Super Flower Leadex VII XG 850W

Serial Number S2305199001

Lab ID SF85002180

Certification ID 252180

Test Result Report ID: 23PS2180A

Certificate Issue Date: May 19, 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 XG 850W
OEM/ODM	Super Flower
Serial Number	S2305199001
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10

Rated Frequency (Hz)	60-50
Rated Power (W)	850
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	SF85002180
Date of receipt	May 12, 2023
Testing Date	May 19, 2023
Report Issued Date	May 19, 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)	3	3	16AWG	No
12+4 pin PCIe (700mm) (600W)	1	1	16-28AWG	No
SATA (550mm+120mm+120mm+120mm)	3	12	18AWG	No
4-pin Molex (550mm+150mm+150mm+150mm)	1	4	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70.8	3	0.5
	Watts	100		849.6	15	6
Total Max. Power (W)		850				

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)	90.612%
Average Noise Output (>1450 Load Combinations)	20.26dBA
Average PF (>1450 Load Combinations)	0.989
Efficiency With 10W (≤500W) or 2% (>500W) Load	71.085%
Standby Power Consumption	0.0646W
Non-Accredited	
12V Ripple (Full Load)	17.68mV
5V Ripple (Full Load)	21.44mV
3.3V Ripple (Full Load)	18.16mV
5VSB Ripple (Full Load)	22.77mV
12V Load Regulation	0.41%

5V Load Regulation	0.12%
3.3V Load Regulation	0.09%
5VSB Load Regulation	2.07%
Inrush Current	32.730A

230V

Accredited		
Average Efficiency (>1450 load combinations)		92.513%
Average Noise Output (>1450 Load Combinations)		20.06dBA
Average PF (>1450 Load Combinations)		0.950
Efficiency With 10W (≤500W) or 2% (>500W) Load		70.584%
Standby Power Consumption		0.1098W
Non-Accredited		
12V Ripple (Full Load)		17.10mV
5V Ripple (Full Load)		15.88mV
3.3V Ripple (Full Load)		13.00mV
5VSB Ripple (Full Load)		14.81mV
12V Load Regulation		0.58%
5V Load Regulation		0.08%
3.3V Load Regulation		0.30%
5VSB Load Regulation		2.13%
Inrush Current		67.340A
12V Transient Response (200%)		11.51V
5V Transient Response (200%)		4.945V
3.3V Transient Response (200%)		3.220V
5VSB Transient Response (200%)		4.954V
Hold-Up Time & PWR_OK Signal		29.80ms
AC Loss to PWR_OK Hold Up Time		25.30ms
PWR_OK Inactive to DC Loss Delay		4.50ms
PSU Timings: T1 (20% / 100%)	91.0ms	91.0ms
PSU Timings: T3 (20% / 100%)	120.0ms	120.0ms
OPP (27.75°C / 37.22°C)	137.96%	137.97%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	29.8
AC Loss to PWR_OK Hold Up Time (ms)	25.3
PWR_OK Inactive to DC Loss Delay (ms)	4.5

Stromverbrauch im Ruhezustand

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.87 V	114.80 V	113.85 V	114.95 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:	1.419	1.417	1.340	1.421	1.490	PASS
Mains Voltage THD:	0.21 %	0.16 %	N/A	0.29 %	2.00 %	PASS
Real Power:	0.065 W	0.045 W	N/A	0.084 W	N/A	N/A
Apparent Power:	10.176 W	10.142 W	N/A	10.219 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

