

Lab ID#: 129
Receipt Date: Jun 6, 2018
Test Date: Jun 18, 2018

Report:

Report Date: Jun 20, 2018

DUT INFORMATION

Brand	Super Flower
Manufacturer (OEM)	Super Flower
Series	Platinum King
Model Number	SF-650P14PE
Serial Number	S1604223285
DUT Notes	Low 5VSB Efficiency

DUT SPECIFICATIONS

Rated Voltage (Vrms)	115-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60
Rated Power (W)	650
Type	ATX12V
Cooling	122mm Duro Bearing Fan (S1202512L)
Semi-Passive Operation	X
Cable Design	Fixed cables

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	54	2.5	0.5
	Watts	10		648	12.5	6
Total Max. Power (W)		650				

CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (540mm)	1	1	16-24AWG
4+4 pin EPS12V (650mm)	1	1	16AWG
6+2 pin PCIe (500mm+125mm)	1	2	16-22AWG
6+2 pin PCIe (500mm)	1	1	16-22AWG
SATA (510mm+135mm+135mm) / 4 pin Molex (+135mm)	1	3 / 1	18AWG
SATA (510mm+135mm) / 4 pin Molex (+135mm+135mm)	1	2 / 2	18AWG

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)		
ErP Lot 3/6 Ready	ErP Lot 6 2010: ✓ ErP Lot 6 2013: Partially ErP Lot 3 2014 & CEC: ✗		
(EU) No 617/2013 Compliance	✓		
115V		230V	
Average Efficiency	89.935%	Average Efficiency	92.226%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000	Average Efficiency 5VSB	71.024%
Average Efficiency 5VSB	73.225%	Standby Power Consumption (W)	0.2680260
Standby Power Consumption (W)	0.1223640	Average PF	0.931
Average PF	0.980	Avg Noise Output	27.12 dB(A)
Avg Noise Output	27.53 dB(A)	Efficiency Rating (ETA)	
Efficiency Rating (ETA)	SILVER	Noise Rating (LAMBDA)	A-
Noise Rating (LAMBDA)	A-		

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

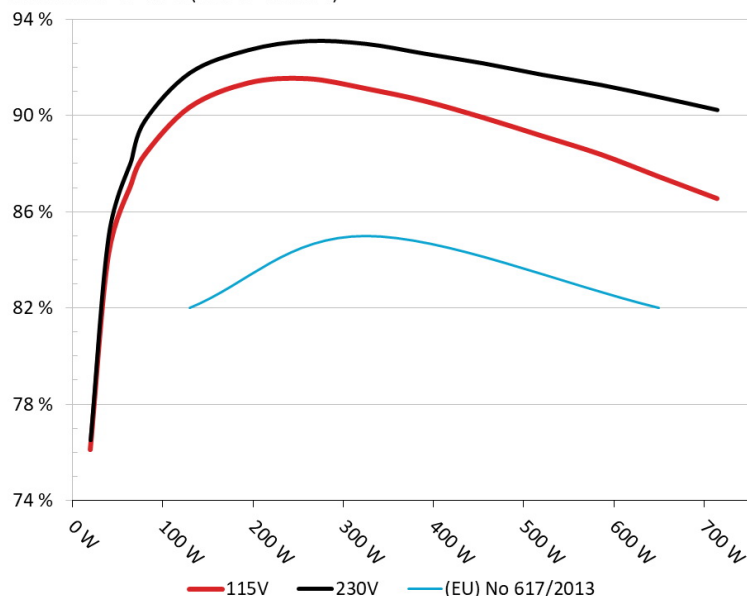
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Super Flower SF-650P14PE
Ambient: 37°C - 46°C (98.6°F - 114.8°F)

