



Make It Yours.

Cooler Master GX II 850 GOLD (MWE Gold 850 V3)

Serial Number PS58513CD2312020014A1GZ

Lab ID CM85002478

Certification ID 252478

Test Result Report ID: 24PS2478A

Certificate Issue Date: Jun 18, 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	Brueel & Kjaer 2270 G4
Microphone	Brueel & 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	GX II 850 GOLD (MWE Gold 850 V3)
OEM/ODM	Lite-on
Serial Number	PS58513CD2312020014A1GZ
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	5-10

Rated Frequency (Hz)	50-60
Rated Power (W)	850
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CM85002478
Date of receipt	May 29, 2024
Testing Date	Jun 17, 2024
Report Issued Date	Jun 18, 2024
DUT Notes	Also sold as: MWE Gold 850 V3
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 (605mm)	1	1	18-22AWG	No
4+4 pin EPS12V (600mm)	1	1	18AWG	No
8 pin EPS12V (600mm)	1	1	18AWG	No
6+2 pin PCIe (550mm)	3	3	16-18AWG	No
12+4 pin PCIe (650mm) (600W)	1	1	16-28AWG	No
SATA (500mm+120mm+120mm+120mm)	2	8	20AWG	No

4 pin Molex (500mm+120mm+120mm+120mm)	1	4	20AWG	No
AC Power Cord (1390mm) - C13 coupler	1	1	18AWG	-

Protection Features(Manufacturer)

Over Voltage Protection	✓
Under Voltage Protection	✓
Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✓
Short Circuit Protection	✓
Surge Protection	✓

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70.8	3	0.3
	Watts	120		849.6	15	3.6
Total Max. Power (W)		850				

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)	89.579%
Average Noise Output (>1450 Load Combinations)	22.87dBA
Average PF (>1450 Load Combinations)	0.992
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	82.480%
Standby Power Consumption	0.0680W
Non-Accredited	
12V Ripple (Full Load)	58.45mV
5V Ripple (Full Load)	17.33mV
3.3V Ripple (Full Load)	18.63mV
5VSB Ripple (Full Load)	16.20mV
12V Load Regulation	0.81%
5V Load Regulation	2.42%
3.3V Load Regulation	3.49%
5VSB Load Regulation	4.26%
Inrush Current	-

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.725%
Average Noise Output (>1450 Load Combinations)	18.91dBA
Average PF (>1450 Load Combinations)	0.981
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	77.935%
Standby Power Consumption	0.1253W
Non-Accredited	
12V Ripple (Full Load)	56.06mV
5V Ripple (Full Load)	17.50mV
3.3V Ripple (Full Load)	19.53mV

5VSB Ripple (Full Load)	16.10mV	
12V Load Regulation	0.75%	
5V Load Regulation	2.40%	
3.3V Load Regulation	3.42%	
5VSB Load Regulation	4.16%	
Inrush Current	-	
12V Transient Response (200%)	11.15V	
5V Transient Response (200%)	4.803V	
3.3V Transient Response (200%)	3.191V	
5VSB Transient Response (200%)	4.941V	
Hold-Up Time & PWR_OK Signal	20.90ms	
AC Loss to PWR_OK Hold Up Time	18.20ms	
PWR_OK Inactive to DC Loss Delay	2.70ms	
PSU Timings: T1 (20% / 100%)	61.0ms	36.0ms
PSU Timings: T3 (20% / 100%)	125.0ms	126.0ms
12V OCP (26.3°C / °C)	- 5V	- 5V
5V OCP (26.3°C / °C)		
3.3V OCP (26.3°C / °C)		
5VSB OCP (26.3°C / °C)		
OPP (27.11°C / 0.00°C)	126.90%	-

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	20.9
AC Loss to PWR_OK Hold Up Time (ms)	18.2
PWR_OK Inactive to DC Loss Delay (ms)	2.7

