Gamer Storm PF600X

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Lab ID GA60002731

Certification ID 252731

Test Result Report ID: 25PS2731A

Certificate Issue Date: Feb 5, 2025

230V

Scheme: ETA-EMI PSU



230V



Scheme: LAMBDA PSU



Aristeidis Bitziopoulos, Certification Body General Manager

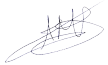
General Information

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	Gamer Storm
Model	PF600X
OEM/ODM	CE-Link
Serial Number	-
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	200-240
□□□□ (Arms)	5
□□□□ (Hz)	50-60

□□□□ (W)	600
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
□□□□□	✗
Cybenetics Testing Information	
Lab ID	GA60002731
Date of receipt	Jan 23, 2025
Testing Date	Feb 3, 2025
Report Issued Date	Feb 5, 2025
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□□	**Gauge**	In Cable Capacitors
ATX □□ 20+4 pin (550mm)	1	1	18-22AWG	□
4+4 pin EPS 12V □□ (610mm+150mm)	1	2	18AWG	□
6+2pin PCIe□□ (510mm+150mm)	2	4	18AWG	□
SATA□□ (455mm+155mm+155mm) / 4-pin Molex (+150mm)	2	6 / 2	18AWG	□

Protection Features(Manufacturer)

Over Power Protection	✓
Over Current (+12V) Protection	?

Over Temperature Protection	✓
Short Circuit Protection	✓
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	16	16	50	3	0.3
	□	100		600	15	3.6
□□□□□ (W)		600				

Parts Description

General Data	
Manufacturer (OEM)	CE LINK
PCB Type	Single-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor M72 1.3D15 (1.3 ohm)
Bridge Rectifier(s)	1x GBU608 (800V, 6A @ 100°C)
APFC MOSFETs	1x Lonten LND18N50 (500V, 13.5A @ 100°C, Rds(on): 0.28Ohm)
APFC Boost Diode	1x Good-Ark MUR860F (600V, 8A @ 105°C)
Bulk Cap(s)	1x Teapo (420V, 390uF, 6-10,000h @ 105°C, TC)
Main Switchers	2x Lonten LND16N50 (500V, 11A @ 100°C, Rds(on): 0.36Ohm)
PFC/PWM Controller	Champion CM6800UX

Topology	Primary side: APFC, Double Forward Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	3x HB043N06GC
5V & 3.3V	DC-DC Converters: 4x SLD3090T PWM Controller(s): 2x Anpec APW7164
Filtering Capacitors	Electrolytic: 13x Teapo (1-3,000h @ 105°C, SC) 1x Toshincon (@105°C, UCE) Polymer: 2x
Supervisor IC	UTC8313
Fan Model	Hong Hua HA1225M12F-Z (120mm, 12V, 0.45A, Fluid Dynamic Bearing Fan)
5VSB	
Rectifier	1x Chongqing Pingwei PS1045L (45V, 10A) SBR
Standby PWM Controller	Esthome EST.2915HP

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	✓

Performance Summary 230V

Accredited	
□□□□ (>1450 load combinations)	87.389%
Average Noise Output (>1450 Load Combinations)	23.46dBA
PF□□□ (>1450 Load Combinations)	0.964
Efficiency With 10W (≤500W) or 2% (>500W) Load	61.001%
□□□□□□	0.1565W
Non-Accredited	

