Make It Yours.

Cooler Master V850 SFX Gold (2021)

MPY8501SFHAGVEU1211500121

Lab ID CM85001903

Certification ID 251903

Test Result Report ID: 21PS1903A

Certificate Issue Date: Sep 14, 2021

Scheme: ETA-EMI PSU

115V



230V



Scheme: LAMBDA PSU

115V



230V





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	V850 SFX Gold (2021)
OEM/ODM	Gospower
Serial Number	MPY8501SFHAGVEU1211500121
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	6
□□□□ (Hz)	50-60

□□□□ (W)	850
Operating Temperature (Continuous Full Load) (°C)	
□□	SFX
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	92mm Fluid Dynamic Bearing Fan (HA9215VH12FD-F00)
□□□□□	✓
Cybenetics Testing Information	
Lab ID	CM85001903
Date of receipt	Sep 6, 2021
Testing Date	Sep 10, 2021
Report Issued Date	Sep 14, 2021
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□□ (Non-accredited measurements)

□□□□□				
□□	□□□□	□□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (300mm)	1	1	18-22AWG	□
4+4 pin EPS 12V □□ (460mm)	1	1	18AWG	□
8 pin EPS 12V □□ (460mm)	1	1	18AWG	□
6+2pin PCIe□□ (400mm+120mm)	2	4	16-18AWG	□
SATA□□ (100mm+110mm+110mm+110mm)	2	8	18AWG	□
□ 4pin Molex□□ (100mm+110mm+110mm+110mm)	1	4	18AWG	□
AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	70.8	3	0.3
	□	120		849.6	15	3.6
□□□□□ (W)		850				

Parts Description

General Data	-
Manufacturer (OEM)	Gospower
PCB Type	Double Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x MPS HF81 (Discharge IC)
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x
APFC MOSFETs	2x STMicroelectronics STF33N60DM2 (600V, 15.5A @ 100°C, Rds(on): 0.13Ohm)
APFC Boost Diode	1x
Bulk Cap(s)	1x Nichicon (450V, 560uF, 2,000h @ 105°C, LGM)
Main Switchers	2x Sanrise Tech SRC60R140BTFE (600V, 11.2A @ 125°C, Rds(on): 0.14Ohm)
APFC Controller	Champion CM6500UNX & CM03AX
Resonant Controller	Champion CU6901VAC
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	6x On Semiconductor NTMFS5C410NL (40V, 230A @ 100°C, Rds(on): 0.82mOhm)
5V & 3.3V	DC-DC Converters: 6x On Semiconductor NTMFS4C022N (30V, 136A, Rds(on): 1.7mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 4x Rubycon (4-10,000h @ 105°C, YXF) Polymer: 28x FPCAP, 1x Nippon Chemi-Con
Supervisor IC	IN1S313I-SAG
Fan Model	Hong Hua HA9215VH12FD-F00 (92mm, 12V, 0.36A, Fluid Dynamic Bearing Fan)
5VSB Circuit	-

Standby PWM Controller	On-Bright OB2365SP

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓
ALPM (Alternative Low Power Mode) compatible	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	88.519%
Average Noise Output (>1450 Load Combinations)	37.32dBA
PF□□□ (>1450 Load Combinations)	0.985
Efficiency With 10W (≤500W) or 2% (>500W) Load	51.215%
□□□□□□	0.0447W
Non-Accredited	
12V Ripple (Full Load)	63.21mV
5V Ripple (Full Load)	35.79mV
3.3V Ripple (Full Load)	86.38mV
5VSB Ripple (Full Load)	24.61mV
12V Load Regulation	1.75%
5V Load Regulation	1.73%
3.3V Load Regulation	2.61%
5VSB Load Regulation	3.60%
Inrush Current	62.990A

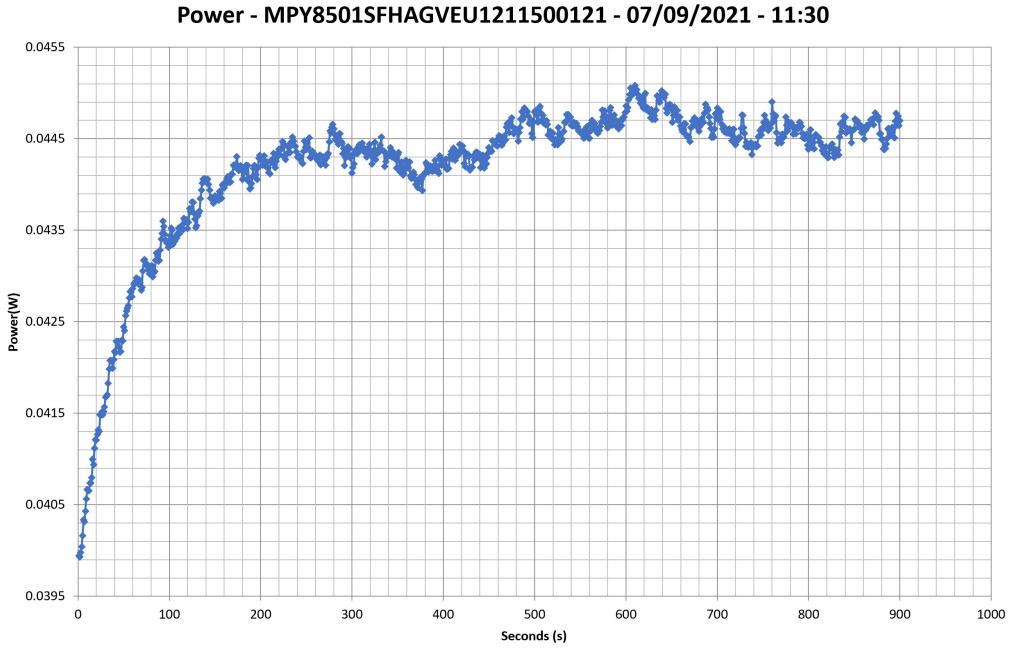
230V		
Accredited		
□□□□ (>1450 load combinations)		91.022%
Average Noise Output (>1450 Load Combinations)		37.09dBA
PF□□□ (>1450 Load Combinations)		0.955
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
□□□□□□		0.0824W
Non-Accredited		
12V Ripple (Full Load)		23.08mV
5V Ripple (Full Load)		15.37mV
3.3V Ripple (Full Load)		15.58mV
5VSB Ripple (Full Load)		19.03mV
12V Load Regulation		1.80%
5V Load Regulation		1.75%
3.3V Load Regulation		2.61%
5VSB Load Regulation		3.62%
Inrush Current		84.830A
□□□□ & PG□□		17.20ms
AC Loss to PWR_OK Hold Up Time		16.10ms
PWR_OK Inactive to DC Loss Delay		1.10ms
PSU Timings: T1 (20% / 100%)	48.0ms	48.0ms
PSU Timings: T3 (20% / 100%)	136.0ms	136.0ms
OPP (28.40°C / 42.42°C)	116.80%	114.44%

