



Make It Yours.

Cooler Master XG 750

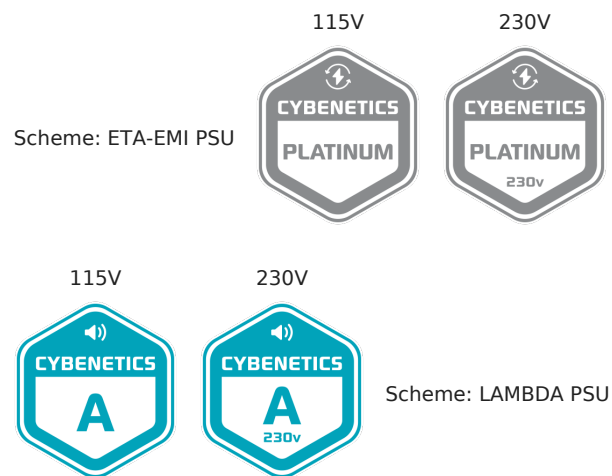
Serial Number

Lab ID CM75001889

Certification ID 251889

Test Result Report ID: 21PS1889A

Certificate Issue Date: Aug 30, 2021



A handwritten signature in blue ink, appearing to read "A. Bitziopoulos", is positioned above the name of the Certification Body General Manager.

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	Cooler Master
Model	XG 750
OEM/ODM	Huizhou Xin Hui Yuan Tech (Fusion Power)
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60

Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	140mm Fluid Dynamic Bearing Fan (DWPH EFC-14E12D)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	CM75001889
Date of receipt	Aug 3, 2021
Testing Date	Aug 27, 2021
Report Issued Date	Aug 30, 2021
Engineer Name	-
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 20+4 pin (650mm)	1	1	18AWG	No
4+4 pin EPS12V (650mm)	1	1	18AWG	No
8 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (550mm+125mm)	2	4	16-18AWG	No
SATA (500mm+125mm+125mm+125mm)	3	12	18AWG	No
4 pin Molex (500mm+125mm+125mm+125mm)	1	4	18AWG	No

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	100		750	15	3.6
Total Max. Power (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Huizhou Xin Hui Yuan Tech (Fusion Power)
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF72-5D15 (5 Ohm) & Relay
Bridge Rectifier(s)	2x MCC GBU15KL (800V, 15A @ 100°C)
APFC MOSFETs	2x NCE Power NCE65TF099 (650V, 24A @ 100°C, Rds(on): 0.109Ohm)
APFC Boost Diode	1x CDP0865G1
Bulk Cap(s)	1x TK (450V, 560uF, 2,000h @ 105°C, LGW)
Main Switchers	4x NCE Power NCE65TF130 (650V, 18A @ 100°C, Rds(on): 0.130Ohm)
Digital Controllers	Champion CM6500UNX
MCU	Champion CM6901T6X
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x Infineon BSC010N04LS (40V, 178A @ 100°C, Rds(on): 1mOhm)
5V & 3.3V	DC-DC Converters: 2x Excelliance MOS EMB04N03A (30V, 55A @ 100°C, Rds(on): 4mOhm) & 2x Excelliance MOS EMB07N03 (30V, 17A @ 100°C, Rds(on): 7mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 2x Nippon Chemi-Con (105°C, W), 4x Nippon Chemi-Con (2-5,000h @ 105°C, KZE), 8x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 2x Nippon Chemi-Con (5-6,000h @ 105°C, KZH) Polymer: 22x FPCAP
Supervisor IC	IN1S313I-SAG
Fan Model	DWPH EFC-14E12D (140mm, 12V, 0.80A, Fluid Dynamic Bearing Fan)
5VSB Circuit	

Rectifier	1x 45R10C SBR
Standby PWM Controller	Excelliance MOS EM8569C

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.025%
Average Noise Output (>1450 Load Combinations)	20.31dBA
Average PF (>1450 Load Combinations)	0.984
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	67.637%
Standby Power Consumption	0.0466W
Non-Accredited	
12V Ripple (Full Load)	22.17mV
5V Ripple (Full Load)	10.53mV
3.3V Ripple (Full Load)	12.21mV
5VSB Ripple (Full Load)	9.34mV
12V Load Regulation	0.06%
5V Load Regulation	0.36%
3.3V Load Regulation	0.24%
5VSB Load Regulation	2.72%
Inrush Current	76.880A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.777%	
Average Noise Output (>1450 Load Combinations)	20.24dBA	
Average PF (>1450 Load Combinations)	0.940	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0835W	
Non-Accredited		
12V Ripple (Full Load)	23.60mV	
5V Ripple (Full Load)	10.57mV	
3.3V Ripple (Full Load)	12.33mV	
5VSB Ripple (Full Load)	9.35mV	
12V Load Regulation	0.05%	
5V Load Regulation	0.36%	
3.3V Load Regulation	0.24%	
5VSB Load Regulation	2.74%	
Inrush Current	53.290A	
Hold-Up Time & PWR_OK Signal	24.70ms	
AC Loss to PWR_OK Hold Up Time	20.70ms	
PWR_OK Inactive to DC Loss Delay	4.00ms	
PSU Timings: T1 (20% / 100%)	59.0ms	51.0ms
PSU Timings: T3 (20% / 100%)	124.0ms	123.0ms
OPP (28.95°C / 44.79°C)	139.55%	132.74%