Vampire Power

Tables

115V

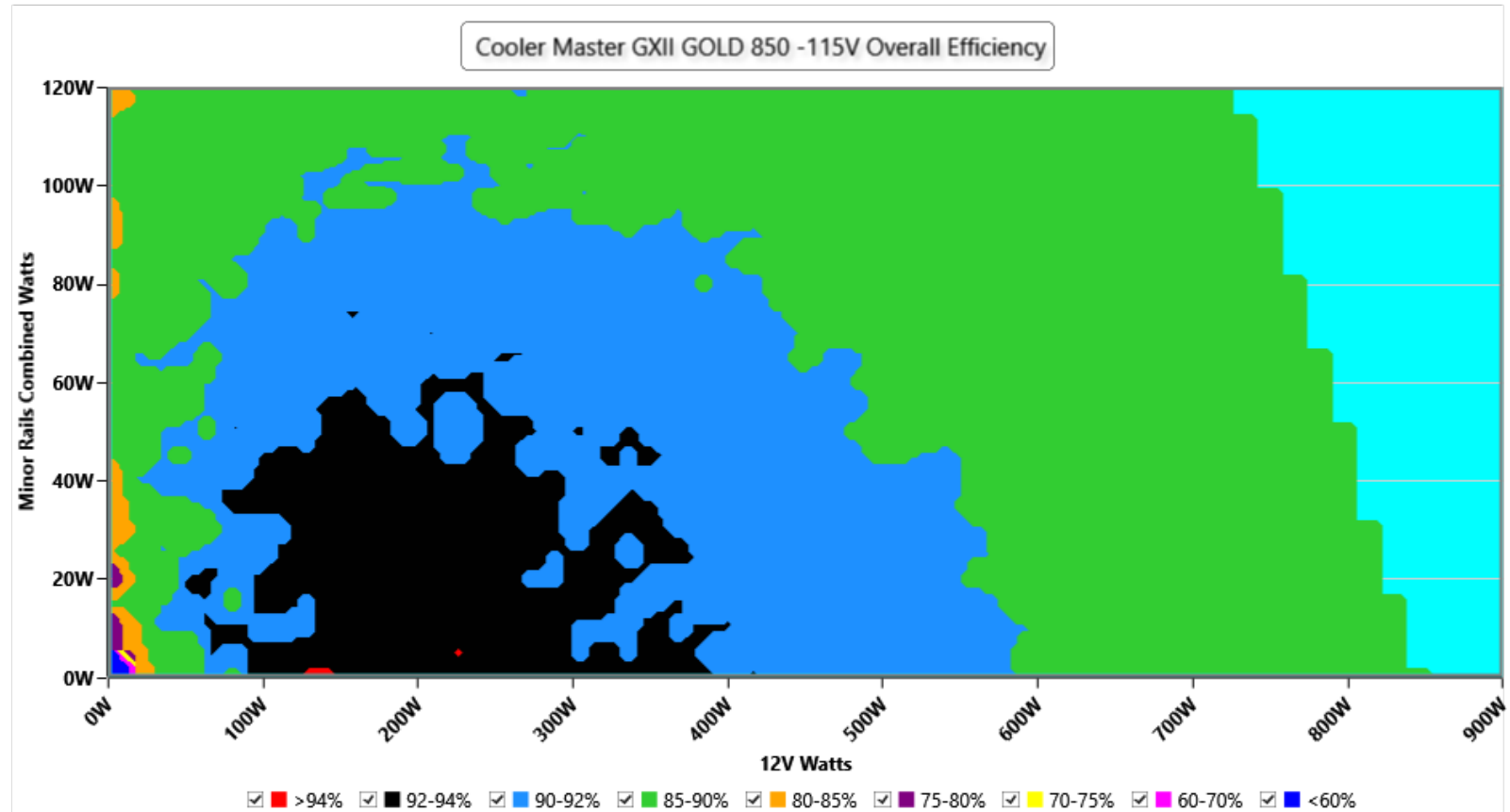
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.07 V	115.04 V	113.85 V	115.11 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.068 W	-0.002 W	N/A	0.125 W	N/A	N/A
Apparent Power:	7.900 W	7.539 W	N/A	8.267 W	N/A	N/A
Power Factor:	0.013	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.03 V	230.92 V	227.70 V	231.09 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:	0.125 W	0.079 W	N/A	0.210 W	N/A	N/A
Apparent Power:	25.453 W	24.984 W	N/A	25.920 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

