EVGA 550 B3

Serial Number 1703460505800699

Lab ID 147

Certification ID 25147

Test Result Report ID:

Certificate Issue Date: Jul 27, 2018

115V 230V

Scheme: ETA-EMI PSU

CYBENETICS SILVER

115V 230V

CYBENETICS A-

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	EVGA
Model	550 B3
OEM/ODM	Super Flower
Serial Number	1703460505800699
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60

Rated Power (W)	550
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	130mm Sleeve Bearing Fan (S1282412H)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	147
Date of receipt	Jul 14, 2018
Testing Date	Jul 25, 2018
Report Issued Date	Jul 27, 2018
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables			
Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (600mm)	1	1	18-22AWG
4+4 pin EPS12V (600mm)	1	1	18-22AWG
6+2 pin PCIe (550mm+150mm)	1	2	18-22AWG
SATA (500mm+100mm+100mm)	2	6	18-20AWG
4 pin Molex (500mm+100mm+100mm)	1	3	18AWG
FDD Adapter (+105mm)	1	1	24AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	45.8	3	0.5
	Watts	110		549.6	15	6
Total Max. Power (W)		550				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	ErP Lot 3/6 2010: ✓ ErP Lot 3/6 2013: Partially ErP Lot 3/6 2014, CEC: Partially
(EU) No 617/2013 Compliance	✓

Performance Summary 115V

Accredited	
Average Efficiency (>1450 load combinations)	86.127%
Average Noise Output (>1450 Load Combinations)	29.74dBA
Average PF (>1450 Load Combinations)	0.985
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.1292W
Non-Accredited	
12V Ripple (Full Load)	12.32mV
5V Ripple (Full Load)	10.53mV
3.3V Ripple (Full Load)	17.44mV
5VSB Ripple (Full Load)	10.69mV
12V Load Regulation	0.70%
5V Load Regulation	0.93%
3.3V Load Regulation	1.14%

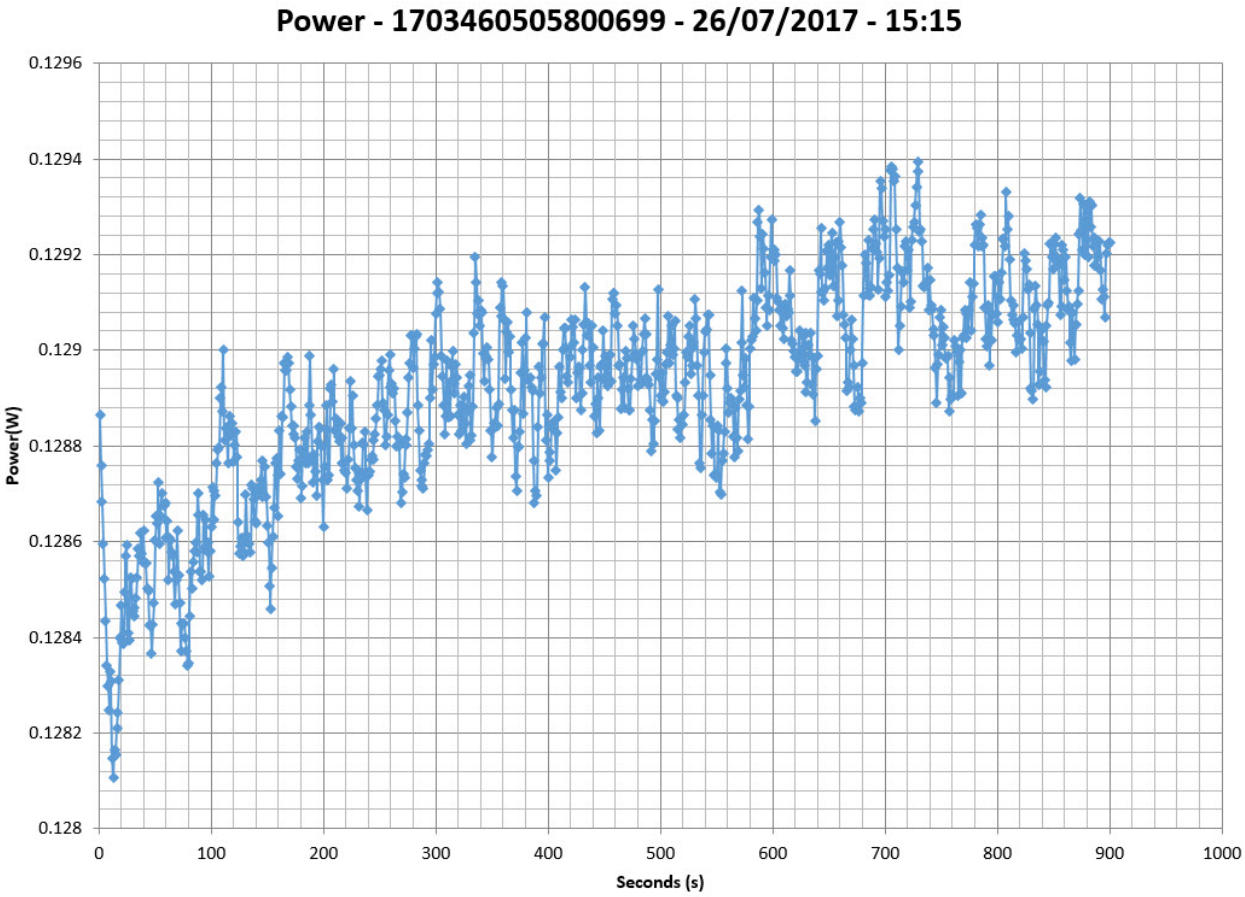
5VSB Load Regulation	3.73%
Inrush Current	76.784A

