Make It Yours.

Cooler Master MWE Gold 1250 V2 (GX Gold 1250)

Serial Number MPEA501AFCAG001

Lab ID CM12501854

Certification ID 251854

Test Result Report ID: 21PS1854A

Certificate Issue Date: Jun 10, 2021

Scheme: ETA-EMI PSU

115V

230V

115V

230V

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	MWE Gold 1250 V2 (GX Gold 1250)
OEM/ODM	Xin Hui Yuan Tech (Fusion Power)
Serial Number	MPEA501AFCAG001
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-7
Rated Frequency (Hz)	50-60

Rated Power (W)	1250
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	140mm Rifle Bearing Fan (EFS-14E12D)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CM12501854
Date of receipt	May 28, 2021
Testing Date	Jun 4, 2021
Report Issued Date	Jun 10, 2021
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 (560mm+120mm)	4	8	16-18AWG	No
SATA (520mm+120mm+120mm+120mm)	3	12	18AWG	No
4 pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1430mm) - C13 coupler	1	1	16AWG	-

Protection Features(Manufacturer)

Over Power Protection	✗
Over Current (+12V) Protection	✗
Over Temperature Protection	✓
Short Circuit Protection	✗
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	104	3	0.3
	Watts	120		1248	15	3.6
Total Max. Power (W)		1250				

Parts Description

General Data	-
Manufacturer (OEM)	Xin Hui Yuan Tech (Fusion Power)
PCB Type	Double Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor MF72-5D15 (5 Ohm) & Relay
Bridge Rectifier(s)	2x GBU2506 (800V, 10A @ 100°C)
APFC MOSFETs	2x SemiHow HCA60R099 (600V, 19.4A @ 100°C, Rds(on): 0.099Ohm)
APFC Boost Diode	1x Global Power Technology G3S06508A (650V, 8A @ 150°C)
Bulk Cap(s)	2x TK (450V, 680uF each or 1360uF combined, 2,000h @ 105°C, LGW)
Main Switchers	4x NCE Power NCE65T180F (650V, 13.2A @ 105°C, Rds(on): 0.18Ohm)
APFC Controller	Champion CM6500UN
Resonant Controller	Champion CM6901T6X
Topology	Primary side: Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters

Secondary Side	-
+12V MOSFETs	8x Excelliance MOS Corp EMP16N04HS (40V, 100A @ 100°C, Rds(on):1.6mOhm)
5V & 3.3V	DC-DC Converters: 6x UBIQ QM3004D (30V, 40A @ 100°C, Rds(on): 8.5mOhm) PWM Controllers: uPI Semi uP3861P
Filtering Capacitors	Electrolytic: 3x Nippon Chemi-Con (105°C, W), 1x Nippon Chemi-Con (2-5,000h @ 105°C, KZE), 10x Nippon Chemi-Con (4-10,000h @ 105°C, KY) Polymer: 22x FPCAP, 9x United Chemi-Con
Supervisor IC	IN1S424I-SDG
Fan Model	DWPH EFS-14E12D (140mm, 12V, 0.80A, Rifle Bearing Fan)
5VSB Circuit	-
Rectifier	1x 60R10S
Standby PWM Controller	Excelliance MOS Corp EM8569C

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.076%
Average Noise Output (>1450 Load Combinations)	36.19dBA
Average PF (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	70.986%
Standby Power Consumption	0.0522W
Non-Accredited	
12V Ripple (Full Load)	19.82mV

5V Ripple (Full Load)	10.18mV
3.3V Ripple (Full Load)	15.71mV
5VSB Ripple (Full Load)	14.47mV
12V Load Regulation	0.28%
5V Load Regulation	0.64%
3.3V Load Regulation	1.04%
5VSB Load Regulation	3.01%
Inrush Current	32.020A

230V

Accredited		
Average Efficiency (>1450 load combinations)		91.214%
Average Noise Output (>1450 Load Combinations)		37.12dBA
Average PF (>1450 Load Combinations)		0.960
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
Standby Power Consumption		0.0884W
Non-Accredited		
12V Ripple (Full Load)		19.39mV
5V Ripple (Full Load)		10.77mV
3.3V Ripple (Full Load)		16.31mV
5VSB Ripple (Full Load)		12.65mV
12V Load Regulation		0.31%
5V Load Regulation		0.58%
3.3V Load Regulation		0.96%
5VSB Load Regulation		3.05%
Inrush Current		65.750A
Hold-Up Time & PWR_OK Signal		30.60ms
AC Loss to PWR_OK Hold Up Time		26.60ms
PWR_OK Inactive to DC Loss Delay		4.00ms
PSU Timings: T1 (20% / 100%)	72.0ms	78.0ms
PSU Timings: T3 (20% / 100%)	141.0ms	143.0ms
OPP (20.53°C / 41.71°C)	122.16%	111.80%

