

Lab ID#: 617

Receipt Date: Jan 22, 2019

Test Date: Jan 27, 2019

Report:

Report Date: Jan 31, 2019

DUT INFORMATION

Brand	Thermaltake
Manufacturer (OEM)	Channel Well Technology
Series	Toughpower GF1
Model Number	TPD-0850FNFAGE-1
Serial Number	PSTPD0850FNFAGU1LF000041
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12
Rated Frequency (Hz)	47-63
Rated Power (W)	850
Type	ATX12V
Cooling	140mm Hydro Dynamic Bearing Fan [TT-1425 (A1425L12S)]
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	70.9	3	0.3
	Watts	120		850	15	3.6
Total Max. Power (W)		850				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18AWG	No
4+4 pin EPS12V (650mm)	1	1	16AWG	No
8 pin EPS12V (650mm)	1	1	16AWG	No
6+2 pin PCIe (700mm+150mm)	3	6	16-18AWG	No
SATA (500mm+150mm+150mm+150mm)	3	12	18AWG	No
4 pin Molex (500mm+150mm+150mm+150mm)	1	4	18AWG	No
FDD Adapter (100mm)	1	1	22AWG	No
AC Power Cord (1420mm) - C13 coupler	1	1	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	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	89.216%
Efficiency With 10W (≤500W) or 2% (>500W)	69.051
Average Efficiency 5VSB	77.695%
Standby Power Consumption (W)	0.0470163
Average PF	0.979
Avg Noise Output	28.45 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	90.852%
Average Efficiency 5VSB	77.325%
Standby Power Consumption (W)	0.0608747
Average PF	0.937
Avg Noise Output	27.91 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

TEST EQUIPMENT

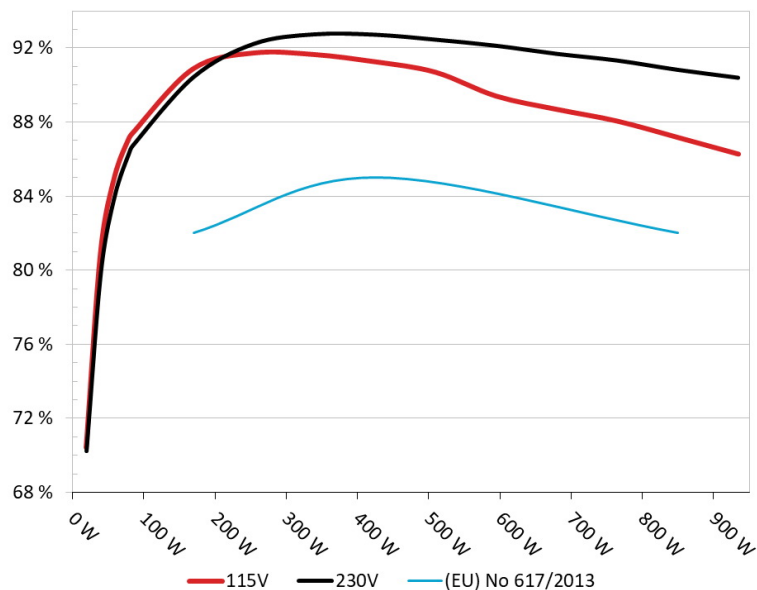
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Chroma 61604, Keysight AC6804B	
Power Analyzers	N4L PPA1530 x2, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Thermaltake TPD-0850FNFACE-1
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

