EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

SilverStone Strider Essential 400W 230V

Lab ID#: SL40001810
Receipt Date: Feb 22, 2021
Test Date: Mar 11, 2021

Report: 21PS1810A
Report Date: Mar 24, 2021

DUT INFORMATION

Brand	SilverStone
Manufacturer (OEM)	CWT
Series	VIVA Bronze
Model Number	SST-AX0400FCBR-A
Serial Number	VA400-B-230
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	200-240
Rated Current (Arms)	3
Rated Frequency (Hz)	47-63
Rated Power (W)	400
Type	ATX12V
Cooling	120mm Sleeve Bearing Fan (D12SM-12)
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	83.966%
Average Efficiency 5VSB	71.271%
Standby Power Consumption (W)	0.2347920
Average PF	0.965
Avg Noise Output	33.74 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	Standard++

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	17	16	30	2.5	0.3
	Watts	100		360	12.5	3.6
Total Max. Power (W)		400				

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

Hold-Up Time (ms)	10.5
AC Loss to PWR_OK Hold Up Time (ms)	6.6
PWR_OK Inactive to DC Loss Delay (ms)	3.9

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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) / 4-pin Molex (+150mm+150mm)	1	2 / 2	20AWG	No
SATA (520mm+150mm) / 4-pin Molex (+150mm) / FDD (+150mm)	1	2 / 1 / 1	20-22AWG	No

Modular Cables

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

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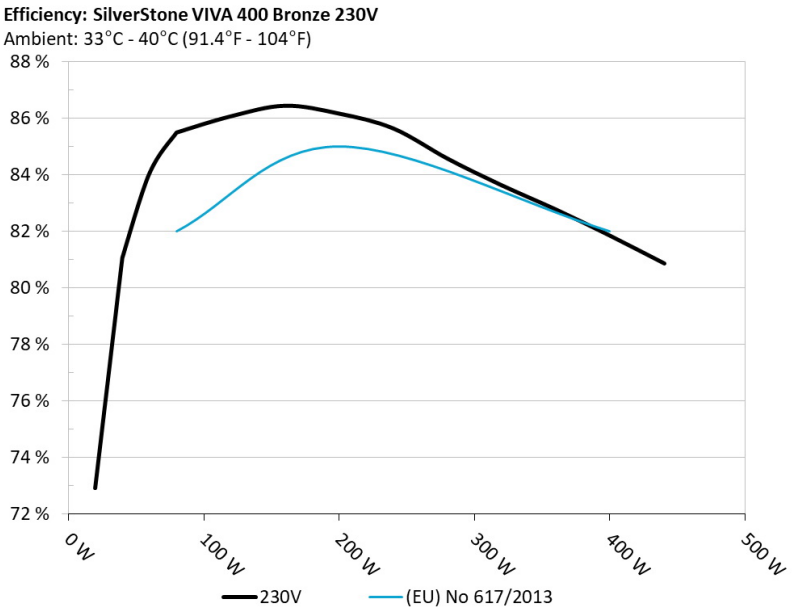
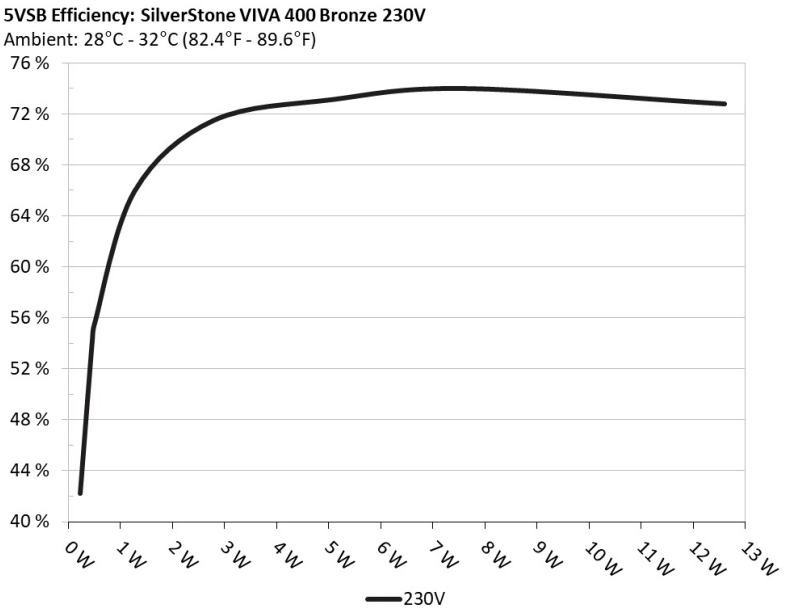
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	0.229	42.251%	0.035
	5.087V	0.542		230.28V
2	0.090A	0.458	54.137%	0.054
	5.087V	0.846		230.28V
3	0.550A	2.793	71.487%	0.202
	5.078V	3.907		230.26V
4	1.000A	5.070	73.118%	0.277
	5.069V	6.934		230.27V
5	1.500A	7.593	73.984%	0.323
	5.061V	10.263		230.26V
6	2.500A	12.606	72.779%	0.373
	5.043V	17.321		230.27V