□□□□ & PG□□

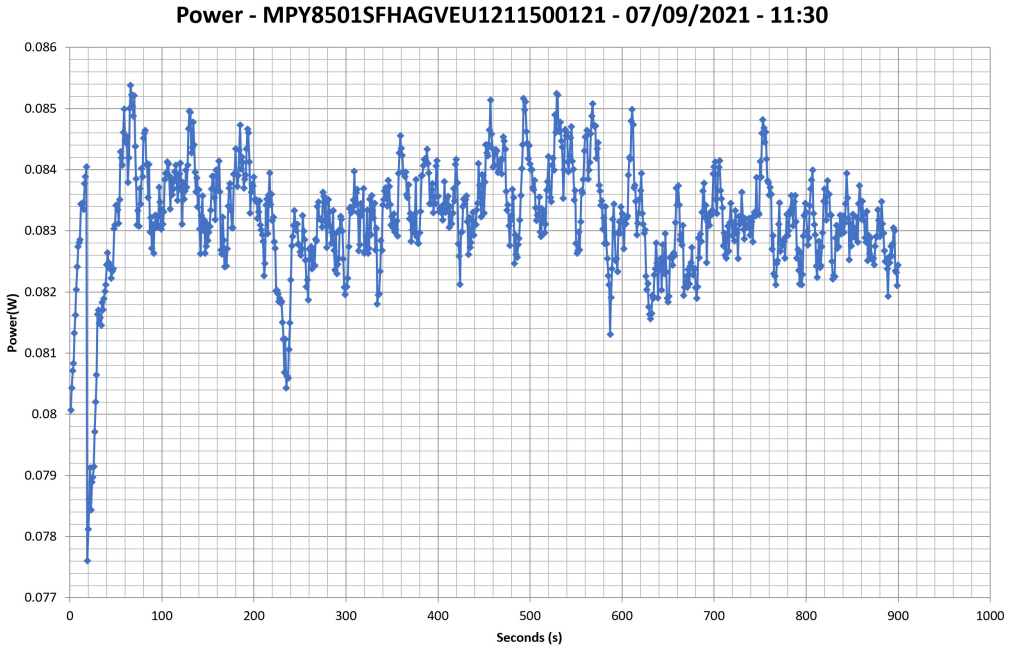
Hold-Up Time (ms)	17.2
AC Loss to PWR_OK Hold Up Time (ms)	16.1
PWR_OK Inactive to DC Loss Delay (ms)	1.1