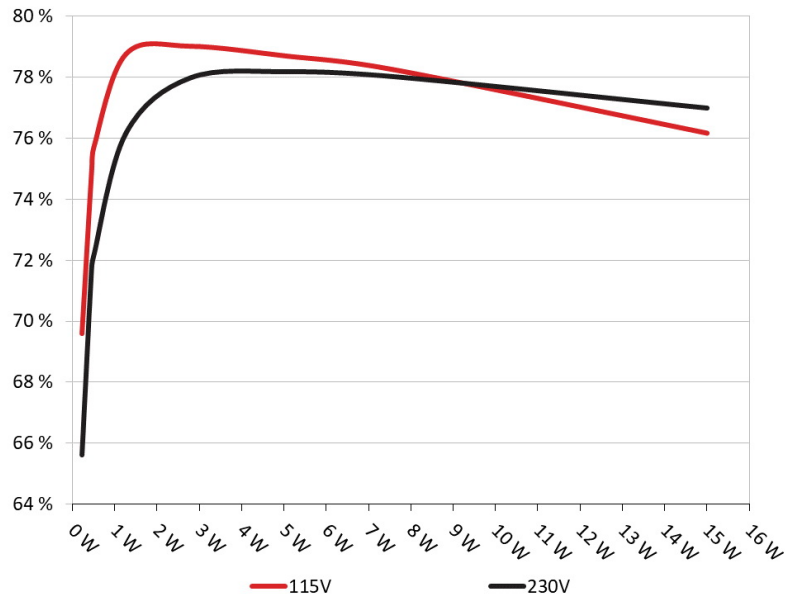


INFO

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: Thermaltake TPD-0850FNFACE-1
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	0.045A	0.229	69.605%	0.033
	5.078V	0.329		115.14V
2	0.090A	0.458	74.959%	0.061
	5.078V	0.611		115.14V
3	0.550A	2.788	79.025%	0.264
	5.067V	3.528		115.12V
4	1.000A	5.056	78.705%	0.356
	5.055V	6.424		115.13V
5	1.500A	7.566	78.266%	0.409
	5.044V	9.667		115.13V
6	3.000A	15.012	76.176%	0.472
	5.004V	19.707		115.14V

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

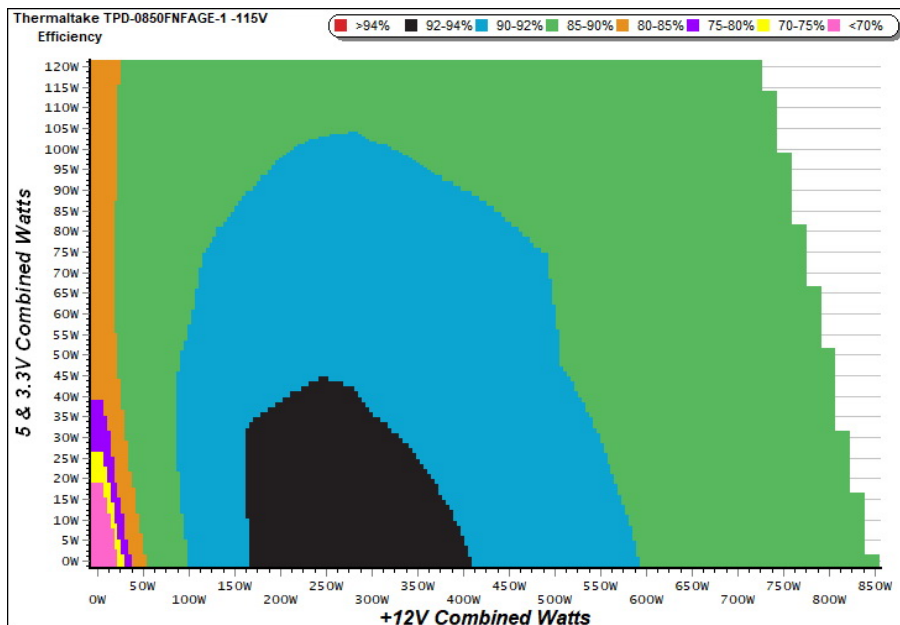
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229	65.616%	0.011
	5.078V	0.349		230.24V
2	0.090A	0.457	71.743%	0.019
	5.078V	0.637		230.24V
3	0.550A	2.787	77.980%	0.101
	5.067V	3.574		230.24V
4	1.000A	5.056	78.182%	0.169
	5.055V	6.467		230.24V
5	1.500A	7.563	78.025%	0.227
	5.042V	9.693		230.24V
6	3.000A	15.007	76.991%	0.330
	5.002V	19.492		230.22V

