EVGA

EVGA 750 B3

Serial Number 1703460715800109

Lab ID 161

Certification ID 25161

Test Result Report ID:

Certificate Issue Date: Aug 17, 2018

115V 230V

Scheme: ETA-EMI PSU

115V 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	EVGA
Model	750 B3
OEM/ODM	Super Flower
Serial Number	1703460715800109
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60

Rated Power (W)	750
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	161
Date of receipt	Aug 5, 2018
Testing Date	Aug 15, 2018
Report Issued Date	Aug 17, 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)	2	4	18-22AWG
SATA (500mm+100mm+100mm)	2	6	18-20AWG
4 pin Molex (500mm+100mm+100mm)	1	3	18AWG
FDD Adapter (+105mm)	1	1	20AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	24	24	62.4	3	0.5
	Watts	120		748.8	15	6
Total Max. Power (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Super Flower
Platform Model	Leadex Bronze
Primary Side	
Transient Filter	5x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor
Bridge Rectifier(s)	GBU1506 (600V, 15A @ 100°C)
APFC MOSFETS	2x Infineon IPA50R199CP (550V, 11A @100°C, 0.199Ohm)
APFC Boost Diode	1x CREE C3D06065A (650V, 6A @ 150°C)
Hold-up Cap(s)	1x Nippon Chemi-Con (400V, 4700uF, 95°C, CE)
Main Switchers	2x Infineon IPA50R199CP (550V, 11A @ 100°C, 0.199Ohm)
APFC Controller	SF29605 & S9602 & ICE3PCS02G
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x A&O AOT240L (40V, 82A @ 100°C, 4.7mOhm @ 125°C)
5V & 3.3V	DC-DC Converters: 4x A&O AON6516 (30V, 25A @ 100°C, 8mOhm) PWM Controller: 2x On Semiconductor NCP1587A
Filtering Capacitors	Electrolytics: Chemi-Con 7x W, 3x KZE, 3x KY, 2x KMG, 7x KRG (modular board) Polymers: 7x Chemi-Con
Supervisor IC	SF29605 & LM339A
Fan Model	S1282412H (120mm, 12V, 0.35A, Sleeve Bearing)
5VSB Circuit	
Rectifier	Mospec S10C60C

