Super Flower Leadex Titanium 1000W

S1506102134

Lab ID 154

Certification ID 25154

Test Result Report ID: 19PS154A

Certificate Issue Date: Mar 8, 2018

115V

Scheme: ETA-EMI PSU



115V



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 Titanium 1000W
OEM/ODM	Super Flower
Serial Number	S1506102134
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	15
□□□□ (Hz)	50-60

□□□□ (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	140mm Double Ball-Bearing Fan (RL4Z-B1402512HH)
□□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	154
Date of receipt	Feb 24, 2018
Testing Date	Mar 4, 2018
Report Issued Date	Mar 8, 2018
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□			
□□	□□□	□□□□□	Gauge
ATX □□ 20+4 pin (590mm)	1	1	16-22AWG
4+4 pin EPS 12V □□ (750mm)	2	2	16-22AWG
6+2pin PCIe□□ (750mm)	4	4	16-22AWG
6+2pin PCIe□□ (750mm+150mm)	2	4	16-22AWG
SATA□□ (550mm+100mm+100mm+100mm)	3	12	18-20AWG
□ 4pin Molex□□ (550mm+100mm+100mm)	2	6	18AWG
□ 4pin □□ (+100mm)	1	1	20AWG

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	83.3	2.5	0.5
	□	100		999.6	12.5	6
□□□□□ (W)		1000				

Parts Description

Primary Side	
Transient Filter	4x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Electromagnetic Relay
Bridge Rectifier(s)	Bridgeless Design - 1x US30K80R & 4x Infineon Mosfets
APFC Mosfets	4x Infineon Mosfets
APFC Boost Diode	4x Infineon IDH06G65C5
Hold-up Cap(s)	3x Nippon Chemi-Con (400 V, 2x 390 uF & 1x 330 uF, 1110 uF combined, 105°C, KMW)
Main Switchers	4x IPP50R199CP (550V, 11A @ 100C, 0.199 Ohm)
APFC Controller	SF29603
Switching Controller	SFAA9013
Topology	Primary side: Bridgeless PFC & Full-Bridge LLC & Resonant Converter Secondary side: Syncronous Rectification & DC-DC converters
Secondary Side	
+12V Mosfets	8x Infineon BSC027N04LS
5V & 3.3V	DC-DC Converters: 8x Infineon IPD060N03 fets
Filtering Capacitors	Electrolytics: Chemi-Con, 105°C, KY, KRG & KMG Polymers: Chemi-Con
Supervisor IC	AA9013 & LM324ADG
Fan Model	Globe Fan RL4Z-B1402512HH (140 mm, 12 V, 0.5 A, 1800 RPM, 70.000 MTBF)
5VSB Circuit	
Rectifying Diode	Mospec S10C60C
Standby PWM Controller	29604

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	ErP Lot 3/6 2010: ✓ ErP Lot 3/6 2013: Partially ErP Lot 3/6 2014, CEC: ✓
□□ (EU) No 617/2013□□	✓