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	15.98
AC Loss to PWR_OK Hold Up Time (ms)	14.18
PWR_OK Inactive to DC Loss Delay (ms)	1.80

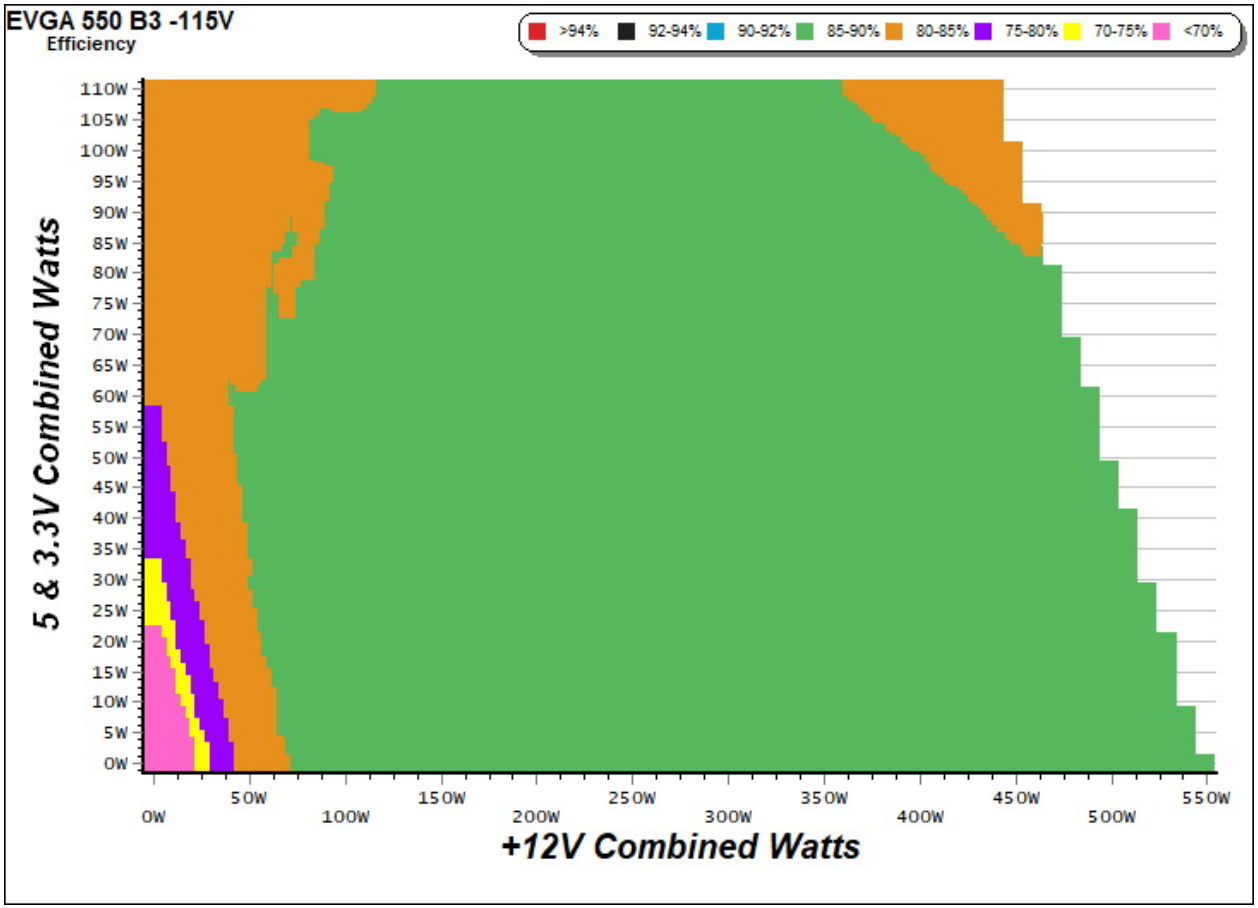
Vampire Power

Graphs 115V



Efficiency Graph

115V

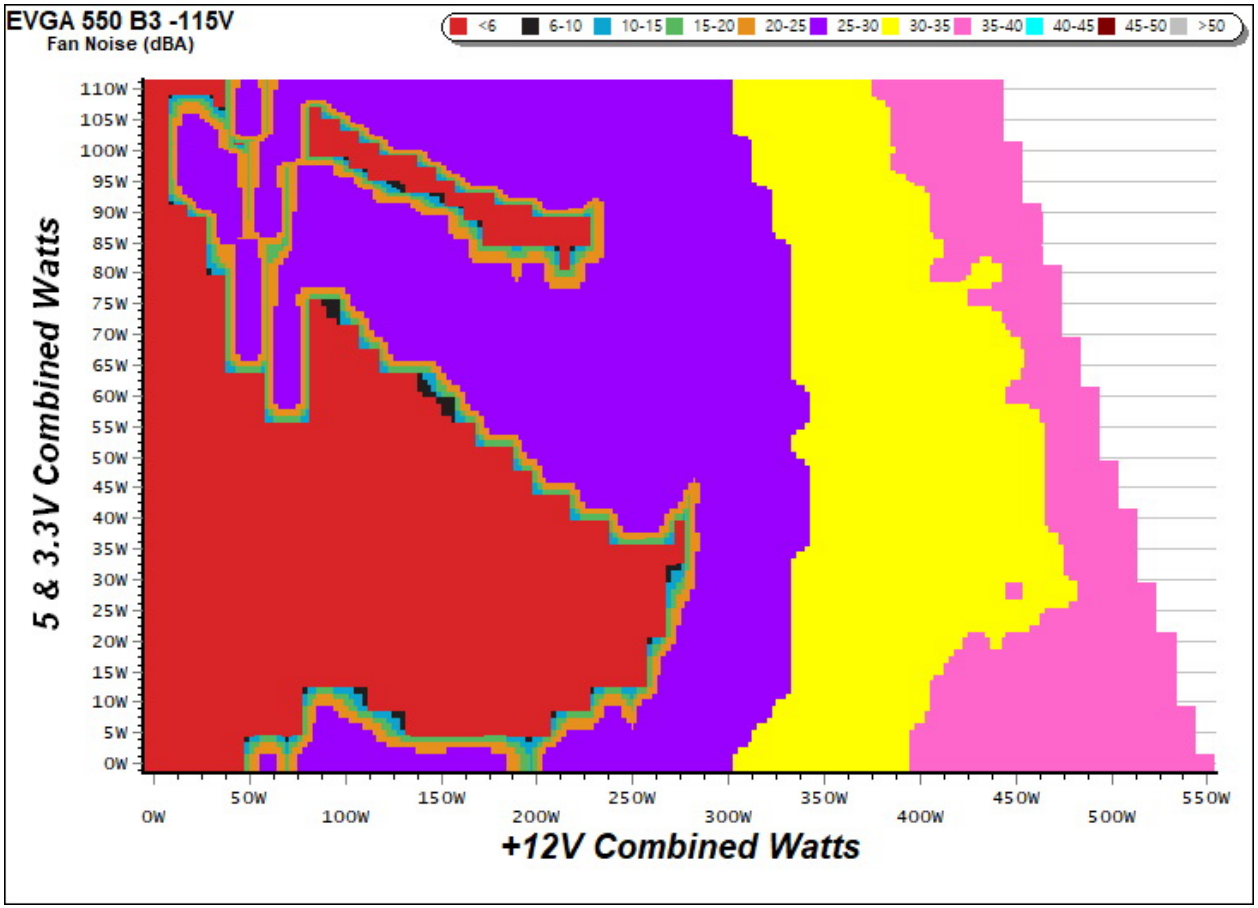


INFO