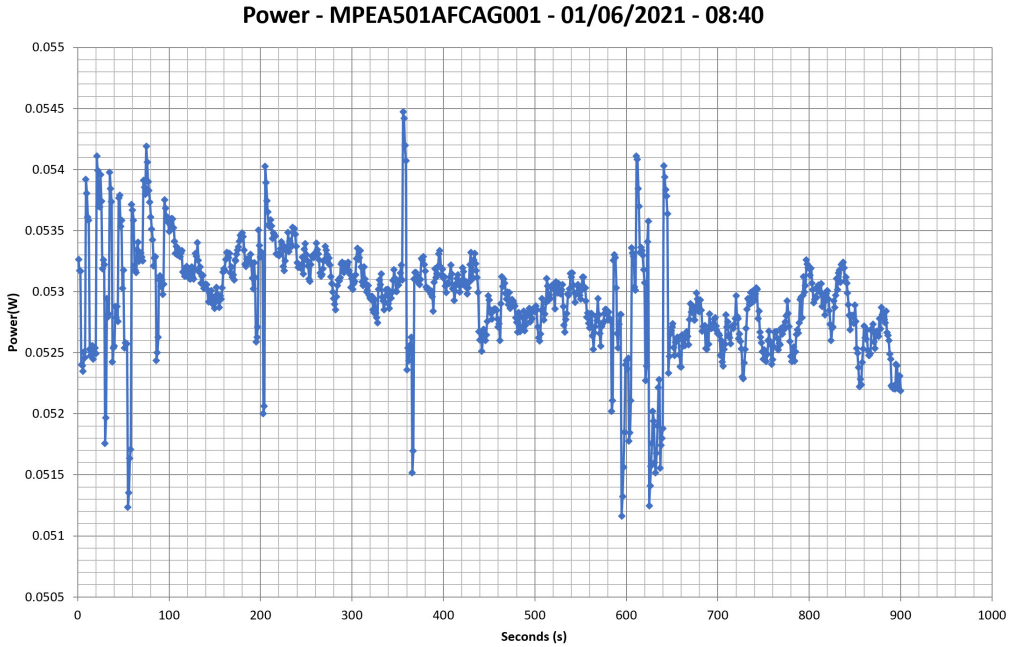
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	30.6
AC Loss to PWR_OK Hold Up Time (ms)	26.6
PWR_OK Inactive to DC Loss Delay (ms)	4