Hold-Up Time & PWR_OK Signal

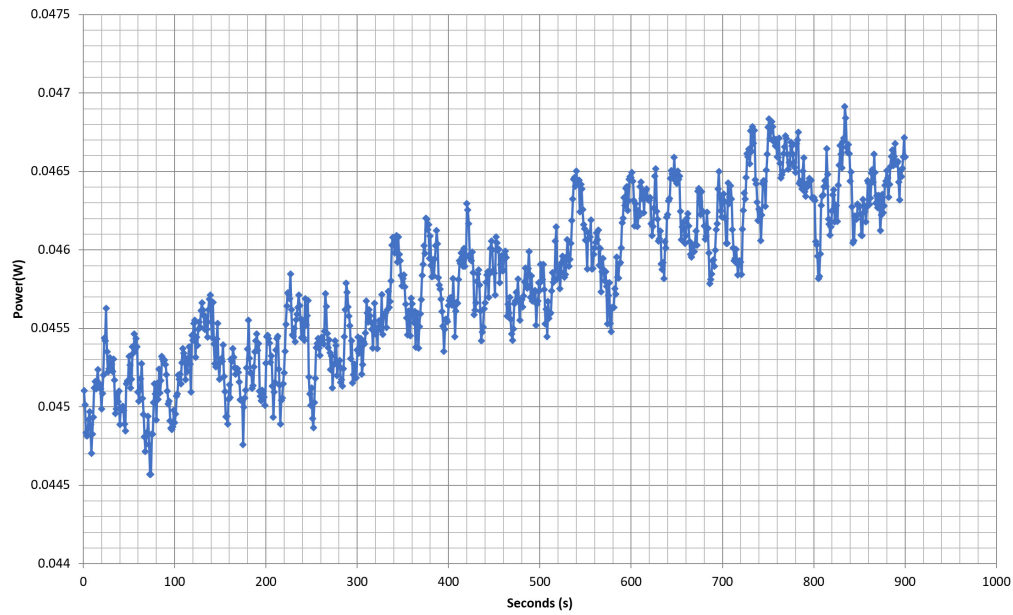
Hold-Up Time (ms)	24.7
AC Loss to PWR_OK Hold Up Time (ms)	20.7
PWR_OK Inactive to DC Loss Delay (ms)	4

