Super Flower Leadex 2500W ATX3+

Serial Number S2609199012

Lab ID SF25003472

Certification ID 263472

Test Result Report ID: 26PS3472A

Certificate Issue Date: Nov 3, 2026

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 2500W ATX3+
OEM/ODM	Super Flower
Serial Number	S2609199012
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	200-240
Rated Current (Arms)	15

Rated Frequency (Hz)	50-60
Rated Power (W)	2500
Operating Temperature (Continuous Full Load) (°C)	0 - 50
Type	ATX12V
Cable Design	Fully Modular
Warranty	10 years
Cybenetics Measurements	
Dimensions (W x H x D)	150 x 86 x 202mm
Weight	2.97 kg (6.55 lb)
Cooling	140mm Double Ball Bearing Fan (ZIC ZFB142512D)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	SF25003472
Date of receipt	Oct 20, 2026
Testing Date	Nov 2, 2026
Report Issued Date	Nov 3, 2026
DUT Notes	We did not go all the way on the OPP and 12V OCP tests because the PSU's high power capacity would require us to exceed the maximum output capabilities of our AC power sources to trigger these protection mechanisms.
Engineer Name	Efstathios Papadopoulos
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Description	Cable Count	Connector Count (Total)	Gauge	Cable Type
ATX connector 20+4 pin (590mm)	1	1	16-20AWG	Tinned Copper
4+4 pin EPS12V (700mm)	2	2	16-18AWG	Tinned Copper
6+2 pin PCIe (700mm)	6	6	16AWG	Tinned Copper
12+4 pin PCIe (700mm) (600W)	4	4	16-26AWG	Tinned Copper

SATA (550mm+105mm+105mm+105mm)	4	16	18AWG	Tinned Copper
4-pin Molex (550mm+100mm+100mm+100mm)	1	4	18AWG	Tinned Copper
AC Power Cord (1670mm) - C19 coupler	1	1	16AWG	-

Protection Features(Manufacturer)

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

Power Specifications

Rail		**3.3V**	**5V**	**12V**	**5VSB**	**-12V**
Max. Power	**Amps**	20	20	208.3	3	0.5
	Watts	100		2499.6	15	6
Total Max. Power (W)		2500				

Parts Description

General Data	
Manufacturer (OEM)	Super Flower
PCB Type	Double-Sided
Primary Side	
Transient Filter	7x Y caps, 4x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor SCK256R8 (6.8 Ohm @ 25°C) & Relay
Bridge Rectifier(s)	Shindengen US30KB80R (800V, 30A @ 97°C)
APFC MOSFETs	8x Infineon FETs 65C7130 ThinPAK/8*8
APFC Boost Diode	8x Infineon IDL10G65C5 (650V, 10A @ 125°C)

Bulk Cap(s)	1x Nippon Chemi-Con (450V, 790uF, 2000h @ 105°C, KHE) 2x Nippon Chemi-Con (450V, 680uF, 2000h @ 105°C, KMZ)
Main Switchers	8x Infineon IPW60R070CFD7 (650V, 20A @ 100°C, Rds(on): 0.07 Ohm)
APFC Controller	Onsemi NCP1654 1x Syncpower SPN5003 (for reduced no-load consumption)
Resonant Controller	STMicroelectronics MZQV349
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	28x Infineon BSC014N04LS (40V, 100A @ 125°C, Rds(on): 1.4 mOhm)
5V & 3.3V	DC-DC Converters: 4x Infineon BSC0902NS (30V, 67A , Rds(on): 4.5mOhm) PWM Controller(s): 1x ANPEC APW7159C
Filtering Capacitors	Electrolytic: 5x Nippon Chemi-Con (@ 105°C, W) 1x Nippon Chemi-con (1-2,000h @105°C, KMG) 9x CapXon (2-5,000h @ 105°C, KF) 4x Rubycon (6-10000h @ 105°C, ZLH) 1x Rubycon (4-10000h @ 105°C, YXF) 1x Rubycon (@ 105°C, YXG) Polymer: 42x Nippon Chemi-Con
Supervisor IC	JTC113 & LM324ADG
Fan Model	ZIC ZFB142512D (140mm, 12V, 0.65A, Double Ball Bearing Fan)
5VSB	
Rectifier	PFC Device Corporation PFR20L60CT (60V, 20A)
Standby PWM Controller	29604

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 v3.1 PSU Power Excursion	✓
Conducted Emissions EN 55032 & CISPR 32	Passed

Performance Summary 230V

Accredited		
Average Efficiency (>1450 load combinations)		93.245%
Average Noise Output (>1450 Load Combinations)		40.39dBA
Average PF (>1450 Load Combinations)		0.940
Efficiency With 10W (≤500W) or 2% (>500W) Load		75.016%
Standby Power Consumption		0.1082W
Non-Accredited		
12V Ripple (Full Load)		29.82mV
5V Ripple (Full Load)		25.97mV
3.3V Ripple (Full Load)		25.09mV
5VSB Ripple (Full Load)		20.27mV
12V Load Regulation		0.96%
5V Load Regulation		0.22%
3.3V Load Regulation		0.52%
5VSB Load Regulation		2.79%
Inrush Current		76.610A
12V Transient Response (200%)		11.62V
5V Transient Response (200%)		4.965V
3.3V Transient Response (200%)		3.245V
5VSB Transient Response (200%)		4.965V
Hold-Up Time & PWR_OK Signal		31.50ms
AC Loss to PWR_OK Hold Up Time		25.80ms
PWR_OK Inactive to DC Loss Delay		5.70ms
PSU Timings: T1 (20% / 100%)	102.0ms	103.0ms
PSU Timings: T3 (20% / 100%)	125.0ms	127.0ms
12V OCP (29.5°C / 42.3°C)	268.000A (128.66%), 11.958V — DID NOT SHUT DOWN	258.600A (124.15%), 11.949V — shut down

