

NZXT

NZXT C1200 Gold

52241Z04700003

Lab ID NZ12002447

Certification ID 252447

Test Result Report ID: 24PS2447A

Certificate Issue Date: May 20, 2024

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		NZXT
Model		C1200 Gold
OEM/ODM		Channel Well Technology
Serial Number		52241Z04700003
Product Specifications		
Manufacturer-Provided Information		
□□□□ (Vrms)		100-240
□□□□ (Arms)		14

□□□□ (Hz)	50-60
□□□□ (W)	1200
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)
□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	NZ12002447
Date of receipt	May 7, 2024
Testing Date	May 17, 2024
Report Issued Date	May 20, 2024
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

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□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (600mm)	1	1	16-20AWG	□
4+4 pin EPS 12V □□ (700mm)	1	1	16AWG	□
8 pin EPS 12V □□ (700mm)	1	1	16AWG	□
6+2pin PCIe□□ (650mm)	3	3	16-18AWG	□
12+4 pin PCIe (645mm) (600W)	1	1	16-24AWG	□
SATA□□ (500mm+145mm+145mm+145mm)	3	12	18AWG	□
4-pin Molex (500mm+145mm+145mm+145mm)	1	4	18AWG	□

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AC Power Cord (1415mm) - C13 coupler	1	1	14AWG	-

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
□□□□	□□	22	22	100	3	0
	□	120		1200	15	0
□□□□ (W)		1200				

Parts Description

General Data	
Manufacturer (OEM)	CWT
Platform	CXT
PCB Type	Double-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor SCK207R0 (7Ω @ 25°C) & Relay
Bridge Rectifier(s)	2x WeEn WNB2560M (600V, 25A @ 127°C)
APFC MOSFETs	3x Infineon IPA60R099P6 (650V, 24A @ 100°C, Rds(on): 0.99Ohm)
APFC Boost Diode	1x On Semi FFSP1665A (650V, 16A @ 135°C)
Bulk Cap(s)	2x Rubycon (420V, 680uF each or 1360uF combined, 2000h @ 105°C,MXE)
Main Switchers	2x Infineon IPA60R099P6 (650V, 24A @ 100°C, Rds(on): 0.99Ohm)

APFC Controller	Champion CM6500UNX & CM03X (for no load consumption)
Resonant Controller	Champion CM6901
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	10x Infineon BSC014N04LS (40V, 125A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 2x QM3054M6 (30V, 61A @ 100°C, Rds(on): 4.8mOhm) & 2x QN3107M6N (30V, 74A @ 100°C, Rds(on): 2.6mOhm) PWM Controller(s): uP3861P
Filtering Capacitors	Electrolytic: 4x Nippon Chemi-Con (W) 3x Rubycon (4-10,000 @ 105°C, YXF), Polymer: 31x FPCAPS, 1x Nippon Chemi-Con
Supervisor IC	Weltrend WT7502 (OVD, UVD, PGO,)
Fan Model	Hong Hua (HA13525H12SF-Z) (135mm, 12V, 0.5A Fluid Dynamic Bearing Fan)
5VSB	
TVS Diode	P6SMB
Rectifier	Pingwey R1MF
Synchronous Rectification Driver	Leadtrend LD8926AA1
Standby PWM Controller	On-Bright OB2365T

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 v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	88.108%
Average Noise Output (>1450 Load Combinations)	26.58dBA
PF□□□ (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	74.614%
□□□□□	0.0173W
Non-Accredited	
12V Ripple (Full Load)	18.92mV
5V Ripple (Full Load)	8.47mV
3.3V Ripple (Full Load)	8.91mV
5VSB Ripple (Full Load)	7.97mV
12V Load Regulation	0.87%
5V Load Regulation	0.44%
3.3V Load Regulation	1.11%
5VSB Load Regulation	2.04%
Inrush Current	25.470A

230V

Accredited	
□□□□ (>1450 load combinations)	90.520%
Average Noise Output (>1450 Load Combinations)	26.16dBA
PF□□□ (>1450 Load Combinations)	0.961
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.986%
□□□□□	0.0828W
Non-Accredited	
12V Ripple (Full Load)	20.48mV
5V Ripple (Full Load)	10.98mV
3.3V Ripple (Full Load)	12.75mV

5VSB Ripple (Full Load)	10.11mV	
12V Load Regulation	0.86%	
5V Load Regulation	0.40%	
3.3V Load Regulation	0.99%	
5VSB Load Regulation	1.88%	
Inrush Current	47.960A	
12V Transient Response (200%)	11.33V	
5V Transient Response (200%)	4.920V	
3.3V Transient Response (200%)	3.181V	
5VSB Transient Response (200%)	4.810V	
PG ₁ & PG ₂	29.50ms	
AC Loss to PWR_OK Hold Up Time	26.00ms	
PWR_OK Inactive to DC Loss Delay	3.50ms	
PSU Timings: T1 (20% / 100%)	59.0ms	59.0ms
PSU Timings: T3 (20% / 100%)	131.0ms	132.0ms
OPP (27.49°C / 41.18°C)	125.25%	125.26%