Vampire Power

Graphs

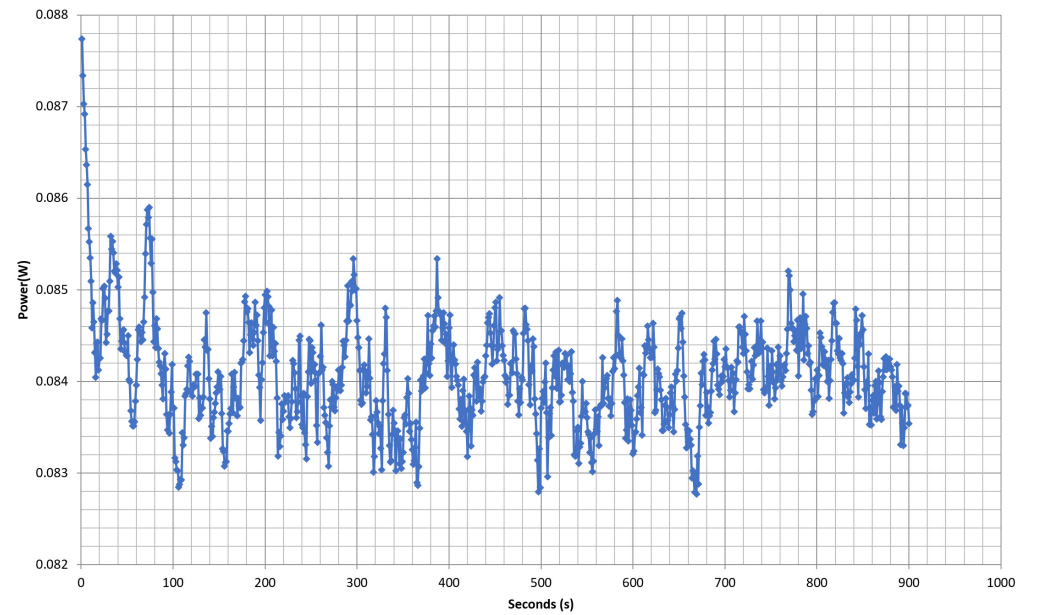
115V

Power - 23/08/2021 - 14:52



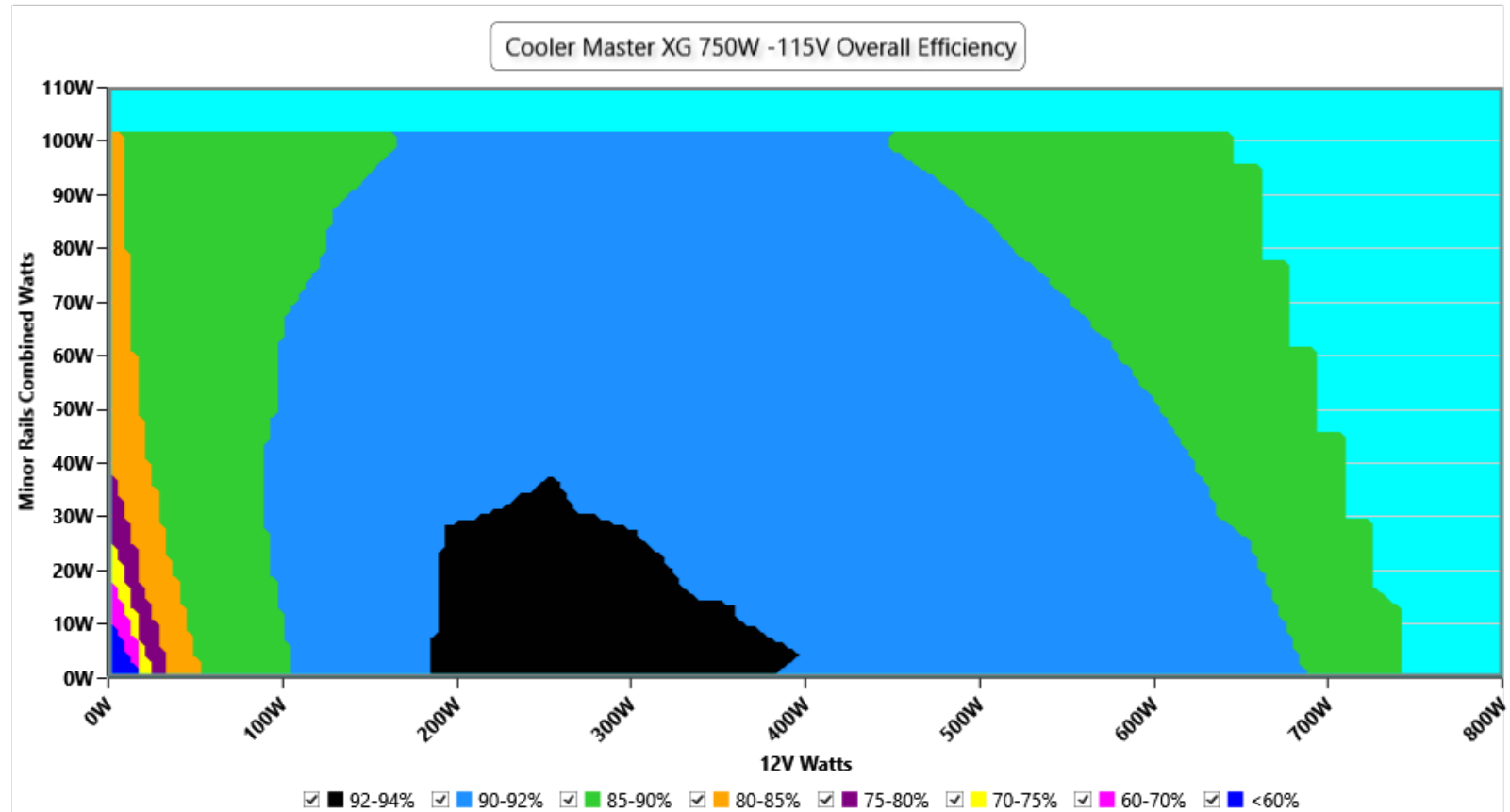
230V

Power - 23/08/2021 - 14:52



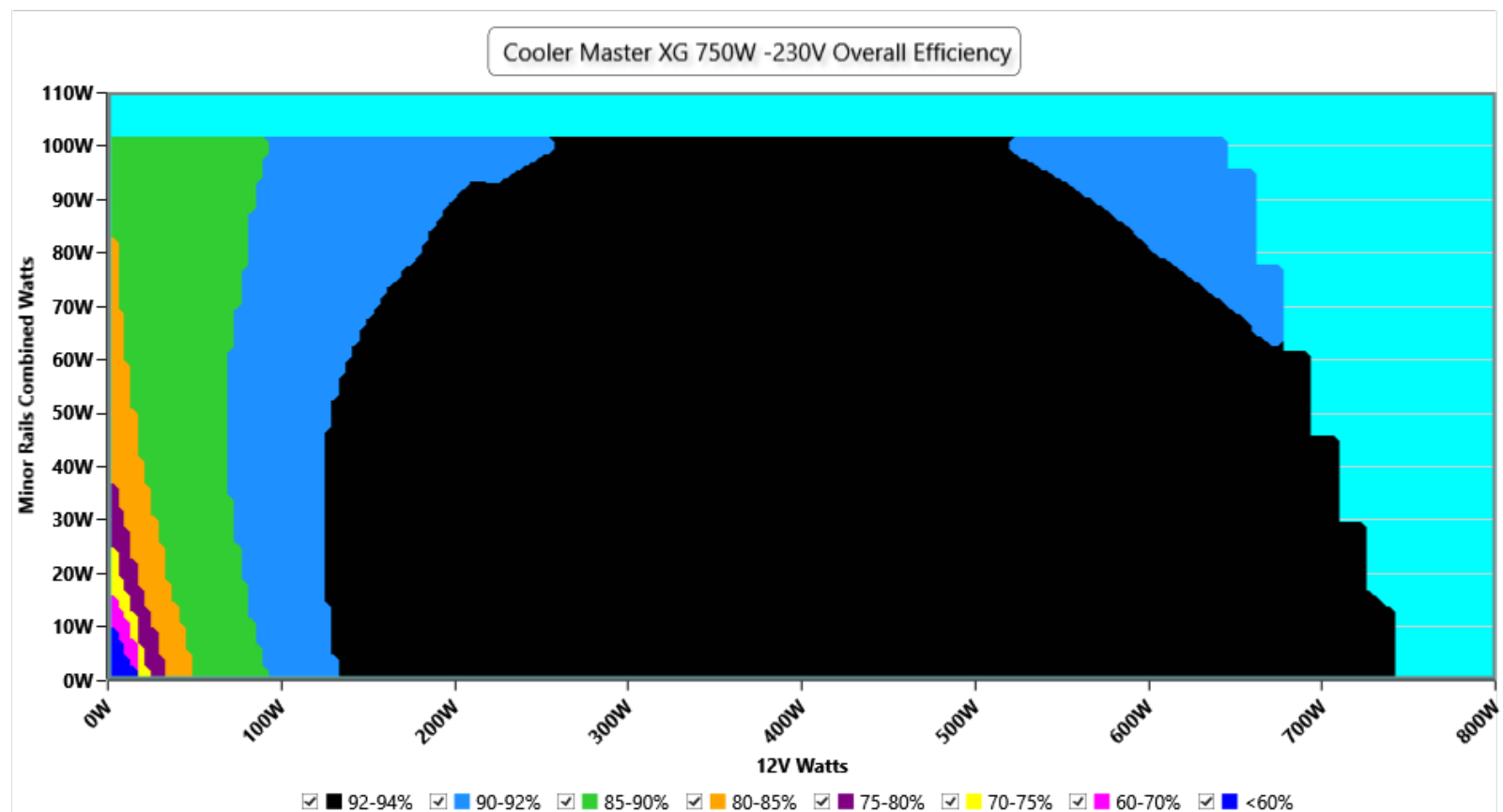