12V Ripple (Full Load)		24.47mV
5V Ripple (Full Load)		17.36mV
3.3V Ripple (Full Load)		16.26mV
5VSB Ripple (Full Load)		10.95mV
12V Load Regulation		0.30%
5V Load Regulation		2.70%
3.3V Load Regulation		3.77%
5VSB Load Regulation		5.17%
Inrush Current		187.500A
12V Transient Response (150%)		11.61V
5V Transient Response (150%)		4.910V
3.3V Transient Response (150%)		3.203V
5VSB Transient Response (150%)		4.963V
□□□□ & PG□□		12.40ms
AC Loss to PWR_OK Hold Up Time		10.40ms
PWR_OK Inactive to DC Loss Delay		2.00ms
PSU Timings: T1 (20% / 100%)	72.0ms	69.0ms
PSU Timings: T3 (20% / 100%)	114.0ms	112.0ms
12V OCP (30.1°C / 44.0°C)	66.39A (132.78%), 12.029V *High Ripple (166.37mV), Stopped	66.40A (132.80%), 11.888V *High Ripple (176.47mV), Stopped
5V OCP (30.1°C / 44.0°C)	25.3A (158.13%), 5.025V	25.4A (158.75%), 5.027V
3.3V OCP (30.1°C / 44.0°C)	25A (156.25%), 3.34V	24.9A (155.63%), 3.343V
5VSB OCP (30.1°C / 44.0°C)	5.4A (180.00%), 4.944V	5.3A (176.67%), 4.946V
OPP (29.50°C / 40.85°C)	128.76%	128.77%