PG₁ & PG₂

Hold-Up Time (ms)	29.5
AC Loss to PWR_OK Hold Up Time (ms)	26
PWR_OK Inactive to DC Loss Delay (ms)	3.5

PG₁

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.87 V	114.83 V	113.85 V	114.91 V	116.15 V	PASS

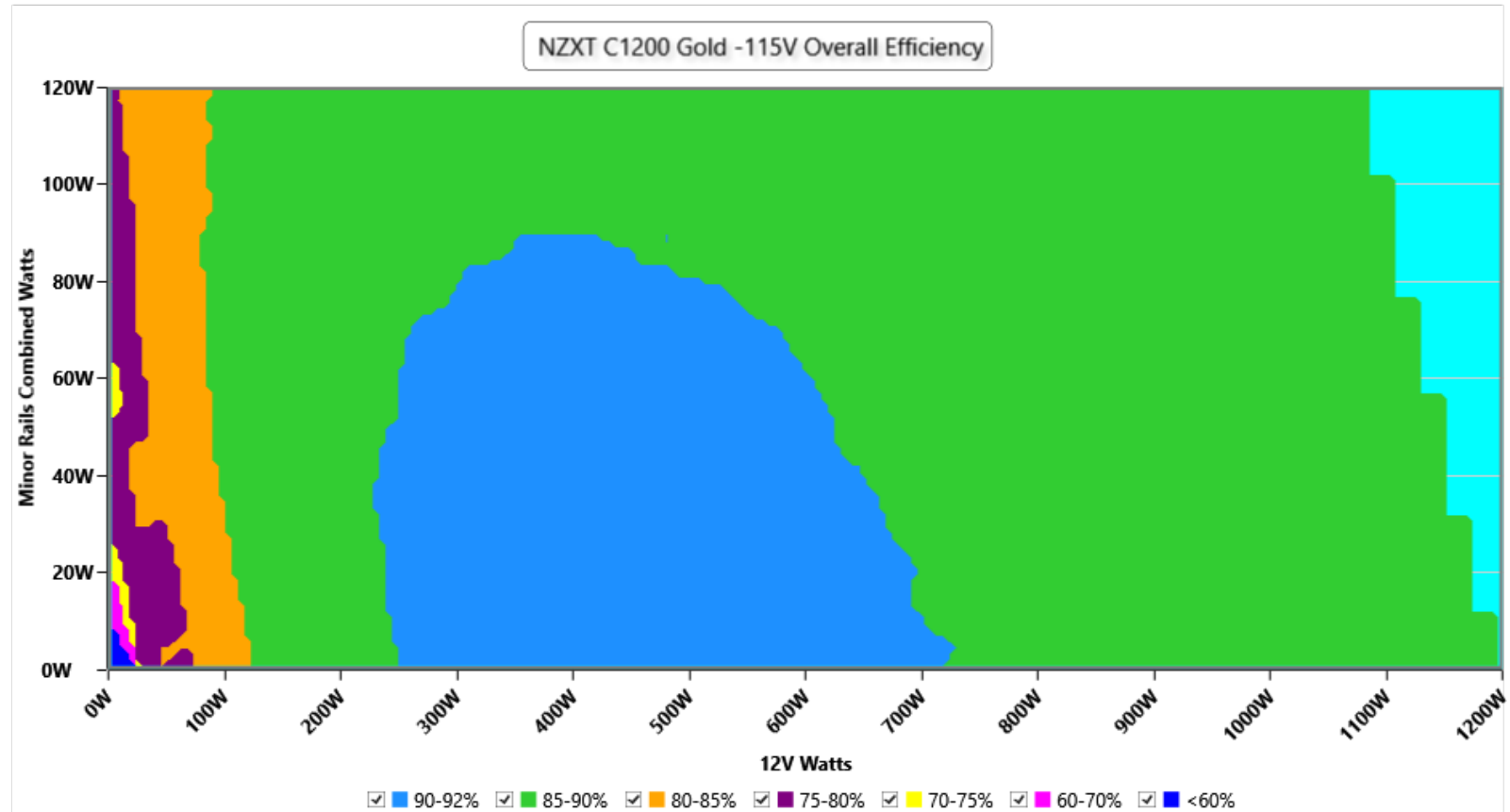
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.02 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.417	1.417	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.14 %	0.10 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.017 W	0.015 W	N/A	0.020 W	N/A	N/A
Apparent Power:	10.339 W	10.316 W	N/A	10.359 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

