ASRock Phantom Gaming PG-1000G (ATX v3.1)

Serial Number S4351030036

Lab ID AR10002695

Certification ID 252695

Test Result Report ID: 24PS2695A

Certificate Issue Date: Jan 6, 2025

Scheme: ETA-EMI PSU

115V: CYBENETICS GOLD

230V: CYBENETICS PLATINUM 230v

Scheme: LAMBDA PSU

115V: CYBENETICS A

230V: CYBENETICS A 230v

CYBENETICS ATX 3.1 PASS

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	ASRock
Model	Phantom Gaming PG-1000G (ATX v3.1)
OEM/ODM	FSP
Serial Number	S4351030036
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	6-12

Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Hydro Dynamic Bearing Fan (PLA13525S12M)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	AR10002695
Date of receipt	Dec 16, 2024
Testing Date	Dec 27, 2024
Report Issued Date	Jan 6, 2025
Engineer Name	Georgios Theodoros Sarimpalas
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	**Cable Count**	**Connector Count (Total)**	**Gauge**	In Cable Capacitors
ATX connector 24 pin (600mm)	1	1	16-22AWG	No
4+4 pin EPS12V (650mm)	2	2	16AWG	No
6+2 pin PCIe (675mm+150mm)	2	4	16-18AWG	No
6+2 pin PCIe (670mm)	1	1	16-18AWG	No
12+4 pin PCIe (700mm) (600W)	1	1	16-24AWG	No
SATA (455mm+105mm+105mm)	3	9	18AWG	No
4-pin Molex (455mm+105mm+105mm)	1	3	18AWG	No

Protection Features(Manufacturer)

Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✗
Short Circuit Protection	✓
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.3	3	0.3
	Watts	130		1000	15	3.6
Total Max. Power (W)		1000				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	88.981%

Average Noise Output (>1450 Load Combinations)	20.51dBA
Average PF (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	64.852%
Standby Power Consumption	0.0526W
Non-Accredited	
12V Ripple (Full Load)	35.85mV
5V Ripple (Full Load)	20.12mV
3.3V Ripple (Full Load)	20.25mV
5VSB Ripple (Full Load)	16.41mV
12V Load Regulation	0.47%
5V Load Regulation	0.67%
3.3V Load Regulation	0.79%
5VSB Load Regulation	1.92%
Inrush Current	61.940A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.264%
Average Noise Output (>1450 Load Combinations)	20.54dBA
Average PF (>1450 Load Combinations)	0.950
Efficiency With 10W (≤500W) or 2% (>500W) Load	65.465%
Standby Power Consumption	0.1247W
Non-Accredited	
12V Ripple (Full Load)	35.23mV
5V Ripple (Full Load)	21.83mV
3.3V Ripple (Full Load)	25.15mV
5VSB Ripple (Full Load)	16.56mV
12V Load Regulation	0.48%
5V Load Regulation	0.58%
3.3V Load Regulation	0.73%
5VSB Load Regulation	1.94%
Inrush Current	101.000A

12V Transient Response (200%)	11.47V	
5V Transient Response (200%)	4.888V	
3.3V Transient Response (200%)	3.174V	
5VSB Transient Response (200%)	4.882V	
Hold-Up Time & PWR_OK Signal	17.30ms	
AC Loss to PWR_OK Hold Up Time	11.80ms	
PWR_OK Inactive to DC Loss Delay	5.50ms	
PSU Timings: T1 (20% / 100%)	66.0ms	67.0ms
PSU Timings: T3 (20% / 100%)	125.0ms	122.0ms
12V OCP (28.6°C / 42.6°C)	94.20A (113.09%), 11.970V	93.00A (111.64%), 11.983V
5V OCP (28.6°C / 42.6°C)	29.1A (145.50%), 4.953V	27.4A (137.00%), 4.947V
3.3V OCP (28.6°C / 42.6°C)	29.5A (147.50%), 3.274V	27.1A (135.50%), 3.27V
5VSB OCP (28.6°C / 42.6°C)	5.2A (173.33%), 4.971V	5.2A (173.33%), 4.972V
OPP (28.57°C / 42.86°C)	126.17%	120.97%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	17.3
AC Loss to PWR_OK Hold Up Time (ms)	11.8
PWR_OK Inactive to DC Loss Delay (ms)	5.5

Stromverbrauch im Ruhezustand

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.04 V	115.01 V	113.85 V	115.09 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS

