EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

SilverStone Strider Essential 600W 230V

Lab ID#: SL60001807
Receipt Date: Feb 22, 2021
Test Date: Mar 8, 2021

Report: 21PS1807A
Report Date: Mar 24, 2021

DUT INFORMATION

Brand	SilverStone
Manufacturer (OEM)	CWT
Series	VIVA Bronze
Model Number	SST-AX0600FCBR-A
Serial Number	VA600-B-230
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	200-240
Rated Current (Arms)	4.5
Rated Frequency (Hz)	47-63
Rated Power (W)	600
Type	ATX12V
Cooling	120mm Sleeve Bearing Fan (HA1225H12S-Z)
Semi-Passive Operation	✗
Cable Design	Fixed cables

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

230V

Average Efficiency	84.435%
Average Efficiency 5VSB	73.713%
Standby Power Consumption (W)	0.1906540
Average PF	0.973
Avg Noise Output	36.06 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	Standard+

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	46	2.5	0.3
	Watts	120		552	12.5	3.6
Total Max. Power (W)		600				

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	7.3
AC Loss to PWR_OK Hold Up Time (ms)	5.8
PWR_OK Inactive to DC Loss Delay (ms)	1.5

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CABLES AND CONNECTORS

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 (780mm)	1	1	18AWG	No
6+2 pin PCIe (520mm+150mm)	1	2	18AWG	No
SATA (520mm+150mm)	2	4	20AWG	No
4-pin Molex (520mm+150mm+150mm) / FDD (+150mm)	1	3 / 1	18-22AWG	No

Modular Cables

AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

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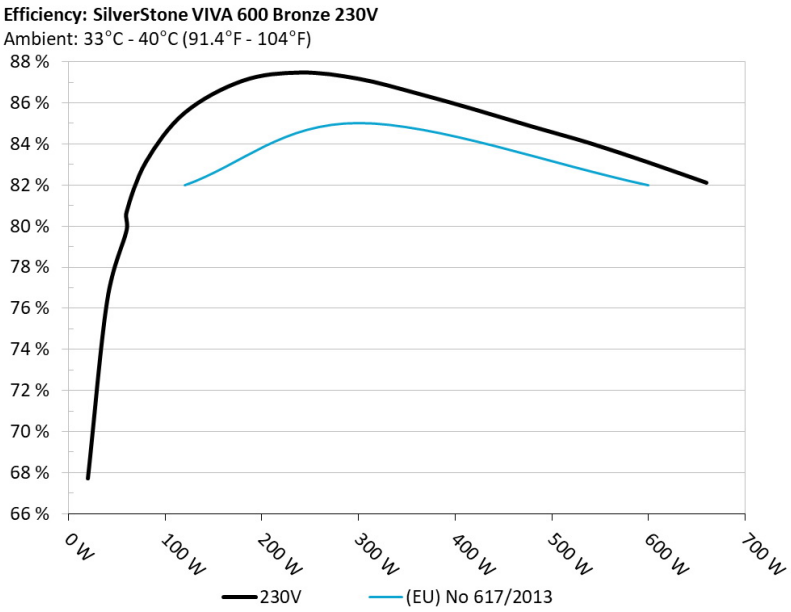
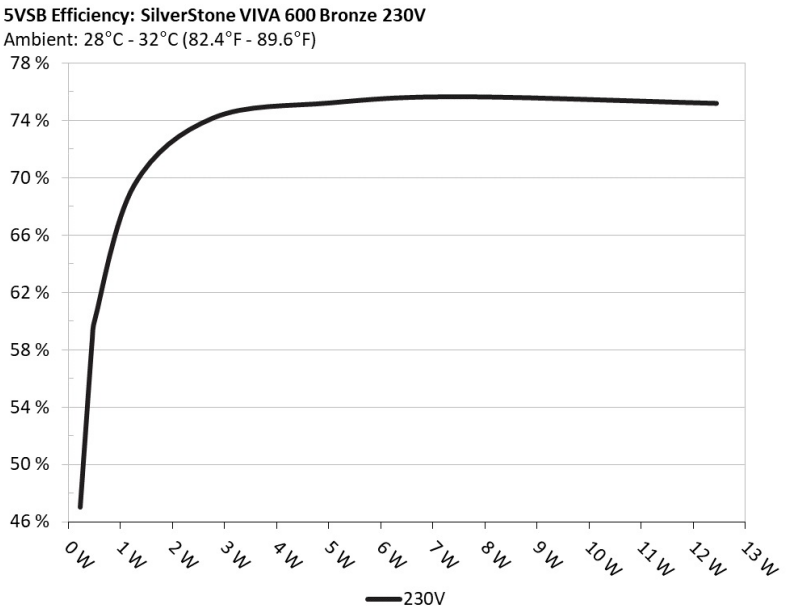
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	47.010%	0.033
	5.069V	0.485		230.32V
2	0.090A	0.456	58.612%	0.052
	5.068V	0.778		230.32V
3	0.550A	2.779	74.166%	0.202
	5.052V	3.747		230.32V
4	1.000A	5.037	75.224%	0.280
	5.036V	6.696		230.32V
5	1.500A	7.530	75.648%	0.328
	5.019V	9.954		230.32V
6	2.500A	12.457	75.187%	0.376
	4.982V	16.568		230.32V