Graphs

115V



230V



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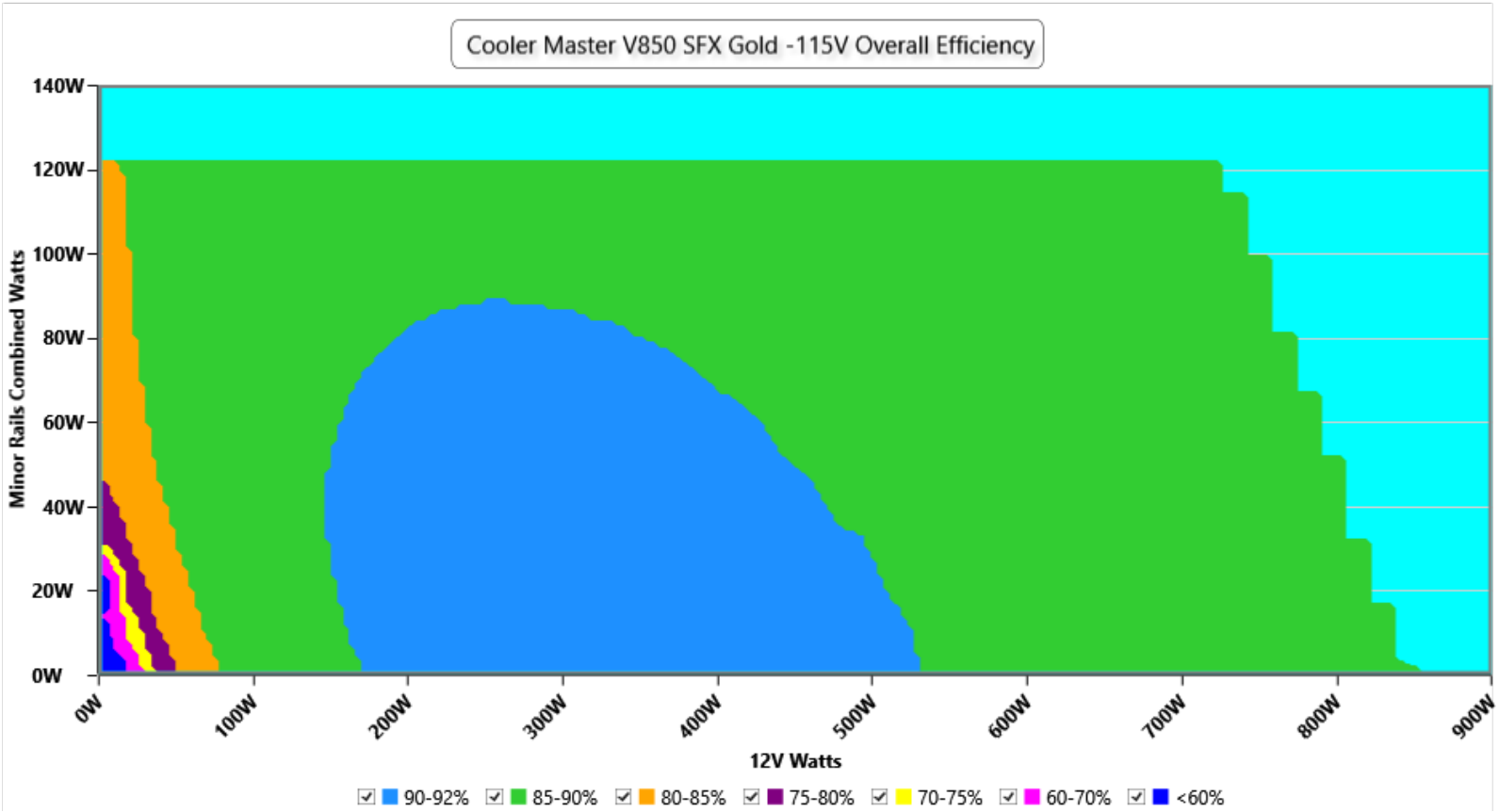
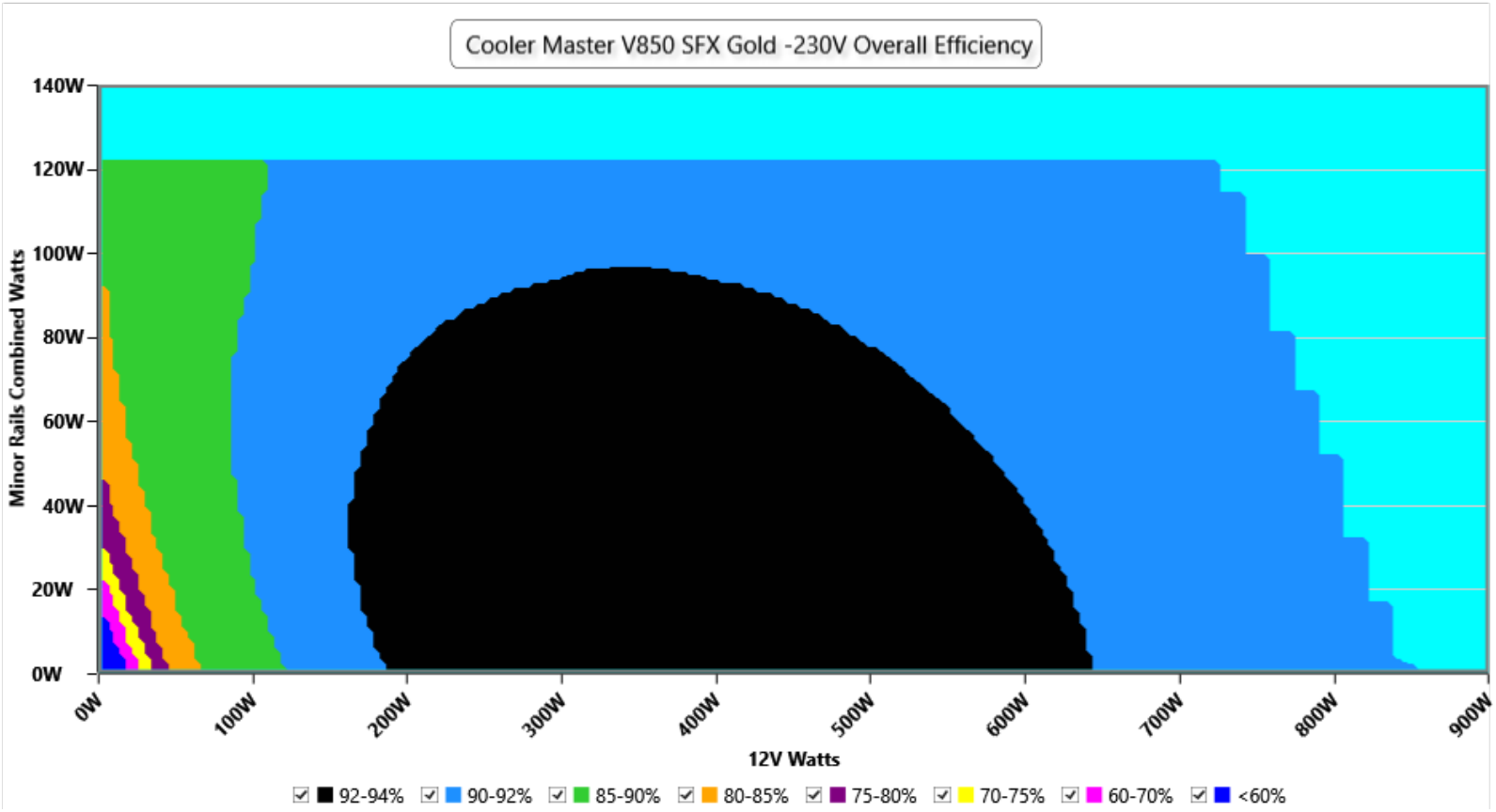
115V



