Super Flower Leadex VII XP 1000W

Serial Number

Lab ID SF10002194

Certification ID 252194

Test Result Report ID: 23PS2194A

Certificate Issue Date: Jun 15, 2023

Scheme: ETA-EMI PSU

115V 230V

Scheme: LAMBDA PSU

115V 230V

Outside Validation Scope

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 VII XP 1000W
OEM/ODM	Super Flower
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15

Rated Frequency (Hz)	60-50
Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	140mm Fluid Dynamic Bearing Fan (ZFF142512D)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	SF10002194
Date of receipt	Jun 9, 2023
Testing Date	Jun 14, 2023
Report Issued Date	Jun 15, 2023
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	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-20AWG	No
4+4 pin EPS12V (700mm)	2	2	18AWG	No
6+2 pin PCIe (700mm)	4	4	16AWG	No
12+2 pin PCIe (700mm) (600W)	1	1	16-24AWG	No
SATA (550mm+130mm+130mm+130mm)	3	12	18AWG	No
4-pin Molex (550mm+150mm+150mm+150mm)	1	4	18AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.3	3	0.5
	Watts	100		999.6	15	6
Total Max. Power (W)		1000				

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	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.0 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.573%
Average Noise Output (>1450 Load Combinations)	32.37dBA
Average PF (>1450 Load Combinations)	0.989
Efficiency With 10W (≤500W) or 2% (>500W) Load	71.308%
Standby Power Consumption	0.0640W
Non-Accredited	
12V Ripple (Full Load)	15.79mV
5V Ripple (Full Load)	13.89mV
3.3V Ripple (Full Load)	14.38mV
5VSB Ripple (Full Load)	20.20mV
12V Load Regulation	0.46%

5V Load Regulation	0.20%
3.3V Load Regulation	0.42%
5VSB Load Regulation	2.28%
Inrush Current	30.690A

230V

Accredited		
Average Efficiency (>1450 load combinations)	92.347%	
Average Noise Output (>1450 Load Combinations)	33.13dBA	
Average PF (>1450 Load Combinations)	0.952	
Efficiency With 10W (≤500W) or 2% (>500W) Load	71.153%	
Standby Power Consumption	0.1050W	
Non-Accredited		
12V Ripple (Full Load)	17.79mV	
5V Ripple (Full Load)	14.01mV	
3.3V Ripple (Full Load)	15.92mV	
5VSB Ripple (Full Load)	20.70mV	
12V Load Regulation	0.47%	
5V Load Regulation	0.18%	
3.3V Load Regulation	0.39%	
5VSB Load Regulation	2.26%	
Inrush Current	67.380A	
12V Transient Response (200%)	11.53V	
5V Transient Response (200%)	4.974V	
3.3V Transient Response (200%)	3.202V	
5VSB Transient Response (200%)	5.028V	
Hold-Up Time & PWR_OK Signal	26.70ms	
AC Loss to PWR_OK Hold Up Time	24.10ms	
PWR_OK Inactive to DC Loss Delay	2.60ms	
PSU Timings: T1 (20% / 100%)	87.0ms	87.0ms
PSU Timings: T3 (20% / 100%)	117.0ms	118.0ms
OPP (31.62°C / 42.73°C)	139.11%	132.56%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	26.7
AC Loss to PWR_OK Hold Up Time (ms)	24.1
PWR_OK Inactive to DC Loss Delay (ms)	2.6

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.87 V	114.81 V	113.85 V	114.92 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.418	1.417	1.340	1.420	1.490	PASS
Mains Voltage THD:	0.15 %	0.09 %	N/A	0.25 %	2.00 %	PASS
Real Power:	0.064 W	0.043 W	N/A	0.084 W	N/A	N/A
Apparent Power:	9.841 W	9.813 W	N/A	9.874 W	N/A	N/A
Power Factor:	0.006	N/A	N/A	N/A	N/A	N/A