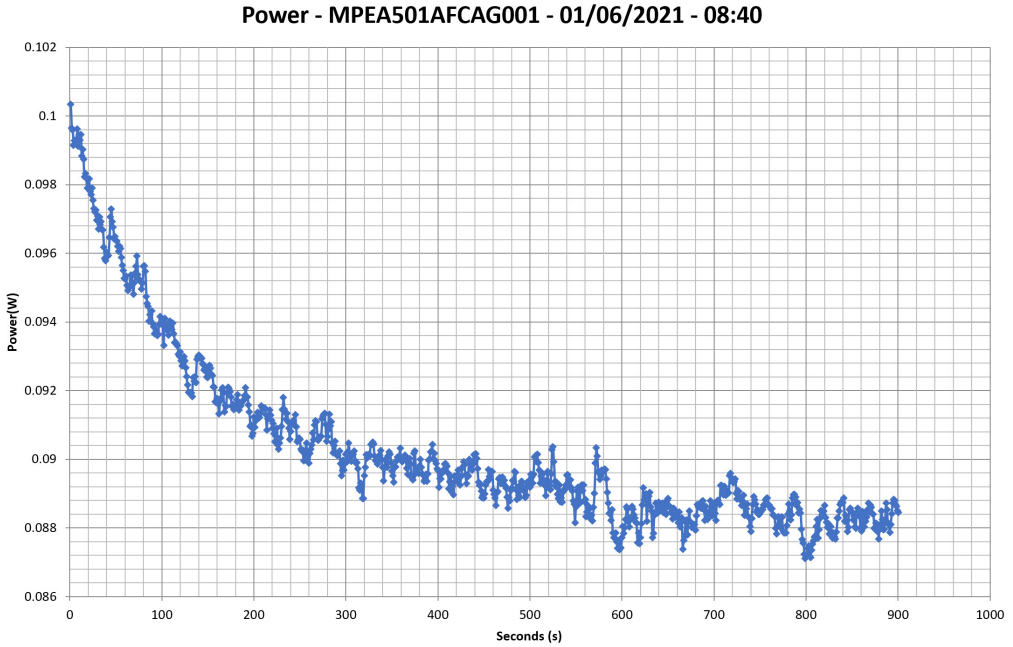
Vampire Power

Graphs

115V

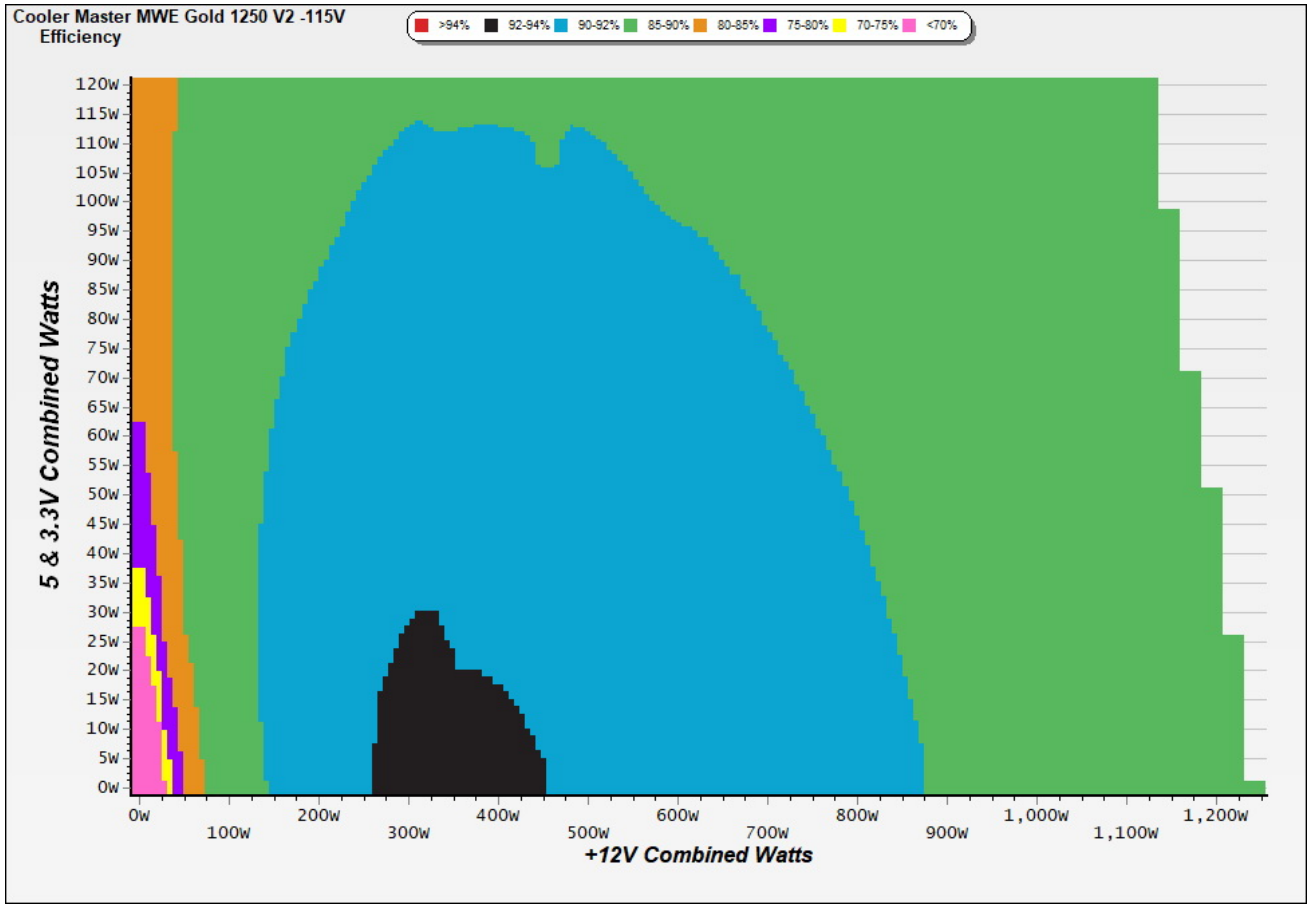