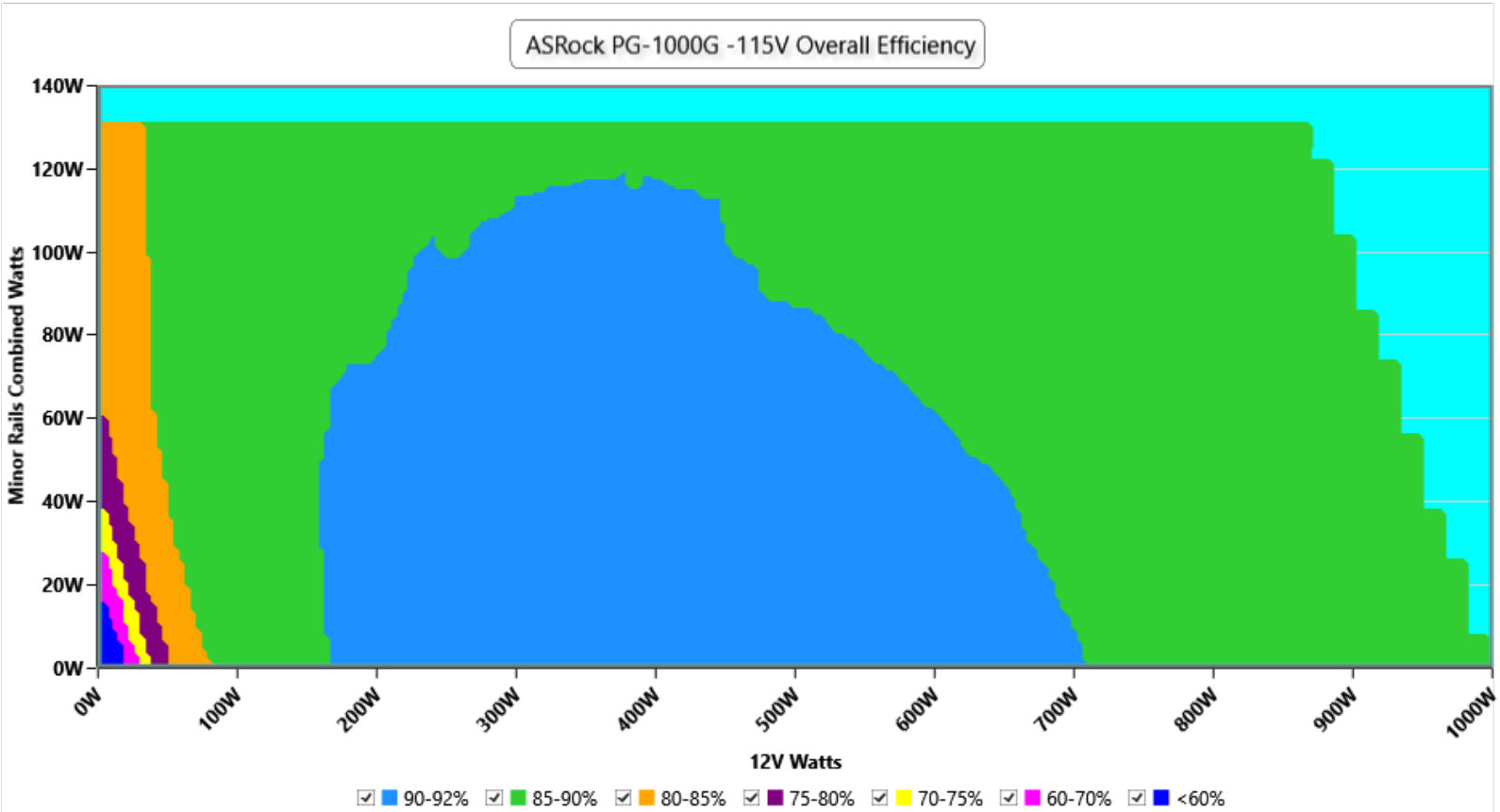
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.053 W	-0.003 W	N/A	0.104 W	N/A	N/A
Apparent Power:	10.129 W	10.083 W	N/A	10.187 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.00 V	230.90 V	227.70 V	231.06 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:	0.17 %	0.14 %	N/A	0.26 %	2.00 %	PASS
Real Power:	0.125 W	0.073 W	N/A	0.218 W	N/A	N/A
Apparent Power:	34.839 W	34.644 W	N/A	35.067 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

