Super Flower Leadex II 750W

Serial Number S1609199008

Lab ID 97

Certification ID 2597

Test Result Report ID: 19PS97A

Certificate Issue Date: Apr 23, 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	Super Flower
Model	Leadex II 750W
OEM/ODM	Super Flower
Serial Number	S1609199008
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	135mm Fluid Dynamic Bearing Fan (RL4Z S1352512HH)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	97
Date of receipt	Apr 10, 2018
Testing Date	Apr 19, 2018
Report Issued Date	Apr 23, 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 (540mm)	1	1	18-22AWG
4+4 pin EPS12V (650mm)	2	2	18-22AWG
6+2 pin PCIe (550mm+150mm)	2	4	18-22AWG
SATA (500mm+100mm+100mm	3	9	18AWG
4 pin Molex (500mm+100mm+100mm+100)	1	4	18AWG

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				

Test Results

Temperature & Compliance Info

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

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.161%
Average Noise Output (>1450 Load Combinations)	29.84dBA
Average PF (>1450 Load Combinations)	0.989
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.1190W
Non-Accredited	
12V Ripple (Full Load)	12.32mV
5V Ripple (Full Load)	8.35mV
3.3V Ripple (Full Load)	9.35mV
5VSB Ripple (Full Load)	10.17mV
12V Load Regulation	0.30%

5V Load Regulation	0.12%
3.3V Load Regulation	0.12%
5VSB Load Regulation	2.96%
Inrush Current	33.080A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.143%	
Average Noise Output (>1450 Load Combinations)	29.28dBA	
Average PF (>1450 Load Combinations)	0.957	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.2273W	
Non-Accredited		
12V Ripple (Full Load)	11.61mV	
5V Ripple (Full Load)	7.64mV	
3.3V Ripple (Full Load)	7.00mV	
5VSB Ripple (Full Load)	8.73mV	
12V Load Regulation	0.27%	
5V Load Regulation	0.12%	
3.3V Load Regulation	0.09%	
5VSB Load Regulation	2.92%	
Inrush Current	63.670A	
Hold-Up Time & PWR_OK Signal	18.44ms	
AC Loss to PWR_OK Hold Up Time	16.64ms	
PWR_OK Inactive to DC Loss Delay	1.80ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