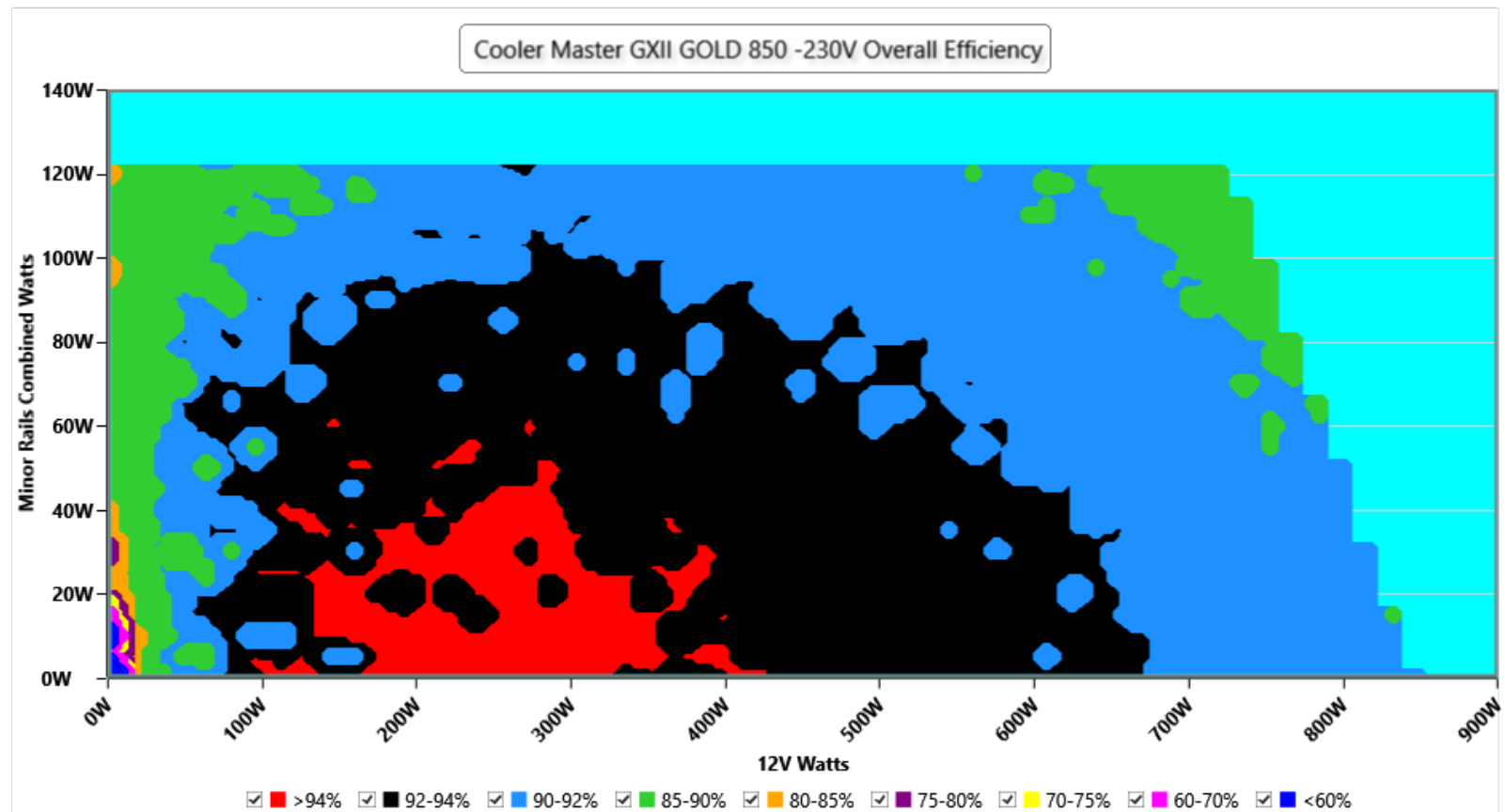
Efficiency Graph

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