Performance Summary 115V

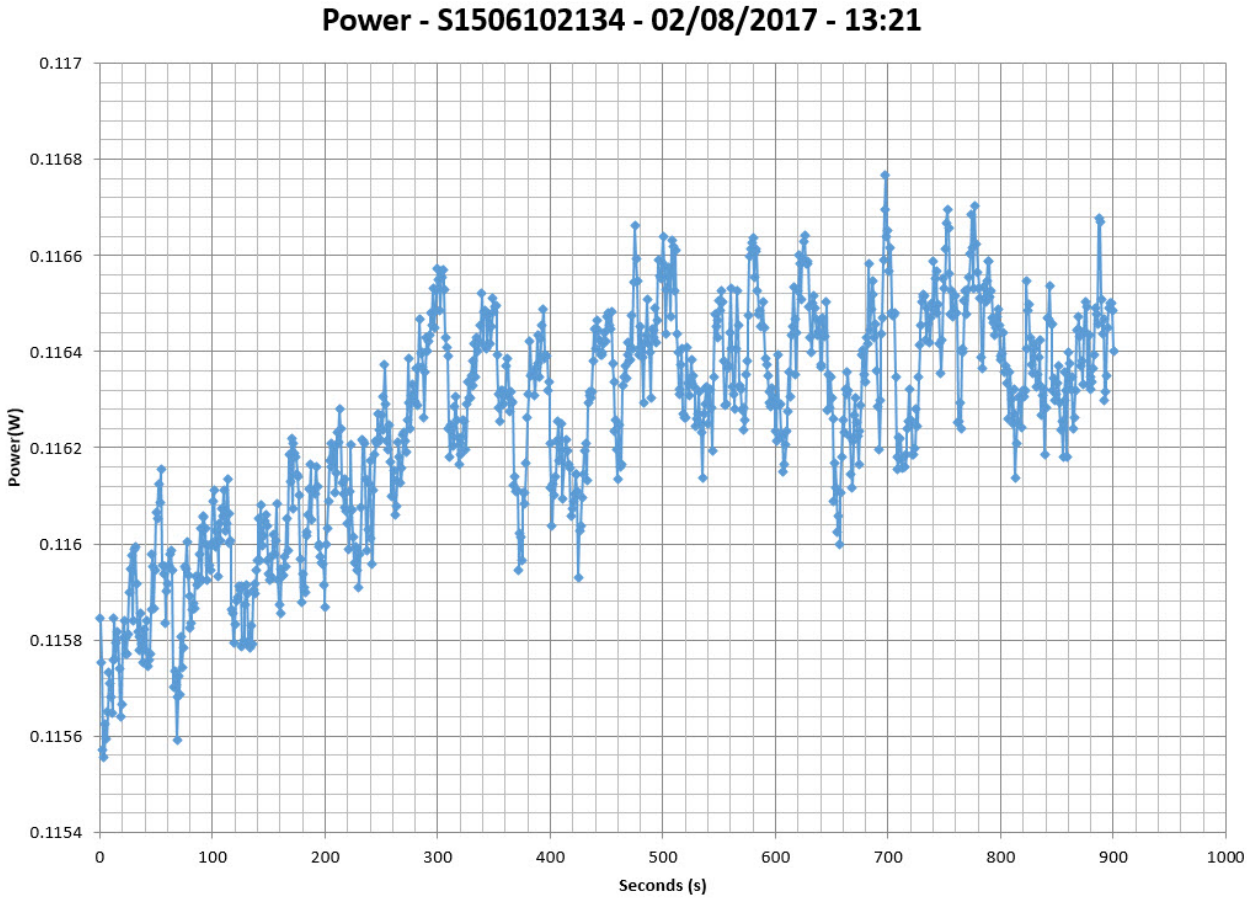
Accredited	
□□□□ (>1450 load combinations)	91.621%
Average Noise Output (>1450 Load Combinations)	26.26dBA
PF□□□ (>1450 Load Combinations)	0.993
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
□□□□□□	0.1164W
Non-Accredited	
12V Ripple (Full Load)	21.60mV
5V Ripple (Full Load)	25.02mV
3.3V Ripple (Full Load)	30.07mV
5VSB Ripple (Full Load)	16.10mV
12V Load Regulation	0.40%
5V Load Regulation	0.67%
3.3V Load Regulation	0.75%
5VSB Load Regulation	1.52%
Inrush Current	40.016A

