SILVERSTONE

SilverStone Strider Essential 500W 230V

Serial Number VA500-B-230

Lab ID SL50001855

Certification ID 251855

Test Result Report ID: 21PS1855A

Certificate Issue Date: Jun 8, 2021

230V

Scheme: ETA-EMI PSU



230V



Scheme: LAMBDA PSU



Aristeidis Bitziopoulos, Certification Body General Manager

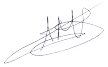
General Information

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	Strider Essential 500W 230V
OEM/ODM	CWT
Serial Number	VA500-B-230
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	200-240
Rated Current (Arms)	4
Rated Frequency (Hz)	47-63

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	✗
Cybenetics Testing Information	
Lab ID	SL50001855
Date of receipt	Jun 1, 2021
Testing Date	Jun 7, 2021
Report Issued Date	Jun 8, 2021
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 (520mm)	1	1	18-22AWG	No
4+4 pin EPS12V (760mm)	1	1	18AWG	No
6+2 pin PCIe (520mm+150mm)	1	2	18AWG	No
SATA (510mm+150mm) / 4-pin Molex (+150mm+150mm)	1	2 / 2	20AWG	No
SATA (510mm+150mm) / 4-pin Molex (+150mm) / FDD (+150mm)	1	2 / 1 / 1	18-22AWG	No

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	18	17	38	2.5	0.3
	Watts	110		456	12.5	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 230V

Accredited	
Average Efficiency (>1450 load combinations)	85.499%
Average Noise Output (>1450 Load Combinations)	26.85dBA
Average PF (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.2443W
Non-Accredited	
12V Ripple (Full Load)	30.59mV
5V Ripple (Full Load)	15.23mV
3.3V Ripple (Full Load)	24.91mV
5VSB Ripple (Full Load)	16.58mV
12V Load Regulation	1.75%
5V Load Regulation	2.67%
3.3V Load Regulation	3.10%
5VSB Load Regulation	2.69%
Inrush Current	70.810A