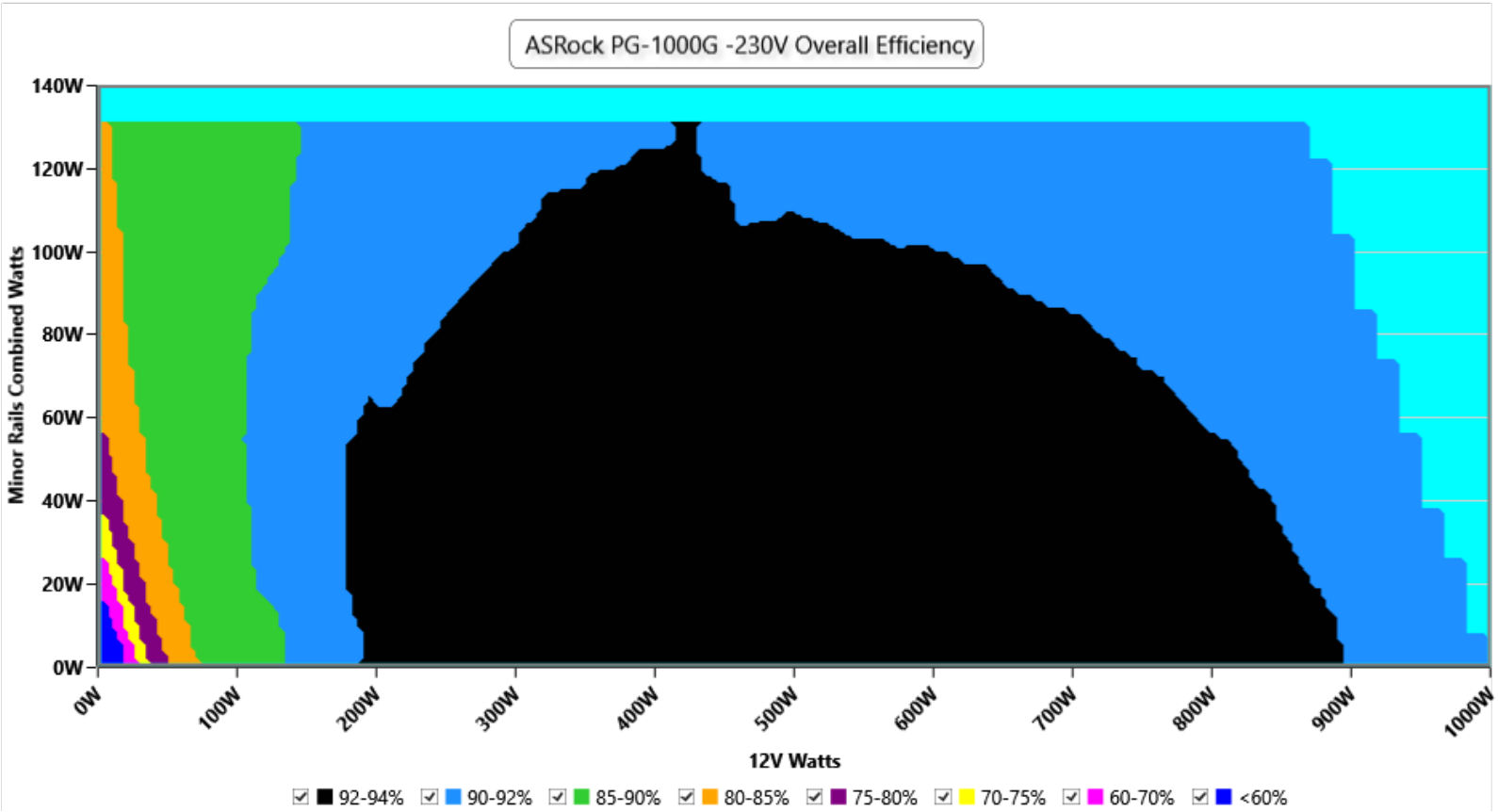
115V



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

230V