□□□□ & PG□□

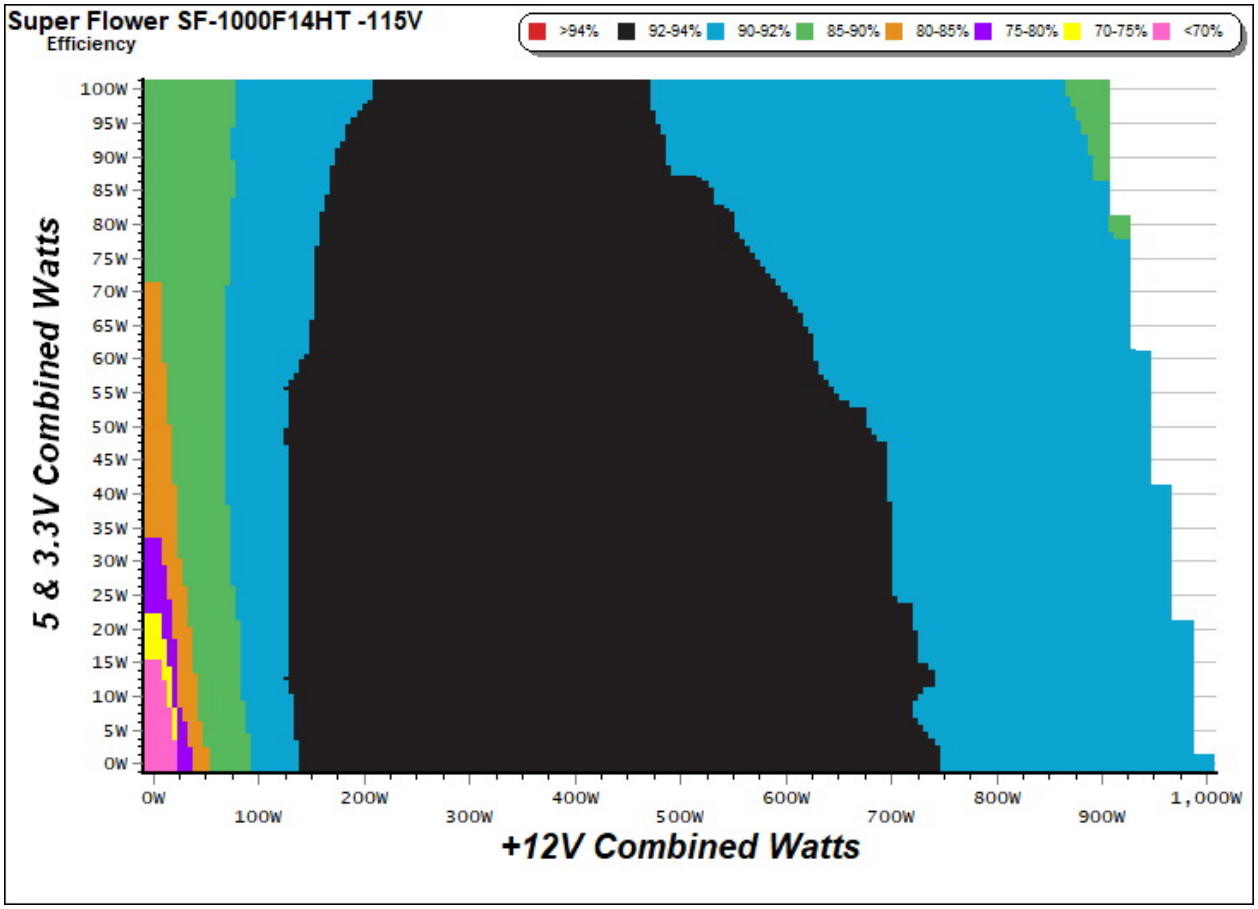
Hold-Up Time (ms)	20.14
AC Loss to PWR_OK Hold Up Time (ms)	18.12
PWR_OK Inactive to DC Loss Delay (ms)	2.02

□□□□

Graphs 115V



115V



□□

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.