□□

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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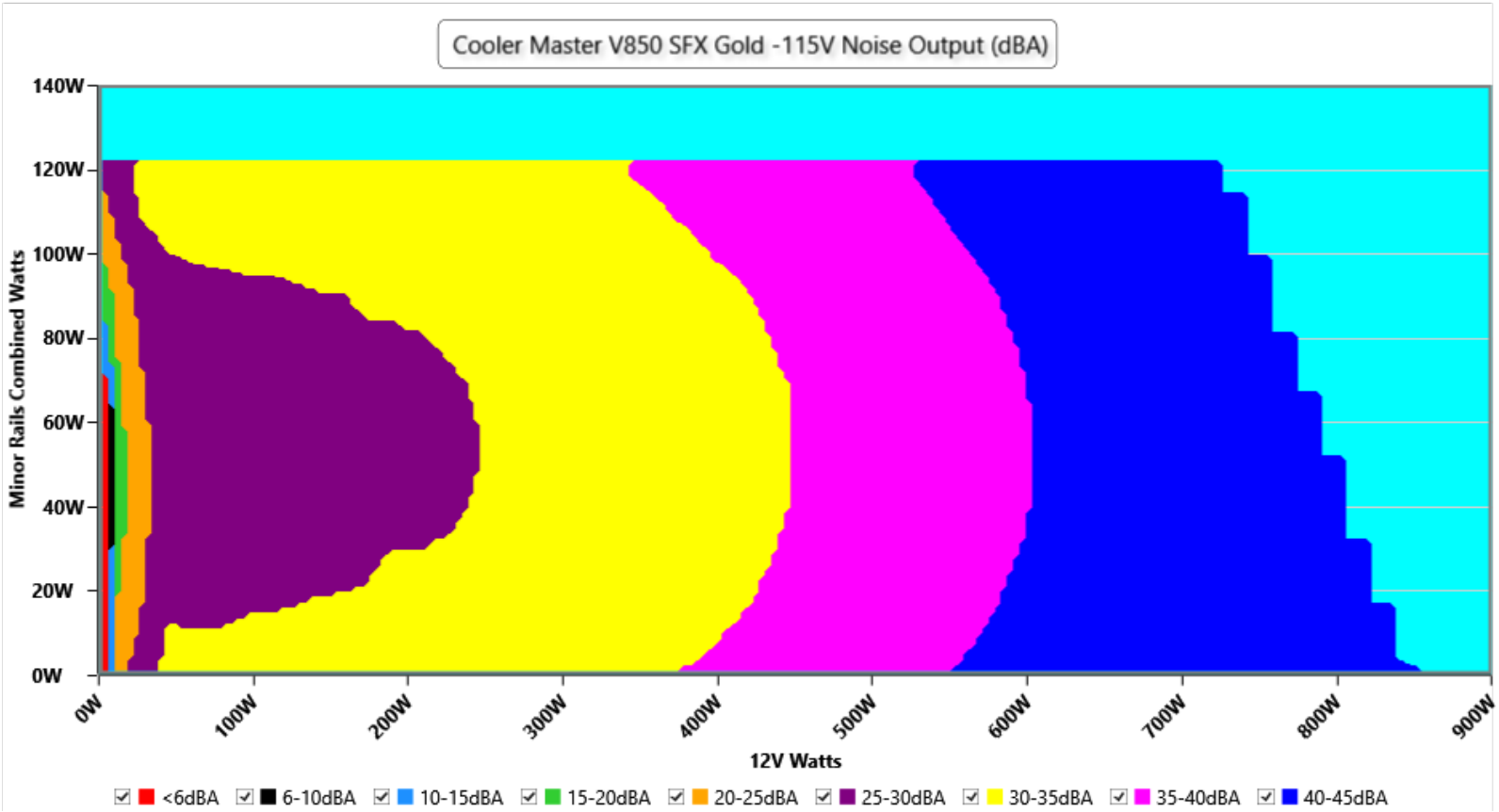
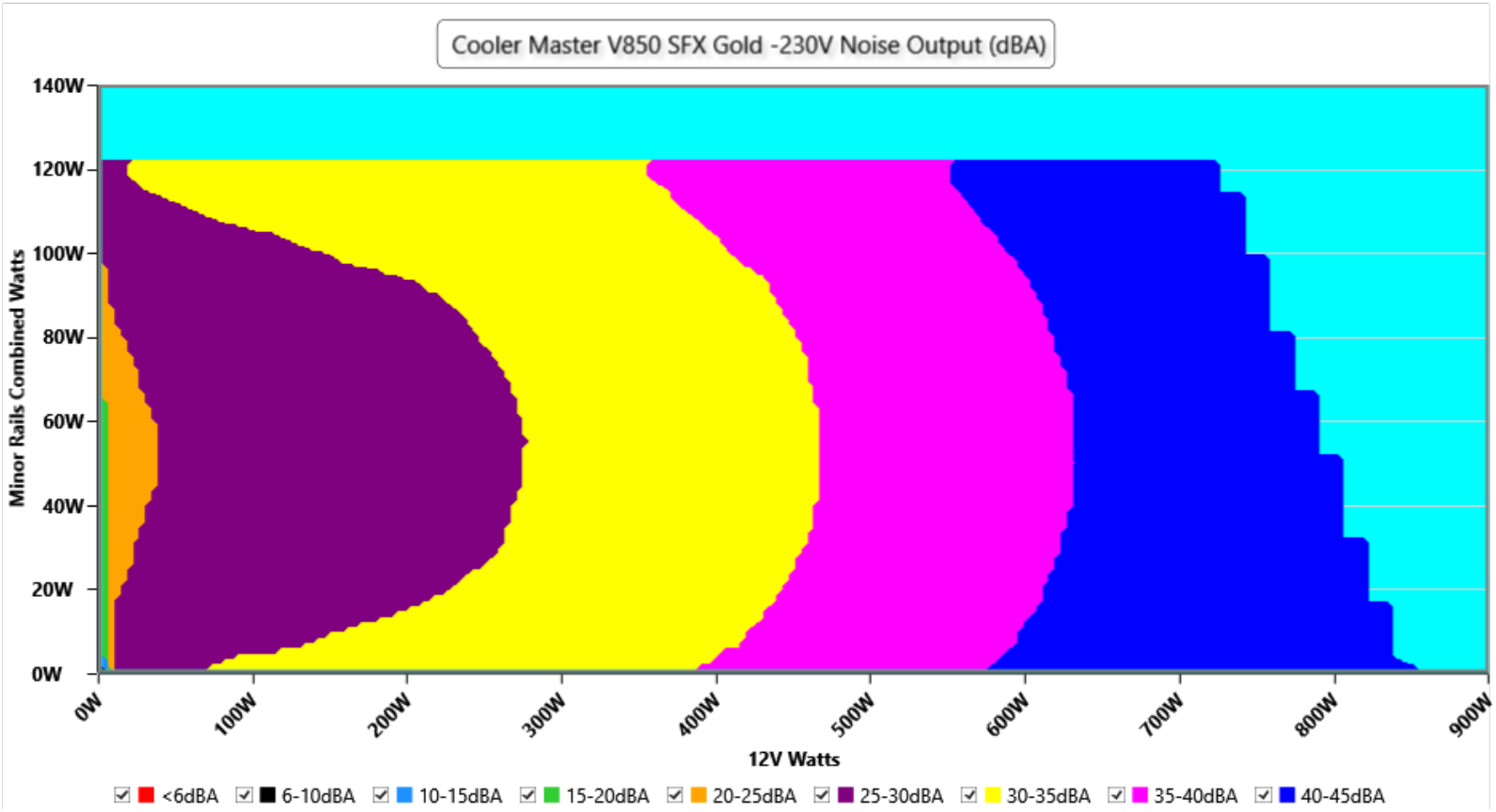
115V