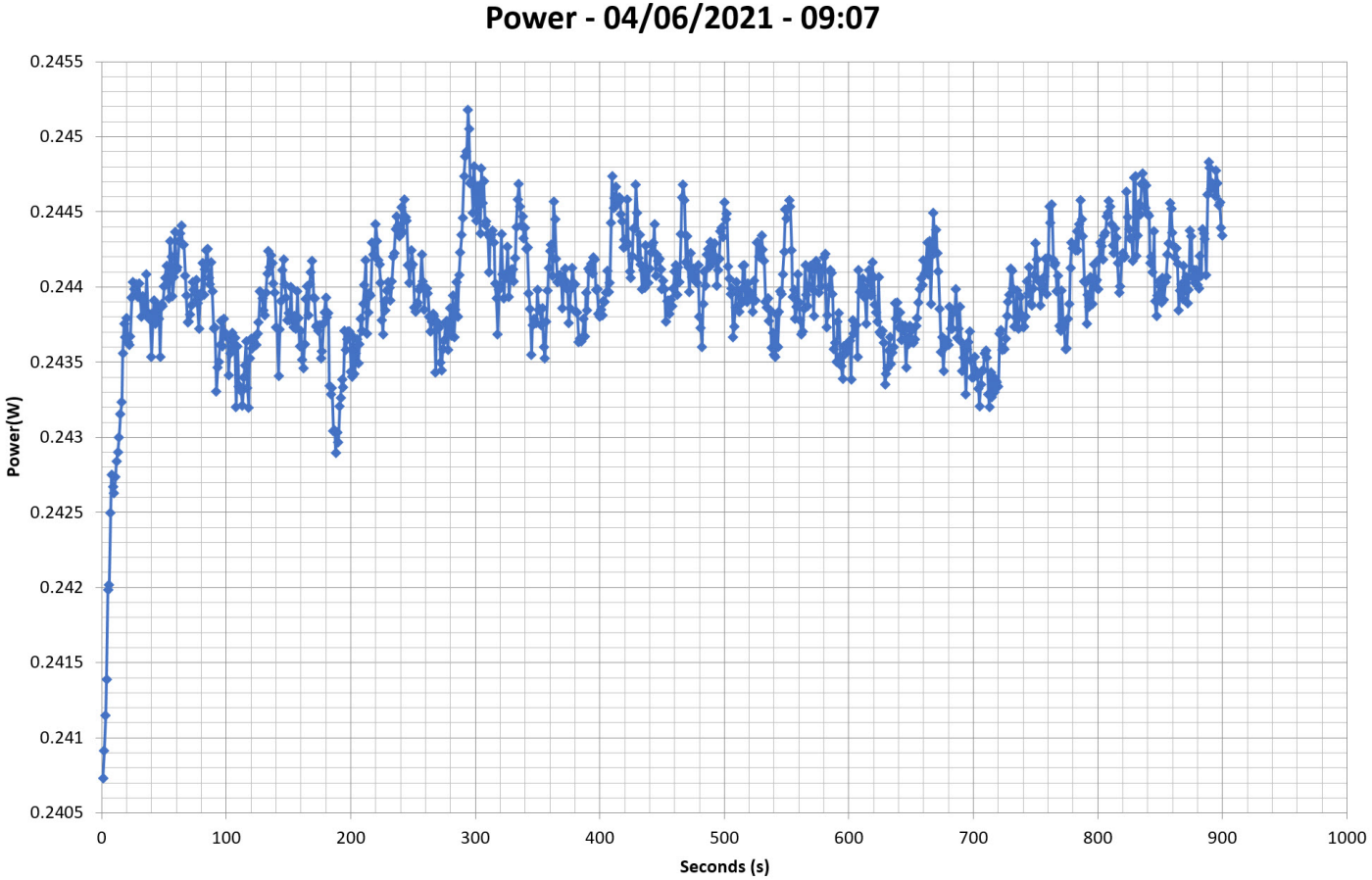
Hold-Up Time & PWR_OK Signal		14.40ms
AC Loss to PWR_OK Hold Up Time		11.40ms
PWR_OK Inactive to DC Loss Delay		3.00ms
PSU Timings: T1 (20% / 100%)	60.0ms	62.0ms
PSU Timings: T3 (20% / 100%)	228.0ms	244.0ms
OPP (27.50°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	14.4
AC Loss to PWR_OK Hold Up Time (ms)	11.4
PWR_OK Inactive to DC Loss Delay (ms)	3