5V OCP (29.5°C / 42.3°C)	27.000A (135.00%), 5.029V — shut down	27.100A (135.50%), 5.027V — shut down
3.3V OCP (29.5°C / 42.3°C)	28.300A (141.50%), 3.310V — shut down	28.900A (144.50%), 3.310V — shut down
5VSB OCP (29.5°C / 42.3°C)	4.900A (163.33%), 4.991V — shut down	4.500A (150.00%), 5.009V — shut down
OPP (28.85°C / 42.48°C)	128.58%	120.86%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	31.5
AC Loss to PWR_OK Hold Up Time (ms)	25.8
PWR_OK Inactive to DC Loss Delay (ms)	5.7

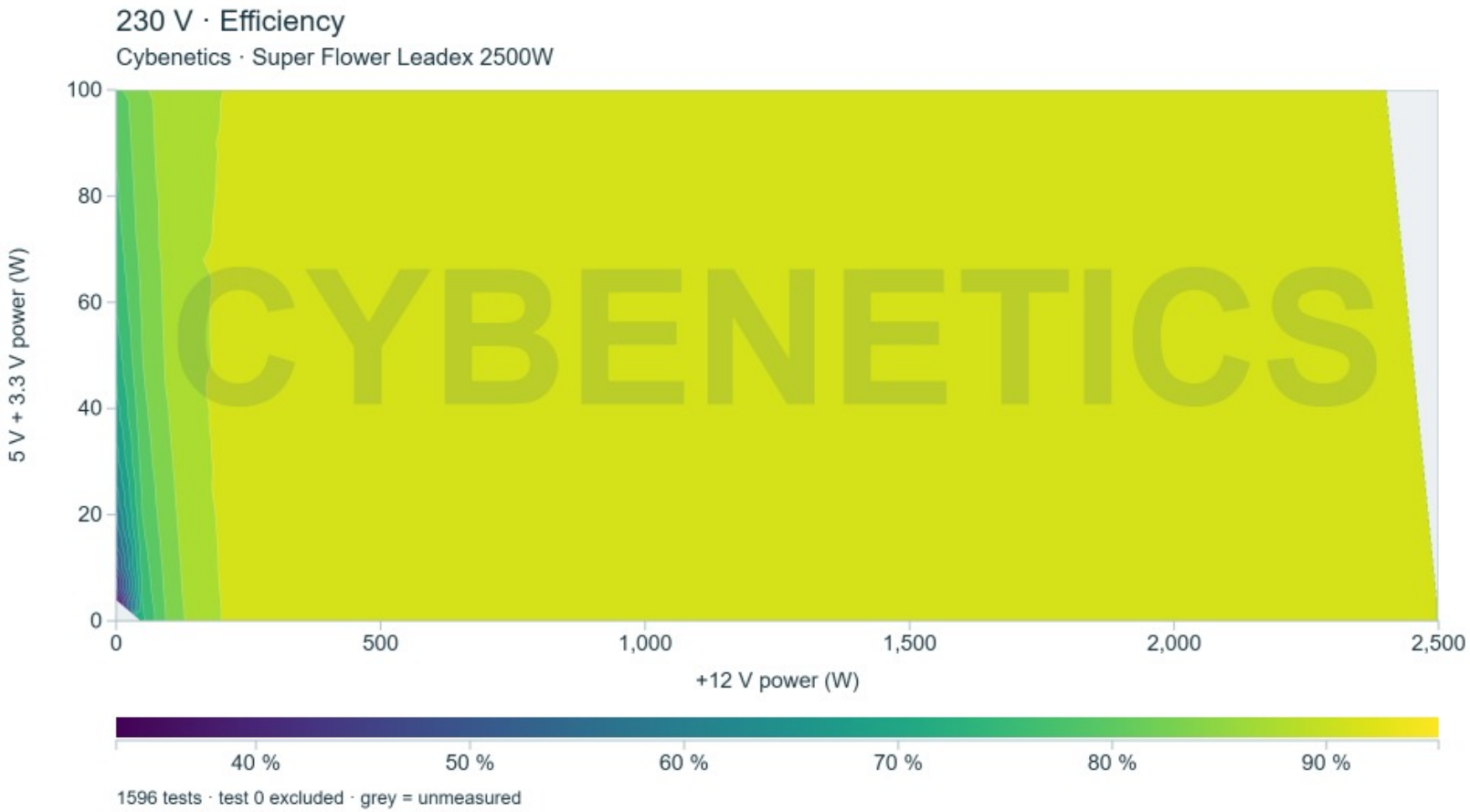
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Tables 230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.00 V	229.99 V	227.70 V	230.02 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:	1.415	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:	0.108 W	0.047 W	N/A	0.150 W	N/A	N/A
Apparent Power:	56.793 W	56.748 W	N/A	56.823 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