□□

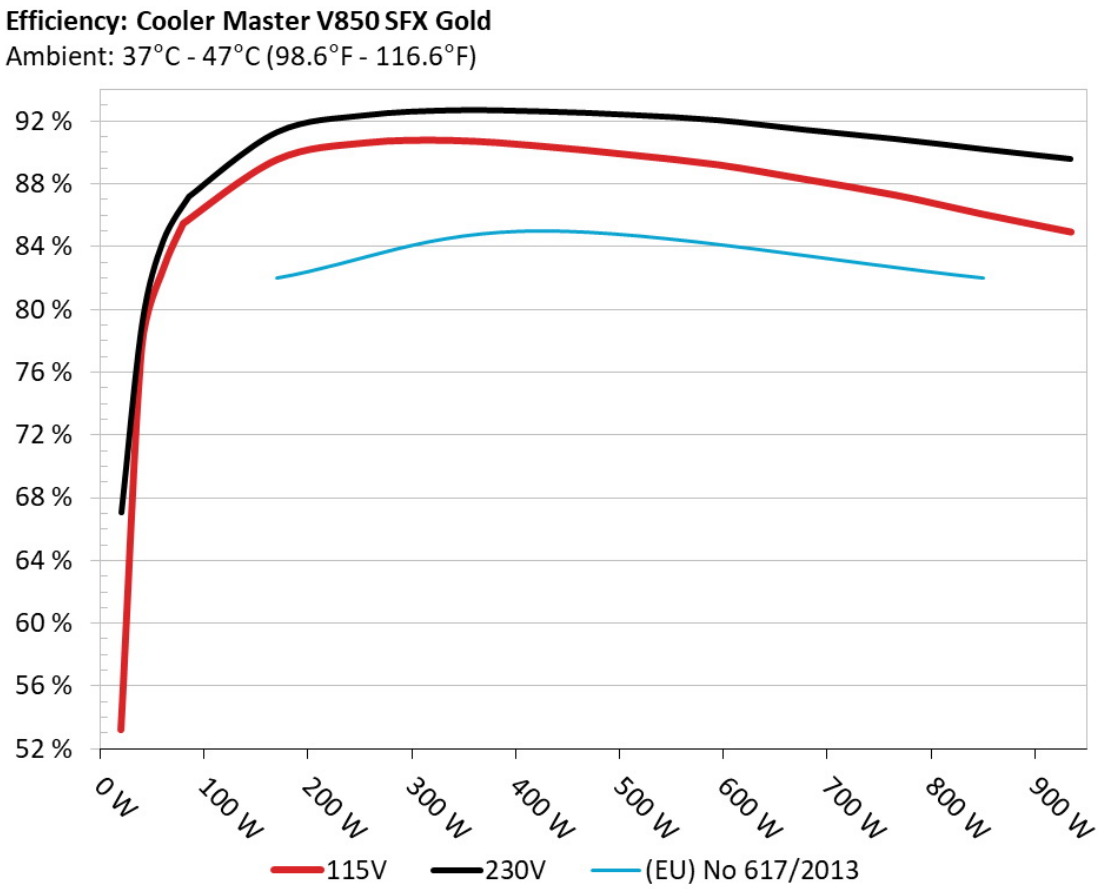
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

