



Make It Yours.

Cooler Master V SFX Gold 850 (ATX v3.1)

Serial Number MPY8501SFHAGV3EEU1243500002

Lab ID CM85002598

Certification ID 252598

Test Result Report ID: 24PS2598A

Certificate Issue Date: Oct 9, 2024

Scheme: ETA-EMI PSU

115V

230V

115V

230V

Scheme: LAMBDA PSU

Outside Validation Scope

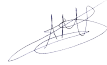
General Information

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	Cooler Master
Model	V SFX Gold 850 (ATX v3.1)
OEM/ODM	Gospower
Serial Number	MPY8501SFHAGV3EEU1243500002
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	6-12

Rated Frequency (Hz)	50-60
Rated Power (W)	850
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	92mm Fluid Dynamic Bearing Fan (HA9215VH12FD-F00)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CM85002598
Date of receipt	Sep 23, 2024
Testing Date	Oct 8, 2024
Report Issued Date	Oct 9, 2024
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 (300mm)	1	1	18AWG	No
8 pin EPS12V (455mm)	1	1	18AWG	No
4+4 pin EPS12V (455mm)	1	1	18AWG	No
6+2 pin PCIe (400mm+120mm)	2	4	16-18AWG	No
12+4 pin PCIe (415mm) (600W)	1	1	16-28AWG	No
SATA (105mm+110mm+110mm+110mm)	2	8	18AWG	No
4-pin Molex (105mm+115mm+115mm+115mm)	1	4	18AWG	No

AC Power Cord (1370mm) - C13 coupler	1	1	17AWG	-
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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)	87.894%
Average Noise Output (>1450 Load Combinations)	29.21dBA
Average PF (>1450 Load Combinations)	0.980
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	67.765%
Standby Power Consumption	0.0441W
Non-Accredited	
12V Ripple (Full Load)	19.55mV
5V Ripple (Full Load)	24.52mV
3.3V Ripple (Full Load)	16.01mV
5VSB Ripple (Full Load)	31.84mV
12V Load Regulation	1.47%
5V Load Regulation	1.82%
3.3V Load Regulation	2.52%
5VSB Load Regulation	3.62%
Inrush Current	32.500A

230V

Accredited	
Average Efficiency (>1450 load combinations)	90.298%
Average Noise Output (>1450 Load Combinations)	28.60dBA
Average PF (>1450 Load Combinations)	0.942
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	69.201%
Standby Power Consumption	0.1110W
Non-Accredited	
12V Ripple (Full Load)	21.47mV
5V Ripple (Full Load)	26.83mV
3.3V Ripple (Full Load)	15.61mV

5VSB Ripple (Full Load)	30.24mV	
12V Load Regulation	1.49%	
5V Load Regulation	1.80%	
3.3V Load Regulation	2.49%	
5VSB Load Regulation	3.58%	
Inrush Current	65.850A	
12V Transient Response (200%)	11.38V	
5V Transient Response (200%)	4.881V	
3.3V Transient Response (200%)	3.159V	
5VSB Transient Response (200%)	4.940V	
Hold-Up Time & PWR_OK Signal	22.50ms	
AC Loss to PWR_OK Hold Up Time	19.20ms	
PWR_OK Inactive to DC Loss Delay	3.30ms	
PSU Timings: T1 (20% / 100%)	56.0ms	56.0ms
PSU Timings: T3 (20% / 100%)	127.0ms	127.0ms
12V OCP (28.4°C / 44.7°C)	96.00A (135.59%), 11.834V	96.20A (135.88%), 11.822V
5V OCP (28.4°C / 44.7°C)	32.7A (163.50%), 4.967V	32.7A (163.50%), 4.969V
3.3V OCP (28.4°C / 44.7°C)	31.4A (157.00%), 3.282V	30.6A (153.00%), 3.285V
5VSB OCP (28.4°C / 44.7°C)	3.9A (130.00%), 4.999V*	3.8A (126.67%), 4.987V
OPP (28.52°C / 42.67°C)	133.25%	119.18%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	22.5
AC Loss to PWR_OK Hold Up Time (ms)	19.2
PWR_OK Inactive to DC Loss Delay (ms)	3.3