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230V

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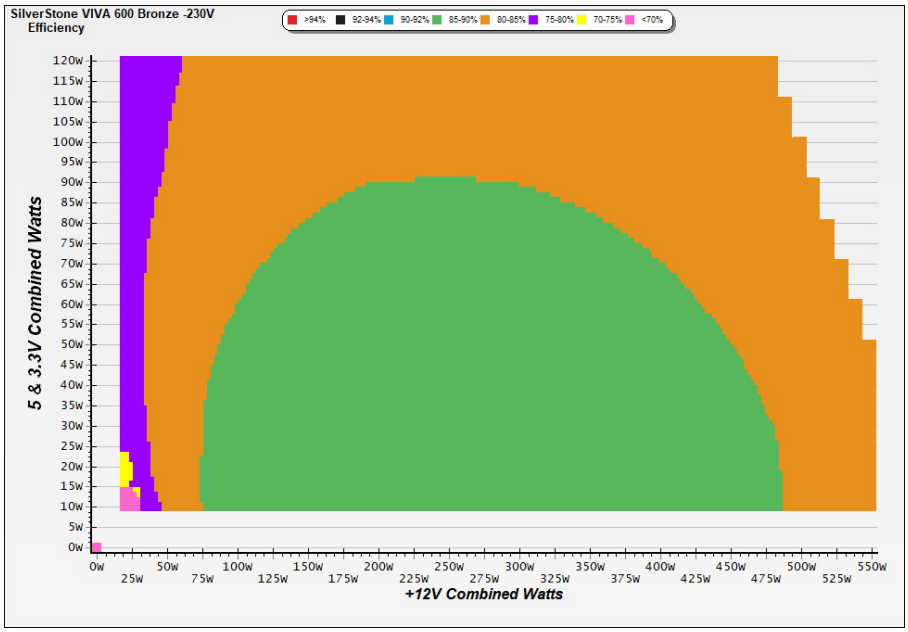
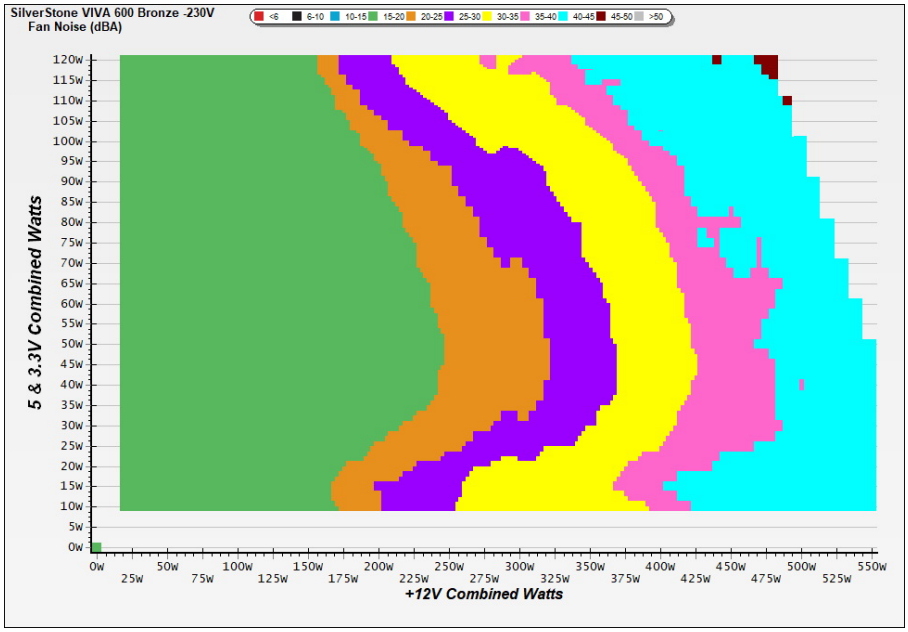
EFFICIENCY GRAPH 230V