Standby PWM Controller	29604

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

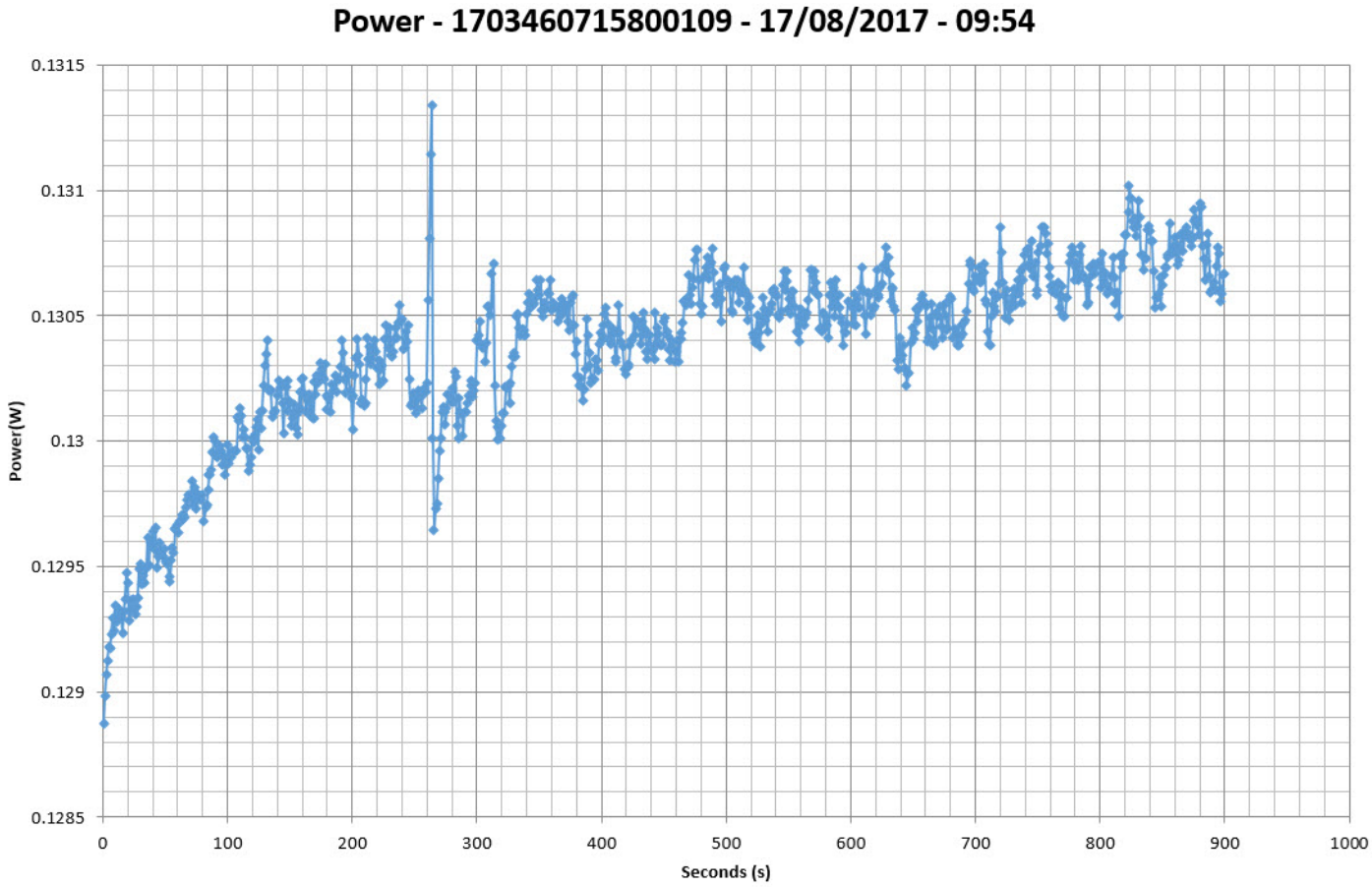
Accredited	
Average Efficiency (>1450 load combinations)	84.685%
Average Noise Output (>1450 Load Combinations)	31.66dBA
Average PF (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.1307W
Non-Accredited	
12V Ripple (Full Load)	17.16mV
5V Ripple (Full Load)	16.73mV
3.3V Ripple (Full Load)	18.03mV
5VSB Ripple (Full Load)	27.33mV
12V Load Regulation	0.79%
5V Load Regulation	0.97%
3.3V Load Regulation	1.20%
5VSB Load Regulation	4.77%
Inrush Current	43.751A

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	22.66
AC Loss to PWR_OK Hold Up Time (ms)	20.14
PWR_OK Inactive to DC Loss Delay (ms)	2.52