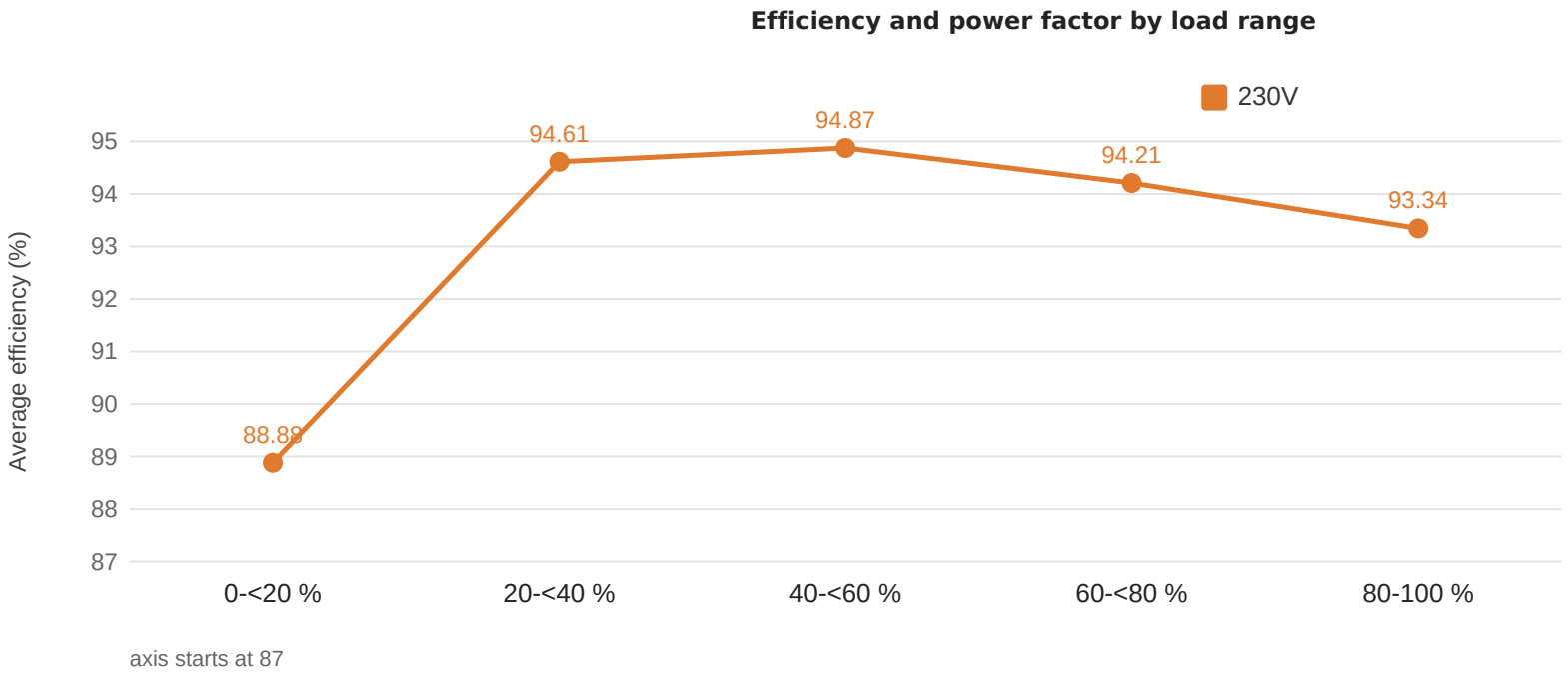
Efficiency Graph

230V

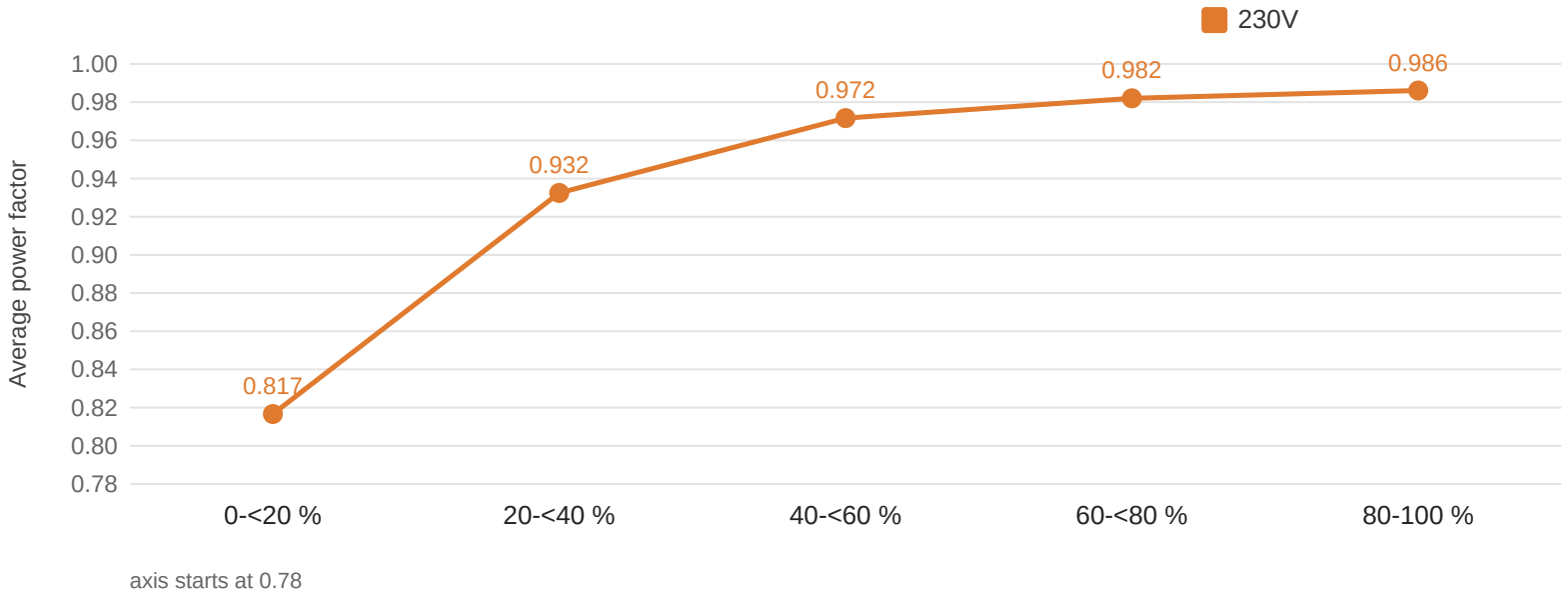


INFO

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



axis starts at 87



axis starts at 0.78

Load range	Points	Efficiency 230V	PF 230V
0-<20 %	300	88.88%	0.817
20-<40 %	321	94.61%	0.932
40-<60 %	326	94.87%	0.972
60-<80 %	320	94.21%	0.982
80-100 %	329	93.34%	0.986
70-100 % (High-Load)	490	93.55%	0.985
All (published average)	1596	93.25%	0.940

INFO

The average efficiency and power factor in five ranges of load. Calculated from the 1596 (230V) load combinations of the certification sweep, the same data that ETA and LAMBDA use (test 0 excluded). Load is the total DC output as a share of the rated 2500 W. These are plain averages of the valid readings, as for the ETA rating, so the ranges combined give back the published averages.

Informational. Not part of the ETA or LAMBDA rating.

Noise Graph

230V



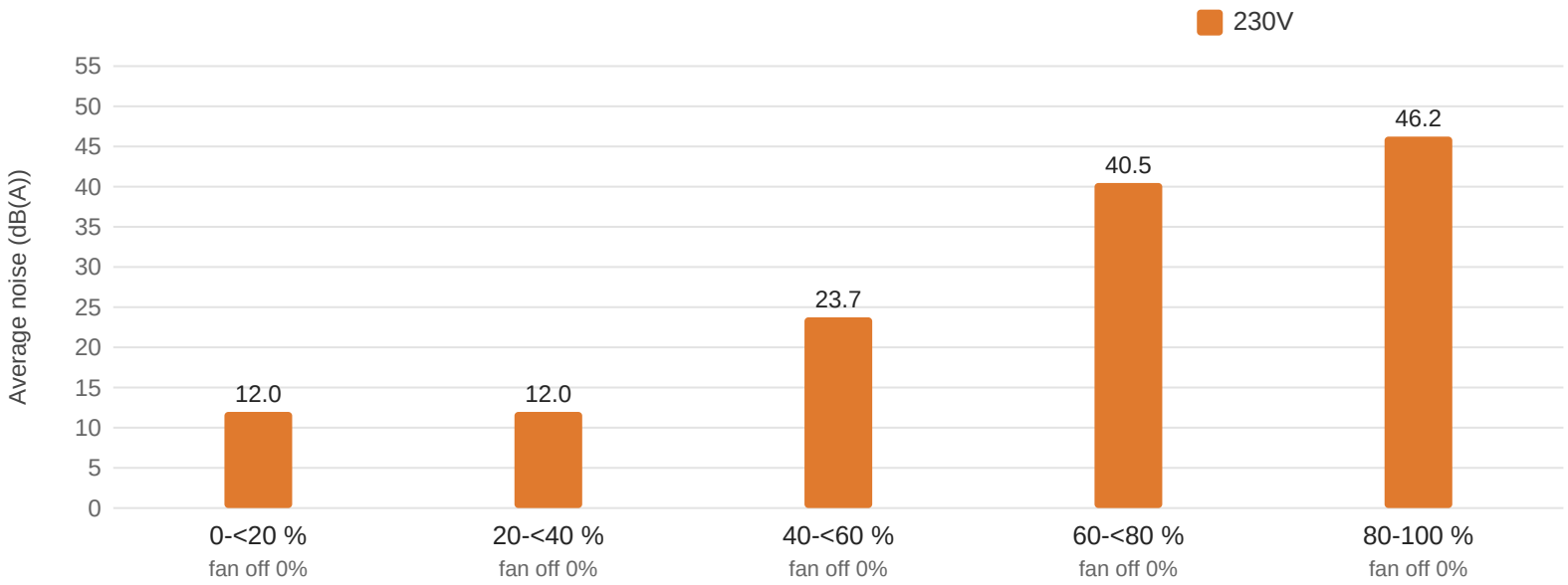
INFO

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

Noise by load range

High-Load Index (70-100 % load)
Noise **45.4 dB(A)** at 230V · loudest point 47.9 dB(A)

Efficiency 93.55% · power factor 0.985 (230V)



Load range	Noise 230V avg (loudest)	Fan off 230V
0-<20 %	12.0 (12.0)	0%
20-<40 %	12.0 (12.0)	0%
40-<60 %	23.7 (31.3)	0%
60-<80 %	40.5 (44.3)	0%
80-100 %	46.2 (47.9)	0%
70-100 % (High-Load)	45.4 (47.9)	0%
All (published average)	40.4 (47.9)	0%

INFO

The average noise in five ranges of load, the share of points with the fan stopped (semi-passive operation), and the High-Load Index: the same figures for all points at 70 % of the rated output and above. Calculated from the 1596 (230V) load combinations of the certification sweep, the same data that ETA and LAMBDA use (test 0 excluded). Load is the total DC output as a share of the rated 2500 W. Noise is averaged on the energy scale, as for LAMBDA, so the ranges combined give back the published average noise. Each load combination is held for about five seconds; the stabilized readings at fixed loads

are under "Noise under high ambient temperature".