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.

Noise Graph

115V

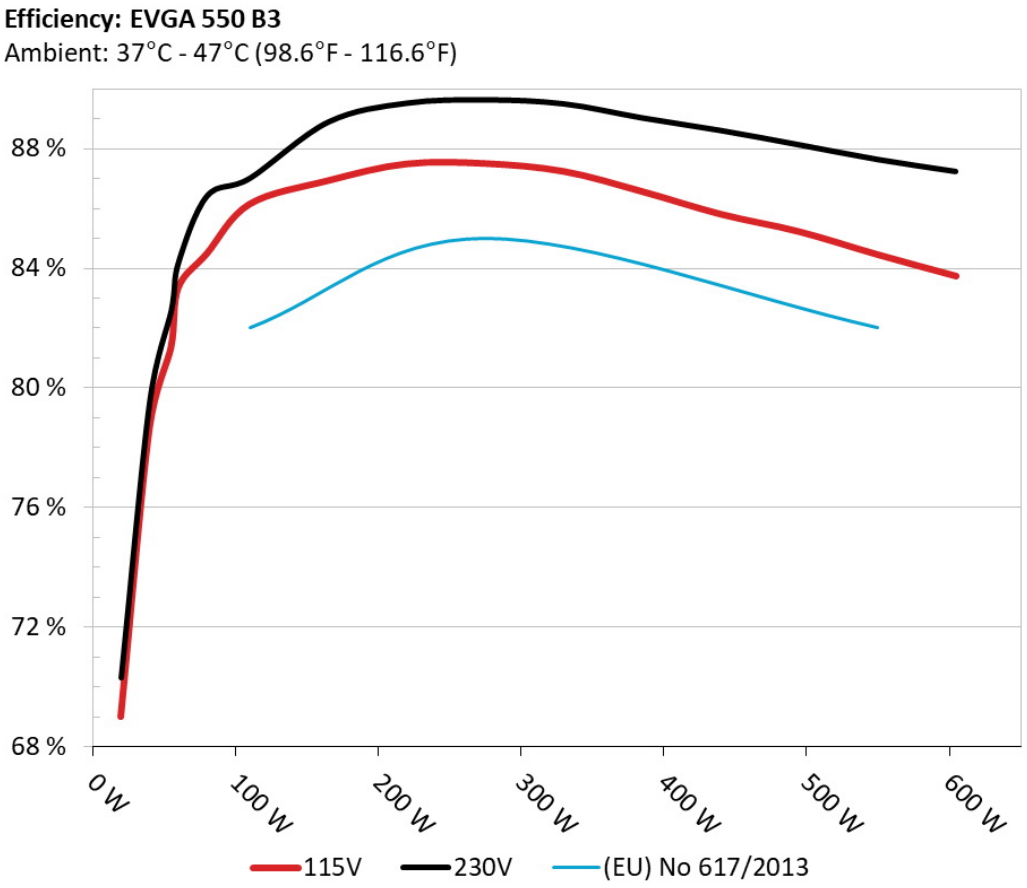


INFO

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.