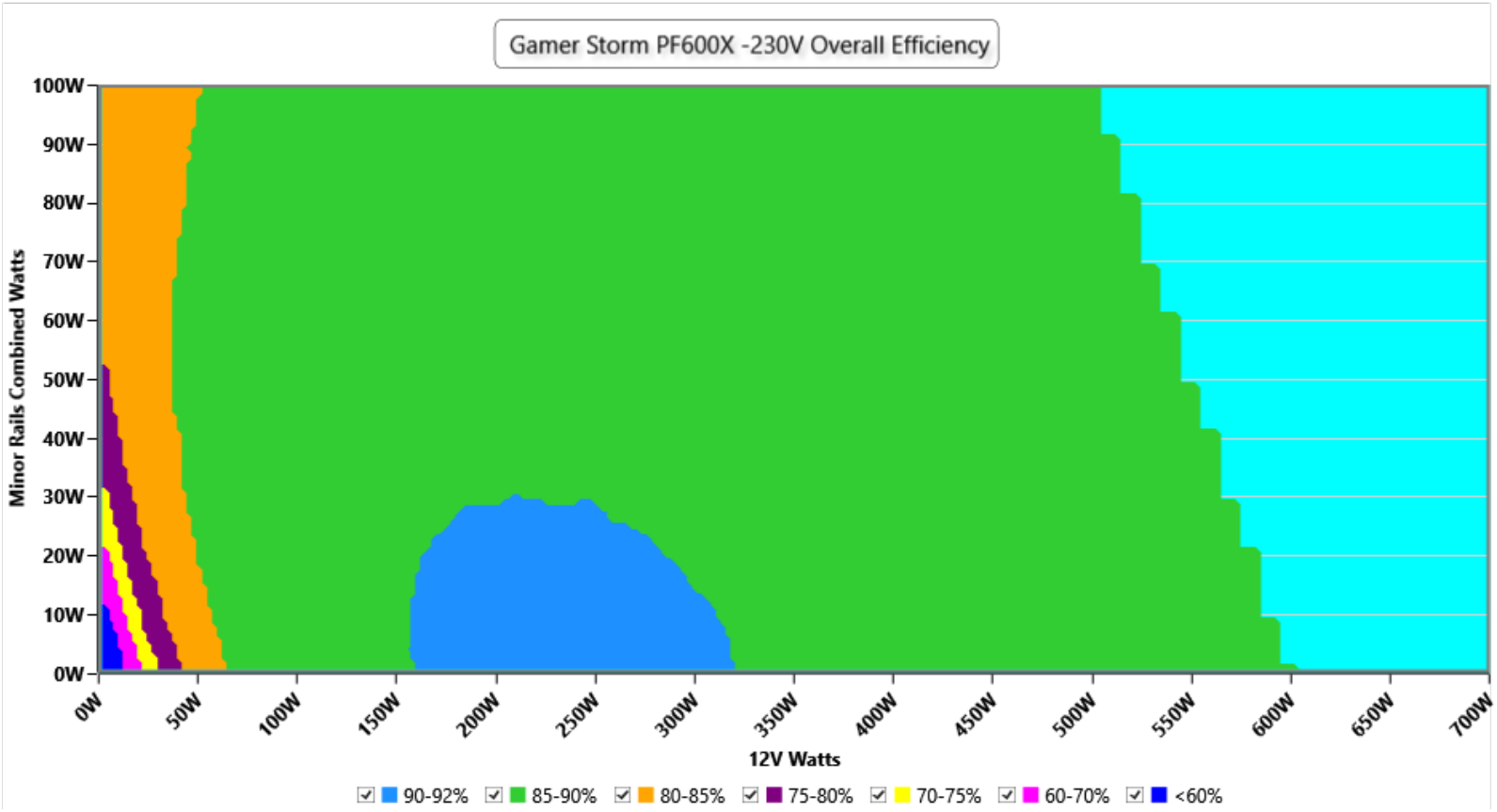
□□□□ & PG□□

Hold-Up Time (ms)	12.4
AC Loss to PWR_OK Hold Up Time (ms)	10.4
PWR_OK Inactive to DC Loss Delay (ms)	2

Tables 230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.00 V	230.88 V	227.70 V	231.07 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	0.27 %	2.00 %	PASS
Real Power:	0.157 W	0.113 W	N/A	0.215 W	N/A	N/A
Apparent Power:	16.121 W	15.903 W	N/A	16.342 W	N/A	N/A
Power Factor:	0.009	N/A	N/A	N/A	N/A	N/A