230V

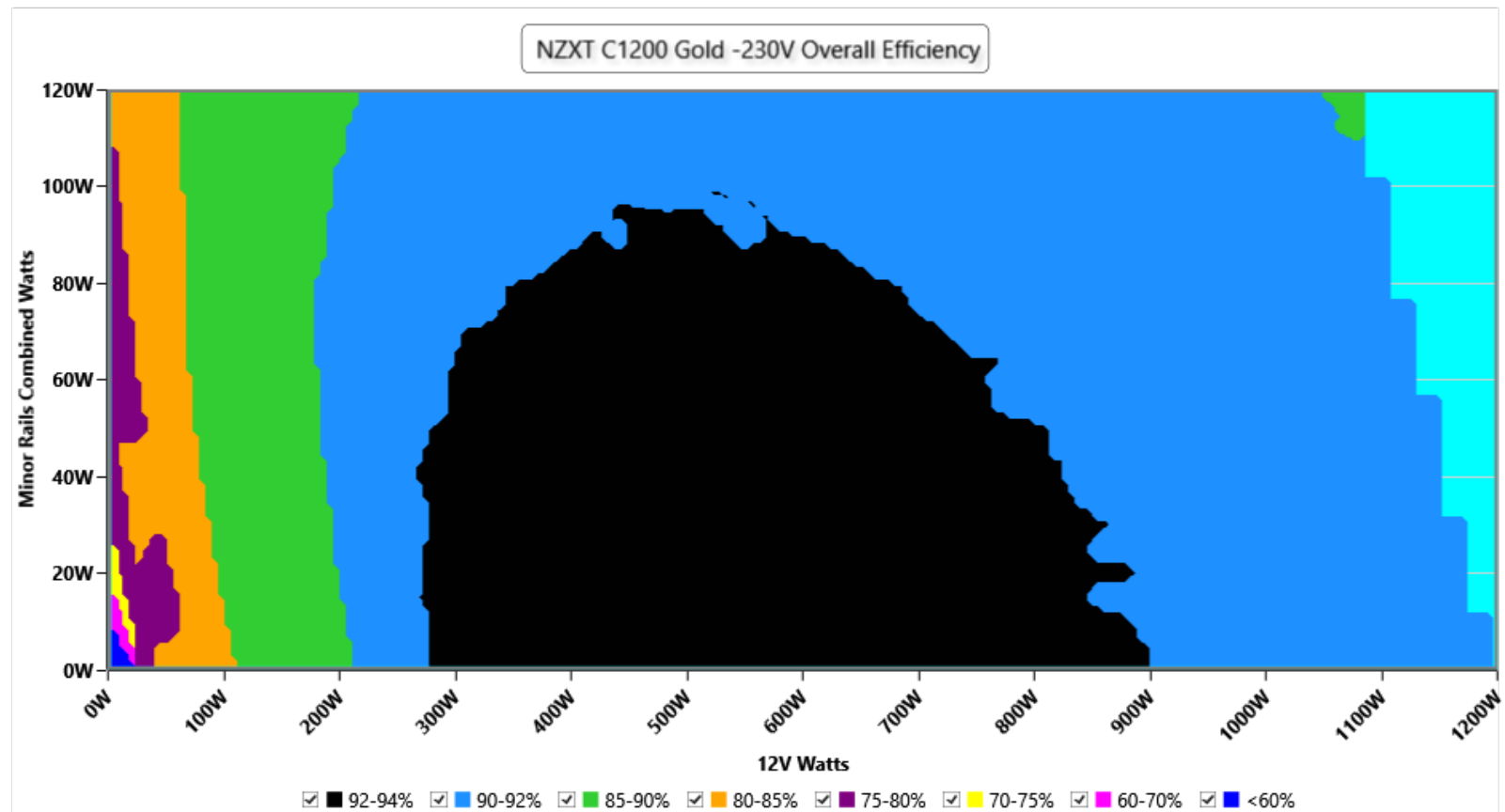
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.98 V	229.91 V	227.70 V	230.04 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.17 %	0.15 %	N/A	0.20 %	2.00 %	PASS
Real Power:	0.083 W	0.071 W	N/A	0.099 W	N/A	N/A
Apparent Power:	34.780 W	34.748 W	N/A	34.805 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A



