



EVGA 500B

Serial Number 1603530515803386

Lab ID 185

Certification ID 25185

Test Result Report ID:

Certificate Issue Date: Mar 10, 2018

115V

230V

Scheme: ETA-EMI PSU



115V

230V



Scheme: LAMBDA PSU

A handwritten signature in blue ink, appearing to be 'A. Bitziopoulos'.

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	500B
OEM/ODM	HEC
Serial Number	1603530515803386
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 (EFS-12E12H)
Semi-Passive Operation	X
Cybenetics Testing Information	
Lab ID	185
Date of receipt	Feb 25, 2018
Testing Date	Mar 8, 2018
Report Issued Date	Mar 10, 2018
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
ATX connector 20+4 pin (560mm)	1	1	18-22AWG
4+4 pin EPS12V (620mm)	1	1	18AWG
6+2 pin PCIe (580mm+120mm)	1	2	20AWG
SATA (470mm+120mm+120mm)	2	6	20AWG
4 pin Molex (480mm+120mm+120mm) / FDD (+120mm)	1	3 / 1	20-22AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	24	20	40	3	0.3
	Watts	120		480	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)	82.363%
Average Noise Output (>1450 Load Combinations)	35.75dBA
Average PF (>1450 Load Combinations)	0.963
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0569W
Non-Accredited	
12V Ripple (Full Load)	65.18mV
5V Ripple (Full Load)	26.09mV
3.3V Ripple (Full Load)	30.28mV
5VSB Ripple (Full Load)	24.27mV
12V Load Regulation	2.00%
5V Load Regulation	1.24%
3.3V Load Regulation	2.66%
5VSB Load Regulation	3.39%
Inrush Current	49.506A

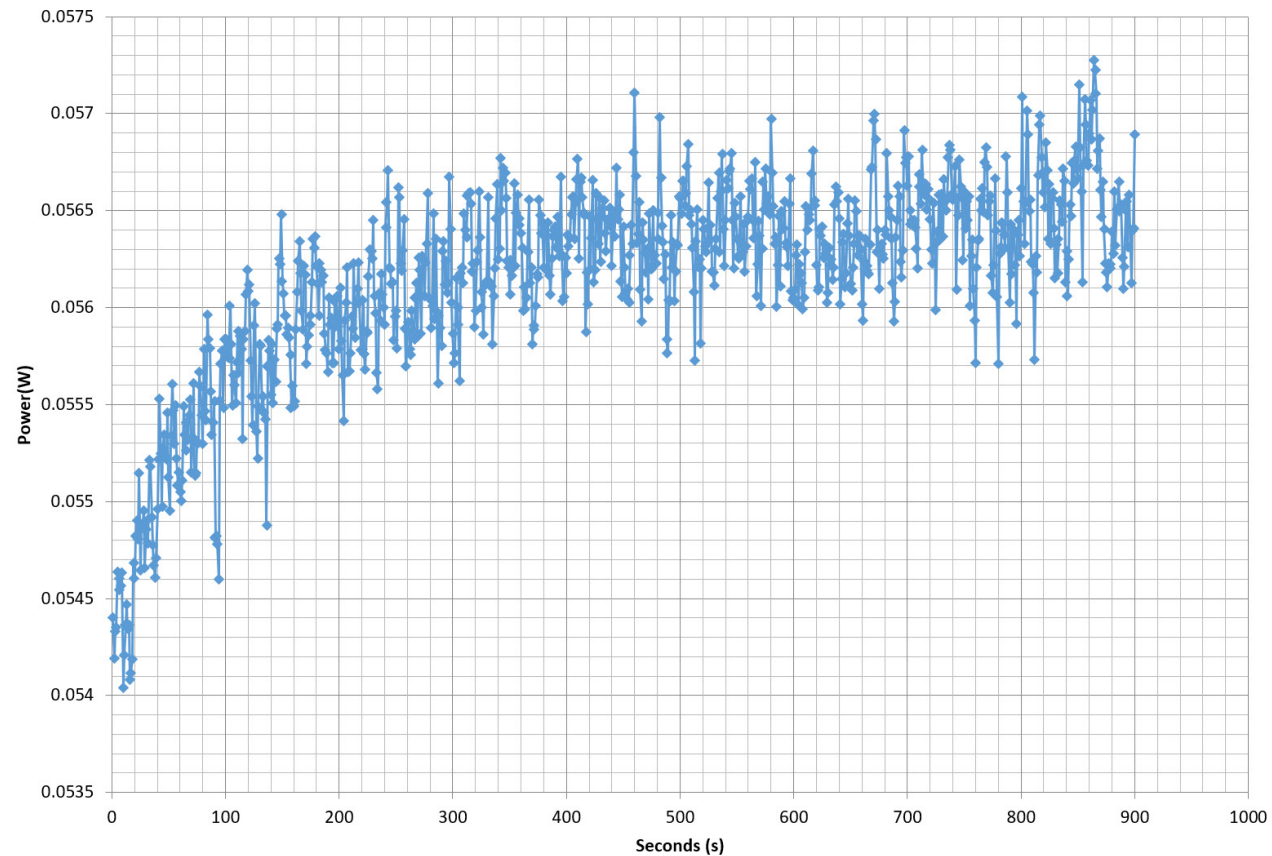
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	15.62
AC Loss to PWR_OK Hold Up Time (ms)	10.10
PWR_OK Inactive to DC Loss Delay (ms)	5.52