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230V

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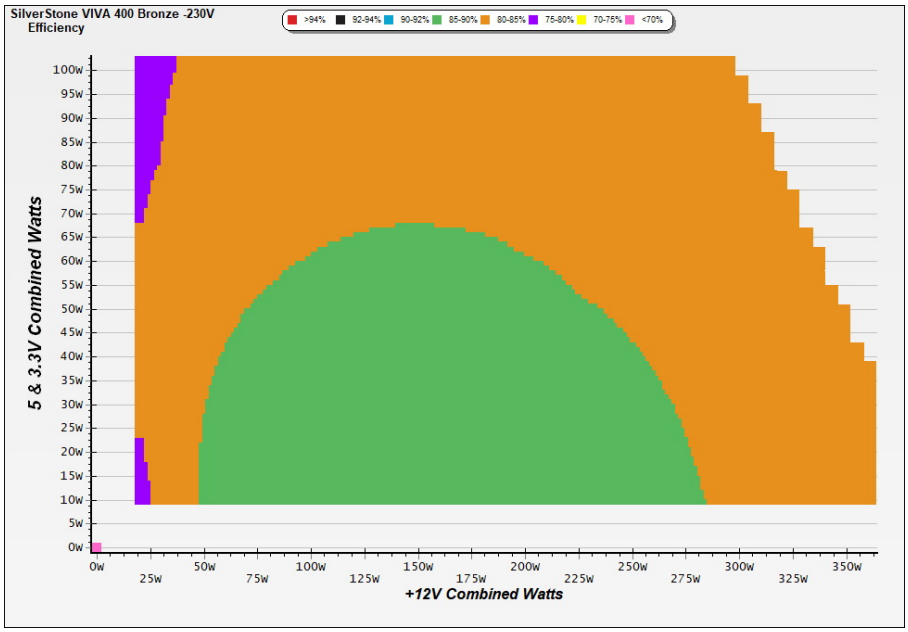
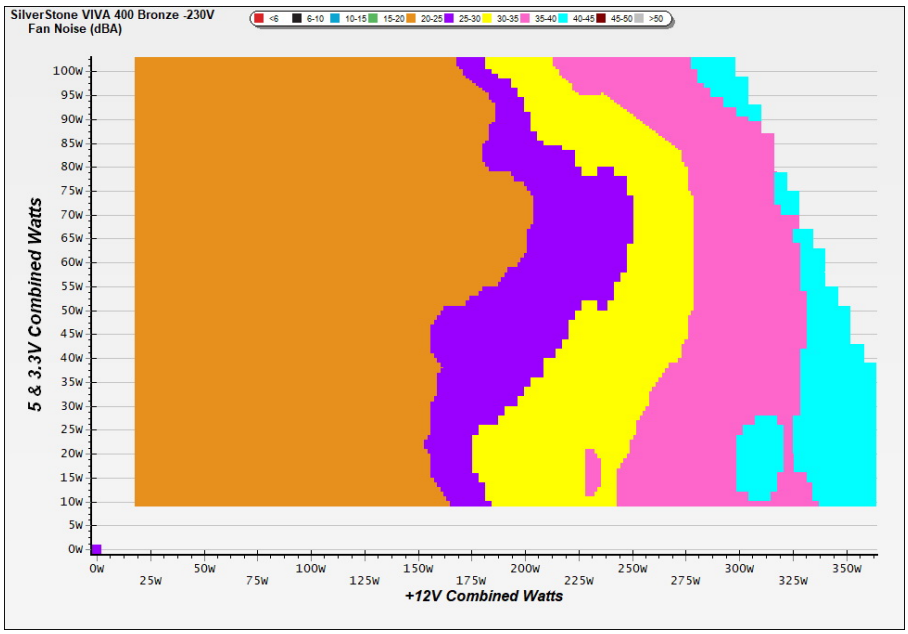
EFFICIENCY GRAPH 230V