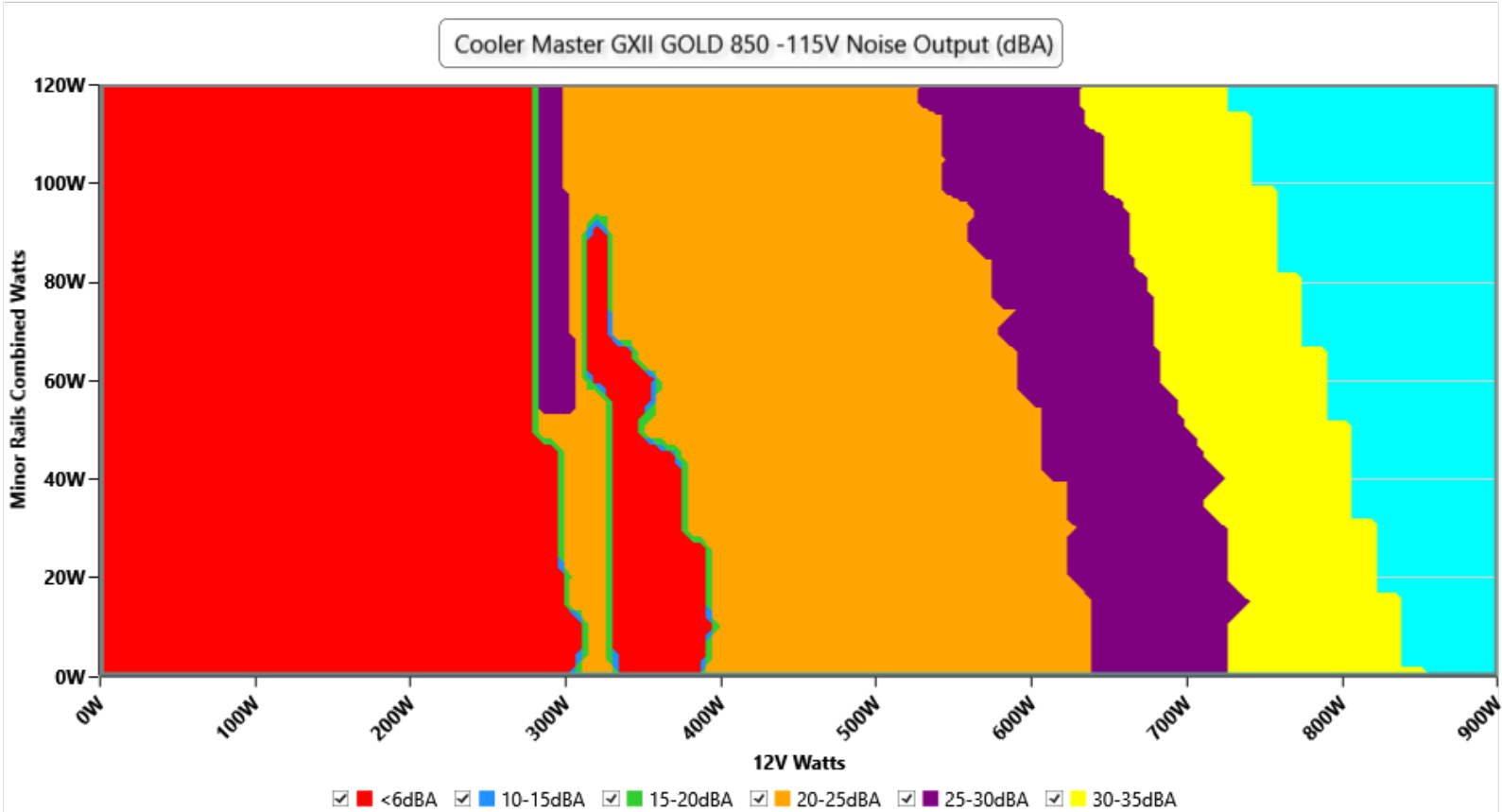


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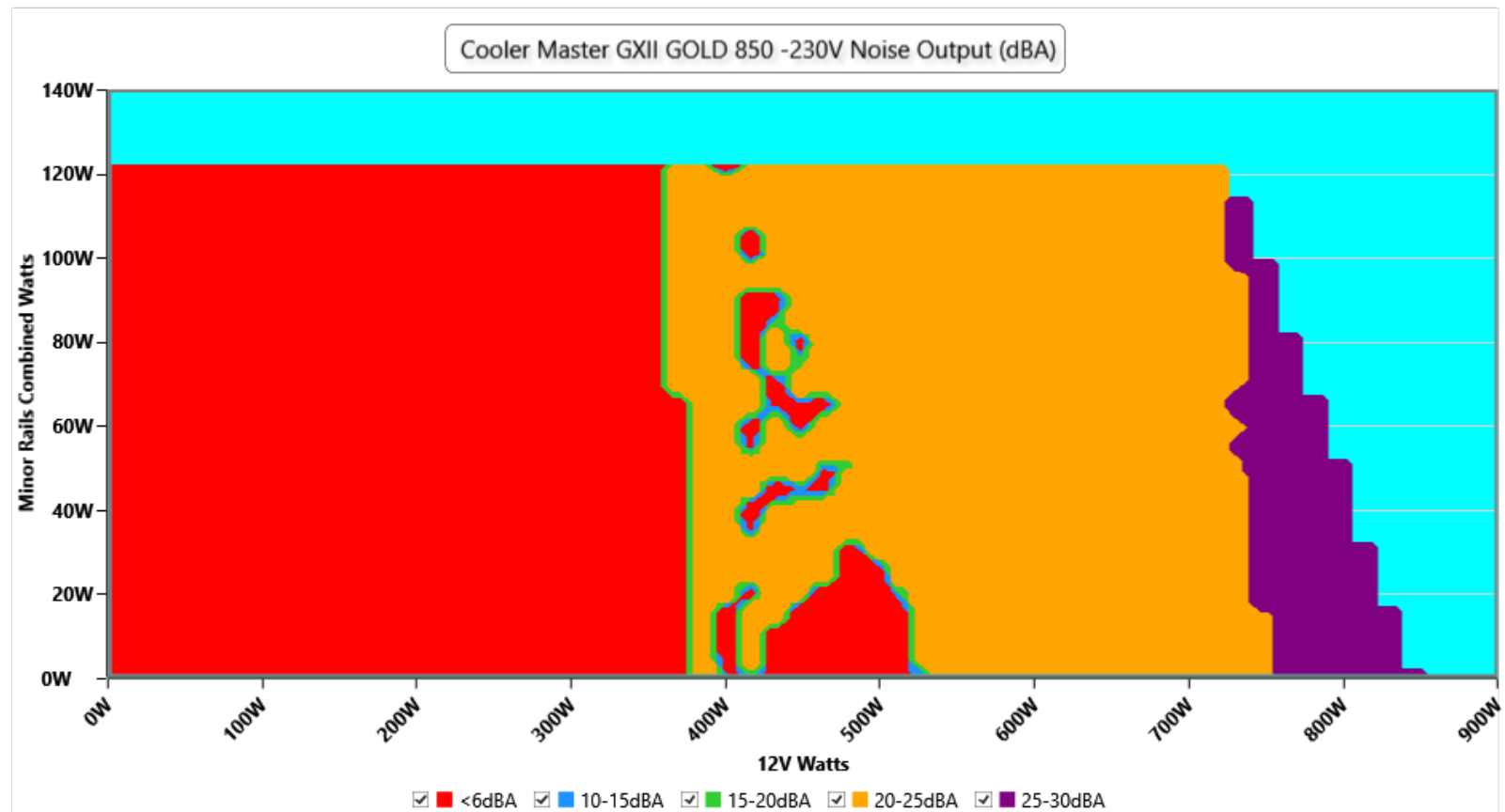
Noise Graph