230V



Efficiency Graph

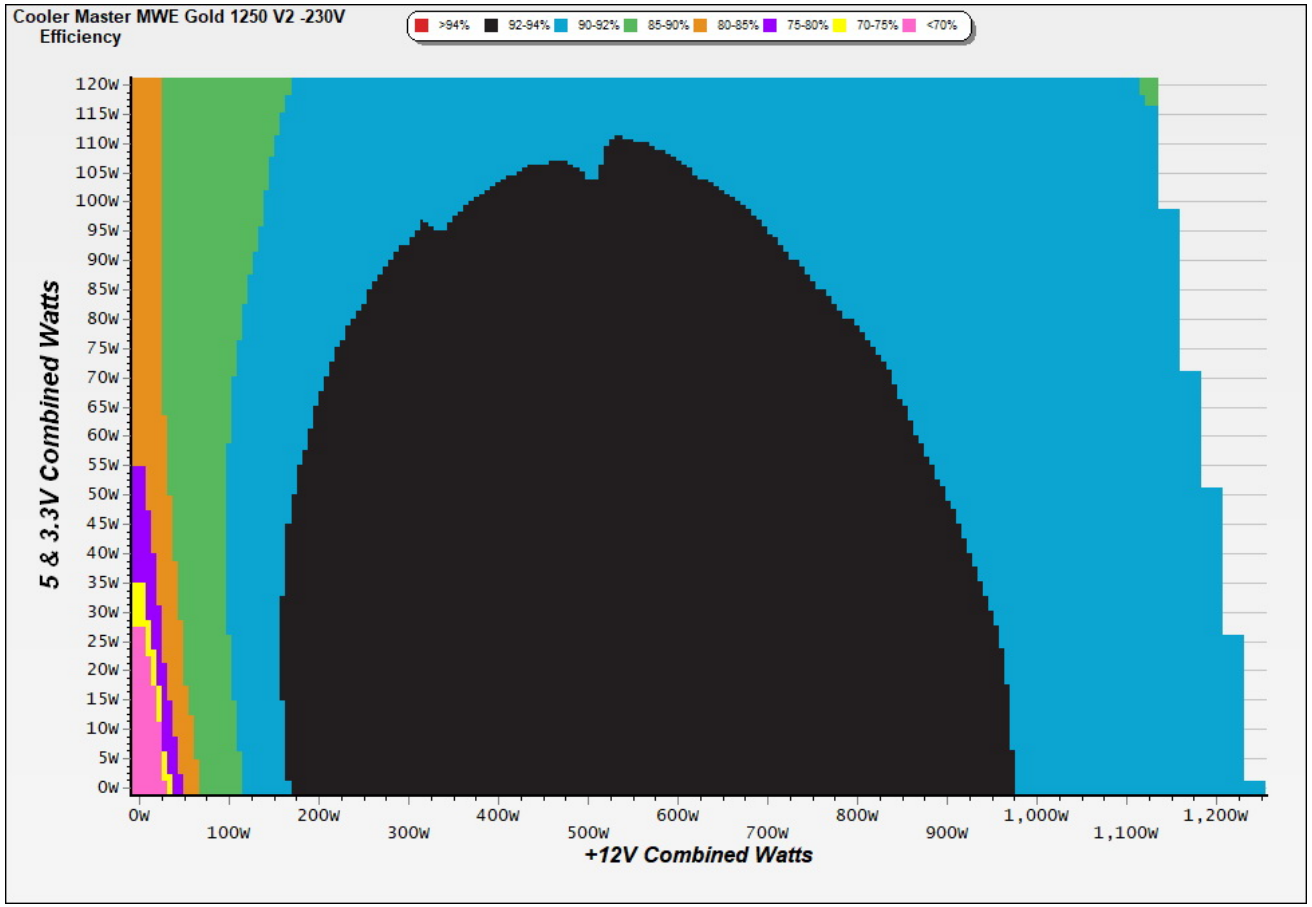
115V



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