Make It Yours.

Cooler Master XG 750 (#2)

Serial Number MPG7501AFBAPEU2234400002

Lab ID CM75002305

Certification ID 252305

Test Result Report ID: 23PS2305A

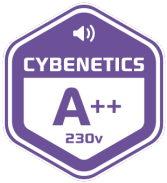
Certificate Issue Date: Dec 14, 2023

Scheme: ETA-EMI PSU

115V 230V

Scheme: LAMBDA PSU

115V 230V



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	Cooler Master
Model	XG 750 (#2)
OEM/ODM	Huizhou Xin Hui Yuan Tech (Fusion Power)
Serial Number	MPG7501AFBAPEU2234400002
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 (EFC-14E12D)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	CM75002305
Date of receipt	Nov 27, 2023
Testing Date	Dec 13, 2023
Report Issued Date	Dec 14, 2023
DUT Notes	No 12VHPWR
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+120mm)	2	4	16-18AWG	No
SATA (510mm+120mm+120mm+120mm)	3	12	18AWG	No
4 pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No

AC Power Cord (1390mm) - C13 coupler	1	1	18AWG	-	

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				

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)	89.964%
Average Noise Output (>1450 Load Combinations)	11.35dBA
Average PF (>1450 Load Combinations)	0.980
Efficiency With 10W (≤500W) or 2% (>500W) Load	64.314%
Standby Power Consumption	0.0446W
Non-Accredited	
12V Ripple (Full Load)	34.20mV
5V Ripple (Full Load)	13.42mV
3.3V Ripple (Full Load)	13.16mV

5VSB Ripple (Full Load)	16.25mV
12V Load Regulation	0.12%
5V Load Regulation	0.28%
3.3V Load Regulation	0.40%
5VSB Load Regulation	2.40%
Inrush Current	143.100A

230V

Accredited		
Average Efficiency (>1450 load combinations)		91.853%
Average Noise Output (>1450 Load Combinations)		10.28dBA
Average PF (>1450 Load Combinations)		0.947
Efficiency With 10W (≤500W) or 2% (>500W) Load		66.063%
Standby Power Consumption		0.0929W
Non-Accredited		
12V Ripple (Full Load)		33.00mV
5V Ripple (Full Load)		12.53mV
3.3V Ripple (Full Load)		14.61mV
5VSB Ripple (Full Load)		16.11mV
12V Load Regulation		0.12%
5V Load Regulation		0.32%
3.3V Load Regulation		0.46%
5VSB Load Regulation		2.42%
Inrush Current		175.900A
12V Transient Response (150%)		11.87V
5V Transient Response (150%)		4.973V
3.3V Transient Response (150%)		3.243V
5VSB Transient Response (150%)		4.993V
Hold-Up Time & PWR_OK Signal		21.40ms
AC Loss to PWR_OK Hold Up Time		17.00ms
PWR_OK Inactive to DC Loss Delay		4.40ms
PSU Timings: T1 (20% / 100%)	54.0ms	60.0ms

PSU Timings: T3 (20% / 100%)	127.0ms	127.0ms
OPP (27.87°C / 40.38°C)	149.75%	149.75%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	21.4
AC Loss to PWR_OK Hold Up Time (ms)	17
PWR_OK Inactive to DC Loss Delay (ms)	4.4

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Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.93 V	114.84 V	113.85 V	115.01 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.95 Hz	59.40 Hz	60.04 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.420	1.419	1.340	1.423	1.490	PASS
Mains Voltage THD:	0.28 %	0.21 %	N/A	0.40 %	2.00 %	PASS
Real Power:	0.045 W	0.008 W	N/A	0.059 W	N/A	N/A
Apparent Power:	6.351 W	6.336 W	N/A	6.365 W	N/A	N/A
Power Factor:	0.009	N/A	N/A	N/A	N/A	N/A

