



XPG Core Reactor II 1000W



Lab ID AD10002244

Certification ID 252244

Test Result Report ID: 23PS2243A

Certificate Issue Date: Sep 28, 2023

Scheme: ETA-EMI PSU

115V

230V

115V

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		XPG
Model		Core Reactor II 1000W
OEM/ODM		Channel Well Technology
Serial Number		
Product Specifications		
Manufacturer-Provided Information		
Vrms	100-240	
Arms	13	

□□□□ (Hz)	50-60
□□□□ (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Fluid Dynamic Bearing Fan (HA13525H12SF-Z)
□□□□	X
Cybenetics Testing Information	
Lab ID	AD10002244
Date of receipt	Aug 3, 2023
Testing Date	Sep 25, 2023
Report Issued Date	Sep 28, 2023
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (640mm)	1	1	16-20AWG	□
4+4 pin EPS 12V □□ (650mm)	2	2	16AWG	□
6+2pin PCIe□□ (650mm+150mm)	3	6	16-18AWG	□
2x 6+2pin PCIe□□ (550mm)	1	2	16AWG	□
12+4 pin PCIe (650mm) (600W)	1	1	16-24AWG	□
SATA□□ (500mm+150mm+150mm) / 4-pin Molex (+150mm)	3	9 / 3	18AWG	□

□		3.3V	5V	12V	5VSB	-12V
□□□	□□	22	22	83.5	3	0.3
	□	120		1000	15	3.6
□□□□ (W)		1000				

Test Results

Temperature & Compliance Info

(°C / °F)	28-32 / 82.4-89.6
ErP Lot3/6	✓
(EU) No 617/2013	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.0 Compliance	✓

Performance Summary

115V

Accredited	
(>1450 load combinations)	89.071%
Average Noise Output (>1450 Load Combinations)	27.43dBA
PF (>1450 Load Combinations)	0.985
Efficiency With 10W (≤500W) or 2% (>500W) Load	78.306%
	0.0133W
Non-Accredited	
12V Ripple (Full Load)	19.42mV
5V Ripple (Full Load)	8.84mV
3.3V Ripple (Full Load)	9.20mV
5VSB Ripple (Full Load)	10.71mV
12V Load Regulation	0.59%

5V Load Regulation	0.34%
3.3V Load Regulation	0.48%
5VSB Load Regulation	1.27%
Inrush Current	25.620A

230V

Accredited		
η ₁₄₅₀ (>1450 load combinations)	91.148%	
Average Noise Output (>1450 Load Combinations)	27.74dBA	
PF ₁₄₅₀ (>1450 Load Combinations)	0.960	
Efficiency With 10W (≤500W) or 2% (>500W) Load	78.018%	
η ₁₀₀₀	0.0712W	
Non-Accredited		
12V Ripple (Full Load)	18.80mV	
5V Ripple (Full Load)	9.10mV	
3.3V Ripple (Full Load)	9.17mV	
5VSB Ripple (Full Load)	10.36mV	
12V Load Regulation	0.60%	
5V Load Regulation	0.40%	
3.3V Load Regulation	0.51%	
5VSB Load Regulation	1.27%	
Inrush Current	47.920A	
12V Transient Response (200%)	11.46V	
5V Transient Response (200%)	4.960V	
3.3V Transient Response (200%)	3.188V	
5VSB Transient Response (200%)	4.949V	
η ₁₀₀₀ & PG ₁₀₀₀	21.10ms	
AC Loss to PWR_OK Hold Up Time	18.70ms	
PWR_OK Inactive to DC Loss Delay	2.40ms	
PSU Timings: T1 (20% / 100%)	62.0ms	61.0ms
PSU Timings: T3 (20% / 100%)	129.0ms	130.0ms
OPP (30.49°C / 41.91°C)	126.72%	120.71%

|||| & PG||

Hold-Up Time (ms)	21.1
AC Loss to PWR_OK Hold Up Time (ms)	18.7
PWR_OK Inactive to DC Loss Delay (ms)	2.4



Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.85 V	114.79 V	113.85 V	114.93 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.419	1.418	1.340	1.422	1.490	PASS
Mains Voltage THD:	0.15 %	0.10 %	N/A	0.26 %	2.00 %	PASS
Real Power:	0.013 W	0.000 W	N/A	0.027 W	N/A	N/A
Apparent Power:	11.009 W	10.981 W	N/A	11.045 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