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115V

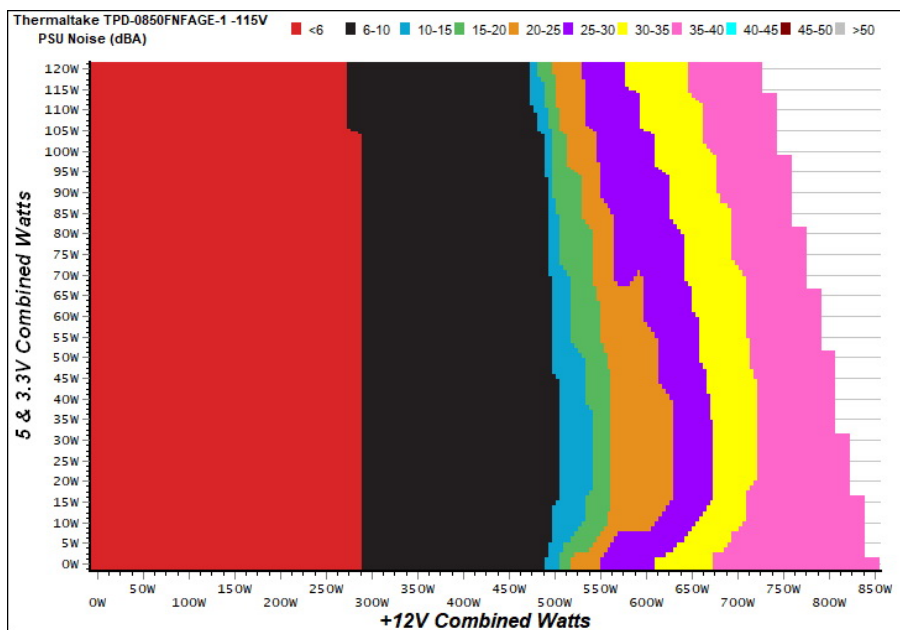
EFFICIENCY GRAPH 115V



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

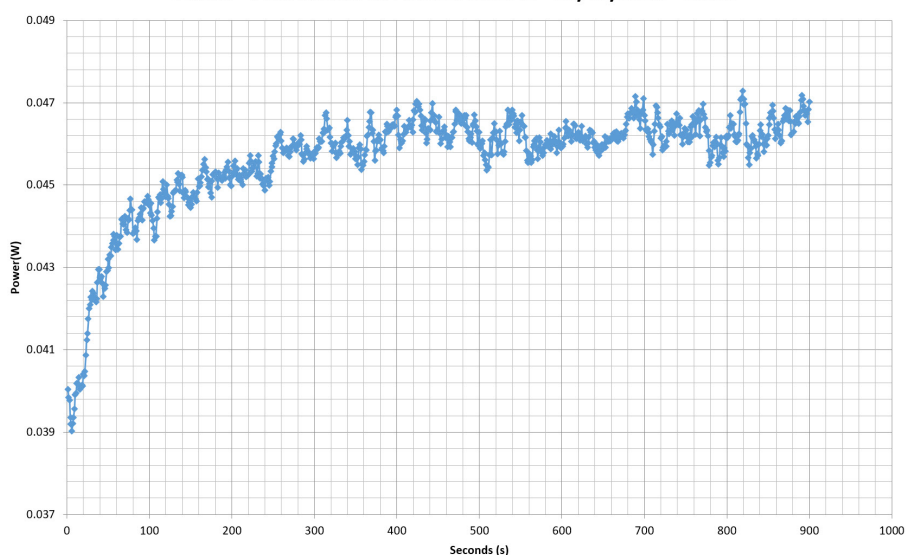
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - PSTPD0850FNFAGU1LF000041 - 28/01/2019 - 15:30



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

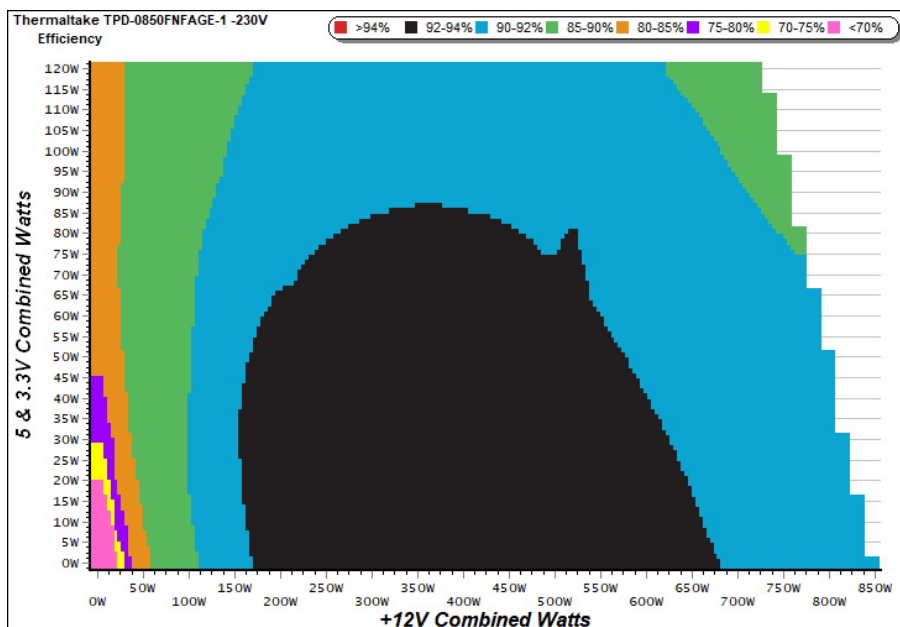
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230V