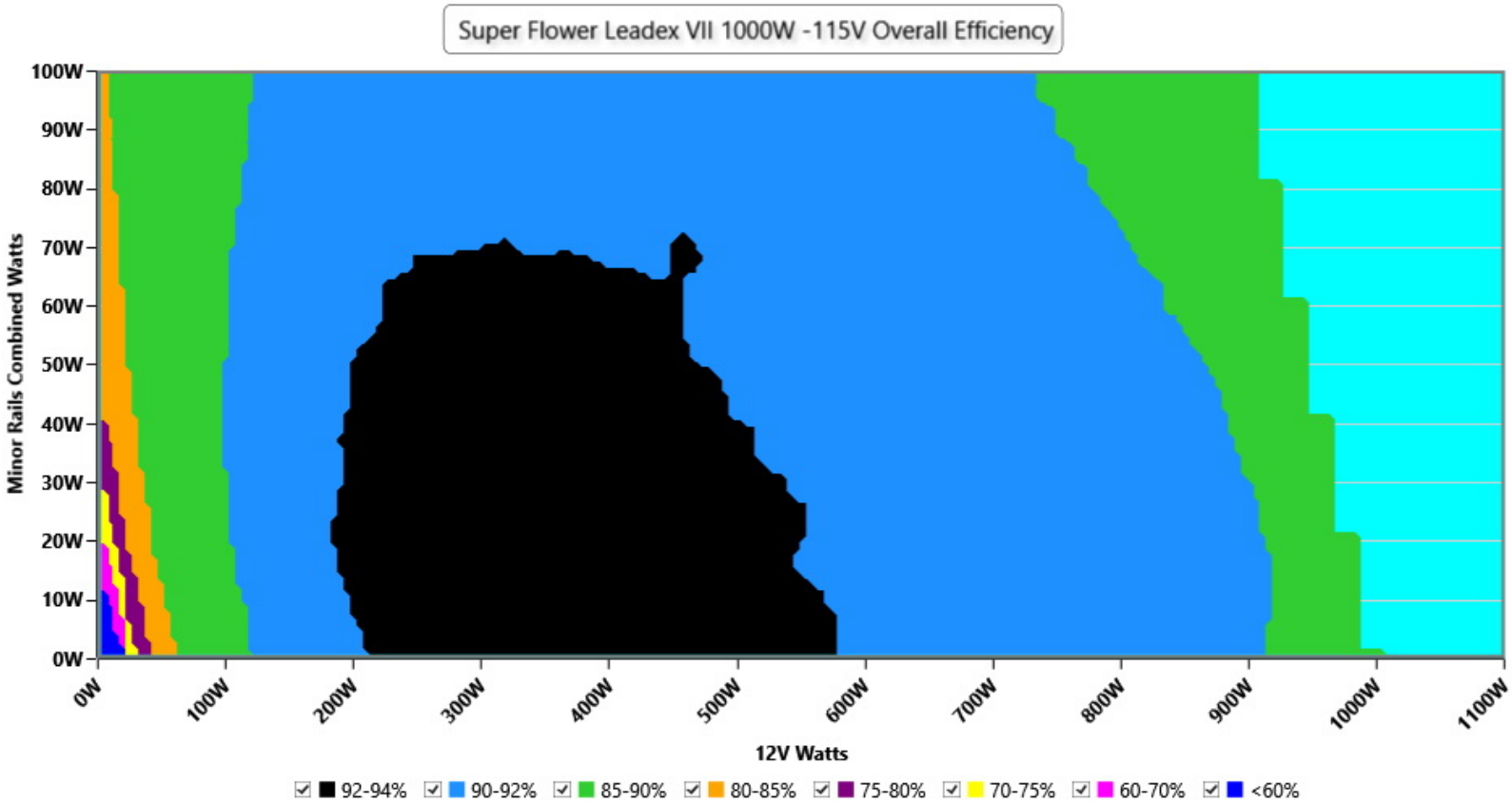
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.96 V	229.89 V	227.70 V	230.01 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.105 W	0.059 W	N/A	0.162 W	N/A	N/A
Apparent Power:	33.123 W	33.078 W	N/A	33.177 W	N/A	N/A

Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

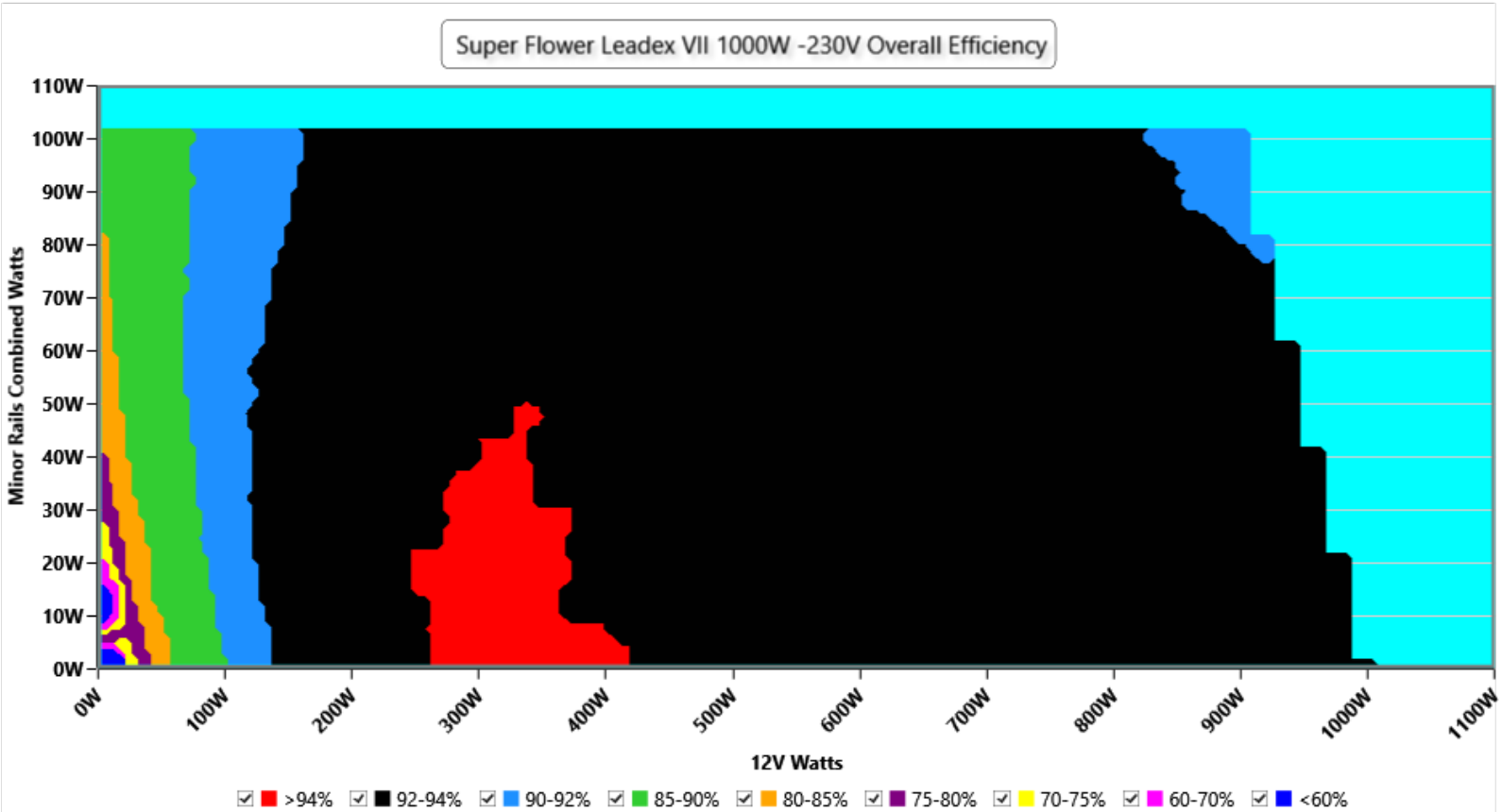
115V



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