115V



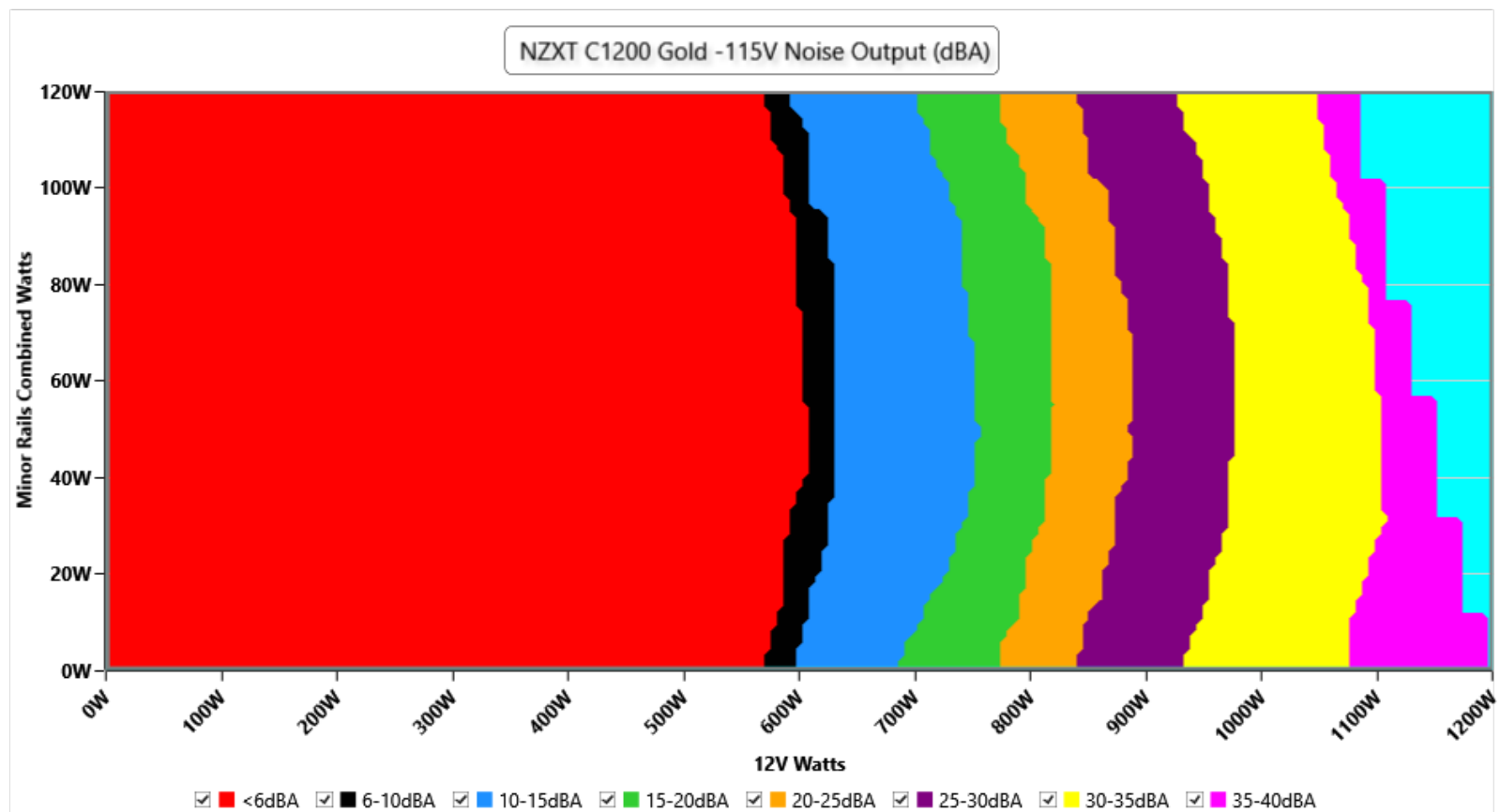
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



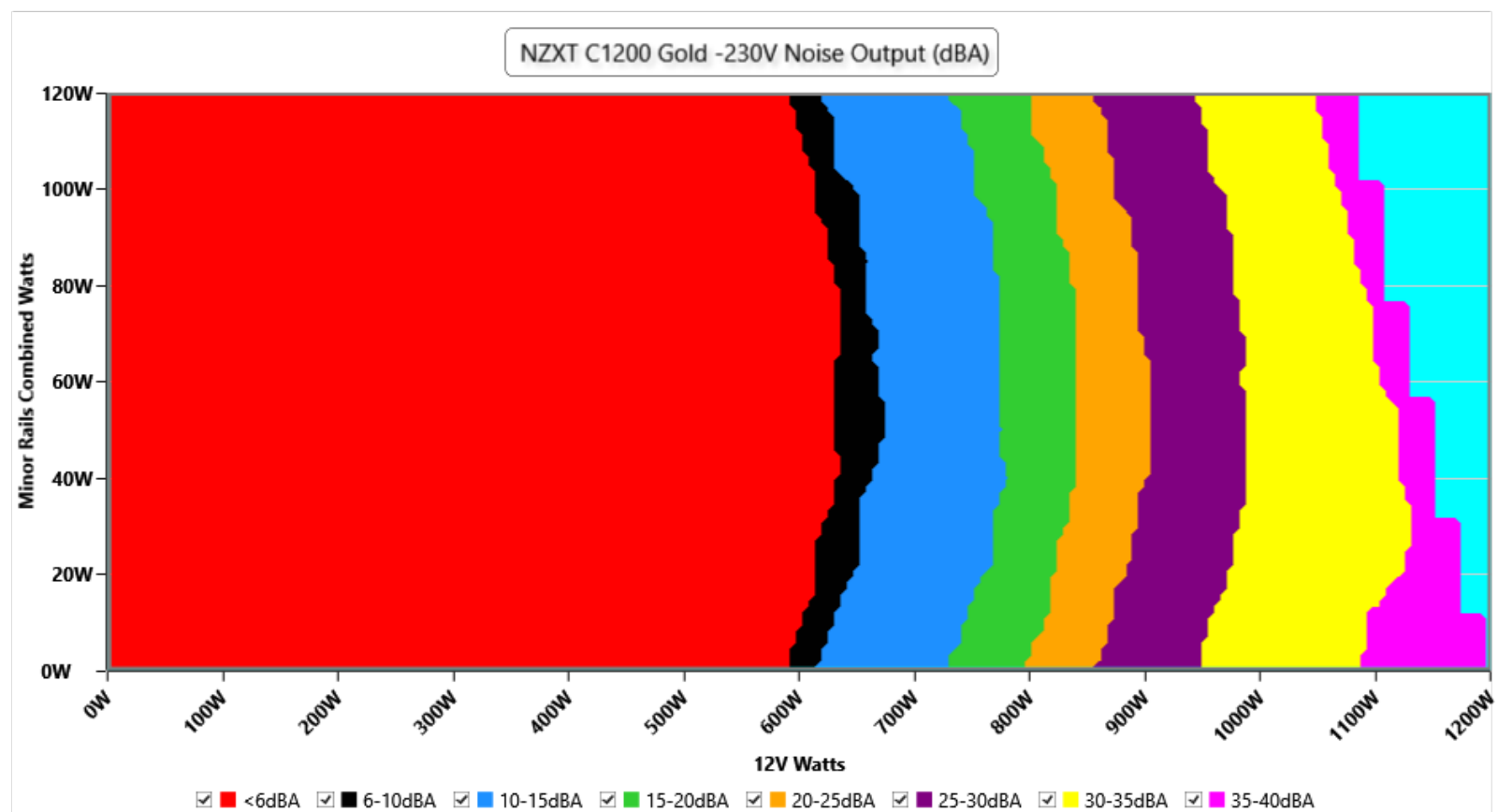
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V

