Super Flower Leadex ATX3+ 2200W (#2)

S2509199013

Lab ID SF22003003

Certification ID 253003

Test Result Report ID: 25PS3003A

Certificate Issue Date: Oct 24, 2025

230V

Scheme: ETA-EMI PSU

230V

Scheme: LAMBDA PSU

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 ATX3+ 2200W (#2)
OEM/ODM	Super Flower
Serial Number	S2509199013
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	200-240

□□□□ (Arms)	15
□□□□ (Hz)	50-60
□□□□ (W)	2200
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	150 x 85 x 205
Weight	2.79 kg (6.15 lb)
□□	140mm Double Ball Bearing Fan (ZFB142512D)
□□□□□	✓
Cybenetics Testing Information	
Lab ID	SF22003003
Date of receipt	Oct 8, 2025
Testing Date	Oct 20, 2025
Report Issued Date	Oct 24, 2025
Engineer Name	Georgios Theodoros Sarimpalas
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□□
(Non-accredited measurements)

□□□□□				
□□	□□□□	□□□□□□	**Gauge**	In Cable Capacitors
ATX □□ 24 pin (590mm)	1	1	16-20AWG	□
4+4 pin EPS 12V □□ (700mm)	2	2	16AWG	□
6+2pin PCIe□□ (700mm)	6	6	16AWG	□
12+4 pin PCIe (700mm) (600W)	2	2	16-26AWG	□
SATA□□ (550mm+110mm+110mm+110mm)	4	16	18AWG	□

4-pin Molex (550mm+100mm+100mm+100mm)	1	4	18AWG	□
AC Power Cord (1660mm) - C19 coupler	1	1	16AWG	-

Protection Features

Under Voltage Protection	✓
Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✓
Short Circuit Protection	✓
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	183.3	3	0.5
	□	100		2199.6	15	6
□□□□□ (W)		2200				

Parts Description

General Data	
Manufacturer (OEM)	Super Flower
PCB Type	Double-Sided
Primary Side	
Transient Filter	8x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor SCK-254R7 (4.7 Ohm) & Relay
Bridge Rectifier	Shindengen U30K80R (800V, 30A @ 97°C)
APFC MOSFETs	8x Infineon FETs
APFC Boost Diode	8x Infineon IDL08G65C5 (650V, 8A @ 125°C)
Bulk Cap(s)	2x Nippon Chemi-Con (450V, 680uF each or 1,360uF, 2,000h @ 105°C,KMZ) Nippon Chemi-Con (450V, 560uF, 2,000h @ 105°C,KMZ)
Main Switchers	4x Infineon IPB60R055CFD7 (650V, 24A @ 100°C, Rds(on): 0.055Ohm)

APFC Controller	Onsemi NCP1654 & Sync Power SPN5003 (reducing no load consumption)
Resonant Controller	Super Flower JTC113
Topology	Primary side: Bridgeless PFC, Full-Bridge & LLC Resonant Converter Secondary side: [12V] Synchronous Rectification & [Minor Rails] DC-DC converters
Secondary Side	
+12V MOSFETs	20x Infineon BSC014N04LS (40V, 145A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 4x Infineon BSC0906NS (30V, 40A @ 100°C, Rds(on): 4.5mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 6x Nippon Chemi-Con (@ 105°C, W) 2x Nippon Chemi-Con (1-2,000h @105°C, KMG) 3x Rubycon (6-10,000h @105°C, ZLH) 9x CapXon (2-5,000h @105°C, KF) Polymer: 41x Nippon Chemi-Con
Supervisor IC	JTC113
Fan Model	ZIC ZFB142512D (140mm, 12V, 0.65A, Double Ball Bearing Fan)
5VSB Circuit	
Rectifier	PFC PFR20L60CT SBR (60V, 20A)
Standby PWM Controller	29604