Vampire Power

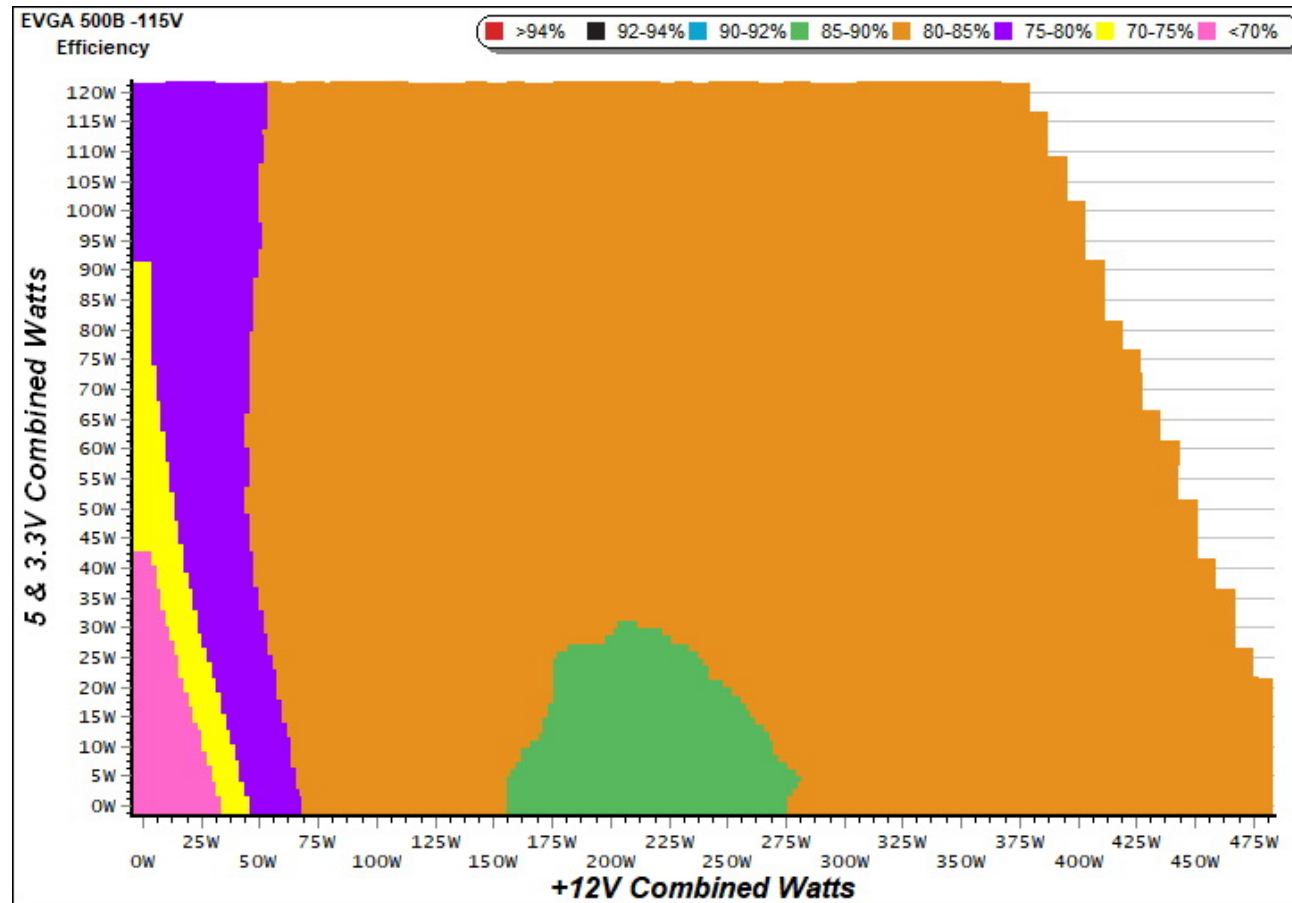
Graphs 115V

Power - 1603530515803386 - 27/09/2017 - 12:02