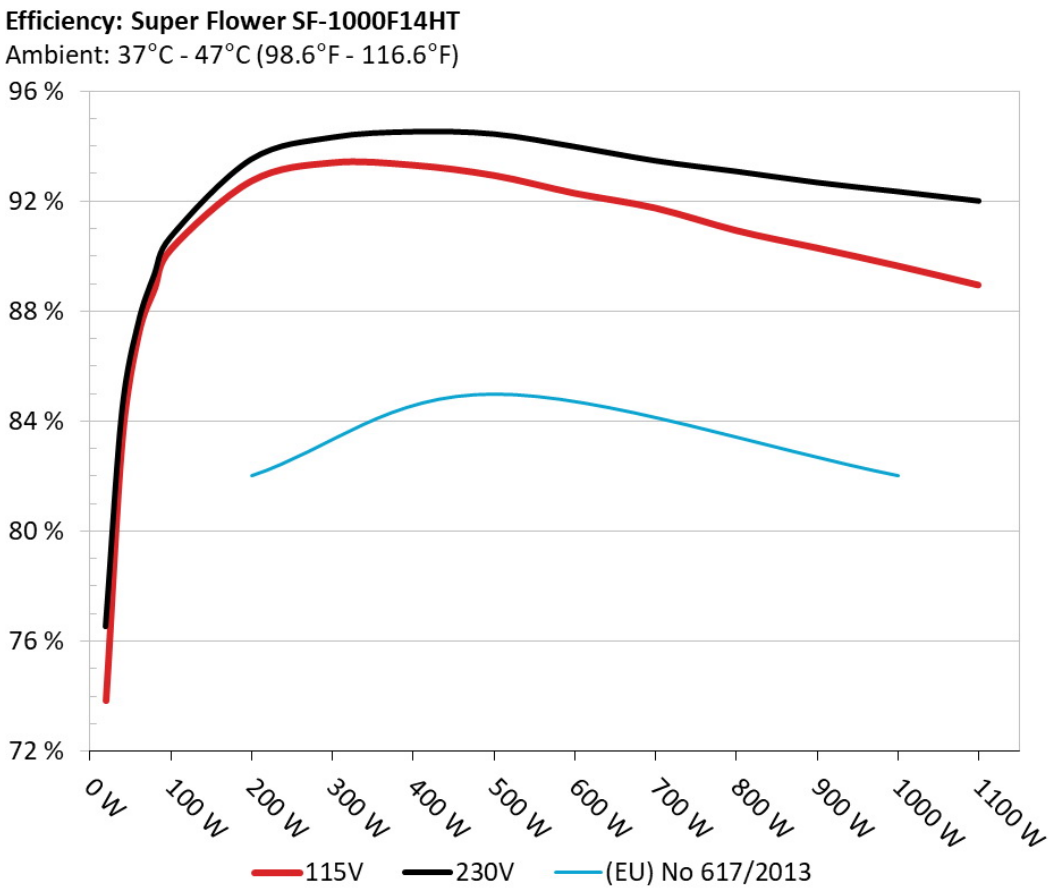
115V



□□

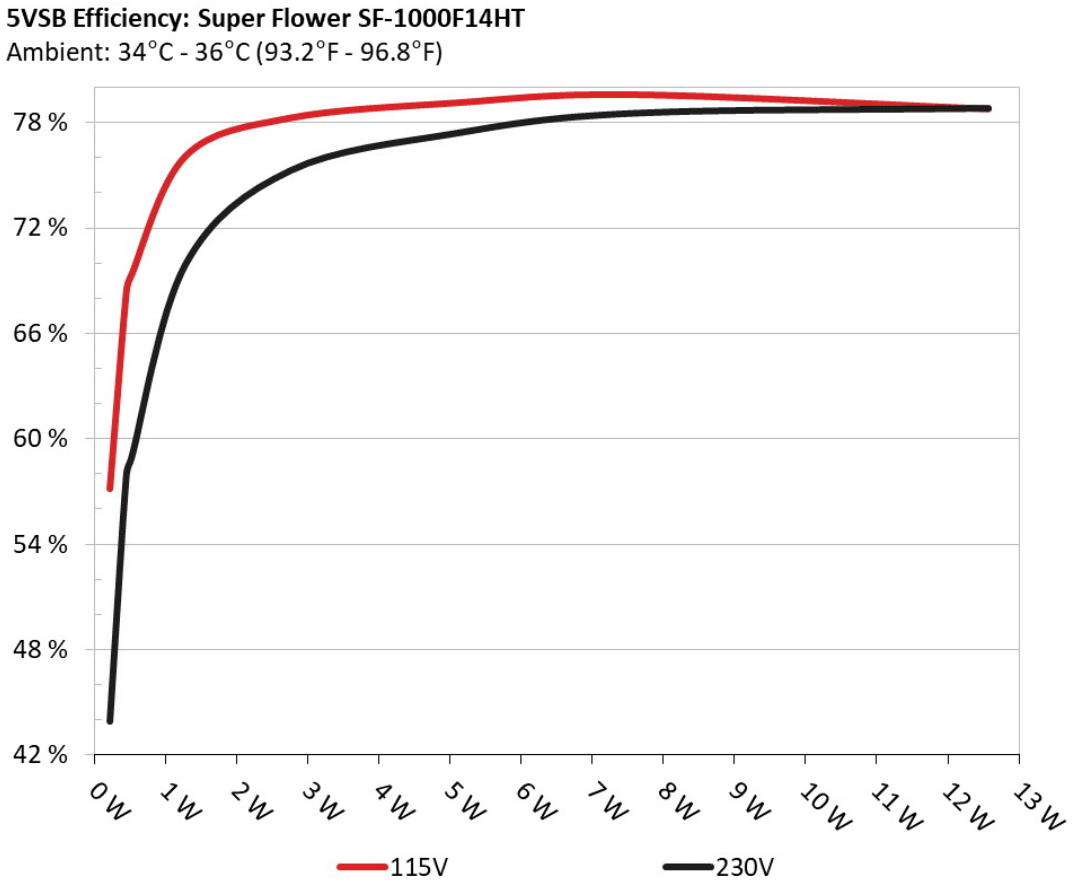
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance



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□□□□



□□

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input.

□□□□ □□ 5Vsb □□ (ErP Lot3/6 & CEC) 115V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.042A	0.212	57.143%	0.023
	5.076V	0.371		115.14V

2	0.087A	0.443	68.364%	0.041
	5.074V	0.648		115.14V
3	0.542A	2.746	78.256%	0.196
	5.065V	3.509		115.12V
4	1.002A	5.065	79.116%	0.300
	5.055V	6.402		115.13V
5	1.502A	7.576	79.588%	0.370
	5.045V	9.519		115.13V
6	2.501A	12.566	78.774%	0.445
	5.024V	15.952		115.13V

Supplementary Tests (For Reference)

10-110%□□□□ 115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	6.431A	1.985A	1.990A	0.986A	99.795	90.252%	0	| 6	43.75°C	0.975
	12.163V	5.040V	3.310V	5.054V	110.574				38.40°C	115.18V