INFO

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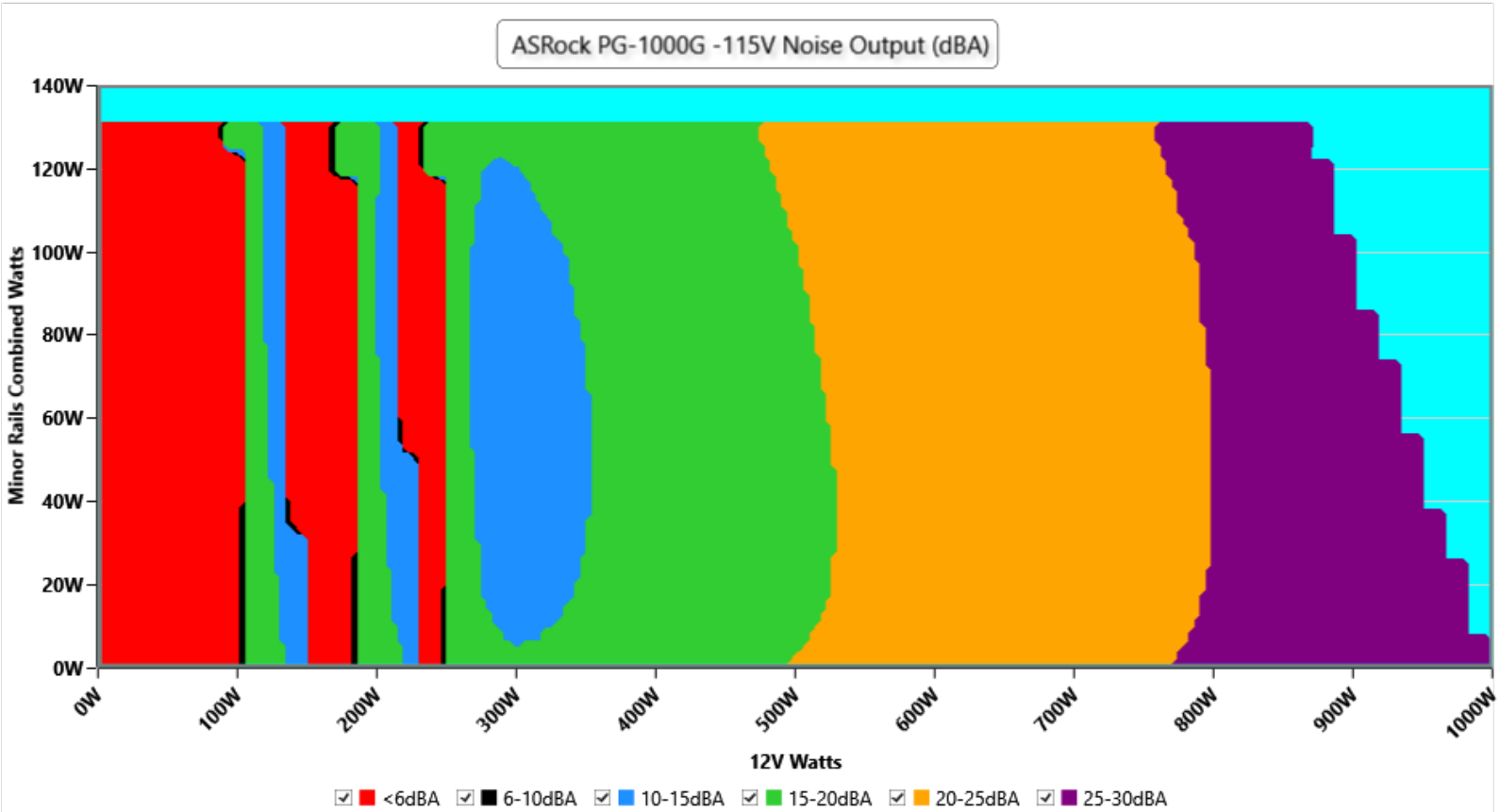
Noise Graph

