Make It Yours.

Cooler Master V850 Gold (#2)

MPY8501AFAAGV1184300028

Lab ID 622

Certification ID 25622

Test Result Report ID: 19PS622A

Certificate Issue Date: Aug 2, 2019

115V 230V

Scheme: ETA-EMI PSU

CYBENETICS PLATINUM

115V 230V

CYBENETICS STANDARD++

Scheme: LAMBDA PSU

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 Gold (#2)
OEM/ODM	Chicony Electronics
Serial Number	MPY8501AFAAGV1184300028
Product Specifications	
Manufacturer-Provided Information	
□□□ (Vrms)	100-240
□□□ (Arms)	13-6
□□□ (Hz)	50-60

额定功率 (W)	850
Operating Temperature (Continuous Full Load) (°C)	
类别	ATX12V
线材设计	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
散热	135mm Fluid Dynamic Bearing Fan (APISTEK SAC4H2H)
半被动运转	✓ (selectable)
Cybenetics Testing Information	
Lab ID	622
Date of receipt	Jul 27, 2019
Testing Date	Jul 30, 2019
Report Issued Date	Aug 2, 2019
被测品纪录	MPY-8501-AFAAGV
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

线材与接头 **(Non-accredited measurements)**

模组化线材				
描述	线材数量	总连接器数量	Gauge	In Cable Capacitors
ATX 接头 20+4 pin (650mm)	1	1	18-22AWG	否
4+4 pin EPS 12V 接头 (650mm)	1	1	18AWG	否
8 pin EPS 12V 接头 (650mm)	1	1	18AWG	否
6+2pin PCIe接头 (600mm+120mm)	3	6	18AWG	否
SATA接头 (500mm+120mm+120mm+120mm)	3	12	18AWG	否
大 4pin Molex接头 (500mm+120mm+120mm+120mm)	1	4	18AWG	否
小 4pin 接头 (125mm)	1	1	22AWG	否

AC Power Cord (1350mm) - C13 coupler	1	1	18AWG	-

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	70.4	3	0.3
	□	130		844	15	3.6
□□□□□ (W)		850				

Parts Description

General Data	
Manufacturer (OEM)	Chicony
PCB Type	Single Layer
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes
Inrush Protection	-
Bridge Rectifier(s)	2x GBU15JL (600V, 15A @ 115°C)
APFC MOSFETS	2x Infineon IPA60R120P7 (650V, 16A @ 100°C, 0.12Ohm)
APFC Boost Diode	1x CREE C3D10060A (600V, 10A @ 150°C)
Hold-up Cap(s)	1x Nichicon (450V, 560uF, 2000h @ 105 °C, GL)
Main Switchers	2x Toshiba TK25A60X (600V, 25A @ 150°C, 0.125Ohm)
APFC Controller	Infineon ICE3PCS03G
Resonant Controllers	MPS HR1000A & 2x MPS MP6903 (Installed on the secondary side)
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Nexperia PSMN2R6-40YS (40V, 100A @ 25°C, 3.7mOhm)
5V & 3.3V	DC-DC Converters: 6x APEC AP0403GH (30V, 50A @ 100°C, 4.5mOhm) PWM Controller: 2x APW7160A
Filtering Capacitors	Electrolytics: 4x Rubycon (6-10,000h @ 105°C, ZLH), 2x Chemi-Con (4-10,000h @ 105°C, KY), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), Polymers: FPCAP (FP5), Chemi-Con
Supervisor IC	CP006WD
Fan Model	APISTEK SAC4H2H (135mm, 12V, 0.50A, 111.1CFM, 41.6 dBA, Fluid Dynamic Bearing)
5VSB Circuit	
Rectifier	UTC 4N60K-MK FET (600V, 4A @ 25°C, 2.5Ohm) & MBR20100CTG SBR (100V, 1A)