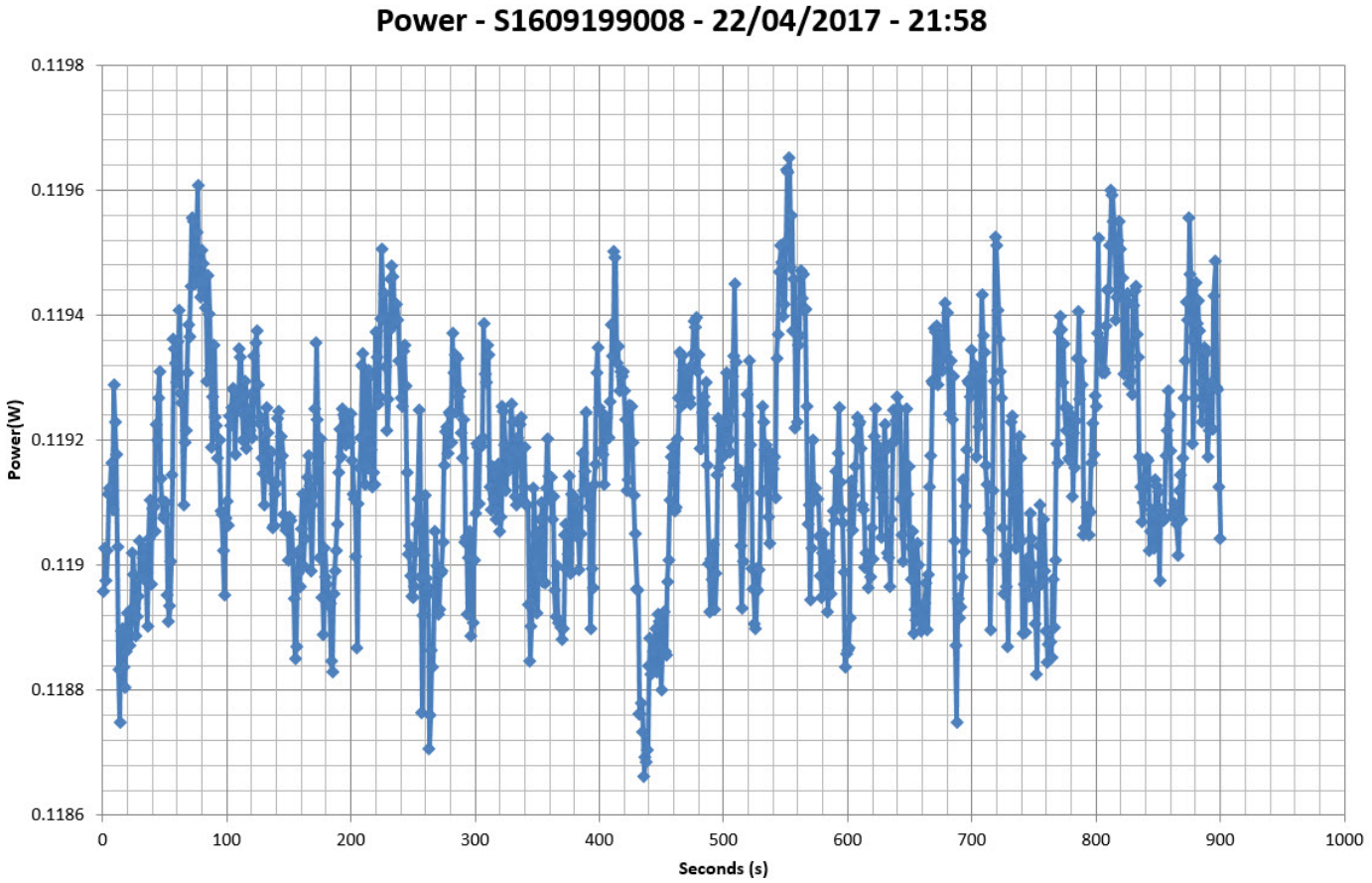
Hold-Up Time (ms)	18.44
AC Loss to PWR_OK Hold Up Time (ms)	16.64