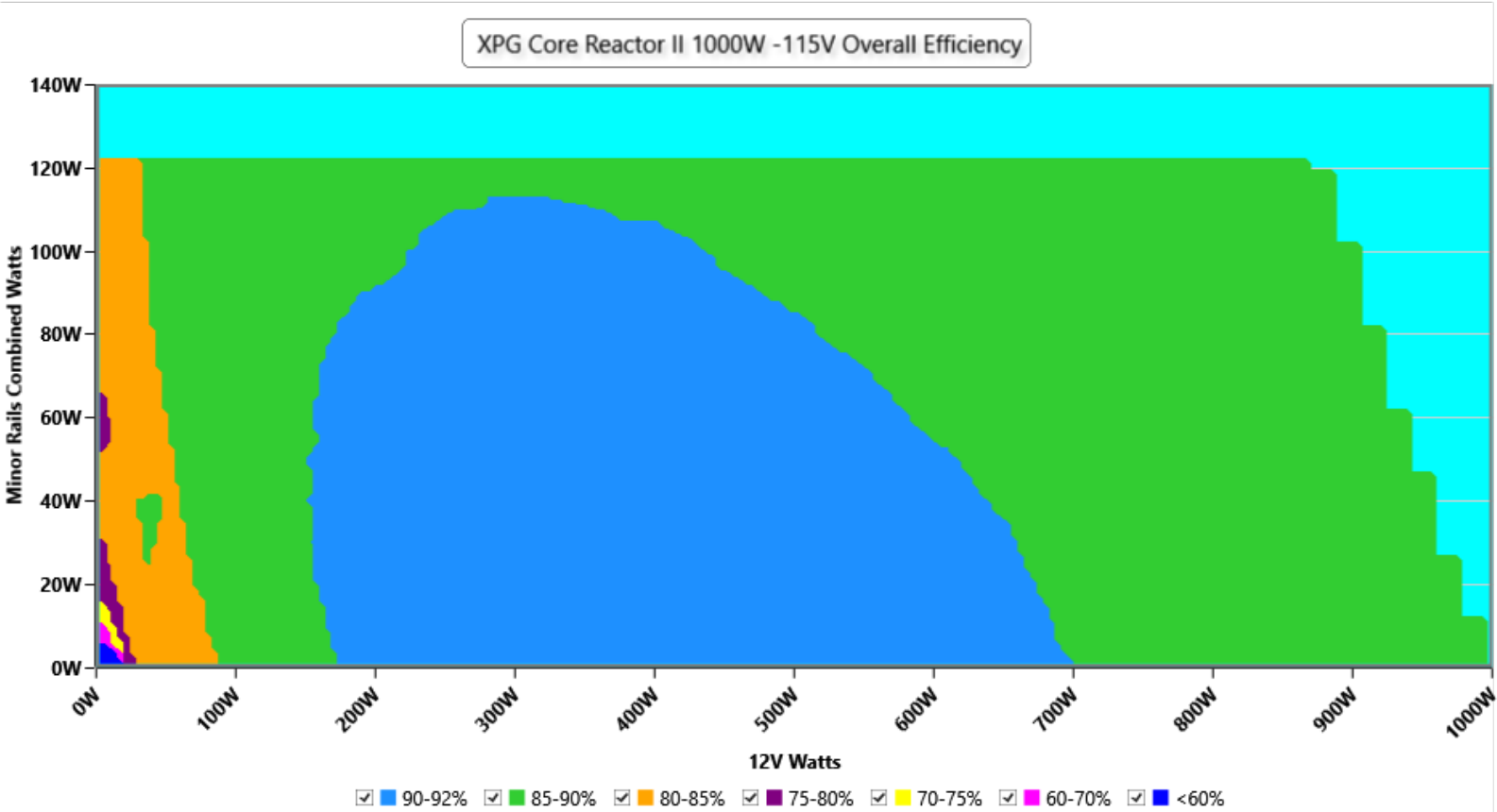
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.88 V	229.80 V	227.70 V	229.93 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.14 %	0.10 %	N/A	0.20 %	2.00 %	PASS
Real Power:	0.071 W	0.042 W	N/A	0.099 W	N/A	N/A
Apparent Power:	38.036 W	37.967 W	N/A	38.089 W	N/A	N/A