Standby PWM Controller	400BBBBB2 PAJH

Test Results

Temperature & Compliance Info

温度范围 (°C /°F)	28-32 / 82.4-89.6
符合 ErP Lot3/6规范	✓
符合 (EU) No 617/2013规范	✓

Performance Summary 115V

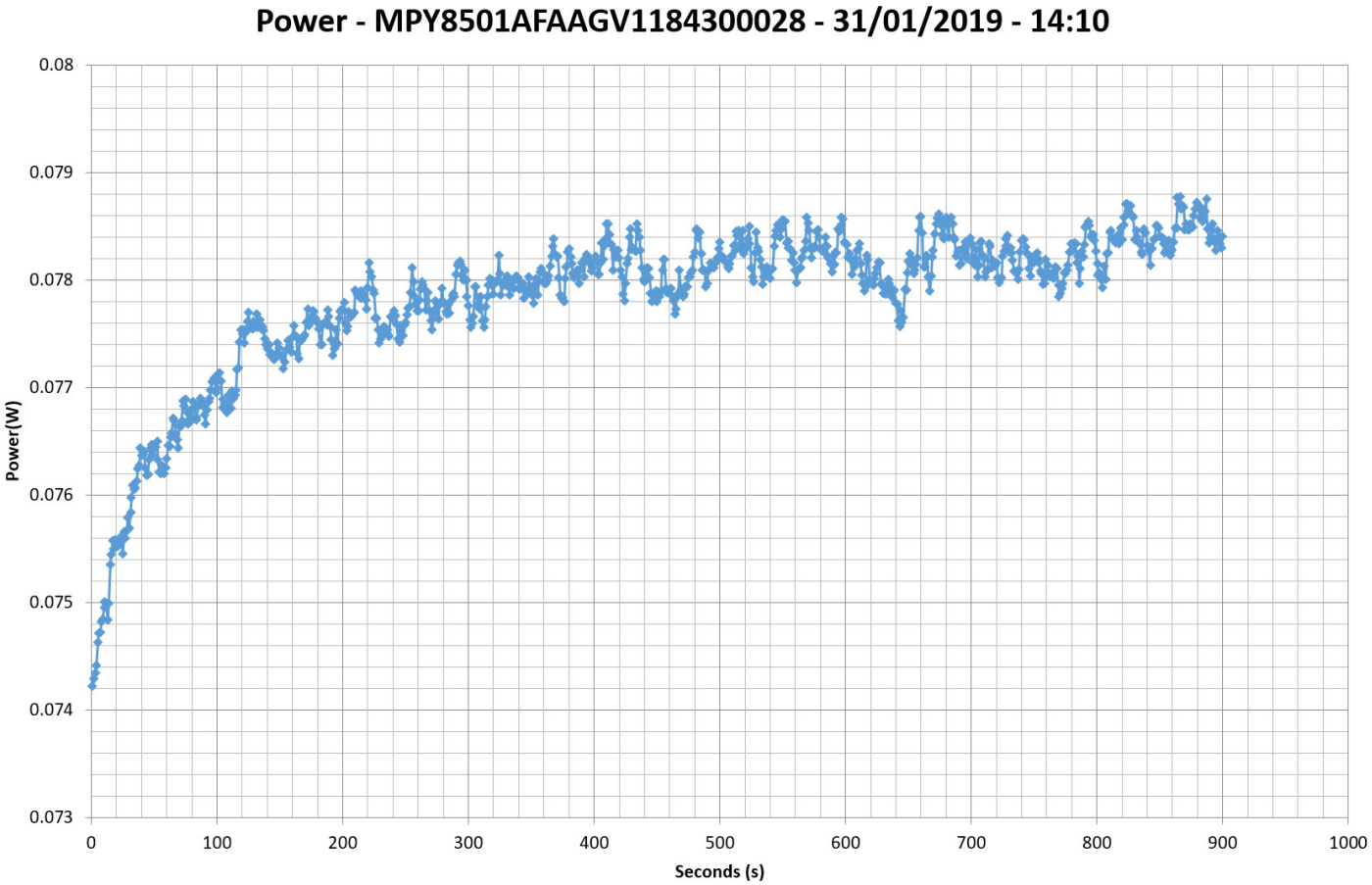
Accredited	
平均效率 (>1450 load combinations)	89.082%
Average Noise Output (>1450 Load Combinations)	31.64dBA
PF平均值 (>1450 Load Combinations)	0.993
Efficiency With 10W (≤500W) or 2% (>500W) Load	62.967%
待机功率耗损	0.0784W
Non-Accredited	
12V Ripple (Full Load)	23.48mV
5V Ripple (Full Load)	12.37mV
3.3V Ripple (Full Load)	20.30mV
5VSB Ripple (Full Load)	58.15mV
12V Load Regulation	0.70%
5V Load Regulation	1.13%
3.3V Load Regulation	0.98%
5VSB Load Regulation	4.29%
Inrush Current	85.664A