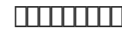


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails



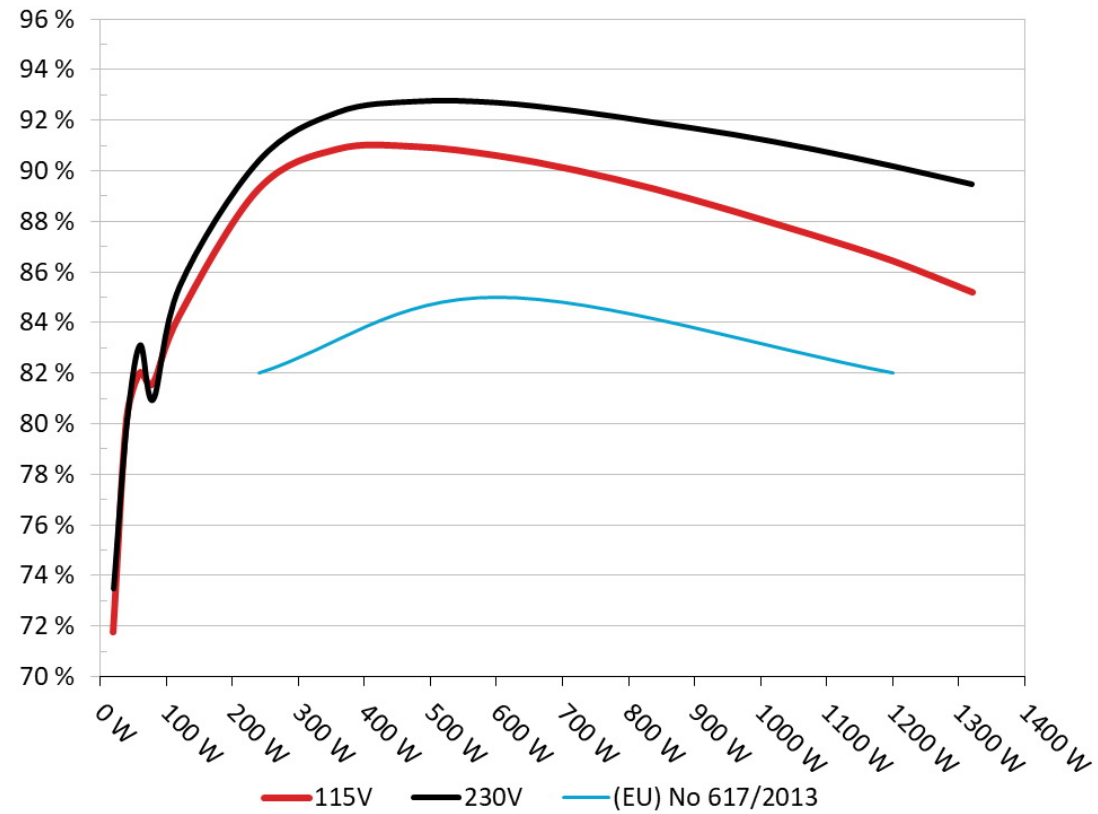
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance