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

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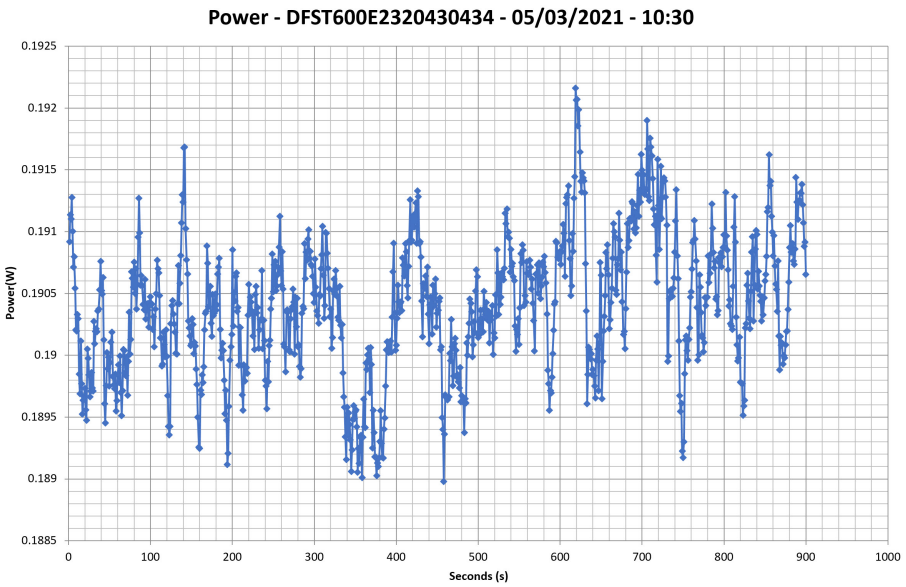
VAMPIRE POWER -230V