保持时间 & PG信号

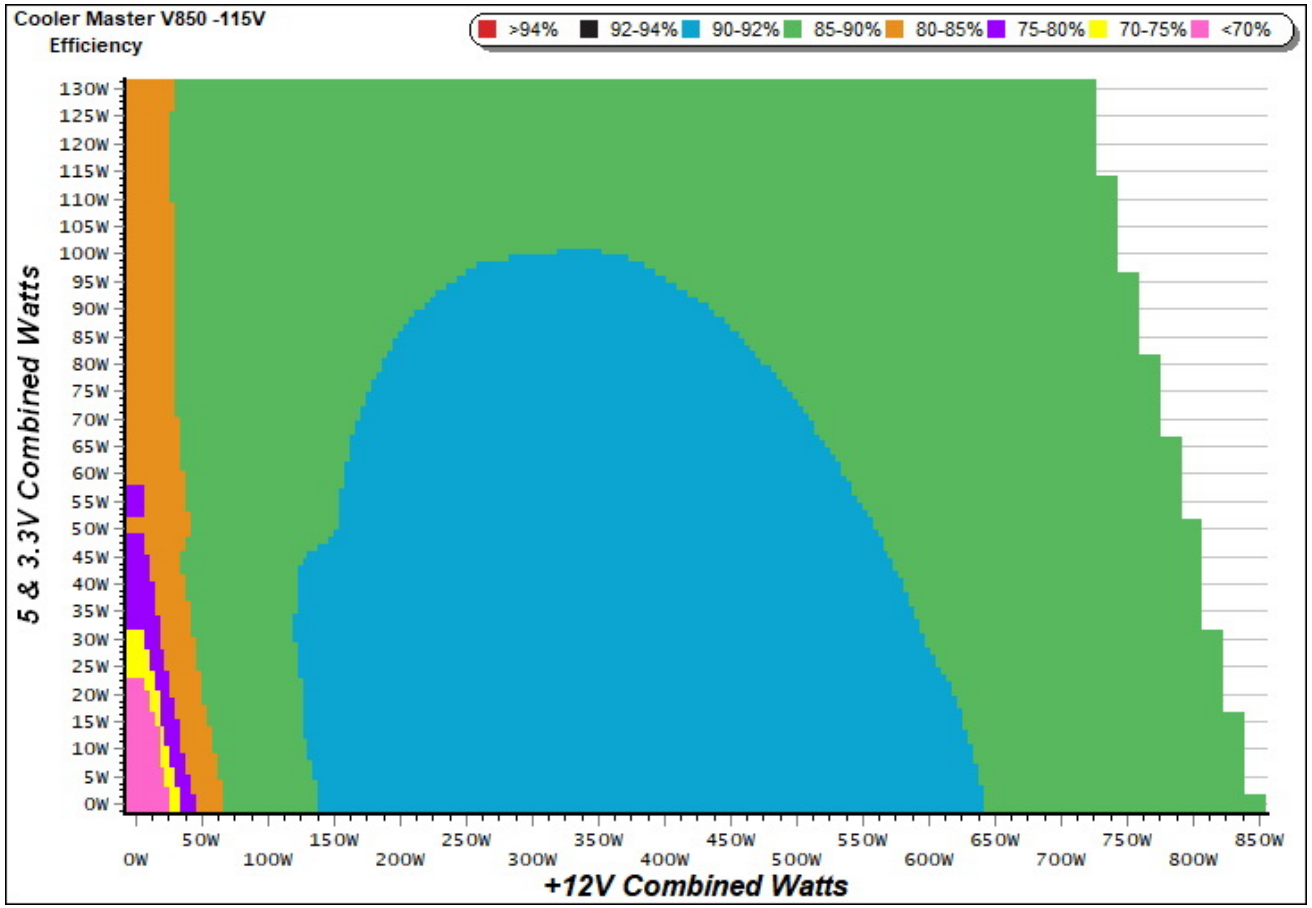
Hold-Up Time (ms)	23.6
AC Loss to PWR_OK Hold Up Time (ms)	18.8

