NZXT

NZXT NP-C750M

31195125800160

Lab ID NZ75001685

Certification ID 251685

Test Result Report ID: 20PS1685A

Certificate Issue Date: Jul 20, 2020

Scheme: ETA-EMI PSU

115V



230V



115V



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	NZXT
Model	NP-C750M
OEM/ODM	Seasonic
Serial Number	31195125800160
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	10-5
□□□□ (Hz)	50-60

□□□□ (W)	750
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
□□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	NZ75001685
Date of receipt	Jun 25, 2020
Testing Date	Jul 16, 2020
Report Issued Date	Jul 20, 2020
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□□ (Non-accredited measurements)

□□□□□				
□□	□□□□	□□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (610mm)	1	1	18-22AWG	□
4+4 pin EPS 12V □□ (650mm)	1	1	18AWG	□
6+2pin PCIe□□ (680mm+80mm)	2	4	18AWG	□
SATA□□ (500mm+100mm+100mm+100mm)	2	8	18AWG	□
4-pin Molex (500+100mm+100mm)	2	6	18AWG	□
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	62	3	0.3
	□	100		744	15	3.6
□□□□□ (W)		750				

Parts Description

General Data	-
Manufacturer (OEM)	Seasonic
PCB Type	Double Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x Champion CM02X (Discharge IC)
Inrush Protection	NTC Thermistor (MF72-5D15M) & Relay
Bridge Rectifier(s)	2x GBU1508 (800V, 15A @ 100°C)
APFC MOSFETs	2x Infineon IPA60R180P7S (650V, 11A @ 100°C, Rds(on): 0.18Ohm)
APFC Boost Diode	1x STMicroelectronics STTH8S06 (600V, 8A @ 25°C)
Bulk Cap(s)	1x Nippon Chemi-Con (400V, 560uF, 2,000h @ 105°C, KMR)
Main Switchers	4x Great Power GPT10N50AD (500V, 9.7A, Rds(on): 0.7Ohm)
APFC Controller	Champion CM6500UNX
Resonant Controller	Champion CM6901T6X
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	4x Nexperia PSMN2R6-40YS (40V, 100A @ 100°C, Rds(on): 5.3mOhm @ 175°C)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0906NS (30V, 40A @ 100°C, 4.5mΩ) PWM Controller: ANPEC APW7159
Filtering Capacitors	Electrolytic: 2x Nippon Chemi-Con (105°C, W), 6x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 4x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 2x Rubycon (3-6,000h @ 105°C, YXG) Polymer: 8x Chemi-Con, 3x FPCAP, 6x NIC
Supervisor IC	Weltrend WT7527V (OCP, OVP, UVP, SCP, PG)
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, 2200 RPM, Fluid Dynamic Bearing)
5VSB Circuit	-

Rectifier	1x MCC MBR1045ULPS SBR (45V, 10A @ 90°C)
Standby PWM Controller	Excelliance MOS EM8569

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	88.696%
Average Noise Output (>1450 Load Combinations)	33.38dBA
PF□□□ (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	64.017%
□□□□□□	0.0442W
Non-Accredited	
12V Ripple (Full Load)	22.73mV
5V Ripple (Full Load)	11.75mV
3.3V Ripple (Full Load)	15.39mV
5VSB Ripple (Full Load)	9.23mV
12V Load Regulation	0.24%
5V Load Regulation	1.39%
3.3V Load Regulation	1.29%
5VSB Load Regulation	3.13%
Inrush Current	28.550A

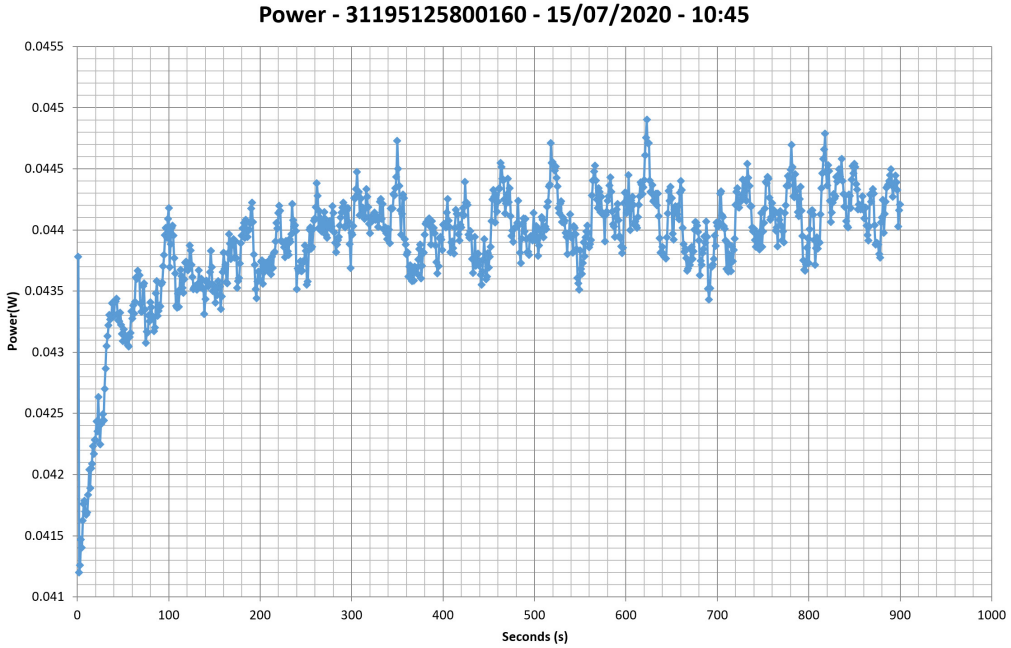
230V		
Accredited		
□□□□ (>1450 load combinations)		90.780%
Average Noise Output (>1450 Load Combinations)		33.05dBA
PF□□□ (>1450 Load Combinations)		0.943
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
□□□□□□		0.0683W
Non-Accredited		
12V Ripple (Full Load)		23.76mV
5V Ripple (Full Load)		12.16mV
3.3V Ripple (Full Load)		15.38mV
5VSB Ripple (Full Load)		8.85mV
12V Load Regulation		0.31%
5V Load Regulation		1.47%
3.3V Load Regulation		1.59%
5VSB Load Regulation		3.09%
Inrush Current		67.100A
□□□□ & PG□□		22.10ms
AC Loss to PWR_OK Hold Up Time		18.40ms
PWR_OK Inactive to DC Loss Delay		3.70ms
PSU Timings: T1 (20% / 100%)	92.0ms	85.0ms
PSU Timings: T3 (20% / 100%)	324.0ms	322.0ms
OPP (0.00°C / 0.00°C)	138.19%	-