Informational. Not part of the ETA or LAMBDA rating.

Noise under high ambient temperature (indicative)

230V

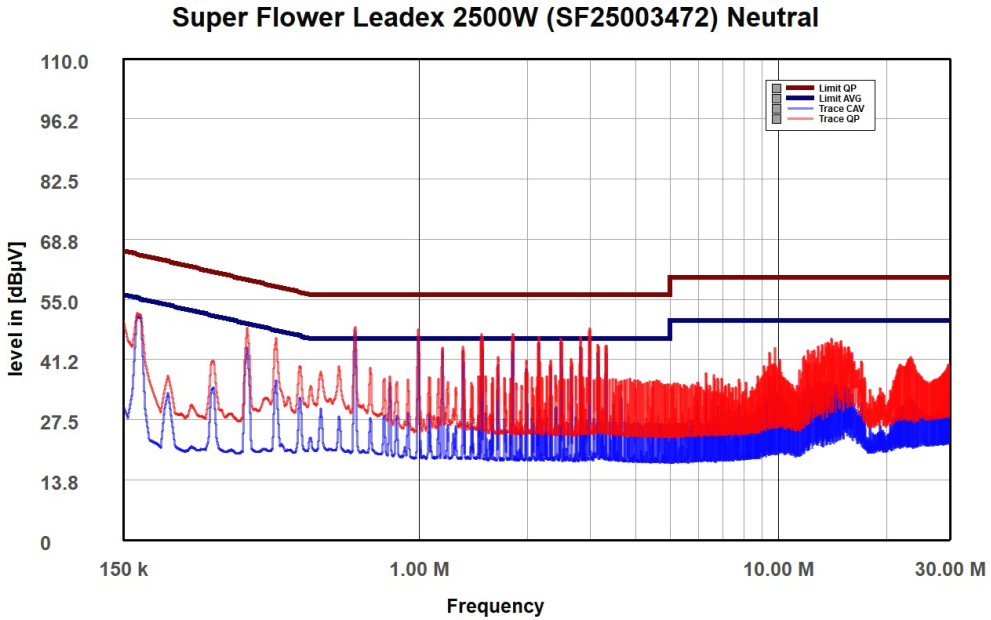
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	475 RPM · 11.5 dB(A) · 30.9 °C	485 RPM · 11.5 dB(A) · 40.3 °C	**+0.0 dB(A)**
20%	477 RPM · 11.5 dB(A) · 30.1 °C	486 RPM · 11.5 dB(A) · 41.0 °C	**+0.0 dB(A)**
50%	481 RPM · 11.5 dB(A) · 30.9 °C	1235 RPM · 34.9 dB(A) · 42.2 °C	**+23.4 dB(A)**
100%	2081 RPM · 47.8 dB(A) · 30.9 °C	2353 RPM · 50.4 dB(A) · 45.2 °C	**+2.6 dB(A)**

INFO

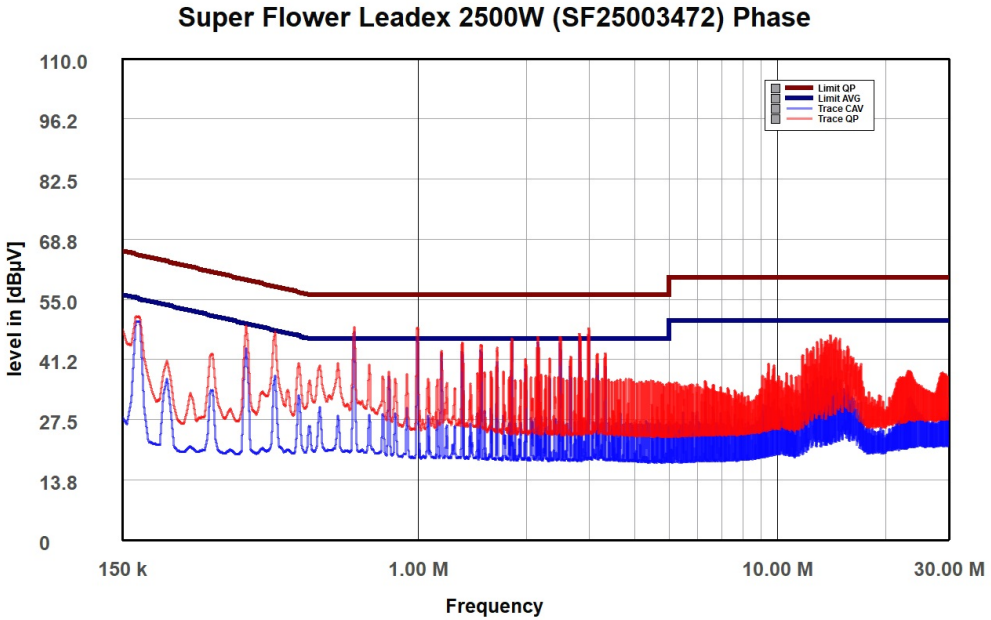
Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative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