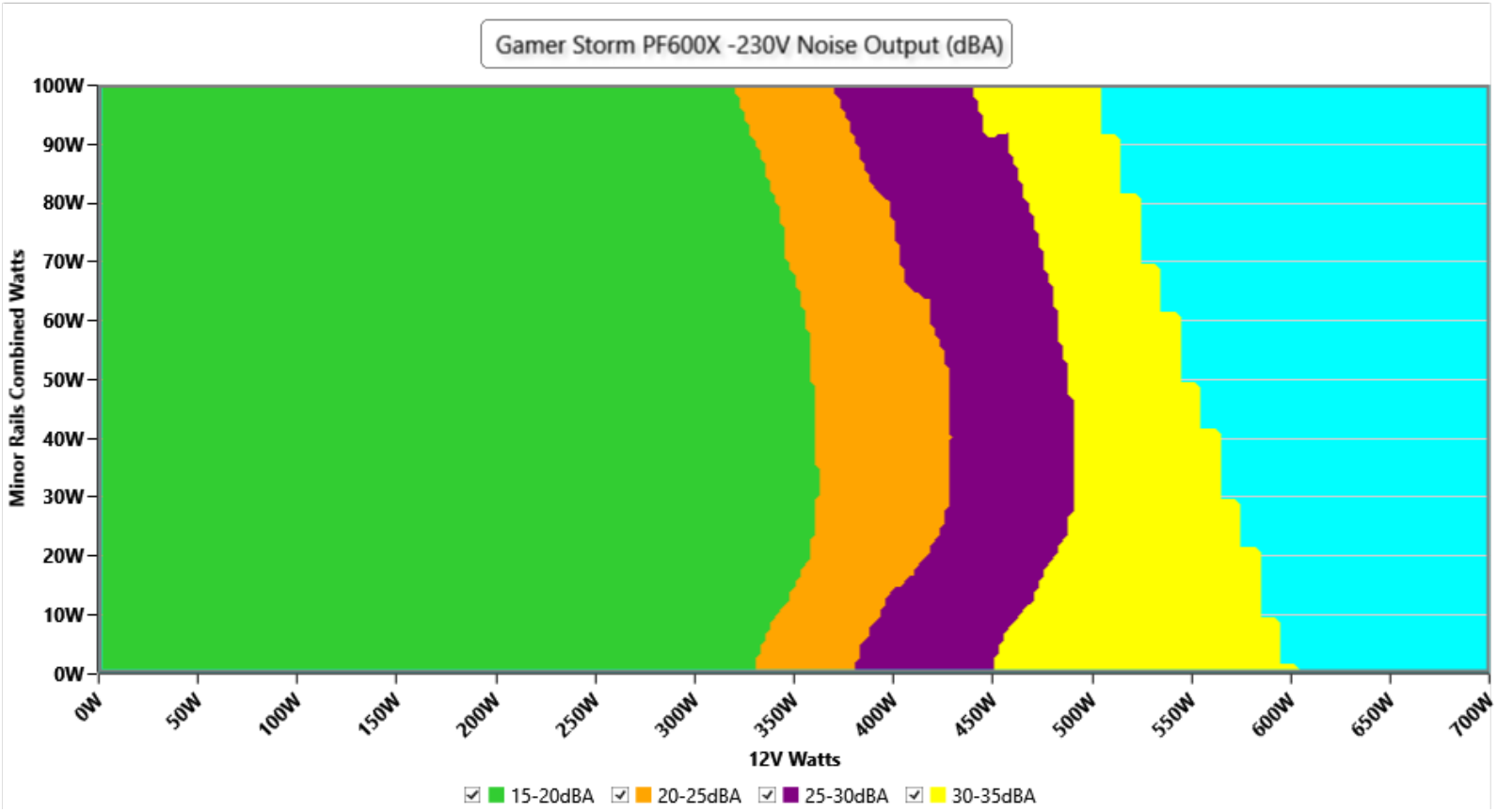
230V



□□

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



□□

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

Noise under high ambient temperature (indicative)

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	745 RPM · 16.5 dB(A) · 30.5 °C	760 RPM · 16.8 dB(A) · 40.0 °C	**+0.3 dB(A)**
20%	752 RPM · 16.8 dB(A) · 30.2 °C	764 RPM · 16.9 dB(A) · 40.8 °C	**+0.1 dB(A)**
50%	763 RPM · 16.9 dB(A) · 30.6 °C	888 RPM · 21.0 dB(A) · 42.2 °C	**+4.1 dB(A)**
100%	1408 RPM · 34.5 dB(A) · 30.5 °C	1950 RPM · 44.0 dB(A) · 45.2 °C	**+9.5 dB(A)**