□□□□ & PG□□

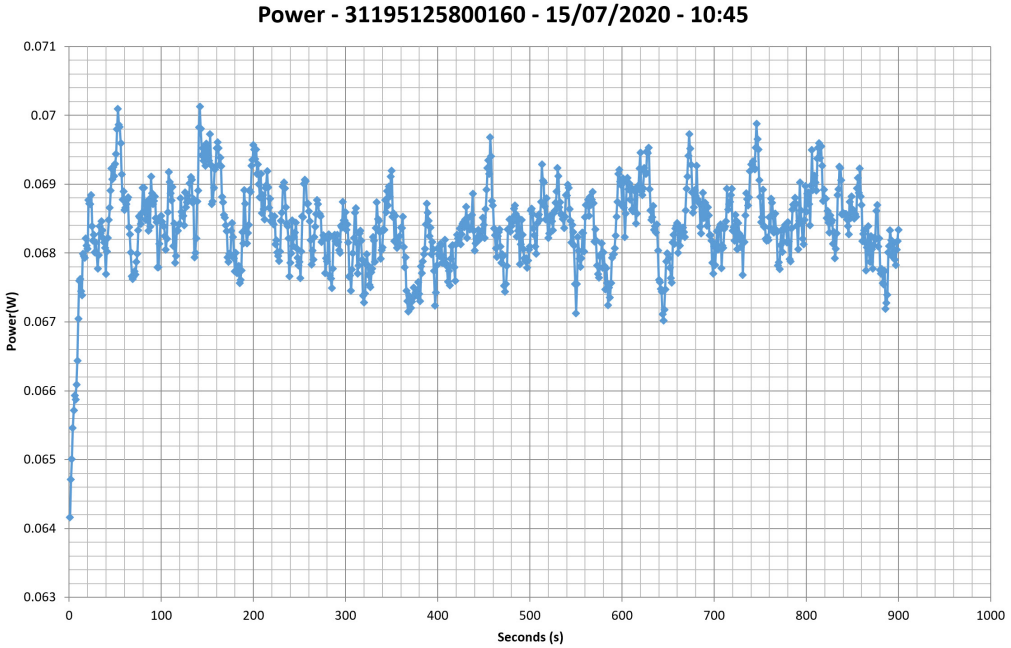
Hold-Up Time (ms)	22.1
AC Loss to PWR_OK Hold Up Time (ms)	18.4
PWR_OK Inactive to DC Loss Delay (ms)	3.7