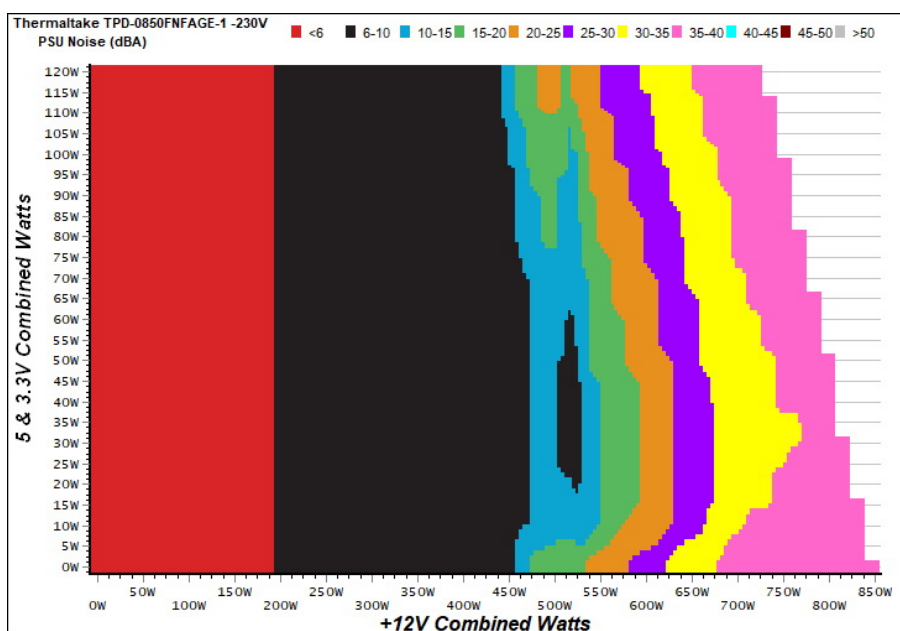
EFFICIENCY GRAPH 230V



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NOISE GRAPH 230V



INFO

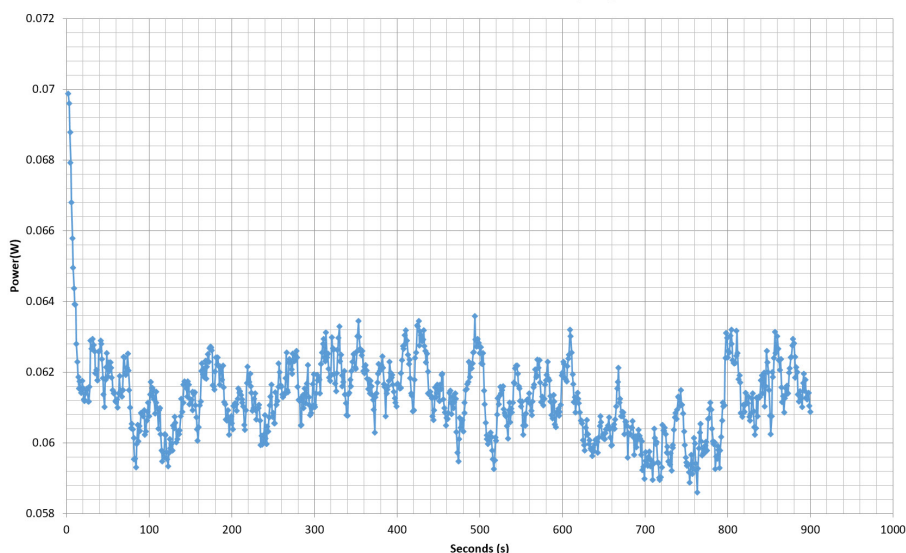
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EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Thermaltake Toughpower GF1 850W (#2)

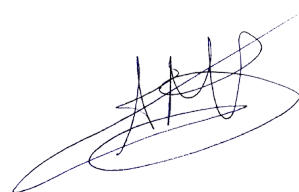


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Power specifications label

CERTIFICATIONS 115V

Aris Mpitsiopoulos
Lab Director

CERTIFICATIONS 230V



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