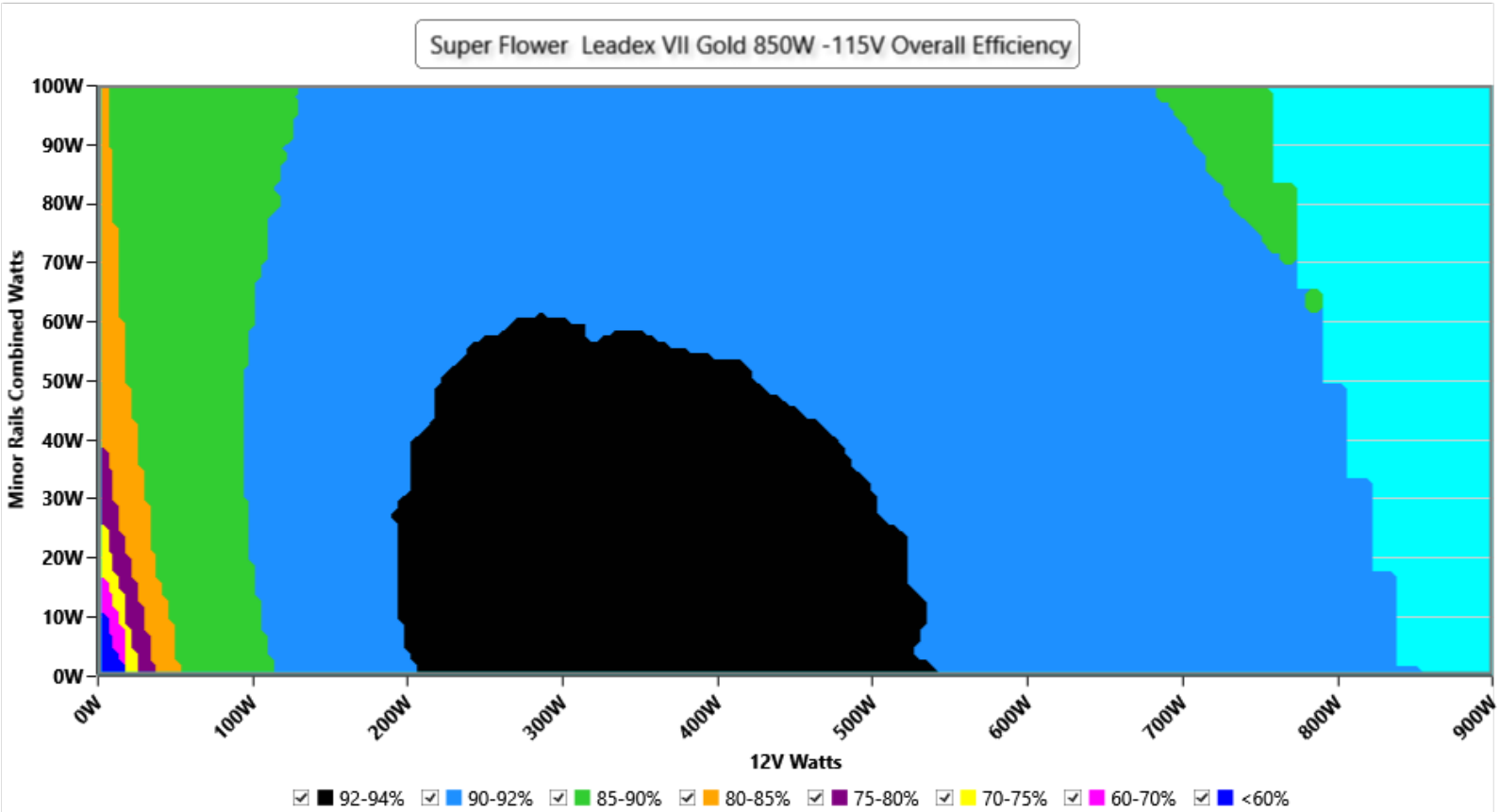
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.79 V	229.72 V	227.70 V	229.87 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.15 %	0.13 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.110 W	0.067 W	N/A	0.155 W	N/A	N/A
Apparent Power:	34.714 W	34.640 W	N/A	34.804 W	N/A	N/A

Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

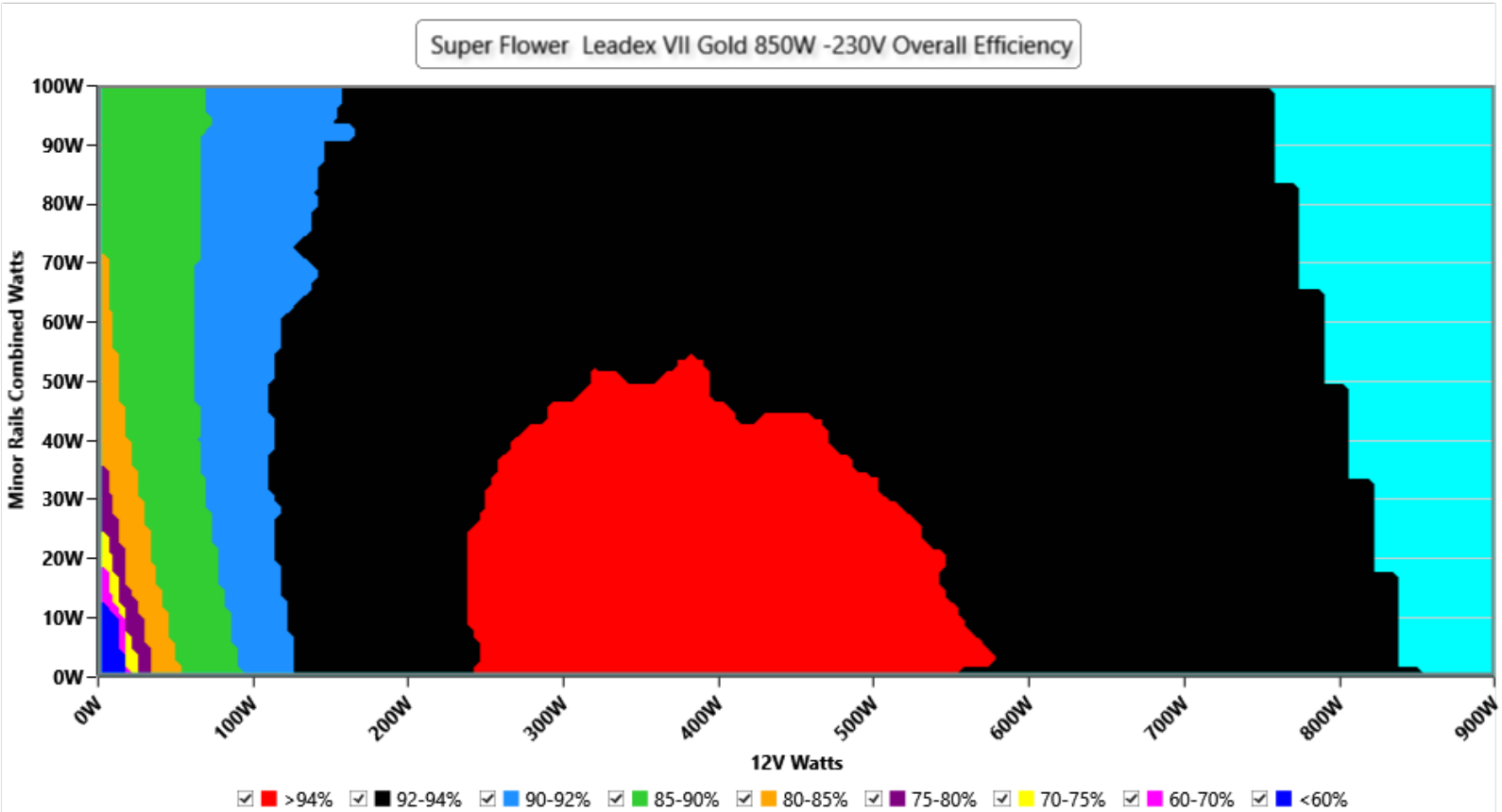
115V



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