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



INFO

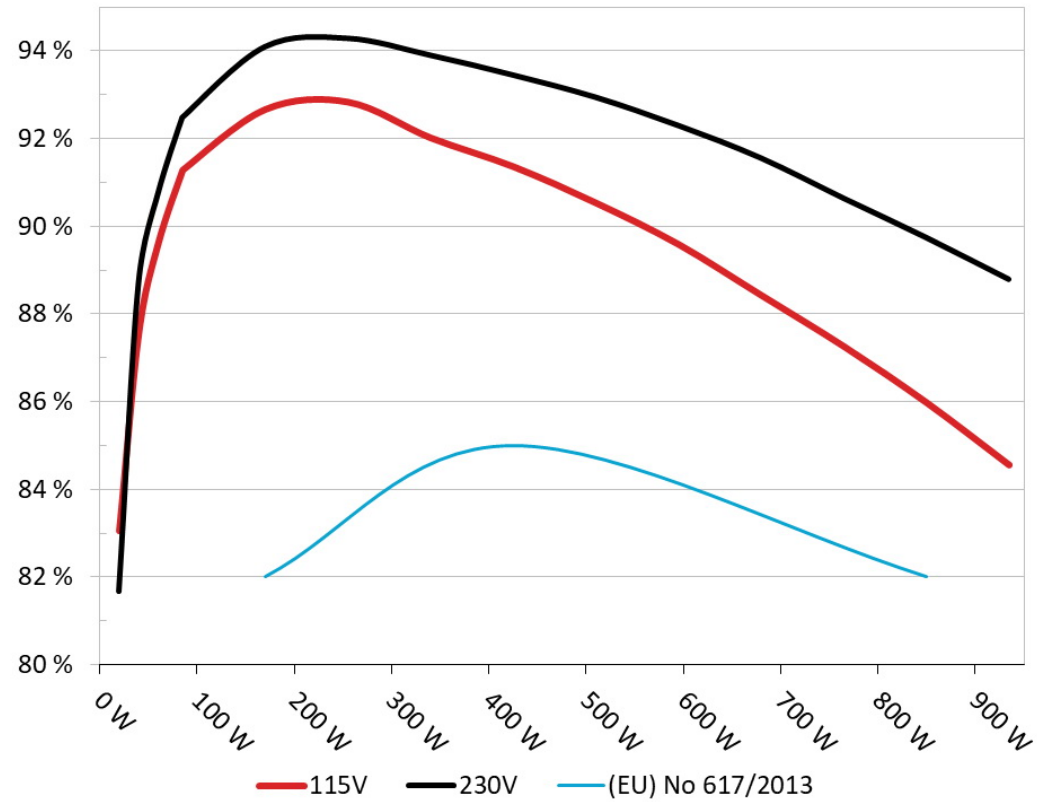
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Cooler Master GXII 850W (#2)

Ambient: 36°C - 47°C (96.8°F - 116.6°F)