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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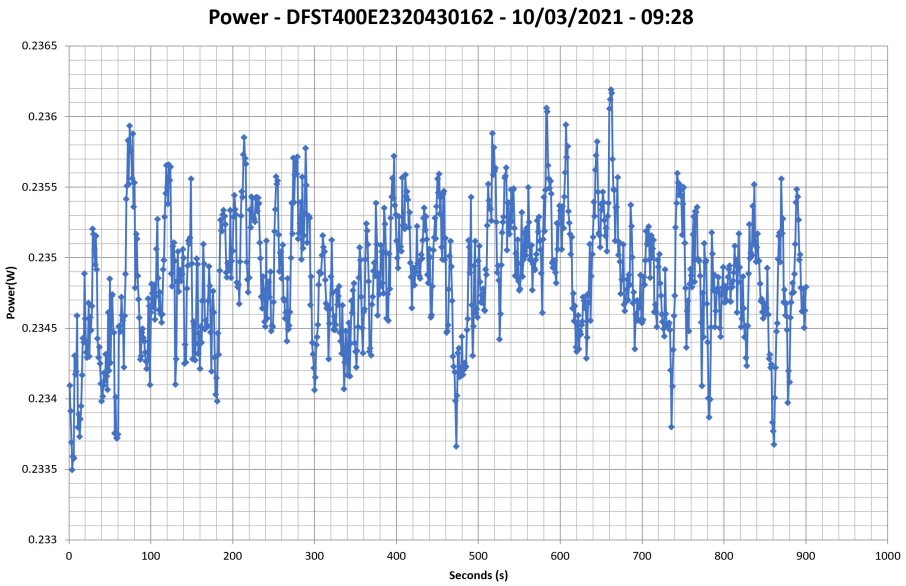
VAMPIRE POWER -230V



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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SilverStone Strider Essential 400W 230V