Graphs

115V



230V



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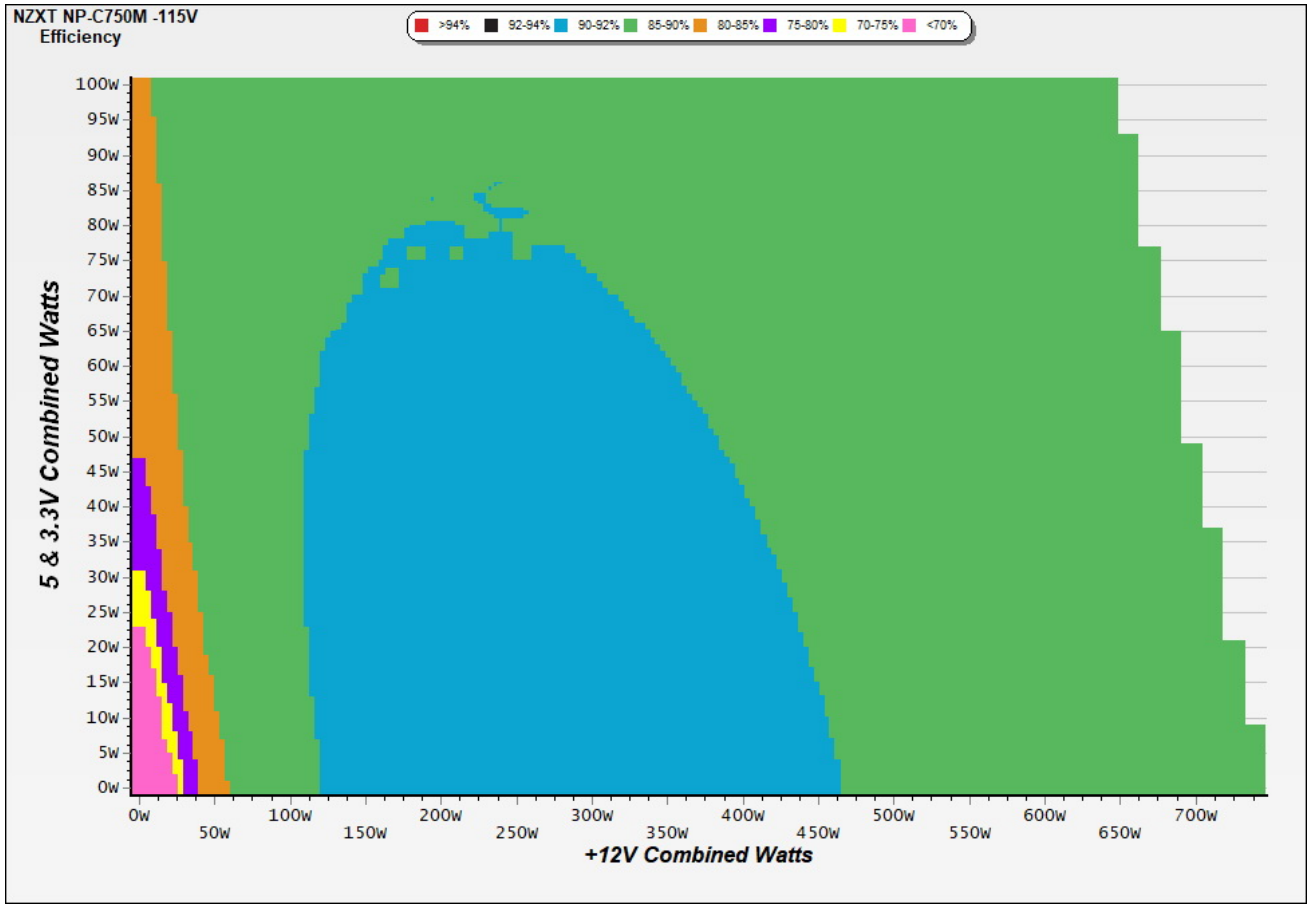
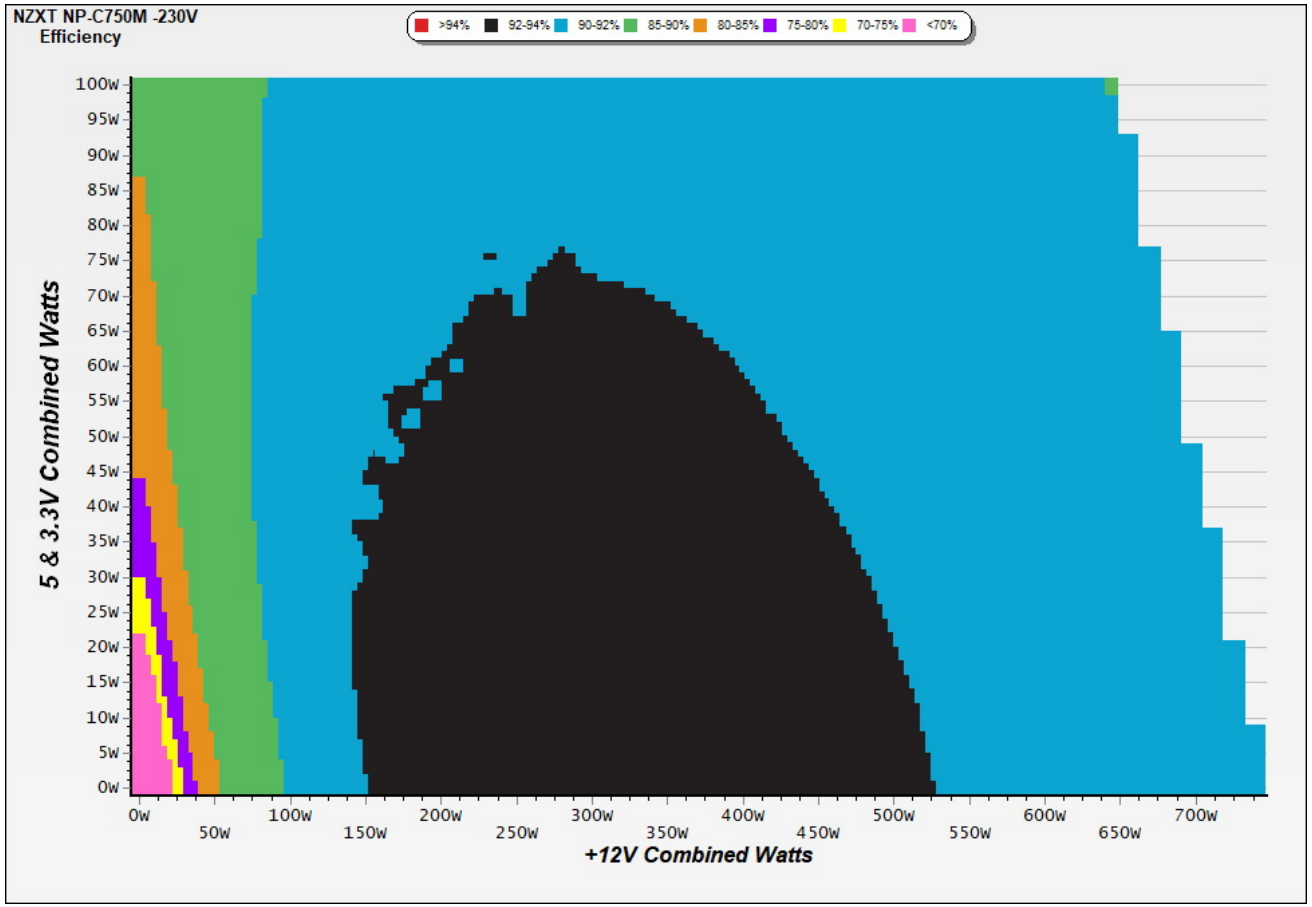
115V