Efficiency: NZXT C1200 Gold

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

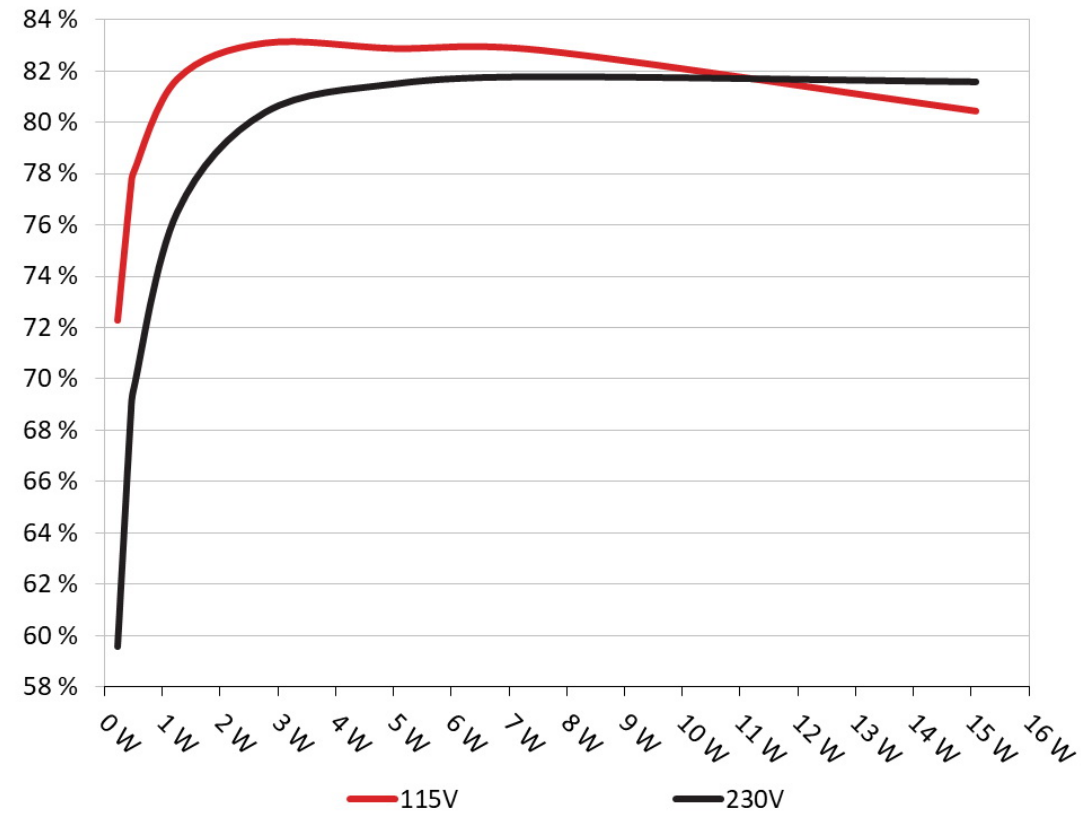


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb□□□

5VSB Efficiency: NZXT C1200 Gold

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	0.227W	72.27%	0.03
	5.048V	0.314W		114.88V
2	0.09A	0.454W	77.437%	0.056
	5.047V	0.586W		114.87V
3	0.55A	2.773W	83.08%	0.256
	5.043V	3.338W		114.87V
4	1A	5.039W	82.869%	0.362
	5.04V	6.081W		114.86V
5	1.5A	7.554W	82.799%	0.415
	5.037V	9.124W		114.86V
6	3A	15.075W	80.432%	0.497
	5.026V	18.742W		114.86V

230V

#	5VSB	DC/AC (%)		PF/AC (%)
1	0.045A	0.227W	59.572%	0.011
	5.054V	0.382W		229.95V
2	0.09A	0.454W	68.613%	0.019
	5.049V	0.663W		229.94V
3	0.55A	2.773W	80.39%	0.095
	5.043V	3.45W		229.94V
4	1A	5.04W	81.514%	0.16
	5.04V	6.183W		229.94V
5	1.5A	7.555W	81.786%	0.22
	5.037V	9.238W		229.94V
6	3A	15.074W	81.587%	0.322
	5.025V	18.476W		229.94V

Protection Features

Protection Features	
OCP (Cold @ 27°C)	12V: 122A (122%), 12.081V 5V: 26.8A (121.82%), 5.056V 3.3V: 28.3A (128.64%), 3.335V 5VSB: 4.9A (163.33%), 5V
OCP (Hot @ 43°C)	12V: 123A (123%), 12.112V 5V: 26.5A (120.45%), 5.059V 3.3V: 27.5A (125%), 3.331V 5VSB: 4.8A (160%), 5.003V
OPP (Cold @ 27°C)	1503.05W (125.25%)
OPP (Hot @ 41°C)	1503.08W (125.26%)
OTP	✓ (160°C @ secondary side)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓
PWR_OK	Proper operation
NLO	✓
Fan Failure Protection	✓
SIP	Surge: MOV Inrush: NTC Thermistor & Bypass relay

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
	8.096A	1.973A	1.964A	0.993A	120.001	84.263%	0	<6.0	44.47°C	0.949
	12.155V	5.07V	3.36V	5.036V	142.416				40.23°C	115.1V

