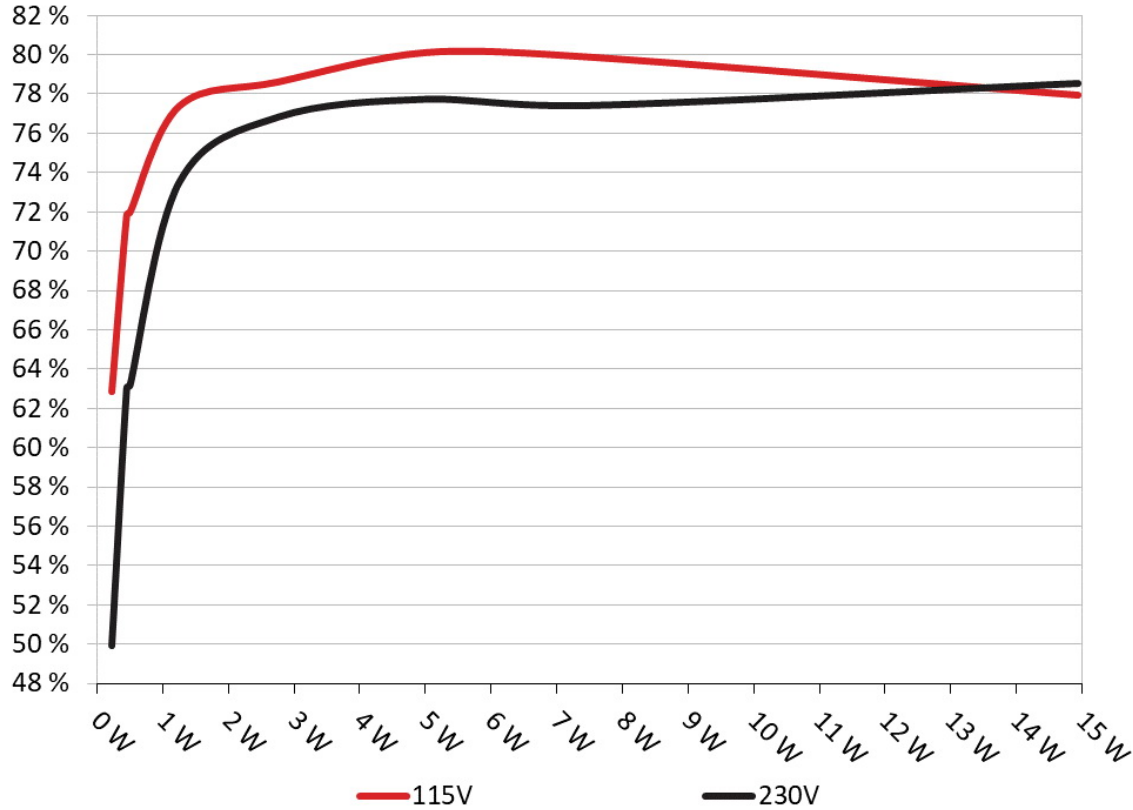
INFO

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

5VSB Efficiency: SilverStone Strider Essential 500W

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



INFO

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

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	62.872%	0.071
	5.033V	0.361W		115.14V
2	0.09A	0.453W	71.855%	0.116
	5.032V	0.63W		115.15V
3	0.55A	2.764W	78.626%	0.286
	5.024V	3.515W		115.14V
4	1A	5.016W	80.122%	0.33
	5.015V	6.26W		115.14V
5	1.5A	7.509W	79.885%	0.356
	5.005V	9.4W		115.14V
6	3A	14.935W	77.953%	0.39
	4.978V	19.159W		115.14V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	49.903%	0.027
	5.032V	0.455W		230.35V
2	0.09A	0.453W	63.027%	0.043
	5.032V	0.719W		230.35V
3	0.55A	2.764W	76.824%	0.164
	5.024V	3.598W		230.34V
4	1A	5.017W	77.734%	0.233
	5.015V	6.454W		230.34V
5	1.5A	7.512W	77.414%	0.276
	5.007V	9.703W		230.34V
6	3A	14.936W	78.534%	0.332
	4.978V	19.018W		230.34V