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	1.496A	1.990A	1.948A	0.990A	40.003	78.596%	823	21.8	35.89°C	0.874
	12.303V	5.024V	3.387V	5.053V	50.897				39.17°C	230.31V
2	3.998A	2.996A	2.932A	1.191A	80.022	84.354%	828	22.1	35.99°C	0.932
	12.288V	5.007V	3.374V	5.038V	94.865				40.11°C	230.31V
3	6.852A	3.500A	3.433A	1.393A	119.977	86.064%	832	22.4	36.52°C	0.954
	12.249V	5.000V	3.364V	5.024V	139.405				41.45°C	230.31V
4	9.723A	4.007A	3.935A	1.597A	160.017	86.438%	831	22.3	36.71°C	0.965
	12.220V	4.992V	3.353V	5.012V	185.123				42.07°C	230.33V
5	12.252A	5.029A	4.941A	1.802A	200.049	86.159%	830	22.2	37.29°C	0.972
	12.204V	4.974V	3.341V	4.996V	232.187				43.10°C	230.30V
6	14.768A	6.058A	5.947A	2.000A	239.938	85.636%	830	22.2	37.30°C	0.970
	12.200V	4.954V	3.329V	4.980V	280.183				44.22°C	230.28V
7	17.318A	7.095A	6.966A	2.217A	280.056	84.565%	1249	33.1	38.20°C	0.971
	12.180V	4.935V	3.317V	4.963V	331.171				45.39°C	230.27V
8	19.857A	8.002A	7.988A	2.426A	319.371	83.635%	1625	40.2	38.94°C	0.974
	12.169V	4.916V	3.304V	4.947V	381.862				46.78°C	230.28V
9	22.858A	8.666A	8.503A	2.432A	359.981	82.765%	1932	44.5	39.36°C	0.979
	12.139V	4.905V	3.293V	4.935V	434.942				48.10°C	230.28V
10	25.855A	9.190A	9.050A	2.540A	400.055	81.834%	2108	46.5	39.74°C	0.981
	12.100V	4.897V	3.282V	4.923V	488.860				49.18°C	230.26V
11	29.353A	9.187A	9.078A	2.545A	440.122	80.851%	2104	46.5	40.29°C	0.983
	12.023V	4.899V	3.272V	4.912V	544.364				50.04°C	230.30V
CL1	8.001A	12.000A	12.001A	0.000A	198.296	82.303%	1259	33.5	37.69°C	0.963
	12.596V	4.810V	3.316V	4.999V	240.935				43.30°C	230.32V
CL2	30.007A	1.001A	0.999A	1.000A	361.136	83.208%	2048	45.5	39.79°C	0.977
	11.588V	5.108V	3.321V	4.984V	434.017				49.13°C	230.30V

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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	1.215A	0.493A	0.486A	0.197A	19.990	72.895%	824	21.9	0.770
	12.213V	5.068V	3.398V	5.077V	27.423				230.31V
2	2.429A	0.988A	0.972A	0.395A	39.980	81.054%	827	22.0	0.870
	12.222V	5.055V	3.391V	5.068V	49.325				230.30V
3	3.646A	1.486A	1.461A	0.593A	60.010	84.043%	825	21.9	0.911
	12.224V	5.044V	3.385V	5.059V	71.404				230.30V
4	4.856A	1.987A	1.951A	0.793A	79.959	85.490%	824	21.9	0.931
	12.224V	5.034V	3.379V	5.048V	93.530				230.30V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	8.60mV	5.80mV	7.70mV	9.30mV	Pass
20% Load	8.50mV	5.90mV	8.40mV	12.40mV	Pass
30% Load	10.30mV	6.30mV	8.40mV	10.80mV	Pass
40% Load	12.20mV	6.70mV	9.10mV	9.90mV	Pass
50% Load	12.20mV	7.90mV	10.00mV	17.60mV	Pass
60% Load	13.70mV	8.20mV	10.90mV	11.00mV	Pass
70% Load	11.40mV	8.10mV	12.40mV	12.00mV	Pass
80% Load	11.90mV	8.90mV	19.20mV	11.50mV	Pass
90% Load	14.10mV	10.00mV	20.00mV	12.50mV	Pass
100% Load	23.50mV	12.60mV	22.40mV	14.50mV	Pass
110% Load	27.50mV	13.20mV	22.10mV	14.80mV	Pass
Crossload1	13.20mV	14.90mV	24.80mV	7.90mV	Pass
Crossload2	20.70mV	10.40mV	10.10mV	13.20mV	Pass

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Top side

Power specifications label

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V

CYBENETICS BRONZE 230v

CYBENETICS STANDARD++ 230v

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