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary 230V

Accredited		
□□□□ (>1450 load combinations)		93.449%
Average Noise Output (>1450 Load Combinations)		33.79dBA
PF□□□ (>1450 Load Combinations)		0.964
Efficiency With 10W (≤500W) or 2% (>500W) Load		77.356%
□□□□□□		0.1090W
Non-Accredited		
12V Ripple (Full Load)		26.38mV
5V Ripple (Full Load)		22.63mV
3.3V Ripple (Full Load)		19.81mV
5VSB Ripple (Full Load)		16.24mV
12V Load Regulation		0.56%
5V Load Regulation		0.30%
3.3V Load Regulation		0.64%
5VSB Load Regulation		2.65%
Inrush Current		68.750A
12V Transient Response (200%)		11.71V
5V Transient Response (200%)		4.978V
3.3V Transient Response (200%)		3.254V
5VSB Transient Response (200%)		4.961V
□□□□ & PG□□		27.10ms
AC Loss to PWR_OK Hold Up Time		20.00ms
PWR_OK Inactive to DC Loss Delay		7.10ms
PSU Timings: T1 (20% / 100%)	91.0ms	92.0ms
PSU Timings: T3 (20% / 100%)	123.0ms	124.0ms
12V OCP (29.2°C / 43.7°C)	226.20A (123.40%), 12.043V	226.80A (123.73%), 12.037V
5V OCP (29.2°C / 43.7°C)	28.8A (144.00%), 5.024V	28.3A (141.50%), 5.025V
3.3V OCP (29.2°C / 43.7°C)	27.3A (136.50%), 3.32V	26.4A (132.00%), 3.322V
5VSB OCP (29.2°C / 43.7°C)	4.8A (160.00%), 4.967V	4.8A (160.00%), 4.973V
OPP (28.13°C / 43.85°C)	120.50%	120.50%

□□□□ & PG□□

Hold-Up Time (ms)	27.1
AC Loss to PWR_OK Hold Up Time (ms)	20
PWR_OK Inactive to DC Loss Delay (ms)	7.1