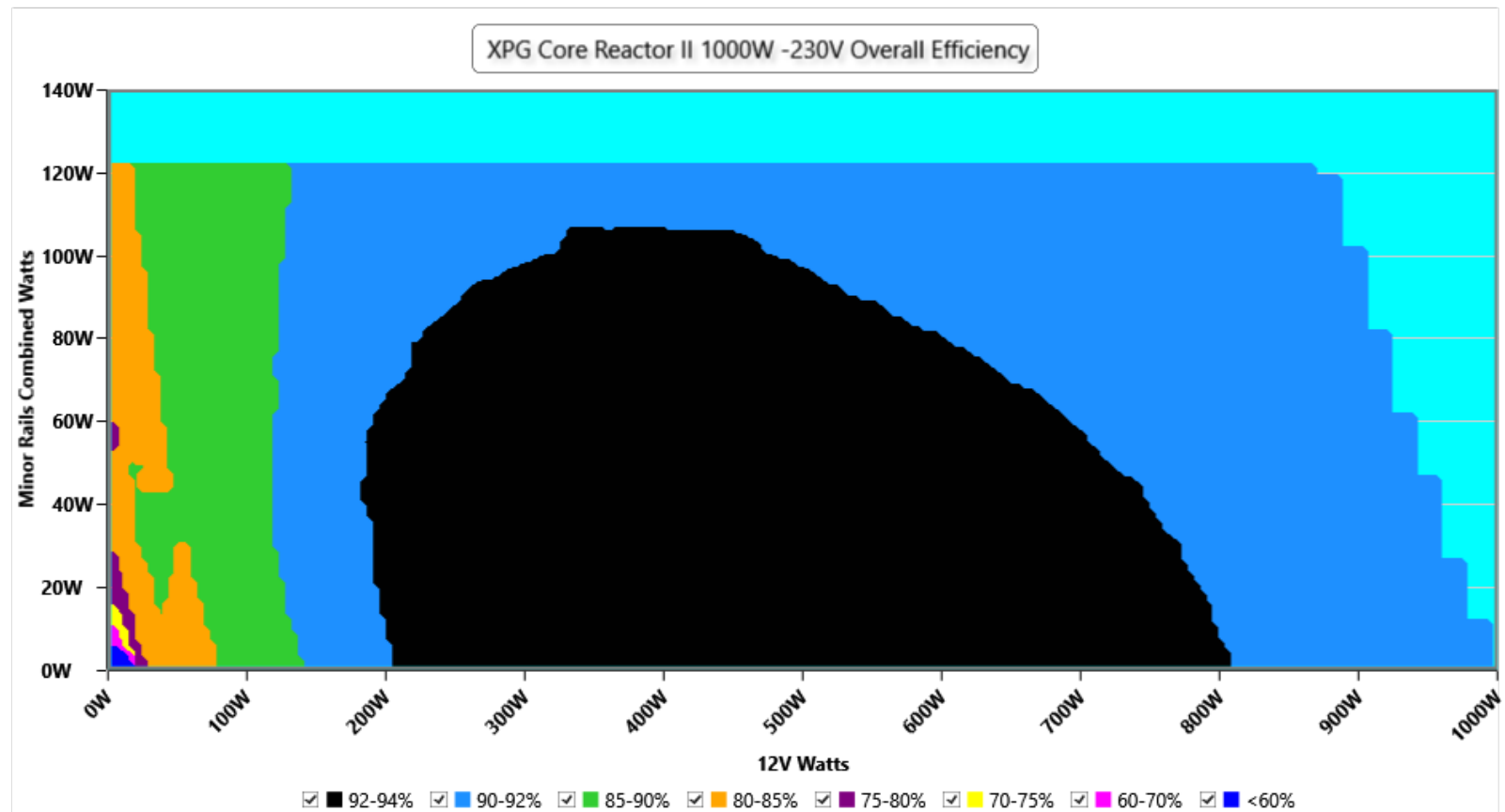
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A
---------------	-------	-----	-----	-----	-----	-----



115V



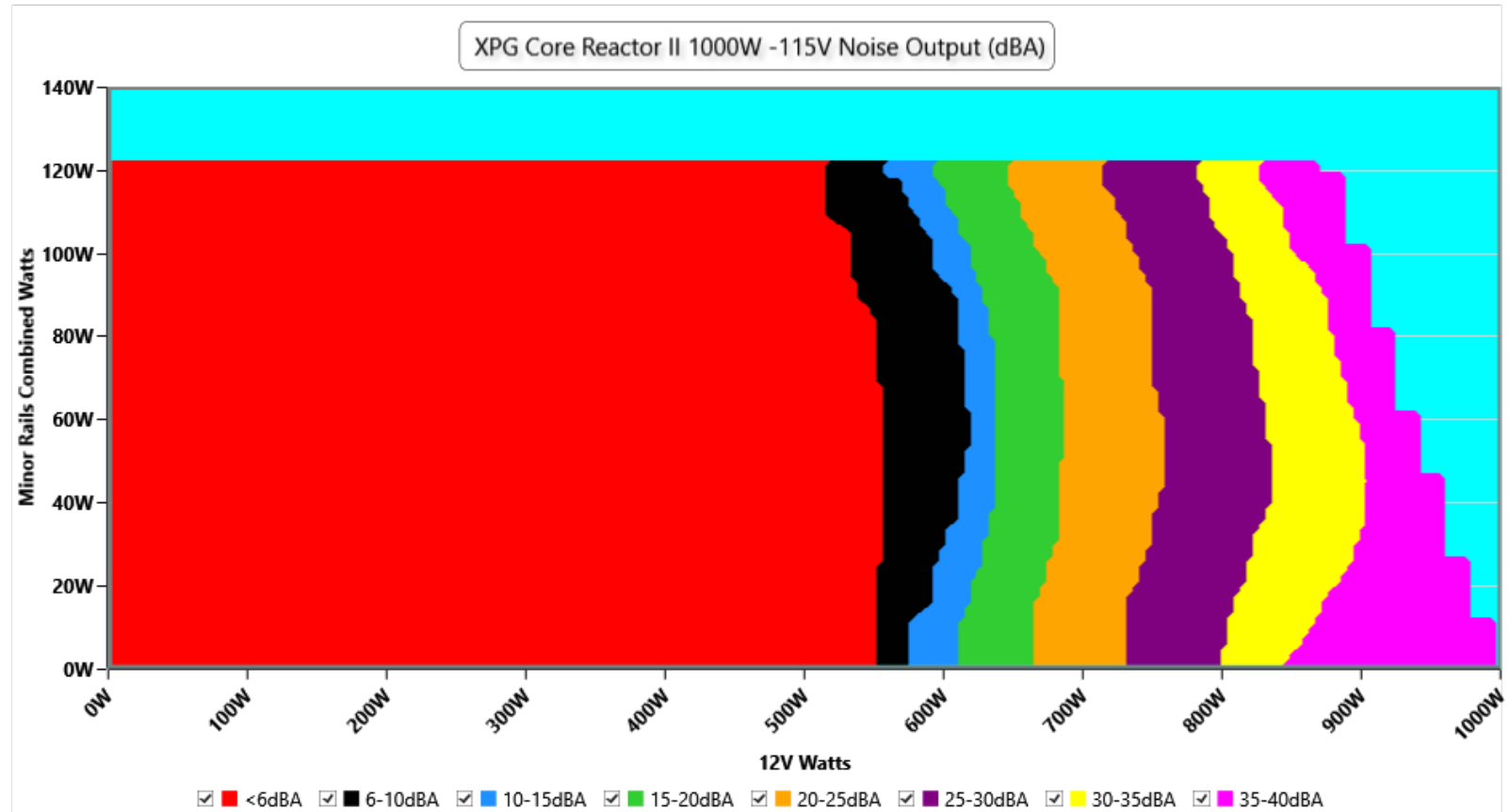
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