Efficiency Graph

115V

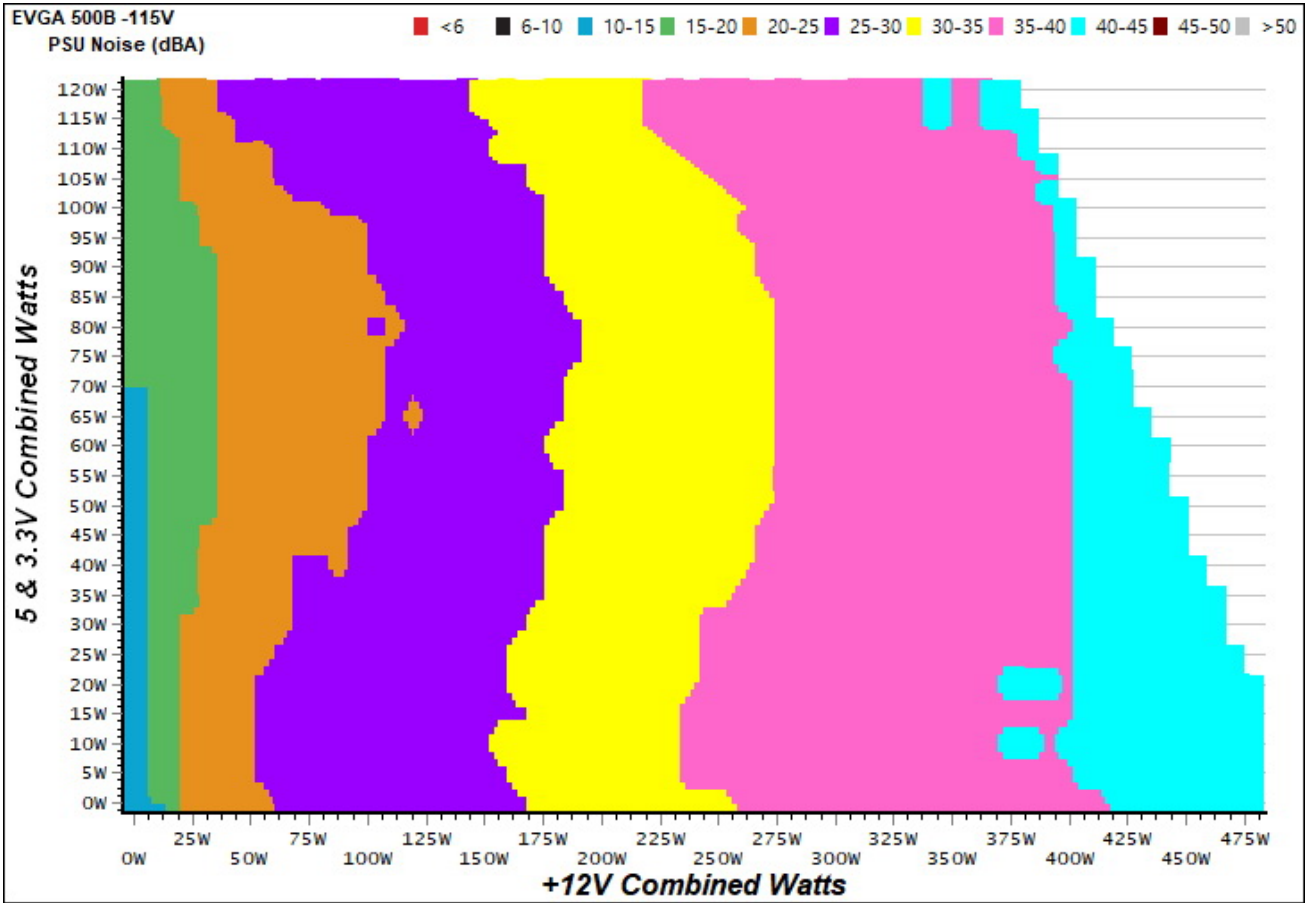


INFO

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