PWR_OK Inactive to DC Loss Delay (ms)	4.8

Graphs 115V



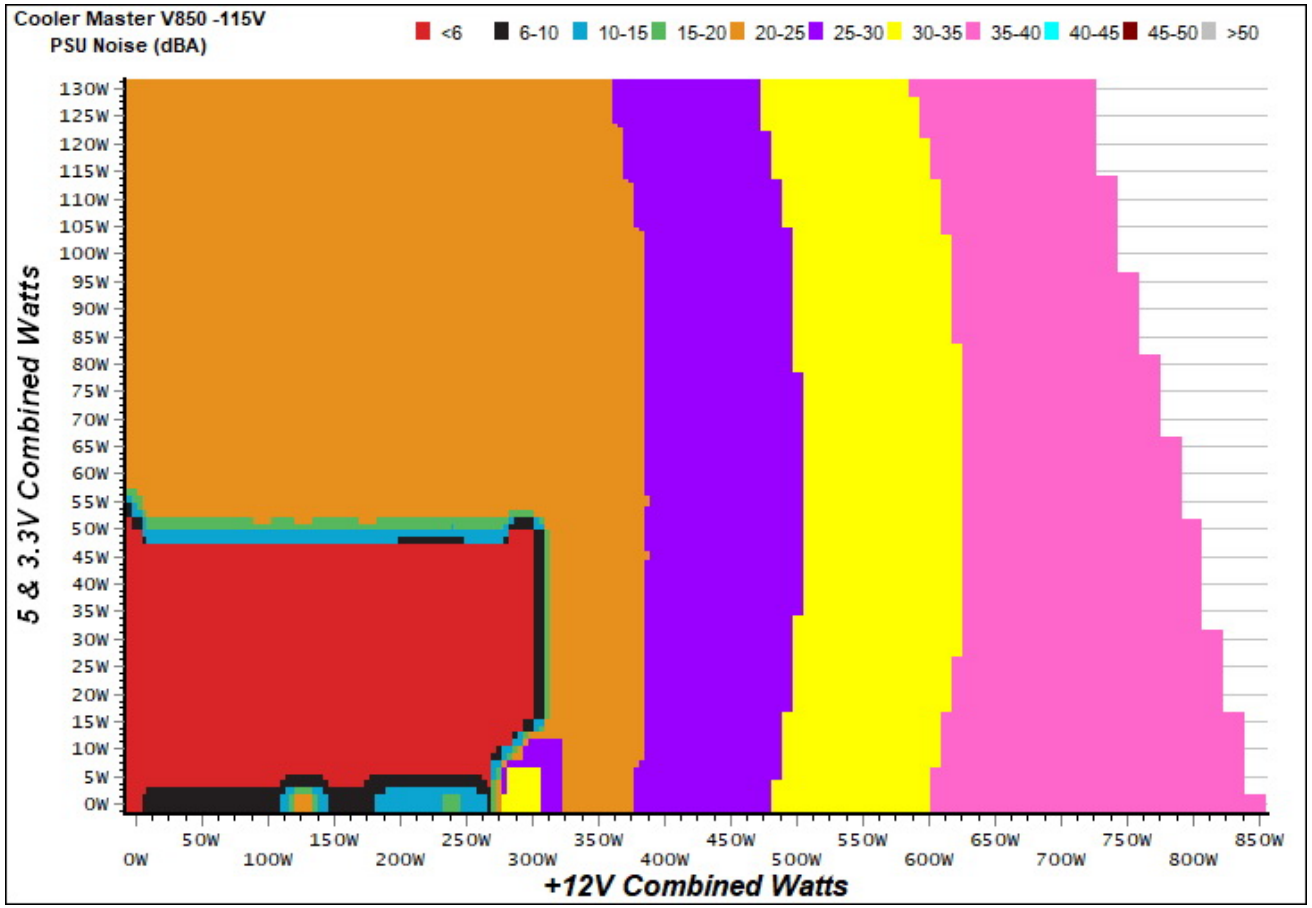
115V



□□

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.