Efficiency Graph

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

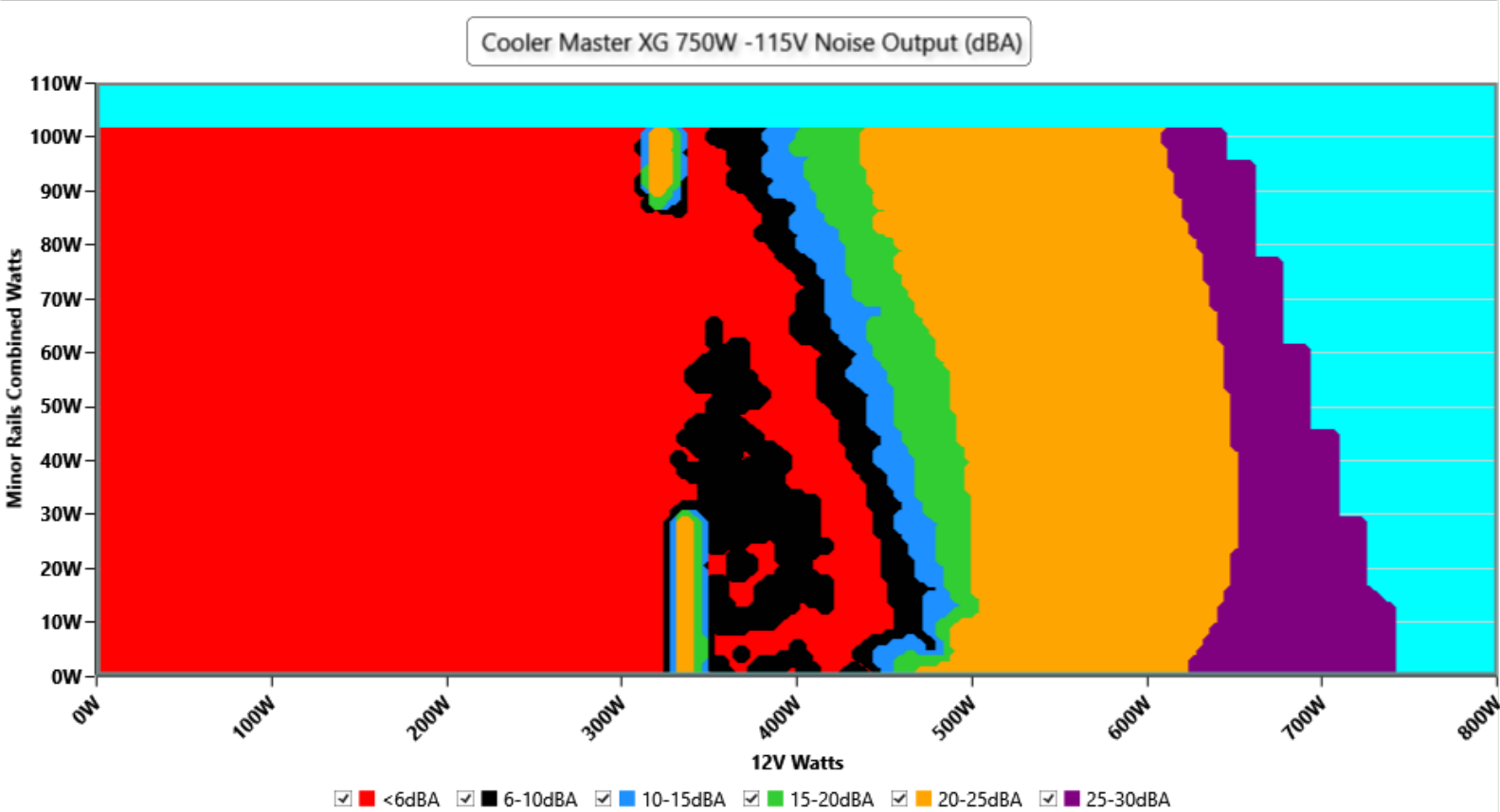


INFO

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

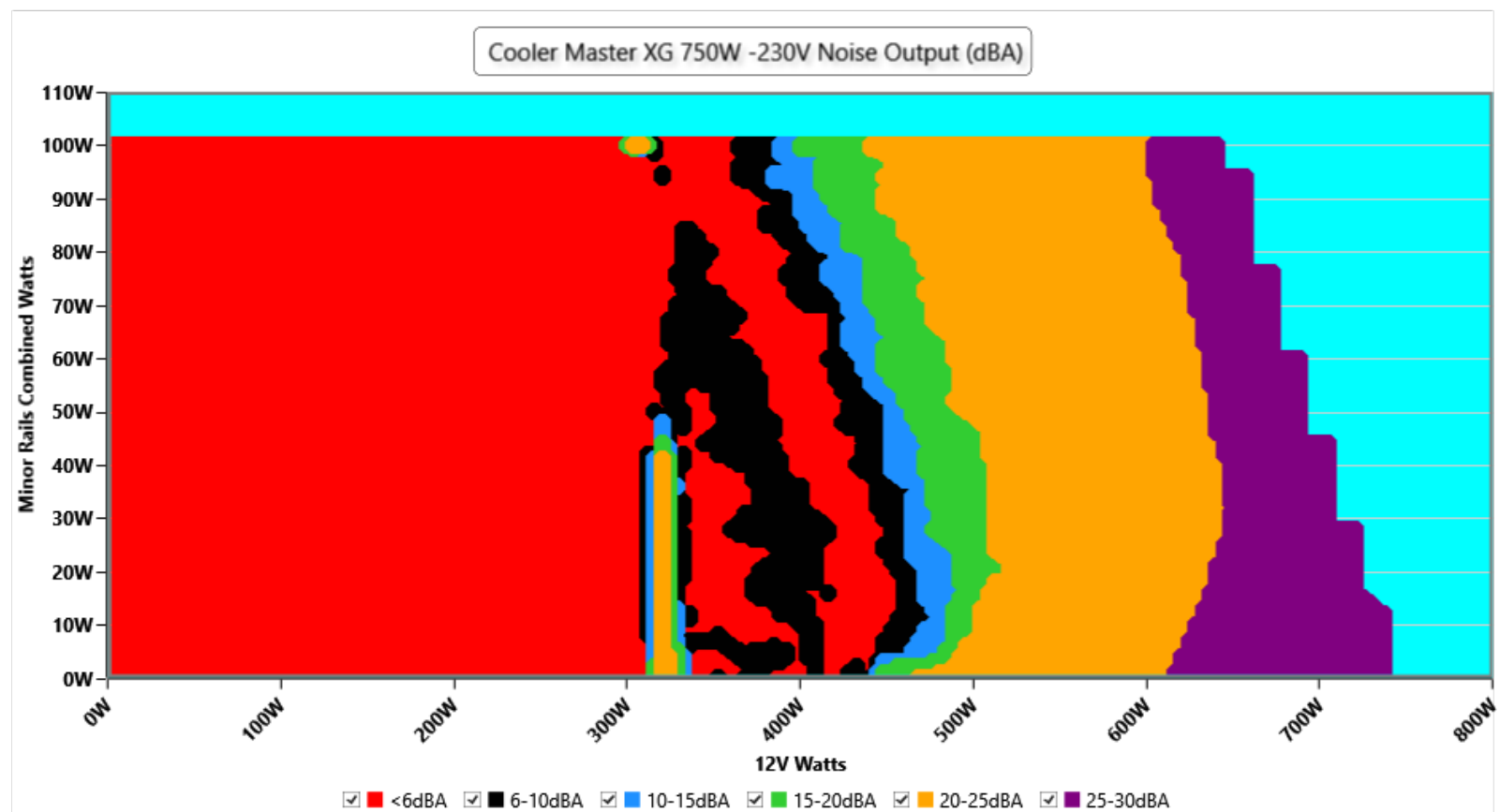