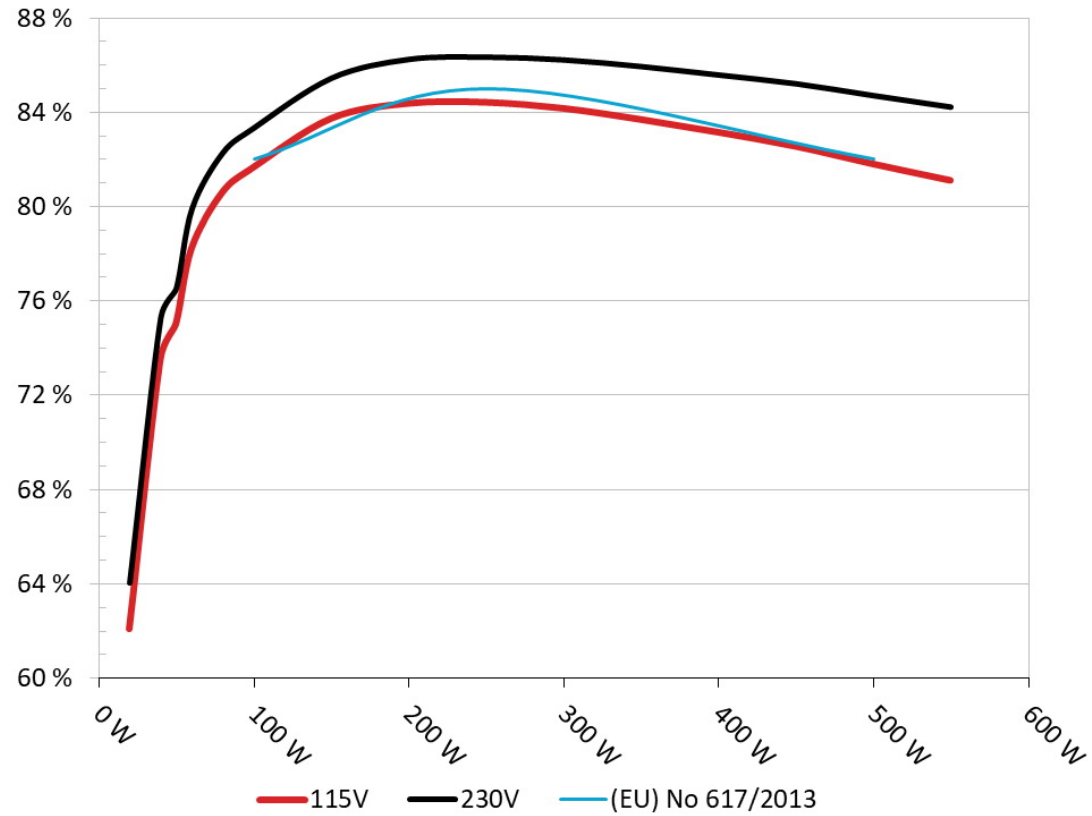
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: EVGA 500B