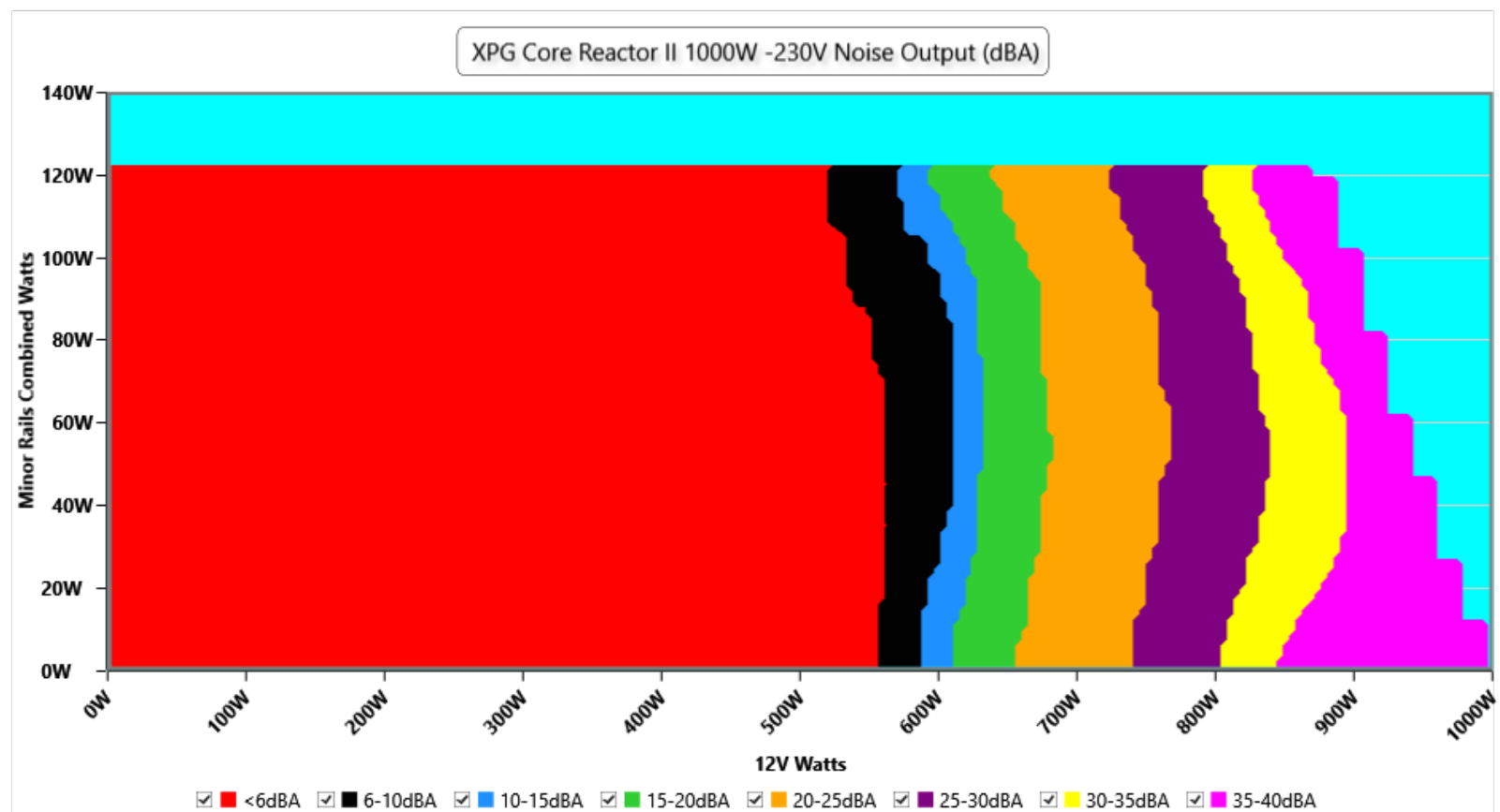
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V