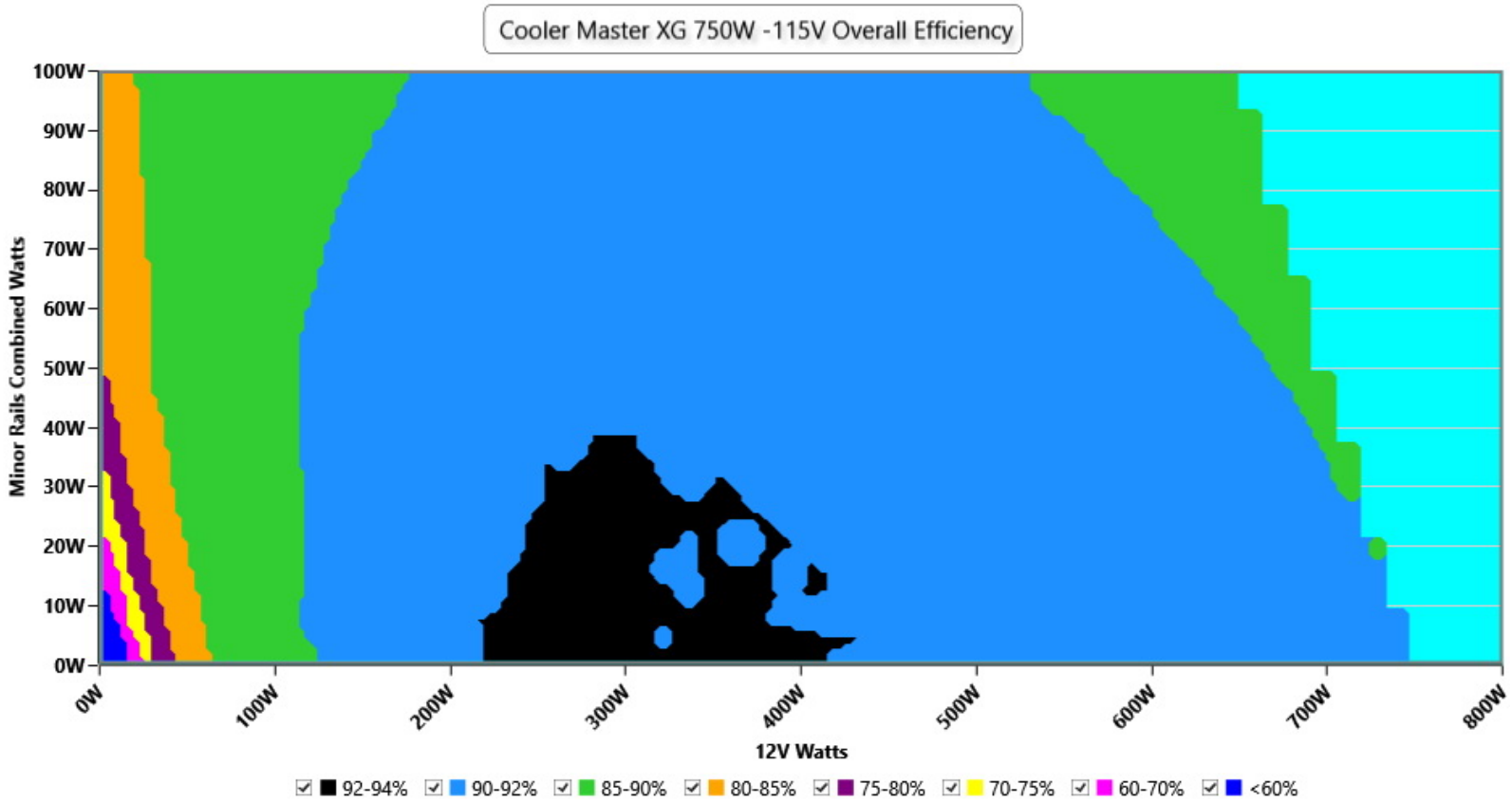
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.89 V	229.79 V	227.70 V	229.99 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.98 Hz	49.50 Hz	50.02 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.419	1.490	PASS

Mains Voltage THD:	0.19 %	0.14 %	N/A	0.25 %	2.00 %	PASS
Real Power:	0.093 W	0.074 W	N/A	0.116 W	N/A	N/A
Apparent Power:	21.513 W	21.464 W	N/A	21.578 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

