

Lab ID#: AD85002216
Receipt Date: Jul 25, 2023
Test Date: Jul 31, 2023

Report: 23PS2216A

Report Date: Aug 25, 2023

DUT INFORMATION

Brand	XPG
Manufacturer (OEM)	Channel Well Technology
Series	Core Reactor II
Model Number	COREREACTORII850GOLD
Serial Number	4N1680815250
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	47-63
Rated Frequency (Hz)	12-6
Rated Power (W)	850
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	X
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, 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, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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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	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.0 PSU Power Excursion	✓

115V

Average Efficiency	89.464%
Efficiency With 10W (≤500W) or 2% (>500W)	71.503
Average Efficiency 5VSB	79.454%
Standby Power Consumption (W)	0.0403000
Average PF	0.990
Avg Noise Output	32.43 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	91.387%
Average Efficiency 5VSB	78.595%
Standby Power Consumption (W)	0.0724000
Average PF	0.962
Avg Noise Output	30.00 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard++

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	70.8	3	0.3
	Watts	120		850	15	3.6
Total Max. Power (W)		850				

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (640mm)	1	1	16-20AWG	No
4+4 pin EPS12V (650mm)	2	2	16AWG	No
4+4 pin EPS12V (750mm)	1	1	16AWG	No
6+2 pin PCIe (650mm+150mm)	2	4	16-18AWG	No
6+2 pin PCIe (650mm)	2	2	16AWG	No
12+4 pin PCIe (650mm) (600W)	1	1	16-24AWG	No
SATA (500mm+150mm+150mm+150mm)	2	8	18AWG	No
4-pin Molex (500mm+150mm+150mm+150mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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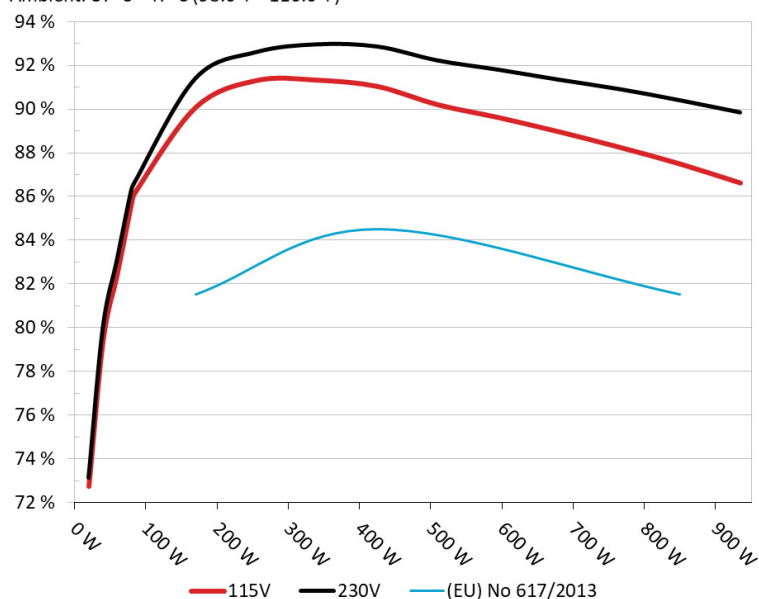
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: XPG Core Reactor II 850W