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



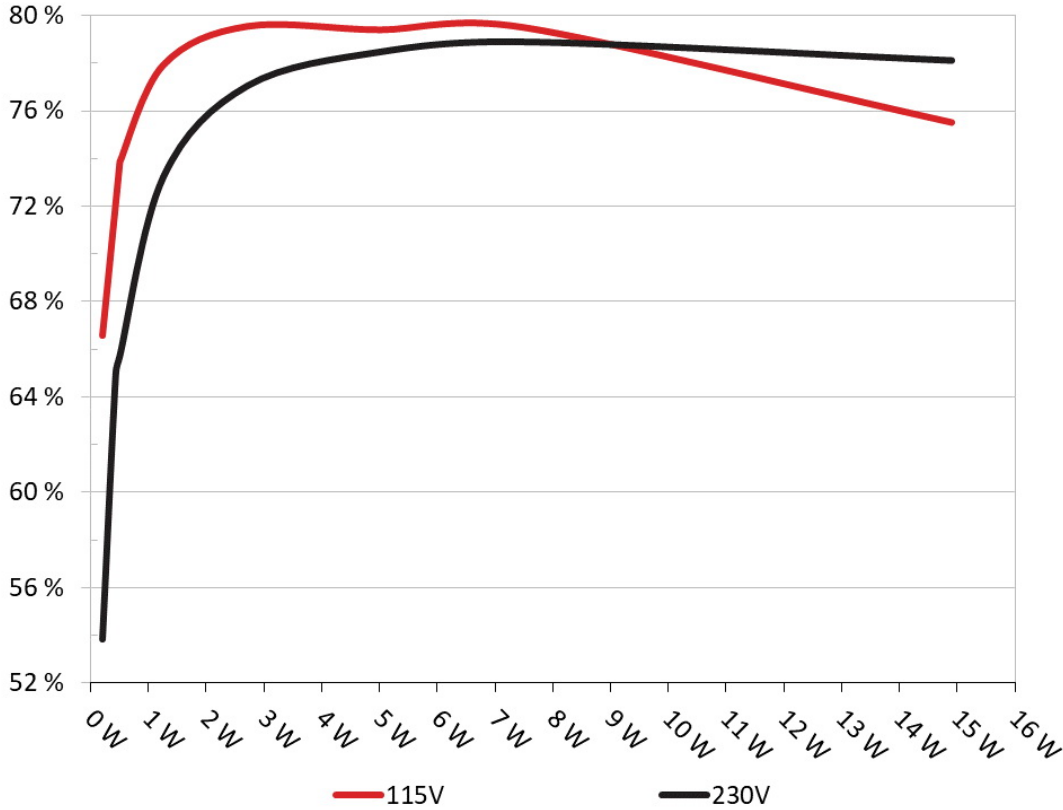
INFO

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: EVGA 500B

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	0.042A	0.209	66.561%	0.058
	5.025V	0.314		115.16V

2	0.087A	0.438	73.862%	0.104
	5.025V	0.593		115.16V
3	0.542A	2.719	79.549%	0.311
	5.016V	3.418		115.13V
4	1.002A	5.018	79.399%	0.365
	5.009V	6.320		115.14V
5	1.502A	7.504	79.500%	0.392
	4.997V	9.439		115.15V
6	3.001A	14.911	75.510%	0.438
	4.969V	19.747		115.15V

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	2.311A	1.980A	1.955A	1.000A	49.767	75.032%	957	20.3	38.29°C	0.890
	12.195V	5.051V	3.375V	4.986V	66.328				43.31°C	115.18V
2	5.660A	2.972A	2.938A	1.206A	99.767	81.658%	1128	25.3	38.42°C	0.935
	12.172V	5.042V	3.366V	4.975V	122.176				43.65°C	115.18V
3	9.373A	3.467A	3.450A	1.410A	149.889	83.727%	1300	29.2	38.82°C	0.952
	12.143V	5.045V	3.358V	4.962V	179.021				44.35°C	115.19V
4	13.092A	3.962A	3.940A	1.616A	199.770	84.365%	1486	33.1	39.58°C	0.961
	12.113V	5.047V	3.349V	4.948V	236.792				45.69°C	115.19V
5	16.482A	4.969A	4.938A	1.823A	249.792	84.410%	1660	36.2	40.23°C	0.967
	12.091V	5.037V	3.339V	4.932V	295.926				47.14°C	115.19V
6	19.884A	5.965A	5.941A	2.035A	299.773	84.155%	1865	39.2	41.19°C	0.972
	12.070V	5.029V	3.330V	4.910V	356.216				48.94°C	115.19V
7	23.299A	6.975A	6.958A	2.245A	349.763	83.685%	2015	41.4	42.64°C	0.977
	12.046V	5.021V	3.318V	4.898V	417.954				51.29°C	115.20V
8	26.729A	7.978A	7.974A	2.455A	399.694	83.147%	2023	41.5	44.12°C	0.980
	12.021V	5.015V	3.309V	4.883V	480.710				53.83°C	115.20V