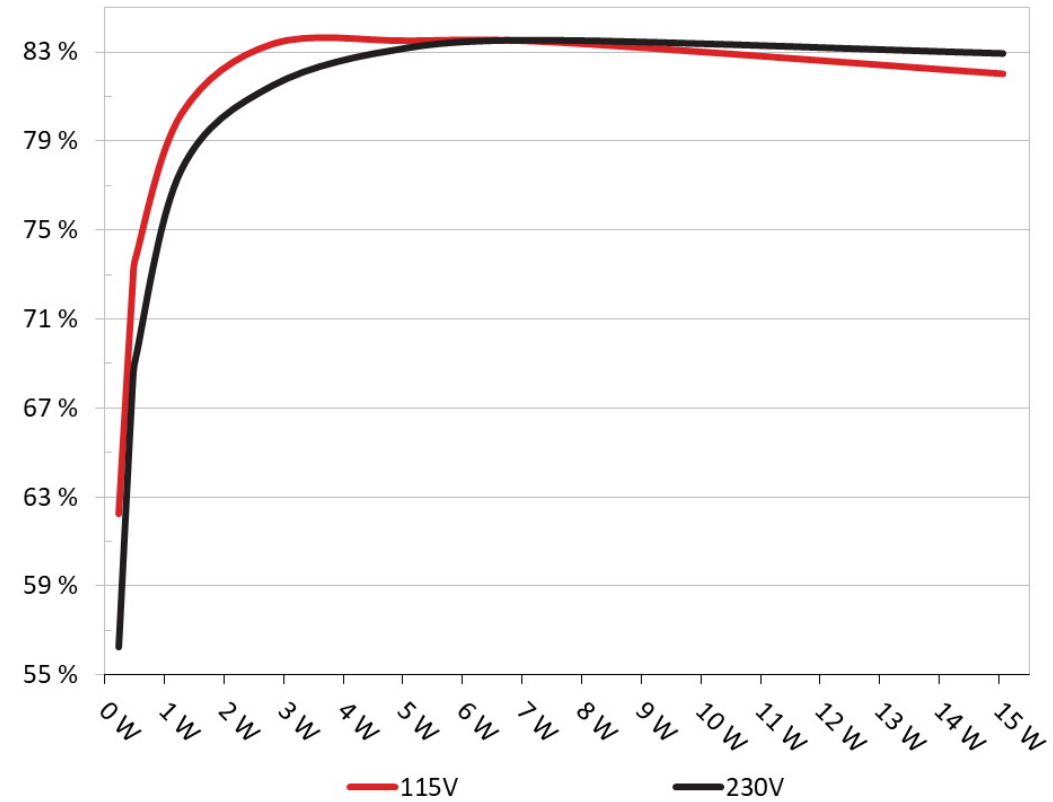
INFO

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 GXII 850W (#2)

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	62.265%	0.05
	5.14V	0.371W		114.94V
2	0.09A	0.463W	72.567%	0.083
	5.138V	0.639W		114.94V
3	0.55A	2.816W	83.392%	0.265
	5.12V	3.377W		114.92V
4	1A	5.101W	83.532%	0.319
	5.101V	6.106W		114.92V
5	1.5A	7.622W	83.456%	0.347
	5.081V	9.135W		114.92V
6	3A	15.059W	82.045%	0.387
	5.02V	18.354W		114.91V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.232W	56.245%	0.017
	5.144V	0.418W		229.9V
2	0.09A	0.463W	67.99%	0.027
	5.141V	0.684W		229.88V
3	0.55A	2.816W	81.485%	0.126
	5.121V	3.459W		229.89V
4	1A	5.102W	83.186%	0.193
	5.102V	6.135W		229.88V
5	1.5A	7.623W	83.508%	0.243
	5.081V	9.131W		229.88V
6	3A	15.059W	82.919%	0.316
	5.02V	18.163W		229.88V

Protection Features

Protection Features	
OCP (Cold @ 26.3°C)	12V: - 5V: - 3.3V: - 5VSB: 5.8A (193.33%), 4.9V
OCP (Hot @ - C)	12V: - 5V: - 3.3V: - 5VSB: -
OPP (Cold @ 27.11°C)	1078.68W (126.90%)
OPP (Hot @ - C)	-
OTP	✗ (Didn't shut down)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
PWR_OK	Proper Operation
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC & Bypass Relay

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%	5.264A	1.975A	1.957A	0.98A	85	91.283%	0	<6.0	51.96°C	0.973
	12.042V	5.063V	3.372V	5.1V	93.149				40.09°C	114.89V
20%	11.555A	2.969A	2.946A	1.18A	169.936	92.666%	0	<6.0	54.04°C	0.985
	12.033V	5.051V	3.361V	5.083V	183.448				40.85°C	114.87V
30%	18.204A	3.471A	3.447A	1.382A	254.939	92.835%	0	<6.0	56.68°C	0.991
	12.024V	5.042V	3.351V	5.066V	274.558				41.03°C	114.84V
40%	24.871A	3.976A	3.952A	1.584A	340.027	92.018%	1260	25.5	41.91°C	0.994
	12.015V	5.031V	3.341V	5.05V	369.508				47.88°C	114.81V
50%	31.183A	4.982A	4.957A	1.789A	424.819	91.363%	1258	25.5	42.2°C	0.995
	12.004V	5.018V	3.328V	5.031V	464.942				48.39°C	114.79V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
60%	37.479A	5.994A	5.971A	1.995A	509.347	90.54%	1258	25.5	42.95°C	0.996
	11.994V	5.006V	3.317V	5.014V	562.53				50.22°C	114.74V
70%	43.852A	7.011A	6.992A	2.202A	594.668	89.59%	1310	26.9	43.15°C	0.997
	11.985V	4.993V	3.304V	4.996V	663.766				52.37°C	114.72V
80%	50.235A	8.031A	8.019A	2.308A	679.484	88.432%	2541	45.4	43.84°C	0.997
	11.975V	4.98V	3.292V	4.982V	768.396				52.02°C	114.68V
90%	57.032A	8.551A	8.532A	2.415A	764.896	87.259%	2556	45.6	44.15°C	0.997
	11.965V	4.969V	3.282V	4.969V	876.595				51.74°C	114.64V
100%	63.573A	9.074A	9.08A	3.041A	849.724	85.98%	2868	49.1	45.51°C	0.997
	11.955V	4.958V	3.271V	4.933V	988.268				53.59°C	114.61V
110%	69.993A	10.111A	10.222A	3.047A	934.317	84.563%	2865	49	46.77°C	0.997
	11.945V	4.944V	3.258V	4.923V	1104.9				56.39°C	114.57V
CL1	0.116A	14.425A	14.357A	0A	121.29	84.775%	0	<6.0	56.13°C	0.981
	12.032V	5.004V	3.323V	5.131V	143.088				40.34°C	114.87V
CL2	0.115A	19.97A	0A	0A	101.339	83.131%	0	<6.0	55.79°C	0.978
	12.040V	5.005V	3.357V	5.139V	121.921				40.91°C	114.87V
CL3	0.115A	0A	19.834A	0A	67.395	78.832%	0	<6.0	54.76°C	0.972
	12.040V	5.041V	3.328V	5.139V	85.518				40.83°C	114.89V
CL4	70.997A	0A	0A	0A	849.481	86.705%	2859	48.9	45.17°C	0.997
	11.966V	5.002V	3.31V	5.075V	979.761				53.15°C	114.61V