□□

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

230V



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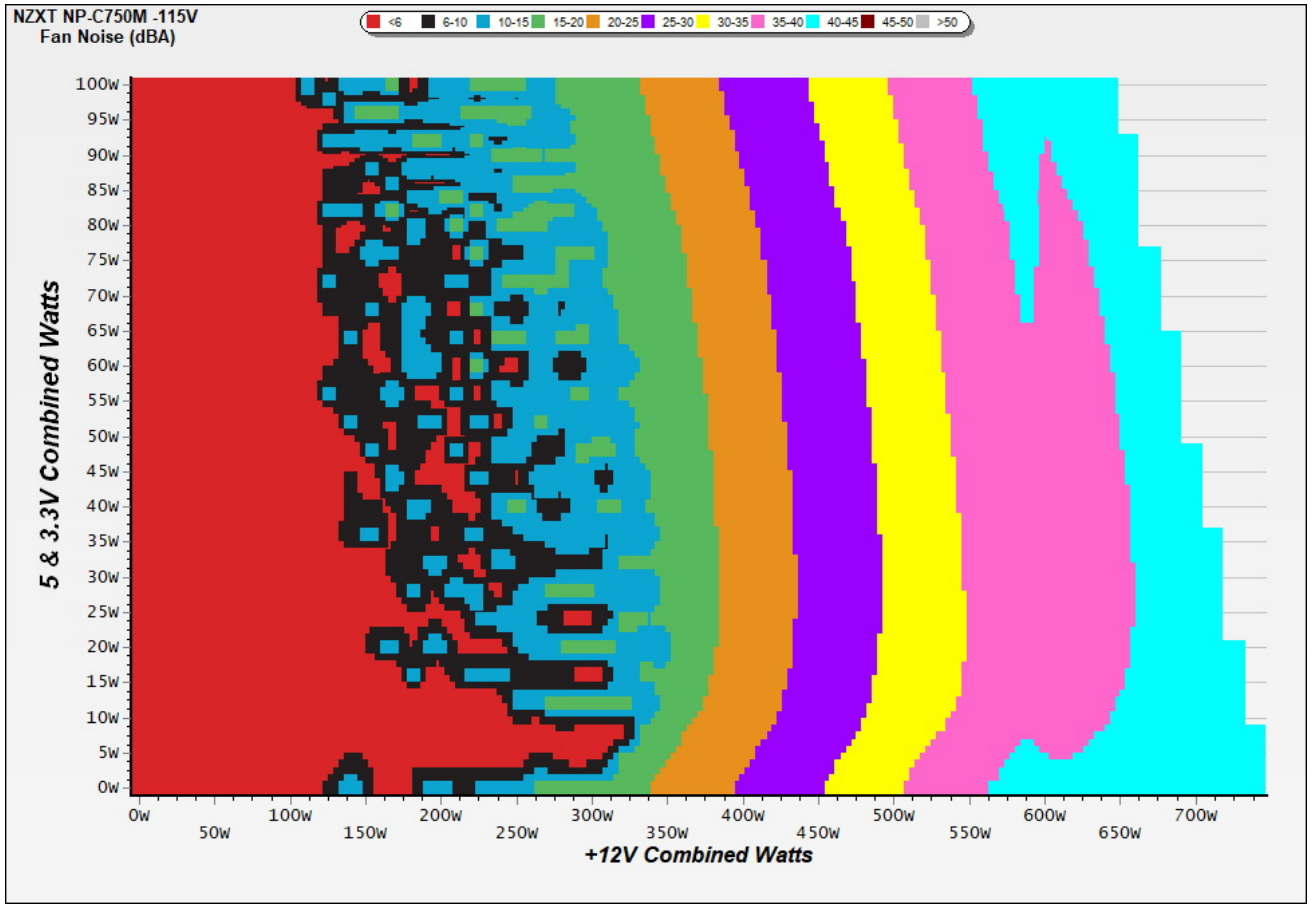
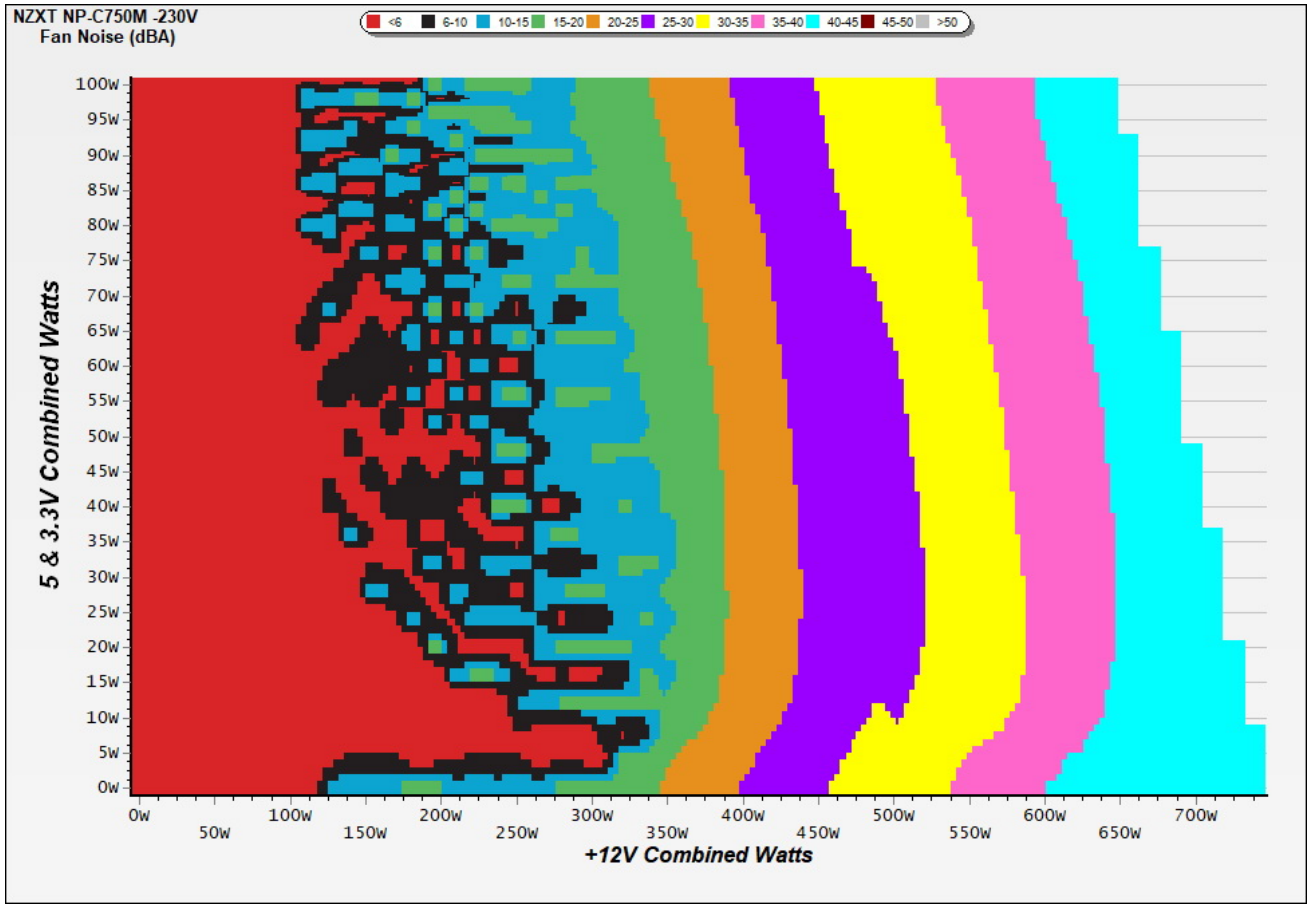
115V