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



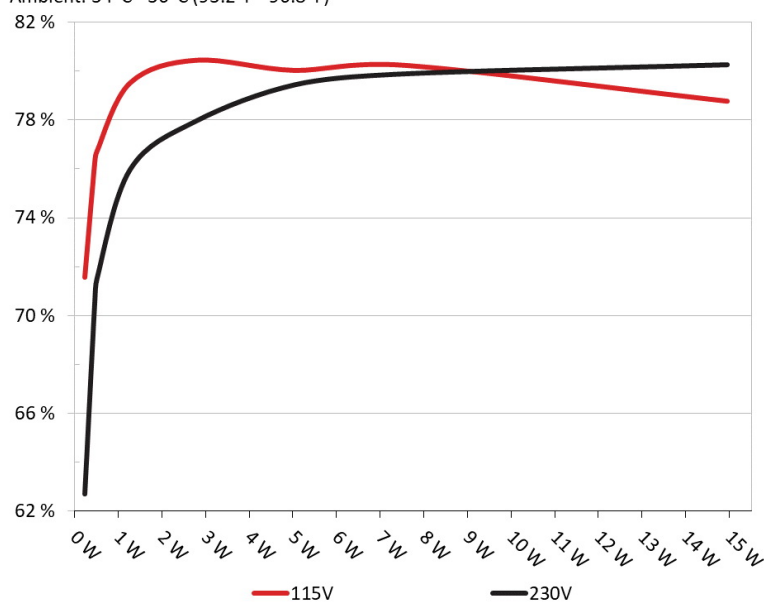
INFO

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: XPG Core Reactor II 850W

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	0.228W	71.07%	0.032
	5.068V	0.321W		115.17V
2	0.09A	0.456W	75.777%	0.06
	5.067V	0.602W		115.16V
3	0.55A	2.78W	79.949%	0.269
	5.054V	3.477W		115.16V
4	1A	5.043W	79.531%	0.369
	5.042V	6.34W		115.17V
5	1.5A	7.543W	79.743%	0.42
	5.028V	9.459W		115.16V
6	3A	14.957W	78.274%	0.487
	4.985V	19.11W		115.16V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228W	62.2%	0.011
	5.068V	0.366W		230.39V
2	0.09A	0.456W	70.04%	0.02
	5.067V	0.651W		230.39V
3	0.55A	2.78W	77.447%	0.103
	5.054V	3.59W		230.39V
4	1A	5.042W	78.928%	0.171
	5.041V	6.387W		230.39V
5	1.5A	7.542W	79.373%	0.23
	5.027V	9.503W		230.39V
6	3A	14.956W	79.747%	0.334
	4.985V	18.757W		230.38V

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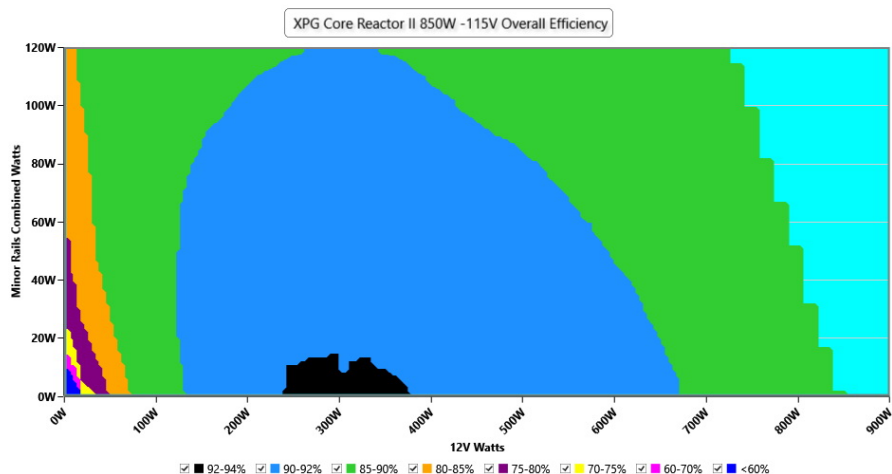
115V

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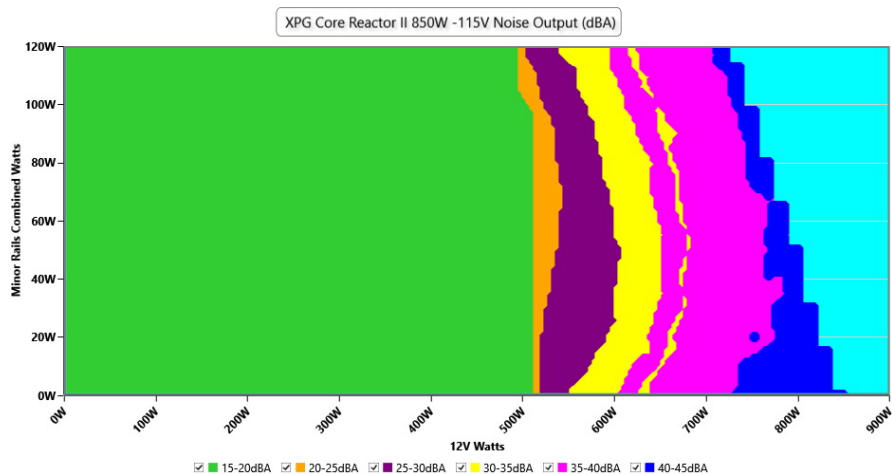
EFFICIENCY GRAPH 115V



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 (+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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.15 V	115.14 V	113.85 V	115.17 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	60.00 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.040 W	0.036 W	N/A	0.044 W	N/A	N/A
Apparent Power:	9.904 W	9.900 W	N/A	9.907 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