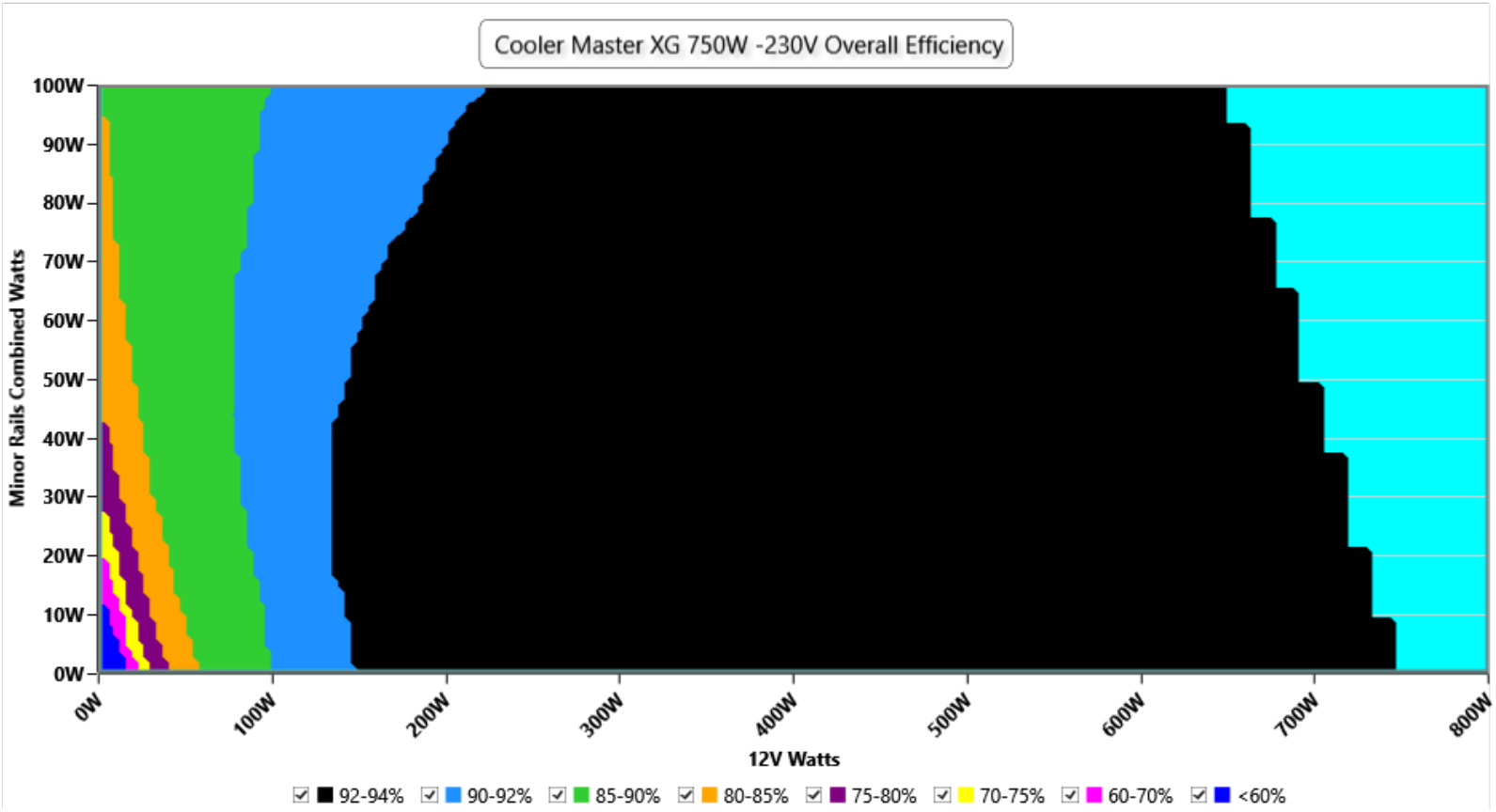
115V



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



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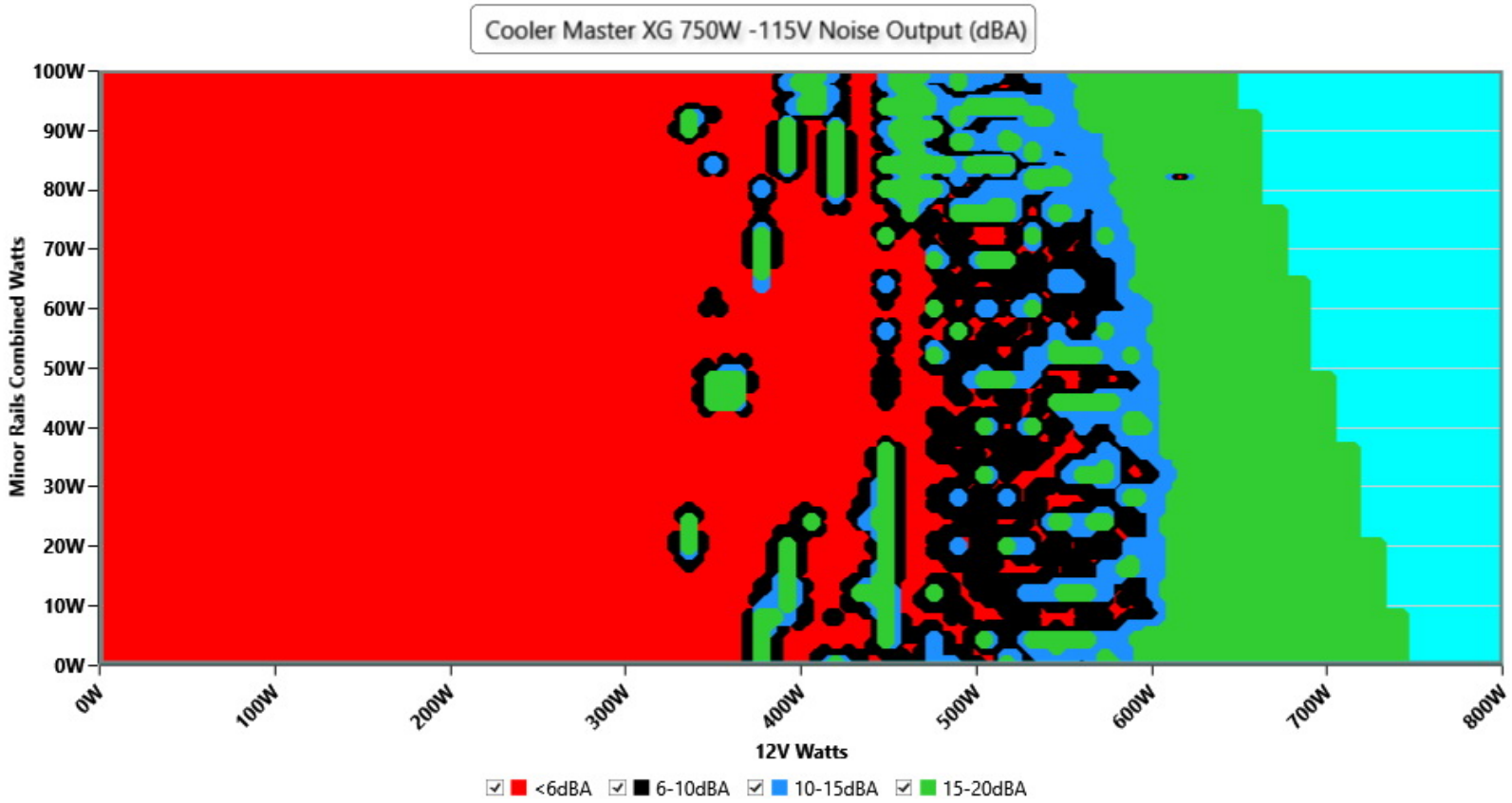
Noise Graph