Vampire Power

Tables

115V

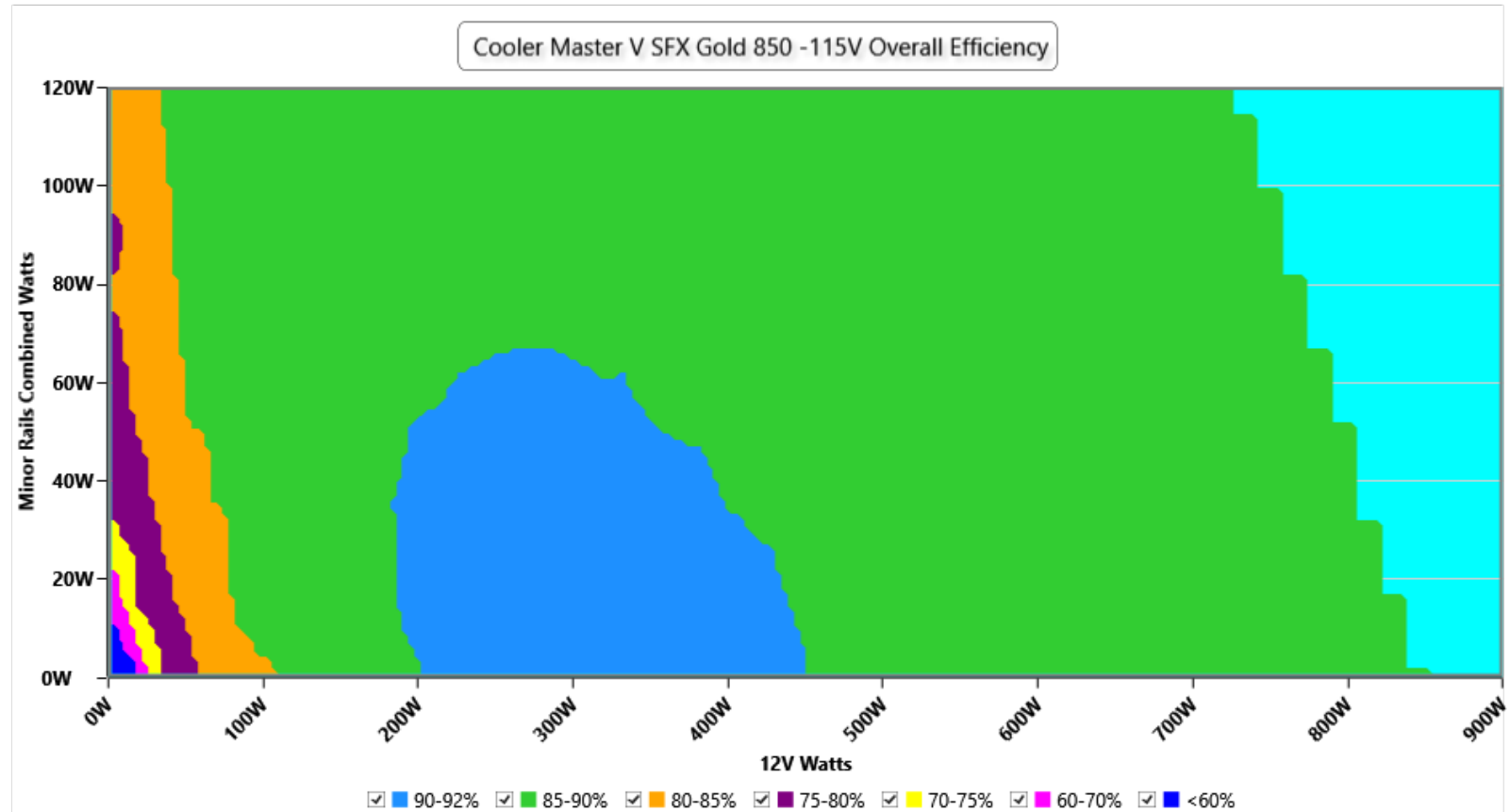
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.08 V	115.03 V	113.85 V	115.12 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.08 %	N/A	0.20 %	2.00 %	PASS
Real Power:	0.044 W	-0.008 W	N/A	0.085 W	N/A	N/A
Apparent Power:	12.309 W	11.535 W	N/A	13.100 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.01 V	230.91 V	227.70 V	231.08 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:	0.111 W	0.070 W	N/A	0.178 W	N/A	N/A
Apparent Power:	38.291 W	37.366 W	N/A	39.172 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