230V



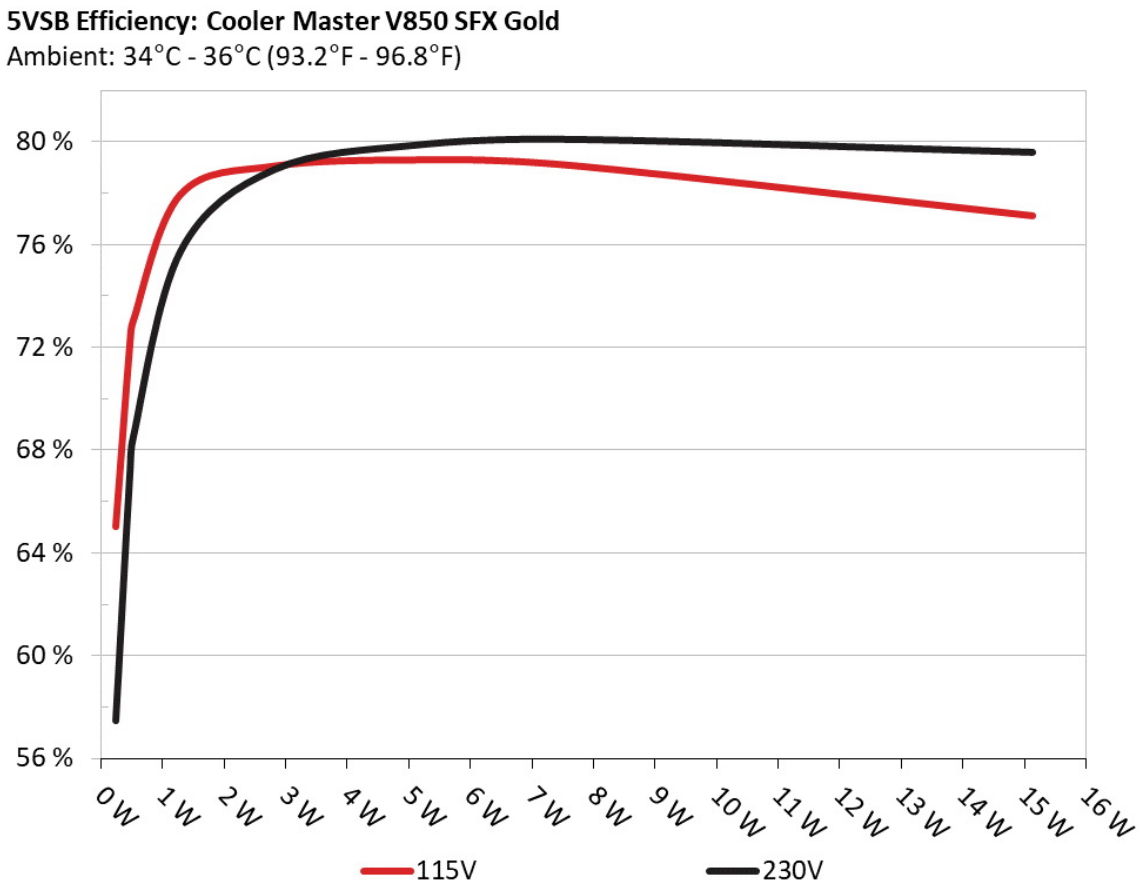
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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	0.231W	65.007%	0.038
	5.136V	0.341W		115.13V
2	0.09A	0.462W	72.205%	0.069
	5.135V	0.64W		115.13V
3	0.55A	2.817W	79.059%	0.275
	5.121V	3.563W		115.13V
4	1A	5.108W	79.297%	0.371
	5.107V	6.442W		115.13V
5	1.5A	7.638W	79.08%	0.424
	5.091V	9.658W		115.13V
6	3.001A	15.133W	77.12%	0.49
	5.043V	19.622W		115.13V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.231W	57.455%	0.013
	5.135V	0.402W		230.28V
2	0.09A	0.462W	67.17%	0.022
	5.135V	0.688W		230.28V
3	0.55A	2.817W	78.929%	0.11
	5.12V	3.569W		230.29V
4	1A	5.108W	79.873%	0.18
	5.106V	6.395W		230.29V
5	1.5A	7.637W	80.096%	0.24
	5.09V	9.535W		230.29V
6	3.001A	15.131W	79.591%	0.344
	5.042V	19.011W		230.28V

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	5.240A	2.001A	1.98A	0.982A	85.019	85.501%	1993	33.7	40.14°C	0.949
	12.102V	4.998V	3.333V	5.094V	99.436				43.32°C	115.14V
20%	11.512A	3.007A	2.978A	1.181A	169.995	89.556%	2148	36.2	40.88°C	0.97
	12.082V	4.989V	3.325V	5.081V	189.821				44.57°C	115.14V
30%	18.151A	3.514A	3.483A	1.382A	255.017	90.631%	2247	37.3	41.07°C	0.983
	12.063V	4.981V	3.317V	5.068V	281.378				45.33°C	115.13V
40%	24.820A	4.022A	3.99A	1.583A	340.124	90.782%	2423	39.6	41.35°C	0.989
	12.043V	4.974V	3.309V	5.055V	374.662				46.43°C	115.13V
50%	31.155A	5.037A	5A	1.786A	425.189	90.417%	2611	41.3	42.24°C	0.992
	12.026V	4.965V	3.3V	5.039V	470.254				47.84°C	115.12V
60%	37.470A	6.055A	6.017A	1.991A	509.718	89.871%	2743	42.9	42.39°C	0.993
	12.007V	4.956V	3.292V	5.024V	567.166				48.78°C	115.12V
70%	43.874A	7.078A	7.039A	2.197A	595.04	89.232%	2870	44.1	43.47°C	0.994
	11.987V	4.947V	3.282V	5.008V	666.847				50.27°C	115.12V
80%	50.304A	8.004A	8.067A	2.303A	679.379	88.302%	3016	46.5	43.68°C	0.995
	11.966V	4.938V	3.273V	4.996V	769.381				51.01°C	115.12V
90%	57.160A	8.627A	8.578A	2.41A	765.297	87.308%	3060	46.5	44.55°C	0.995
	11.945V	4.929V	3.265V	4.982V	876.552				52.45°C	115.12V
100%	63.781A	9.151A	9.123A	3.032A	850.109	86.08%	3062	46.5	45.44°C	0.992
	11.922V	4.92V	3.256V	4.949V	987.582				54.27°C	115.15V
110%	70.295A	10.188A	10.258A	3.04A	934.699	84.953%	3062	46.5	46.57°C	0.991
	11.898V	4.91V	3.246V	4.935V	1100.257				56.49°C	115.12V
CL1	0.116A	14.514A	14.398A	0A	121.336	83.547%	2758	41.1	42.2°C	0.961
	12.120V	4.976V	3.313V	5.105V	145.231				47.4°C	115.14V