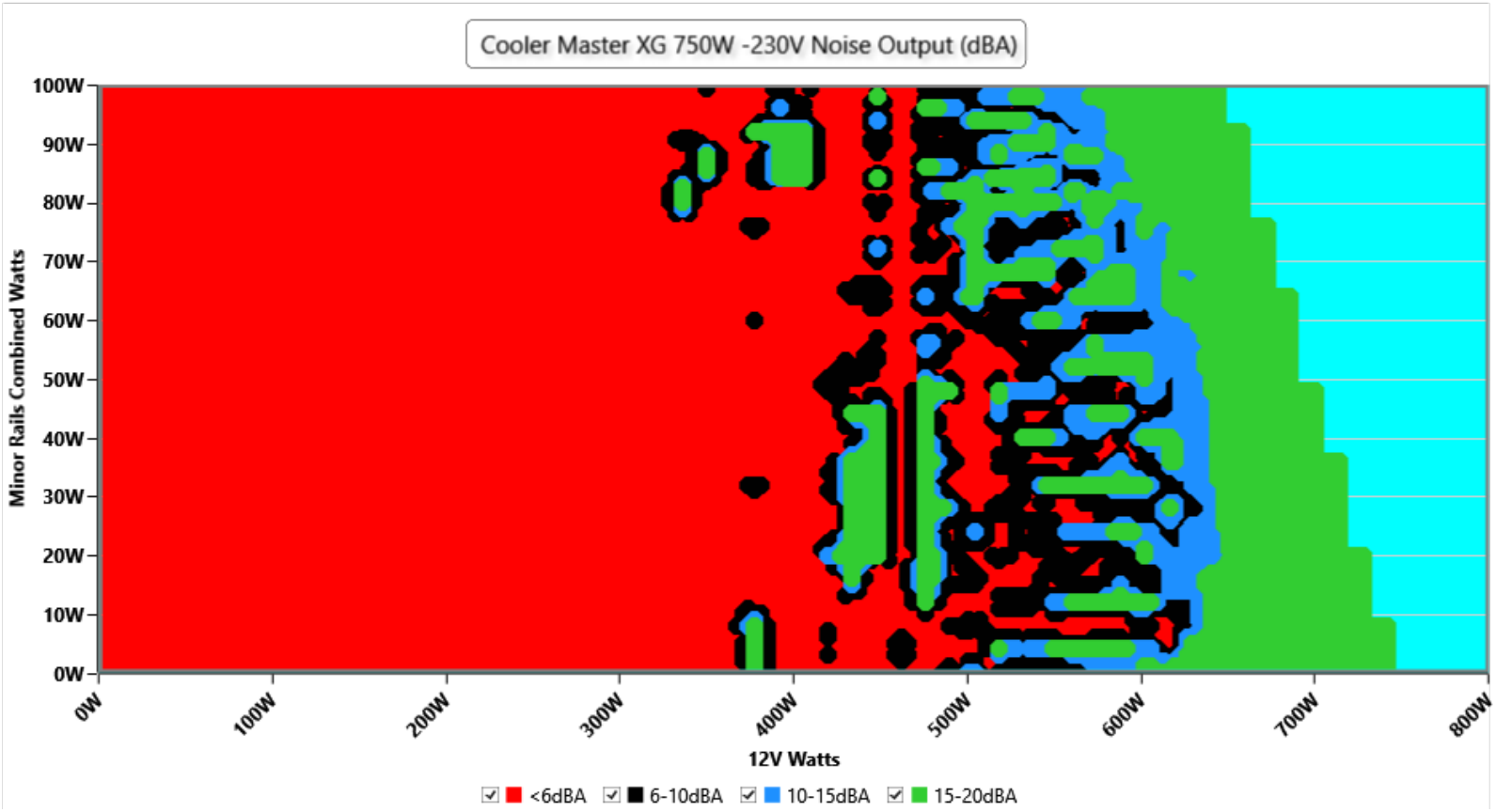
115V



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



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