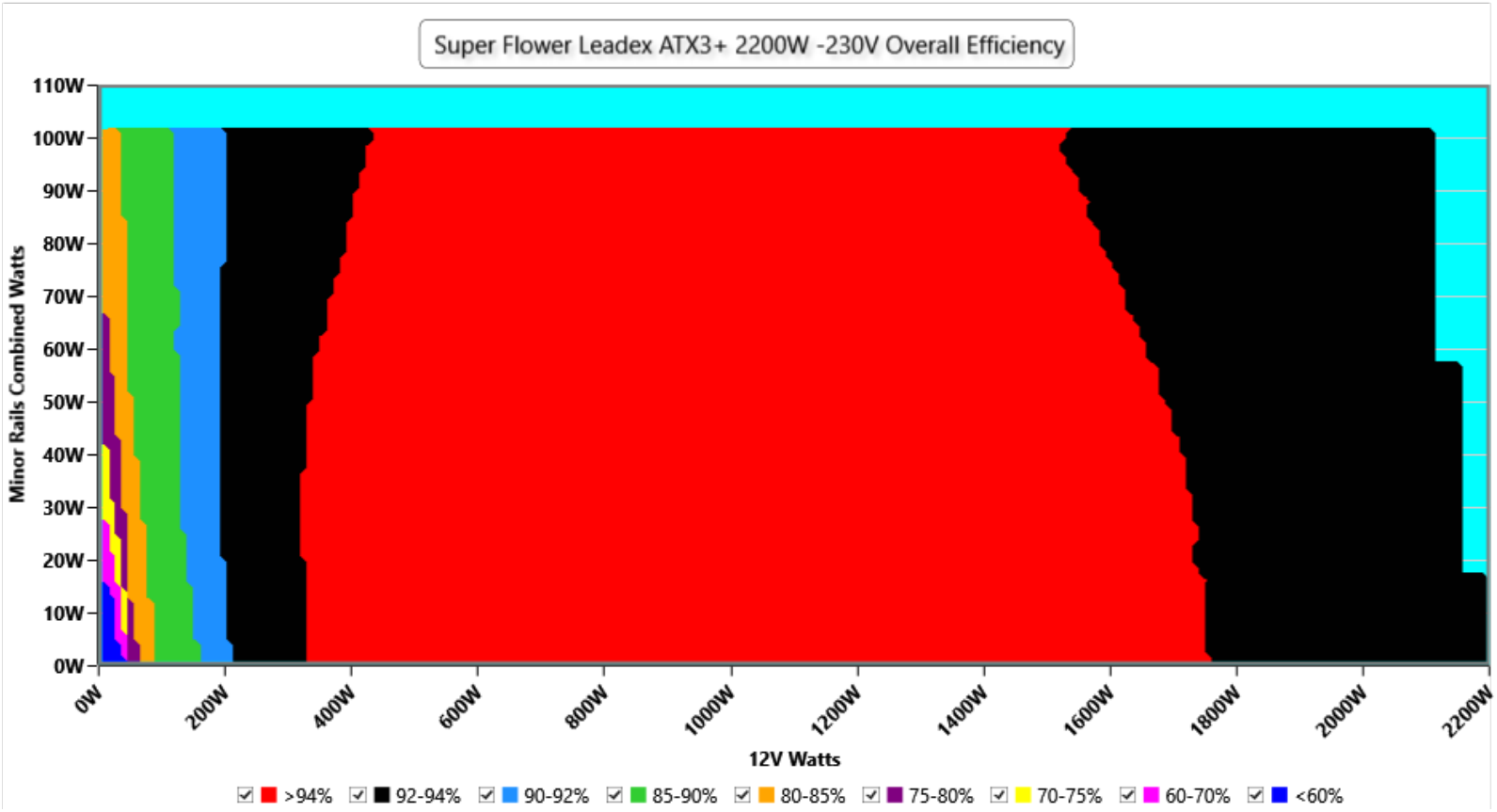
□□□□

Tables 230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.00 V	229.93 V	227.70 V	230.05 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:	1.416	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.15 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.109 W	0.038 W	N/A	0.162 W	N/A	N/A
Apparent Power:	56.012 W	55.954 W	N/A	56.068 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