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

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	5.182A	1.965A	1.99A	0.986A	85.001	86.674%	895	20.6	40.54°C	0.977
	12.235V	5.09V	3.316V	5.072V	98.07				44.75°C	115.14V
20%	11.450A	2.949A	2.987A	1.185A	169.952	90.559%	900	20.9	40.67°C	0.99
	12.143V	5.086V	3.314V	5.065V	187.668				45.23°C	115.12V
50%	30.739A	4.924A	4.983A	1.784A	425.044	91.518%	915	21.5	42.44°C	0.992
	12.185V	5.079V	3.312V	5.047V	464.436				48.37°C	115.05V
100%	62.586A	8.894A	8.991A	2.996A	850.036	87.97%	2335	48.8	45.39°C	0.996
	12.149V	5.06V	3.303V	5.007V	966.278				55.46°C	114.92V

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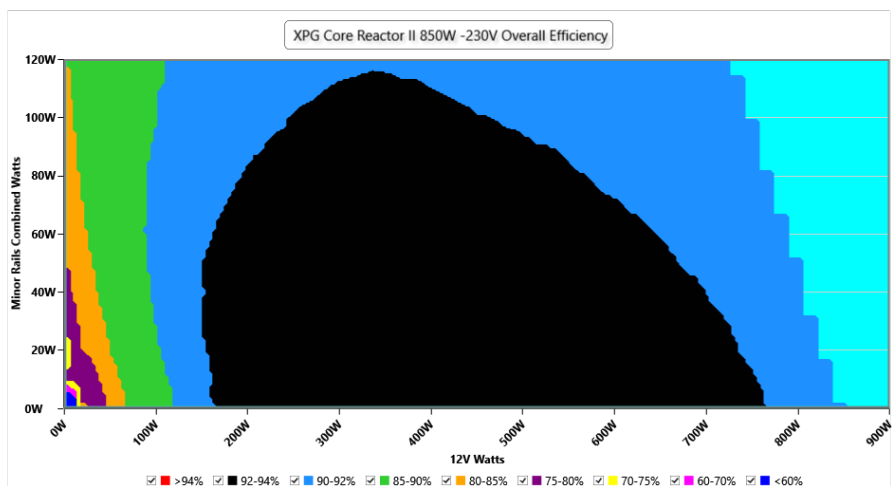
230V

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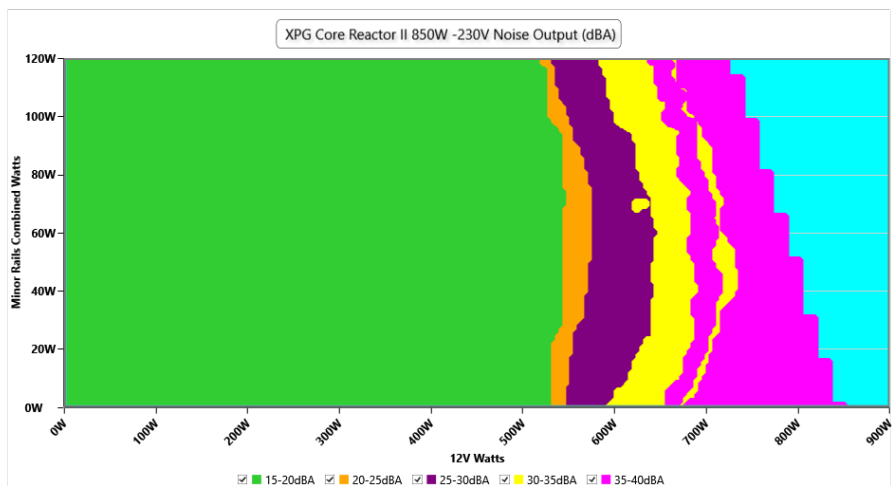
EFFICIENCY GRAPH 230V



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

NOISE GRAPH 230V



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 -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.38 V	230.36 V	227.70 V	230.40 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:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.14 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.072 W	0.061 W	N/A	0.096 W	N/A	N/A
Apparent Power:	33.110 W	33.103 W	N/A	33.119 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

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COMMISSION REGULATION (EU) NO 617/2013 TESTING 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%	5.180A	1.965A	1.99A	0.986A	85.003	87.159%	896	20.6	40.41°C	0.842
	12.238V	5.09V	3.316V	5.072V	97.527				44.66°C	230.39V
20%	11.450A	2.95A	2.987A	1.185A	169.961	91.884%	896	20.6	40.65°C	0.938
	12.145V	5.086V	3.314V	5.065V	184.978				45.29°C	230.38V
50%	30.744A	4.924A	4.983A	1.784A	425.074	93.343%	907	20.9	42.62°C	0.98
	12.183V	5.079V	3.312V	5.047V	455.386				48.65°C	230.35V
100%	62.600A	8.895A	8.992A	2.997A	850.089	90.885%	2323	48.8	45.68°C	0.989
	12.146V	5.059V	3.303V	5.006V	935.341				55.77°C	230.3V

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