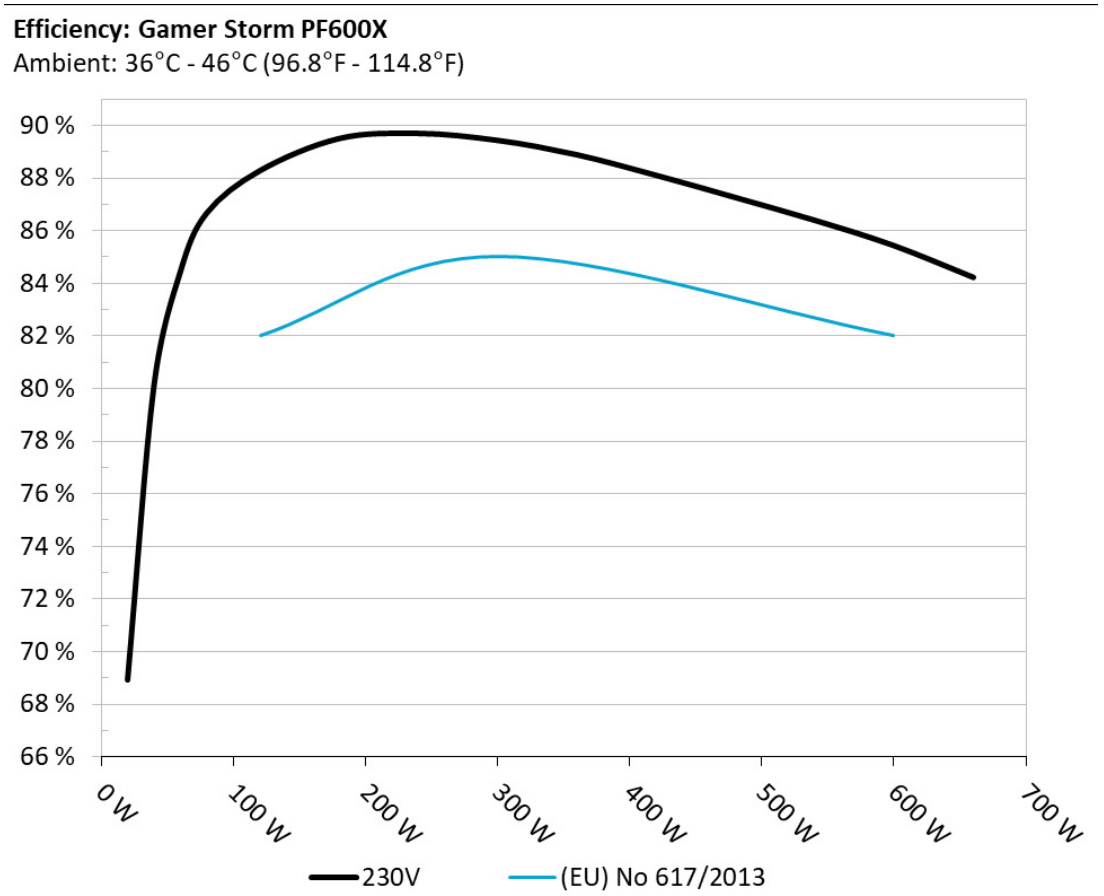
INFO

Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter: the fan is stopped or too quiet to measure (the fan speed column says which); with the fan stopped, the intake sensor can read higher than the chamber air.

Informational. Not part of the ETA or LAMBDA rating.

Indicative Performance

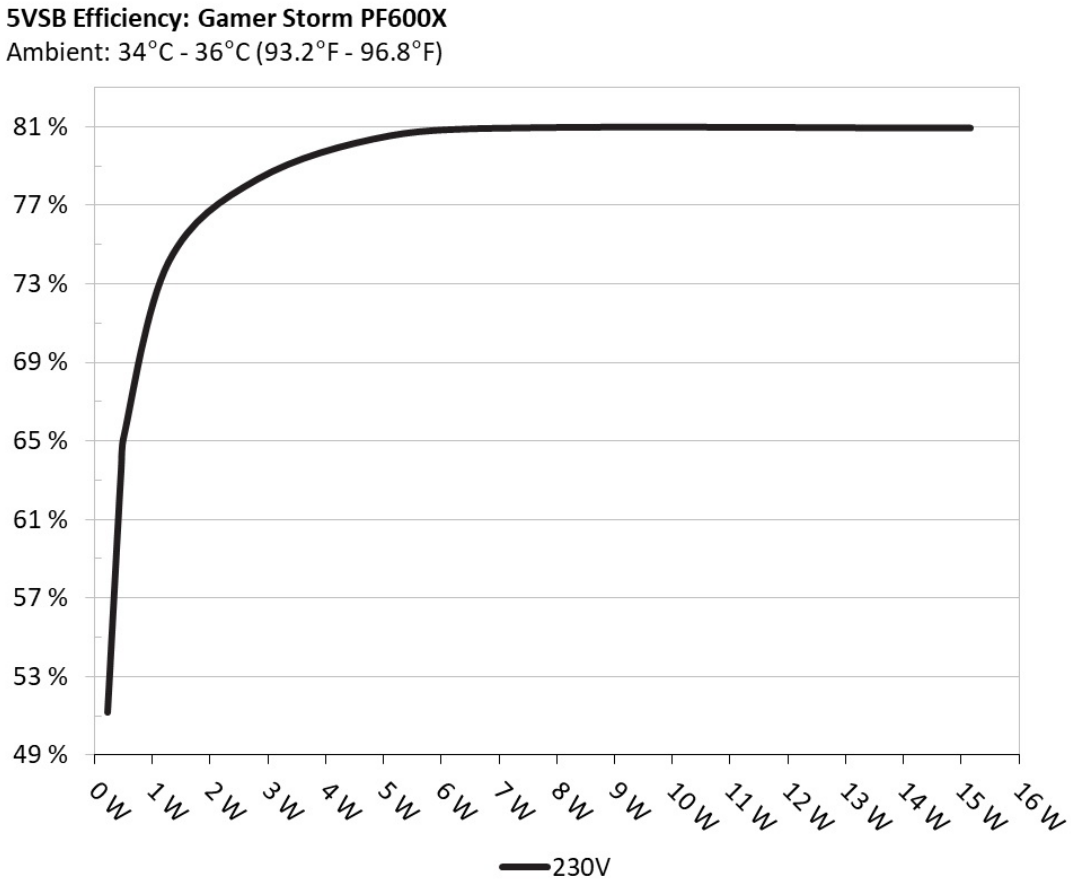
□□□□□□□□□



□□

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□□□□



□□

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

□□□□ □□ 5Vsb □□ (ErP Lot3/6 & CEC) 230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.232W	51.199%	0.026
	5.159V	0.454W		229.92V