9	30.635A	8.472A	8.515A	2.460A	449.755	82.548%	2023	41.5	45.49°C	0.982
	11.985V	5.019V	3.299V	4.871V	544.843				57.17°C	115.21V
10	34.299A	8.968A	9.028A	3.094A	499.618	81.802%	2023	41.5	46.48°C	0.983
	11.951V	5.020V	3.290V	4.845V	610.768				59.11°C	115.23V
11	38.606A	8.948A	9.048A	3.097A	549.574	81.107%	2023	41.5	46.64°C	0.983
	11.912V	5.031V	3.282V	4.839V	677.593				59.94°C	115.25V
CL1	0.101A	14.026A	14.003A	0.004A	113.347	75.270%	2045	41.8	44.29°C	0.948
	12.528V	4.659V	3.336V	4.949V	150.587				53.05°C	115.19V
CL2	39.968A	1.003A	1.002A	1.002A	484.585	82.241%	2015	41.4	45.50°C	0.983
	11.787V	5.213V	3.316V	4.922V	589.228				56.76°C	115.22V

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	1.200A	0.492A	0.472A	0.196A	19.695	62.118%	787	15.6	0.837
	12.176V	5.089V	3.384V	5.015V	31.706				115.18V
2	2.423A	0.980A	0.975A	0.396A	39.754	73.542%	822	16.2	0.880
	12.175V	5.078V	3.380V	5.005V	54.056				115.18V
3	3.651A	1.470A	1.479A	0.601A	59.883	78.235%	957	20.3	0.907
	12.171V	5.069V	3.376V	4.995V	76.542				115.18V
4	4.865A	1.976A	1.953A	0.801A	79.777	80.606%	1040	22.8	0.920
	12.167V	5.062V	3.372V	4.989V	98.972				115.18V

The results above are not used in the certification process

Ripple Measurements 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	29.9 mV	18.0 mV	27.5 mV	18.0 mV	Pass
20% Load	31.4 mV	20.6 mV	32.4 mV	19.2 mV	Pass
30% Load	34.8 mV	18.9 mV	35.0 mV	18.0 mV	Pass
40% Load	36.4 mV	18.9 mV	26.8 mV	15.5 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	43.1 mV	18.8 mV	26.9 mV	18.5 mV	Pass
60% Load	46.0 mV	20.1 mV	27.1 mV	18.8 mV	Pass
70% Load	51.9 mV	21.3 mV	28.9 mV	18.9 mV	Pass
80% Load	57.8 mV	23.2 mV	30.4 mV	22.4 mV	Pass
90% Load	61.6 mV	24.3 mV	27.6 mV	24.1 mV	Pass
100% Load	65.2 mV	26.1 mV	30.3 mV	24.3 mV	Pass
110% Load	71.3 mV	26.5 mV	34.3 mV	27.2 mV	Pass
Crossload 1	42.7 mV	59.9 mV	27.0 mV	22.6 mV	Fail
Crossload 2	72.0 mV	57.4 mV	30.8 mV	29.6 mV	Fail

The results above are not used in the certification process

EVGA 500B



Top side

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 LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

UL CE UL LISTED FC RoHS 2002/95/EC 80 PLUS BRONZE					
+40°C ambient @ full load					
AC Input	AC 100-240V~ 50-60Hz 8/4A				
DC Output	+5V	+3.3V	+12V	-12V	+5Vsb
Max Output, A	20	24	40	0.3	3.0
Combined, W	120		480	3.6	15
Output Power, P _{cont}	500W @ +40°C				

Power specifications label

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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