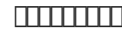


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails



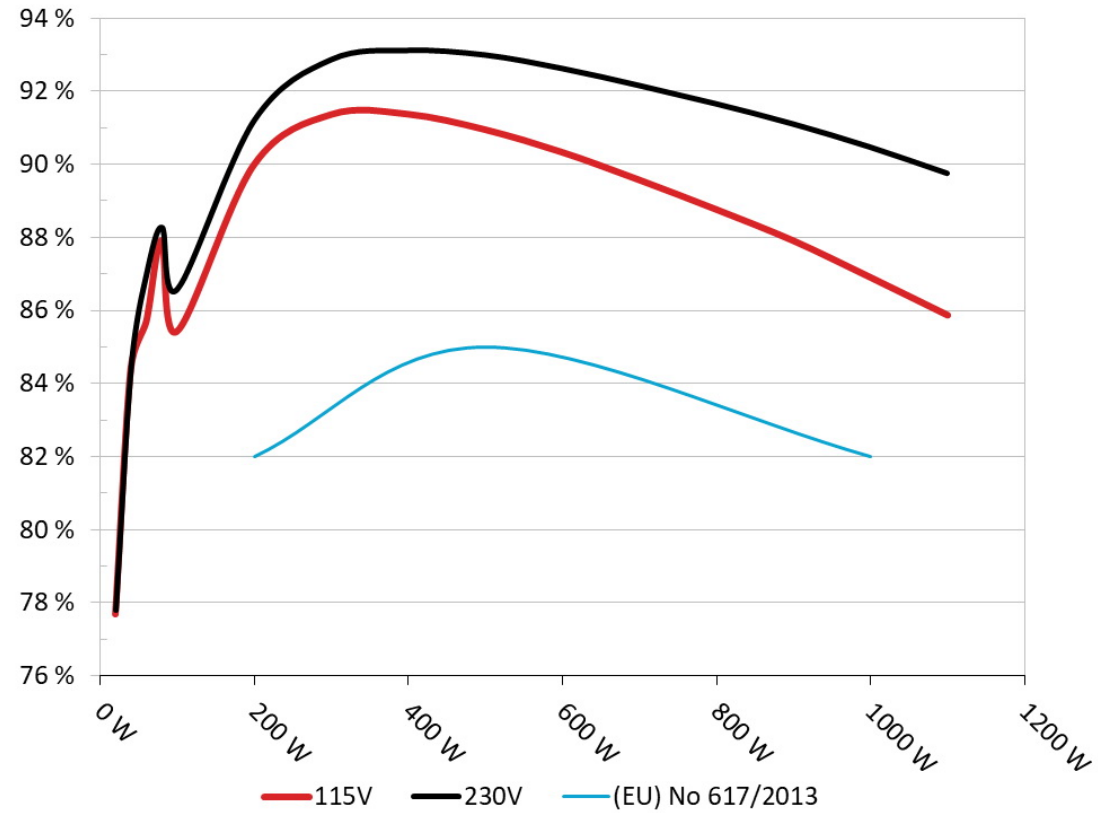
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance



