Anex

Super Flower Leadex III Gold 550W rev.2

Lab ID#: SF20550014
Receipt Date: Jul 11, 2019
Test Date: Feb 21, 2020

Report: 20PSA
Report Date: Feb 21, 2020

DUT INFORMATION

Brand	Super Flower
Manufacturer (OEM)	Super Flower
Series	Leadex III Gold
Model Number	SF-550F14HG rev.2
Serial Number	S1907198881
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60
Rated Power (W)	550
Type	ATX12V
Cooling	130mm Fluid Dynamic Bearing (S1282412L)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	45.8	3	0.5
	Watts	100		549.6	15	6
Total Max. Power (W)		550				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (590mm)	1	1	18-22AWG	Yes
4+4 pin EPS12V (700mm)	1	1	18-22AWG	Yes
6+2 pin PCIe (550mm+150mm)	1	2	18-22AWG	Yes
SATA (550mm+120mm+120mm)	2	6	18AWG	No
4 pin Molex (550mm+100mm+100mm+100mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	89.113%
Efficiency With 10W (≤500W) or 2% (>500W)	68.324
Average Efficiency 5VSB	80.361%
Standby Power Consumption (W)	0.0449008
Average PF	0.983
Avg Noise Output	18.91 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A+

230V

Average Efficiency	91.111%
Average Efficiency 5VSB	79.418%
Standby Power Consumption (W)	0.0722962
Average PF	0.940
Avg Noise Output	20.59 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	25.6
AC Loss to PWR_OK Hold Up Time (ms)	23
PWR_OK Inactive to DC Loss Delay (ms)	2.6

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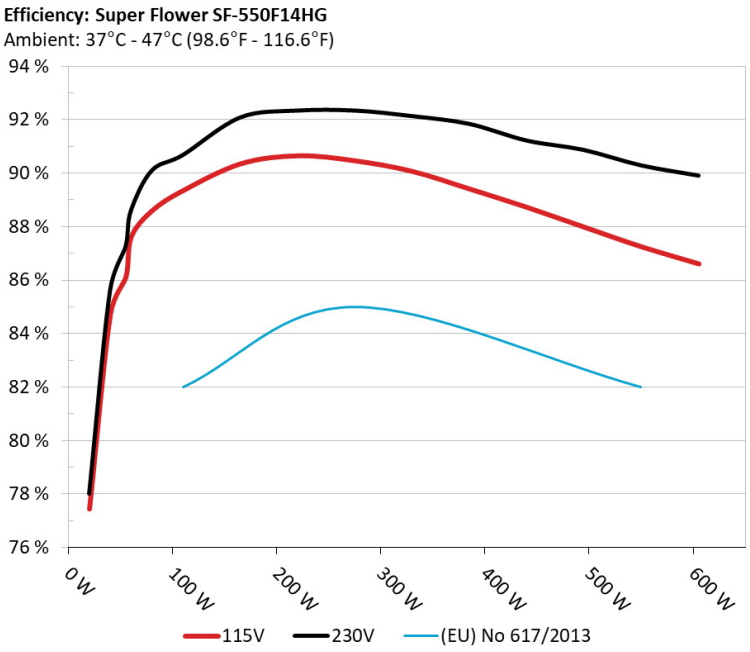
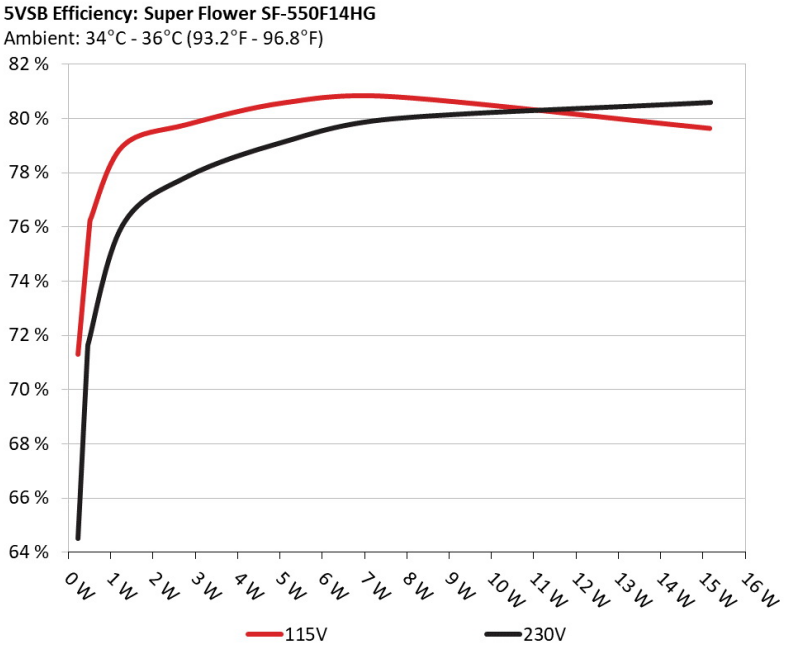
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	71.296%	0.037
	5.128V	0.324		115.12V
2	0.090A	0.462	76.238%	0.068
	5.127V	0.606		115.12V
3	0.550A	2.815	79.790%	0.280
	5.117V	3.528		115.12V
4	1.000A	5.107	80.590%	0.360
	5.106V	6.337		115.12V
5	1.500A	7.643	80.818%	0.403
	5.095V	9.457		115.12V
6	3.000A	15.166	79.645%	0.457
	5.055V	19.042		115.12V