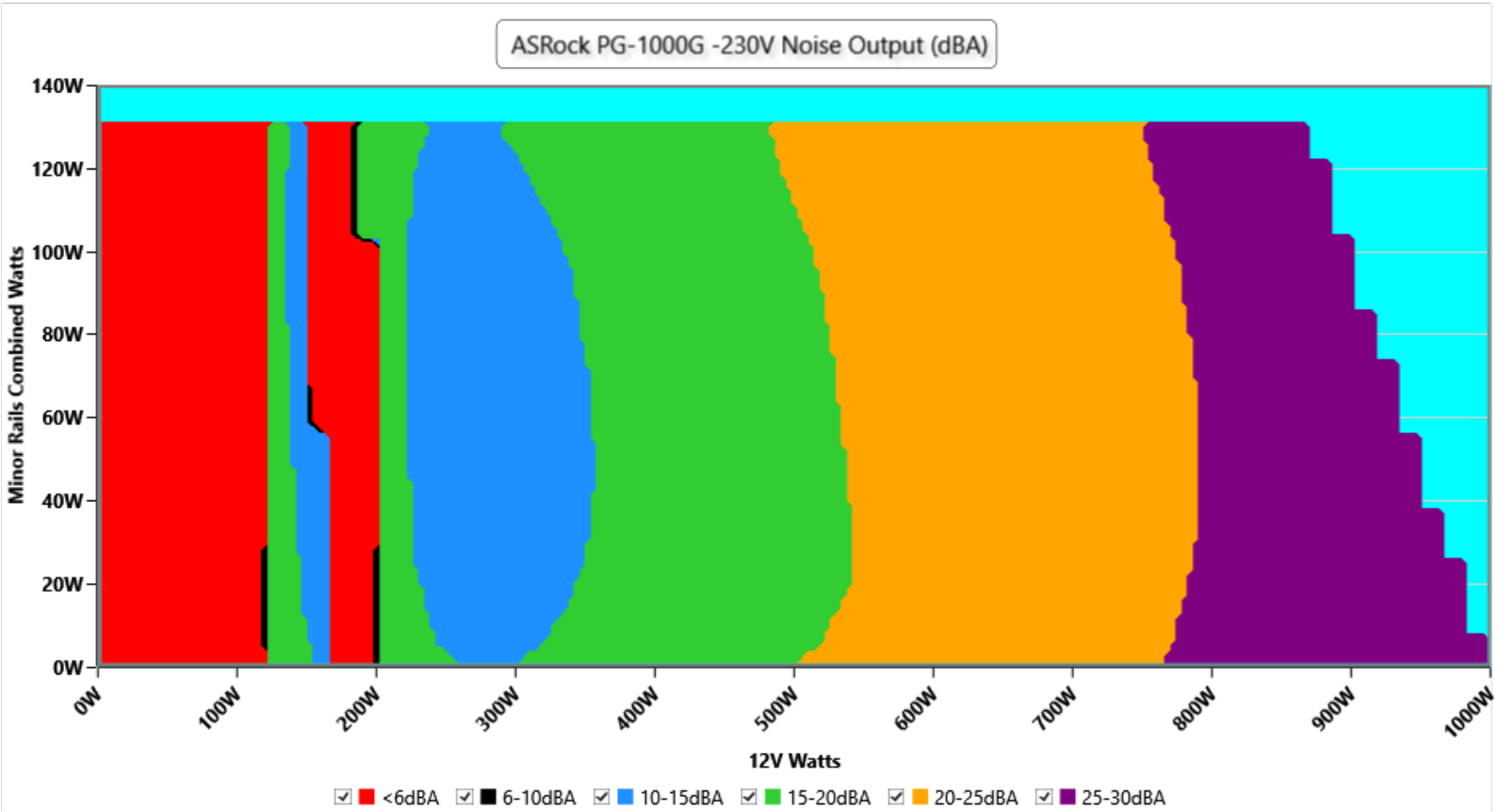
115V



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

230V

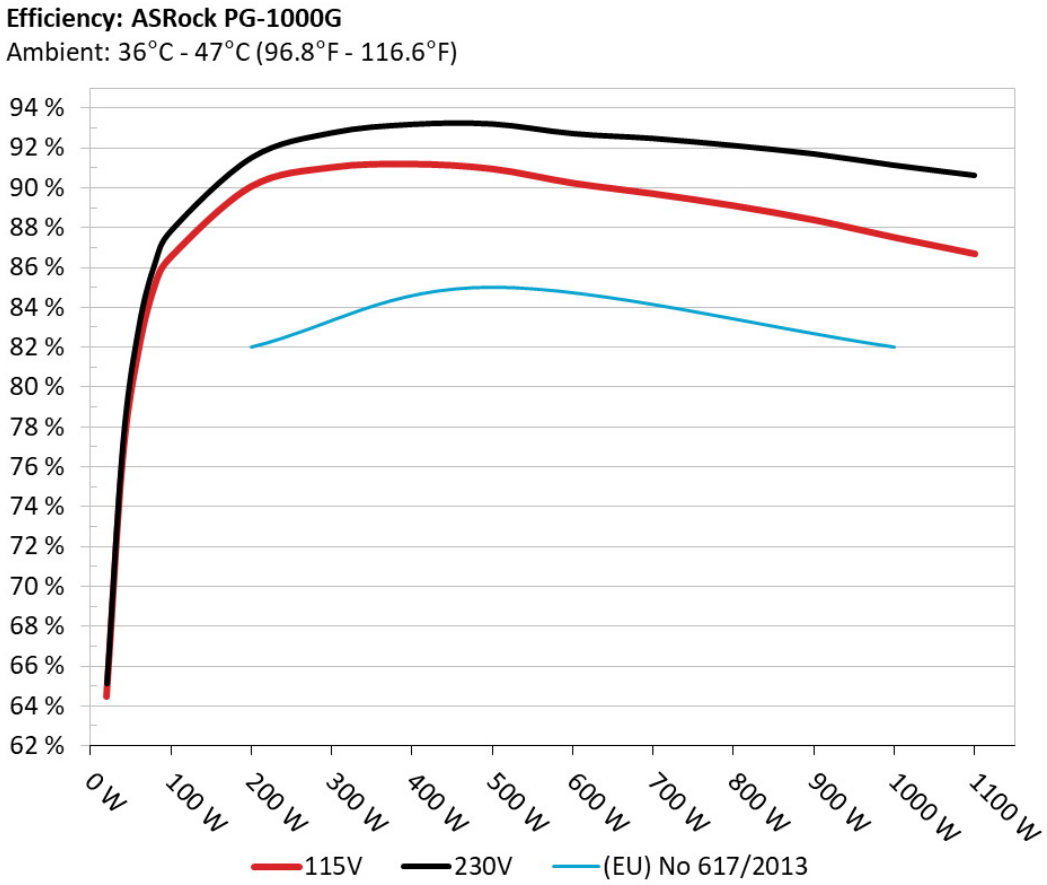


INFO

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

Indicative Performance

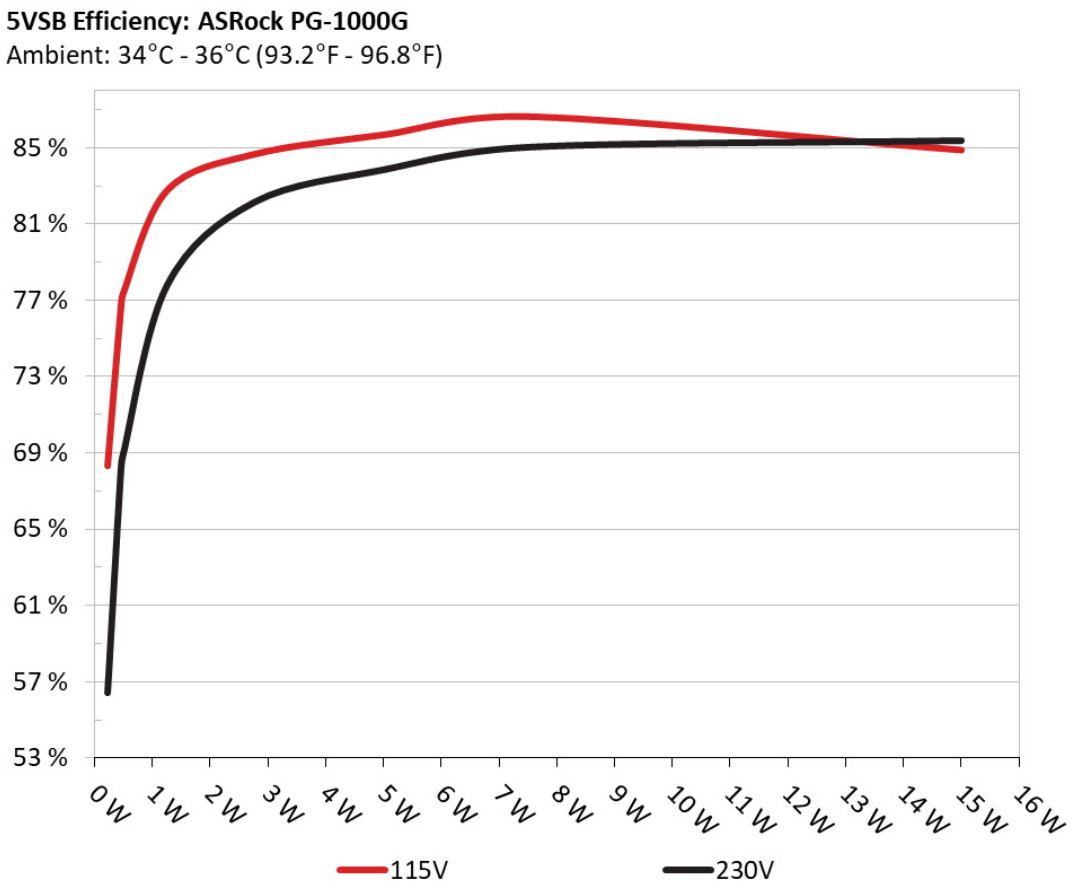
Efficiency under high ambient temperature



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

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.227W	68.314%	0.032
	5.035V	0.332W		114.83V
2	**0.09A**	0.453W	76.488%	0.056
	5.034V	0.593W		114.83V
3	**0.55A**	2.765W	84.649%	0.242
	5.028V	3.267W		114.83V
4	**1A**	5.023W	85.677%	0.317
	5.022V	5.863W		114.84V
5	**1.5A**	7.525W	86.62%	0.367
	5.016V	8.688W		114.83V
6	**3A**	14.994W	84.869%	0.437
	4.998V	17.668W		114.83V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.226W	56.423%	0.011