230V



INFO

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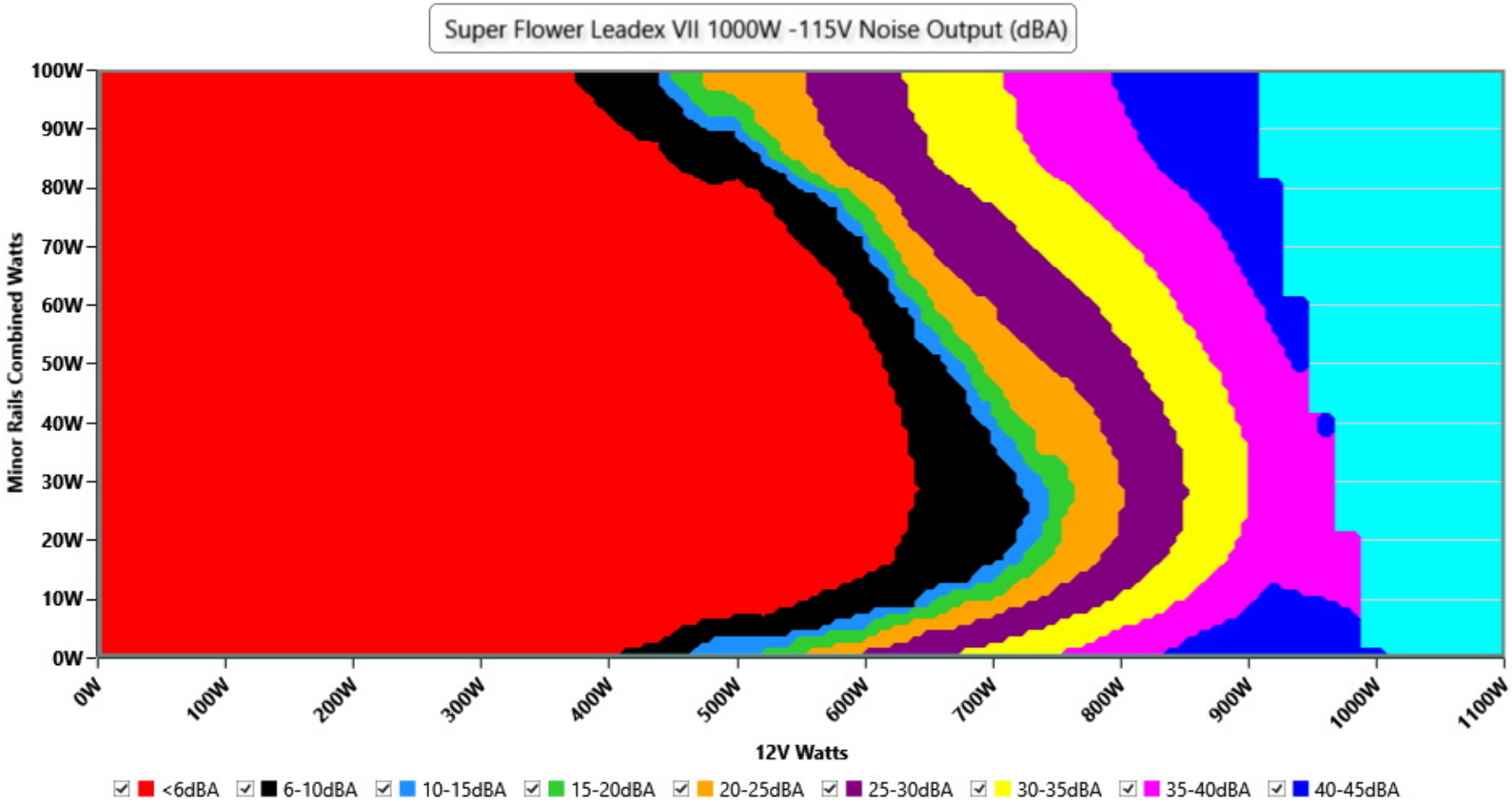
Noise Graph