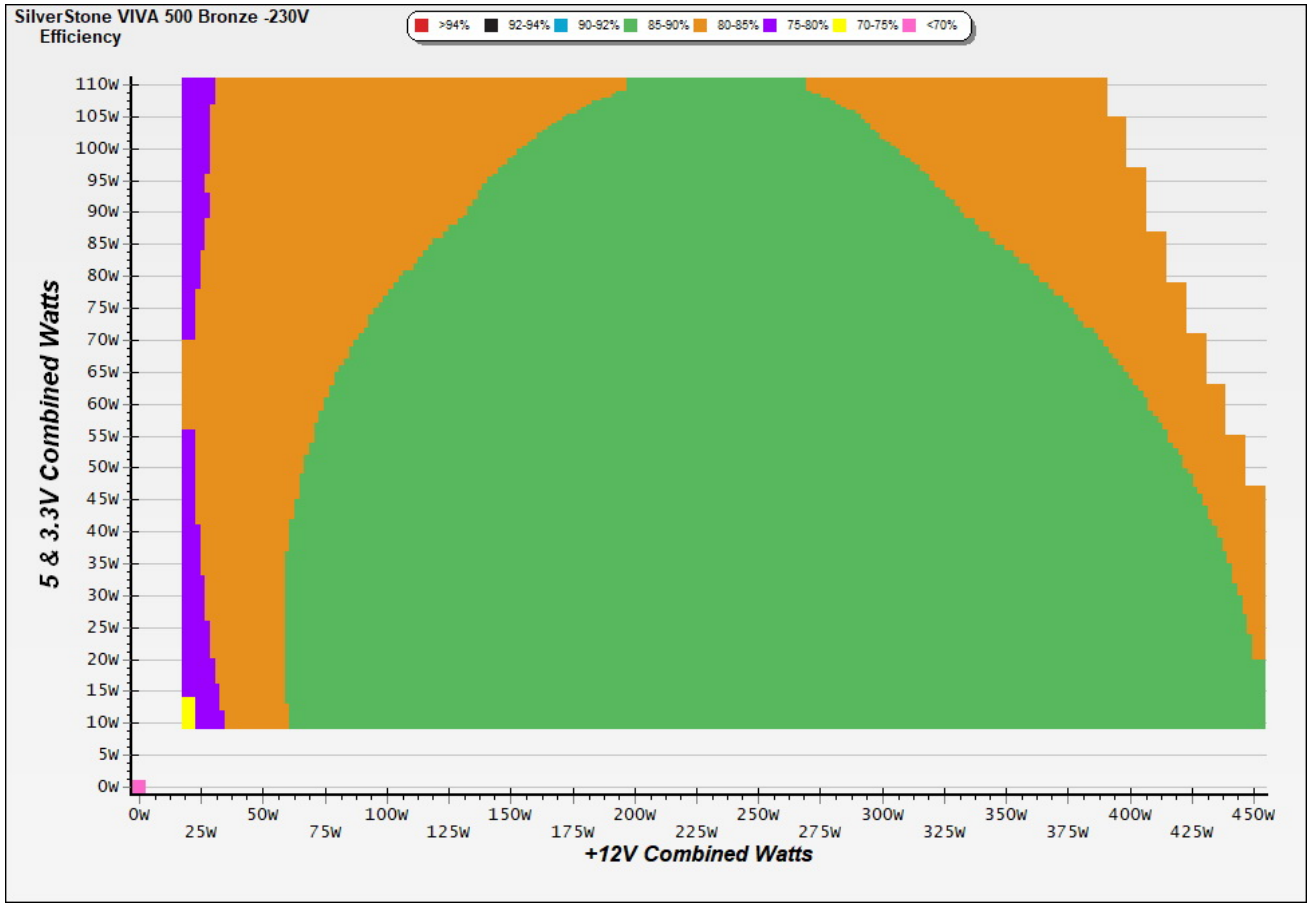
Vampire Power

Graphs 230V



Efficiency Graph

230V

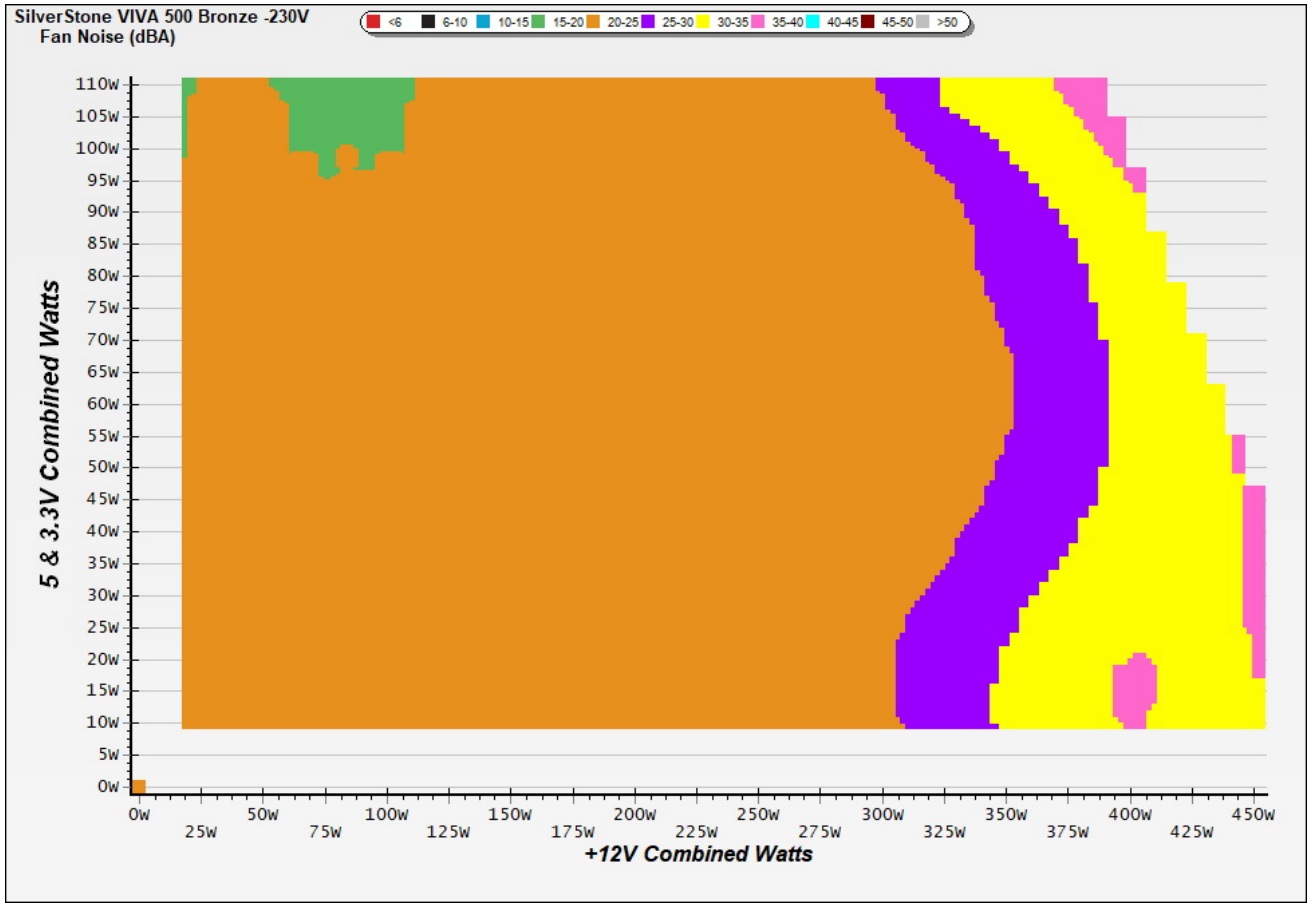


INFO

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

Noise Graph

230V



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

Noise under high ambient temperature (indicative)

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	806 RPM · 21.2 dB(A) · 29.2 °C	806 RPM · 21.2 dB(A) · 29.2 °C	**+0.0 dB(A)**
20%	810 RPM · 21.3 dB(A) · 29.8 °C	810 RPM · 21.3 dB(A) · 29.8 °C	**+0.0 dB(A)**
50%	818 RPM · 21.6 dB(A) · 31.1 °C	818 RPM · 21.6 dB(A) · 31.1 °C	**+0.0 dB(A)**
100%	1572 RPM · 39.4 dB(A) · 34.8 °C	1572 RPM · 39.4 dB(A) · 34.8 °C	**+0.0 dB(A)**