□□

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

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)

115V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 43.3 °C	0 RPM · <6.0 dB(A) · 43.3 °C	fan off in both
20%	577 RPM · 10.5 dB(A) · 41.0 °C	577 RPM · 10.5 dB(A) · 41.0 °C	**+0.0 dB(A)**
50%	1087 RPM · 28.1 dB(A) · 42.0 °C	1087 RPM · 28.1 dB(A) · 42.0 °C	**+0.0 dB(A)**
100%	2094 RPM · 44.7 dB(A) · 45.2 °C	2094 RPM · 44.7 dB(A) · 45.2 °C	**+0.0 dB(A)**

230V

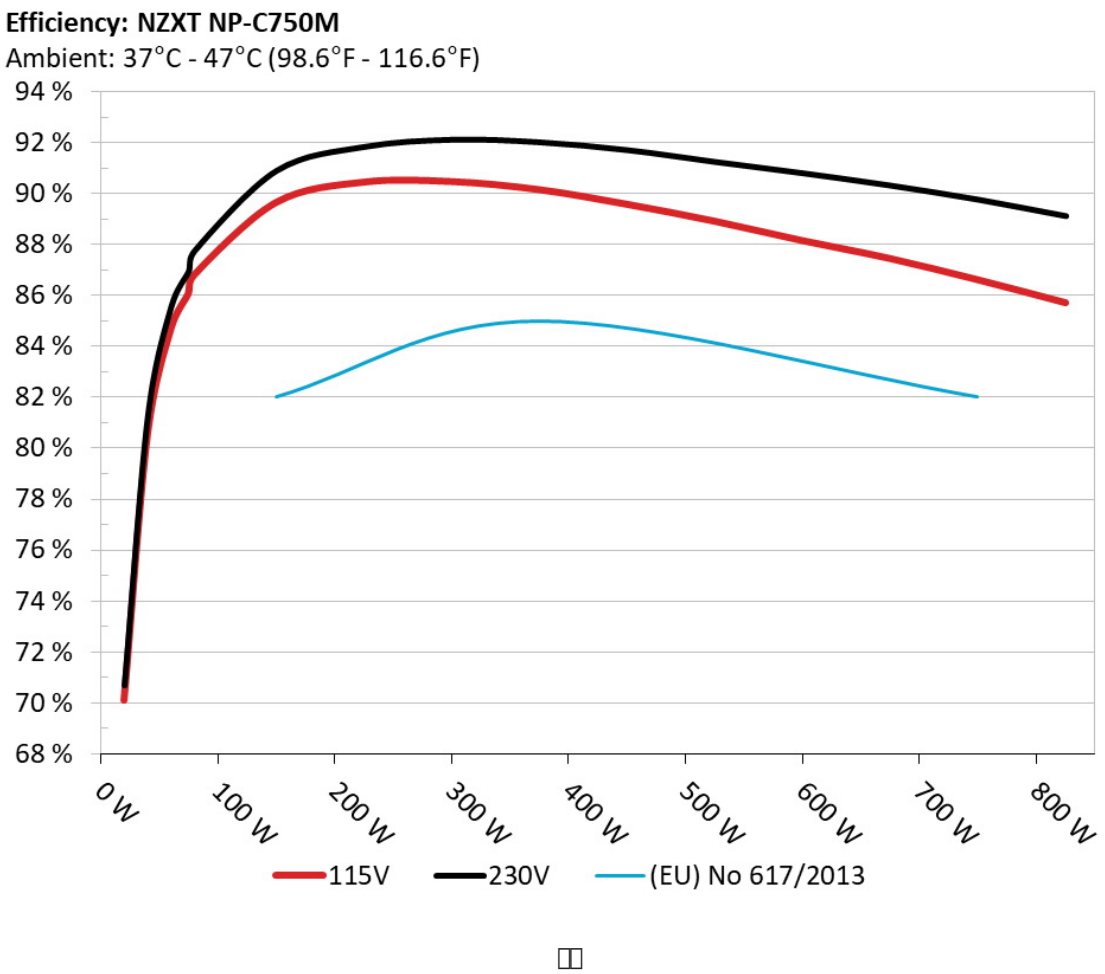