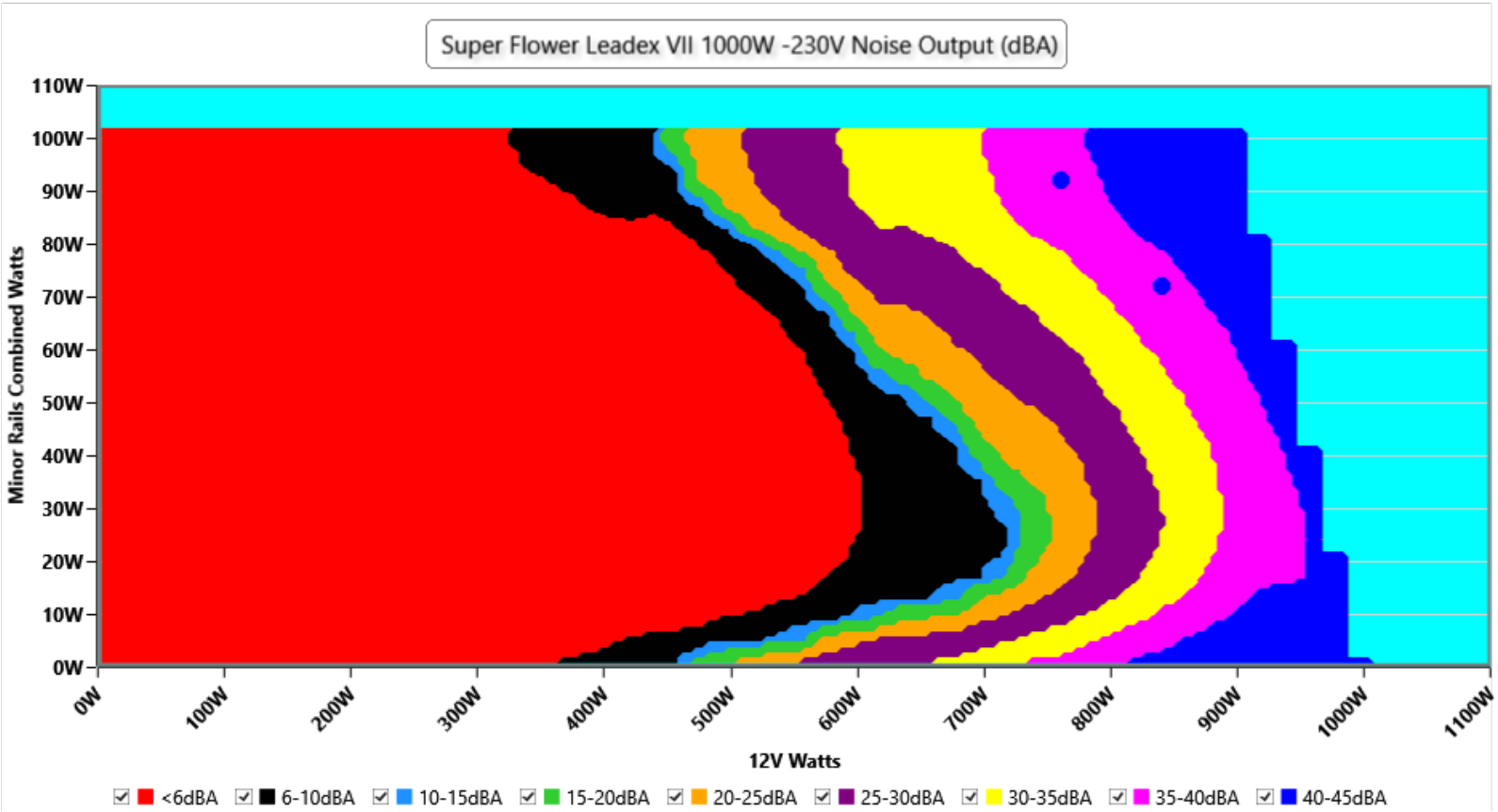
115V



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

230V

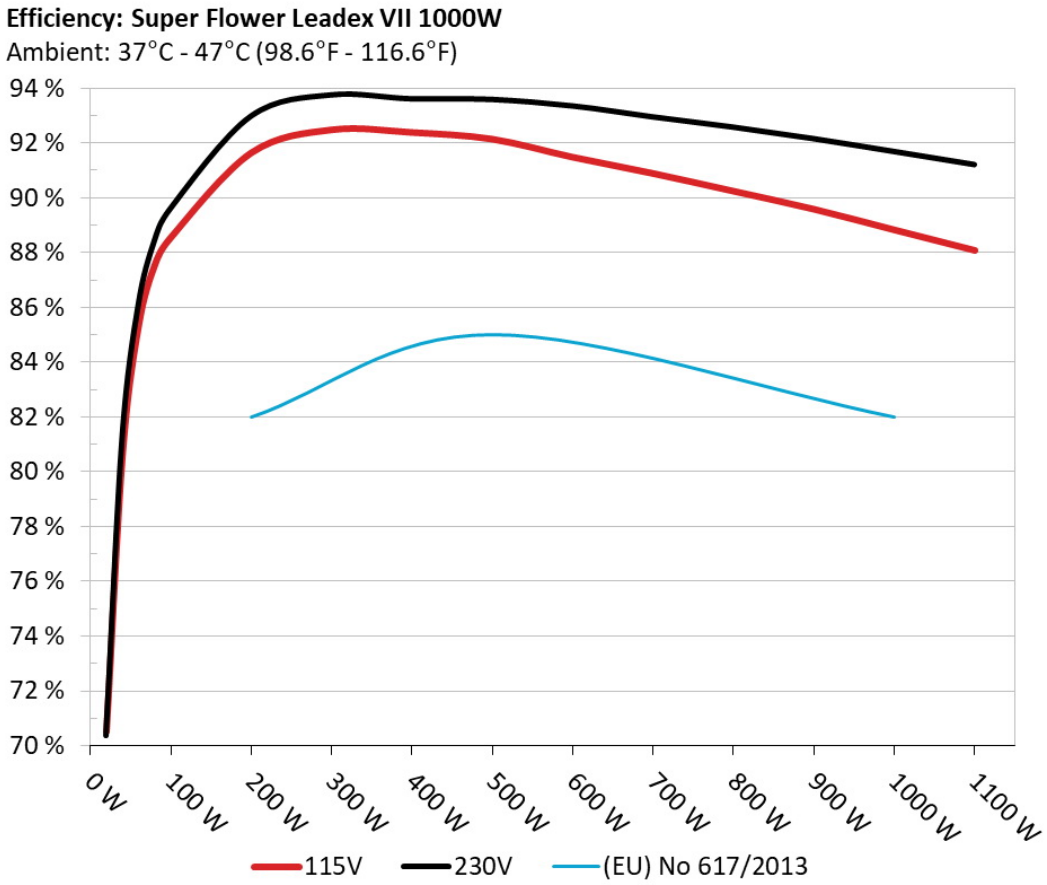