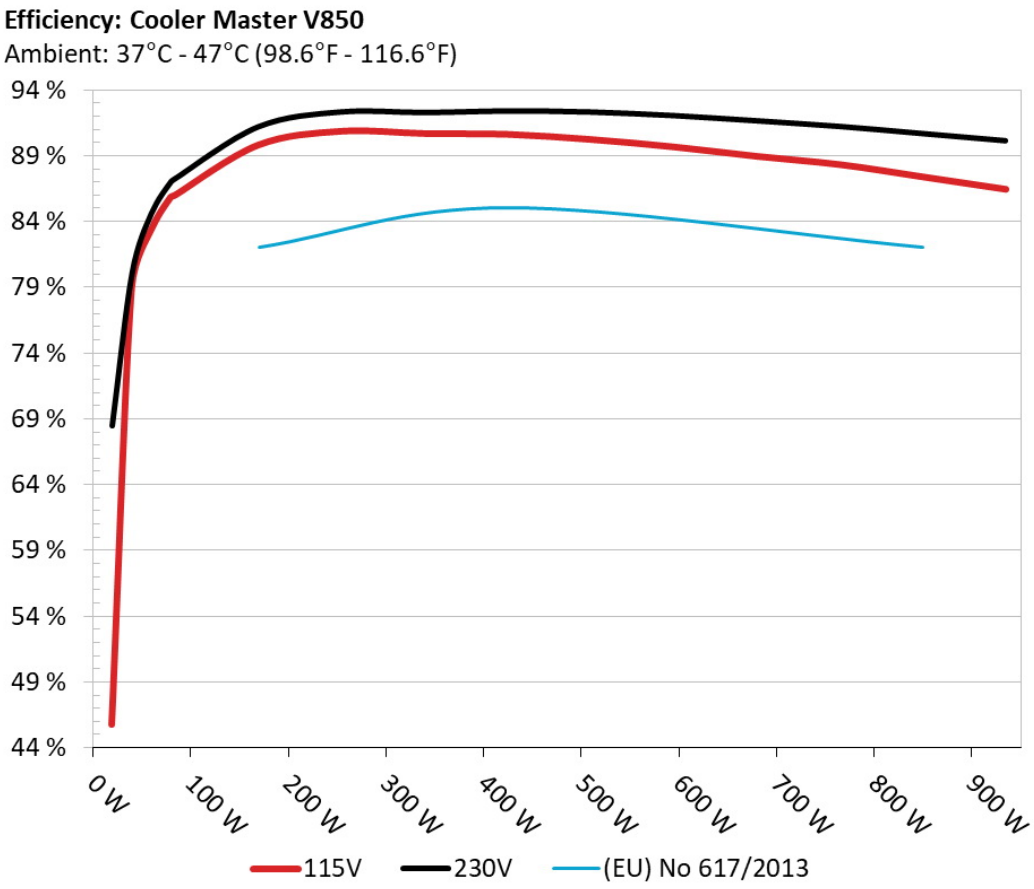
115V



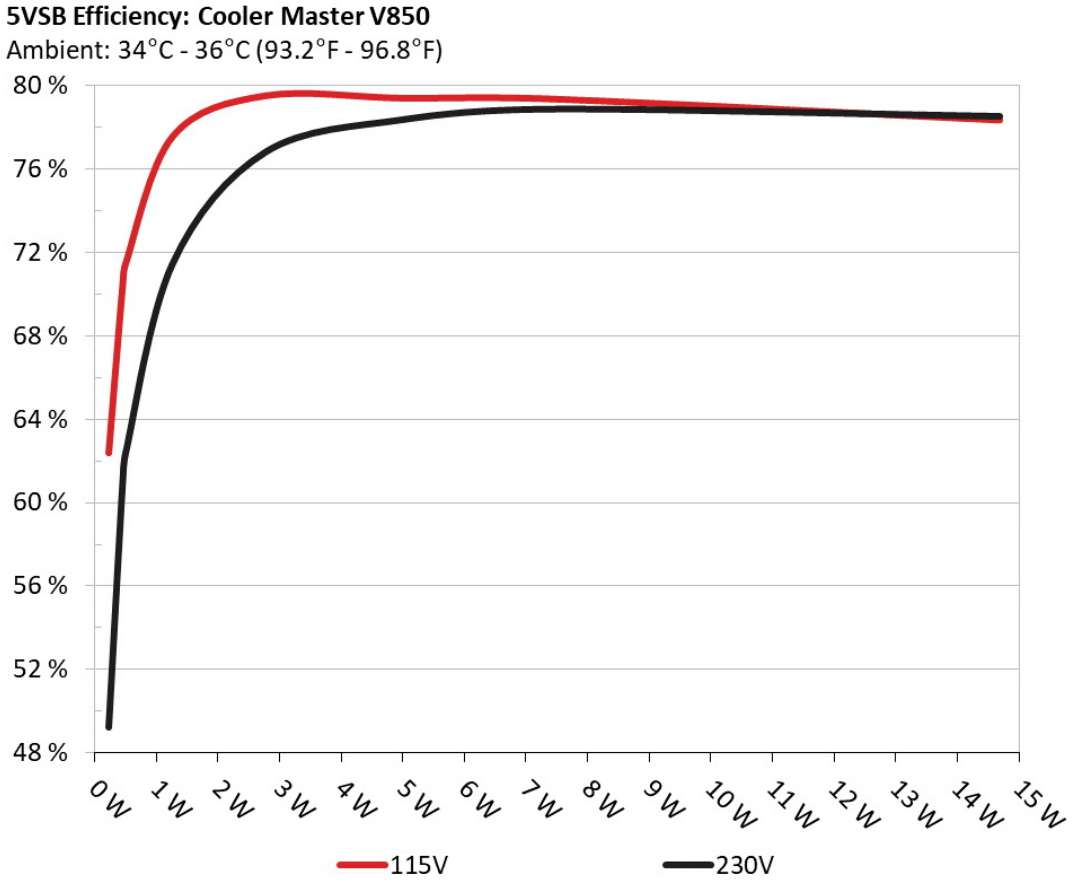
□□

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.

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转换效率

资讯

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

输入电压 时的 5Vsb 效率 (ErP Lot3/6 & CEC) 115V

测试 #	5VSB	DC/AC (瓦)	效率	PF/AC 电压
1	0.045A	0.229	62.398%	0.053
	5.072V	0.367		115.12V

2	0.090A	0.457	70.525%	0.090
	5.069V	0.648		115.12V
3	0.550A	2.774	79.530%	0.276
	5.043V	3.488		115.12V
4	1.000A	5.018	79.411%	0.325
	5.016V	6.319		115.12V
5	1.500A	7.482	79.368%	0.351
	4.987V	9.427		115.12V
6	3.000A	14.688	78.361%	0.388
	4.896V	18.744		115.12V

Supplementary Tests (For Reference)