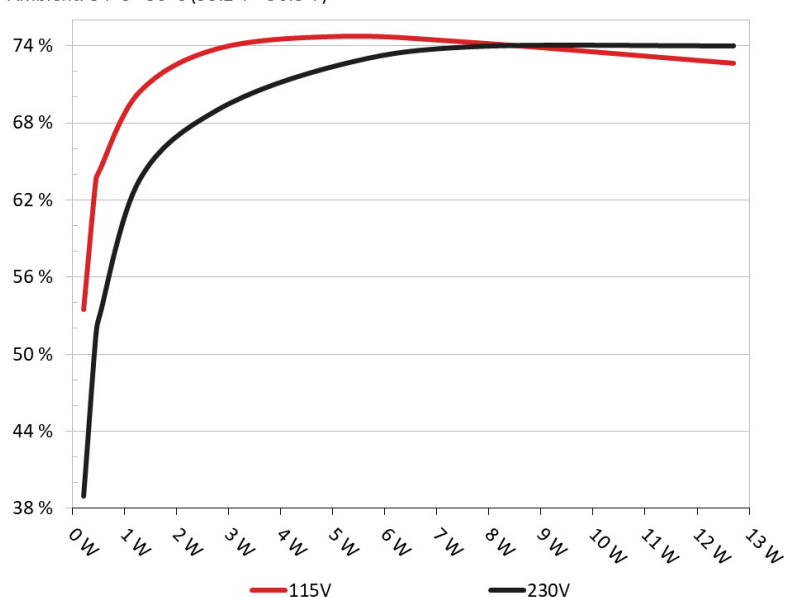


INFO

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

5VSB Efficiency: Super Flower SF-650P14PE
Ambient: 34°C - 36°C (93.2°F - 96.8°F)



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	0.042A	0.214	53.500%	0.066
	5.133V	0.400		115.13V
2	0.087A	0.447	63.494%	0.112
	5.133V	0.704		115.13V
3	0.542A	2.779	73.772%	0.343
	5.125V	3.767		115.10V
4	1.002A	5.125	74.730%	0.411
	5.114V	6.858		115.11V
5	1.502A	7.661	74.263%	0.444
	5.101V	10.316		115.12V
6	2.501A	12.700	72.642%	0.480
	5.077V	17.483		115.12V

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

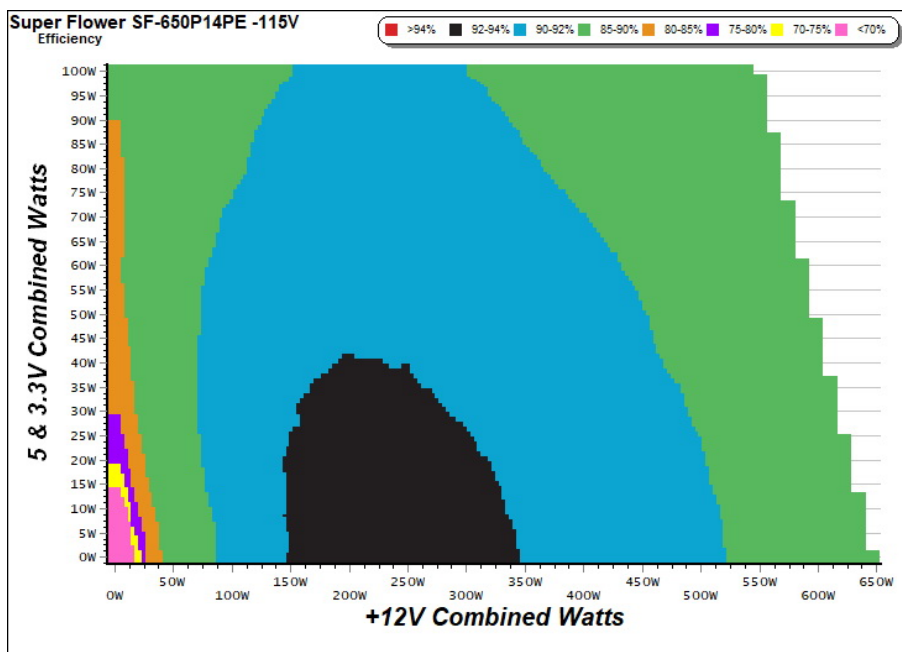
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.215	38.949%	0.028
	5.134V	0.552		230.27V
2	0.087A	0.448	51.376%	0.043
	5.134V	0.872		230.30V
3	0.542A	2.780	68.983%	0.173
	5.125V	4.030		230.28V
4	1.002A	5.126	72.493%	0.253
	5.115V	7.071		230.29V
5	1.502A	7.663	73.910%	0.304
	5.102V	10.368		230.29V
6	2.501A	12.702	73.982%	0.362
	5.078V	17.169		230.29V