2	**0.09A**	0.464W	63.487%	0.041
	5.157V	0.732W		229.92V
3	**0.55A**	2.827W	78.357%	0.175
	5.14V	3.608W		229.92V
4	**1A**	5.124W	80.569%	0.25
	5.124V	6.361W		229.9V
5	**1.5A**	7.659W	80.977%	0.294
	5.106V	9.458W		229.89V
6	**3A**	15.151W	80.958%	0.359
	5.051V	18.718W		229.89V

Protection Features

OCP (Normal @ 30.1°C)	12V: 66.39A (132.78%), 12.029V *High Ripple (166.37mV), Stopped 5V: 25.3A (158.13%), 5.025V 3.3V: 25A (156.25%), 3.34V 5VSB: 5.4A (180.00%), 4.944V
OCP (Hot @ 44.0°C)	12V: 66.40A (132.80%), 11.888V *High Ripple (176.47mV), Stopped 5V: 25.4A (158.75%), 5.027V 3.3V: 24.9A (155.63%), 3.343V 5VSB: 5.3A (176.67%), 4.946V
OPP (Normal @ 29.5°C)	772.57W (128.76%)
OPP (Hot @ 40.9°C)	772.60W (128.77%)
OTP	✓ (134°C @ Secondary Side)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
PWR_OK	Accurate but lower than 11.0ms
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC

Supplementary Tests (For Reference)

10-110%□□□□ 230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	**3.176A**	**1.965A**	**1.958A**	**0.979A**	60	83.516%	760	16.8	40.04°C	0.88
	12.093V	5.088V	3.37V	5.109V	71.843				39.6°C	229.88V
20%	**7.365A**	**2.956A**	**2.948A**	**1.179A**	119.931	88.288%	764	16.9	40.8°C	0.939
	12.089V	5.074V	3.358V	5.087V	135.838				40.56°C	229.87V
30%	**11.908A**	**3.456A**	**3.451A**	**1.382A**	179.971	89.514%	768	17.2	41.22°C	0.959
	12.086V	5.063V	3.347V	5.067V	201.054				41.67°C	229.86V
40%	**16.455A**	**3.959A**	**3.957A**	**1.586A**	240.013	89.709%	773	17.5	41.55°C	0.969
	12.082V	5.051V	3.336V	5.046V	267.548				42.98°C	229.85V
50%	**20.653A**	**4.963A**	**4.965A**	**1.792A**	299.968	89.444%	888	21	42.2°C	0.974
	12.079V	5.038V	3.324V	5.023V	335.371				44.62°C	229.84V
60%	**24.860A**	**5.973A**	**5.981A**	**2A**	360.006	88.895%	1155	28.8	42.62°C	0.977
	12.075V	5.023V	3.311V	5V	404.979				45.41°C	229.83V
70%	**29.026A**	**6.989A**	**7.006A**	**2.211A**	419.487	88.121%	1398	34.2	43.06°C	0.977
	12.072V	5.008V	3.298V	4.976V	476.035				46.03°C	229.82V
80%	**33.278A**	**8.008A**	**8.038A**	**2.32A**	479.475	87.274%	1603	37.9	43.76°C	0.981
	12.068V	4.994V	3.284V	4.956V	549.388				47.29°C	229.8V
90%	**37.863A**	**8.53A**	**8.556A**	**2.431A**	539.269	86.415%	1772	40.3	44.13°C	0.986
	12.064V	4.982V	3.273V	4.937V	624.045				47.42°C	229.79V
100%	**42.256A**	**9.056A**	**9.111A**	**3.063A**	599.293	85.449%	1950	44	45.21°C	0.986
	12.059V	4.968V	3.26V	4.897V	701.346				48.97°C	229.78V
110%	**46.585A**	**10.093A**	**10.258A**	**3.075A**	659.923	84.233%	2014	43.6	46.43°C	0.986
	12.056V	4.953V	3.246V	4.879V	783.452				51.42°C	229.77V
CL1	**0.115A**	**11.942A**	**11.898A**	**0A**	101.286	81.564%	763	16.9	40.85°C	0.934
	12.093V	5.04V	3.337V	5.109V	124.181				44.94°C	229.87V
CL2	**0.114A**	**15.814A**	**0A**	**0A**	81.376	80.32%	758	16.8	40.01°C	0.918
	12.095V	5.058V	3.347V	5.129V	101.315				43.78°C	229.88V