Supplementary Tests (For Reference)

Typical Load Tests

115V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	2.338A	1.958A	2.002A	1A	50.006	84.846%	972	26.2	34.54°C	0.953
	12.148V	5.107V	3.296V	5.001V	58.937				37.35°C	115.15V
20%	5.707A	2.937A	3.012A	1.203A	99.953	88.956%	1029	28.1	35.5°C	0.976
	12.099V	5.109V	3.287V	4.988V	112.362				38.84°C	115.15V
30%	9.449A	3.426A	3.523A	1.407A	149.991	90.152%	1107	30.0	36.02°C	0.987
	12.058V	5.109V	3.279V	4.976V	166.375				39.83°C	115.15V
40%	13.212A	3.914A	4.036A	1.612A	200.032	90.333%	1186	31.9	36.43°C	0.992
	12.021V	5.112V	3.271V	4.963V	221.437				40.54°C	115.15V
50%	16.624A	4.898A	5.06A	1.819A	249.983	90.065%	1277	33.7	36.58°C	0.996
	12.000V	5.105V	3.261V	4.949V	277.557				41.53°C	115.16V
60%	20.060A	5.886A	6.089A	2.001A	299.894	89.644%	1360	35.6	37.59°C	0.997
	11.974V	5.098V	3.252V	4.936V	334.539				42.88°C	115.16V
70%	23.513A	6.878A	7.128A	2.236A	350.061	89.022%	1462	37.7	37.71°C	0.997
	11.948V	5.091V	3.241V	4.921V	393.227				43.54°C	115.16V
80%	26.987A	7.869A	8.173A	2.343A	399.688	88.394%	1474	37.9	38.62°C	0.998
	11.923V	5.085V	3.23V	4.909V	452.168				44.74°C	115.16V
90%	30.970A	8.35A	8.692A	2.451A	449.916	87.738%	1467	37.8	39.13°C	0.998
	11.863V	5.091V	3.221V	4.897V	512.794				45.63°C	115.16V
100%	34.678A	8.84A	9.251A	3.077A	499.534	86.814%	1470	37.8	39.5°C	0.998
	11.818V	5.091V	3.21V	4.875V	575.405				46.65°C	115.16V
110%	38.315A	9.84A	10.411A	3.085A	549.756	85.787%	1470	37.8	40.05°C	0.999
	11.783V	5.082V	3.198V	4.863V	640.837				47.78°C	115.17V
CL1	1.904A	14.862A	14.682A	0.505A	146.419	84.878%	1519	38.6	36.42°C	0.988
	12.611V	4.858V	3.249V	4.955V	172.504				41.25°C	115.17V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	1.908A	19.753A	1.01A	0.502A	126.517	86.352%	1417	36.8	37.28°C	0.985
	12.582V	4.896V	3.268V	4.979V	146.512				42.85°C	115.16V
CL3	1.946A	1.004A	22.744A	0.504A	105.706	82.021%	1178	31.6	38.08°C	0.981
	12.333V	4.983V	3.262V	4.96V	128.877				44.53°C	115.16V
CL4	42.640A	0.952A	1.02A	0.506A	499.747	86.633%	1445	37.4	39.41°C	0.998
	11.466V	5.251V	3.236V	4.94V	576.859				46.47°C	115.16V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	2.342A	1.964A	2.007A	1A	50.004	84.052%	1033	28.2	35.61°C	0.868
	12.130V	5.092V	3.289V	5.001V	59.492				38.53°C	230.32V
20%	5.718A	2.939A	3.017A	1.203A	99.948	89.211%	1065	29.1	35.94°C	0.935
	12.074V	5.104V	3.281V	4.988V	112.034				39.15°C	230.32V
30%	9.471A	3.432A	3.53A	1.407A	149.987	90.836%	1136	30.5	36°C	0.96
	12.028V	5.101V	3.272V	4.975V	165.118				39.59°C	230.32V
40%	13.244A	3.921A	4.045A	1.612A	200.028	91.38%	1208	32.4	36.24°C	0.974
	11.992V	5.103V	3.264V	4.963V	218.897				40.25°C	230.33V
50%	16.650A	4.904A	5.066A	1.819A	249.966	91.525%	1196	32.2	37.38°C	0.982
	11.980V	5.099V	3.257V	4.95V	273.112				41.69°C	230.34V
60%	20.088A	5.893A	6.1A	2.001A	299.887	91.299%	1324	34.8	37.85°C	0.985
	11.957V	5.093V	3.246V	4.936V	328.465				42.7°C	230.34V
70%	23.542A	6.883A	7.144A	2.236A	350.054	90.979%	1431	37.1	38.34°C	0.988
	11.933V	5.087V	3.234V	4.92V	384.766				43.54°C	230.35V
80%	27.043A	7.869A	8.185A	2.344A	399.666	90.695%	1471	37.8	39.17°C	0.99
	11.898V	5.085V	3.225V	4.908V	440.669				44.82°C	230.35V
90%	30.990A	8.355A	8.703A	2.451A	449.915	90.214%	1470	37.8	39.75°C	0.991
	11.855V	5.088V	3.217V	4.896V	498.719				46.12°C	230.35V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	34.674A	8.844A	9.251A	3.076A	499.446	89.679%	1474	37.9	40.14°C	0.992
	11.817V	5.089V	3.21V	4.877V	556.926				47.29°C	230.36V
110%	38.313A	9.842A	10.416A	3.085A	549.709	88.926%	1474	37.9	40.21°C	0.993
	11.782V	5.081V	3.197V	4.864V	618.163				48.12°C	230.36V
CL1	1.916A	14.841A	14.712A	0.504A	146.4	86.479%	1123	30.3	37.51°C	0.961
	12.533V	4.865V	3.242V	4.96V	169.289				41.68°C	230.36V
CL2	1.912A	19.791A	1.011A	0.502A	126.509	87.01%	1209	32.4	38.55°C	0.954
	12.559V	4.886V	3.263V	4.979V	145.395				43.72°C	230.36V
CL3	1.954A	1.005A	22.934A	0.505A	105.707	82.297%	1232	32.8	39.88°C	0.946
	12.283V	4.98V	3.235V	4.957V	128.446				46.29°C	230.36V
CL4	42.657A	0.953A	1.021A	0.506A	499.736	89.292%	1440	37.3	40.87°C	0.992
	11.462V	5.247V	3.232V	4.939V	559.663				48.92°C	230.37V