□□□□□□

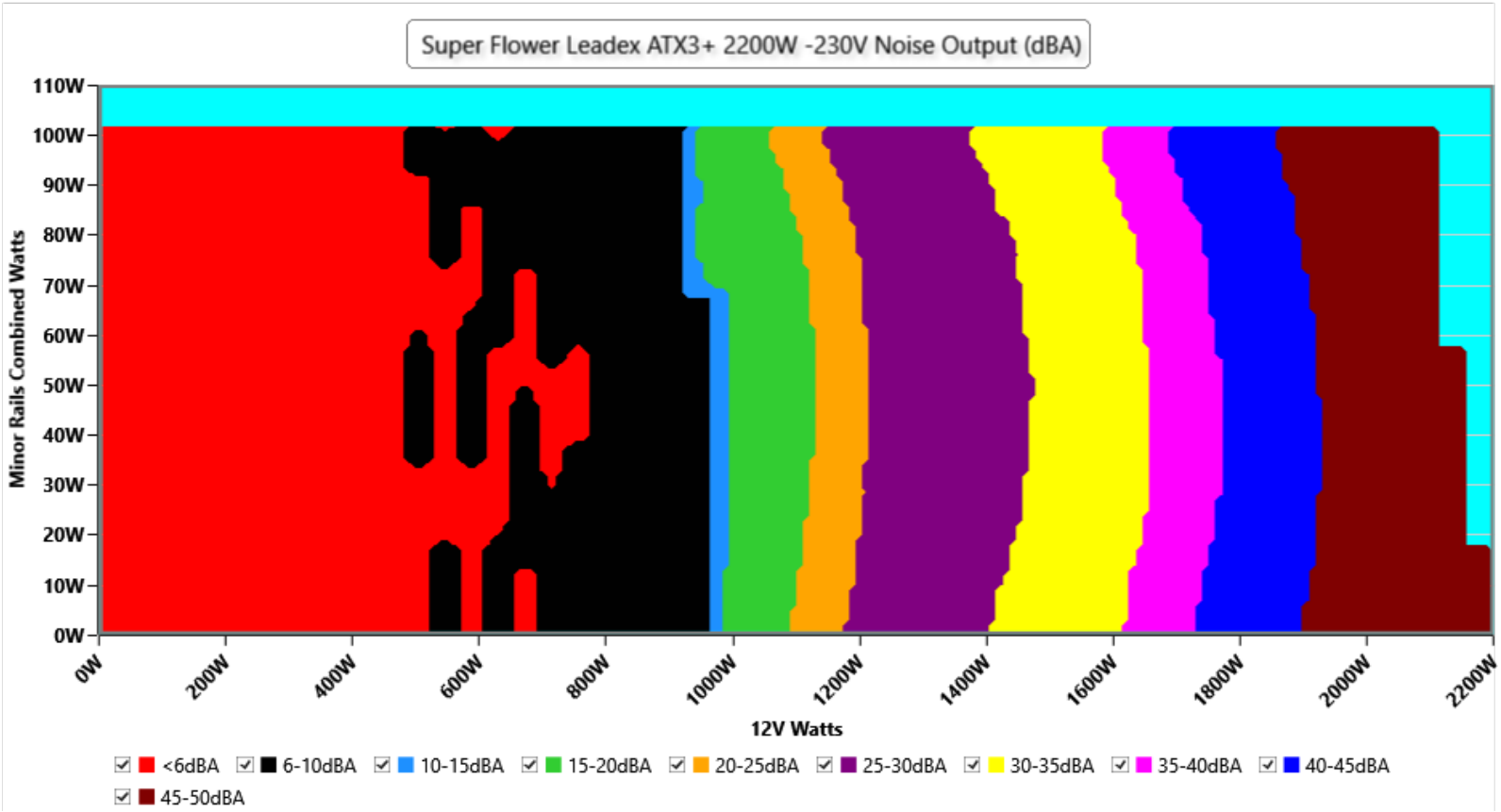
230V



□□

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



□□

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

Noise under high ambient temperature (indicative)

230V

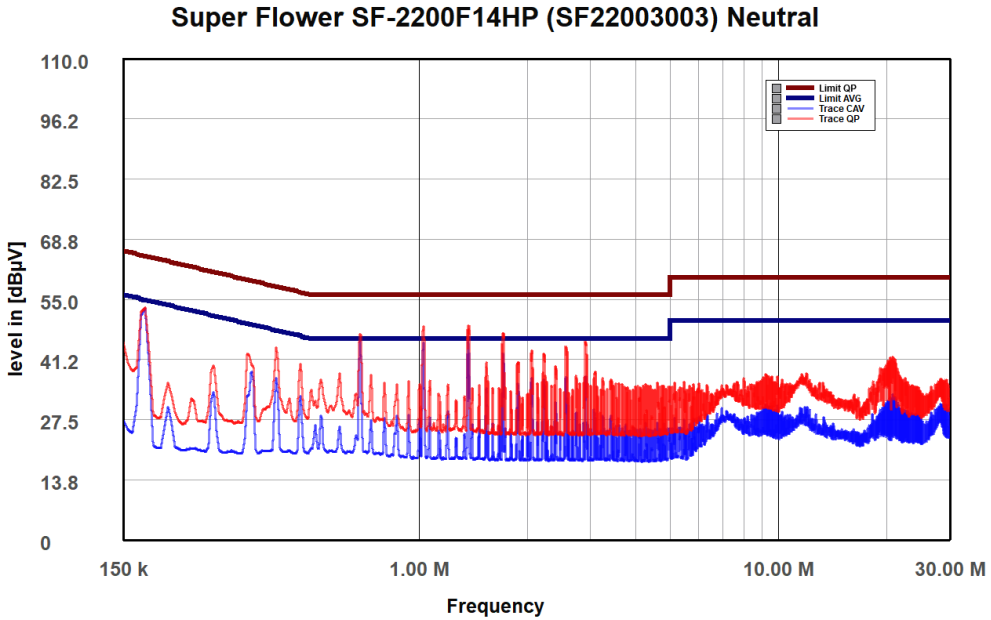
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 30.6 °C	0 RPM · <6.0 dB(A) · 47.9 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 33.9 °C	0 RPM · <6.0 dB(A) · 44.4 °C	fan off in both
50%	446 RPM · 9.9 dB(A) · 30.7 °C	882 RPM · 28.9 dB(A) · 42.2 °C	**+19.0 dB(A)**
100%	1557 RPM · 46.5 dB(A) · 30.1 °C	2160 RPM · 52.3 dB(A) · 45.4 °C	**+5.8 dB(A)**