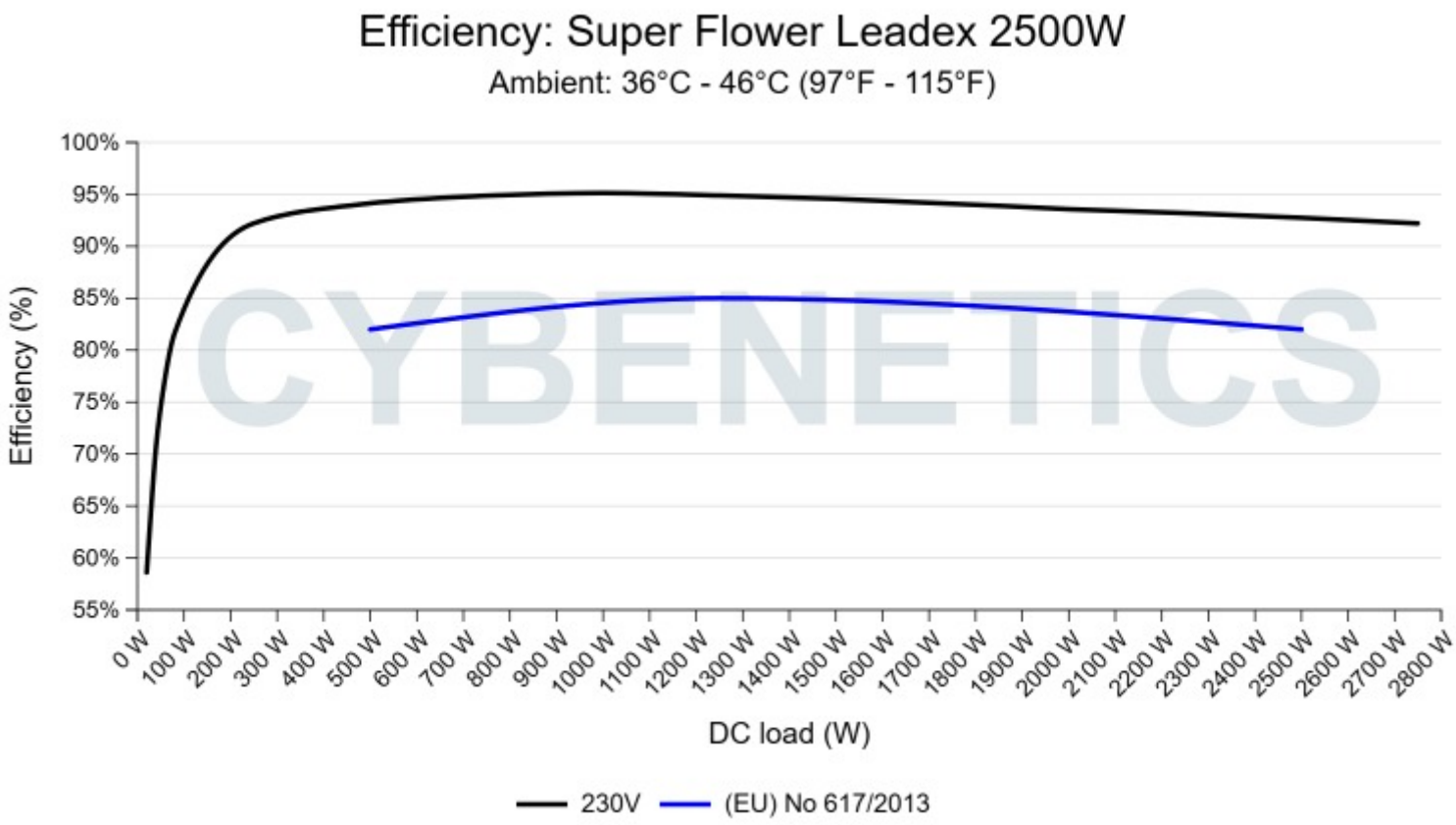
NEUTRAL



PHASE

Indicative Performance

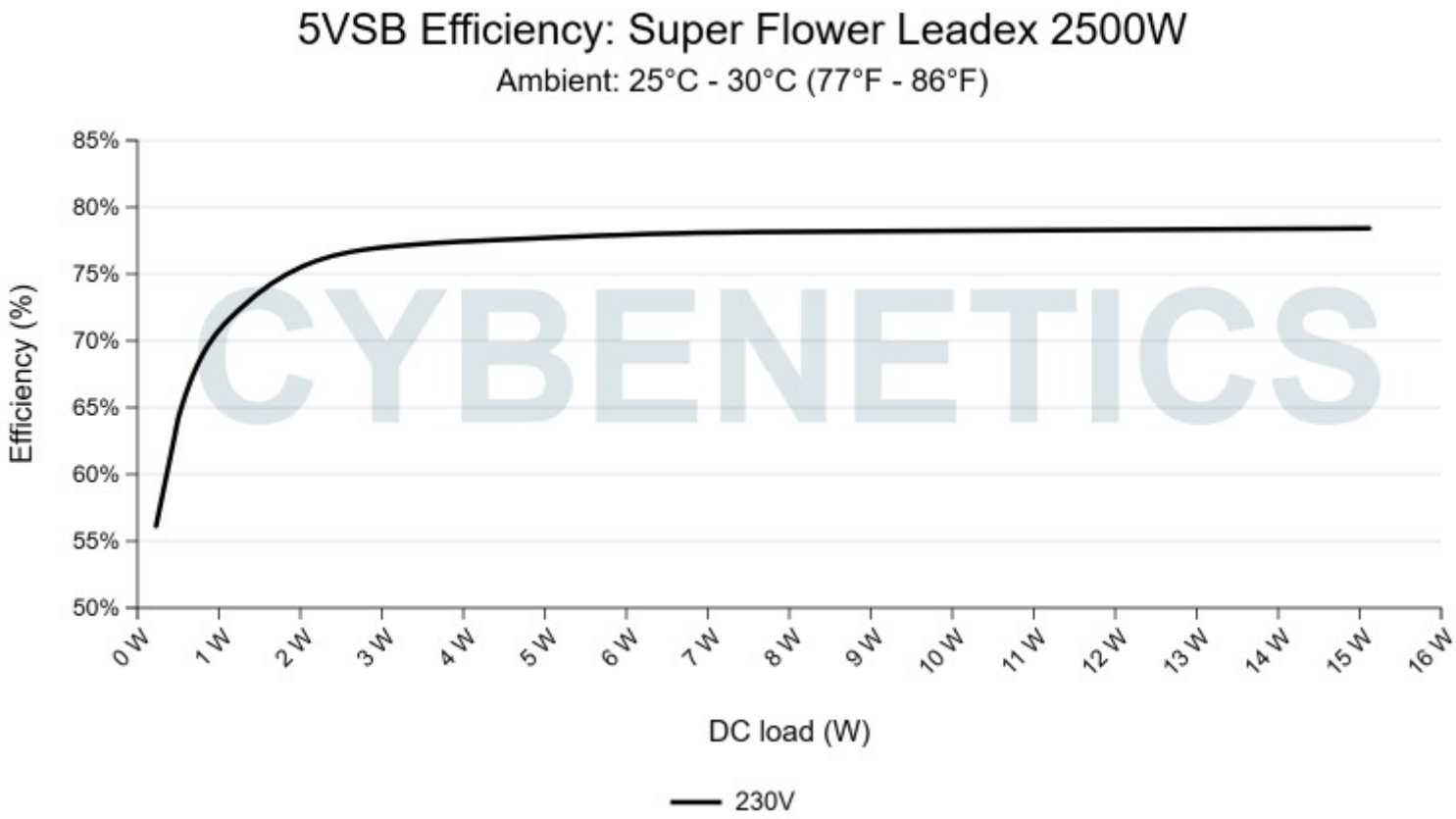
Efficiency under high ambient temperature



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) 230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.229W	56.134%	0.007
	5.093V	0.408W		229.9V

2	**0.09A**	0.458W	62.913%	0.013
	5.092V	0.729W		229.9V
3	**0.55A**	2.796W	76.83%	0.062
	5.084V	3.64W		229.9V
4	**1A**	5.077W	77.716%	0.107
	5.077V	6.533W		229.9V
5	**1.5A**	7.603W	78.139%	0.154
	5.068V	9.73W		229.9V
6	**3A**	15.116W	78.411%	0.264
	5.039V	19.279W		229.9V

Protection Features

OCP (Normal @ 29.5°C)	12V: 268.000A (128.66%), 11.958V — DID NOT SHUT DOWN 5V: 27.000A (135.00%), 5.029V — shut down 3.3V: 28.300A (141.50%), 3.310V — shut down 5VSB: 4.900A (163.33%), 4.991V — shut down
OCP (Hot @ 42.3°C)	12V: 258.600A (124.15%), 11.949V — shut down 5V: 27.100A (135.50%), 5.027V — shut down 3.3V: 28.900A (144.50%), 3.310V — shut down 5VSB: 4.500A (150.00%), 5.009V — shut down
OVP (per rail)	12V: 15.380V (✓) 5V: 6.05V (✓) 3.3V: 3.970V (✓)
OPP (Normal @ 28.9°C)	3214.50W (128.58%) — DID NOT SHUT DOWN
OPP (Hot @ 42.5°C)	3021.59W (120.86%) — shut down
OTP	✓ (157°C @ 12V Heatsink)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓ Rail to rail: not tested
PWR_OK	Proper Operation
UVP (Typical Load @ 180V)	✓

UVP (No Damage @ 170V)	✓
Conducted Emissions EN 55032 & CISPR 32	✓
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC & Bypass Relay

Supplementary Tests (For Reference)