Efficiency: XPG Core Reactor II 1000W

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

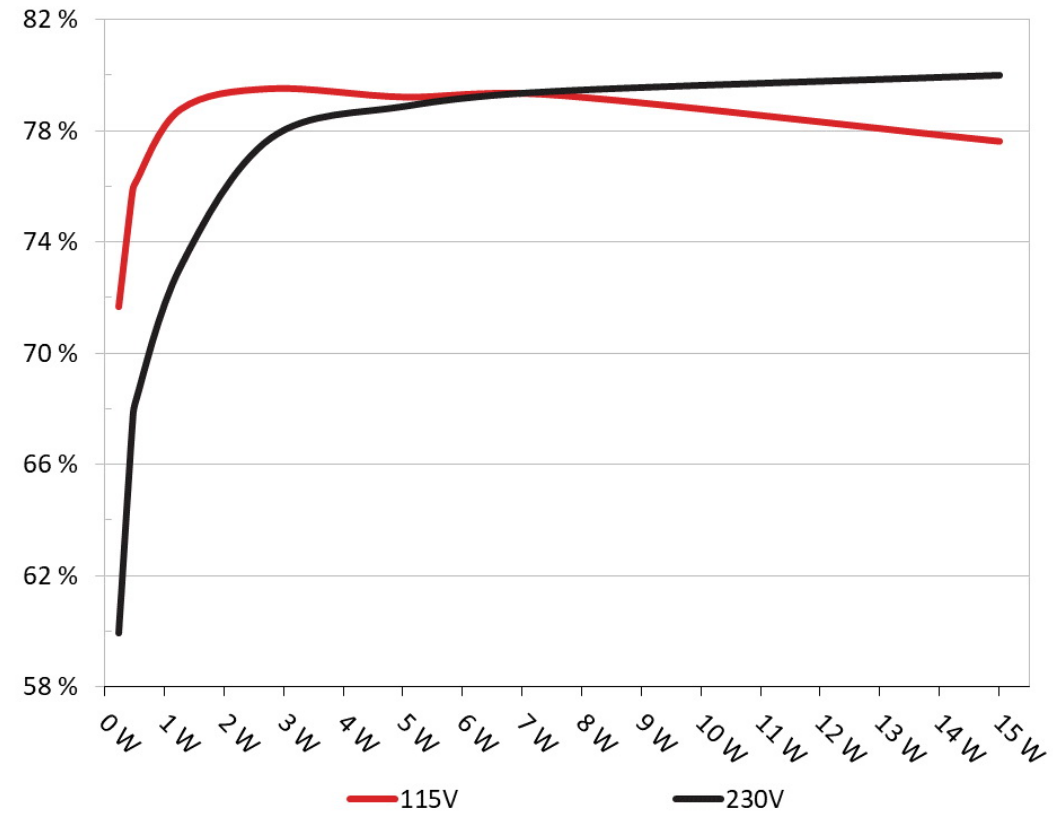


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb

5VSB Efficiency: XPG Core Reactor II 1000W

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

5Vsb (ErP Lot3/6 & CEC)

115V

#	5VSB	DC/AC ()		PF/AC
1	0.045A	0.228W	71.679%	0.032
	5.065V	0.318W		114.84V
2	0.09A	0.456W	75.78%	0.059
	5.064V	0.602W		114.85V
3	0.55A	2.78W	79.502%	0.271
	5.054V	3.497W		114.84V
4	1A	5.045W	79.195%	0.36
	5.044V	6.371W		114.84V
5	1.5A	7.551W	79.27%	0.423
	5.034V	9.526W		114.85V
6	3A	15.006W	77.612%	0.503
	5.002V	19.335W		114.83V

230V

#	5VSB	DC/AC ()		PF/AC
1	0.045A	0.228W	59.933%	0.011
	5.064V	0.381W		229.86V
2	0.09A	0.456W	67.41%	0.02
	5.064V	0.676W		229.85V
3	0.55A	2.78W	77.724%	0.102
	5.054V	3.577W		229.85V
4	1A	5.045W	78.87%	0.17
	5.045V	6.397W		229.85V
5	1.5A	7.551W	79.405%	0.231
	5.034V	9.51W		229.85V
6	3A	15.006W	79.979%	0.326
	5.002V	18.763W		229.85V

Supplementary Tests (For Reference)

10-110%□□□

115V

□	12V	5V	3.3V	5VSB	DC/AC (□)	□	□□□ (RPM)	□□□□□ (dB[A])	□ (□□ /□□)	PF/AC □
10%	6.466A	1.975A	1.971A	0.993A	99.983	85.432%	394	<6.0	40.06°C	0.972
	12.124V	5.062V	3.348V	5.036V	117.033				44.32°C	114.82V
20%	13.947A	2.963A	2.958A	1.194A	199.927	89.998%	394	<6.0	40.86°C	0.982
	12.119V	5.062V	3.347V	5.025V	222.145				45.45°C	114.79V
30%	21.818A	3.457A	3.451A	1.377A	299.969	91.371%	394	<6.0	41.3°C	0.983
	12.096V	5.061V	3.347V	5.085V	328.302				46.32°C	114.76V
40%	29.636A	3.952A	3.945A	1.572A	399.476	91.379%	395	<6.0	41.57°C	0.983
	12.089V	5.061V	3.346V	5.089V	437.167				47.13°C	114.73V
50%	37.135A	4.94A	4.933A	1.772A	499.201	90.958%	395	<6.0	42.1°C	0.986
	12.083V	5.06V	3.345V	5.081V	548.826				48.14°C	114.7V
60%	44.705A	5.928A	5.92A	1.972A	599.737	90.337%	396	<6.0	42.66°C	0.988
	12.077V	5.061V	3.344V	5.071V	663.894				49.21°C	114.65V
70%	52.216A	6.915A	6.908A	2.173A	699.472	89.579%	753	20.2	43.19°C	0.99
	12.072V	5.062V	3.344V	5.062V	780.853				50.22°C	114.62V
80%	59.805A	7.903A	7.896A	2.275A	799.486	88.771%	1025	30.3	43.7°C	0.991
	12.066V	5.062V	3.343V	5.054V	900.615				52.01°C	114.58V
90%	67.739A	8.398A	8.378A	2.378A	899.292	87.917%	1448	40.8	44.39°C	0.992
	12.058V	5.06V	3.342V	5.047V	1022.891				53.46°C	114.54V
100%	75.475A	8.895A	8.892A	2.983A	999.326	86.914%	1880	47.6	45.88°C	0.993
	12.053V	5.059V	3.34V	5.028V	1149.796				56.01°C	114.5V
110%	83.137A	9.885A	9.967A	2.987A	1099.947	85.875%	2176	50.5	46.68°C	0.994
	12.048V	5.058V	3.341V	5.022V	1280.875				57.59°C	114.47V
CL1	0.114A	14.254A	14.251A	0A	121.297	83.067%	399	<6.0	41.15°C	0.983
	12.125V	5.065V	3.347V	5.051V	146.025				46.62°C	114.81V