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 43.6 °C	0 RPM · <6.0 dB(A) · 43.6 °C	fan off in both
20%	601 RPM · 11.2 dB(A) · 40.7 °C	601 RPM · 11.2 dB(A) · 40.7 °C	**+0.0 dB(A)**
50%	1103 RPM · 28.6 dB(A) · 42.1 °C	1103 RPM · 28.6 dB(A) · 42.1 °C	**+0.0 dB(A)**
100%	2098 RPM · 44.8 dB(A) · 45.0 °C	2098 RPM · 44.8 dB(A) · 45.0 °C	**+0.0 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, with the fan stopped; with the fan stopped, the intake sensor can read higher than the chamber air.

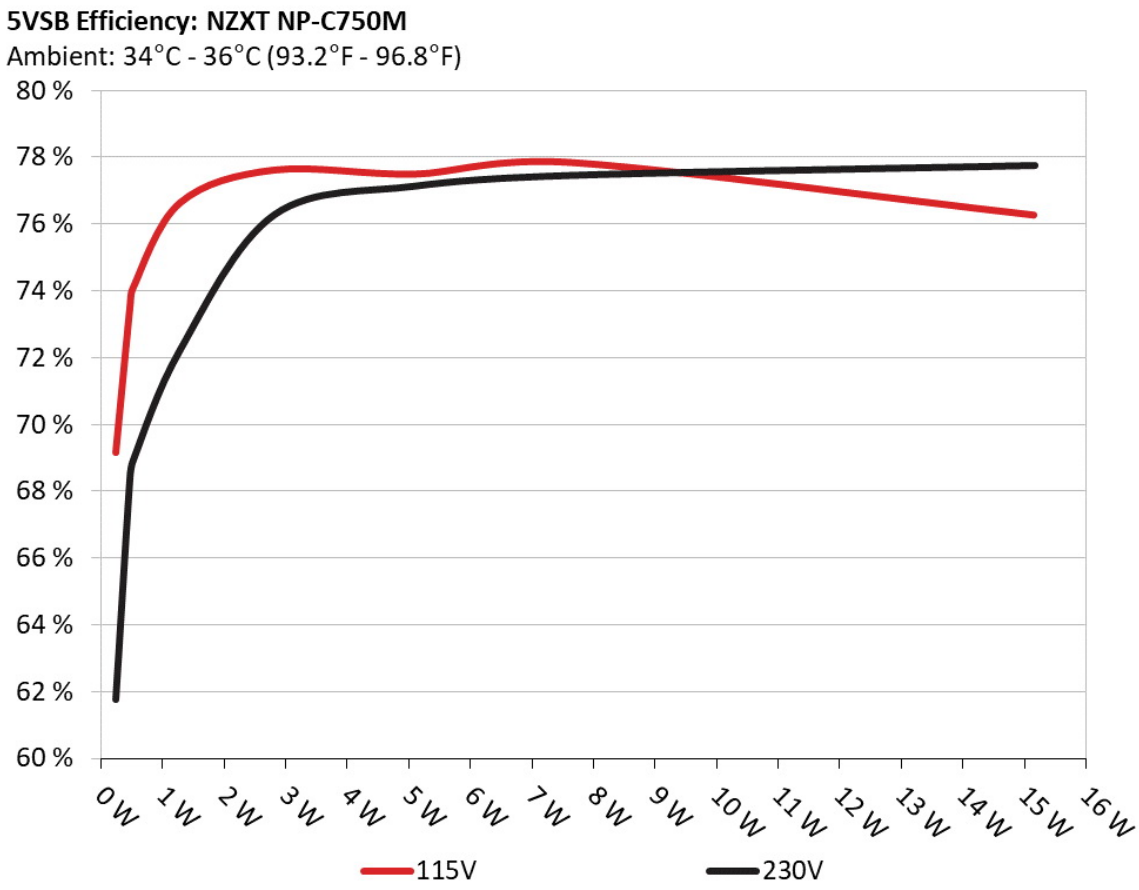
Informational. Not part of the ETA or LAMBDA rating.