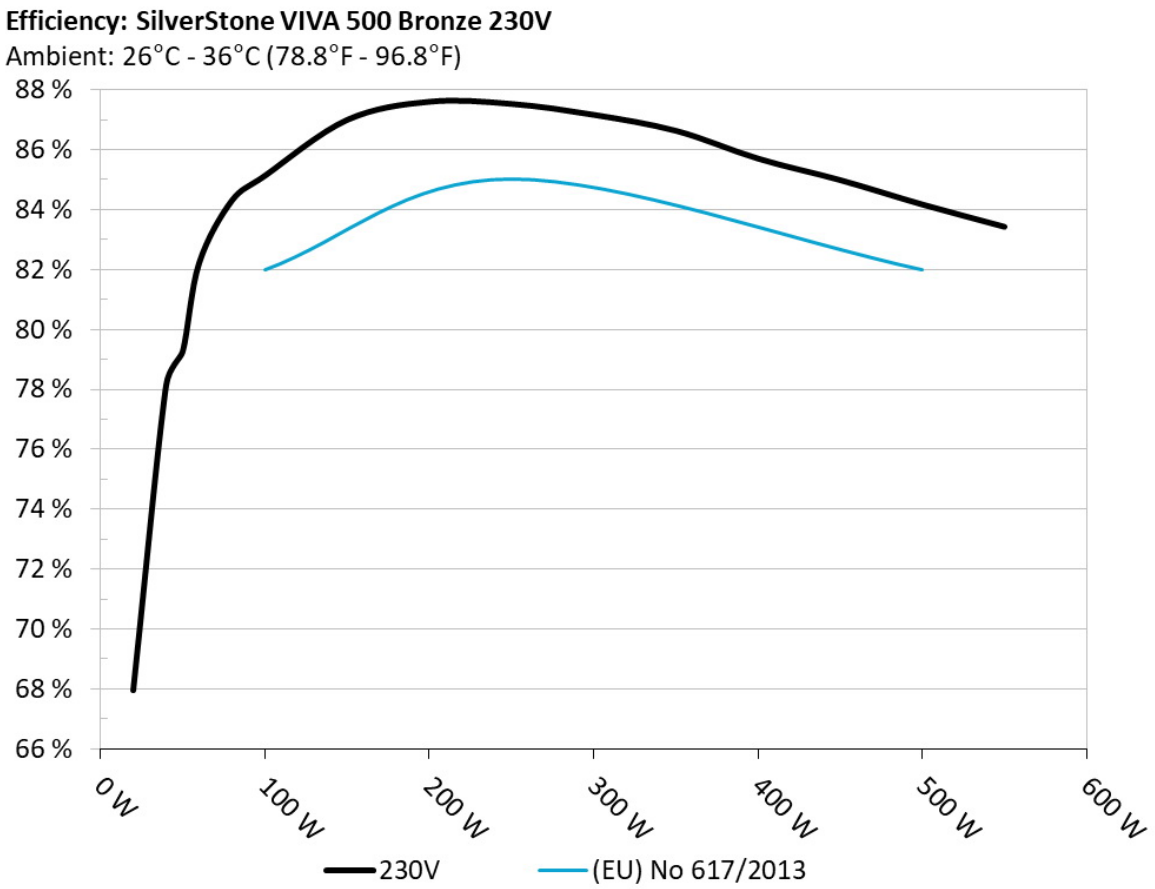
INFO

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

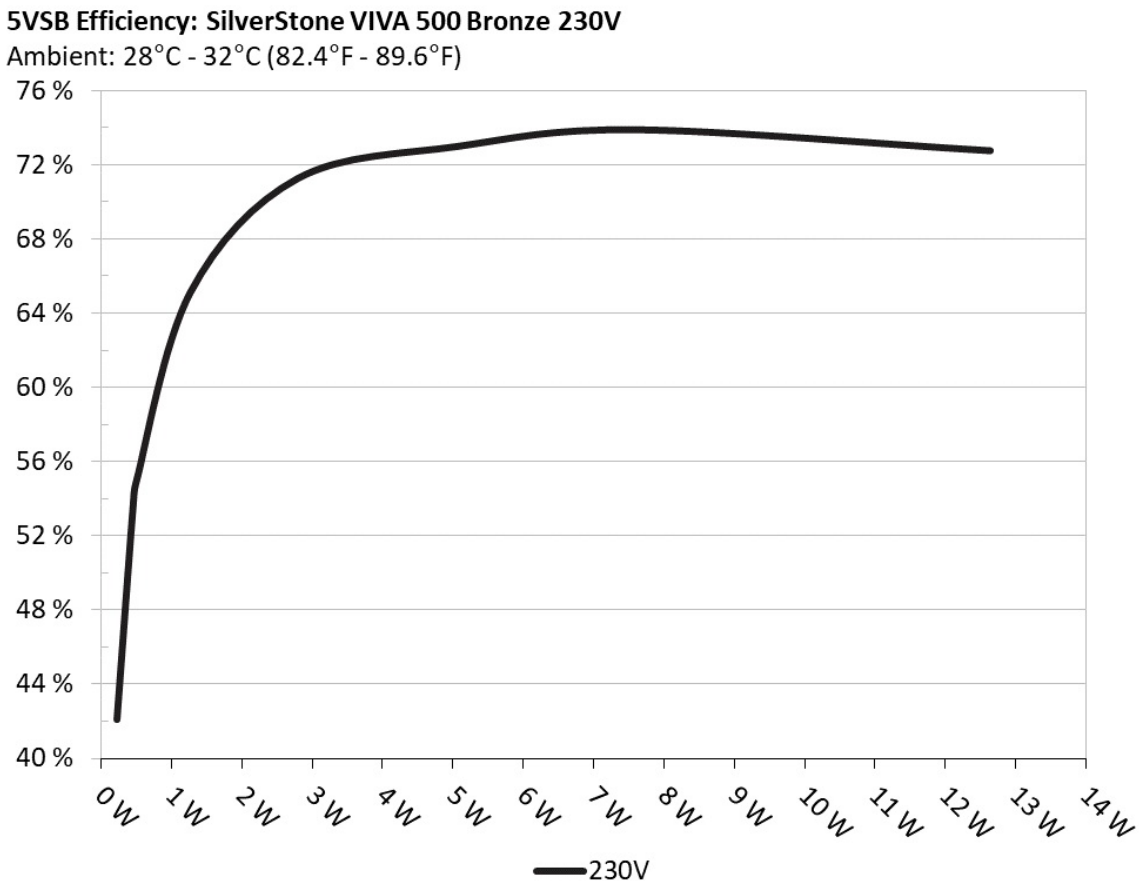
Efficiency under high ambient temperature



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



INFO

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

5VSB Efficiency (ERP LOT 3/6 & CEC) 230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	42.125%	0.033
	5.100V	0.546		230.27V

2	0.090A	0.459	53.621%	0.052
	5.099V	0.856		230.27V
3	0.550A	2.801	71.236%	0.193
	5.091V	3.932		230.25V
4	1.000A	5.084	72.962%	0.267
	5.083V	6.968		230.25V
5	1.500A	7.614	73.851%	0.312
	5.075V	10.310		230.25V
6	2.500A	12.646	72.724%	0.360
	5.058V	17.389		230.25V

Supplementary Tests (For Reference)

Typical Load Tests 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	2.365A	1.957A	1.952A	0.986A	50.003	79.244%	806	21.2	29.16°C	0.914
	12.009V	5.111V	3.381V	5.071V	63.100				32.34°C	230.23V