INFO

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

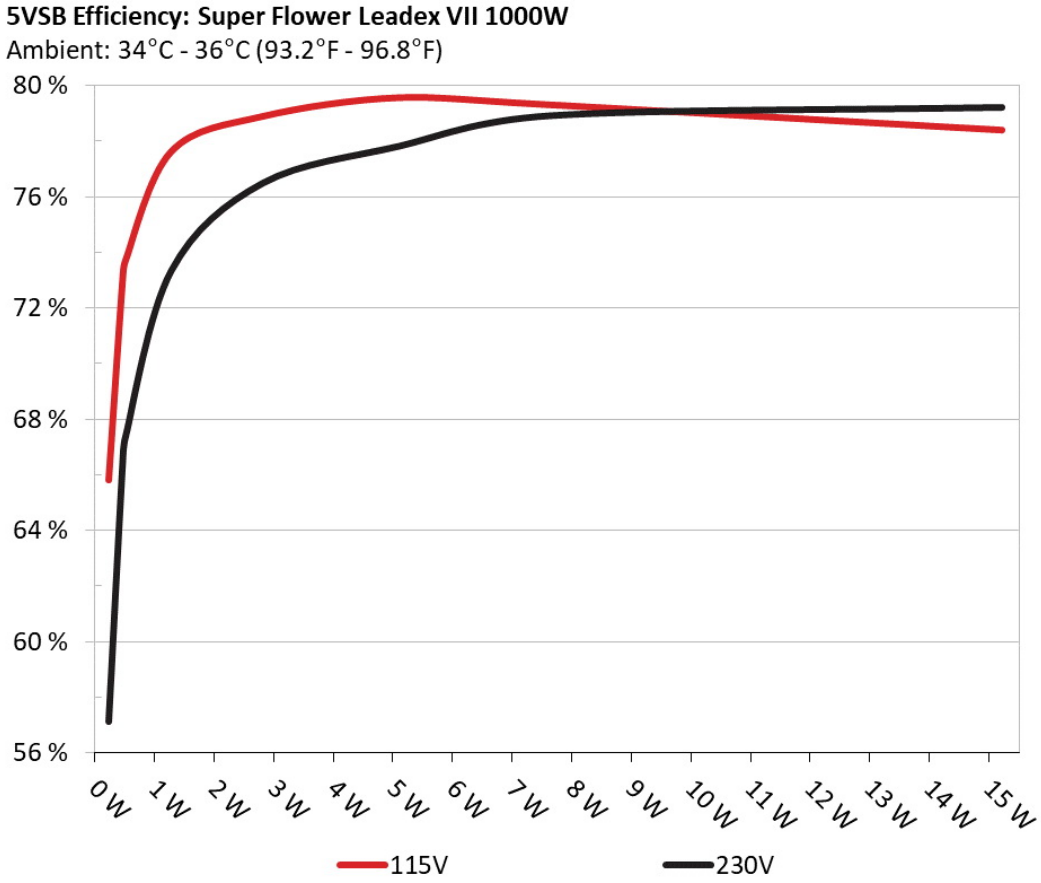
Efficiency under high ambient temperature