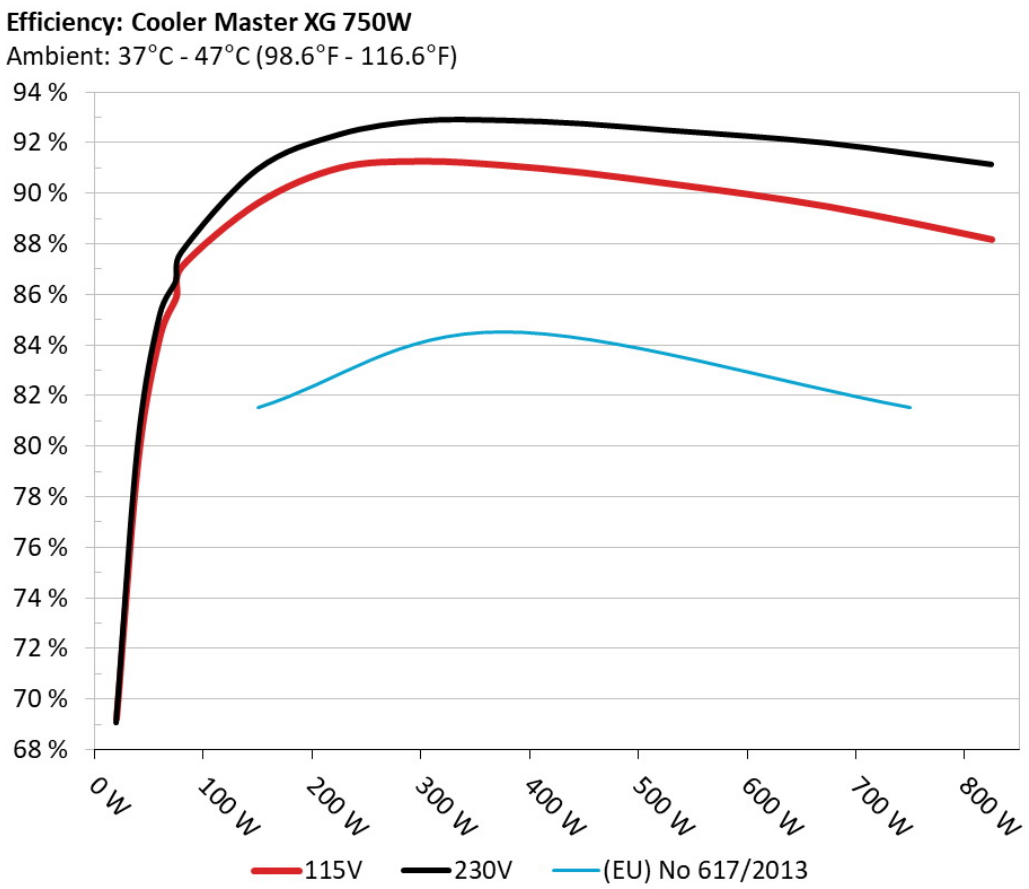
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

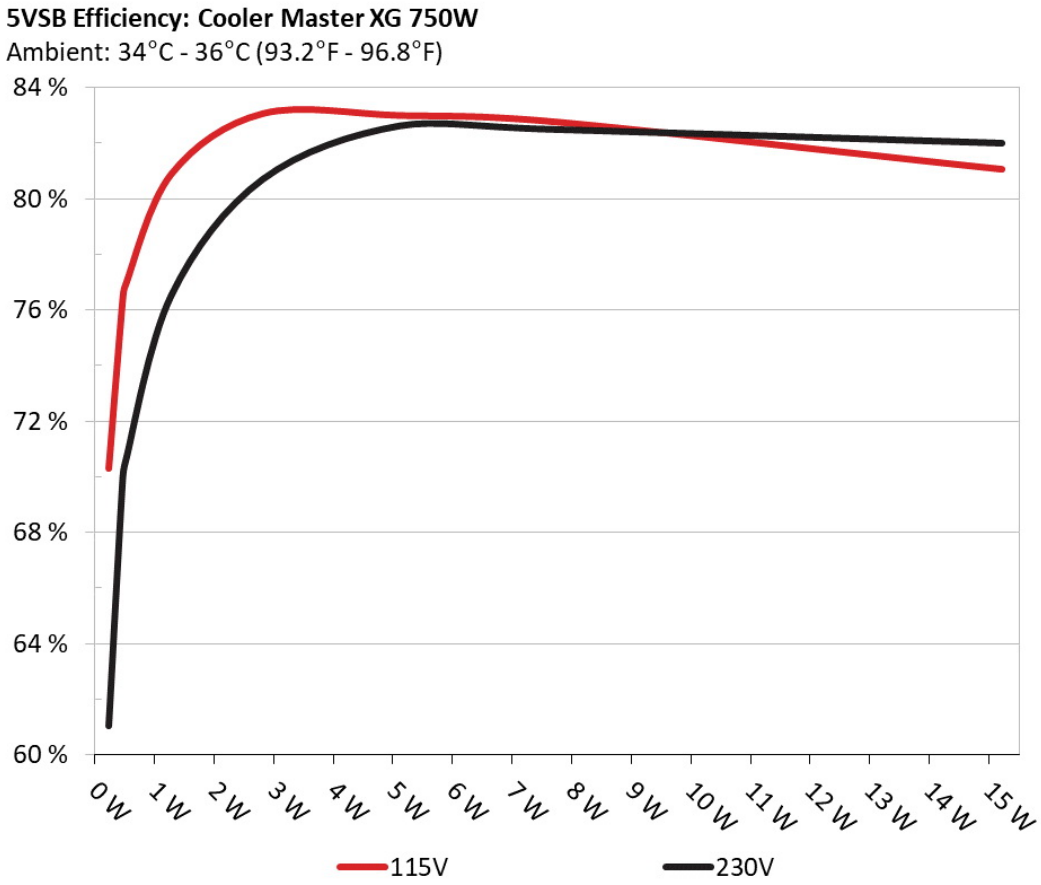
Efficiency under high ambient temperature