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)

115V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.231	69.162%	0.054
	5.123V	0.334		115.17V
2	0.090A	0.461	73.525%	0.098
	5.122V	0.627		115.17V
3	0.550A	2.813	77.621%	0.335
	5.112V	3.624		115.17V
4	1.000A	5.104	77.498%	0.407
	5.103V	6.586		115.17V
5	1.500A	7.639	77.846%	0.442
	5.091V	9.813		115.17V
6	3.000A	15.159	76.272%	0.494
	5.053V	19.875		115.17V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.231	61.765%	0.018
	5.123V	0.374		230.35V
2	0.090A	0.461	68.398%	0.033
	5.122V	0.674		230.35V
3	0.550A	2.812	76.268%	0.159
	5.112V	3.687		230.36V
4	1.000A	5.104	77.123%	0.240
	5.102V	6.618		230.35V
5	1.500A	7.638	77.441%	0.296
	5.091V	9.863		230.35V
6	3.000A	15.175	77.737%	0.376
	5.058V	19.521		230.35V

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.421A	1.988A	1.982A	0.982A	74.962	86.060%	0	<6.0	43.25°C	0.963
	12.070V	5.030V	3.331V	5.091V	87.104				39.63°C	115.15V
2	9.872A	2.986A	2.975A	1.182A	150.035	89.637%	577	10.5	40.96°C	0.979
	12.068V	5.024V	3.327V	5.077V	167.380				45.12°C	115.13V
3	15.662A	3.489A	3.477A	1.383A	225.038	90.437%	691	14.4	41.06°C	0.985
	12.066V	5.018V	3.322V	5.063V	248.834				45.89°C	115.12V
4	21.459A	3.992A	3.979A	1.585A	300.049	90.458%	903	22.2	41.78°C	0.986
	12.062V	5.011V	3.318V	5.050V	331.699				47.22°C	115.09V
5	26.881A	4.997A	4.979A	1.788A	374.662	90.144%	1087	28.1	42.03°C	0.988
	12.059V	5.004V	3.313V	5.036V	415.624				48.10°C	115.11V
6	32.333A	6.004A	5.986A	1.992A	449.612	89.570%	1316	33.7	42.29°C	0.988
	12.056V	4.997V	3.308V	5.021V	501.965				49.25°C	115.11V
7	37.821A	7.017A	6.993A	2.198A	524.934	88.902%	1654	39.3	43.06°C	0.989
	12.052V	4.989V	3.304V	5.006V	590.462				50.69°C	115.10V
8	43.310A	8.003A	8.000A	2.405A	600.105	88.138%	1988	43.6	44.27°C	0.990
	12.049V	4.981V	3.300V	4.990V	680.873				52.28°C	115.09V
9	49.172A	8.545A	8.497A	2.410A	674.779	87.440%	2081	44.6	44.37°C	0.990
	12.045V	4.973V	3.296V	4.980V	771.705				53.74°C	115.08V
10	54.836A	9.066A	9.032A	3.027A	750.005	86.604%	2094	44.7	45.22°C	0.991
	12.041V	4.965V	3.289V	4.957V	866.012				55.17°C	115.08V
11	61.100A	9.082A	9.056A	3.033A	825.239	85.700%	2104	44.9	46.51°C	0.992
	12.038V	4.956V	3.280V	4.947V	962.936				57.17°C	115.07V
CL1	0.117A	12.001A	12.001A	0.000A	101.657	84.856%	794	18.4	42.21°C	0.972
	12.079V	5.017V	3.336V	5.088V	119.799				47.85°C	115.16V