PWR_OK Inactive to DC Loss Delay (ms)	1.80

Stromverbrauch im Ruhezustand

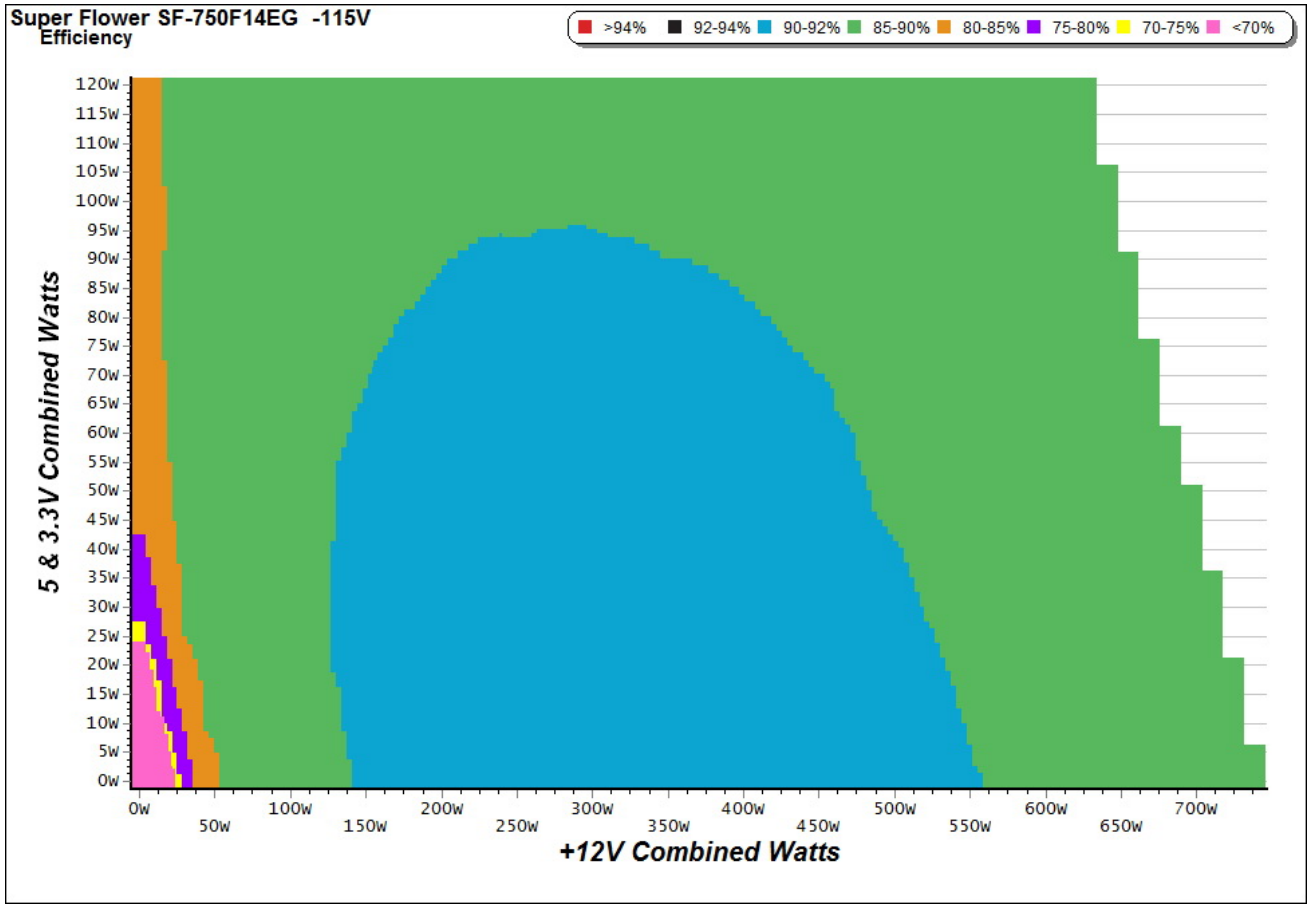
Graphs

115V



Efficiency Graph