Indicative Performance

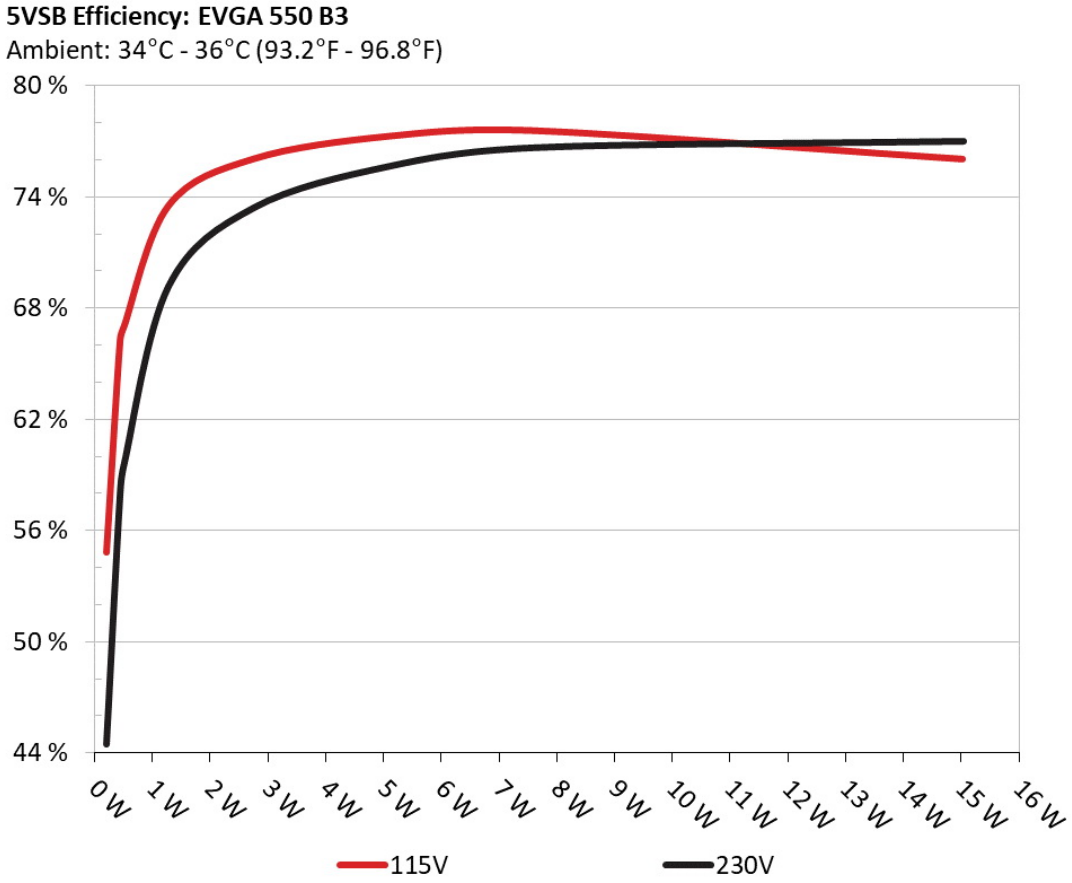
Efficiency under high ambient temperature



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) 115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.041A	0.210	54.830%	0.028
	5.126V	0.383		115.22V

2	0.086A	0.443	66.218%	0.049
	5.125V	0.669		115.22V
3	0.541A	2.764	76.080%	0.218
	5.108V	3.633		115.21V
4	1.001A	5.096	77.294%	0.310
	5.090V	6.593		115.21V
5	1.500A	7.609	77.595%	0.364
	5.071V	9.806		115.21V
6	3.000A	15.020	76.062%	0.436
	5.006V	19.747		115.21V