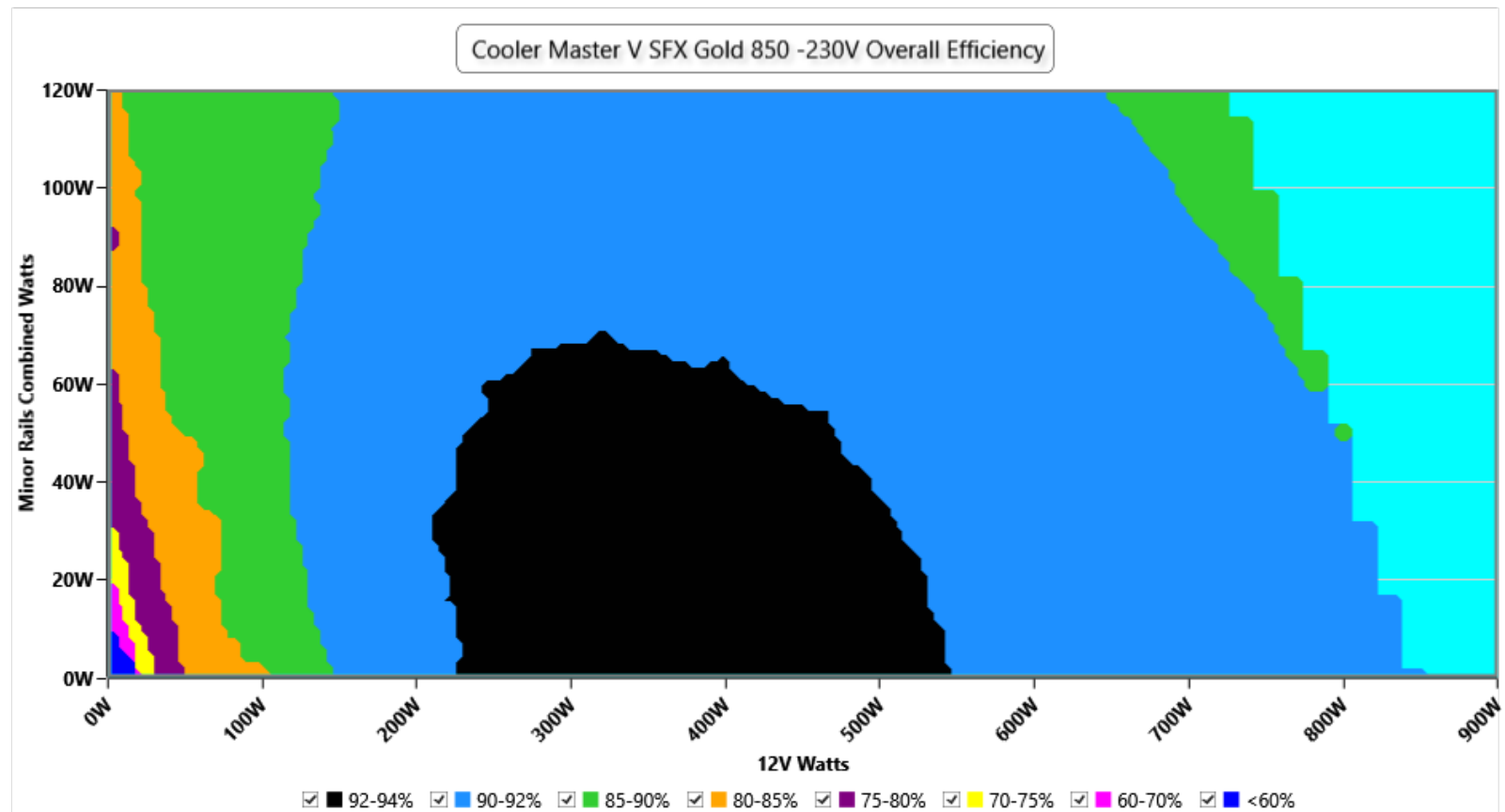
Efficiency Graph

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

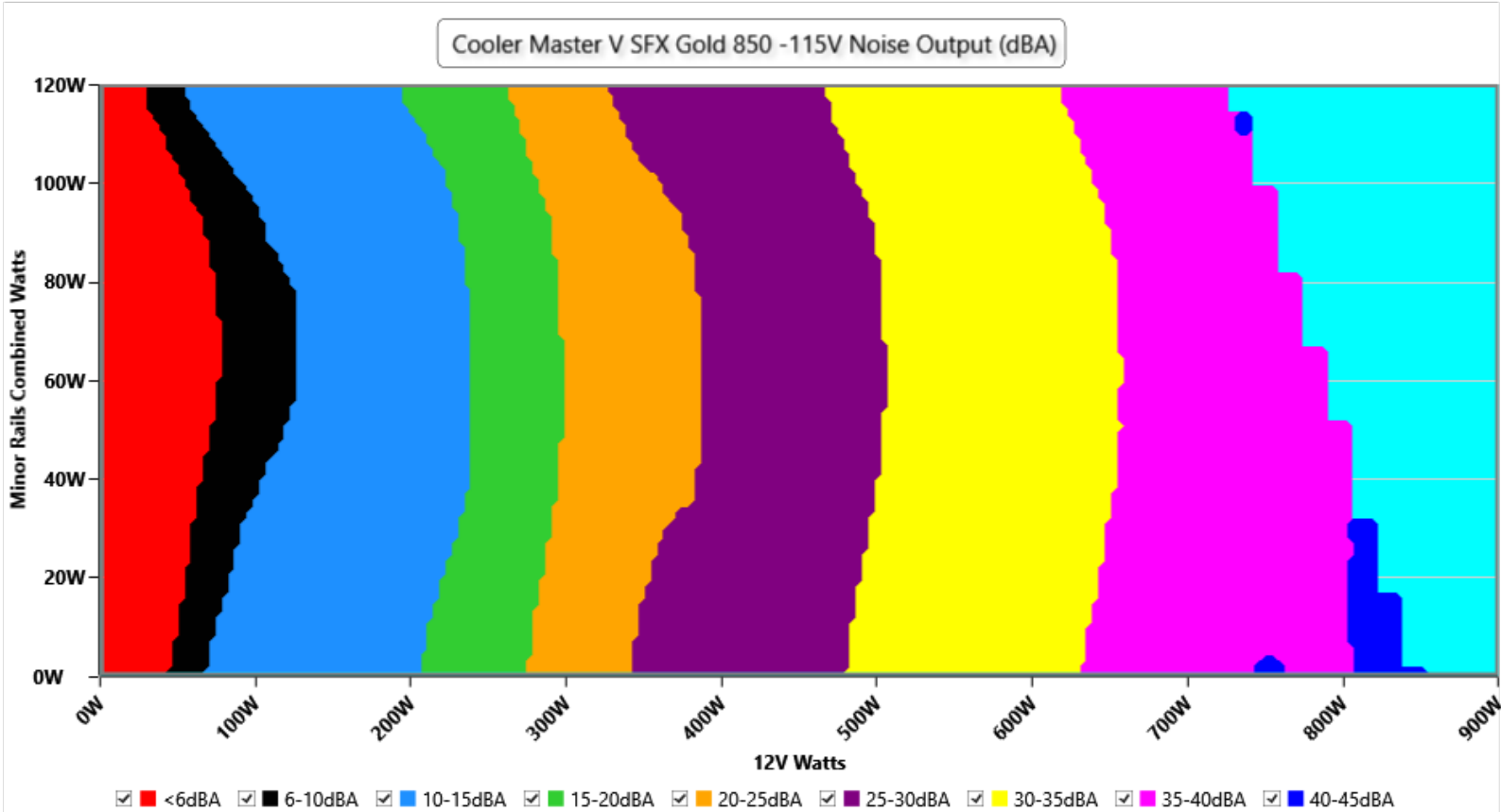