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	64.525%	0.012
	5.128V	0.358		230.24V
2	0.090A	0.462	71.517%	0.022
	5.127V	0.646		230.24V
3	0.550A	2.815	77.870%	0.116
	5.116V	3.615		230.25V
4	1.000A	5.107	79.154%	0.186
	5.106V	6.452		230.24V
5	1.500A	7.642	79.996%	0.241
	5.094V	9.553		230.25V
6	3.000A	15.175	80.602%	0.329
	5.058V	18.827		230.25V

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115V

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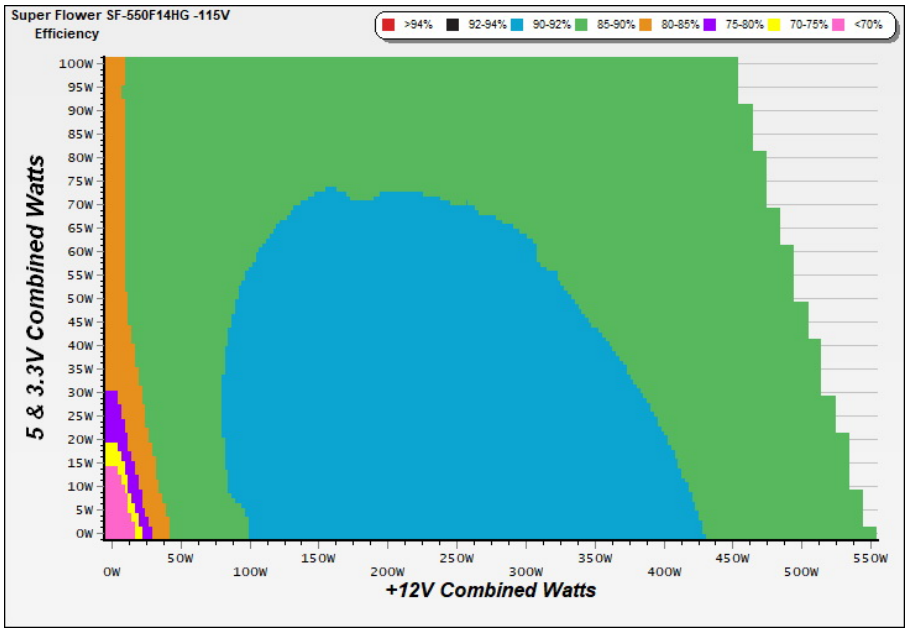
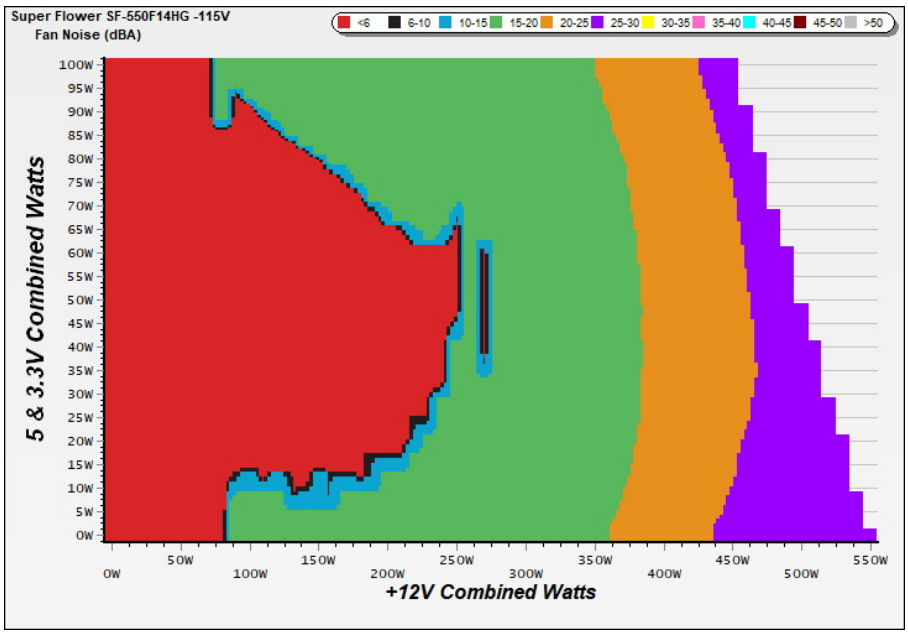
EFFICIENCY GRAPH 115V