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	0.231W	69.803%	0.052
	5.135V	0.331W		114.91V
2	0.09A	0.462W	75.811%	0.093
	5.134V	0.609W		114.91V
3	0.55A	2.818W	82.561%	0.329
	5.124V	3.413W		114.91V
4	1A	5.115W	82.493%	0.41
	5.115V	6.201W		114.91V
5	1.5A	7.657W	82.275%	0.446
	5.105V	9.307W		114.91V
6	3A	15.216W	80.558%	0.5
	5.073V	18.888W		114.91V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	60.543%	0.018
	5.135V	0.383W		229.89V
2	0.09A	0.462W	69.342%	0.031
	5.134V	0.668W		229.89V
3	0.55A	2.818W	80.213%	0.148
	5.124V	3.514W		229.88V
4	1A	5.115W	82.129%	0.229
	5.115V	6.228W		229.88V
5	1.5A	7.657W	82.002%	0.291
	5.104V	9.337W		229.88V
6	3A	15.217W	81.506%	0.379
	5.073V	18.671W		229.88V

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%	4.386A	1.991A	2.001A	0.979A	75.002	86.391%	0	<6.0	44.57°C	0.943
	12.177V	5.023V	3.298V	5.107V	86.818				40.29°C	114.89V
20%	9.775A	2.987A	3.003A	1.177A	149.934	90.096%	0	<6.0	45.13°C	0.969
	12.177V	5.022V	3.296V	5.096V	166.417				40.62°C	114.87V
30%	15.511A	3.485A	3.504A	1.376A	224.933	91.49%	0	<6.0	46.44°C	0.979
	12.177V	5.021V	3.296V	5.086V	245.854				41.43°C	114.84V
40%	21.252A	3.983A	4.006A	1.576A	300.018	91.75%	0	<6.0	47.28°C	0.985
	12.178V	5.021V	3.295V	5.076V	326.993				41.68°C	114.82V
50%	26.593A	4.98A	5.009A	1.777A	374.432	91.597%	292	<6.0	42.03°C	0.985
	12.181V	5.02V	3.294V	5.065V	408.786				48.03°C	114.79V
60%	31.989A	5.98A	6.015A	1.978A	449.333	91.297%	296	<6.0	42.98°C	0.986
	12.177V	5.017V	3.292V	5.055V	492.165				49.49°C	114.76V
70%	37.397A	6.979A	7.023A	2.18A	524.253	90.886%	638	17.4	43.47°C	0.988
	12.170V	5.015V	3.29V	5.045V	576.828				50.57°C	114.74V
80%	42.869A	7.977A	8.029A	2.283A	599.449	90.454%	643	17.7	43.99°C	0.989
	12.166V	5.013V	3.288V	5.037V	662.714				52.09°C	114.71V
90%	48.659A	8.478A	8.518A	2.386A	674.466	89.954%	651	18.0	44.27°C	0.99
	12.166V	5.012V	3.287V	5.028V	749.786				53.38°C	114.68V
100%	54.243A	8.978A	9.038A	2.995A	749.68	89.329%	840	26.4	45.55°C	0.991
	12.167V	5.011V	3.286V	5.009V	839.231				55.6°C	114.65V
110%	59.706A	9.98A	10.138A	2.999A	824.717	88.657%	1075	33.4	46.95°C	0.992
	12.167V	5.01V	3.284V	5.002V	930.23				57.88°C	114.62V
CL1	0.114A	12.01A	12.079A	0A	101.287	83.859%	0	<6.0	44.52°C	0.96
	12.200V	5.012V	3.287V	5.12V	120.783				39.07°C	114.88V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.113A	19.927A	0A	0A	101.34	81.497%	0	<6.0	41.98°C	0.96
	12.202V	5.016V	3.3V	5.122V	124.348				34.97°C	114.87V
CL3	0.113A	0A	20.052A	0A	67.393	76.876%	0	<6.0	42.53°C	0.944
	12.203V	5.023V	3.292V	5.122V	87.666				33.48°C	114.89V
CL4	61.606A	0A	0A	0A	749.534	90.147%	825	25.8	45.86°C	0.991
	12.167V	5.027V	3.303V	5.077V	831.458				56.83°C	114.66V