INFO

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

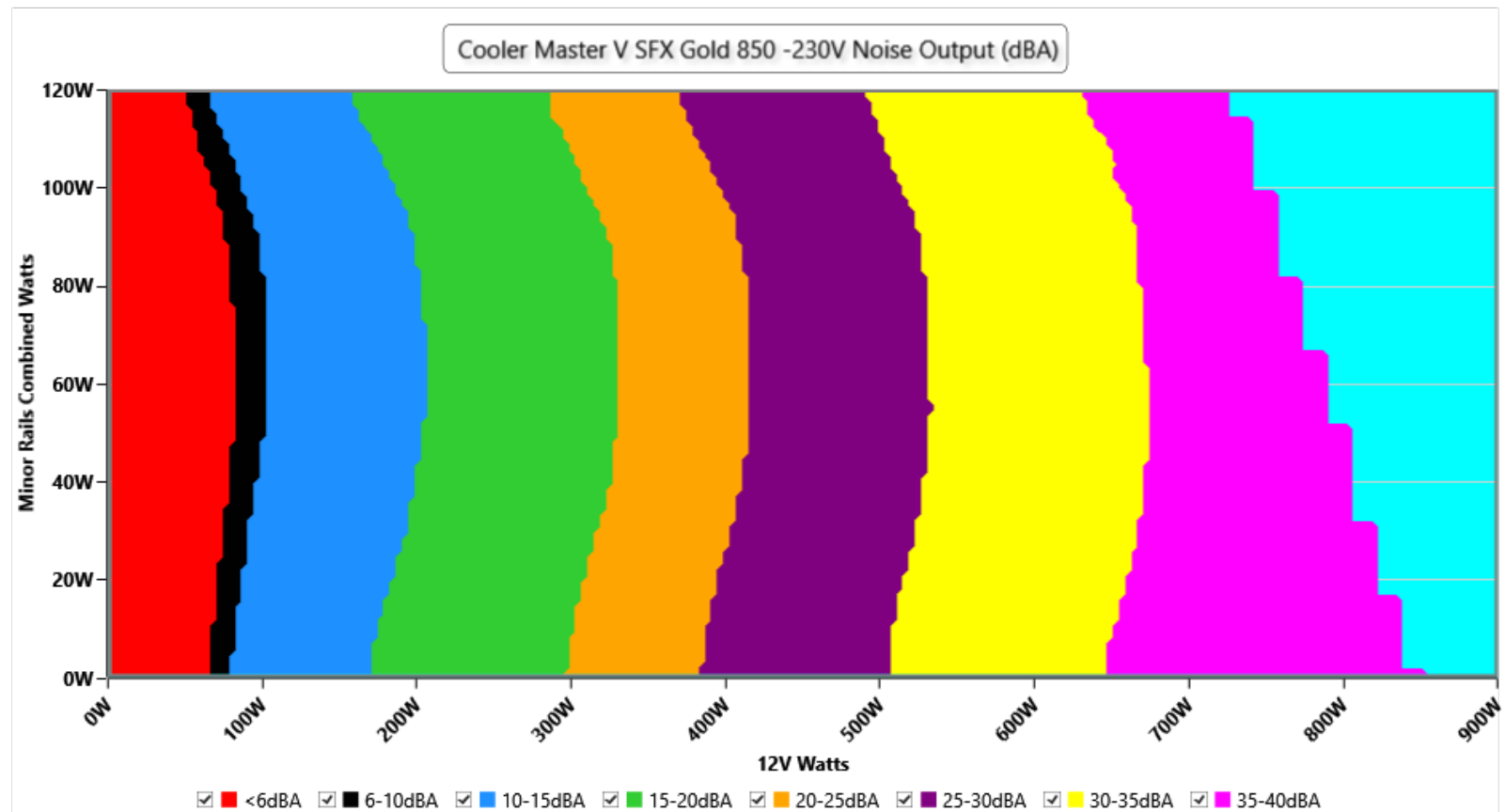
Noise Graph

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