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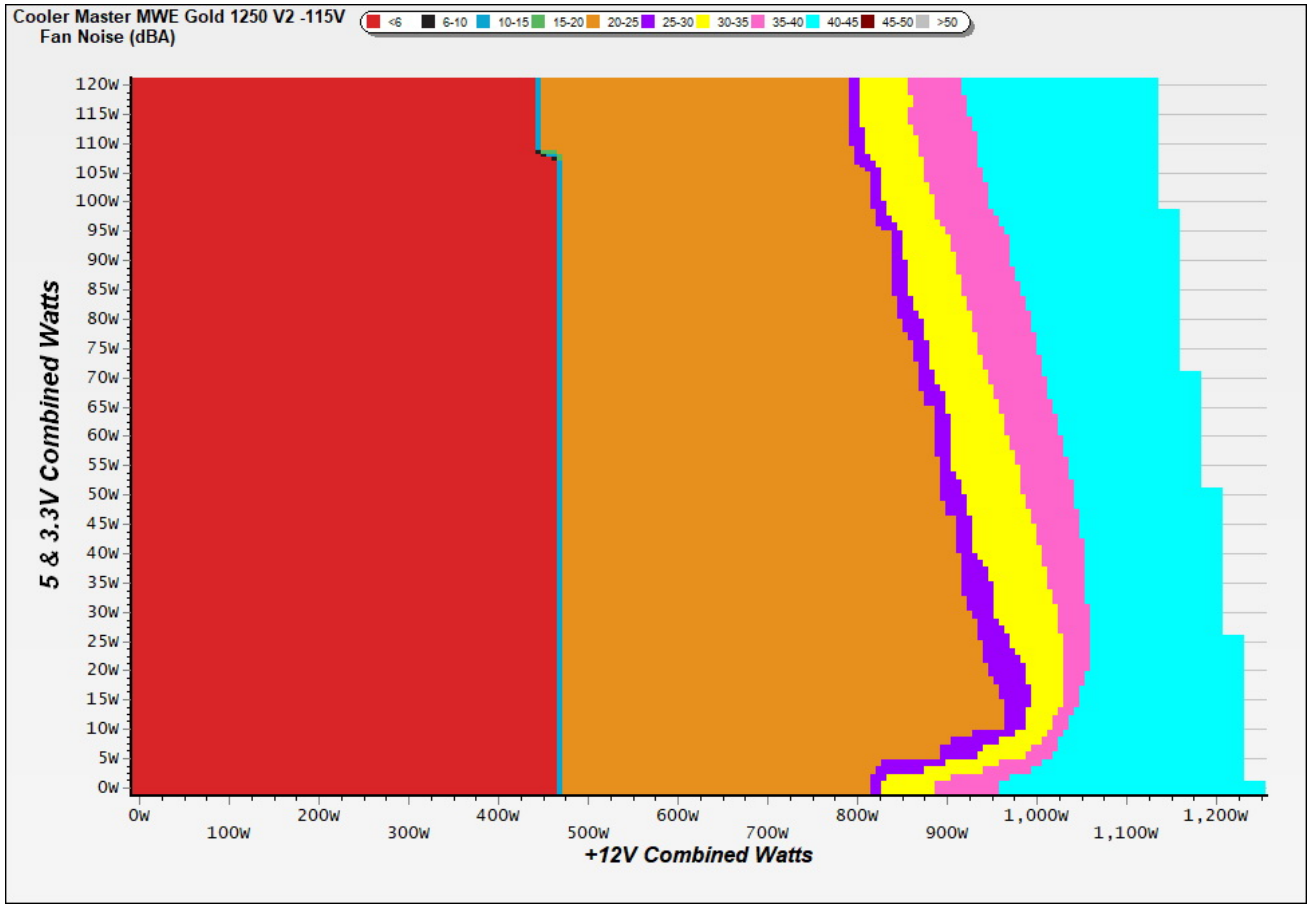
Noise Graph