CL3	**0.114A**	**0A**	**15.697A**	**0A**	54.191	75.331%	760	16.8	41.2°C	0.88
	12.095V	5.075V	3.364V	5.127V	71.938				43.1°C	229.88V
CL4	**49.745A**	**0.001A**	**0A**	**0.001A**	599.951	86.637%	1897	43.2	45.84°C	0.986
	12.060V	5.016V	3.294V	5.041V	692.498				48.48°C	229.79V

The results above are not used in the certification process

20-80□□□□ 230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	**1.228A**	**0.49A**	**0.488A**	**0.194A**	20.008	68.926%	751	16.8	36.4°C	0.713
	12.095V	5.102V	3.383V	5.15V	29.027				37.94°C	229.89V
40W	**2.704A**	**0.687A**	**0.684A**	**0.292A**	40.003	80.125%	755	16.8	37.16°C	0.824
	12.093V	5.097V	3.378V	5.142V	49.926				37.6°C	229.88V
60W	**4.179A**	**0.883A**	**0.88A**	**0.39A**	60	84.46%	756	16.8	38.05°C	0.879
	12.092V	5.093V	3.374V	5.134V	71.039				37.84°C	229.88V
80W	**5.650A**	**1.081A**	**1.077A**	**0.488A**	79.947	86.681%	760	16.8	39.18°C	0.908
	12.091V	5.089V	3.37V	5.126V	92.23				39.02°C	229.88V

The results above are not used in the certification process

□□□□ 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.89mV	16.45mV	16.17mV	13.45mV	Pass
20% Load	16.83mV	18.39mV	15.81mV	14.99mV	Pass
30% Load	18.98mV	18.75mV	18.21mV	14.27mV	Pass
40% Load	20.11mV	20.74mV	19.18mV	14.53mV	Pass
50% Load	23.18mV	22.28mV	20.31mV	16.83mV	Pass
60% Load	26.50mV	24.57mV	21.18mV	16.01mV	Pass
70% Load	30.03mV	25.75mV	25.07mV	17.90mV	Pass
80% Load	33.41mV	28.30mV	27.52mV	18.98mV	Pass
90% Load	38.06mV	30.20mV	28.08mV	21.79mV	Pass
100% Load	24.47mV	17.36mV	16.26mV	10.95mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
110% Load	29.05mV	19.42mV	19.04mV	12.44mV	Pass
Crossload1	10.00mV	11.24mV	12.01mV	7.35mV	Pass
Crossload2	16.22mV	22.79mV	17.75mV	15.65mV	Pass
Crossload3	14.22mV	18.90mV	23.02mV	14.89mV	Pass
Crossload4	27.40mV	18.14mV	17.25mV	11.92mV	Pass

The results above are not used in the certification process

Gamer Storm PF600X

Top side

Power specifications label

本测试报告中包含的所有数据和图表均可在以下条件下由任何人使用：使用过程需提及测试结果由 Cybenetics提供。
在任何情况下都应提供原始测试结果文档的网站链接

Cybenetics 提供自愿性认证计划：电源方面有 ETA (效率)、 LAMBDA (噪声) 与 SAFE (安全与正确运行)；散热产品方面有 DELTA (机箱隔音) 与 PHI (风扇风量与静压)

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