	5.035V	0.401W		229.83V
2	**0.09A**	0.453W	68.002%	0.019
	5.035V	0.667W		229.84V
3	**0.55A**	2.765W	82.175%	0.092
	5.028V	3.364W		229.83V
4	**1A**	5.022W	83.89%	0.153
	5.023V	5.987W		229.83V
5	**1.5A**	7.525W	85.066%	0.194
	5.017V	8.846W		229.83V
6	**3A**	14.995W	85.404%	0.296
	4.999V	17.56W		229.83V

Protection Features

OCP (Normal @ 28.6°C)	12V: 94.20A (113.09%), 11.970V 5V: 29.1A (145.50%), 4.953V 3.3V: 29.5A (147.50%), 3.274V 5VSB: 5.2A (173.33%), 4.971V
OCP (Hot @ 42.6°C)	12V: 93.00A (111.64%), 11.983V 5V: 27.4A (137.00%), 4.947V 3.3V: 27.1A (135.50%), 3.27V 5VSB: 5.2A (173.33%), 4.972V
OPP (Normal @ 28.6°C)	1261.74W (126.17%)
OPP (Hot @ 42.9°C)	1209.73W (120.97%)
OTP	✓ (133°C @ Heat Sink)
SCP	
PWR_OK	Proper Operation
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC

Supplementary Tests (For Reference)