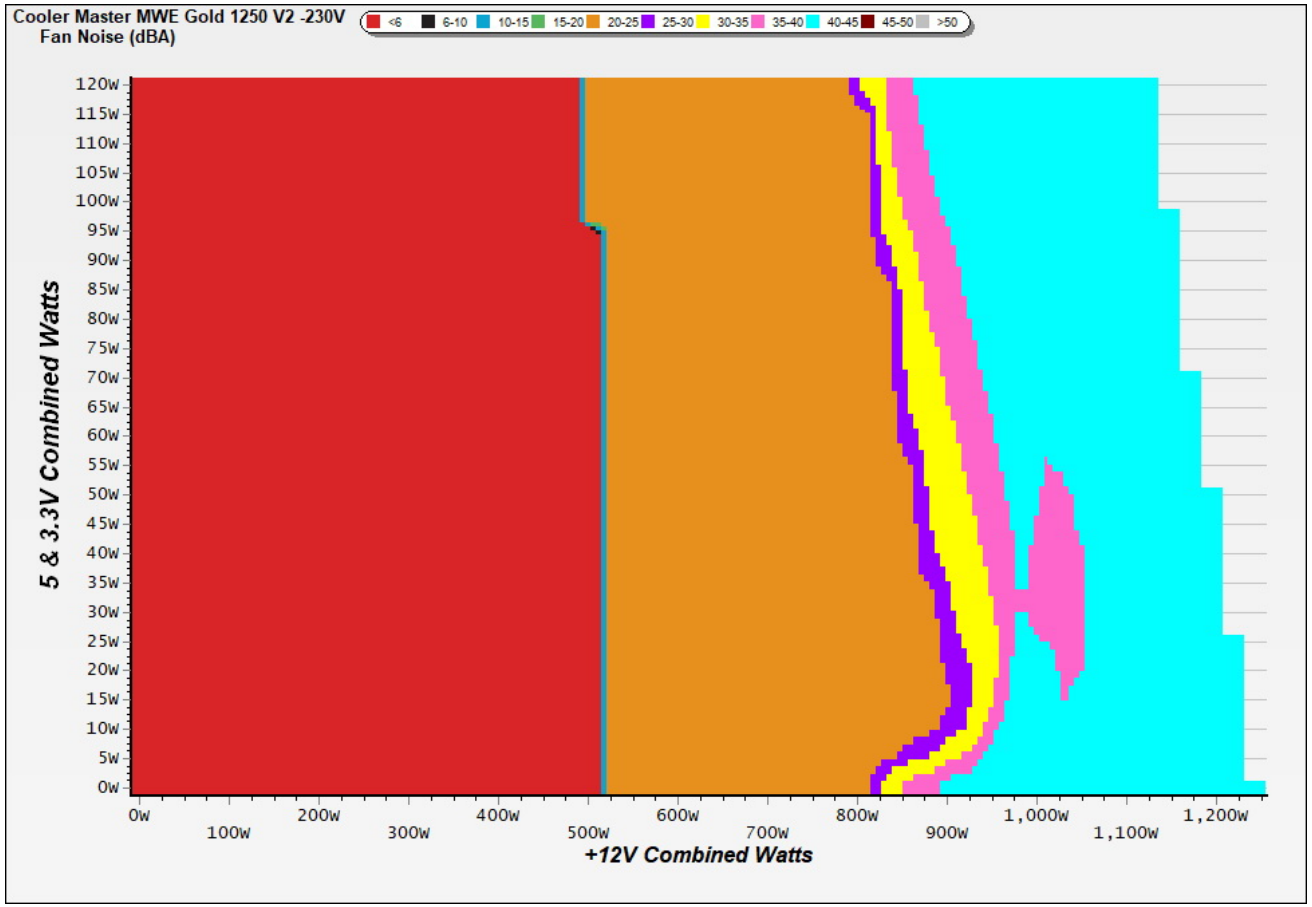
115V



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

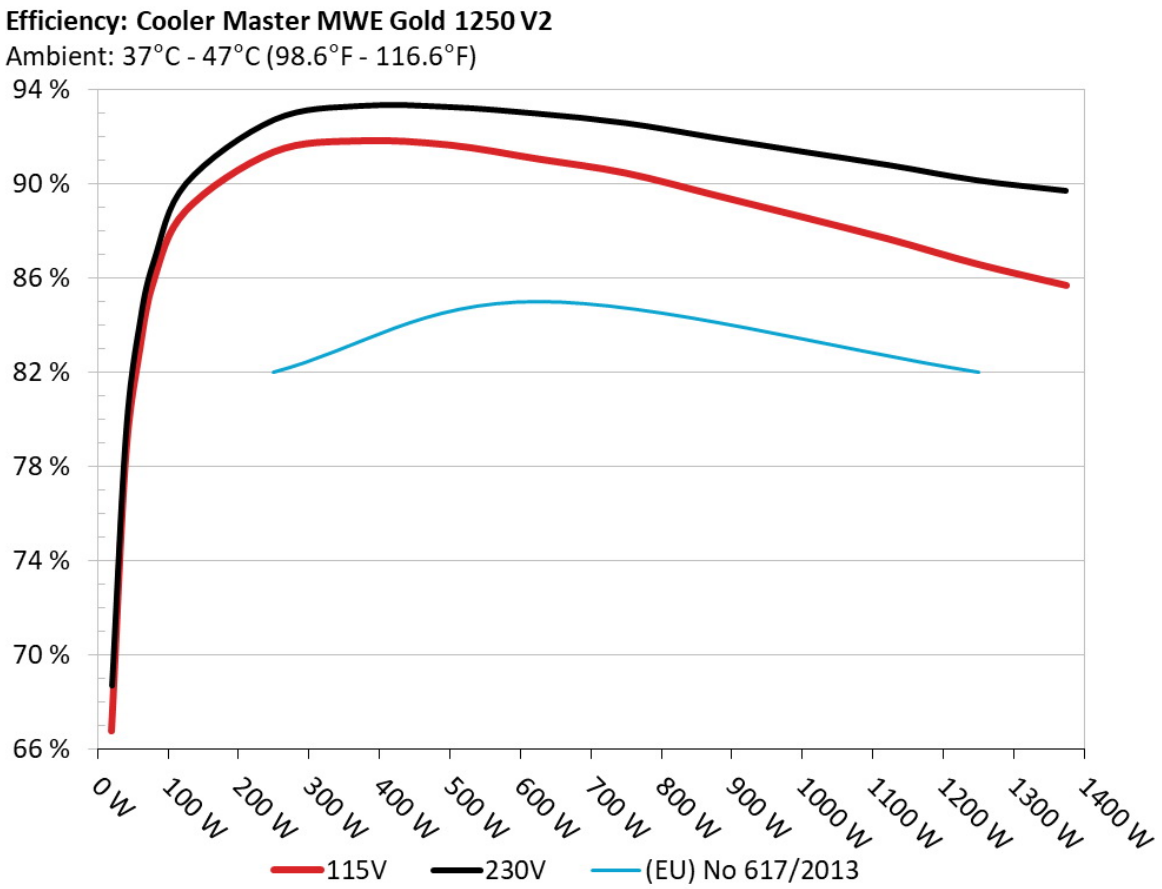