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%	5.266A	1.975A	1.958A	0.981A	85.002	92.475%	0	<6.0	48.65°C	0.949
	12.041V	5.062V	3.371V	5.099V	91.966				40.42°C	229.88V
20%	11.556A	2.97A	2.947A	1.181A	169.941	94.09%	0	<6.0	48.97°C	0.973
	12.032V	5.05V	3.36V	5.083V	180.662				40.53°C	229.86V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
30%	18.203A	3.472A	3.447A	1.382A	254.937	94.283%	0	<6.0	52.07°C	0.981
	12.024V	5.041V	3.351V	5.066V	270.402				41.05°C	229.85V
40%	24.870A	3.976A	3.952A	1.584A	340.02	93.897%	1254	25.5	41.96°C	0.986
	12.015V	5.03V	3.34V	5.05V	362.206				44.9°C	229.83V
50%	31.180A	4.983A	4.957A	1.789A	424.802	93.446%	1254	25.5	42.13°C	0.989
	12.005V	5.018V	3.328V	5.032V	454.691				45.21°C	229.82V
60%	37.475A	5.994A	5.97A	1.995A	509.338	92.942%	1256	25.5	42.67°C	0.991
	11.996V	5.005V	3.317V	5.014V	548.035				47.01°C	229.8V
70%	43.848A	7.011A	6.991A	2.202A	594.671	92.296%	1257	25.5	43.08°C	0.992
	11.986V	4.993V	3.305V	4.996V	644.357				48.32°C	229.79V
80%	50.231A	8.031A	8.018A	2.308A	679.496	91.556%	1473	30.3	43.78°C	0.994
	11.976V	4.98V	3.293V	4.983V	742.118				49.84°C	229.77V
90%	57.026A	8.552A	8.531A	2.415A	764.909	90.634%	2443	44.4	44.14°C	0.995
	11.967V	4.969V	3.282V	4.969V	843.908				49.51°C	229.76V
100%	63.570A	9.076A	9.08A	3.041A	849.738	89.737%	2863	49	45.28°C	0.995
	11.956V	4.957V	3.271V	4.933V	946.923				50.06°C	229.74V
110%	69.988A	10.112A	10.221A	3.047A	934.321	88.789%	2866	49.1	46.81°C	0.996
	11.946V	4.943V	3.258V	4.923V	1052.298				53.05°C	229.73V
CL1	0.115A	14.426A	14.355A	0A	121.287	86.106%	0	<6.0	50.79°C	0.967
	12.032V	5.004V	3.323V	5.131V	140.941				40.92°C	229.87V
CL2	0.115A	19.967A	0A	0A	101.337	84.306%	0	<6.0	51.51°C	0.962
	12.040V	5.006V	3.357V	5.138V	120.261				40.58°C	229.87V
CL3	0.115A	0A	19.83A	0A	67.395	79.996%	0	<6.0	51.17°C	0.943
	12.040V	5.042V	3.329V	5.138V	84.304				40°C	229.88V
CL4	70.995A	0A	0A	0A	849.485	90.474%	2862	49	45.96°C	0.995
	11.966V	5.002V	3.31V	5.075V	938.946				50.95°C	229.75V