Noise Graph

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



INFO

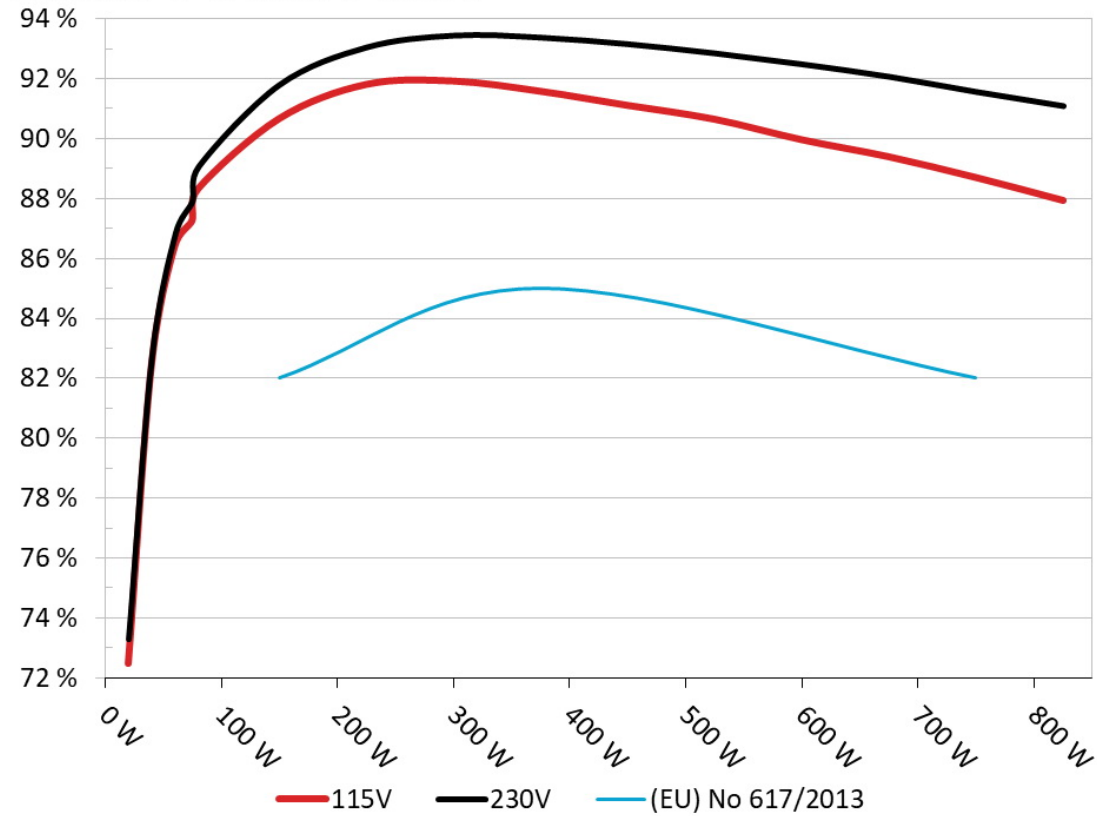
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Cooler Master XG 750W