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

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

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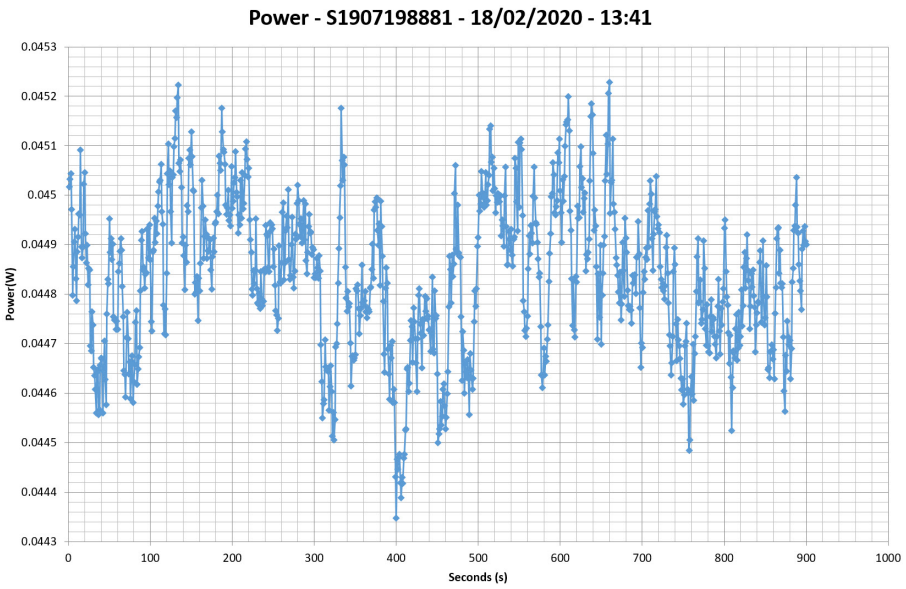
VAMPIRE POWER -115V



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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Super Flower Leadex III Gold 550W rev.2

10-110% 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
1	2.743A	1.992A	1.996A	0.982A	54.974	86.107%	0	<6.0	45.87°C	0.936
	12.165V	5.019V	3.309V	5.095V	63.844				40.47°C	115.13V
2	6.510A	2.992A	2.998A	1.181A	110.057	89.339%	775	16.2	40.97°C	0.967
	12.157V	5.015V	3.305V	5.082V	123.191				46.82°C	115.13V
3	10.615A	3.492A	3.500A	1.381A	165.062	90.335%	786	16.5	41.19°C	0.981
	12.153V	5.011V	3.302V	5.071V	182.722				47.55°C	115.13V
4	14.721A	3.995A	4.004A	1.581A	220.077	90.634%	802	17.0	41.53°C	0.988
	12.150V	5.009V	3.298V	5.061V	242.819				48.42°C	115.12V
5	18.491A	4.998A	5.013A	1.783A	275.079	90.447%	857	18.2	42.34°C	0.991
	12.144V	5.004V	3.294V	5.048V	304.133				49.67°C	115.12V
6	22.270A	6.005A	6.021A	1.986A	330.086	90.051%	941	20.4	42.58°C	0.993
	12.136V	4.998V	3.289V	5.036V	366.553				50.62°C	115.12V
7	26.065A	7.013A	7.036A	2.191A	385.185	89.393%	1054	23.3	43.06°C	0.994
	12.126V	4.992V	3.284V	5.023V	430.888				51.51°C	115.12V
8	29.852A	8.005A	8.051A	2.396A	440.101	88.710%	1153	27.0	43.58°C	0.994
	12.119V	4.986V	3.280V	5.010V	496.114				52.82°C	115.12V
9	34.011A	8.534A	8.550A	2.400A	494.713	87.977%	1273	30.6	44.95°C	0.994
	12.119V	4.982V	3.276V	5.003V	562.320				54.62°C	115.11V
10	37.984A	9.045A	9.079A	3.013A	549.934	87.240%	1373	31.4	45.21°C	0.994
	12.116V	4.977V	3.271V	4.980V	630.370				55.65°C	115.11V
11	42.541A	9.051A	9.086A	3.017A	605.146	86.600%	1483	34.1	46.64°C	0.995
	12.116V	4.974V	3.268V	4.974V	698.783				57.53°C	115.11V
CL1	0.102A	12.003A	11.997A	0.000A	100.663	84.367%	990	22.4	42.58°C	0.968
	12.137V	4.993V	3.292V	5.090V	119.316				49.53°C	115.13V
CL2	45.846A	0.999A	1.001A	1.000A	569.253	87.936%	1374	31.4	45.35°C	0.994
	12.126V	4.997V	3.284V	5.045V	647.351				55.62°C	115.11V