10-110%□□□□ 115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	5.195A	1.964A	1.968A	0.999A	84.930	86.049%	0	<6.0	44.87°C	0.975
	12.191V	5.092V	3.352V	5.005V	98.700				40.19°C	115.14V
2	11.377A	2.933A	2.934A	1.203A	169.398	89.832%	0	<6.0	45.81°C	0.992
	12.173V	5.116V	3.374V	4.988V	188.572				40.62°C	115.13V
3	17.973A	3.426A	3.416A	1.409A	254.500	90.884%	0	<6.0	47.20°C	0.993
	12.157V	5.109V	3.365V	4.971V	280.026				41.20°C	115.13V
4	24.484A	3.932A	3.933A	1.615A	339.715	90.708%	1197	34.0	41.69°C	0.995
	12.192V	5.088V	3.355V	4.957V	374.515				48.47°C	115.13V
5	30.586A	4.930A	4.930A	1.821A	424.962	90.646%	1219	34.5	42.34°C	0.996
	12.243V	5.072V	3.345V	4.943V	468.815				49.66°C	115.11V
6	36.777A	5.927A	5.892A	2.030A	509.477	90.259%	1323	36.6	42.52°C	0.996
	12.227V	5.062V	3.361V	4.926V	564.462				50.24°C	115.11V
7	43.056A	6.884A	6.892A	2.241A	594.815	89.690%	1402	38.1	43.13°C	0.997
	12.210V	5.085V	3.351V	4.909V	663.187				51.32°C	115.11V
8	49.349A	7.882A	7.899A	2.454A	680.157	88.972%	1524	40.0	43.83°C	0.997
	12.194V	5.075V	3.341V	4.891V	764.458				52.86°C	115.11V

9	56.042A	8.388A	8.335A	2.456A	764.975	88.346%	1538	40.2	44.20°C	0.997
	12.178V	5.066V	3.359V	4.888V	865.890				53.69°C	115.11V
10	62.512A	8.896A	8.867A	3.099A	849.843	87.410%	1717	42.7	45.80°C	0.997
	12.160V	5.058V	3.349V	4.842V	972.251				56.20°C	115.09V
11	69.581A	8.909A	8.886A	3.101A	934.620	86.473%	1781	43.5	46.62°C	0.997
	12.143V	5.051V	3.342V	4.838V	1080.823				57.65°C	115.09V
CL1	0.142A	16.000A	15.999A	0.000A	138.397	82.940%	1380	37.7	42.72°C	0.992
	12.176V	5.134V	3.408V	5.052V	166.864				49.75°C	115.12V
CL2	70.343A	1.002A	0.996A	1.000A	868.643	87.791%	1675	42.1	45.51°C	0.997
	12.160V	5.007V	3.290V	4.978V	989.448				56.28°C	115.09V

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 □□
1	1.189A	0.490A	0.473A	0.198A	19.611	45.795%	0	<6.0	0.910
	12.217V	5.091V	3.361V	5.059V	42.823				115.14V
2	2.436A	0.981A	0.982A	0.397A	40.018	78.976%	0	<6.0	0.932
	12.201V	5.092V	3.358V	5.046V	50.671				115.14V
3	3.612A	1.474A	1.459A	0.596A	59.457	83.322%	0	<6.0	0.959
	12.197V	5.092V	3.356V	5.033V	71.358				115.14V
4	4.862A	1.966A	1.967A	0.797A	79.879	85.867%	0	<6.0	0.972
	12.192V	5.090V	3.353V	5.019V	93.026				115.14V

The results above are not used in the certification process

□□□□ 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.1 mV	6.3 mV	12.0 mV	9.6 mV	Pass
20% Load	8.1 mV	6.7 mV	12.3 mV	11.2 mV	Pass
30% Load	8.9 mV	7.7 mV	13.7 mV	12.7 mV	Pass
40% Load	10.3 mV	9.2 mV	13.8 mV	13.1 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	11.1 mV	9.4 mV	14.4 mV	19.3 mV	Pass
60% Load	12.2 mV	10.7 mV	15.9 mV	23.6 mV	Pass
70% Load	14.8 mV	10.9 mV	17.9 mV	30.3 mV	Pass
80% Load	16.8 mV	11.4 mV	19.2 mV	37.9 mV	Pass
90% Load	18.2 mV	11.7 mV	18.4 mV	47.2 mV	Pass
100% Load	23.5 mV	12.4 mV	20.3 mV	58.2 mV	Fail
110% Load	26.6 mV	12.4 mV	20.8 mV	61.4 mV	Fail
Crossload 1	9.7 mV	8.9 mV	18.2 mV	10.5 mV	Pass
Crossload 2	22.3 mV	9.9 mV	15.5 mV	18.7 mV	Pass

The results above are not used in the certification process

Cooler Master V850 Gold (#2)

Top side

Power specifications label

Cybenetics Cybenetics ETA LAMBDA SAFE DELTA PHI

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