The results above are not used in the certification process

Light Load Tests

115V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.222A	0.488A	0.499A	0.199A	20.002	76.013%	933	25.0	32.27°C	0.901
	12.150V	5.119V	3.305V	5.022V	26.314				33.4°C	115.16V
40W	2.704A	0.682A	0.7A	0.299A	40.001	84.315%	954	25.6	33.19°C	0.941
	12.090V	5.134V	3.301V	5.017V	47.442				34.98°C	115.15V
60W	4.187A	0.876A	0.9A	0.399A	60	87.415%	948	25.4	33.3°C	0.958
	12.068V	5.138V	3.299V	5.013V	68.638				35.43°C	115.15V
80W	5.671A	1.071A	1.101A	0.499A	79.959	88.853%	975	26.4	34.41°C	0.97
	12.049V	5.136V	3.296V	5.008V	89.99				36.87°C	115.15V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.228A	0.489A	0.5A	0.199A	19.998	73.466%	968	26.1	33.38°C	0.716
	12.092V	5.112V	3.298V	5.023V	27.221				34.56°C	230.3V
40W	2.704A	0.684A	0.701A	0.299A	39.997	83.049%	986	26.8	33.75°C	0.835
	12.090V	5.117V	3.295V	5.018V	48.161				35.24°C	230.3V
60W	4.198A	0.878A	0.902A	0.399A	59.997	86.7%	996	27.1	34.59°C	0.887
	12.036V	5.127V	3.293V	5.012V	69.2				36.39°C	230.3V
80W	5.680A	1.072A	1.103A	0.499A	79.951	88.837%	1017	27.8	34.88°C	0.916
	12.028V	5.13V	3.29V	5.008V	89.997				37.11°C	230.31V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	17.67mV	19.59mV	10.90mV	15.29mV	Pass
20% Load	26.00mV	18.77mV	17.14mV	15.86mV	Pass
30% Load	35.40mV	27.10mV	21.09mV	10.91mV	Pass
40% Load	33.71mV	27.30mV	17.09mV	10.30mV	Pass
50% Load	34.58mV	28.59mV	18.02mV	10.76mV	Pass
60% Load	38.31mV	32.27mV	18.22mV	13.10mV	Pass
70% Load	42.45mV	33.85mV	17.87mV	14.37mV	Pass
80% Load	48.42mV	44.39mV	21.34mV	16.16mV	Pass
90% Load	54.40mV	45.92mV	20.16mV	17.49mV	Pass
100% Load	68.44mV	58.22mV	36.75mV	20.37mV	Fail
110% Load	95.37mV	73.19mV	38.03mV	22.79mV	Fail
Crossload1	40.07mV	88.07mV	30.86mV	17.06mV	Fail
Crossload2	36.57mV	74.20mV	19.50mV	16.97mV	Fail