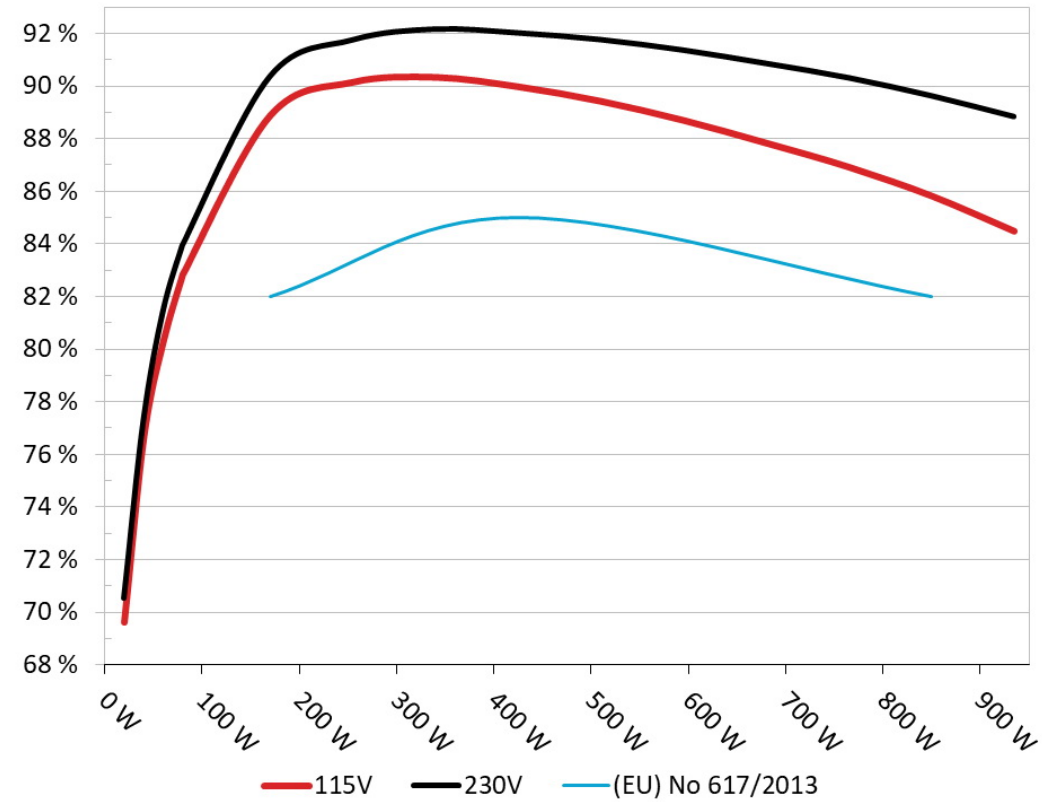
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Cooler Master V SFX Gold 850