Typical Load Tests 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%	**18.906A**	**1.988A**	**1.99A**	**0.987A**	249.995	92.221%	485	11.5	40.27°C	0.826
	12.081V	5.03V	3.317V	5.068V	271.083				41.63°C	230.25V
20%	**38.834A**	**2.983A**	**2.986A**	**1.187A**	499.58	94.13%	486	11.5	40.95°C	0.894
	12.069V	5.029V	3.316V	5.056V	530.735				42.38°C	230.21V
30%	**59.185A**	**3.48A**	**3.485A**	**1.388A**	749.597	94.863%	487	11.5	41.15°C	0.936
	12.056V	5.028V	3.314V	5.045V	790.191				43.09°C	230.16V
40%	**79.584A**	**3.978A**	**3.985A**	**1.59A**	999.544	95.138%	507	11.5	41.97°C	0.961
	12.042V	5.027V	3.313V	5.033V	1050.629				44.75°C	230.14V
50%	**99.694A**	**4.974A**	**4.984A**	**1.793A**	1249.713	94.902%	1235	34.9	42.19°C	0.973
	12.029V	5.026V	3.311V	5.02V	1316.846				48.15°C	230.1V
60%	**119.849A**	**5.971A**	**5.984A**	**1.997A**	1499.836	94.566%	1618	41.6	42.75°C	0.98
	12.015V	5.024V	3.309V	5.008V	1586.015				48.93°C	230.05V
70%	**140.039A**	**6.969A**	**6.986A**	**2.202A**	1749.974	94.101%	1865	45.2	43.45°C	0.982
	12.003V	5.023V	3.307V	4.994V	1859.68				49.64°C	230.01V
80%	**160.254A**	**7.964A**	**7.986A**	**2.307A**	1999.563	93.583%	2082	47.8	43.83°C	0.985
	11.992V	5.022V	3.305V	4.984V	2136.683				50.5°C	229.96V
90%	**180.878A**	**8.463A**	**8.473A**	**2.413A**	2249.787	93.189%	2344	50.4	44.5°C	0.987
	11.982V	5.021V	3.304V	4.973V	2414.23				52.99°C	229.91V
100%	**201.231A**	**8.963A**	**8.992A**	**3.03A**	2499.353	92.738%	2353	50.4	45.21°C	0.988
	11.974V	5.02V	3.302V	4.95V	2695.064				55.17°C	229.87V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
110%	**221.586A**	**9.961A**	**10.087A**	**3.036A**	2749.554	92.209%	2348	50.4	46.35°C	0.989
	11.965V	5.019V	3.301V	4.94V	2981.859				57.45°C	229.81V
CL1	**0.116A**	**11.97A**	**11.96A**	**0A**	101.3	79.281%	1609	41.5	40.34°C	0.818
	12.075V	5.029V	3.319V	5.086V	127.774				52.79°C	230.27V
CL2	**0.115A**	**19.876A**	**0A**	**0A**	101.337	79.344%	873	24.7	40.24°C	0.817
	12.081V	5.029V	3.316V	5.087V	127.719				49.56°C	230.26V
CL3	**0.114A**	**0A**	**19.833A**	**0A**	67.376	72.534%	507	11.5	40.28°C	0.759
	12.083V	5.041V	3.327V	5.087V	92.89				46.74°C	230.28V
CL4	**208.850A**	**0A**	**0A**	**0A**	2499.979	93.047%	2216	49.2	45.95°C	0.988
	11.970V	5.022V	3.302V	5.008V	2686.794				50.52°C	229.87V

The results above are not used in the certification process

Light Load Tests 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	**1.229A**	**0.497A**	**0.497A**	**0.197A**	20.003	58.605%	480	11.5	36.14°C	0.437
	12.087V	5.031V	3.319V	5.088V	34.133				40.66°C	230.29V
40W	**2.704A**	**0.696A**	**0.696A**	**0.295A**	39.999	70.718%	480	11.5	37.95°C	0.629
	12.088V	5.031V	3.318V	5.086V	56.561				39.94°C	230.29V
60W	**4.180A**	**0.894A**	**0.895A**	**0.393A**	59.995	77.513%	480	11.5	38.7°C	0.718
	12.089V	5.03V	3.318V	5.084V	77.4				39.85°C	230.29V
80W	**5.650A**	**1.093A**	**1.094A**	**0.492A**	79.924	81.656%	482	11.5	39.02°C	0.769
	12.089V	5.03V	3.318V	5.082V	97.878				40.37°C	230.29V

The results above are not used in the certification process

Ripple Measurements 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	26.03mV	21.40mV	23.65mV	15.96mV	Pass
20% Load	26.24mV	20.68mV	23.76mV	17.08mV	Pass
30% Load	27.26mV	22.63mV	23.40mV	18.88mV	Pass

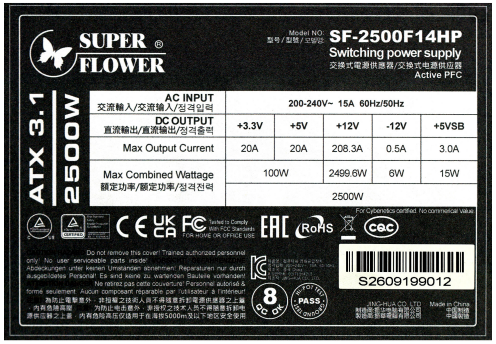
Test	12V	5V	3.3V	5VSB	Pass/Fail
40% Load	27.62mV	23.81mV	25.04mV	19.91mV	Pass
50% Load	29.20mV	21.30mV	24.68mV	18.16mV	Pass
60% Load	27.92mV	24.07mV	25.55mV	20.22mV	Pass
70% Load	29.82mV	23.66mV	26.47mV	22.47mV	Pass
80% Load	29.51mV	23.25mV	26.88mV	25.35mV	Pass
90% Load	28.23mV	25.20mV	25.24mV	27.40mV	Pass
100% Load	29.82mV	25.97mV	25.09mV	20.27mV	Pass
110% Load	29.10mV	25.82mV	26.63mV	22.01mV	Pass
Crossload1	23.58mV	21.66mV	24.27mV	20.01mV	Pass
Crossload2	23.27mV	23.81mV	22.11mV	18.99mV	Pass
Crossload3	22.56mV	21.20mV	22.52mV	19.03mV	Pass
Crossload4	28.23mV	24.25mV	23.14mV	48.18mV	Pass

The results above are not used in the certification process

Super Flower Leadex 2500W ATX3+



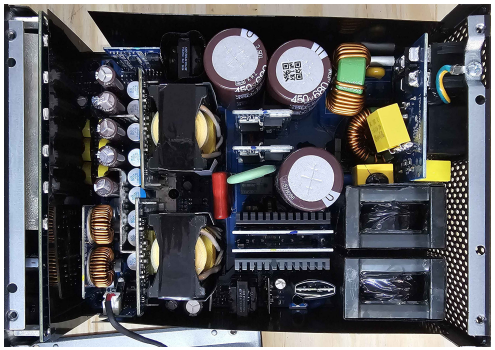
Top side



Power specifications label



Fan



PSU Internals

Cybenetics ETA LAMBDA SAFE DELTA PHI