	17.190A	2.959A	2.95A	1.193A	239.962	89.275%	0	<6.0	45.5°C	0.973
	12.162V	5.07V	3.356V	5.029V	268.791				40.93°C	115.05V
	26.614A	3.454A	3.445A	1.395A	359.266	90.853%	0	<6.0	46.41°C	0.98
	12.145V	5.068V	3.352V	5.02V	395.439				41.4°C	115.02V
	36.122A	3.948A	3.942A	1.597A	479.639	90.949%	410	<6.0	41.71°C	0.986
	12.137V	5.067V	3.349V	5.012V	527.369				47.25°C	114.99V
	45.255A	4.94A	4.932A	1.8A	599.444	90.601%	505	8.9	42.18°C	0.99
	12.130V	5.062V	3.345V	5V	660.404				48.26°C	114.75V
	54.465A	5.932A	5.926A	2A	719.947	90.018%	696	17.2	42.94°C	0.992
	12.121V	5.059V	3.341V	4.99V	799.773				49.45°C	114.91V
	63.619A	6.925A	6.922A	2.209A	839.69	89.271%	918	26.3	43.16°C	0.993
	12.112V	5.056V	3.337V	4.98V	940.609				50.21°C	114.87V
	72.853A	7.916A	7.919A	2.314A	959.677	88.389%	1111	32.1	43.43°C	0.993
	12.104V	5.053V	3.333V	4.971V	1085.752				51.47°C	114.82V
	82.408A	8.415A	8.409A	2.419A	1079.515	87.445%	1321	38.0	44.56°C	0.994
	12.098V	5.05V	3.329V	4.962V	1234.51				53.59°C	114.78V
	91.740A	8.914A	8.93A	3.032A	1199.575	86.433%	1511	41.2	45.5°C	0.994
	12.098V	5.048V	3.325V	4.947V	1387.868				55.64°C	114.74V
	100.981A	9.909A	10.027A	3.037A	1320.21	85.191%	1717	44.6	46.59°C	0.995
	12.100V	5.046V	3.32V	4.939V	1549.701				57.47°C	114.72V
	0.115A	14.265A	14.245A	0A	121.299	79.529%	489	7.9	41.78°C	0.954
	12.170V	5.061V	3.348V	5.038V	152.522				51.12°C	115.09V
	0.115A	21.723A	0A	0A	111.387	77.513%	409	<6.0	41.08°C	0.95
	12.173V	5.064V	3.352V	5.044V	143.695				49.72°C	115.09V
	0.115A	0A	21.758A	0A	73.986	72.262%	408	<6.0	40.22°C	0.955
	12.168V	5.079V	3.336V	5.039V	102.386				48.62°C	115.11V
	99.171A	0A	0A	0A	1200.048	87.191%	1487	40.7	45.79°C	0.994
	12.100V	5.061V	3.326V	4.986V	1376.354				55.1°C	114.76V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □
	8.092A	1.972A	1.966A	0.991A	119.965	85.43%	0	<6.0	44.47°C	0.896
	12.155V	5.071V	3.357V	5.044V	140.432				40.18°C	229.92V
	17.191A	2.958A	2.952A	1.191A	239.907	90.402%	0	<6.0	45.33°C	0.943
	12.158V	5.071V	3.353V	5.037V	265.377				40.76°C	229.9V
	26.603A	3.452A	3.448A	1.392A	359.017	92.314%	0	<6.0	46.51°C	0.956
	12.140V	5.069V	3.35V	5.029V	388.91				41.44°C	229.89V
	36.115A	3.947A	3.944A	1.593A	479.432	92.75%	414	<6.0	41.91°C	0.968
	12.134V	5.068V	3.347V	5.02V	516.924				47.5°C	229.86V
	45.262A	4.937A	4.935A	1.796A	599.173	92.7%	472	6.6	42.22°C	0.974
	12.122V	5.064V	3.344V	5.01V	646.365				48.32°C	229.85V
	54.488A	5.929A	5.928A	2A	719.706	92.368%	659	15.4	42.83°C	0.976
	12.111V	5.061V	3.34V	5.001V	779.182				49.48°C	229.83V
	63.661A	6.921A	6.923A	2.204A	839.441	91.915%	855	24.3	43.25°C	0.981
	12.101V	5.058V	3.337V	4.991V	913.296				50.32°C	229.82V
	72.912A	7.913A	7.92A	2.308A	959.44	91.434%	1088	31.5	43.68°C	0.984
	12.091V	5.055V	3.333V	4.982V	1049.327				51.74°C	229.79V
	82.477A	8.411A	8.409A	2.413A	1079.256	90.854%	1277	36.9	44.08°C	0.986
	12.086V	5.053V	3.329V	4.974V	1187.91				53.09°C	229.78V
	91.825A	8.909A	8.929A	3.024A	1199.29	90.191%	1486	40.7	46.46°C	0.987
	12.084V	5.051V	3.326V	4.96V	1329.737				56.46°C	229.76V
	101.083A	9.903A	10.025A	3.029A	1319.916	89.471%	1682	43.9	47.08°C	0.988
	12.085V	5.049V	3.321V	4.953V	1475.261				57.97°C	229.73V
	0.114A	14.259A	14.261A	0A	121.29	80.516%	490	8.0	42.29°C	0.903
	12.171V	5.063V	3.345V	5.046V	150.64				61.38°C	229.93V
	0.114A	21.7A	0A	0A	111.333	78.552%	410	<6.0	40.69°C	0.897
	12.173V	5.067V	3.348V	5.051V	141.727				60.42°C	229.93V
	0.114A	0A	21.78A	0A	73.981	72.043%	410	<6.0	42.02°C	0.866
	12.167V	5.08V	3.333V	5.047V	102.69				59.84°C	229.93V