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



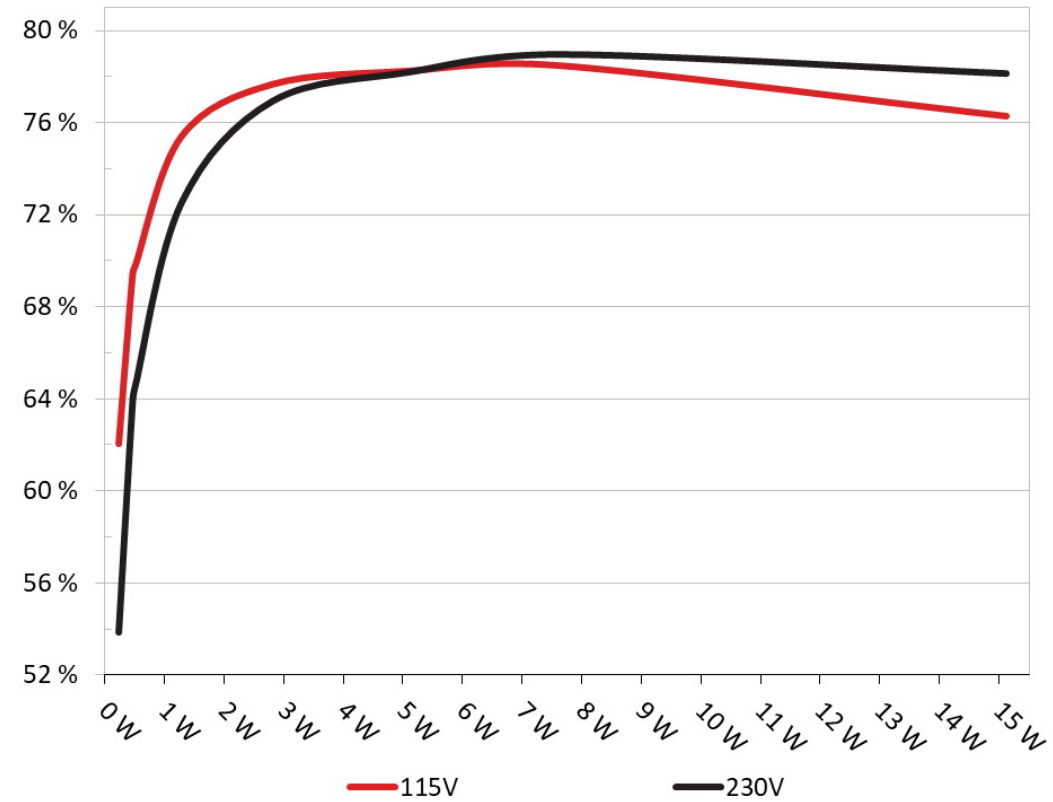
INFO

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 V SFX Gold 850

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	62.033%	0.034
	5.134V	0.373W		114.91V
2	0.09A	0.462W	69.37%	0.06
	5.132V	0.666W		114.91V
3	0.55A	2.815W	77.672%	0.257
	5.119V	3.624W		114.9V
4	1A	5.105W	78.251%	0.355
	5.105V	6.524W		114.91V
5	1.5A	7.635W	78.483%	0.401
	5.089V	9.728W		114.9V
6	3A	15.126W	76.285%	0.47
	5.042V	19.829W		114.9V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	53.874%	0.012
	5.134V	0.43W		229.9V
2	0.09A	0.462W	63.82%	0.02
	5.132V	0.726W		229.9V
3	0.55A	2.815W	76.924%	0.095
	5.119V	3.661W		229.9V
4	1A	5.105W	78.179%	0.159
	5.105V	6.53W		229.9V
5	1.5A	7.635W	78.944%	0.205
	5.089V	9.672W		229.9V
6	3A	15.126W	78.117%	0.316
	5.042V	19.363W		229.9V

Protection Features

OCP (Normal @ 28.4°C)	12V: 96.00A (135.59%), 11.834V 5V: 32.7A (163.50%), 4.967V 3.3V: 31.4A (157.00%), 3.282V 5VSB: 3.9A (130.00%), 4.999V* *High ripple (62.46mV)
OCP (Hot @ 44.7°C)	12V: 96.20A (135.88%), 11.822V 5V: 32.7A (163.50%), 4.969V 3.3V: 30.6A (153.00%), 3.285V 5VSB: 3.8A (126.67%), 4.987V
OPP (Normal @ 28.5°C)	1132.65W (133.25%)
OPP (Hot @ 42.7°C)	1013.02W (119.18%)
OTP	✓ (116°C @ Heat Sink)
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%	5.238A	1.99A	1.986A	0.982A	85.004	82.623%	1302	18.6	40.02°C	0.934
	12.102V	5.024V	3.323V	5.094V	102.882				42.74°C	114.89V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20%	11.504A	2.991A	2.987A	1.181A	169.942	88.866%	1384	20.6	40.54°C	0.958
	12.086V	5.015V	3.315V	5.08V	191.234				43.88°C	114.86V
30%	18.141A	3.495A	3.493A	1.382A	254.944	90.129%	1517	23.7	41.01°C	0.975
	12.066V	5.007V	3.307V	5.066V	282.87				45.16°C	114.83V
40%	24.802A	4.001A	4A	1.583A	340.028	90.316%	1694	27.2	41.56°C	0.984
	12.048V	4.999V	3.3V	5.052V	376.488				46.76°C	114.8V
50%	31.118A	5.011A	5.014A	1.787A	424.859	89.955%	1897	30.7	42.03°C	0.988
	12.030V	4.99V	3.291V	5.038V	472.301				48.72°C	114.77V
60%	37.431A	6.025A	6.033A	1.992A	509.417	89.406%	2114	34.1	42.87°C	0.991
	12.012V	4.98V	3.282V	5.022V	569.778				50.57°C	114.74V
70%	43.832A	7.043A	7.058A	2.198A	594.767	88.678%	2311	36.4	43.18°C	0.993
	11.992V	4.97V	3.274V	5.006V	670.704				52.77°C	114.7V
80%	50.257A	8.063A	8.088A	2.304A	679.586	87.817%	2510	40	43.62°C	0.993
	11.972V	4.96V	3.264V	4.993V	773.863				55.29°C	114.68V
90%	57.113A	8.583A	8.6A	2.41A	765.01	86.895%	2668	40.9	44.26°C	0.994
	11.950V	4.951V	3.256V	4.979V	880.393				57.86°C	114.64V
100%	63.732A	9.105A	9.145A	3.032A	849.804	85.803%	2847	43	45.81°C	0.995
	11.927V	4.941V	3.248V	4.948V	990.405				61.47°C	114.61V
110%	70.277A	10.14A	10.285A	3.039A	934.358	84.467%	3033	44.5	46.74°C	0.996
	11.897V	4.93V	3.238V	4.936V	1106.167				65.37°C	114.56V
CL1	0.116A	14.452A	14.475A	0A	121.293	82.07%	2335	36.7	41.05°C	0.944
	12.129V	4.995V	3.296V	5.11V	147.794				50.5°C	114.86V
CL2	0.114A	20A	0A	0A	101.342	78.735%	2063	33.2	40.81°C	0.941
	12.123V	4.997V	3.313V	5.118V	128.714				47.26°C	114.88V
CL3	0.114A	0A	19.986A	0A	67.396	73.58%	1899	30.7	40.81°C	0.929
	12.114V	5.019V	3.303V	5.12V	91.593				45.95°C	114.89V
CL4	71.342A	0A	0A	0.002A	849.542	86.602%	2649	40.7	45.35°C	0.994
	11.908V	4.965V	3.271V	5.065V	980.991				58.42°C	114.62V