CL2	62.019A	1.000A	1.000A	1.000A	759.915	87.085%	2096	44.8	45.47°C	0.991
	12.039V	4.971V	3.280V	5.018V	872.613				55.83°C	115.08V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	4.431A	1.989A	1.983A	0.983A	74.970	86.948%	0	<6.0	43.57°C	0.812
	12.042V	5.030V	3.330V	5.090V	86.224				40.48°C	230.41V
2	9.888A	2.988A	2.978A	1.182A	150.059	90.883%	601	11.2	40.65°C	0.906
	12.050V	5.022V	3.325V	5.076V	165.112				44.55°C	230.41V
3	15.666A	3.491A	3.479A	1.383A	225.072	91.820%	668	13.6	41.06°C	0.938
	12.065V	5.016V	3.320V	5.062V	245.122				45.44°C	230.41V
4	21.464A	3.995A	3.985A	1.585A	300.094	92.102%	867	21.4	41.37°C	0.956
	12.061V	5.008V	3.314V	5.049V	325.828				46.58°C	230.40V
5	26.894A	5.001A	4.989A	1.788A	374.799	92.002%	1103	28.6	42.11°C	0.965
	12.058V	5.000V	3.308V	5.035V	407.381				47.84°C	230.39V
6	32.348A	6.014A	5.996A	1.993A	449.720	91.697%	1242	32.0	42.62°C	0.970
	12.053V	4.992V	3.303V	5.019V	490.440				49.10°C	230.40V
7	37.837A	7.026A	7.006A	2.199A	525.020	91.232%	1749	40.9	43.34°C	0.974
	12.049V	4.983V	3.298V	5.005V	575.476				50.64°C	230.37V
8	43.330A	8.002A	8.020A	2.406A	600.125	90.787%	1912	42.7	43.40°C	0.977
	12.045V	4.975V	3.292V	4.989V	661.025				51.89°C	230.37V
9	49.221A	8.559A	8.523A	2.411A	674.843	90.307%	2090	44.7	44.86°C	0.979
	12.034V	4.966V	3.286V	4.980V	747.273				54.04°C	230.35V
10	54.844A	9.082A	9.062A	3.028A	750.054	89.754%	2098	44.8	45.03°C	0.981
	12.040V	4.957V	3.278V	4.956V	835.682				55.53°C	230.35V
11	61.104A	9.095A	9.085A	3.033A	825.294	89.105%	2109	44.9	46.70°C	0.983
	12.038V	4.949V	3.270V	4.947V	926.207				58.43°C	230.36V
CL1	0.118A	12.002A	12.001A	0.000A	101.517	85.836%	832	20.1	42.58°C	0.872
	12.075V	5.013V	3.327V	5.088V	118.268				47.67°C	230.37V

CL2	62.025A	1.000A	1.000A	1.000A	759.732	90.251%	2095	44.7	45.18°C	0.981
	12.035V	4.967V	3.276V	5.017V	841.803				55.80°C	230.32V

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 □□
1	1.230A	0.496A	0.495A	0.196A	19.992	70.086%	0	<6.0	0.850
	12.067V	5.036V	3.332V	5.117V	28.525				115.16V
2	2.459A	0.994A	0.991A	0.392A	39.982	80.502%	0	<6.0	0.929
	12.067V	5.035V	3.332V	5.109V	49.666				115.16V
3	3.693A	1.490A	1.485A	0.588A	60.012	84.673%	0	<6.0	0.953
	12.068V	5.032V	3.331V	5.102V	70.875				115.15V
4	4.919A	1.987A	1.982A	0.785A	79.961	86.795%	0	<6.0	0.964
	12.068V	5.031V	3.331V	5.095V	92.126				115.15V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.231A	0.495A	0.496A	0.196A	19.997	70.696%	0	<6.0	0.532
	12.063V	5.037V	3.331V	5.116V	28.286				230.39V
2	2.461A	0.994A	0.991A	0.392A	39.988	81.268%	0	<6.0	0.676
	12.060V	5.035V	3.331V	5.109V	49.205				230.40V
3	3.694A	1.490A	1.487A	0.588A	60.018	85.560%	0	<6.0	0.766
	12.065V	5.032V	3.330V	5.102V	70.147				230.39V
4	4.925A	1.989A	1.983A	0.785A	79.966	87.744%	0	<6.0	0.821
	12.053V	5.030V	3.329V	5.094V	91.136				230.40V

The results above are not used in the certification process

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115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.80mV	6.20mV	5.40mV	5.50mV	Pass
20% Load	13.40mV	6.30mV	5.70mV	6.00mV	Pass
30% Load	15.80mV	7.00mV	6.20mV	6.50mV	Pass
40% Load	17.90mV	7.10mV	6.90mV	6.70mV	Pass
50% Load	13.80mV	7.60mV	6.90mV	6.50mV	Pass
60% Load	12.20mV	7.80mV	7.10mV	6.90mV	Pass
70% Load	12.20mV	8.50mV	7.60mV	7.30mV	Pass
80% Load	12.70mV	9.20mV	13.60mV	8.40mV	Pass
90% Load	14.60mV	10.10mV	14.60mV	9.10mV	Pass
100% Load	22.70mV	11.80mV	15.40mV	9.20mV	Pass
110% Load	26.50mV	12.60mV	15.50mV	10.30mV	Pass
Crossload1	14.40mV	12.20mV	14.30mV	7.30mV	Pass
Crossload2	21.70mV	9.00mV	8.20mV	8.50mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.40mV	5.90mV	5.30mV	5.60mV	Pass
20% Load	13.50mV	6.40mV	5.70mV	6.30mV	Pass
30% Load	16.00mV	6.80mV	6.10mV	6.50mV	Pass
40% Load	18.10mV	7.50mV	6.50mV	6.10mV	Pass
50% Load	14.50mV	7.70mV	6.70mV	6.10mV	Pass
60% Load	12.30mV	8.10mV	6.90mV	6.50mV	Pass
70% Load	12.80mV	8.00mV	7.20mV	6.40mV	Pass
80% Load	13.50mV	9.10mV	13.80mV	7.40mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	15.90mV	9.70mV	14.10mV	8.10mV	Pass
100% Load	23.80mV	12.20mV	15.40mV	8.90mV	Pass
110% Load	27.60mV	12.10mV	16.00mV	8.80mV	Pass
Crossload1	14.20mV	12.00mV	14.50mV	6.80mV	Pass
Crossload2	24.80mV	8.60mV	8.00mV	8.00mV	Pass

The results above are not used in the certification process

NZXT NP-C750M

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

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