2	13.884A	2.972A	2.990A	1.186A	199.622	92.735%	0	| 6	44.24°C	0.989
	12.157V	5.035V	3.306V	5.046V	215.260				38.65°C	115.18V
3	21.706A	3.478A	3.508A	1.386A	299.846	93.400%	0	| 6	45.30°C	0.996
	12.152V	5.032V	3.304V	5.039V	321.033				39.13°C	115.17V
4	29.513A	3.976A	3.992A	1.586A	399.621	93.312%	0	| 6	46.29°C	0.995
	12.146V	5.029V	3.301V	5.033V	428.265				39.82°C	115.16V
5	36.984A	4.975A	4.997A	1.790A	499.610	92.938%	920	23.0	41.17°C	0.996
	12.144V	5.025V	3.298V	5.026V	537.574				48.14°C	115.16V
6	44.464A	5.977A	6.003A	1.990A	599.534	92.291%	920	23.0	41.42°C	0.997
	12.139V	5.021V	3.296V	5.019V	649.615				49.52°C	115.16V
7	51.953A	6.981A	7.013A	2.195A	699.519	91.753%	920	23.0	41.82°C	0.997
	12.134V	5.018V	3.293V	5.010V	762.390				51.07°C	115.16V
8	59.444A	7.977A	8.019A	2.395A	799.368	90.939%	1365	34.5	43.28°C	0.998
	12.129V	5.014V	3.291V	5.004V	879.016				52.19°C	115.16V