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	0.045A	0.231W	66.325%	0.036
	5.125V	0.348W		114.87V
2	0.09A	0.461W	73.442%	0.063
	5.124V	0.628W		114.86V
3	0.55A	2.814W	79.365%	0.271
	5.116V	3.546W		114.86V
4	1A	5.108W	80.039%	0.359
	5.108V	6.382W		114.86V
5	1.5A	7.648W	79.777%	0.413
	5.099V	9.587W		114.86V
6	3A	15.213W	78.874%	0.479
	5.071V	19.288W		114.85V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	57.629%	0.012
	5.124V	0.401W		229.94V
2	0.09A	0.461W	66.815%	0.021
	5.124V	0.689W		229.94V
3	0.55A	2.814W	76.981%	0.106
	5.116V	3.656W		229.94V
4	1A	5.108W	78.311%	0.175
	5.108V	6.523W		229.94V
5	1.5A	7.648W	79.408%	0.23
	5.099V	9.631W		229.94V
6	3A	15.215W	79.703%	0.336
	5.072V	19.089W		229.94V

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
10%	6.497A	1.987A	1.972A	0.981A	99.985	88.535%	0	<6.0	44.32°C	0.962
	12.065V	5.032V	3.347V	5.099V	112.934				40.07°C	114.84V
20%	14.019A	2.981A	2.959A	1.179A	199.929	91.62%	0	<6.0	45.16°C	0.984
	12.057V	5.033V	3.345V	5.089V	218.216				40.58°C	114.8V
30%	21.904A	3.476A	3.454A	1.378A	299.976	92.462%	0	<6.0	46.38°C	0.991
	12.049V	5.034V	3.344V	5.079V	324.434				41.29°C	114.76V
40%	29.756A	3.972A	3.948A	1.578A	399.535	92.367%	404	<6.0	41.81°C	0.993
	12.042V	5.036V	3.344V	5.069V	432.548				47.28°C	114.74V
50%	37.284A	4.965A	4.938A	1.779A	499.27	92.124%	421	<6.0	42.47°C	0.994
	12.036V	5.036V	3.342V	5.06V	541.96				48.55°C	114.69V
60%	44.889A	5.958A	5.928A	1.98A	599.803	91.465%	726	24.9	42.61°C	0.995
	12.029V	5.036V	3.34V	5.05V	655.778				49.22°C	114.66V
70%	52.441A	6.951A	6.92A	2.183A	699.543	90.872%	1058	36.6	43.39°C	0.995
	12.022V	5.036V	3.339V	5.04V	769.817				50.47°C	114.62V
80%	60.041A	7.945A	7.912A	2.286A	799.572	90.226%	1306	43.6	43.73°C	0.996
	12.020V	5.036V	3.337V	5.032V	886.188				52.01°C	114.58V
90%	67.965A	8.439A	8.397A	2.389A	899.346	89.571%	1501	46.2	44.56°C	0.996
	12.019V	5.036V	3.335V	5.024V	1004.057				53.59°C	114.54V
100%	75.707A	8.935A	8.911A	2.997A	999.389	88.818%	1694	48.5	45.65°C	0.996
	12.016V	5.037V	3.333V	5.006V	1125.226				55.66°C	114.49V
110%	83.390A	9.926A	9.996A	3.001A	1099.99	88.067%	1861	51.8	46.51°C	0.996
	12.012V	5.037V	3.331V	4.999V	1249.044				57.42°C	114.45V
CL1	0.116A	11.959A	11.855A	0A	101.303	83.733%	549	15.2	40.5°C	0.964
	12.070V	5.034V	3.349V	5.108V	120.996				45.99°C	114.83V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.115A	19.877A	0A	0A	101.379	82.977%	405	<6.0	40.93°C	0.964
	12.072V	5.03V	3.356V	5.111V	122.178				47.95°C	114.84V
CL3	0.115A	0A	19.734A	0A	67.385	77.615%	715	24.3	41.1°C	0.955
	12.069V	5.042V	3.344V	5.109V	86.823				50.19°C	114.85V
CL4	83.234A	0A	0A	0A	999.952	89.585%	1521	47.2	45.53°C	0.996
	12.014V	5.037V	3.335V	5.069V	1116.214				56.49°C	114.51V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	6.496A	1.988A	1.972A	0.98A	99.978	89.608%	0	<6.0	44.59°C	0.837
	12.065V	5.03V	3.346V	5.099V	111.573				40.31°C	229.93V
20%	14.018A	2.982A	2.96A	1.179A	199.919	92.98%	0	<6.0	45.36°C	0.926
	12.056V	5.031V	3.345V	5.089V	215.015				40.78°C	229.91V
30%	21.902A	3.477A	3.454A	1.378A	299.962	93.764%	0	<6.0	46.43°C	0.958
	12.050V	5.033V	3.343V	5.08V	319.911				41.4°C	229.9V
40%	29.748A	3.973A	3.948A	1.578A	399.521	93.623%	368	<6.0	41.81°C	0.966
	12.045V	5.034V	3.343V	5.07V	426.729				47.29°C	229.88V
50%	37.280A	4.966A	4.938A	1.779A	499.241	93.599%	452	6.9	42.46°C	0.972
	12.037V	5.034V	3.341V	5.06V	533.374				48.47°C	229.86V
60%	44.888A	5.959A	5.928A	1.98A	599.773	93.362%	723	24.7	42.77°C	0.976
	12.029V	5.035V	3.34V	5.05V	642.429				49.31°C	229.84V
70%	52.438A	6.953A	6.921A	2.182A	699.495	92.962%	1108	38.5	43.27°C	0.979
	12.021V	5.035V	3.338V	5.04V	752.456				50.31°C	229.83V
80%	60.045A	7.947A	7.913A	2.285A	799.519	92.589%	1253	43.1	43.83°C	0.982
	12.018V	5.034V	3.336V	5.032V	863.513				52.01°C	229.81V
90%	67.967A	8.442A	8.397A	2.388A	899.307	92.167%	1449	46.7	44.53°C	0.984
	12.018V	5.034V	3.334V	5.024V	975.741				53.58°C	229.79V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	75.707A	8.938A	8.912A	2.996A	999.326	91.698%	1653	47.8	45.05°C	0.985
	12.016V	5.035V	3.333V	5.007V	1089.81				55.15°C	229.78V
110%	83.388A	9.93A	9.997A	3A	1099.931	91.22%	1852	51.9	46.82°C	0.986
	12.012V	5.035V	3.331V	5V	1205.799				57.73°C	229.76V
CL1	0.116A	11.96A	11.856A	0A	101.295	84.861%	517	13.5	40.9°C	0.85
	12.070V	5.033V	3.348V	5.108V	119.385				46.38°C	229.93V
CL2	0.115A	19.878A	0A	0A	101.369	84.151%	379	<6.0	40.04°C	0.852
	12.072V	5.03V	3.356V	5.111V	120.467				47.09°C	229.93V
CL3	0.114A	0A	19.735A	0A	67.381	78.529%	732	25.2	42.25°C	0.789
	12.069V	5.041V	3.344V	5.109V	85.805				51.27°C	229.93V
CL4	83.235A	0A	0A	0A	999.904	92.398%	1514	46.8	45.04°C	0.985
	12.013V	5.035V	3.335V	5.069V	1082.167				56.01°C	229.77V