INFO

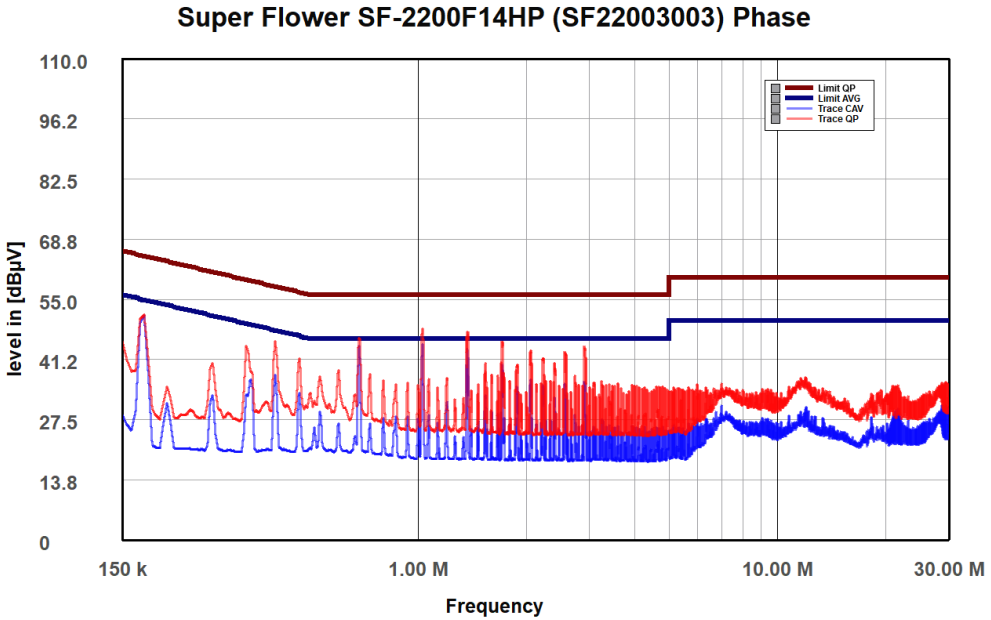
Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter: the fan is stopped or too quiet to measure (the fan speed column says which); with the fan stopped, the intake sensor can read higher than the chamber air.

Informational. Not part of the ETA or LAMBDA rating.