9	67.370A	8.484A	8.537A	2.396A	899.367	90.303%	1830	41.2	44.05°C	0.998
	12.124V	5.012V	3.288V	5.001V	995.947				52.99°C	115.16V
10	75.261A	8.992A	9.036A	2.500A	999.245	89.656%	1830	41.2	45.20°C	0.998
	12.118V	5.009V	3.287V	4.996V	1114.533				55.04°C	115.16V
11	83.552A	8.996A	9.040A	2.500A	1099.111	88.957%	1830	41.2	46.77°C	0.998
	12.111V	5.006V	3.285V	4.993V	1235.550				58.24°C	115.17V
CL1	0.097A	12.017A	12.004A	0.004A	101.163	85.422%	1365	34.5	44.04°C	0.978
	12.165V	5.022V	3.300V	5.068V	118.428				51.13°C	115.21V
CL2	83.247A	1.003A	1.002A	1.002A	1021.920	89.921%	1830	41.2	45.93°C	0.998
	12.115V	5.020V	3.295V	5.036V	1136.470				55.64°C	115.17V

The results above are not used in the certification process

20-80□□□□□ 115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□ (dB[A])	PF/AC □□
1	1.201A	0.493A	0.479A	0.196A	19.685	73.854%	0	| 6	0.812
	12.169V	5.046V	3.314V	5.073V	26.654				115.17V
2	2.421A	0.991A	0.993A	0.391A	39.725	83.316%	0	| 6	0.921
	12.167V	5.043V	3.312V	5.068V	47.680				115.17V
3	3.653A	1.478A	1.508A	0.591A	59.881	87.155%	0	| 6	0.955
	12.166V	5.042V	3.311V	5.064V	68.706				115.17V
4	4.867A	1.985A	1.988A	0.790A	79.782	88.825%	0	| 6	0.967
	12.164V	5.040V	3.310V	5.058V	89.819				115.18V

The results above are not used in the certification process

□□□□ 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	8.8 mV	7.5 mV	10.8 mV	8.5 mV	Pass
20% Load	13.7 mV	10.5 mV	14.0 mV	10.6 mV	Pass
30% Load	16.1 mV	11.5 mV	17.6 mV	11.8 mV	Pass
40% Load	16.9 mV	13.7 mV	19.4 mV	11.8 mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	17.2 mV	15.5 mV	20.0 mV	13.3 mV	Pass
60% Load	18.1 mV	18.3 mV	24.2 mV	14.5 mV	Pass
70% Load	21.4 mV	20.4 mV	24.5 mV	14.9 mV	Pass
80% Load	19.1 mV	21.2 mV	25.2 mV	14.0 mV	Pass
90% Load	20.6 mV	23.2 mV	28.4 mV	15.5 mV	Pass
100% Load	21.6 mV	25.0 mV	30.1 mV	16.1 mV	Pass
110% Load	21.3 mV	27.0 mV	31.6 mV	14.9 mV	Pass
Crossload 1	12.2 mV	10.2 mV	9.9 mV	20.6 mV	Pass
Crossload 2	20.5 mV	25.0 mV	29.1 mV	16.2 mV	Pass

The results above are not used in the certification process

Super Flower Leadex Titanium 1000W

Top side

Power specifications label

本测试报告中包含的所有数据和图表均可在以下条件下由任何人使用：使用过程需提及测试结果由 Cybenetics提供。
在任何情况下都应提供原始测试结果文档的网站链接

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