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



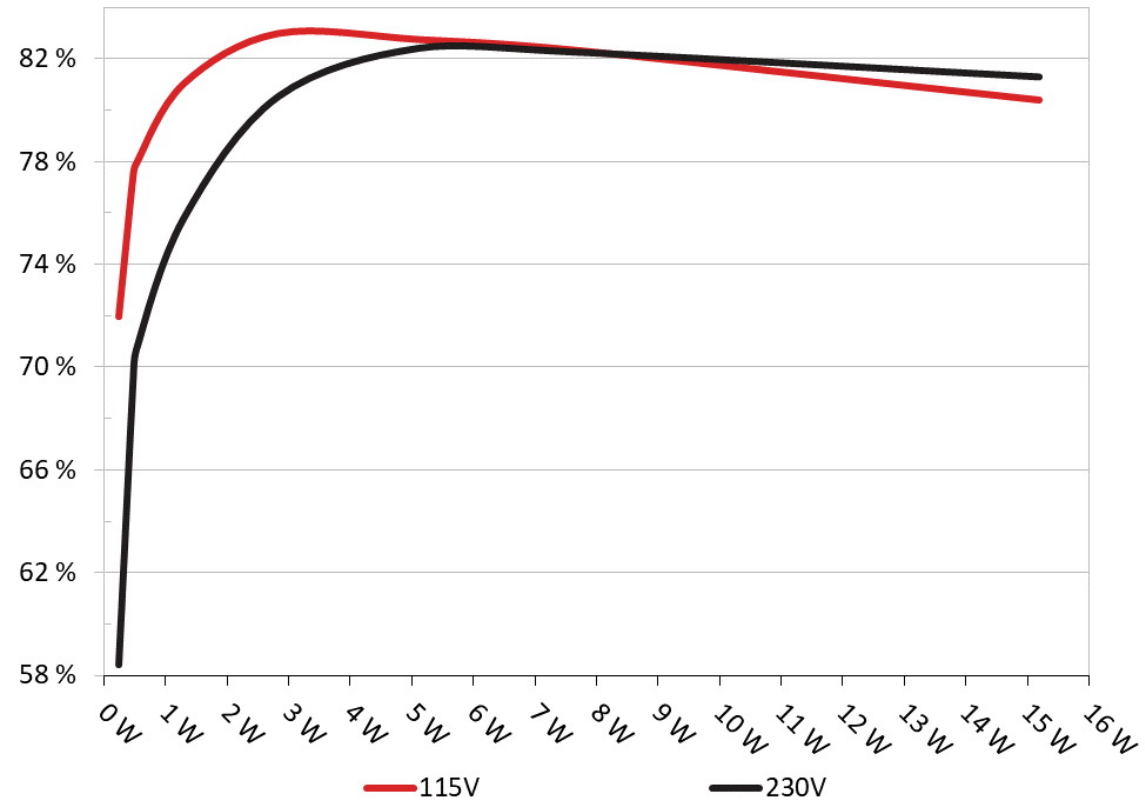
INFO

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

5VSB Efficiency: Cooler Master XG 750W

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



INFO

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

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

115V

5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts	
1	0.045A	0.232W	71.978%	0.054
	5.142V	0.322W		115.18V
2	0.09A	0.463W	77.426%	0.096
	5.141V	0.598W		115.18V
3	0.55A	2.822W	83%	0.329
	5.129V	3.4W		115.17V
4	1A	5.119W	82.764%	0.402
	5.117V	6.185W		115.17V
5	1.5A	7.658W	82.347%	0.441
	5.104V	9.3W		115.17V
6	3.001A	15.196W	80.409%	0.49
	5.064V	18.898W		115.16V

230V

5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts	
1	0.045A	0.232W	58.396%	0.02
	5.142V	0.397W		230.37V
2	0.09A	0.463W	69.397%	0.034
	5.141V	0.667W		230.37V
3	0.55A	2.822W	80.509%	0.156
	5.129V	3.505W		230.37V
4	1A	5.118W	82.399%	0.236
	5.117V	6.211W		230.37V
5	1.5A	7.658W	82.245%	0.293
	5.104V	9.311W		230.37V
6	3.001A	15.197W	81.279%	0.377
	5.065V	18.697W		230.37V