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])	Temps (In/Out)	PF/AC Volts
20W	1.230A	0.497A	0.493A	0.195A	19.993	70.535%	0	<6.0	40.08°C	0.823
	12.071V	5.027V	3.346V	5.12V	28.345				36.97°C	114.88V
40W	2.708A	0.696A	0.69A	0.293A	39.993	80.67%	0	<6.0	40.8°C	0.917
	12.069V	5.028V	3.346V	5.117V	49.577				37.54°C	114.87V
60W	4.186A	0.895A	0.887A	0.391A	59.993	85.34%	0	<6.0	42.21°C	0.952
	12.068V	5.029V	3.346V	5.114V	70.295				38.47°C	114.86V
80W	5.661A	1.093A	1.085A	0.489A	79.932	87.525%	0	<6.0	43.98°C	0.956
	12.066V	5.03V	3.346V	5.11V	91.326				40°C	114.84V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.230A	0.497A	0.493A	0.195A	19.988	70.355%	0	<6.0	40.04°C	0.475
	12.072V	5.026V	3.346V	5.12V	28.506				36.92°C	229.96V
40W	2.708A	0.696A	0.69A	0.293A	39.988	81.23%	0	<6.0	41.13°C	0.643
	12.071V	5.027V	3.346V	5.117V	49.226				37.77°C	229.95V
60W	4.186A	0.895A	0.887A	0.391A	59.988	86.066%	0	<6.0	42.04°C	0.74
	12.069V	5.028V	3.346V	5.114V	69.702				38.48°C	229.94V
80W	5.660A	1.094A	1.085A	0.489A	79.925	88.411%	0	<6.0	42.99°C	0.799
	12.067V	5.029V	3.346V	5.11V	90.405				39.21°C	229.93V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.63mV	6.34mV	9.31mV	13.57mV	Pass
20% Load	8.20mV	6.96mV	9.57mV	14.71mV	Pass
30% Load	8.15mV	7.83mV	10.08mV	14.61mV	Pass
40% Load	9.64mV	7.78mV	10.39mV	14.92mV	Pass
50% Load	9.74mV	8.24mV	10.45mV	14.91mV	Pass
60% Load	10.31mV	9.07mV	10.29mV	15.33mV	Pass
70% Load	10.31mV	9.99mV	10.71mV	15.59mV	Pass
80% Load	10.62mV	9.99mV	12.46mV	15.28mV	Pass
90% Load	10.98mV	11.03mV	12.10mV	17.19mV	Pass
100% Load	15.79mV	13.89mV	14.38mV	20.20mV	Pass
110% Load	16.69mV	14.66mV	14.58mV	20.98mV	Pass
Crossload1	12.24mV	9.77mV	12.60mV	29.94mV	Pass
Crossload2	8.92mV	10.67mV	10.60mV	27.05mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	7.84mV	9.17mV	13.50mV	26.63mV	Pass
Crossload4	15.63mV	11.99mV	13.97mV	29.34mV	Pass

The results above are not used in the certification process

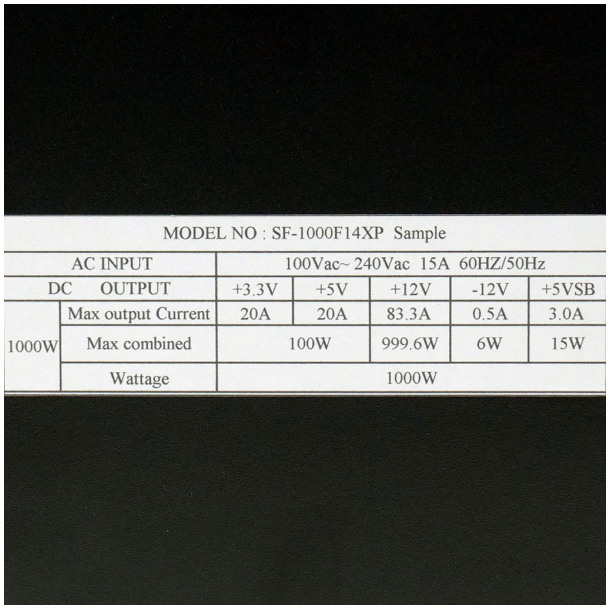
230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.80mV	7.16mV	10.96mV	14.25mV	Pass
20% Load	8.99mV	7.26mV	10.96mV	14.40mV	Pass
30% Load	11.82mV	9.07mV	11.27mV	14.40mV	Pass
40% Load	11.62mV	9.02mV	12.41mV	15.28mV	Pass
50% Load	10.72mV	9.43mV	12.05mV	15.53mV	Pass
60% Load	9.95mV	9.32mV	11.64mV	14.71mV	Pass
70% Load	11.24mV	9.94mV	11.64mV	16.36mV	Pass
80% Load	11.29mV	10.77mV	13.50mV	15.95mV	Pass
90% Load	11.14mV	11.69mV	12.36mV	16.57mV	Pass
100% Load	17.79mV	14.01mV	15.92mV	20.70mV	Pass
110% Load	18.27mV	14.92mV	16.00mV	21.41mV	Pass
Crossload1	12.76mV	10.62mV	13.67mV	28.47mV	Pass
Crossload2	9.13mV	11.08mV	12.15mV	27.82mV	Pass
Crossload3	7.94mV	9.94mV	14.17mV	26.33mV	Pass
Crossload4	17.44mV	12.68mV	15.66mV	29.19mV	Pass

The results above are not used in the certification process

Super Flower Leadex VII XP 1000W

Top side



MODEL NO : SF-1000F14XP Sample

AC INPUT		100Vac~ 240Vac 15A 60HZ/50Hz				
DC OUTPUT		+3.3V	+5V	+12V	-12V	+5VSB
1000W	Max output Current	20A	20A	83.3A	0.5A	3.0A
	Max combined	100W		999.6W	6W	15W
	Wattage	1000W				

Power specifications label

Cybenetics □□□□□□□□□□□□□□□□□ ETA□□□□ LAMBDA□□□□ SAFE□□□□□□□□□□□□□□□□ DELTA□□□□□□ PHI□□□□□□□□

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