Typical 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
10%	**6.506A**	**2.006A**	**2.001A**	**0.996A**	99.979	86.549%	0	<6.0	50.1°C	0.968
	12.047V	4.985V	3.298V	5.02V	115.519				40.28°C	114.8V
20%	**14.028A**	**3.011A**	**3.004A**	**1.197A**	199.924	90.082%	0	<6.0	52.01°C	0.979
	12.050V	4.981V	3.295V	5.012V	221.935				40.71°C	114.78V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
30%	**21.916A**	**3.514A**	**3.506A**	**1.399A**	299.967	91.041%	733	17.3	41.09°C	0.98
	12.042V	4.98V	3.294V	5.003V	329.49				45.52°C	114.74V
40%	**29.779A**	**4.015A**	**4.007A**	**1.602A**	399.471	91.209%	774	18.6	41.57°C	0.982
	12.031V	4.981V	3.294V	4.995V	437.97				46.16°C	114.7V
50%	**37.317A**	**5.022A**	**5.013A**	**1.805A**	499.205	90.969%	829	18.3	42.2°C	0.985
	12.024V	4.978V	3.292V	4.986V	548.77				47.43°C	114.67V
60%	**44.925A**	**6.032A**	**6.021A**	**2A**	599.705	90.252%	949	22.3	42.61°C	0.988
	12.019V	4.974V	3.289V	4.977V	664.476				49.36°C	114.64V
70%	**52.473A**	**7.043A**	**7.032A**	**2.214A**	699.492	89.722%	1015	23.7	43.26°C	0.99
	12.013V	4.97V	3.285V	4.968V	779.622				50.88°C	114.6V
80%	**60.095A**	**8.055A**	**8.044A**	**2.318A**	799.507	89.12%	1075	27	43.78°C	0.991
	12.008V	4.965V	3.282V	4.961V	897.113				51.91°C	114.57V
90%	**68.059A**	**8.564A**	**8.538A**	**2.423A**	899.295	88.408%	1133	29.8	44.62°C	0.992
	12.002V	4.962V	3.279V	4.953V	1017.209				53.18°C	114.53V
100%	**75.842A**	**9.071A**	**9.061A**	**3.037A**	999.337	87.53%	1987	43.9	45.02°C	0.993
	11.994V	4.96V	3.278V	4.939V	1141.708				50.64°C	114.48V
110%	**83.559A**	**10.086A**	**10.168A**	**3.042A**	1099.955	86.699%	1987	43.9	46.58°C	0.994
	11.987V	4.957V	3.275V	4.932V	1268.71				52.82°C	114.44V
CL1	**0.116A**	**15.801A**	**15.746A**	**0A**	131.299	82.251%	927	22.7	41.04°C	0.975
	12.060V	4.955V	3.277V	5.027V	159.635				47.49°C	114.79V
CL2	**0.115A**	**20.167A**	**0A**	**0A**	101.329	81.141%	844	21	40.05°C	0.97
	12.053V	4.955V	3.29V	5.032V	124.879				45.08°C	114.8V
CL3	**0.115A**	**0A**	**20.124A**	**0A**	67.382	75.793%	794	20.5	41.53°C	0.96
	12.046V	4.975V	3.279V	5.031V	88.904				46.07°C	114.82V
CL4	**83.428A**	**0A**	**0A**	**0.001A**	999.942	88.128%	1992	43.7	45.32°C	0.993
	11.985V	4.977V	3.29V	4.98V	1134.652				52.3°C	114.49V

The results above are not used in the certification process

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%	**6.506A**	**2.006A**	**2.002A**	**0.996A**	99.998	87.871%	0	<6.0	48.01°C	0.846
	12.049V	4.985V	3.297V	5.02V	113.803				40.02°C	229.82V
20%	**14.035A**	**3.008A**	**3.002A**	**1.198A**	199.951	91.526%	710	16.3	40.72°C	0.926
	12.045V	4.987V	3.297V	5.011V	218.463				44.16°C	229.8V
30%	**21.931A**	**3.51A**	**3.504A**	**1.4A**	300.002	92.771%	730	17.2	41.02°C	0.948
	12.035V	4.986V	3.296V	5.002V	323.375				44.73°C	229.78V
40%	**29.791A**	**4.013A**	**4.007A**	**1.602A**	399.559	93.197%	778	18.7	41.51°C	0.959
	12.029V	4.984V	3.294V	4.994V	428.727				45.46°C	229.77V
50%	**37.326A**	**5.02A**	**5.014A**	**1.806A**	499.284	93.216%	835	19.6	42.05°C	0.966
	12.023V	4.98V	3.291V	4.985V	535.626				46.76°C	229.75V
60%	**44.935A**	**6.029A**	**6.022A**	**2A**	599.769	92.734%	939	22	42.55°C	0.972
	12.018V	4.977V	3.288V	4.976V	646.767				48.3°C	229.73V
70%	**52.486A**	**7.04A**	**7.033A**	**2.215A**	699.555	92.491%	1006	24	43.14°C	0.975
	12.011V	4.973V	3.285V	4.967V	756.349				46.09°C	229.71V
80%	**60.108A**	**8.051A**	**8.045A**	**2.319A**	799.56	92.136%	1070	28.4	43.75°C	0.977
	12.006V	4.968V	3.281V	4.96V	867.81				47.23°C	229.7V
90%	**68.073A**	**8.559A**	**8.538A**	**2.424A**	899.337	91.718%	1126	29.5	44.21°C	0.979
	12.000V	4.965V	3.279V	4.952V	980.54				47.77°C	229.68V
100%	**75.858A**	**9.066A**	**9.062A**	**3.038A**	999.372	91.15%	1984	44	45.29°C	0.981
	11.992V	4.963V	3.278V	4.938V	1096.411				47.86°C	229.66V
110%	**83.577A**	**10.079A**	**10.168A**	**3.043A**	1099.987	90.638%	1987	43.9	46.14°C	0.982
	11.985V	4.96V	3.275V	4.931V	1213.605				48.35°C	229.65V
CL1	**0.116A**	**15.787A**	**15.742A**	**0A**	131.301	83.75%	914	23.7	41.91°C	0.896
	12.057V	4.96V	3.278V	5.027V	156.782				52.96°C	229.81V
CL2	**0.115A**	**20.154A**	**0A**	**0A**	101.34	82.416%	844	21	40.91°C	0.859
	12.052V	4.959V	3.29V	5.032V	122.961				49.98°C	229.82V
CL3	**0.115A**	**0A**	**20.123A**	**0A**	67.383	76.745%	788	20.2	40.65°C	0.797
	12.045V	4.978V	3.279V	5.031V	87.804				48.62°C	229.82V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL4	**83.442A**	**0A**	**0A**	**0.001A**	999.95	91.761%	1146	30.8	45.23°C	0.98
	11.983V	4.981V	3.291V	4.979V	1089.732				60.01°C	229.67V