Conducted Emissions EN 55032 & CISPR 32

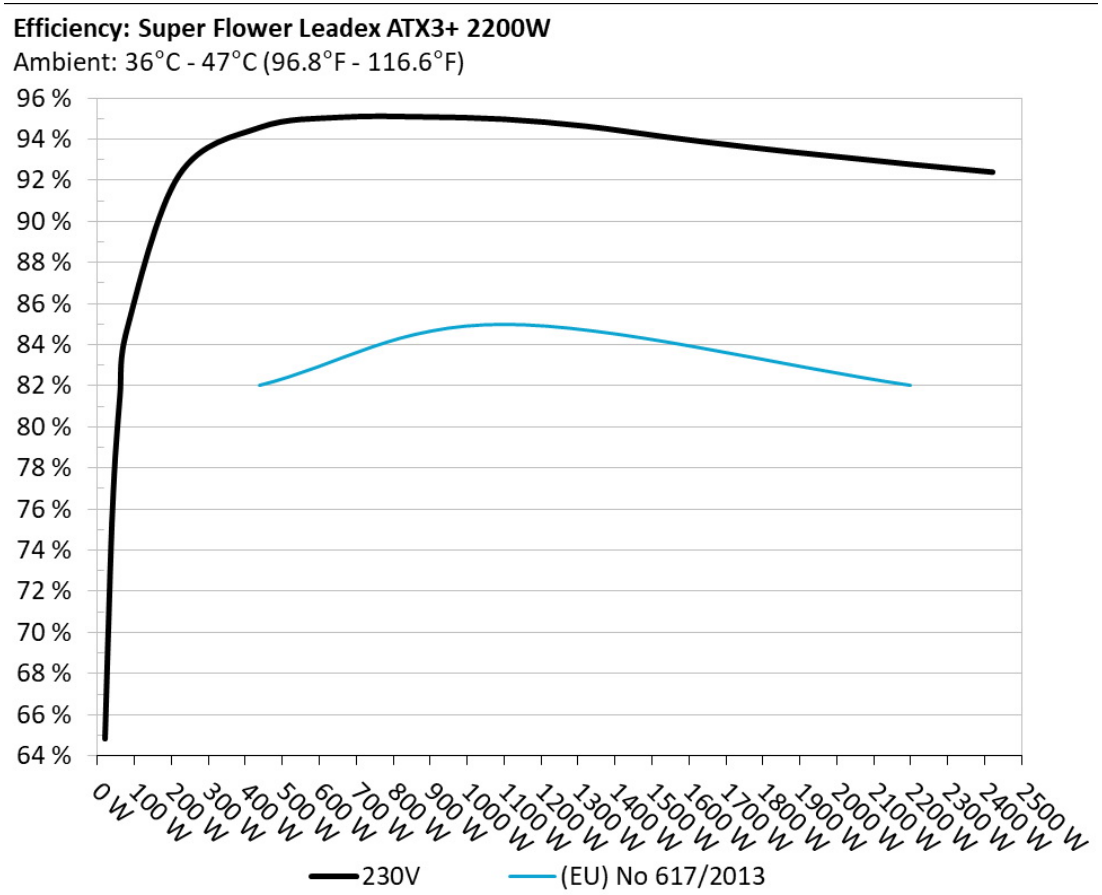


NEUTRAL



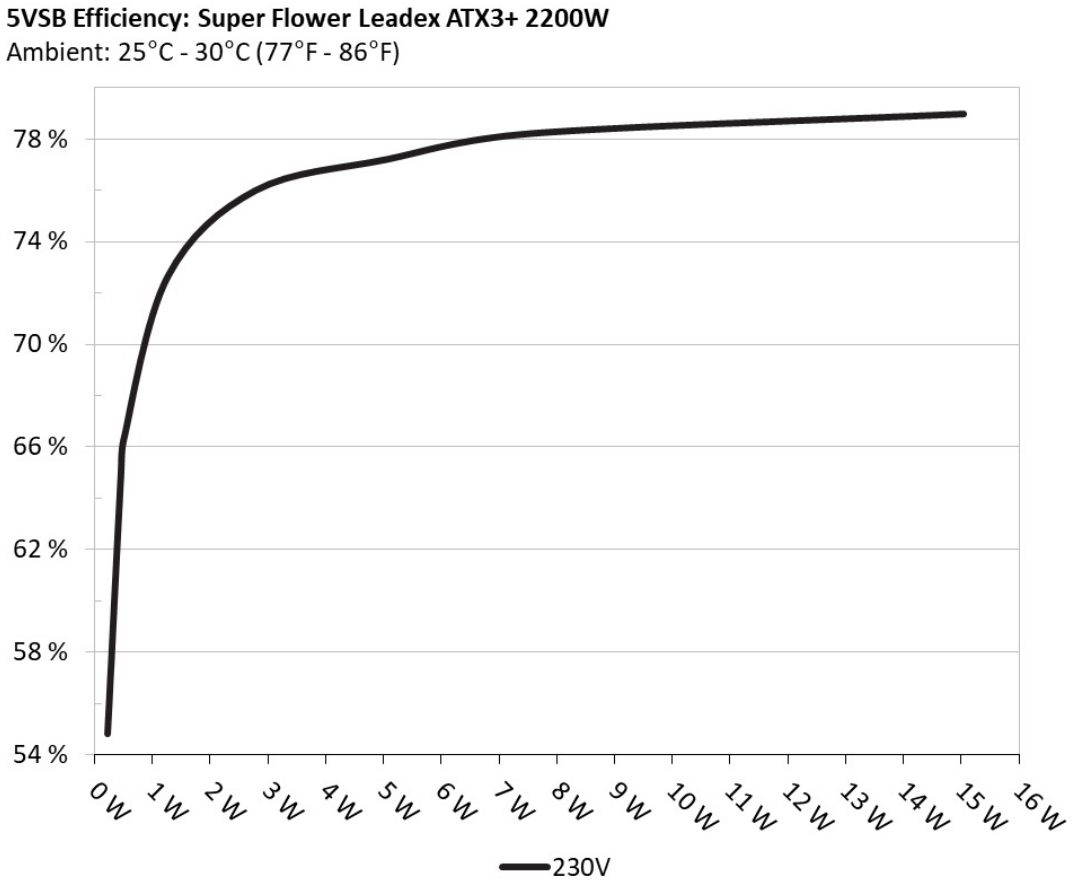
PHASE

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) 230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	**0.045A**	0.228W	54.84%	0.007
	5.077V	0.418W		229.89V

2	**0.09A**	0.457W	64.872%	0.012
	5.076V	0.706W		229.89V
3	**0.55A**	2.787W	76.001%	0.063
	5.067V	3.668W		229.89V
4	**1A**	5.059W	77.211%	0.11
	5.059V	6.552W		229.89V
5	**1.5A**	7.574W	78.221%	0.156
	5.049V	9.684W		229.89V
6	**3A**	15.047W	78.982%	0.264
	5.015V	19.053W		229.9V

Protection Features

OCP (Normal @ 29.2°C)	12V: 226.2A (123.4%), 12.043V 5V: 28.8A (144%), 5.024V 3.3V: 27.3A (136.5%), 3.32V 5VSB: 4.8A (160%), 4.967V
OCP (Hot @ 43.7°C)	12V: 226.8A (123.73%), 12.037V 5V: 28.3A (141.5%), 5.025V 3.3V: 26.4A (132%), 3.322V 5VSB: 4.8A (160%), 4.973V
OPP (Normal @ 28.1°C)	2651.06W (120.5%)
OPP (Hot @ 43.9°C)	2651.08W (120.5%)
OTP	✓ (90°C @ Heat Sink)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
PWR_OK	Proper Operation
UVP (Full Load @ 180V)	✓
UVP (No Damage @ 170V)	✓
Conducted Emissions EN55032 & CISPR 32	✓
NLO	✓

Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC & Bypass Relay

Supplementary Tests (For Reference)

10-110%□□□□ 230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	**16.388A**	**1.99A**	**1.991A**	**0.991A**	219.996	92.245%	0	<6.0	47.86°C	0.907
	12.106V	5.024V	3.315V	5.048V	238.491				40.04°C	229.86V