INFO

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

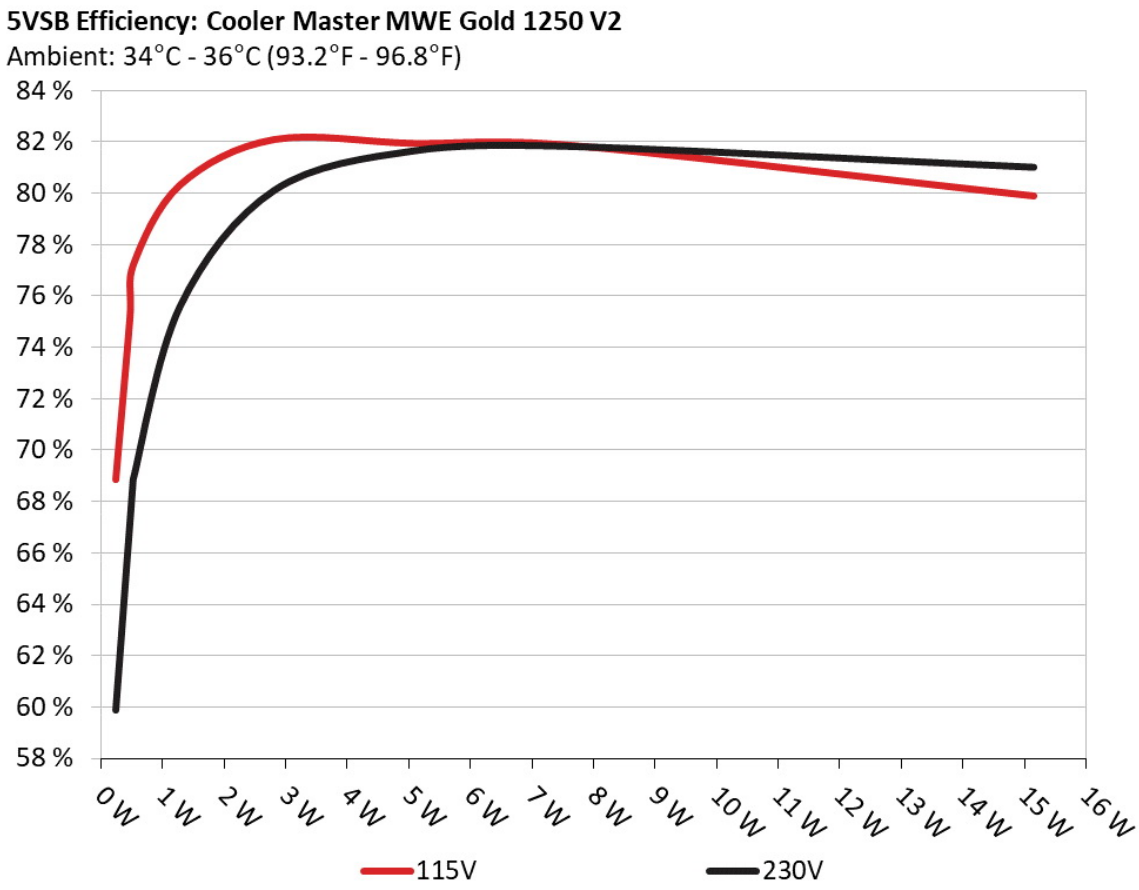
Efficiency under high ambient temperature