	99.268A	0A	0A	0A	1199.927	90.725%	1438	39.8	46.72°C	0.987
	12.088V	5.061V	3.326V	4.998V	1322.616				64.58°C	229.74V

The results above are not used in the certification process

20-80□□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.232A	0.493A	0.491A	0.198A	19.998	71.751%	0	<6.0	39.77°C	0.864
	12.058V	5.07V	3.357V	5.048V	27.872				36.7°C	115.13V
40W	2.710A	0.69A	0.688A	0.297A	39.997	80.104%	0	<6.0	40.85°C	0.936
	12.058V	5.069V	3.359V	5.045V	49.928				37.51°C	115.13V
60W	4.190A	0.888A	0.883A	0.397A	59.996	82.003%	0	<6.0	41.94°C	0.933
	12.057V	5.07V	3.362V	5.044V	73.162				38.26°C	115.12V
80W	5.624A	1.085A	1.08A	0.496A	79.951	81.577%	0	<6.0	42.97°C	0.95
	12.150V	5.07V	3.362V	5.043V	98.008				39.03°C	115.11V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.231A	0.493A	0.492A	0.198A	19.986	73.467%	0	<6.0	39.69°C	0.504
	12.054V	5.068V	3.353V	5.053V	27.205				36.59°C	229.94V
40W	2.711A	0.691A	0.688A	0.297A	39.988	79.997%	0	<6.0	40.86°C	0.705
	12.056V	5.068V	3.356V	5.051V	49.985				37.54°C	229.94V
60W	4.191A	0.888A	0.884A	0.396A	59.988	83.102%	0	<6.0	41.71°C	0.797
	12.055V	5.07V	3.359V	5.051V	72.205				38.13°C	229.93V
80W	5.623A	1.085A	1.08A	0.495A	79.917	80.954%	0	<6.0	43°C	0.858
	12.144V	5.07V	3.359V	5.049V	98.721				39.16°C	229.93V

The results above are not used in the certification process

**115V**

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.94mV	5.31mV	3.71mV	5.30mV	Pass
20% Load	11.20mV	5.30mV	4.07mV	5.35mV	Pass
30% Load	9.99mV	8.06mV	5.90mV	5.35mV	Pass
40% Load	9.62mV	10.76mV	10.73mV	5.55mV	Pass
50% Load	9.97mV	7.80mV	5.70mV	5.60mV	Pass
60% Load	11.76mV	7.81mV	4.88mV	5.66mV	Pass
70% Load	12.06mV	10.40mV	6.77mV	6.27mV	Pass
80% Load	12.47mV	7.35mV	9.77mV	6.06mV	Pass
90% Load	14.04mV	8.77mV	8.90mV	7.44mV	Pass
100% Load	18.92mV	8.47mV	8.91mV	7.97mV	Pass
110% Load	20.74mV	19.31mV	12.96mV	10.26mV	Pass
Crossload1	9.36mV	7.26mV	9.39mV	6.50mV	Pass
Crossload2	10.03mV	6.43mV	4.12mV	6.37mV	Pass
Crossload3	7.53mV	6.78mV	9.97mV	5.96mV	Pass
Crossload4	18.13mV	7.34mV	6.03mV	7.22mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.64mV	8.40mV	9.72mV	7.74mV	Pass
20% Load	12.42mV	9.02mV	9.41mV	7.54mV	Pass
30% Load	11.62mV	9.69mV	9.98mV	7.90mV	Pass
40% Load	9.90mV	9.32mV	9.52mV	7.07mV	Pass
50% Load	10.78mV	10.20mV	10.55mV	8.36mV	Pass
60% Load	12.06mV	15.09mV	11.43mV	8.62mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	13.82mV	9.74mV	11.89mV	9.24mV	Pass
80% Load	13.87mV	10.15mV	12.31mV	9.14mV	Pass
90% Load	14.33mV	11.13mV	11.22mV	9.09mV	Pass
100% Load	20.48mV	10.98mV	12.75mV	10.11mV	Pass
110% Load	21.78mV	22.33mV	15.75mV	10.08mV	Pass
Crossload1	10.55mV	9.75mV	12.29mV	9.57mV	Pass
Crossload2	11.96mV	13.19mV	9.83mV	9.09mV	Pass
Crossload3	9.49mV	8.66mV	12.15mV	9.45mV	Pass
Crossload4	20.61mV	10.27mV	10.33mV	9.06mV	Pass

The results above are not used in the certification process

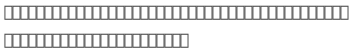
NZXT C1200 Gold



Top side



Power specifications label



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