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20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.219A	0.497A	0.499A	0.195A	20.000	77.453%	0	<6.0	0.797
	12.180V	5.029V	3.315V	5.120V	25.822				115.13V
2	2.439A	0.995A	0.998A	0.391A	39.992	84.705%	0	<6.0	0.900
	12.172V	5.024V	3.313V	5.113V	47.213				115.13V
3	3.663A	1.494A	1.495A	0.588A	60.024	87.602%	0	<6.0	0.947
	12.168V	5.021V	3.311V	5.105V	68.519				115.13V
4	4.881A	1.993A	1.995A	0.785A	79.974	88.581%	0	<6.0	0.952
	12.164V	5.018V	3.308V	5.097V	90.283				115.13V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.00mV	5.70mV	9.50mV	8.90mV	Pass
20% Load	6.20mV	5.90mV	9.00mV	8.20mV	Pass
30% Load	6.50mV	6.50mV	11.10mV	8.00mV	Pass
40% Load	6.70mV	6.90mV	10.70mV	7.90mV	Pass
50% Load	6.60mV	7.20mV	10.00mV	8.10mV	Pass
60% Load	7.50mV	7.70mV	11.30mV	7.70mV	Pass
70% Load	7.80mV	8.90mV	11.60mV	7.40mV	Pass
80% Load	8.50mV	8.90mV	12.30mV	8.50mV	Pass
90% Load	8.60mV	9.50mV	13.70mV	8.80mV	Pass
100% Load	10.50mV	10.20mV	13.90mV	10.80mV	Pass
110% Load	10.40mV	10.90mV	15.20mV	10.40mV	Pass
Crossload1	8.20mV	7.00mV	10.50mV	10.30mV	Pass
Crossload2	10.90mV	10.40mV	14.10mV	11.40mV	Pass

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230V

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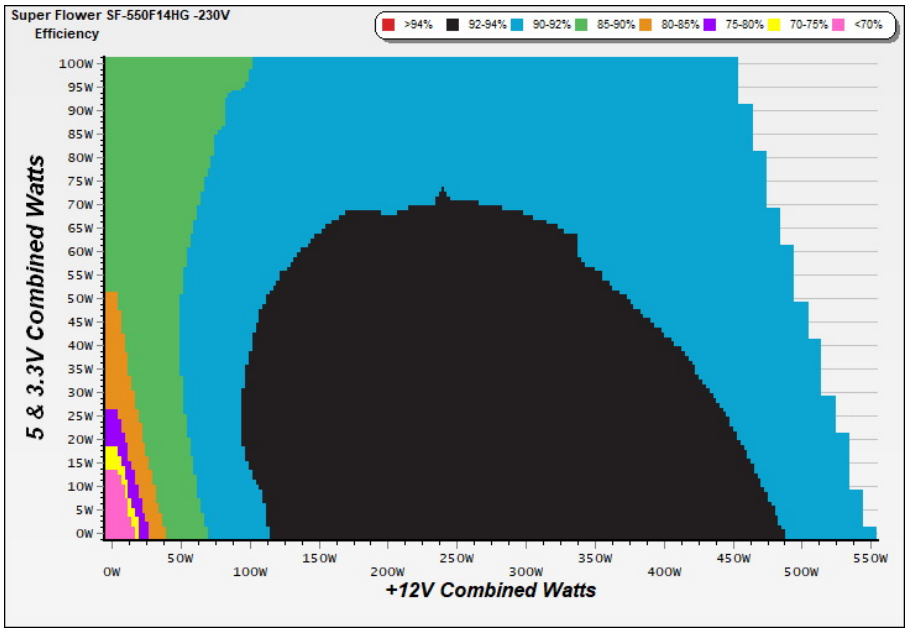
EFFICIENCY GRAPH 230V