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	1.232A	0.492A	0.487A	0.194A	19.998	83.062%	0	<6.0	48.65°C	0.916
	12.052V	5.078V	3.385V	5.143V	24.093				36.75°C	114.91V
40W	2.713A	0.69A	0.683A	0.292A	39.997	87.574%	0	<6.0	48.93°C	0.955
	12.048V	5.075V	3.382V	5.137V	45.704				37.1°C	114.9V
60W	4.194A	0.887A	0.879A	0.39A	59.996	89.615%	0	<6.0	49.19°C	0.966
	12.046V	5.072V	3.379V	5.13V	66.949				38.63°C	114.9V
80W	5.672A	1.085A	1.075A	0.488A	79.942	91.496%	0	<6.0	51.07°C	0.972
	12.044V	5.068V	3.376V	5.123V	87.411				39.07°C	114.89V

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	1.232A	0.492A	0.488A	0.195A	19.998	81.674%	0	<6.0	42.5°C	0.575
	12.046V	5.076V	3.383V	5.138V	24.167				36.15°C	229.89V
40W	2.714A	0.69A	0.683A	0.292A	39.997	88.674%	0	<6.0	44.31°C	0.842
	12.044V	5.074V	3.381V	5.134V	45.297				37.03°C	229.88V
60W	4.196A	0.887A	0.879A	0.39A	59.996	90.733%	0	<6.0	45.57°C	0.918
	12.043V	5.07V	3.378V	5.127V	66.123				38.3°C	229.88V
80W	5.674A	1.085A	1.076A	0.488A	79.942	92.778%	0	<6.0	46.74°C	0.945
	12.041V	5.067V	3.375V	5.121V	86.239				38.92°C	229.88V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	24.8 mV	12.1 mV	12.5 mV	10.3 mV	Pass
20% Load	26.8 mV	11.8 mV	11.9 mV	10.4 mV	Pass
30% Load	28.6 mV	13.4 mV	19.0 mV	10.7 mV	Pass
40% Load	27.5 mV	12.2 mV	17.9 mV	11.2 mV	Pass
50% Load	30.4 mV	12.3 mV	13.4 mV	10.9 mV	Pass
60% Load	34.7 mV	13.0 mV	13.0 mV	10.7 mV	Pass
70% Load	36.1 mV	12.6 mV	13.2 mV	11.9 mV	Pass
80% Load	49.1 mV	14.7 mV	15.0 mV	12.3 mV	Pass
90% Load	45.1 mV	15.0 mV	15.9 mV	12.6 mV	Pass
100% Load	58.5 mV	17.3 mV	18.6 mV	16.2 mV	Pass
110% Load	66.5 mV	22.6 mV	31.0 mV	14.7 mV	Pass
Crossload 1	34.1 mV	16.1 mV	14.8 mV	18.6 mV	Pass
Crossload 2	31.4 mV	19.8 mV	13.0 mV	19.3 mV	Pass
Crossload 3	34.0 mV	13.4 mV	16.9 mV	19.1 mV	Pass
Crossload 4	49.8 mV	14.5 mV	18.0 mV	18.2 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	24.5 mV	12.6 mV	12.7 mV	11.7 mV	Pass
20% Load	26.8 mV	12.4 mV	13.9 mV	11.4 mV	Pass
30% Load	31.7 mV	13.5 mV	18.2 mV	11.1 mV	Pass
40% Load	31.5 mV	13.5 mV	19.4 mV	10.9 mV	Pass
50% Load	31.0 mV	12.9 mV	12.8 mV	10.8 mV	Pass
60% Load	32.1 mV	12.2 mV	13.7 mV	11.4 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	35.7 mV	12.9 mV	13.5 mV	10.8 mV	Pass
80% Load	43.1 mV	15.2 mV	15.6 mV	12.0 mV	Pass
90% Load	48.2 mV	15.0 mV	16.4 mV	12.4 mV	Pass
100% Load	56.1 mV	17.5 mV	19.5 mV	16.1 mV	Pass
110% Load	65.1 mV	26.3 mV	23.3 mV	15.6 mV	Pass
Crossload 1	32.1 mV	15.4 mV	15.1 mV	18.5 mV	Pass
Crossload 2	30.0 mV	20.4 mV	12.8 mV	18.8 mV	Pass
Crossload 3	32.7 mV	13.7 mV	15.6 mV	18.9 mV	Pass
Crossload 4	51.6 mV	15.3 mV	17.6 mV	18.1 mV	Pass

The results above are not used in the certification process

Cooler Master GX II 850 GOLD (MWE Gold 850 V3)

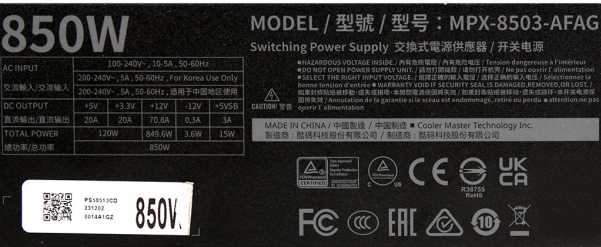


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All data and graphs included in this test report can be used by any individual on the following conditions:

- › 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. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

www.cybenetics.com - info@cybenetics.com