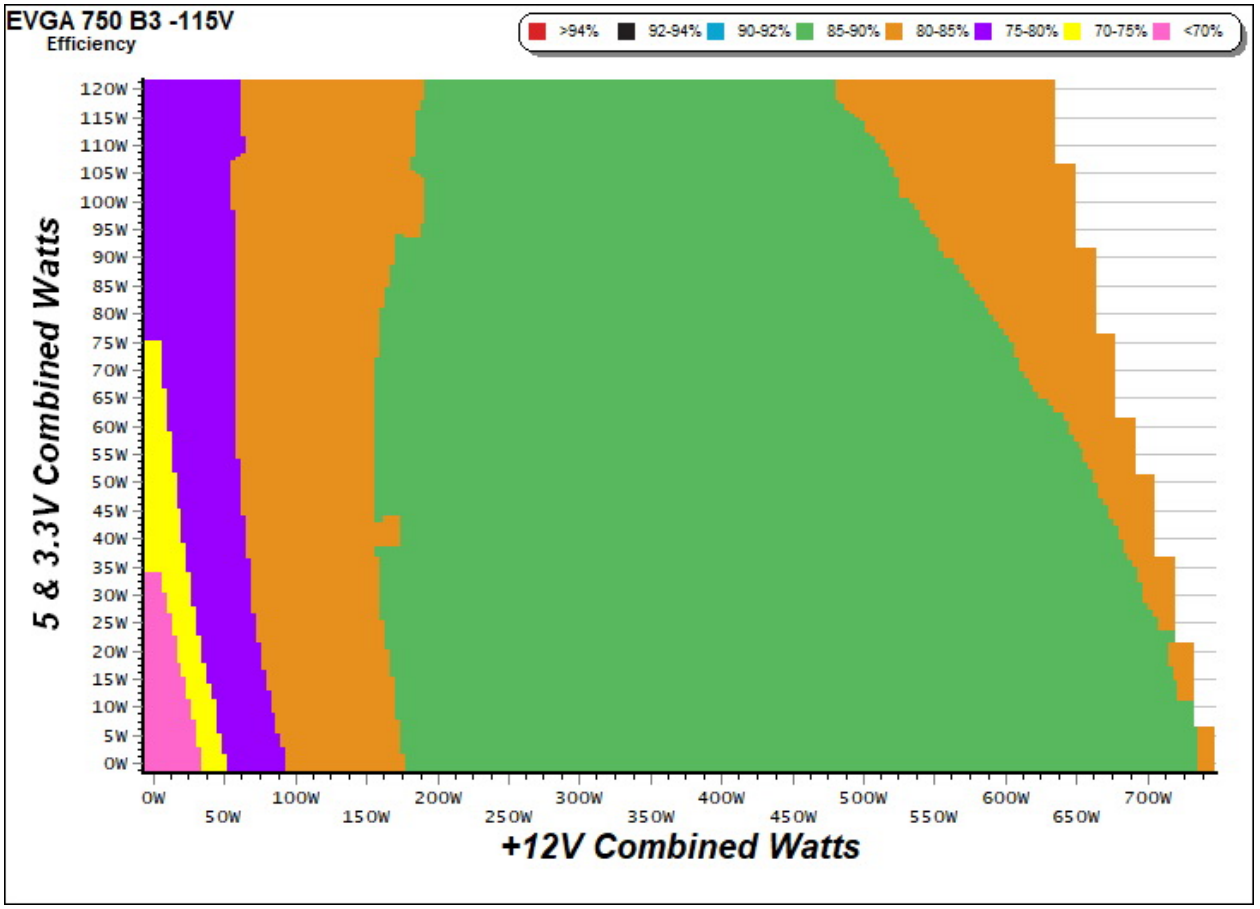
Vampire Power

Graphs 115V



Efficiency Graph

115V

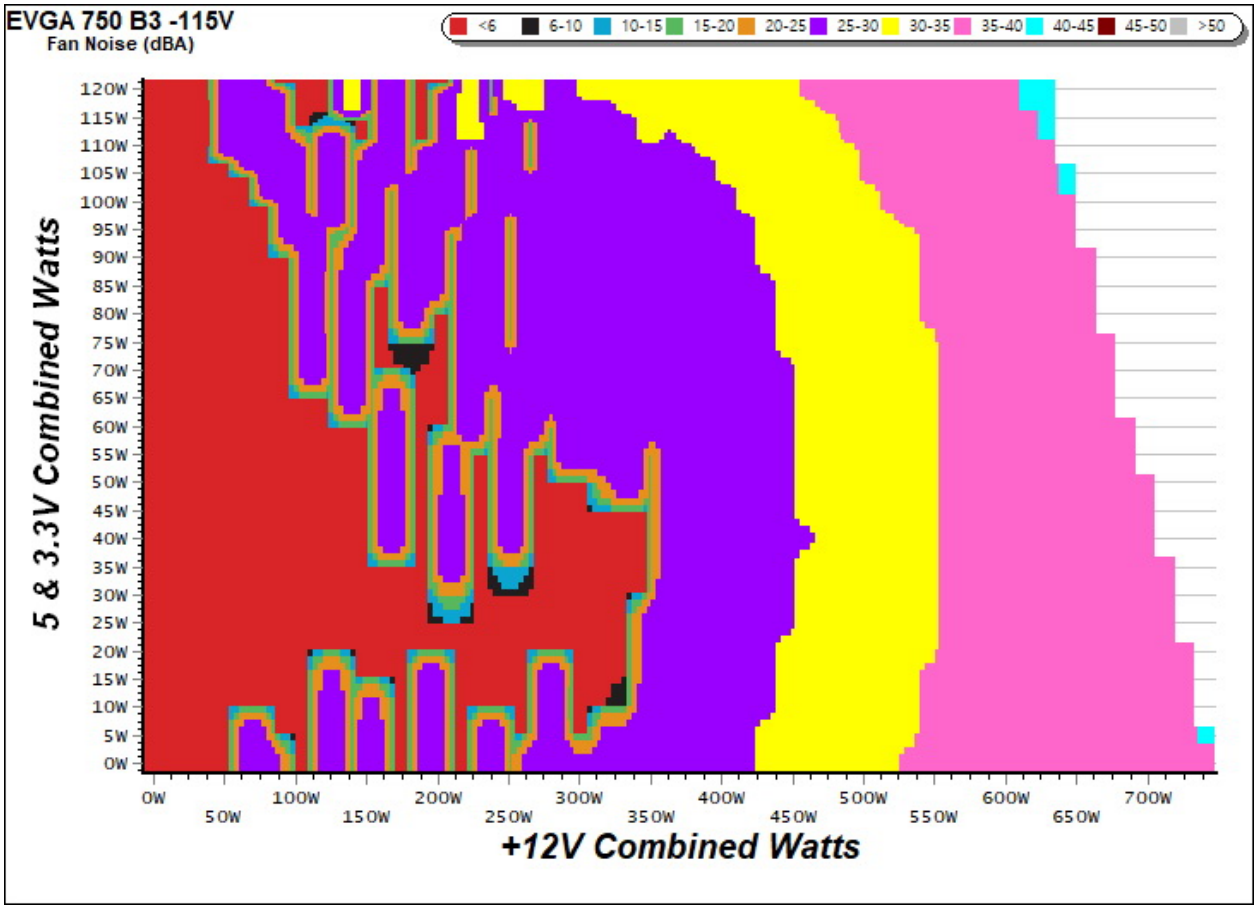


INFO

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

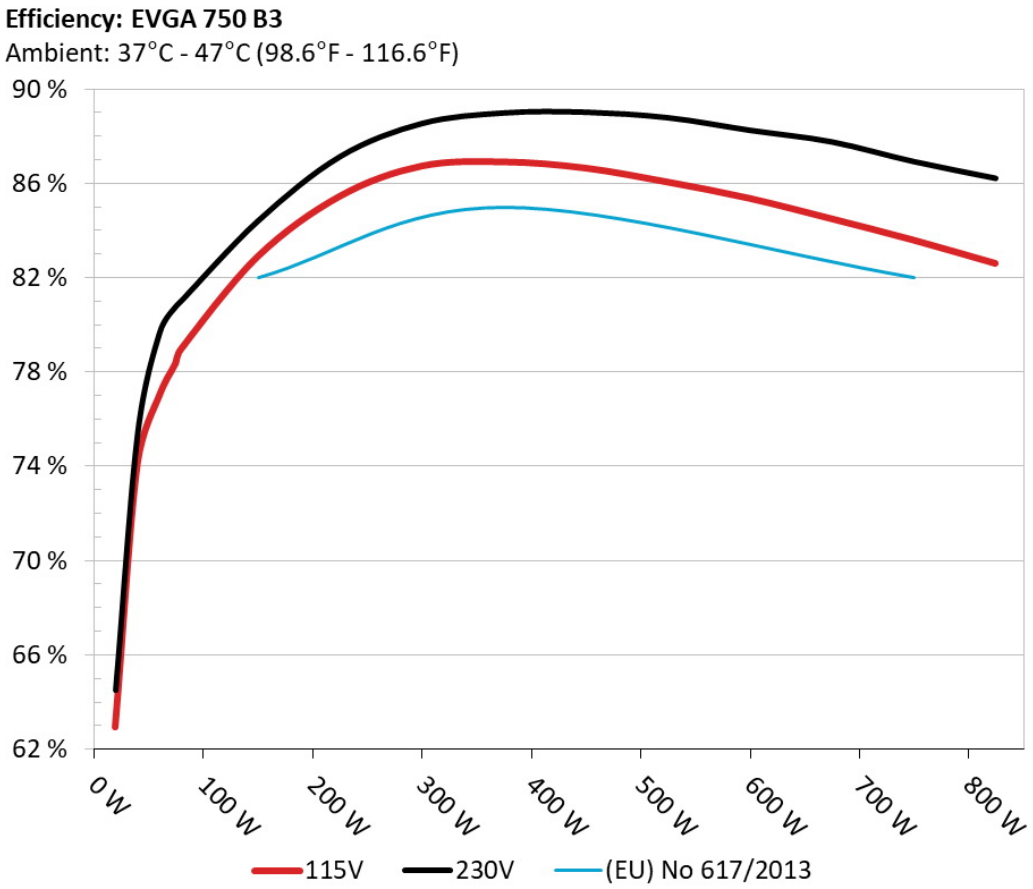


INFO