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%	4.421A	1.989A	1.982A	0.978A	75.009	87.28%	0	<6.0	44.5°C	0.956
	12.081V	5.028V	3.33V	5.115V	85.941				40.22°C	115.2V
20%	9.856A	2.985A	2.974A	1.176A	149.974	90.685%	0	<6.0	45.87°C	0.987
	12.080V	5.026V	3.329V	5.103V	165.38				41.09°C	115.19V
30%	15.639A	3.484A	3.47A	1.375A	224.982	91.829%	0	<6.0	47.51°C	0.991
	12.080V	5.025V	3.329V	5.092V	245.002				42.18°C	115.19V
40%	21.427A	3.982A	3.967A	1.575A	300.074	91.94%	0	<6.0	48.71°C	0.992
	12.081V	5.023V	3.328V	5.081V	326.38				42.87°C	115.18V
50%	26.840A	4.98A	4.959A	1.776A	374.783	91.6%	0	<6.0	49.77°C	0.987
	12.082V	5.022V	3.327V	5.07V	409.151				43.3°C	115.18V
60%	32.268A	5.978A	5.953A	1.978A	449.714	91.129%	755	22.9	43.41°C	0.986
	12.083V	5.02V	3.327V	5.058V	493.492				50.41°C	115.17V
70%	37.717A	6.977A	6.948A	2.181A	524.635	90.667%	758	23.0	43.86°C	0.987
	12.077V	5.018V	3.325V	5.046V	578.64				51.78°C	115.17V
80%	43.213A	7.978A	7.942A	2.284A	599.881	89.982%	980	30.9	44.27°C	0.988
	12.079V	5.016V	3.324V	5.036V	666.667				52.8°C	115.17V
90%	49.053A	8.478A	8.425A	2.388A	674.915	89.411%	1078	33.5	44.57°C	0.989
	12.077V	5.015V	3.324V	5.027V	754.841				53.64°C	115.17V
100%	54.691A	8.98A	8.938A	2.998A	750.141	88.718%	1361	39.8	45.53°C	0.99
	12.076V	5.012V	3.323V	5.004V	845.539				55.27°C	115.17V
110%	60.200A	9.981A	10.023A	3.002A	825.18	87.951%	1562	43.9	46.85°C	0.991
	12.074V	5.011V	3.322V	4.997V	938.225				57.74°C	115.17V
CL1	0.116A	11.99A	11.945A	0A	101.322	84.279%	0	<6.0	49.52°C	0.976
	12.087V	5.022V	3.324V	5.126V	120.223				42.66°C	115.21V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.116A	19.913A	0A	0A	101.407	81.037%	0	<6.0	50.86°C	0.976
	12.092V	5.022V	3.323V	5.135V	125.141				43.31°C	115.21V
CL3	0.116A	0A	19.85A	0A	67.402	77.152%	0	<6.0	52.6°C	0.958
	12.091V	5.015V	3.325V	5.124V	87.364				44.43°C	115.21V
CL4	62.083A	0A	0A	0A	749.908	89.575%	1264	38.1	45.34°C	0.99
	12.079V	5.016V	3.328V	5.097V	837.189				55.11°C	115.18V

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%	4.422A	1.989A	1.982A	0.978A	75.009	87.891%	0	<6.0	45.85°C	0.74
	12.076V	5.029V	3.33V	5.114V	85.343				40.51°C	230.45V
20%	9.859A	2.984A	2.974A	1.176A	149.975	91.778%	0	<6.0	47.23°C	0.892
	12.077V	5.027V	3.329V	5.103V	163.411				41.23°C	230.45V
30%	15.643A	3.483A	3.47A	1.375A	224.982	93.031%	0	<6.0	48.59°C	0.939
	12.077V	5.026V	3.329V	5.092V	241.834				42.14°C	230.45V
40%	21.432A	3.982A	3.967A	1.575A	300.078	93.426%	0	<6.0	49.82°C	0.958
	12.078V	5.024V	3.328V	5.081V	321.193				42.92°C	230.45V
50%	26.847A	4.979A	4.959A	1.776A	374.801	93.36%	0	<6.0	50.97°C	0.969
	12.080V	5.022V	3.327V	5.069V	401.46				43.81°C	230.45V
60%	32.276A	5.977A	5.953A	1.978A	449.714	93.14%	0	<6.0	52.1°C	0.974
	12.080V	5.021V	3.327V	5.058V	482.839				44.45°C	230.45V
70%	37.722A	6.975A	6.947A	2.181A	524.65	92.834%	750	22.8	44.63°C	0.977
	12.076V	5.02V	3.326V	5.046V	565.152				52.72°C	230.45V
80%	43.229A	7.976A	7.942A	2.284A	599.919	92.469%	890	28.0	44.91°C	0.978
	12.075V	5.017V	3.325V	5.036V	648.776				53.74°C	230.45V
90%	49.059A	8.478A	8.424A	2.388A	674.958	92.053%	1105	34.2	45.14°C	0.981
	12.076V	5.015V	3.324V	5.027V	733.228				54.43°C	230.45V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	54.703A	8.98A	8.938A	2.999A	750.232	91.546%	1349	39.6	45.85°C	0.981
	12.074V	5.013V	3.323V	5.003V	819.51				55.81°C	230.46V
110%	60.218A	9.979A	10.023A	3.003A	825.225	91.074%	1491	42.3	46.89°C	0.982
	12.071V	5.012V	3.323V	4.997V	906.108				57.63°C	230.45V
CL1	0.116A	11.988A	11.945A	0A	101.328	85.134%	0	<6.0	50.72°C	0.838
	12.086V	5.023V	3.324V	5.126V	119.023				43.55°C	230.46V
CL2	0.116A	19.915A	0A	0A	101.416	81.57%	0	<6.0	52.58°C	0.848
	12.092V	5.022V	3.324V	5.135V	124.332				44.53°C	230.47V
CL3	0.116A	0A	19.842A	0A	67.409	78.252%	0	<6.0	54.72°C	0.752
	12.086V	5.022V	3.326V	5.124V	86.145				45.44°C	230.47V
CL4	62.103A	0A	0A	0A	749.977	92.388%	1215	37.0	45.06°C	0.981
	12.076V	5.017V	3.329V	5.097V	811.771				55.01°C	230.46V