2	5.762A	2.945A	2.937A	1.186A	100.025	85.118%	810	21.3	29.81°C	0.961
	11.996V	5.096V	3.370V	5.058V	117.514				33.67°C	230.23V
3	9.527A	3.437A	3.438A	1.387A	149.978	86.980%	813	21.4	30.62°C	0.976
	11.959V	5.091V	3.359V	5.046V	172.428				34.86°C	230.23V
4	13.319A	3.932A	3.941A	1.590A	200.020	87.587%	818	21.6	30.99°C	0.983
	11.925V	5.084V	3.349V	5.033V	228.366				35.78°C	230.23V
5	16.742A	4.936A	4.943A	1.793A	250.048	87.513%	818	21.6	31.13°C	0.987
	11.919V	5.066V	3.337V	5.019V	285.727				36.69°C	230.23V
6	20.173A	5.940A	5.954A	1.998A	300.000	87.149%	821	21.7	31.85°C	0.991
	11.907V	5.050V	3.326V	5.005V	344.237				38.24°C	230.23V
7	23.629A	6.955A	6.971A	2.205A	350.080	86.613%	826	21.9	32.34°C	0.992
	11.891V	5.033V	3.314V	4.989V	404.191				39.71°C	230.23V
8	27.084A	7.979A	7.998A	2.413A	400.117	85.683%	1050	28.7	32.75°C	0.993
	11.878V	5.015V	3.300V	4.975V	466.973				40.73°C	230.23V