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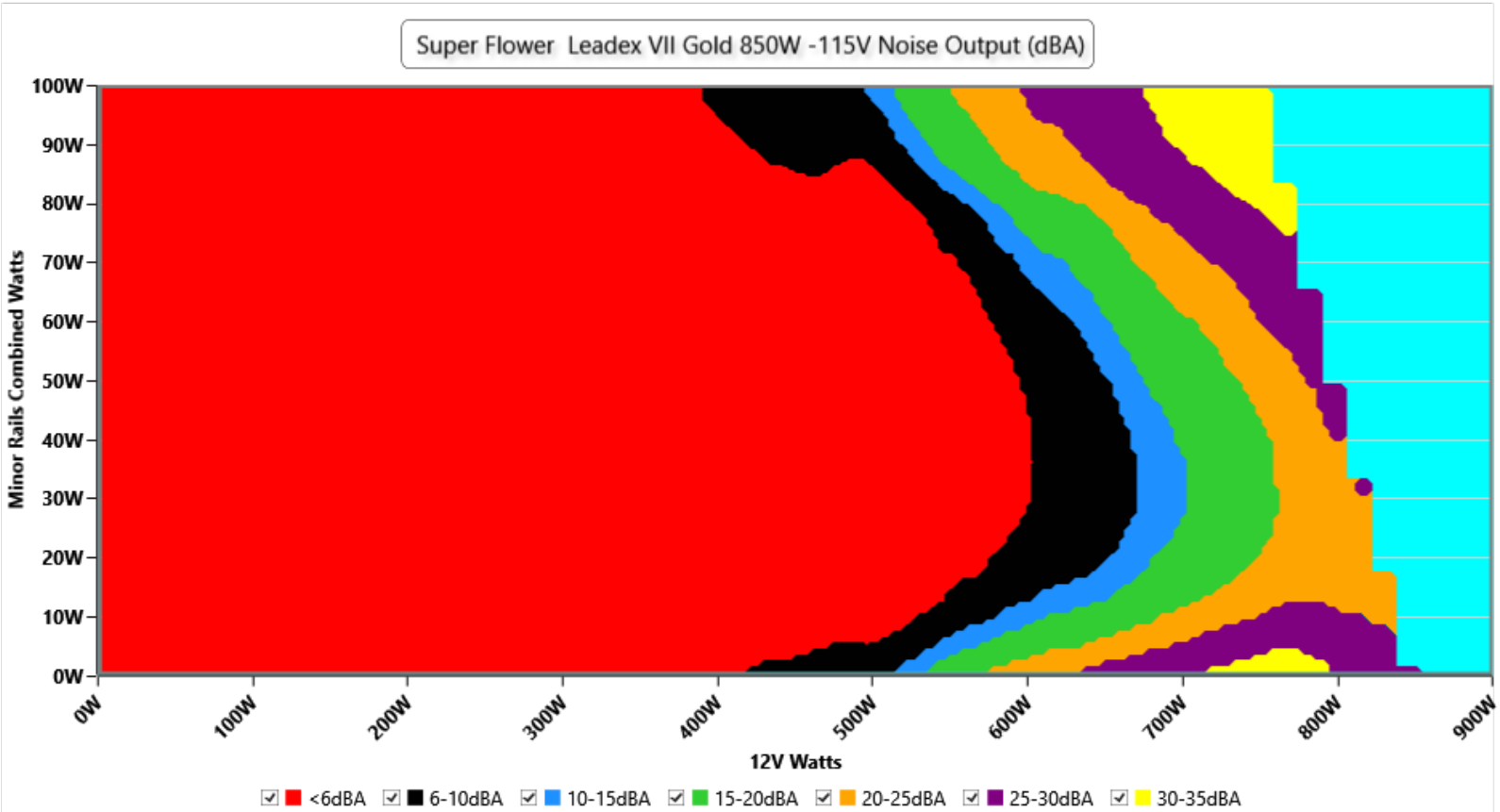
Noise Graph