115V

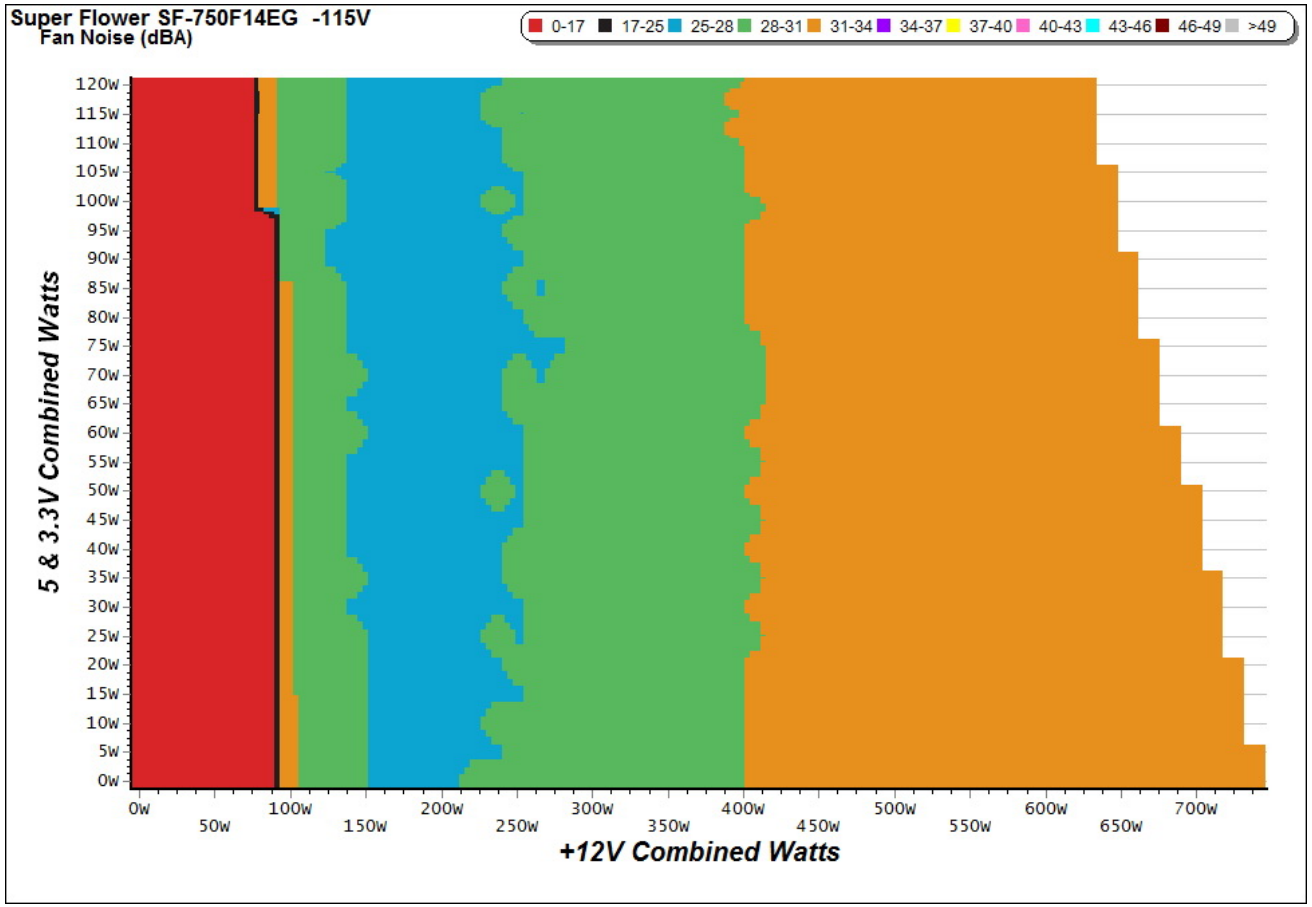


INFO

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

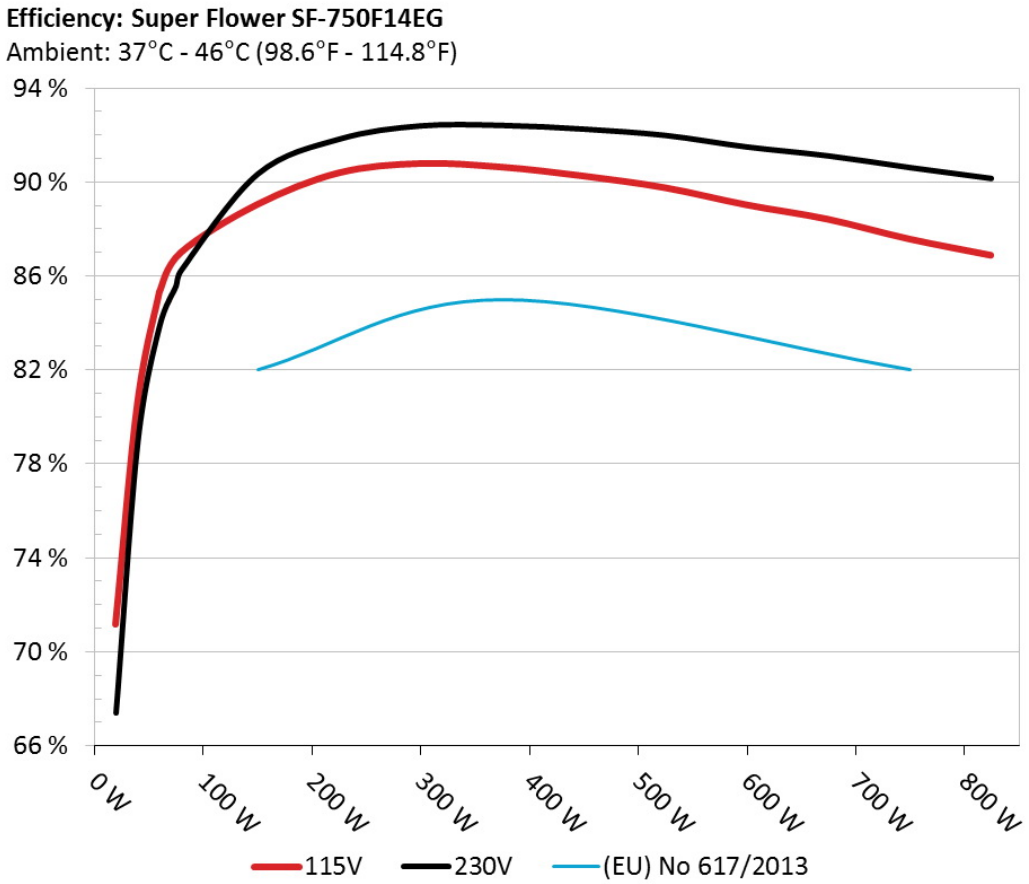