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115V

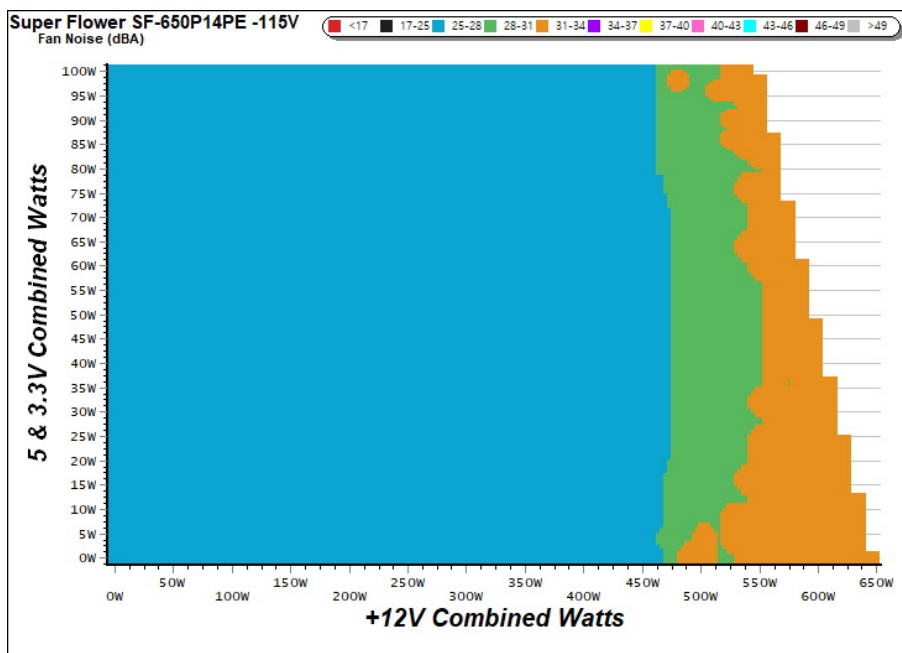
EFFICIENCY GRAPH 115V



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

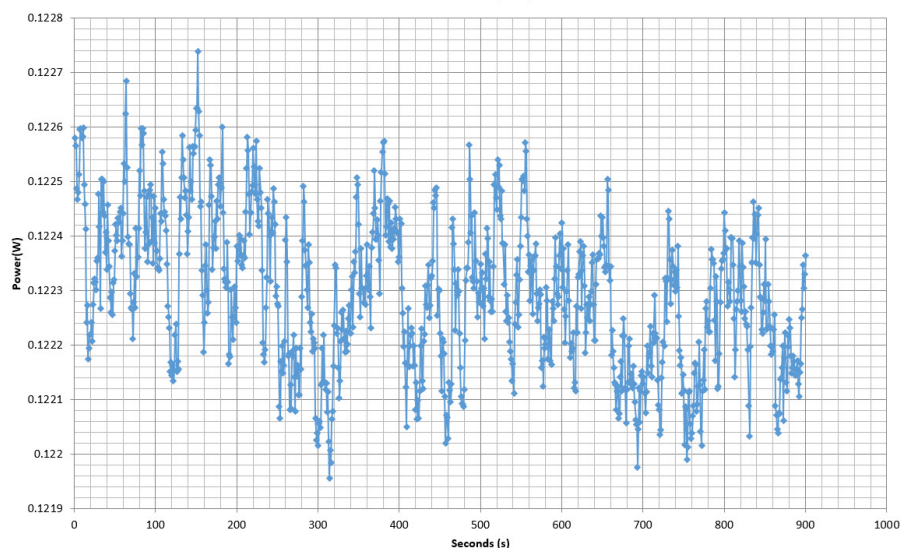
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - S1604223285 - 20/06/2017 - 08:42



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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COMMISSION REGULATION (EU) NO 617/2013 TESTING 115V

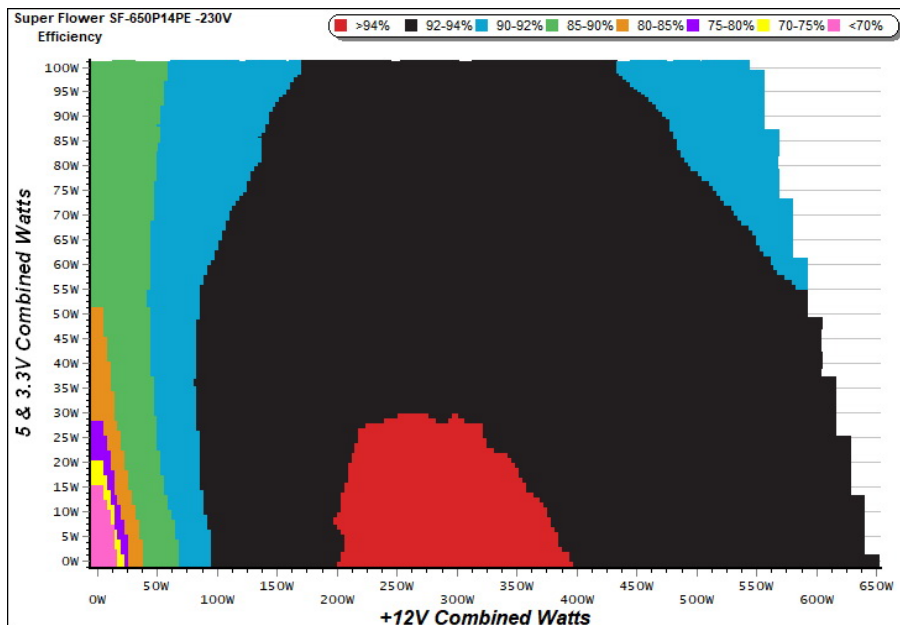
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230V