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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10-110% 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	3.174A	1.963A	1.945A	0.998A	60.004	79.778%	716	20.0	34.52°C	0.700
	12.097V	5.097V	3.393V	5.013V	75.214				37.62°C	230.51V
2	7.376A	2.954A	2.926A	1.202A	120.031	85.496%	718	19.9	35.23°C	0.910
	12.084V	5.079V	3.382V	4.992V	140.394				38.82°C	230.49V
3	11.956A	3.451A	3.426A	1.409A	180.034	87.058%	721	19.5	36.30°C	0.979
	12.042V	5.073V	3.371V	4.970V	206.798				40.57°C	230.48V
4	16.572A	3.948A	3.929A	1.618A	240.037	87.459%	724	19.4	36.55°C	0.989
	11.998V	5.066V	3.360V	4.947V	274.457				41.50°C	230.44V
5	20.830A	4.952A	4.932A	1.829A	300.074	87.157%	854	20.6	37.07°C	0.990
	11.981V	5.049V	3.347V	4.921V	344.293				42.76°C	230.39V
6	25.081A	5.967A	5.936A	2.000A	359.827	86.459%	1191	30.9	37.56°C	0.990
	11.970V	5.030V	3.335V	4.898V	416.184				43.86°C	230.39V
7	29.317A	6.989A	6.952A	2.259A	419.679	85.673%	1493	35.9	38.20°C	0.990
	11.958V	5.009V	3.322V	4.871V	489.860				45.11°C	230.34V
8	33.629A	8.003A	7.974A	2.477A	480.091	84.828%	1836	41.5	38.40°C	0.991
	11.947V	4.989V	3.310V	4.846V	565.957				46.11°C	230.37V
9	38.383A	8.538A	8.484A	2.485A	539.490	84.027%	2120	45.6	39.11°C	0.991
	11.906V	4.979V	3.299V	4.830V	642.040				47.39°C	230.40V
10	43.233A	9.058A	9.034A	2.600A	600.222	83.087%	2392	50.5	39.22°C	0.991
	11.866V	4.969V	3.288V	4.810V	722.405				48.66°C	230.37V
11	48.632A	9.055A	9.064A	2.609A	660.257	82.101%	2386	50.5	40.45°C	0.991
	11.783V	4.972V	3.277V	4.792V	804.203				50.38°C	230.37V
CL1	6.001A	14.002A	14.000A	0.000A	190.303	80.919%	1250	32.1	37.25°C	0.985
	12.599V	4.853V	3.339V	4.969V	235.177				43.13°C	230.42V
CL2	46.001A	2.001A	2.000A	1.000A	549.566	84.194%	2240	47.3	39.22°C	0.991
	11.473V	5.130V	3.315V	4.902V	652.736				48.03°C	230.39V

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20-80W LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.233A	0.487A	0.484A	0.198A	19.993	67.722%	721	19.5	0.432
	12.041V	5.131V	3.404V	5.054V	29.522				230.44V
2	2.462A	0.977A	0.972A	0.397A	39.983	76.381%	718	19.9	0.582
	12.053V	5.120V	3.400V	5.043V	52.347				230.48V
3	3.694A	1.469A	1.457A	0.597A	60.012	80.681%	718	19.9	0.695
	12.062V	5.109V	3.395V	5.031V	74.382				230.52V
4	4.919A	1.961A	1.945A	0.798A	79.961	83.106%	718	19.9	0.791
	12.068V	5.100V	3.391V	5.015V	96.216				230.48V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.80mV	5.10mV	4.30mV	7.50mV	Pass
20% Load	5.80mV	5.10mV	4.60mV	8.50mV	Pass
30% Load	6.60mV	5.00mV	4.80mV	9.60mV	Pass
40% Load	6.40mV	5.20mV	5.20mV	11.20mV	Pass
50% Load	7.60mV	5.70mV	5.30mV	11.40mV	Pass
60% Load	10.20mV	5.40mV	5.60mV	11.70mV	Pass
70% Load	14.30mV	5.60mV	5.90mV	14.80mV	Pass
80% Load	14.10mV	6.30mV	13.80mV	13.40mV	Pass
90% Load	16.00mV	6.90mV	14.10mV	14.00mV	Pass
100% Load	25.00mV	10.10mV	16.60mV	17.30mV	Pass
110% Load	22.70mV	9.60mV	17.90mV	16.90mV	Pass
Crossload1	7.10mV	8.80mV	15.80mV	7.40mV	Pass
Crossload2	22.30mV	7.70mV	9.70mV	14.30mV	Pass

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Top side

Power specifications label

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V

CYBENETICS BRONZE 230v

CYBENETICS STANDARD+ 230v