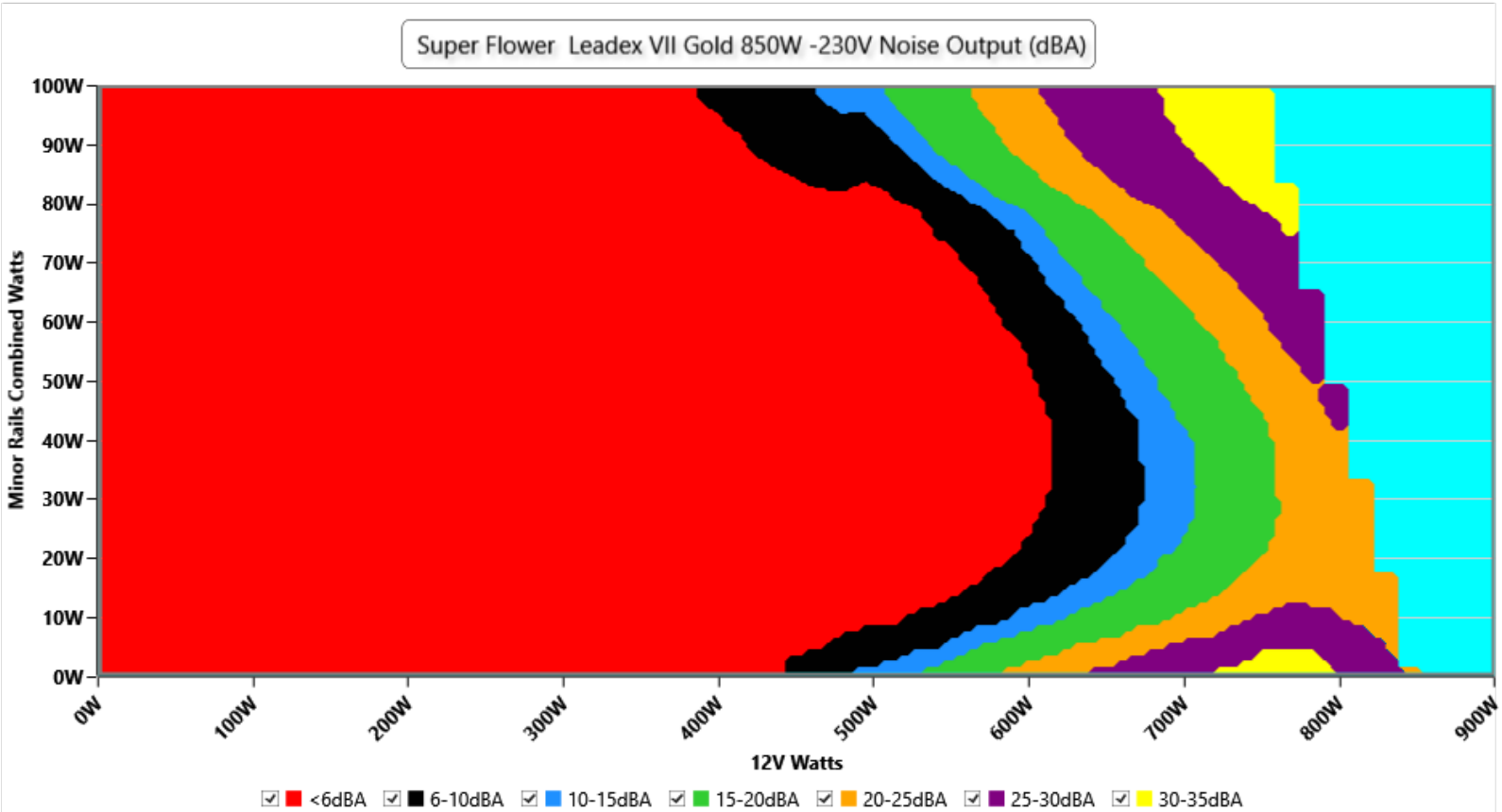
115V



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

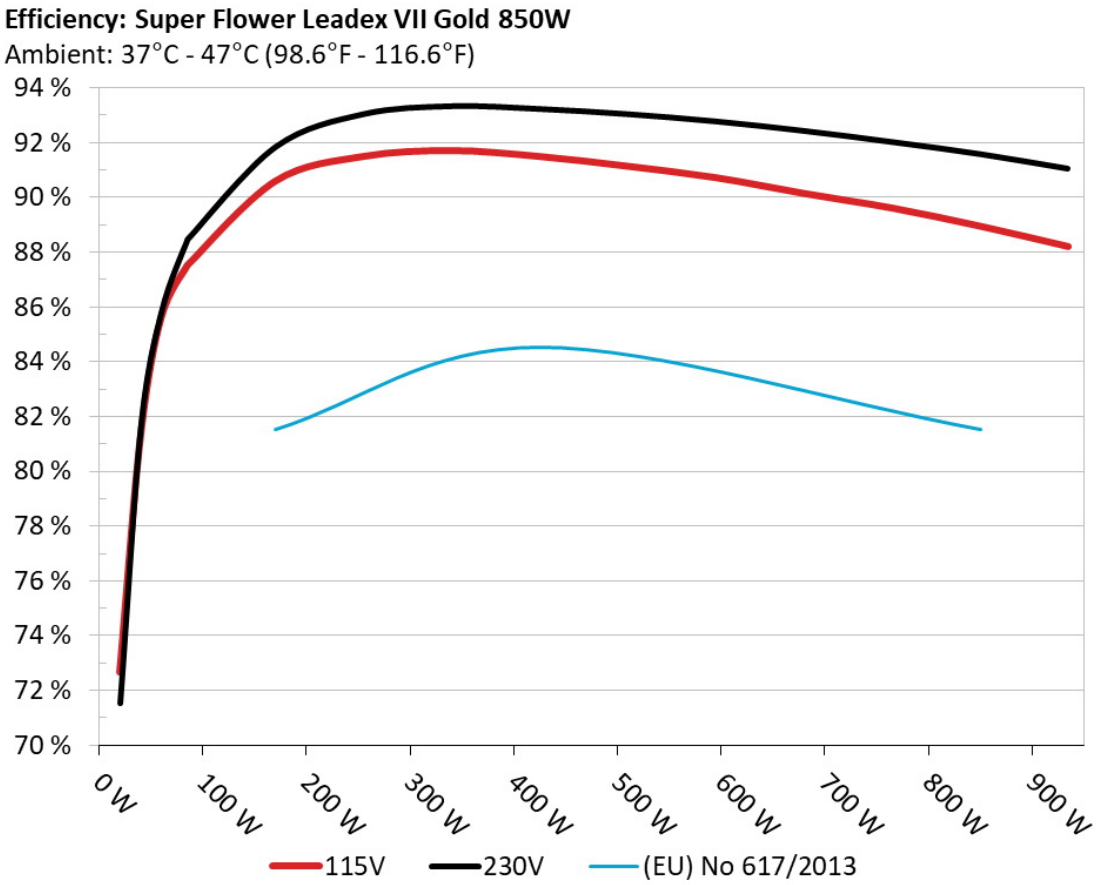


INFO

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

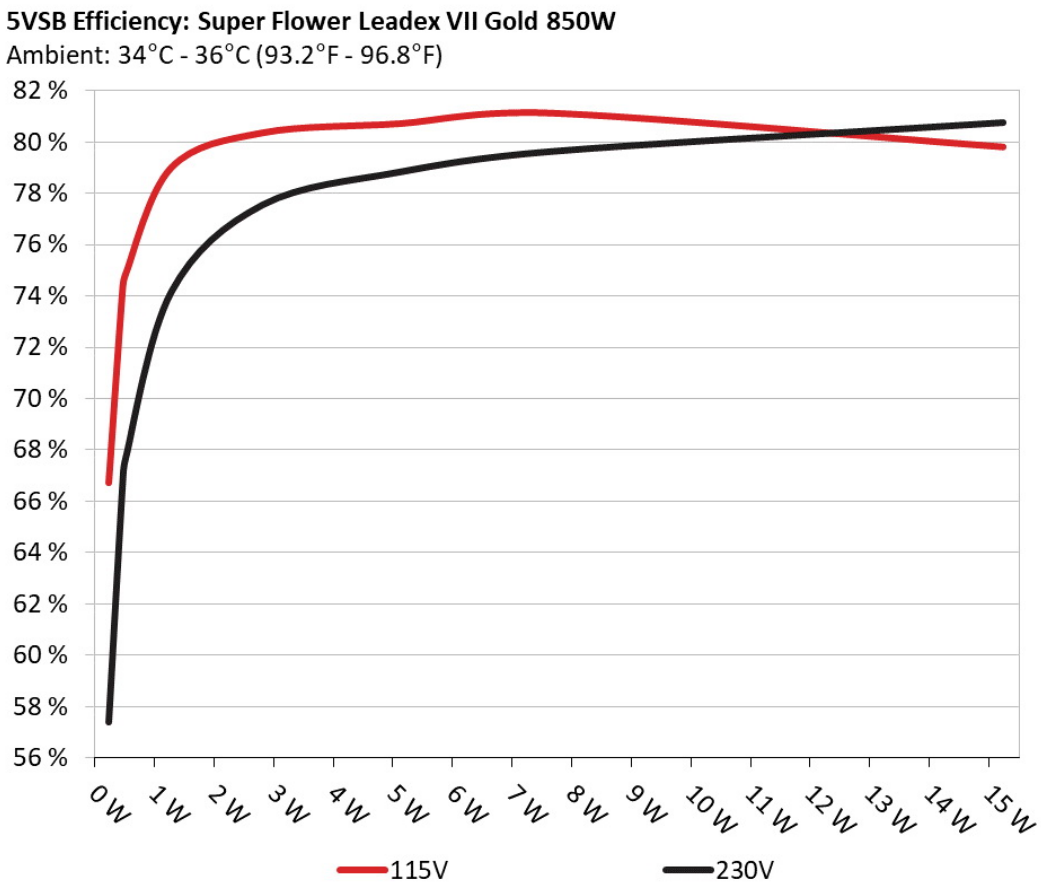
Efficiency under high ambient temperature



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	66.727%	0.035
	5.13V	0.346W		114.88V
2	0.09A	0.462W	74.242%	0.062
	5.129V	0.622W		114.87V
3	0.55A	2.816W	80.352%	0.27
	5.121V	3.505W		114.88V
4	1A	5.113W	80.709%	0.361
	5.114V	6.336W		114.88V
5	1.5A	7.659W	81.118%	0.415
	5.106V	9.439W		114.88V
6	3A	15.235W	79.802%	0.484
	5.079V	19.091W		114.87V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	57.416%	0.012
	5.13V	0.402W		229.77V
2	0.09A	0.462W	66.656%	0.021
	5.128V	0.694W		229.8V
3	0.55A	2.816W	77.553%	0.104
	5.121V	3.631W		229.78V
4	1A	5.113W	78.828%	0.172
	5.113V	6.486W		229.78V
5	1.5A	7.658W	79.628%	0.226
	5.105V	9.617W		229.77V
6	3A	15.236W	80.753%	0.333
	5.08V	18.868W		229.77V