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

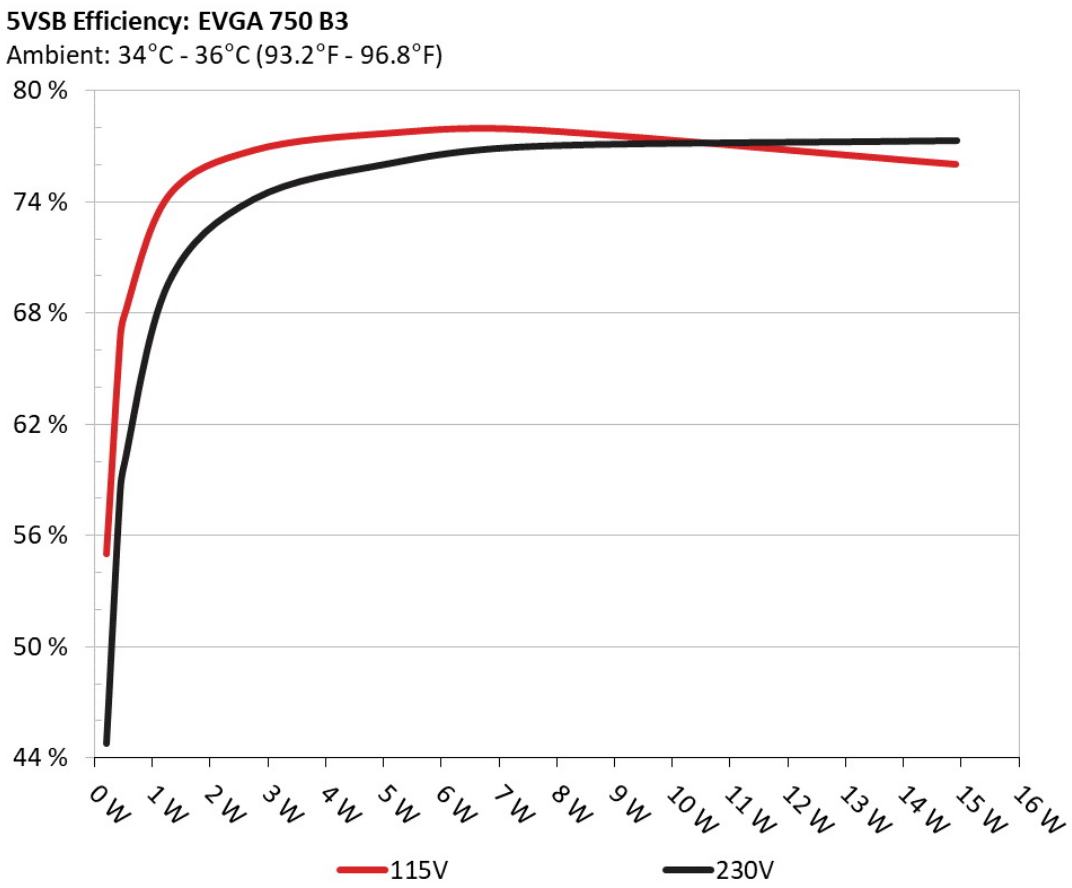
Efficiency under high ambient temperature



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	0.042A	0.213	55.039%	0.030
	5.124V	0.387		115.16V

2	0.087A	0.446	66.468%	0.052
	5.122V	0.671		115.16V
3	0.542A	2.765	76.806%	0.228
	5.100V	3.600		115.16V
4	1.002A	5.087	77.723%	0.327
	5.077V	6.545		115.16V
5	1.502A	7.586	77.901%	0.386
	5.052V	9.738		115.16V
6	3.001A	14.911	76.049%	0.465
	4.969V	19.607		115.16V