CL2	0.114A	21.648A	0A	0A	111.284	81.187%	399	<6.0	40.63°C	0.979
	12.128V	5.077V	3.359V	5.053V	137.072				48.01°C	114.82V
CL3	0.114A	0A	21.657A	0A	73.981	75.197%	398	<6.0	40.61°C	0.974
	12.129V	5.079V	3.352V	5.053V	98.383				49.71°C	114.83V
CL4	82.940A	0A	0A	0A	999.895	87.64%	1755	45.1	45.04°C	0.993
	12.056V	5.08V	3.358V	5.096V	1140.925				55.99°C	114.51V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□ □)	□□	□□□□ (RPM)	□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	6.467A	1.976A	1.972A	0.993A	99.989	86.59%	393	<6.0	40.14°C	0.884
	12.123V	5.061V	3.347V	5.036V	115.474				44.43°C	229.83V
20%	13.950A	2.964A	2.959A	1.194A	199.936	91.207%	393	<6.0	40.6°C	0.943
	12.117V	5.06V	3.346V	5.025V	219.212				45.21°C	229.81V
30%	21.823A	3.459A	3.453A	1.377A	299.986	92.864%	394	<6.0	41.29°C	0.962
	12.094V	5.06V	3.345V	5.083V	323.036				46.31°C	229.8V
40%	29.645A	3.953A	3.947A	1.572A	399.521	93.114%	395	<6.0	41.95°C	0.969
	12.087V	5.059V	3.344V	5.089V	429.071				47.47°C	229.78V
50%	37.146A	4.942A	4.936A	1.772A	499.243	92.989%	395	<6.0	42.15°C	0.975
	12.080V	5.059V	3.343V	5.08V	536.885				48.22°C	229.77V
60%	44.718A	5.93A	5.924A	1.972A	599.785	92.62%	396	<6.0	42.71°C	0.977
	12.075V	5.06V	3.343V	5.071V	647.581				49.23°C	229.75V
70%	52.231A	6.917A	6.912A	2.174A	699.528	92.155%	710	18.4	43.03°C	0.98
	12.070V	5.06V	3.343V	5.061V	759.081				50.04°C	229.74V
80%	59.823A	7.907A	7.901A	2.276A	799.55	91.654%	1007	29.8	43.87°C	0.981
	12.063V	5.06V	3.341V	5.053V	872.363				52.01°C	229.71V
90%	67.758A	8.401A	8.383A	2.378A	899.356	91.105%	1430	40.1	44.04°C	0.982
	12.056V	5.059V	3.34V	5.046V	987.16				53.09°C	229.7V
100%	75.492A	8.898A	8.897A	2.984A	999.388	90.474%	1843	46.8	45.31°C	0.983
	12.050V	5.057V	3.338V	5.027V	1104.615				55.33°C	229.68V

110%	83.161A	9.89A	9.98A	2.988A	1099.99	89.754%	2176	50.5	46.66°C	0.985
	12.045V	5.056V	3.336V	5.021V	1225.558				57.59°C	229.66V
CL1	0.116A	14.258A	14.266A	0A	121.304	83.774%	399	<6.0	40.06°C	0.914
	12.124V	5.064V	3.343V	5.05V	144.804				45.54°C	229.83V
CL2	0.114A	21.656A	0A	0A	111.294	81.813%	398	<6.0	40.25°C	0.907
	12.127V	5.075V	3.355V	5.053V	136.036				47.31°C	229.83V
CL3	0.114A	0A	21.679A	0A	73.985	75.879%	397	<6.0	40.5°C	0.86
	12.128V	5.078V	3.349V	5.053V	97.505				49.51°C	229.83V
CL4	82.959A	0A	0A	0A	999.935	91.109%	1718	44.7	45.56°C	0.983
	12.053V	5.079V	3.355V	5.095V	1097.518				56.5°C	229.68V