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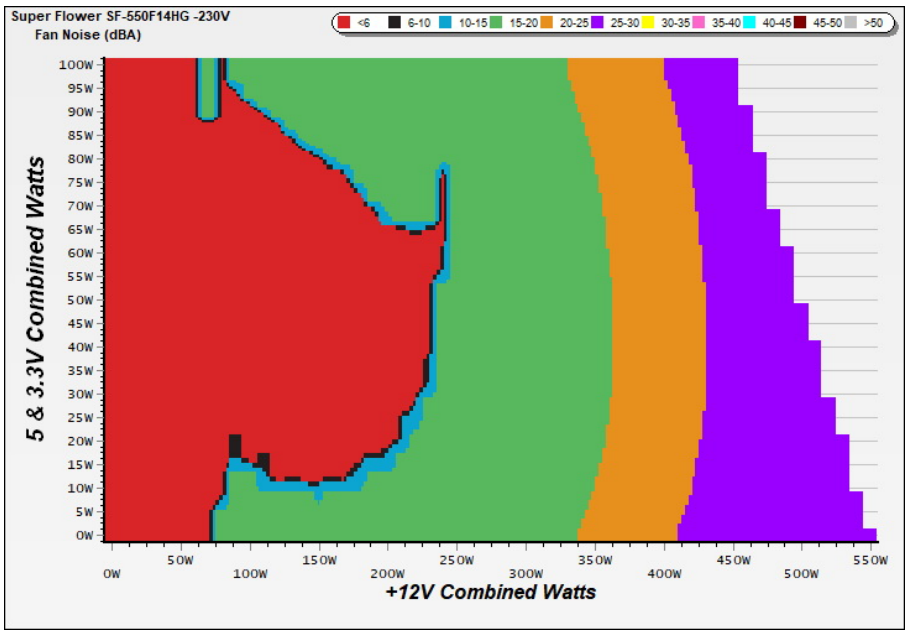
NOISE GRAPH 230V



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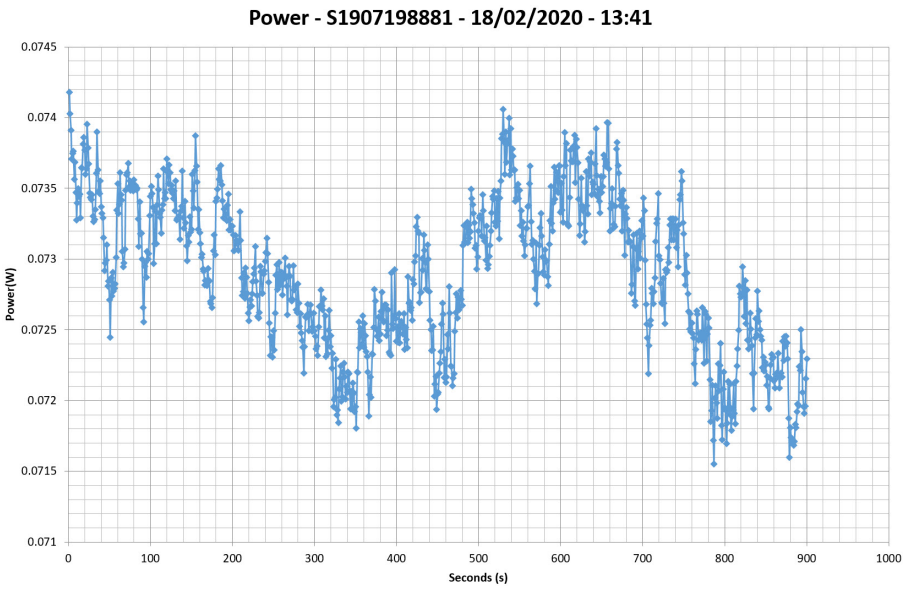