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%	5.227A	1.982A	1.985A	0.979A	84.994	87.829%	0	<6.0	44.56°C	0.96
	12.128V	5.045V	3.324V	5.107V	96.773				40.28°C	114.83V
20%	11.469A	2.972A	2.978A	1.177A	169.918	91.1%	0	<6.0	45.39°C	0.982
	12.122V	5.047V	3.324V	5.098V	186.516				40.76°C	114.81V
30%	18.067A	3.467A	3.474A	1.375A	254.918	92.004%	0	<6.0	46.57°C	0.99
	12.114V	5.048V	3.324V	5.089V	277.074				41.42°C	114.78V
40%	24.679A	3.96A	3.97A	1.575A	339.997	92.217%	374	<6.0	41.54°C	0.993
	12.108V	5.05V	3.325V	5.08V	368.693				47.27°C	114.75V
50%	30.926A	4.952A	4.964A	1.775A	424.78	92.002%	374	<6.0	42.19°C	0.994
	12.103V	5.049V	3.324V	5.071V	461.707				48.24°C	114.72V
60%	37.153A	5.942A	5.958A	1.976A	509.31	91.648%	526	14.0	42.64°C	0.995
	12.099V	5.049V	3.324V	5.062V	555.729				49.31°C	114.7V
70%	43.441A	6.933A	6.952A	2.177A	594.627	91.229%	751	26.1	43.15°C	0.995
	12.097V	5.049V	3.323V	5.052V	651.798				50.24°C	114.66V
80%	49.741A	7.924A	7.945A	2.279A	679.473	90.652%	1001	34.7	43.67°C	0.996
	12.094V	5.049V	3.322V	5.045V	749.542				51.73°C	114.63V
90%	56.446A	8.417A	8.428A	2.382A	764.886	90.117%	1214	41.4	44.07°C	0.996
	12.089V	5.048V	3.322V	5.037V	848.782				53.2°C	114.6V
100%	62.894A	8.911A	8.94A	2.987A	849.702	89.455%	1460	46.6	45.41°C	0.996
	12.084V	5.049V	3.322V	5.021V	949.879				55.45°C	114.57V
110%	69.218A	9.901A	10.025A	2.991A	934.283	88.715%	1705	48.7	46.58°C	0.996
	12.078V	5.049V	3.322V	5.015V	1053.136				57.49°C	114.53V
CL1	0.114A	11.921A	11.953A	0A	101.277	84.848%	404	<6.0	40.64°C	0.967
	12.136V	5.049V	3.322V	5.117V	119.363				46.08°C	114.84V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.114A	19.768A	0A	0A	101.347	83.146%	380	<6.0	40.71°C	0.968
	12.135V	5.057V	3.327V	5.118V	121.887				47.77°C	114.85V
CL3	0.113A	0A	19.864A	0A	67.391	78.258%	625	19.9	40.64°C	0.957
	12.136V	5.048V	3.323V	5.119V	86.113				49.65°C	114.85V
CL4	70.347A	0A	0A	0.001A	849.443	90.298%	1184	40.2	45.47°C	0.996
	12.075V	5.048V	3.329V	5.078V	940.735				56.45°C	114.57V

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%	5.222A	1.983A	1.975A	0.978A	84.999	88.821%	0	<6.0	44.18°C	0.826
	12.139V	5.041V	3.342V	5.111V	95.697				40.08°C	229.84V
20%	11.461A	2.975A	2.963A	1.176A	169.926	92.338%	0	<6.0	45.32°C	0.917
	12.130V	5.042V	3.341V	5.102V	184.027				40.88°C	229.83V
30%	18.056A	3.471A	3.458A	1.375A	254.928	93.537%	0	<6.0	45.83°C	0.954
	12.122V	5.042V	3.34V	5.093V	272.541				41.02°C	229.82V
40%	24.667A	3.966A	3.952A	1.574A	340.017	93.826%	373	<6.0	41.63°C	0.964
	12.114V	5.043V	3.34V	5.083V	362.398				46.85°C	229.8V
50%	30.916A	4.957A	4.942A	1.774A	424.794	93.726%	374	<6.0	42.11°C	0.971
	12.107V	5.044V	3.339V	5.074V	453.232				47.85°C	229.79V
60%	37.152A	5.949A	5.932A	1.975A	509.339	93.538%	577	16.9	42.61°C	0.976
	12.100V	5.044V	3.338V	5.065V	544.529				49.11°C	229.77V
70%	43.442A	6.94A	6.925A	2.176A	594.652	93.271%	781	27.4	43.46°C	0.979
	12.097V	5.043V	3.336V	5.056V	637.559				50.73°C	229.76V
80%	49.745A	7.933A	7.917A	2.278A	679.508	92.927%	1037	35.9	43.88°C	0.982
	12.094V	5.043V	3.334V	5.048V	731.234				52.14°C	229.75V
90%	56.470A	8.428A	8.4A	2.381A	764.929	92.519%	1287	43.5	44.21°C	0.984
	12.085V	5.043V	3.333V	5.041V	826.783				53.25°C	229.73V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	62.946A	8.924A	8.914A	2.986A	849.749	92.078%	1470	46.5	45.55°C	0.985
	12.075V	5.043V	3.332V	5.024V	922.866				55.59°C	229.72V
110%	69.309A	9.914A	9.996A	2.99A	934.338	91.549%	1664	48.0	46.63°C	0.987
	12.064V	5.043V	3.331V	5.017V	1020.615				57.52°C	229.7V
CL1	0.114A	11.93A	11.869A	0A	101.297	85.394%	609	18.7	40.78°C	0.863
	12.144V	5.046V	3.345V	5.119V	118.629				48.32°C	229.84V
CL2	0.114A	19.819A	0A	0A	101.342	84.216%	421	<6.0	41.34°C	0.865
	12.146V	5.043V	3.353V	5.122V	120.349				50.32°C	229.84V
CL3	0.114A	0A	19.754A	0A	67.384	78.882%	736	25.4	40.42°C	0.798
	12.144V	5.049V	3.341V	5.12V	85.427				46.11°C	229.84V
CL4	70.425A	0A	0A	0.001A	849.506	92.827%	1247	43.0	45.73°C	0.986
	12.063V	5.039V	3.334V	5.086V	915.161				51.38°C	229.72V