The results above are not used in the certification process

20-80mm

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.228A	0.492A	0.492A	0.198A	19.996	77.689%	390	<6.0	36.64°C	0.888
	12.095V	5.076V	3.356V	5.058V	25.739				39.73°C	114.85V
40W	2.704A	0.689A	0.688A	0.297A	39.996	84.414%	391	<6.0	37.24°C	0.935
	12.090V	5.076V	3.356V	5.055V	47.382				40.58°C	114.84V
60W	4.178A	0.888A	0.886A	0.396A	59.995	85.695%	391	<6.0	38.36°C	0.955
	12.092V	5.068V	3.351V	5.051V	70.007				42.25°C	114.83V
80W	5.648A	1.086A	1.084A	0.495A	79.932	87.925%	392	<6.0	39.37°C	0.973
	12.093V	5.064V	3.35V	5.048V	90.91				43.28°C	114.83V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□□)	□□	□□□□ (RPM)	□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.228A	0.492A	0.492A	0.198A	20.001	77.81%	390	<6.0	36.61°C	0.499
	12.095V	5.077V	3.355V	5.058V	25.707				39.69°C	229.84V
40W	2.704A	0.69A	0.688A	0.297A	39.999	84.479%	390	<6.0	37.14°C	0.698
	12.090V	5.076V	3.355V	5.055V	47.349				40.43°C	229.84V
60W	4.179A	0.888A	0.886A	0.396A	59.998	87.005%	391	<6.0	38.07°C	0.799
	12.092V	5.067V	3.35V	5.051V	68.959				41.61°C	229.84V
80W	5.649A	1.086A	1.084A	0.495A	79.936	88.273%	391	<6.0	39.16°C	0.847
	12.092V	5.063V	3.348V	5.048V	90.56				42.99°C	229.83V

The results above are not used in the certification process

□□□□

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.87mV	6.88mV	5.90mV	6.11mV	Pass
20% Load	7.11mV	7.34mV	6.10mV	5.95mV	Pass
30% Load	14.89mV	6.98mV	6.05mV	6.05mV	Pass
40% Load	12.94mV	7.44mV	6.62mV	6.46mV	Pass
50% Load	11.31mV	10.11mV	12.11mV	6.62mV	Pass
60% Load	10.59mV	6.93mV	6.67mV	6.47mV	Pass
70% Load	10.95mV	7.44mV	6.72mV	7.85mV	Pass
80% Load	11.20mV	7.90mV	8.46mV	8.26mV	Pass
90% Load	12.02mV	8.37mV	9.49mV	8.36mV	Pass
100% Load	19.42mV	8.84mV	9.20mV	10.71mV	Pass
110% Load	19.48mV	8.78mV	10.79mV	10.45mV	Pass
Crossload1	7.82mV	9.14mV	9.77mV	8.94mV	Pass
Crossload2	10.03mV	15.09mV	6.82mV	8.11mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	8.75mV	7.08mV	12.47mV	8.26mV	Pass
Crossload4	18.97mV	8.07mV	6.73mV	9.98mV	Pass

The results above are not used in the certification process

230V

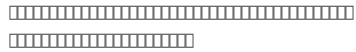
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.88mV	6.67mV	5.74mV	6.16mV	Pass
20% Load	6.39mV	6.62mV	6.11mV	6.05mV	Pass
30% Load	16.27mV	7.14mV	6.31mV	6.72mV	Pass
40% Load	13.15mV	7.03mV	6.41mV	6.78mV	Pass
50% Load	12.23mV	10.57mV	11.90mV	6.98mV	Pass
60% Load	12.59mV	6.98mV	7.34mV	7.18mV	Pass
70% Load	11.56mV	7.08mV	6.67mV	7.64mV	Pass
80% Load	11.97mV	7.29mV	8.62mV	8.06mV	Pass
90% Load	12.38mV	7.39mV	8.21mV	8.62mV	Pass
100% Load	18.80mV	9.10mV	9.17mV	10.36mV	Pass
110% Load	20.27mV	9.49mV	9.81mV	10.73mV	Pass
Crossload1	8.29mV	9.30mV	9.64mV	9.13mV	Pass
Crossload2	9.00mV	14.53mV	6.31mV	7.95mV	Pass
Crossload3	7.42mV	6.88mV	11.90mV	8.41mV	Pass
Crossload4	18.81mV	8.10mV	7.05mV	10.36mV	Pass

The results above are not used in the certification process

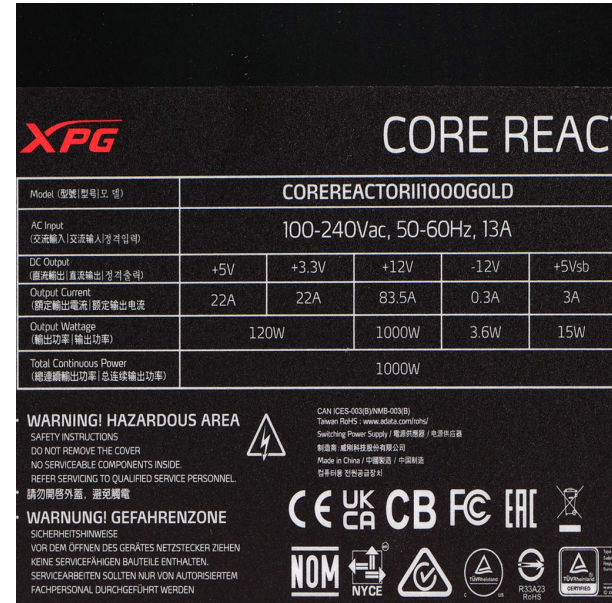
XPG Core Reactor II 1000W



Top side

Cybenetics

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus



Power specifications label

[illegible]ETA DELTA

LAMBDA[]

PHI

SAFE

www.cybenetics.com - info@cybenetics.com