9	31.033A	8.485A	8.512A	2.418A	449.807	84.970%	1295	34.1	33.52°C	0.994
	11.836V	5.009V	3.289V	4.964V	529.369				42.04°C	230.22V
10	34.995A	8.999A	9.062A	2.525A	500.131	84.150%	1572	39.4	34.82°C	0.994
	11.799V	5.002V	3.278V	4.953V	594.335				44.18°C	230.23V
11	39.352A	8.995A	9.085A	2.529A	549.632	83.414%	1828	43.0	35.72°C	0.994
	11.751V	5.003V	3.269V	4.945V	658.923				45.52°C	230.23V
CL1	4.001A	13.002A	12.999A	0.000A	156.616	81.925%	816	21.5	31.48°C	0.979
	12.447V	4.887V	3.329V	5.043V	191.171				36.77°C	230.23V
CL2	37.981A	3.000A	2.999A	1.000A	466.601	85.214%	1426	37.0	35.21°C	0.994
	11.487V	5.137V	3.303V	4.997V	547.565				44.75°C	230.23V

The results above are not used in the certification process

Light Load Tests 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.243A	0.485A	0.486A	0.196A	19.994	67.947%	796	20.9	0.784
	11.949V	5.144V	3.391V	5.093V	29.426				230.24V
2	2.483A	0.974A	0.975A	0.393A	39.983	78.122%	797	20.9	0.887
	11.954V	5.135V	3.386V	5.086V	51.180				230.24V
3	3.726A	1.465A	1.464A	0.591A	60.014	82.200%	798	20.9	0.928
	11.958V	5.125V	3.381V	5.078V	73.010				230.24V
4	4.963A	1.954A	1.953A	0.789A	79.964	84.289%	800	21.0	0.949
	11.963V	5.117V	3.376V	5.069V	94.869				230.24V

The results above are not used in the certification process

Ripple Measurements 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.50mV	8.00mV	14.50mV	9.00mV	Pass
20% Load	15.50mV	8.00mV	15.10mV	9.60mV	Pass
30% Load	16.70mV	9.00mV	15.30mV	9.70mV	Pass
40% Load	18.10mV	10.50mV	16.70mV	14.60mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	20.70mV	11.20mV	17.50mV	11.40mV	Pass
60% Load	21.10mV	10.50mV	17.60mV	11.40mV	Pass
70% Load	22.20mV	10.80mV	18.80mV	13.10mV	Pass
80% Load	23.50mV	11.50mV	22.00mV	14.70mV	Pass
90% Load	22.80mV	13.00mV	22.60mV	16.30mV	Pass
100% Load	30.60mV	15.20mV	24.90mV	16.60mV	Pass
110% Load	33.90mV	16.50mV	24.40mV	19.50mV	Pass
Crossload1	16.20mV	17.50mV	25.00mV	7.80mV	Pass
Crossload2	30.00mV	20.00mV	20.20mV	16.90mV	Pass

The results above are not used in the certification process

SilverStone Strider Essential 500W 230V



Top side



Power specifications label

All data and graphs included in this test report can be used by any individual on the following conditions:

› It should be mentioned that the test results are provided by Cybenetics

› The link to the original test results document should be provided in any case

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

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