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%	5.238A	1.99A	1.986A	0.982A	85.007	83.838%	1414	21.5	40°C	0.812
	12.105V	5.024V	3.324V	5.094V	101.393				42.8°C	229.87V
20%	11.505A	2.991A	2.987A	1.181A	169.959	90.373%	1457	22.3	40.58°C	0.898
	12.086V	5.015V	3.315V	5.08V	188.069				43.41°C	229.85V
30%	18.144A	3.495A	3.493A	1.382A	254.978	91.77%	1571	25	41.03°C	0.932
	12.066V	5.007V	3.307V	5.067V	277.844				44.11°C	229.84V
40%	24.806A	4.001A	4A	1.584A	340.071	92.18%	1735	28	41.51°C	0.947
	12.048V	5V	3.3V	5.053V	368.921				45.3°C	229.84V
50%	31.125A	5.01A	5.013A	1.787A	424.925	92.035%	1935	31.2	42.1°C	0.959
	12.030V	4.99V	3.292V	5.038V	461.7				46.59°C	229.82V
60%	37.435A	6.024A	6.031A	1.991A	509.452	91.78%	2115	34.1	42.79°C	0.966
	12.011V	4.981V	3.283V	5.023V	555.083				47.54°C	229.81V
70%	43.833A	7.042A	7.056A	2.197A	594.771	91.378%	2296	36.3	43.08°C	0.97
	11.992V	4.972V	3.275V	5.007V	650.896				48.96°C	229.79V
80%	50.255A	8.061A	8.085A	2.303A	679.57	90.874%	2476	40	43.57°C	0.974
	11.972V	4.962V	3.265V	4.994V	747.816				50.07°C	229.78V
90%	57.109A	8.581A	8.597A	2.409A	764.984	90.323%	2643	40.6	44.17°C	0.978
	11.951V	4.952V	3.257V	4.982V	846.956				51.65°C	229.76V
100%	63.725A	9.104A	9.143A	3.031A	849.796	89.638%	2805	42.4	45.14°C	0.98
	11.928V	4.942V	3.249V	4.95V	948.03				53.18°C	229.74V
110%	70.244A	10.138A	10.282A	3.038A	934.385	88.851%	2981	43.1	46.06°C	0.983
	11.903V	4.931V	3.239V	4.939V	1051.631				55.74°C	229.72V
CL1	0.116A	14.451A	14.475A	0A	121.299	83.437%	2300	36.3	40.69°C	0.868
	12.127V	4.995V	3.296V	5.111V	145.376				46.63°C	229.87V
CL2	0.114A	19.998A	0A	0A	101.344	79.967%	2051	33.2	40.93°C	0.852
	12.122V	4.998V	3.313V	5.119V	126.733				45.47°C	229.87V
CL3	0.114A	0A	19.987A	0A	67.401	74.52%	1908	30.7	40.79°C	0.793
	12.114V	5.019V	3.303V	5.12V	90.45				44.62°C	229.88V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL4	71.343A	0A	0A	0.002A	849.563	90.247%	2615	40.2	45.32°C	0.98
	11.908V	4.966V	3.271V	5.066V	941.382				51.96°C	229.74V