20%	**33.783A**	**2.986A**	**2.988A**	**1.191A**	439.566	94.568%	0	<6.0	44.4°C	0.948
	12.097V	5.023V	3.313V	5.037V	464.816				40.86°C	229.82V
30%	**51.549A**	**3.485A**	**3.489A**	**1.393A**	659.17	95.059%	476	12.3	41.16°C	0.973
	12.088V	5.021V	3.31V	5.027V	693.432				48.75°C	229.79V
40%	**69.412A**	**3.984A**	**3.99A**	**1.595A**	879.531	95.077%	682	21.8	41.98°C	0.982
	12.078V	5.02V	3.308V	5.016V	925.069				50.35°C	229.75V
50%	**86.901A**	**4.982A**	**4.991A**	**1.799A**	1099.304	94.964%	882	28.9	42.18°C	0.987
	12.069V	5.018V	3.306V	5.004V	1157.597				50.49°C	229.71V
60%	**104.467A**	**5.98A**	**5.993A**	**2A**	1319.838	94.623%	1204	38.1	42.79°C	0.989
	12.062V	5.017V	3.304V	4.992V	1394.847				50.67°C	229.68V
70%	**121.942A**	**6.98A**	**6.997A**	**2.208A**	1539.594	94.094%	1628	46.3	43.15°C	0.99
	12.059V	5.015V	3.302V	4.982V	1636.231				50.13°C	229.64V
80%	**139.502A**	**7.978A**	**8A**	**2.314A**	1759.586	93.604%	1817	48.5	43.96°C	0.991
	12.055V	5.013V	3.299V	4.97V	1879.825				50.93°C	229.59V
90%	**157.410A**	**8.479A**	**8.489A**	**2.419A**	1979.387	93.179%	2001	51	44.96°C	0.992
	12.051V	5.012V	3.298V	4.961V	2124.288				52.17°C	229.56V
100%	**175.134A**	**8.979A**	**9.008A**	**3.037A**	2199.389	92.77%	2160	52.3	45.44°C	0.992
	12.046V	5.012V	3.297V	4.94V	2370.806				53.78°C	229.52V
110%	**192.804A**	**9.979A**	**10.106A**	**3.042A**	2419.994	92.393%	2193	52.2	46.75°C	0.993
	12.042V	5.01V	3.295V	4.932V	2619.267				54.48°C	229.47V