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
1	2.723A	1.976A	1.984A	0.983A	54.766	81.349%	1218	27.3	38.40°C	0.930
	12.192V	5.054V	3.323V	5.074V	67.322				44.04°C	115.23V
2	6.473A	2.969A	2.977A	1.185A	109.762	86.143%	1180	26.7	38.56°C	0.975
	12.188V	5.049V	3.320V	5.059V	127.418				44.28°C	115.23V
3	10.571A	3.468A	3.494A	1.385A	164.846	86.933%	1218	27.3	39.08°C	0.984
	12.182V	5.045V	3.316V	5.045V	189.625				44.95°C	115.23V
4	14.664A	3.967A	3.980A	1.589A	219.727	87.490%	1240	27.8	40.26°C	0.989
	12.176V	5.040V	3.314V	5.031V	251.146				46.17°C	115.23V
5	18.425A	4.970A	4.983A	1.791A	274.745	87.504%	1276	29.0	40.48°C	0.992
	12.171V	5.035V	3.309V	5.015V	313.980				46.51°C	115.24V
6	22.197A	5.966A	5.989A	2.000A	329.735	87.239%	1338	30.7	41.23°C	0.993
	12.161V	5.030V	3.305V	4.997V	377.967				47.41°C	115.22V
7	25.976A	6.971A	7.000A	2.205A	384.707	86.566%	1462	34.3	42.75°C	0.994
	12.150V	5.024V	3.299V	4.981V	444.409				49.55°C	115.22V
8	29.755A	7.972A	8.009A	2.415A	439.617	85.809%	1584	35.9	43.46°C	0.995
	12.140V	5.019V	3.295V	4.965V	512.318				51.06°C	115.22V

9	33.975A	8.479A	8.531A	2.419A	494.712	85.224%	1667	38.1	44.18°C	0.995
	12.130V	5.015V	3.292V	4.956V	580.481				52.08°C	115.21V
10	37.952A	8.990A	9.030A	3.043A	549.583	84.457%	1796	41.4	45.29°C	0.995
	12.117V	5.010V	3.288V	4.925V	650.723				53.89°C	115.21V
11	42.527A	8.995A	9.040A	3.049A	604.547	83.738%	1910	42.1	46.64°C	0.995
	12.106V	5.007V	3.284V	4.916V	721.949				56.12°C	115.21V
CL1	0.100A	13.020A	13.004A	0.000A	109.713	80.343%	1425	32.3	43.82°C	0.975
	12.172V	5.031V	3.306V	5.088V	136.555				50.50°C	115.23V
CL2	45.779A	1.005A	1.001A	1.001A	568.165	85.142%	1817	42.0	45.88°C	0.995
	12.119V	5.021V	3.296V	5.019V	667.314				54.60°C	115.21V

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])	PF/AC Volts
1	1.192A	0.492A	0.480A	0.195A	19.639	69.003%	0	<6.0	0.760
	12.210V	5.059V	3.329V	5.116V	28.461				115.23V
2	2.413A	0.978A	0.990A	0.390A	39.672	78.647%	0	<6.0	0.893
	12.202V	5.057V	3.326V	5.103V	50.443				115.23V
3	3.638A	1.481A	1.501A	0.585A	59.820	83.347%	0	<6.0	0.936
	12.195V	5.055V	3.324V	5.093V	71.772				115.23V
4	4.853A	1.976A	1.982A	0.785A	79.733	84.482%	0	<6.0	0.959
	12.193V	5.054V	3.323V	5.080V	94.379				115.23V

The results above are not used in the certification process

Ripple Measurements 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.0 mV	5.8 mV	7.4 mV	4.7 mV	Pass
20% Load	8.2 mV	5.4 mV	8.2 mV	5.5 mV	Pass
30% Load	7.9 mV	6.4 mV	9.1 mV	5.8 mV	Pass
40% Load	7.8 mV	5.9 mV	10.6 mV	6.4 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	8.3 mV	7.0 mV	12.6 mV	6.9 mV	Pass
60% Load	8.9 mV	7.4 mV	12.1 mV	6.9 mV	Pass
70% Load	9.6 mV	7.8 mV	14.1 mV	8.0 mV	Pass
80% Load	9.9 mV	9.1 mV	14.3 mV	9.5 mV	Pass
90% Load	10.0 mV	8.9 mV	16.4 mV	9.9 mV	Pass
100% Load	12.3 mV	10.5 mV	17.4 mV	10.7 mV	Pass
110% Load	12.8 mV	10.9 mV	17.3 mV	11.1 mV	Pass
Crossload 1	12.8 mV	7.9 mV	10.2 mV	10.1 mV	Pass
Crossload 2	11.7 mV	10.3 mV	16.2 mV	11.1 mV	Pass

The results above are not used in the certification process

EVGA 550 B3

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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