INFO

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

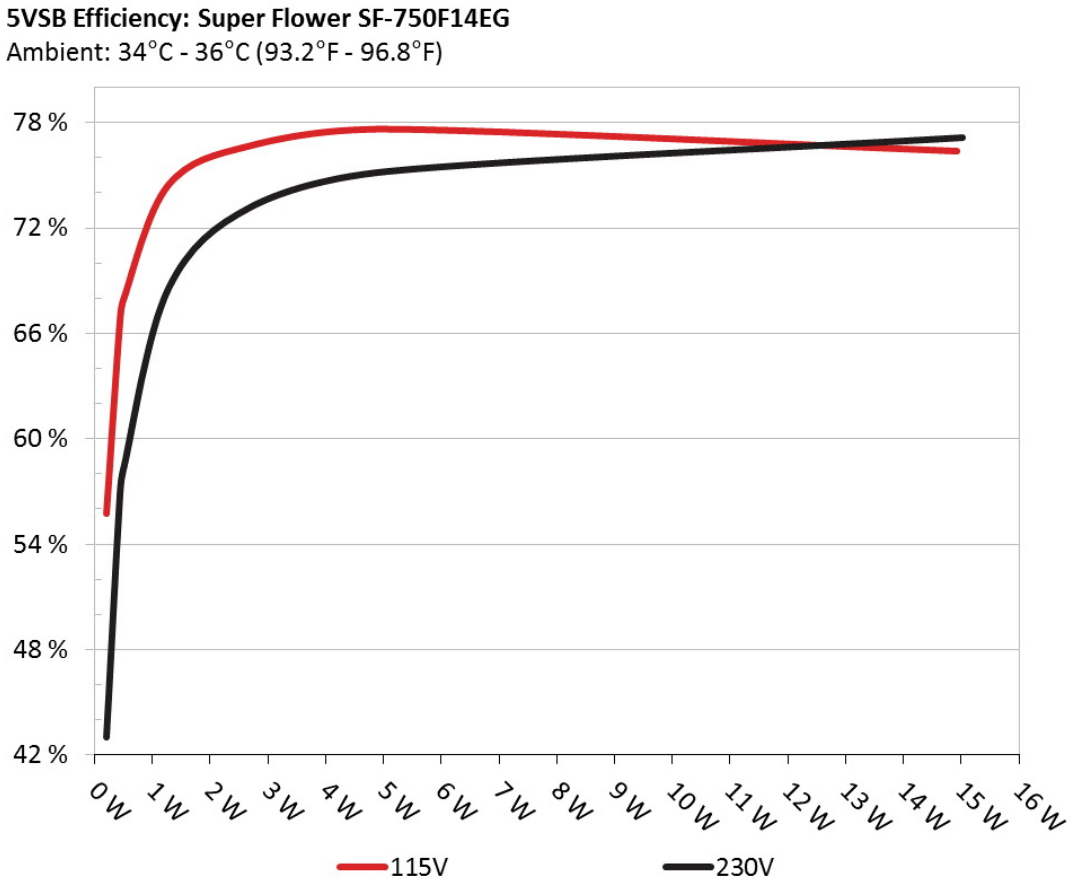
Efficiency under high ambient temperature