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	32.69mV	62.49mV	22.01mV	14.07mV	Fail
Crossload4	75.26mV	89.01mV	32.12mV	20.17mV	Fail

The results above are not used in the certification process

230V

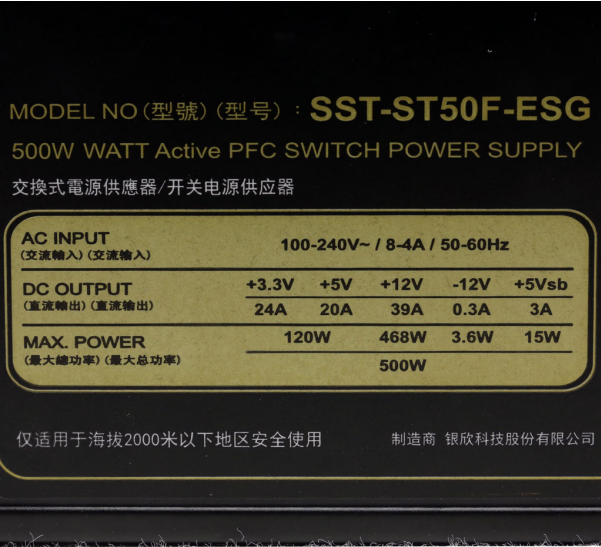
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	28.35mV	21.12mV	11.62mV	14.89mV	Pass
20% Load	25.90mV	17.95mV	11.21mV	18.40mV	Pass
30% Load	28.76mV	21.33mV	10.95mV	19.98mV	Pass
40% Load	30.34mV	25.82mV	12.44mV	19.83mV	Pass
50% Load	33.97mV	29.00mV	13.20mV	10.71mV	Pass
60% Load	37.18mV	33.59mV	13.82mV	12.09mV	Pass
70% Load	39.02mV	43.31mV	14.90mV	13.97mV	Pass
80% Load	45.36mV	40.19mV	21.34mV	18.00mV	Pass
90% Load	51.28mV	46.07mV	21.09mV	18.81mV	Pass
100% Load	70.00mV	61.90mV	36.41mV	21.26mV	Fail
110% Load	86.71mV	70.80mV	40.68mV	22.12mV	Fail
Crossload1	38.04mV	89.69mV	25.11mV	17.98mV	Fail
Crossload2	35.60mV	71.95mV	14.43mV	16.97mV	Fail
Crossload3	32.28mV	65.86mV	21.70mV	16.67mV	Fail
Crossload4	67.63mV	91.23mV	32.32mV	20.43mV	Fail

The results above are not used in the certification process

SilverStone Strider Essential 500W



Top side



Power specifications label