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	1.230A	0.497A	0.495A	0.195A	20.01	72.482%	0	<6.0	39.2°C	0.762
	12.079V	5.03V	3.331V	5.14V	27.609				36.88°C	115.21V
40W	2.707A	0.696A	0.694A	0.292A	40.009	82.472%	0	<6.0	40.79°C	0.891
	12.080V	5.029V	3.331V	5.136V	48.512				37.98°C	115.21V
60W	4.183A	0.895A	0.892A	0.39A	60.008	86.437%	0	<6.0	41.84°C	0.943
	12.080V	5.028V	3.33V	5.132V	69.423				38.55°C	115.21V
80W	5.657A	1.094A	1.09A	0.488A	79.976	88.336%	0	<6.0	43.24°C	0.959
	12.081V	5.028V	3.33V	5.128V	90.536				39.31°C	115.2V

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	1.241A	0.5A	0.5A	0.2A	20.197	73.296%	0	<6.0	39.96°C	0.466
	12.077V	5.031V	3.331V	5.14V	27.559				36.79°C	230.45V
40W	2.721A	0.7A	0.7A	0.3A	40.255	82.714%	0	<6.0	41.26°C	0.598
	12.077V	5.03V	3.331V	5.136V	48.667				37.67°C	230.46V
60W	4.224A	0.9A	0.9A	0.4A	60.604	86.836%	0	<6.0	43.15°C	0.687
	12.078V	5.03V	3.331V	5.132V	69.791				38.77°C	230.46V
80W	5.704A	1.1A	1.1A	0.5A	80.663	89.066%	0	<6.0	44.84°C	0.757
	12.079V	5.029V	3.33V	5.128V	90.565				39.78°C	230.46V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.79mV	6.70mV	4.35mV	7.19mV	Pass
20% Load	12.24mV	7.01mV	4.61mV	7.29mV	Pass
30% Load	13.77mV	7.36mV	4.86mV	7.34mV	Pass
40% Load	13.36mV	7.57mV	5.27mV	8.01mV	Pass
50% Load	12.87mV	8.13mV	5.63mV	8.01mV	Pass
60% Load	14.15mV	9.00mV	5.89mV	8.06mV	Pass
70% Load	14.10mV	8.90mV	5.99mV	8.46mV	Pass
80% Load	13.53mV	8.75mV	10.75mV	8.46mV	Pass
90% Load	16.04mV	9.20mV	11.36mV	9.38mV	Pass
100% Load	22.17mV	10.53mV	12.21mV	9.34mV	Pass
110% Load	22.87mV	10.69mV	12.97mV	10.35mV	Pass
Crossload1	16.26mV	10.32mV	12.84mV	9.99mV	Pass
Crossload2	12.46mV	9.16mV	4.14mV	9.43mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	12.05mV	10.33mV	17.65mV	10.04mV	Pass
Crossload4	20.96mV	7.31mV	6.08mV	8.36mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.13mV	6.65mV	4.71mV	7.70mV	Pass
20% Load	11.78mV	6.90mV	4.86mV	7.54mV	Pass
30% Load	13.32mV	7.72mV	4.81mV	7.95mV	Pass
40% Load	13.32mV	7.57mV	5.32mV	7.95mV	Pass
50% Load	12.72mV	8.18mV	5.83mV	8.26mV	Pass
60% Load	13.33mV	8.33mV	5.94mV	8.31mV	Pass
70% Load	13.23mV	8.75mV	5.94mV	8.36mV	Pass
80% Load	14.15mV	8.95mV	11.05mV	8.36mV	Pass
90% Load	15.12mV	9.25mV	11.72mV	8.01mV	Pass
100% Load	23.60mV	10.57mV	12.33mV	9.35mV	Pass
110% Load	23.83mV	10.65mV	13.15mV	9.24mV	Pass
Crossload1	15.89mV	10.08mV	12.94mV	9.81mV	Pass
Crossload2	11.34mV	9.05mV	3.79mV	9.48mV	Pass
Crossload3	12.00mV	9.82mV	16.63mV	10.25mV	Pass
Crossload4	22.30mV	7.89mV	6.22mV	8.86mV	Pass

The results above are not used in the certification process

Cooler Master XG 750

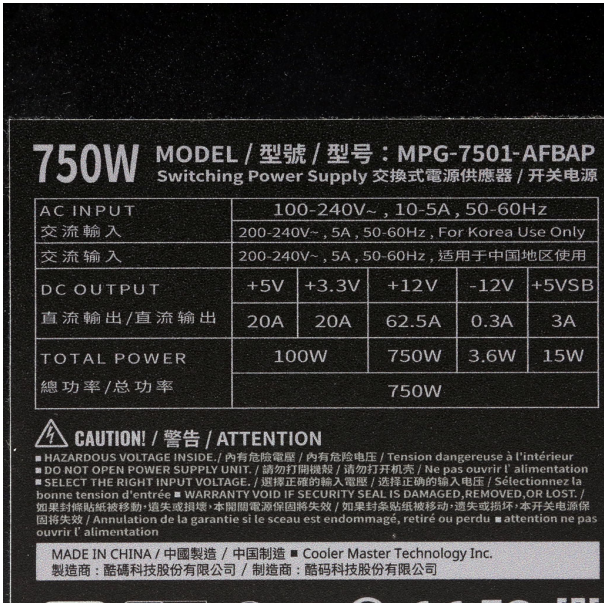


Top side

All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus



Power specifications label

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure

www.cybenetics.com - info@cybenetics.com