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	55.759%	0.046
	5.108V	0.382		115.09V
2	0.087A	0.445	66.717%	0.078
	5.107V	0.667		115.10V
3	0.532A	2.709	76.720%	0.292
	5.093V	3.531		115.10V
4	3.003A	14.928	76.409%	0.492
	4.971V	19.537		115.08V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.213	43.030%	0.018
	5.107V	0.495		230.27V
2	0.087A	0.446	56.815%	0.028
	5.107V	0.785		230.27V
3	0.532A	2.709	73.196%	0.123
	5.093V	3.701		230.27V
4	3.001A	15.025	77.146%	0.353
	5.006V	19.476		230.26V

Supplementary Tests (For Reference)

Typical Load Tests

115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	Fan Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.407A	1.986A	1.989A	0.985A	74.783	84.566%	1339	33.3	37.52°C	0.966
	12.074V	5.028V	3.316V	5.067V	88.431				39.43°C	115.11V
2	9.856A	2.981A	2.984A	1.185A	149.782	89.023%	1339	33.3	38.20°C	0.981
	12.064V	5.030V	3.316V	5.055V	168.251				39.88°C	115.11V
3	15.662A	3.483A	3.494A	1.386A	224.890	90.372%	1364	33.5	38.81°C	0.989
	12.055V	5.028V	3.315V	5.043V	248.848				40.79°C	115.11V
4	21.454A	3.977A	3.980A	1.590A	299.743	90.770%	1384	33.8	39.58°C	0.992
	12.052V	5.026V	3.314V	5.032V	330.223				41.87°C	115.11V
5	26.911A	4.973A	4.976A	1.791A	374.723	90.617%	1415	35.2	40.00°C	0.993
	12.049V	5.026V	3.314V	5.019V	413.525				42.87°C	115.11V
6	32.362A	5.965A	5.972A	1.996A	449.637	90.239%	1448	37.6	41.41°C	0.994
	12.047V	5.028V	3.314V	5.004V	498.276				44.55°C	115.10V
7	37.813A	6.968A	6.969A	2.200A	524.645	89.742%	1476	36.9	41.98°C	0.995
	12.047V	5.028V	3.314V	4.992V	584.618				45.74°C	115.10V
8	43.265A	7.955A	7.963A	2.409A	599.558	89.013%	1530	37.1	42.69°C	0.995
	12.046V	5.028V	3.315V	4.978V	673.564				46.98°C	115.10V
9	49.156A	8.463A	8.480A	2.409A	674.644	88.400%	1583	38.1	43.59°C	0.995
	12.044V	5.026V	3.313V	4.973V	763.171				48.51°C	115.10V
10	54.786A	8.962A	8.965A	3.031A	749.496	87.559%	1631	39.9	44.87°C	0.996
	12.043V	5.024V	3.312V	4.946V	855.994				50.52°C	115.10V
11	61.015A	8.968A	8.972A	3.032A	824.382	86.870%	1667	40.1	46.45°C	0.996
	12.041V	5.021V	3.309V	4.942V	948.987				52.60°C	115.10V
CL1	0.099A	14.025A	14.005A	0.004A	119.170	82.812%	1544	37.4	43.16°C	0.977
	12.071V	5.069V	3.346V	5.081V	143.905				45.77°C	115.12V