The results above are not used in the certification process

Light 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
20W	**1.232A**	**0.501A**	**0.499A**	**0.199A**	19.989	64.48%	0	<6.0	43.69°C	0.873
	12.044V	4.993V	3.304V	5.034V	31.003				36.09°C	114.83V
40W	**2.714A**	**0.701A**	**0.699A**	**0.298A**	39.991	76.419%	0	<6.0	45.45°C	0.928
	12.044V	4.991V	3.303V	5.032V	52.332				37.28°C	114.82V
60W	**4.194A**	**0.902A**	**0.899A**	**0.398A**	59.992	81.906%	0	<6.0	47.27°C	0.952
	12.045V	4.989V	3.302V	5.03V	73.246				38.59°C	114.82V
80W	**5.670A**	**1.102A**	**1.1A**	**0.497A**	79.928	85.11%	0	<6.0	48.44°C	0.964
	12.046V	4.988V	3.3V	5.027V	93.907				39.27°C	114.82V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	**1.233A**	**0.501A**	**0.5A**	**0.199A**	20.001	65.136%	0	<6.0	43.53°C	0.481
	12.046V	4.992V	3.302V	5.034V	30.708				36.68°C	229.83V
40W	**2.714A**	**0.701A**	**0.7A**	**0.298A**	40.001	77.233%	0	<6.0	44.01°C	0.647
	12.046V	4.991V	3.301V	5.032V	51.79				37.54°C	229.83V
60W	**4.194A**	**0.902A**	**0.9A**	**0.398A**	60.001	83.095%	0	<6.0	45.97°C	0.747
	12.047V	4.99V	3.3V	5.029V	72.209				38.77°C	229.83V
80W	**5.670A**	**1.102A**	**1.1A**	**0.497A**	79.946	86.252%	0	<6.0	46.23°C	0.808
	12.047V	4.989V	3.299V	5.027V	92.687				39.04°C	229.81V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	20.87mV	20.48mV	17.08mV	15.85mV	Pass
20% Load	19.43mV	19.96mV	17.70mV	15.75mV	Pass
30% Load	22.04mV	19.86mV	17.29mV	14.83mV	Pass
40% Load	23.89mV	19.86mV	17.96mV	15.29mV	Pass
50% Load	24.30mV	19.66mV	17.55mV	14.78mV	Pass
60% Load	23.12mV	21.92mV	20.57mV	16.42mV	Pass
70% Load	24.04mV	19.76mV	19.44mV	15.49mV	Pass
80% Load	23.43mV	20.12mV	19.65mV	14.83mV	Pass
90% Load	24.40mV	20.73mV	20.57mV	16.52mV	Pass
100% Load	35.85mV	20.12mV	20.25mV	16.41mV	Pass
110% Load	36.79mV	22.91mV	30.98mV	17.04mV	Pass
Crossload1	26.18mV	22.09mV	18.14mV	19.29mV	Pass
Crossload2	23.07mV	23.20mV	18.21mV	15.39mV	Pass
Crossload3	22.97mV	20.02mV	18.47mV	14.57mV	Pass
Crossload4	35.08mV	21.63mV	19.42mV	23.67mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	20.92mV	18.88mV	15.59mV	15.65mV	Pass
20% Load	18.41mV	18.38mV	15.96mV	14.42mV	Pass
30% Load	20.41mV	19.04mV	16.52mV	13.44mV	Pass
40% Load	20.30mV	19.86mV	16.06mV	14.83mV	Pass
50% Load	21.53mV	19.04mV	19.60mV	14.32mV	Pass
60% Load	21.74mV	18.27mV	17.85mV	15.19mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	21.53mV	19.40mV	17.95mV	13.90mV	Pass
80% Load	21.89mV	19.55mV	18.88mV	14.67mV	Pass
90% Load	22.56mV	20.01mV	19.09mV	15.19mV	Pass
100% Load	35.23mV	21.83mV	25.15mV	16.56mV	Pass
110% Load	36.87mV	21.28mV	28.74mV	17.55mV	Pass
Crossload1	27.46mV	21.17mV	17.37mV	19.23mV	Pass
Crossload2	21.58mV	23.40mV	16.06mV	15.14mV	Pass
Crossload3	22.10mV	19.91mV	18.11mV	15.70mV	Pass
Crossload4	35.34mV	21.02mV	19.78mV	22.86mV	Pass

The results above are not used in the certification process

ASRock Phantom Gaming PG-1000G (ATX v3.1)

Top side

Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

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