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%	4.384A	1.99A	2.001A	0.979A	74.997	87.021%	0	<6.0	44.39°C	0.814
	12.180V	5.025V	3.299V	5.107V	86.182				40.11°C	229.87V
20%	9.774A	2.986A	3.003A	1.177A	149.928	91.424%	0	<6.0	45.27°C	0.907
	12.177V	5.023V	3.297V	5.097V	163.99				40.57°C	229.86V
30%	15.512A	3.484A	3.504A	1.376A	224.928	92.8%	0	<6.0	46.56°C	0.941
	12.177V	5.022V	3.296V	5.086V	242.376				41.49°C	229.85V
40%	21.256A	3.983A	4.006A	1.576A	300.015	93.339%	0	<6.0	47.41°C	0.958
	12.176V	5.022V	3.295V	5.076V	321.424				41.89°C	229.84V
50%	26.601A	4.98A	5.009A	1.777A	374.445	93.363%	0	<6.0	48.12°C	0.967
	12.177V	5.02V	3.294V	5.065V	401.066				42.07°C	229.82V
60%	31.983A	5.978A	6.014A	1.979A	449.359	93.227%	640	17.5	42.6°C	0.973
	12.180V	5.019V	3.293V	5.055V	481.999				49.27°C	229.81V
70%	37.403A	6.979A	7.023A	2.18A	524.291	92.978%	637	17.4	43.26°C	0.977
	12.170V	5.016V	3.29V	5.045V	563.889				50.35°C	229.8V
80%	42.874A	7.976A	8.03A	2.283A	599.501	92.743%	643	17.7	43.62°C	0.98
	12.166V	5.014V	3.288V	5.036V	646.411				51.68°C	229.78V
90%	48.666A	8.477A	8.519A	2.387A	674.525	92.461%	650	18.0	44.14°C	0.982
	12.165V	5.013V	3.287V	5.028V	729.521				53.18°C	229.77V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	54.254A	8.977A	9.039A	2.995A	749.742	92.052%	816	25.4	45.22°C	0.983
	12.166V	5.012V	3.286V	5.008V	814.483				55.31°C	229.76V
110%	59.719A	9.979A	10.14A	2.999A	824.779	91.622%	1052	32.7	46.73°C	0.985
	12.165V	5.01V	3.284V	5.002V	900.195				57.66°C	229.75V
CL1	0.114A	12.006A	12.077A	0A	101.291	85.151%	0	<6.0	43.46°C	0.871
	12.199V	5.013V	3.287V	5.119V	118.953				38°C	229.87V
CL2	0.113A	19.924A	0A	0A	101.342	82.371%	0	<6.0	43.76°C	0.876
	12.201V	5.017V	3.3V	5.121V	123.034				36.73°C	229.87V
CL3	0.113A	0A	20.053A	0A	67.399	77.285%	0	<6.0	48.01°C	0.817
	12.201V	5.023V	3.292V	5.122V	87.209				38.85°C	229.87V
CL4	61.619A	0A	0A	0A	749.715	92.795%	774	23.8	45.29°C	0.983
	12.167V	5.024V	3.298V	5.077V	807.922				56.25°C	229.76V

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	1.220A	0.497A	0.5A	0.195A	19.994	69.71%	0	<6.0	39.8°C	0.84
	12.166V	5.025V	3.299V	5.129V	28.681				36.74°C	114.91V
40W	2.686A	0.697A	0.7A	0.293A	39.996	79.985%	0	<6.0	41.18°C	0.911
	12.172V	5.025V	3.299V	5.125V	50.005				37.96°C	114.91V
60W	4.150A	0.896A	0.9A	0.391A	59.998	84.845%	0	<6.0	42.28°C	0.938
	12.174V	5.024V	3.299V	5.121V	70.714				38.52°C	114.9V
80W	5.612A	1.095A	1.1A	0.489A	79.949	87.58%	0	<6.0	43.09°C	0.947
	12.175V	5.024V	3.299V	5.117V	91.289				39.16°C	114.9V