CL2	0.116A	20.104A	0A	0A	101.441	82.405%	2578	41.1	43.27°C	0.957
	12.115V	4.976V	3.329V	5.116V	123.101				49.62°C	115.14V
CL4	71.398A	0A	0A	0.002A	849.838	86.763%	2792	43.0	45.93°C	0.993
	11.903V	4.938V	3.274V	5.072V	979.497				55.13°C	115.13V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	5.240A	2.001A	1.98A	0.982A	85.018	87.109%	2088	35.3	40.13°C	0.843
	12.103V	4.998V	3.334V	5.093V	97.599				43.89°C	230.28V
20%	11.512A	3.007A	2.978A	1.181A	169.993	91.27%	2132	35.8	40.41°C	0.923
	12.081V	4.99V	3.325V	5.08V	186.253				44.54°C	230.28V
30%	18.150A	3.513A	3.482A	1.382A	255.012	92.339%	2402	39.4	41.28°C	0.951
	12.063V	4.982V	3.318V	5.066V	276.17				45.85°C	230.28V
40%	24.816A	4.021A	3.989A	1.584A	340.118	92.657%	2479	40.0	41.72°C	0.963
	12.045V	4.974V	3.31V	5.052V	367.07				46.76°C	230.28V
50%	31.158A	5.036A	5A	1.787A	425.166	92.584%	2591	41.2	42.17°C	0.972
	12.024V	4.966V	3.301V	5.038V	459.222				47.81°C	230.28V
60%	37.479A	6.054A	6.016A	1.991A	509.683	92.367%	2676	42.3	42.69°C	0.977
	12.003V	4.957V	3.292V	5.024V	551.802				48.93°C	230.28V
70%	43.891A	7.077A	7.039A	2.196A	594.969	92.026%	2792	42.9	43.41°C	0.98
	11.981V	4.947V	3.282V	5.01V	646.521				50.07°C	230.28V
80%	50.313A	8.004A	8.065A	2.303A	679.352	91.413%	3067	46.6	43.62°C	0.982
	11.964V	4.939V	3.274V	4.994V	743.166				51.26°C	230.28V
90%	57.171A	8.625A	8.576A	2.411A	765.287	90.839%	3066	46.6	44.65°C	0.984
	11.942V	4.929V	3.265V	4.98V	842.469				52.9°C	230.27V
100%	63.792A	9.151A	9.123A	3.033A	850.118	90.189%	3069	46.6	45.42°C	0.986
	11.920V	4.92V	3.256V	4.946V	942.599				54.55°C	230.27V
110%	70.323A	10.187A	10.26A	3.039A	934.666	89.566%	3066	46.6	46.92°C	0.988
	11.893V	4.91V	3.246V	4.938V	1043.549				56.74°C	230.27V

CL1	0.116A	14.514A	14.399A	0A	121.339	85.136%	2773	43.0	42.86°C	0.897
	12.117V	4.976V	3.313V	5.106V	142.524				47.81°C	230.29V
CL2	0.116A	20.105A	0A	0A	101.441	84.052%	2456	40.1	43.68°C	0.876
	12.108V	4.976V	3.328V	5.118V	120.689				49.99°C	230.29V
CL4	71.425A	0A	0A	0.002A	849.794	90.873%	2762	43.0	45.25°C	0.986
	11.898V	4.938V	3.274V	5.074V	935.153				54.26°C	230.28V

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 □□
20W	1.226A	0.5A	0.494A	0.195A	20.011	53.242%	1774	30.6	36.79°C	0.864
	12.127V	5.005V	3.341V	5.127V	37.586				38.13°C	115.14V
40W	2.696A	0.7A	0.692A	0.293A	40.012	77.611%	1785	30.8	37.94°C	0.89
	12.131V	5.003V	3.339V	5.121V	51.555				39.61°C	115.14V
60W	4.174A	0.9A	0.89A	0.391A	60.014	82.472%	1831	31.6	38.68°C	0.922
	12.107V	5.001V	3.337V	5.116V	72.769				40.83°C	115.14V
80W	5.648A	1.1A	1.089A	0.489A	79.981	85.493%	1920	32.9	39.59°C	0.944
	12.102V	5V	3.335V	5.112V	93.553				42.32°C	115.14V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.224A	0.5A	0.494A	0.195A	20.012	67.087%	1622	27.7	36.9°C	0.561
	12.134V	5.006V	3.341V	5.125V	29.83				38.29°C	230.28V
40W	2.696A	0.7A	0.692A	0.293A	40.012	79.111%	1758	30.4	37.31°C	0.705
	12.130V	5.004V	3.34V	5.12V	50.577				39.22°C	230.28V

60W	4.174A	0.9A	0.89A	0.391A	60.012	84.303%	1870	32.1	38.53°C	0.786
	12.107V	5.002V	3.338V	5.116V	71.186				40.77°C	230.28V
80W	5.648A	1.1A	1.088A	0.489A	79.978	87.174%	1945	33.4	39.54°C	0.834
	12.101V	5V	3.336V	5.111V	91.746				42.52°C	230.28V

The results above are not used in the certification process

□□□□

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	15.66mV	11.08mV	13.50mV	5.12mV	Pass
20% Load	12.90mV	11.03mV	13.70mV	5.68mV	Pass
30% Load	13.00mV	12.67mV	14.42mV	6.86mV	Pass
40% Load	13.00mV	12.51mV	12.99mV	7.57mV	Pass
50% Load	13.71mV	13.43mV	13.86mV	8.60mV	Pass
60% Load	14.18mV	13.99mV	15.44mV	9.72mV	Pass
70% Load	14.48mV	15.17mV	14.88mV	12.44mV	Pass
80% Load	15.86mV	16.55mV	15.55mV	13.92mV	Pass
90% Load	18.78mV	15.99mV	18.31mV	16.79mV	Pass
100% Load	63.21mV	35.79mV	86.38mV	24.61mV	Fail
110% Load	82.99mV	51.36mV	102.50mV	35.69mV	Fail
Crossload1	19.88mV	13.04mV	14.63mV	6.71mV	Pass
Crossload2	14.99mV	11.08mV	12.84mV	4.81mV	Pass
Crossload3	0.00mV	0.00mV	0.00mV	0.00mV	Pass
Crossload4	22.97mV	18.45mV	18.88mV	15.77mV	Pass