CL1	**0.116A**	**12.003A**	**12.008A**	**0A**	101.31	80.704%	822	25.3	40.43°C	0.825
	12.111V	5.015V	3.306V	5.07V	125.578				49.88°C	229.87V
CL2	**0.116A**	**19.916A**	**0A**	**0A**	101.347	81.152%	601	16.8	40.53°C	0.824
	12.111V	5.018V	3.305V	5.071V	124.887				49.12°C	229.87V
CL3	**0.114A**	**0A**	**19.906A**	**0A**	67.383	75.644%	475	9.9	40.59°C	0.758
	12.113V	5.025V	3.315V	5.071V	89.076				48.11°C	229.88V
CL4	**182.697A**	**0A**	**0A**	**0A**	2199.956	93.175%	2052	52.5	45.99°C	0.993
	12.041V	5.022V	3.306V	5.003V	2361.11				52.28°C	229.52V

The results above are not used in the certification process

20-80□□□□ 230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	**1.226A**	**0.497A**	**0.497A**	**0.197A**	20.007	64.854%	0	<6.0	37.62°C	0.406
	12.112V	5.027V	3.318V	5.071V	31.149				36.33°C	229.88V
40W	**2.699A**	**0.696A**	**0.696A**	**0.296A**	40.003	75.899%	0	<6.0	40.13°C	0.615
	12.113V	5.026V	3.317V	5.068V	52.708				37.06°C	229.88V
60W	**4.172A**	**0.895A**	**0.895A**	**0.395A**	60.001	81.449%	0	<6.0	40.58°C	0.712
	12.112V	5.026V	3.317V	5.065V	73.667				38.05°C	229.88V
80W	**5.641A**	**1.094A**	**1.094A**	**0.494A**	79.94	84.792%	0	<6.0	45.04°C	0.77
	12.110V	5.025V	3.316V	5.062V	94.275				39.02°C	229.88V

The results above are not used in the certification process

□□□□ 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	22.81mV	20.53mV	18.98mV	13.03mV	Pass
20% Load	27.00mV	20.83mV	18.63mV	12.67mV	Pass
30% Load	28.13mV	20.58mV	18.73mV	14.01mV	Pass
40% Load	26.29mV	20.17mV	18.57mV	14.83mV	Pass
50% Load	27.11mV	22.02mV	19.86mV	16.88mV	Pass
60% Load	26.59mV	21.66mV	18.83mV	12.88mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	25.93mV	25.86mV	27.34mV	12.88mV	Pass
80% Load	25.42mV	26.64mV	19.96mV	14.37mV	Pass
90% Load	26.03mV	22.48mV	20.62mV	23.09mV	Pass
100% Load	26.38mV	22.63mV	19.81mV	16.24mV	Pass
110% Load	24.84mV	20.50mV	20.92mV	17.03mV	Pass
Crossload1	20.35mV	17.30mV	17.61mV	33.24mV	Pass
Crossload2	23.63mV	22.58mV	17.91mV	32.79mV	Pass
Crossload3	22.86mV	19.61mV	19.34mV	33.71mV	Pass
Crossload4	26.04mV	19.01mV	17.23mV	23.60mV	Pass

The results above are not used in the certification process

Super Flower Leadex ATX3+ 2200W (#2)

Top side

Power specifications label

Fan

PSU Internals

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。Cybenetics 提供自愿性认证计划：电源方面有 ETA (效率)、LAMBDA (噪声) 与 SAFE (安全与正确运行)；散热产品方面有 DELTA (机箱隔音) 与 PHI (风扇风量与静压)
在任何情况下都应提供原始测试结果文档的网站链接