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	1.224A	0.496A	0.496A	0.195A	19.995	73.176%	0	<6.0	39.58°C	0.81
	12.133V	5.044V	3.324V	5.125V	27.323				36.51°C	114.85V
40W	2.694A	0.694A	0.695A	0.293A	39.993	81.768%	0	<6.0	40.59°C	0.918
	12.132V	5.044V	3.324V	5.122V	48.911				37.32°C	114.86V
60W	4.166A	0.892A	0.893A	0.391A	59.991	86.123%	0	<6.0	41.77°C	0.954
	12.130V	5.044V	3.324V	5.119V	69.654				38°C	114.84V
80W	5.632A	1.09A	1.092A	0.489A	79.929	88.022%	0	<6.0	43.2°C	0.958
	12.128V	5.045V	3.324V	5.116V	90.792				39.21°C	114.83V

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	1.222A	0.496A	0.494A	0.195A	19.992	72.025%	0	<6.0	39.92°C	0.487
	12.145V	5.04V	3.342V	5.131V	27.758				36.86°C	229.87V
40W	2.692A	0.694A	0.691A	0.293A	39.994	82.128%	0	<6.0	40.84°C	0.653
	12.143V	5.04V	3.342V	5.128V	48.696				37.61°C	229.86V
60W	4.162A	0.893A	0.888A	0.39A	59.994	86.339%	0	<6.0	41.62°C	0.742
	12.141V	5.04V	3.342V	5.125V	69.486				38.13°C	229.85V
80W	5.626A	1.091A	1.086A	0.488A	79.933	88.96%	0	<6.0	42.61°C	0.811
	12.139V	5.04V	3.342V	5.122V	89.853				38.92°C	229.84V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.36mV	13.84mV	13.66mV	14.27mV	Pass
20% Load	10.23mV	13.85mV	13.56mV	13.96mV	Pass
30% Load	10.18mV	14.66mV	14.63mV	14.27mV	Pass
40% Load	10.39mV	14.97mV	14.47mV	16.06mV	Pass
50% Load	11.05mV	15.12mV	15.55mV	14.32mV	Pass
60% Load	11.00mV	15.38mV	14.89mV	15.14mV	Pass
70% Load	11.97mV	16.09mV	15.30mV	16.47mV	Pass
80% Load	11.87mV	17.62mV	16.32mV	16.78mV	Pass
90% Load	11.92mV	19.36mV	17.29mV	19.64mV	Pass
100% Load	17.68mV	21.44mV	18.16mV	22.77mV	Pass
110% Load	18.64mV	22.76mV	18.98mV	24.09mV	Pass
Crossload1	13.00mV	18.01mV	15.97mV	32.17mV	Pass
Crossload2	10.33mV	21.10mV	13.50mV	27.93mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	10.39mV	17.32mV	18.37mV	25.22mV	Pass
Crossload4	16.61mV	19.33mV	16.85mV	31.37mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.62mV	10.32mV	9.80mV	7.49mV	Pass
20% Load	9.97mV	10.57mV	10.36mV	7.64mV	Pass
30% Load	9.92mV	10.32mV	10.16mV	8.37mV	Pass
40% Load	11.46mV	10.52mV	10.88mV	9.29mV	Pass
50% Load	10.69mV	11.39mV	11.13mV	9.70mV	Pass
60% Load	11.15mV	11.70mV	11.39mV	9.96mV	Pass
70% Load	11.25mV	12.21mV	10.98mV	10.57mV	Pass
80% Load	11.87mV	13.75mV	12.21mV	10.98mV	Pass
90% Load	11.92mV	13.04mV	12.21mV	12.16mV	Pass
100% Load	17.10mV	15.88mV	13.00mV	14.81mV	Pass
110% Load	17.71mV	17.71mV	13.05mV	16.27mV	Pass
Crossload1	13.36mV	12.39mV	12.85mV	25.23mV	Pass
Crossload2	11.04mV	17.50mV	11.54mV	23.09mV	Pass
Crossload3	8.64mV	11.55mV	14.37mV	20.98mV	Pass
Crossload4	16.46mV	15.36mV	11.20mV	25.10mV	Pass

The results above are not used in the certification process

Super Flower Leadex VII XG 850W

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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