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	1.220A	0.497A	0.5A	0.195A	19.998	69.562%	0	<6.0	39.8°C	0.574
	12.173V	5.028V	3.301V	5.129V	28.75				36.73°C	229.89V
40W	2.684A	0.696A	0.7A	0.293A	39.994	80.594%	0	<6.0	40.26°C	0.695
	12.176V	5.027V	3.3V	5.125V	49.623				37.02°C	229.89V
60W	4.150A	0.895A	0.9A	0.39A	59.992	85.655%	0	<6.0	42.44°C	0.775
	12.176V	5.026V	3.3V	5.121V	70.042				38.99°C	229.88V
80W	5.610A	1.094A	1.1A	0.488A	79.933	88.15%	0	<6.0	43.18°C	0.825
	12.176V	5.026V	3.299V	5.118V	90.68				39.37°C	229.87V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	19.99mV	8.48mV	9.72mV	11.82mV	Pass
20% Load	21.93mV	8.48mV	9.57mV	11.61mV	Pass
30% Load	19.20mV	8.84mV	9.67mV	11.92mV	Pass
40% Load	17.70mV	8.28mV	9.31mV	12.79mV	Pass
50% Load	16.98mV	8.69mV	9.51mV	12.99mV	Pass
60% Load	17.14mV	8.73mV	10.03mV	12.89mV	Pass
70% Load	18.88mV	9.04mV	9.62mV	13.86mV	Pass
80% Load	19.75mV	11.08mV	13.35mV	14.37mV	Pass
90% Load	21.03mV	11.75mV	13.50mV	14.94mV	Pass
100% Load	34.20mV	13.42mV	13.16mV	16.25mV	Pass
110% Load	35.61mV	13.00mV	14.46mV	16.95mV	Pass
Crossload1	30.93mV	14.68mV	14.78mV	13.89mV	Pass
Crossload2	20.62mV	20.39mV	10.23mV	14.07mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	20.19mV	11.55mV	16.98mV	13.35mV	Pass
Crossload4	33.25mV	8.63mV	11.04mV	16.84mV	Pass

The results above are not used in the certification process

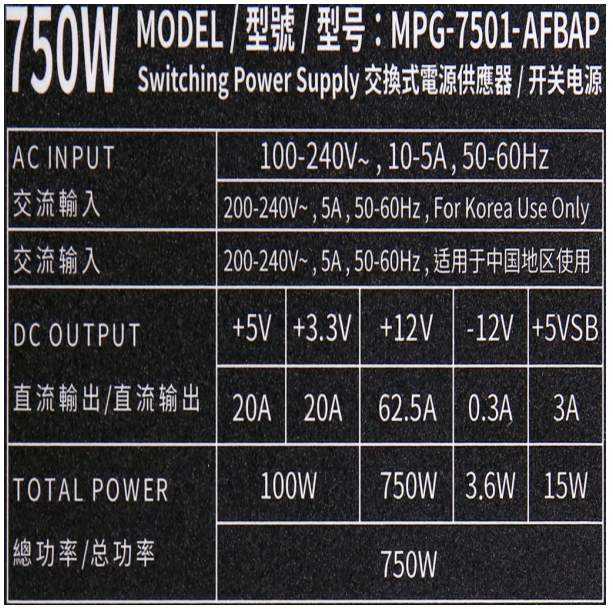
230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	19.73mV	8.12mV	9.62mV	12.33mV	Pass
20% Load	21.68mV	8.28mV	9.62mV	12.02mV	Pass
30% Load	19.83mV	8.12mV	9.26mV	12.84mV	Pass
40% Load	16.49mV	8.53mV	9.67mV	13.56mV	Pass
50% Load	15.70mV	8.99mV	10.28mV	13.20mV	Pass
60% Load	15.91mV	9.86mV	9.87mV	13.91mV	Pass
70% Load	16.68mV	8.89mV	9.87mV	14.02mV	Pass
80% Load	18.88mV	11.80mV	12.79mV	14.37mV	Pass
90% Load	19.18mV	11.29mV	13.15mV	15.55mV	Pass
100% Load	33.00mV	12.53mV	14.61mV	16.11mV	Pass
110% Load	34.47mV	13.43mV	15.35mV	16.65mV	Pass
Crossload1	29.14mV	12.75mV	14.44mV	14.62mV	Pass
Crossload2	19.63mV	20.49mV	10.18mV	13.56mV	Pass
Crossload3	19.48mV	11.04mV	17.19mV	13.97mV	Pass
Crossload4	33.53mV	8.98mV	10.51mV	16.48mV	Pass

The results above are not used in the certification process

Cooler Master XG 750 (#2)

Top side



750W MODEL / 型號 / 型号：MPG-7501-AFBAP Switching Power Supply 交換式電源供應器 / 开关电源					
AC INPUT 交流輸入	100-240V~, 10-5A, 50-60Hz				
	200-240V~, 5A, 50-60Hz, For Korea Use Only				
交流输入	200-240V~, 5A, 50-60Hz, 适用于中国地区使用				
DC OUTPUT	+5V	+3.3V	+12V	-12V	+5VSB
直流輸出/直流输出	20A	20A	62.5A	0.3A	3A
TOTAL POWER	100W		750W	3.6W	15W
總功率/总功率	750W				

Power specifications label