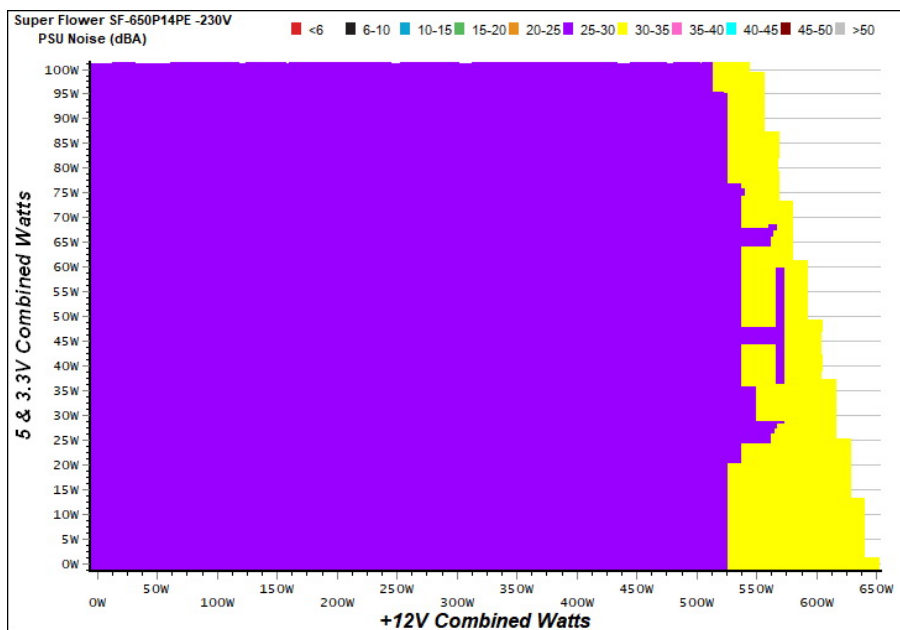
EFFICIENCY GRAPH 230V



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NOISE GRAPH 230V



INFO

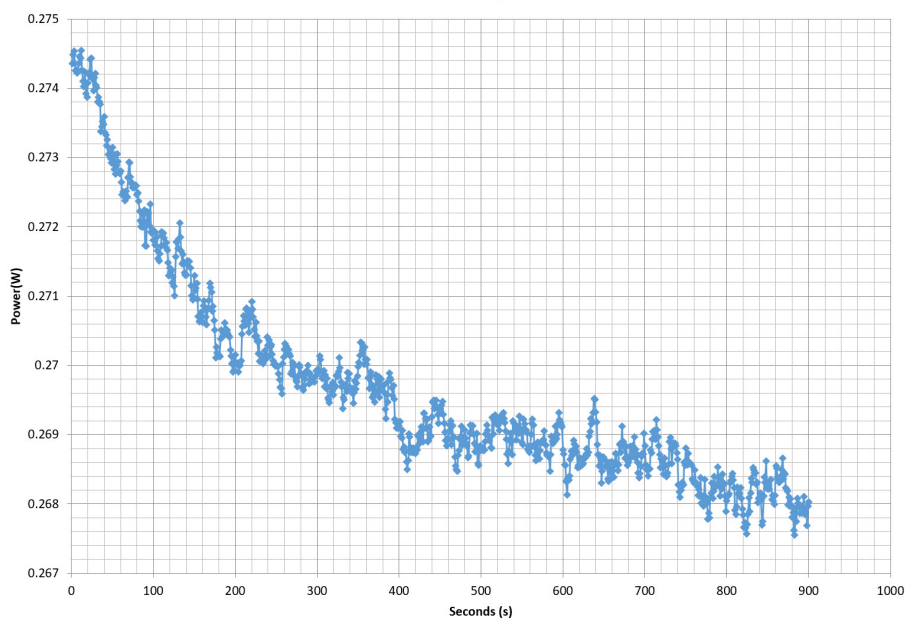
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VAMPIRE POWER -230V

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EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Super Flower Golden King 650W



Top side



Power specifications label

CERTIFICATIONS 115V




Aris Mpitsiopoulos
Lab Director

CERTIFICATIONS 230V



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