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	1.228A	0.497A	0.496A	0.195A	20.003	69.602%	0	<6.0	37.26°C	0.812
	12.099V	5.031V	3.33V	5.127V	28.739				36.94°C	114.91V
40W	2.702A	0.696A	0.694A	0.293A	40.004	76.635%	873	<6.0	37.33°C	0.869
	12.101V	5.03V	3.328V	5.121V	52.201				38.84°C	114.91V
60W	4.176A	0.895A	0.893A	0.391A	60.004	80.264%	1062	11.8	38.17°C	0.903
	12.100V	5.028V	3.327V	5.116V	74.758				40.16°C	114.9V
80W	5.646A	1.094A	1.092A	0.489A	79.956	82.814%	1202	15.8	39.18°C	0.931
	12.100V	5.026V	3.325V	5.111V	96.547				41.6°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	1.228A	0.497A	0.496A	0.195A	20.002	70.516%	0	<6.0	36.31°C	0.5
	12.099V	5.031V	3.33V	5.127V	28.366				37.43°C	229.88V
40W	2.702A	0.696A	0.694A	0.293A	40.001	77.276%	870	<6.0	37.03°C	0.673
	12.102V	5.03V	3.329V	5.122V	51.762				39.55°C	229.88V
60W	4.176A	0.895A	0.893A	0.391A	60	81.421%	1066	11.8	38.11°C	0.754
	12.101V	5.028V	3.327V	5.117V	73.694				40.44°C	229.87V
80W	5.646A	1.094A	1.091A	0.489A	79.95	83.941%	1230	16.6	39.01°C	0.802
	12.102V	5.027V	3.326V	5.111V	95.244				41.68°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	12.94mV	15.12mV	11.61mV	13.71mV	Pass
20% Load	15.04mV	16.40mV	12.17mV	13.71mV	Pass
30% Load	13.66mV	17.68mV	11.51mV	14.07mV	Pass
40% Load	13.15mV	19.36mV	11.61mV	17.14mV	Pass
50% Load	14.12mV	19.11mV	12.74mV	16.52mV	Pass
60% Load	14.33mV	23.96mV	17.03mV	18.21mV	Pass
70% Load	14.02mV	26.98mV	18.67mV	19.13mV	Pass
80% Load	14.73mV	22.32mV	15.50mV	20.46mV	Pass
90% Load	14.79mV	23.50mV	14.43mV	22.35mV	Pass
100% Load	19.55mV	24.52mV	16.01mV	31.84mV	Pass
110% Load	23.62mV	25.77mV	15.15mV	31.35mV	Pass
Crossload1	22.47mV	23.19mV	14.27mV	13.71mV	Pass
Crossload2	14.07mV	28.71mV	12.43mV	15.40mV	Pass
Crossload3	12.84mV	30.96mV	15.14mV	14.12mV	Pass
Crossload4	19.40mV	36.39mV	13.99mV	20.92mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.20mV	14.56mV	12.48mV	14.22mV	Pass
20% Load	14.27mV	17.88mV	12.43mV	13.91mV	Pass
30% Load	13.61mV	17.58mV	11.51mV	14.99mV	Pass
40% Load	13.05mV	17.98mV	12.48mV	16.01mV	Pass
50% Load	13.71mV	19.46mV	12.63mV	17.19mV	Pass
60% Load	13.25mV	23.76mV	17.49mV	19.13mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	13.61mV	27.89mV	19.49mV	19.44mV	Pass
80% Load	14.37mV	22.63mV	18.41mV	22.56mV	Pass
90% Load	14.99mV	22.43mV	14.63mV	22.76mV	Pass
100% Load	21.47mV	26.83mV	15.61mV	30.24mV	Pass
110% Load	25.17mV	25.69mV	15.79mV	30.86mV	Pass
Crossload1	23.32mV	22.04mV	15.15mV	13.35mV	Pass
Crossload2	13.20mV	27.43mV	12.43mV	15.75mV	Pass
Crossload3	12.59mV	30.04mV	15.40mV	13.81mV	Pass
Crossload4	21.79mV	35.09mV	13.68mV	20.87mV	Pass

The results above are not used in the certification process

Cooler Master V SFX Gold 850 (ATX v3.1)

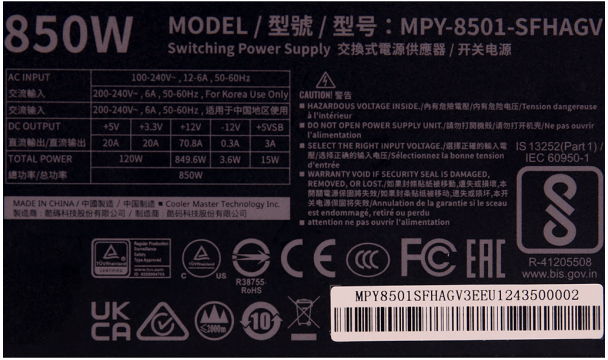


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All data and graphs included in this test report can be used by any individual on the following conditions:

- › 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

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