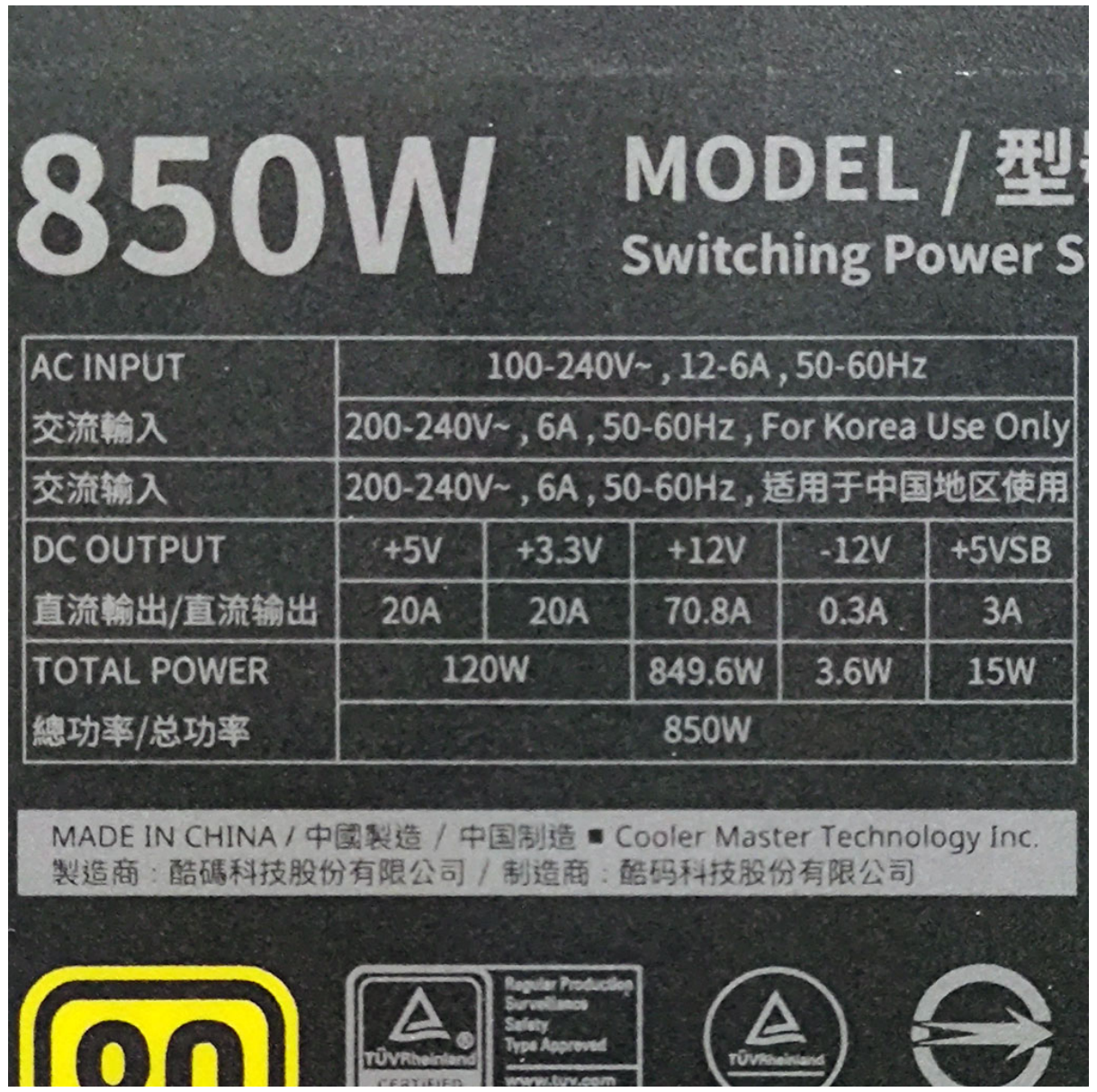
The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	17.47mV	10.47mV	13.19mV	5.37mV	Pass
20% Load	11.56mV	11.44mV	11.91mV	5.73mV	Pass
30% Load	12.54mV	11.95mV	13.55mV	6.91mV	Pass
40% Load	11.51mV	12.26mV	12.94mV	7.42mV	Pass
50% Load	12.38mV	12.41mV	12.74mV	8.90mV	Pass
60% Load	12.02mV	13.23mV	13.91mV	9.31mV	Pass
70% Load	12.69mV	13.79mV	13.81mV	11.15mV	Pass
80% Load	13.92mV	13.94mV	15.09mV	13.41mV	Pass
90% Load	16.73mV	13.84mV	13.50mV	15.35mV	Pass
100% Load	23.08mV	15.37mV	15.58mV	19.03mV	Pass
110% Load	24.74mV	15.71mV	15.53mV	20.77mV	Pass
Crossload1	19.60mV	13.51mV	14.53mV	6.16mV	Pass
Crossload2	14.64mV	11.85mV	11.97mV	4.81mV	Pass
Crossload3	0.00mV	0.00mV	0.00mV	0.00mV	Pass
Crossload4	23.31mV	14.69mV	14.96mV	14.95mV	Pass

The results above are not used in the certification process





Cooler Master V850 SFX Gold (2021)

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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