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10-110% LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	2.744A	1.989A	1.994A	0.982A	54.960	87.245%	0	<6.0	45.50°C	0.731
	12.163V	5.018V	3.310V	5.095V	62.995				40.50°C	230.23V
2	6.508A	2.992A	2.995A	1.181A	110.029	90.669%	786	16.5	40.83°C	0.877
	12.158V	5.014V	3.305V	5.083V	121.353				46.44°C	230.24V
3	10.611A	3.493A	3.498A	1.380A	165.030	92.071%	803	17.1	41.11°C	0.930
	12.155V	5.011V	3.302V	5.072V	179.242				47.35°C	230.24V
4	14.717A	3.994A	4.003A	1.581A	220.035	92.326%	797	16.9	41.96°C	0.956
	12.151V	5.009V	3.298V	5.061V	238.323				48.62°C	230.24V
5	18.487A	4.997A	5.010A	1.783A	275.036	92.326%	858	18.2	42.02°C	0.966
	12.145V	5.004V	3.294V	5.049V	297.898				49.51°C	230.24V
6	22.266A	6.005A	6.021A	1.986A	330.038	92.120%	935	20.3	42.38°C	0.973
	12.136V	4.998V	3.289V	5.036V	358.268				50.54°C	230.24V
7	26.061A	7.014A	7.035A	2.190A	385.135	91.827%	1032	23.0	43.05°C	0.977
	12.126V	4.992V	3.284V	5.024V	419.415				51.75°C	230.25V
8	29.845A	8.003A	8.049A	2.396A	440.001	91.207%	1175	27.5	43.28°C	0.981
	12.119V	4.986V	3.280V	5.011V	482.418				52.26°C	230.25V
9	34.001A	8.534A	8.547A	2.399A	494.613	90.858%	1252	30.4	44.91°C	0.984
	12.120V	4.982V	3.276V	5.004V	544.381				54.39°C	230.25V
10	37.974A	9.043A	9.077A	3.012A	549.843	90.279%	1371	31.4	45.66°C	0.986
	12.117V	4.977V	3.272V	4.982V	609.047				55.80°C	230.25V
11	42.535A	9.050A	9.085A	3.016A	605.064	89.897%	1487	34.2	46.70°C	0.987
	12.116V	4.974V	3.268V	4.975V	673.062				57.61°C	230.25V
CL1	0.101A	12.001A	12.000A	0.000A	100.651	85.852%	985	22.1	42.37°C	0.872
	12.139V	4.993V	3.292V	5.092V	117.238				49.97°C	230.25V
CL2	45.838A	1.000A	1.002A	1.000A	569.257	91.076%	1368	31.3	45.09°C	0.986
	12.128V	4.997V	3.284V	5.046V	625.032				55.20°C	230.25V

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Super Flower Leadex III Gold 550W rev.2

20-80W LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.219A	0.497A	0.498A	0.195A	19.990	78.013%	0	<6.0	0.474
	12.176V	5.027V	3.315V	5.120V	25.624				230.23V
2	2.439A	0.995A	0.996A	0.391A	39.979	85.592%	0	<6.0	0.649
	12.170V	5.023V	3.313V	5.112V	46.709				230.23V
3	3.663A	1.494A	1.493A	0.588A	60.009	88.582%	0	<6.0	0.750
	12.166V	5.020V	3.311V	5.105V	67.744				230.23V
4	4.880A	1.993A	1.995A	0.785A	79.960	90.082%	0	<6.0	0.820
	12.163V	5.018V	3.309V	5.097V	88.764				230.23V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.20mV	5.60mV	8.80mV	8.90mV	Pass
20% Load	5.70mV	5.90mV	8.50mV	8.40mV	Pass
30% Load	6.60mV	6.40mV	9.90mV	8.20mV	Pass
40% Load	6.30mV	6.60mV	10.70mV	8.10mV	Pass
50% Load	6.40mV	7.10mV	9.90mV	7.80mV	Pass
60% Load	7.00mV	7.30mV	10.40mV	7.50mV	Pass
70% Load	7.10mV	7.50mV	10.50mV	7.40mV	Pass
80% Load	7.30mV	8.30mV	11.00mV	8.00mV	Pass
90% Load	7.70mV	8.00mV	11.40mV	8.00mV	Pass
100% Load	9.50mV	8.80mV	12.10mV	9.60mV	Pass
110% Load	9.90mV	8.90mV	12.50mV	10.00mV	Pass
Crossload1	6.90mV	6.90mV	10.70mV	10.70mV	Pass
Crossload2	9.80mV	8.80mV	11.80mV	11.50mV	Pass

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Top side

Power specifications label

CERTIFICATIONS 115V

CERTIFICATIONS 230V