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	4.385A	1.984A	1.984A	0.985A	74.767	78.388%	0	<6.0	45.17°C	0.956
	12.127V	5.050V	3.320V	5.060V	95.381				38.14°C	115.19V
2	9.808A	2.971A	2.981A	1.188A	149.737	82.908%	1180	26.7	40.01°C	0.982
	12.120V	5.044V	3.317V	5.042V	180.607				43.56°C	115.19V
3	15.583A	3.479A	3.496A	1.391A	224.879	85.474%	1218	27.3	40.19°C	0.989
	12.114V	5.039V	3.314V	5.025V	263.096				43.85°C	115.20V
4	21.355A	3.977A	3.983A	1.595A	299.740	86.755%	1240	27.8	40.40°C	0.992
	12.107V	5.035V	3.311V	5.005V	345.503				44.09°C	115.19V
5	26.802A	4.974A	4.986A	1.803A	374.721	86.934%	1315	30.4	40.85°C	0.994
	12.097V	5.030V	3.307V	4.985V	431.041				44.67°C	115.19V
6	32.255A	5.975A	5.991A	2.010A	449.621	86.672%	1425	32.3	41.39°C	0.995
	12.086V	5.024V	3.303V	4.965V	518.762				45.34°C	115.19V
7	37.723A	6.982A	6.996A	2.222A	524.620	86.079%	1518	35.4	42.14°C	0.996
	12.075V	5.019V	3.300V	4.944V	609.464				46.49°C	115.22V
8	43.204A	7.984A	8.010A	2.435A	599.523	85.391%	1645	37.4	42.86°C	0.996
	12.062V	5.012V	3.295V	4.923V	702.091				47.54°C	115.19V

9	49.128A	8.487A	8.535A	2.440A	674.581	84.523%	1796	41.4	44.65°C	0.996
	12.050V	5.009V	3.292V	4.910V	798.101				49.49°C	115.19V
10	54.814A	9.002A	9.050A	3.078A	749.458	83.619%	1910	42.1	45.68°C	0.996
	12.036V	5.004V	3.281V	4.866V	896.273				50.81°C	115.19V
11	61.100A	9.012A	9.065A	3.085A	824.374	82.633%	2014	43.1	47.08°C	0.997
	12.024V	4.998V	3.275V	4.855V	997.629				52.48°C	115.18V
CL1	0.098A	14.027A	14.003A	0.004A	117.483	75.801%	1425	32.3	44.06°C	0.977
	12.119V	5.027V	3.268V	5.087V	154.989				47.72°C	115.20V
CL2	62.446A	1.003A	1.002A	1.002A	764.673	83.995%	1945	42.1	46.78°C	0.997
	12.032V	5.013V	3.287V	4.991V	910.382				51.70°C	115.19V

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	1.195A	0.492A	0.480A	0.195A	19.656	67.380%	0	<6.0	0.838
	12.191V	5.068V	3.324V	5.124V	29.172				115.22V
2	2.418A	0.981A	0.990A	0.391A	39.717	77.905%	0	<6.0	0.909
	12.183V	5.066V	3.323V	5.113V	50.981				115.21V
3	3.645A	1.478A	1.500A	0.585A	59.843	82.078%	0	<6.0	0.953
	12.178V	5.064V	3.323V	5.101V	72.910				115.21V
4	4.862A	1.976A	1.985A	0.785A	79.773	84.254%	0	<6.0	0.965
	12.172V	5.062V	3.322V	5.091V	94.681				115.21V

The results above are not used in the certification process

Ripple Measurements 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.0 mV	6.5 mV	11.4 mV	14.0 mV	Pass
20% Load	9.2 mV	6.6 mV	11.2 mV	14.3 mV	Pass
30% Load	9.3 mV	7.5 mV	11.0 mV	13.8 mV	Pass
40% Load	10.6 mV	8.4 mV	11.7 mV	14.6 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	11.4 mV	10.2 mV	12.2 mV	15.2 mV	Pass
60% Load	13.0 mV	10.1 mV	13.7 mV	15.6 mV	Pass
70% Load	13.0 mV	11.4 mV	14.4 mV	17.8 mV	Pass
80% Load	13.8 mV	11.5 mV	14.9 mV	17.8 mV	Pass
90% Load	14.9 mV	13.2 mV	16.6 mV	21.8 mV	Pass
100% Load	17.2 mV	16.7 mV	18.0 mV	27.3 mV	Pass
110% Load	17.3 mV	17.0 mV	18.6 mV	29.8 mV	Pass
Crossload 1	8.9 mV	8.5 mV	9.7 mV	11.9 mV	Pass
Crossload 2	17.0 mV	14.7 mV	16.4 mV	25.0 mV	Pass

The results above are not used in the certification process

EVGA 750 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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com