CL2	62.452A	1.004A	1.003A	1.002A	765.148	88.041%	1596	38.2	44.76°C	0.996
	12.038V	4.995V	3.290V	5.027V	869.081				49.69°C	115.11V

The results above are not used in the certification process

230V

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)	Fan Noise (dB[A])	PF/AC Volts
1	1.207A	0.493A	0.481A	0.195A	19.648	71.176%	0	0	0.846
	12.082V	5.025V	3.314V	5.097V	27.605				115.12V
2	2.443A	0.990A	0.994A	0.391A	39.770	80.573%	0	0	0.929
	12.079V	5.026V	3.315V	5.089V	49.359				115.12V
3	3.678A	1.487A	1.506A	5.080A	59.887	85.302%	0	0	0.965
	12.076V	5.028V	3.315V	5.080V	70.206				115.11V
4	4.905A	1.984A	1.989A	0.786A	79.772	86.991%	0	0	0.966
	12.073V	5.028V	3.315V	5.071V	91.701				115.11V

The results above are not used in the certification process

230V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.3 mV	4.1 mV	5.4 mV	4.5 mV	Pass
20% Load	5.6 mV	4.2 mV	6.0 mV	4.9 mV	Pass
30% Load	7.0 mV	4.6 mV	6.0 mV	5.2 mV	Pass
40% Load	7.6 mV	4.7 mV	6.5 mV	5.4 mV	Pass
50% Load	8.6 mV	5.2 mV	6.6 mV	5.8 mV	Pass
60% Load	9.3 mV	5.8 mV	7.2 mV	5.9 mV	Pass
70% Load	9.8 mV	7.0 mV	6.7 mV	6.4 mV	Pass
80% Load	11.0 mV	6.9 mV	7.5 mV	7.9 mV	Pass
90% Load	11.5 mV	7.9 mV	8.0 mV	9.3 mV	Pass
100% Load	12.3 mV	8.4 mV	9.4 mV	10.2 mV	Pass
107% Load	12.8 mV	9.0 mV	9.8 mV	10.2 mV	Pass
Crossload 1	6.8 mV	5.8 mV	8.3 mV	11.6 mV	Pass
Crossload 2	11.7 mV	8.4 mV	8.8 mV	8.2 mV	Pass

The results above are not used in the certification process

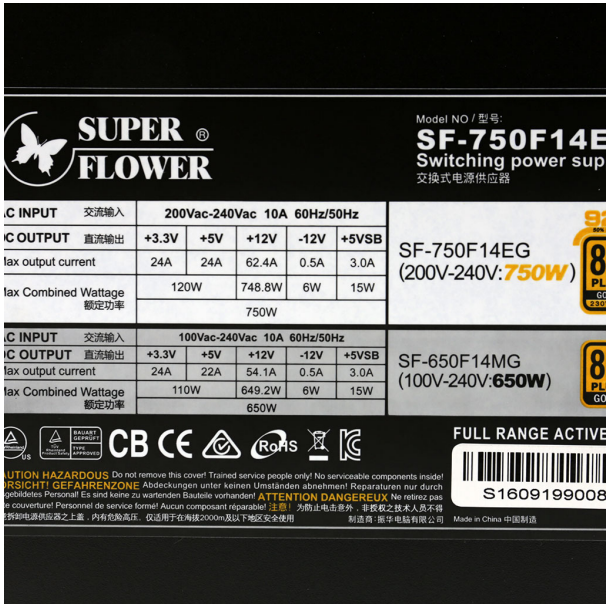
230V

The results above are not used in the certification process

Super Flower Leadex II 750W



Top side



Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

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