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	0.230	68.862%	0.052
	5.115V	0.334		115.16V
2	0.090A	0.460	75.163%	0.092
	5.114V	0.612		115.16V
3	0.550A	2.807	82.076%	0.321
	5.104V	3.420		115.16V
4	1.000A	5.094	81.923%	0.397
	5.095V	6.218		115.16V
5	1.500A	7.625	81.848%	0.436
	5.084V	9.316		115.16V
6	2.999A	15.148	79.882%	0.490
	5.051V	18.963		115.16V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	59.896%	0.019
	5.114V	0.384		230.31V
2	0.090A	0.460	68.862%	0.032
	5.113V	0.668		230.31V
3	0.550A	2.807	80.108%	0.150
	5.104V	3.504		230.31V
4	1.000A	5.094	81.648%	0.229
	5.094V	6.239		230.31V
5	1.500A	7.625	81.813%	0.286
	5.084V	9.320		230.31V
6	3.000A	15.151	81.004%	0.370
	5.051V	18.704		230.31V

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
1	8.495A	1.992A	1.972A	0.982A	125.004	88.831%	0	<6.0	45.15°C	0.978
	12.173V	5.020V	3.345V	5.090V	140.721				40.51°C	115.14V
2	18.004A	2.989A	2.962A	1.182A	249.987	91.337%	0	<6.0	46.29°C	0.973
	12.169V	5.017V	3.342V	5.077V	273.697				40.93°C	115.13V
3	27.798A	3.491A	3.462A	1.382A	374.246	91.808%	0	<6.0	47.16°C	0.976
	12.166V	5.013V	3.338V	5.064V	407.642				41.24°C	115.13V
4	37.668A	3.995A	3.959A	1.584A	499.409	91.630%	0	<6.0	48.19°C	0.982
	12.164V	5.010V	3.334V	5.051V	545.029				41.51°C	115.13V
5	47.231A	4.991A	4.952A	1.787A	624.795	91.038%	903	22.6	42.75°C	0.985
	12.159V	5.010V	3.334V	5.036V	686.299				50.09°C	115.12V
6	56.723A	5.994A	5.948A	1.991A	749.329	90.439%	920	23.2	43.07°C	0.987
	12.156V	5.006V	3.329V	5.022V	828.549				50.84°C	115.11V
7	66.285A	6.996A	6.946A	2.195A	874.591	89.509%	1868	44.2	43.23°C	0.989
	12.152V	5.003V	3.326V	5.008V	977.101				51.38°C	115.10V
8	75.865A	8.003A	7.945A	2.402A	999.934	88.574%	1883	44.4	44.26°C	0.990
	12.147V	5.000V	3.322V	4.993V	1128.923				52.84°C	115.09V
9	85.820A	8.506A	8.437A	2.407A	1124.845	87.617%	1890	44.5	44.43°C	0.992
	12.146V	4.995V	3.318V	4.983V	1283.814				53.59°C	115.08V
10	95.536A	9.013A	8.959A	3.023A	1249.591	86.561%	1901	44.9	45.17°C	0.993
	12.141V	4.992V	3.315V	4.961V	1443.592				54.89°C	115.07V
11	105.835A	9.019A	8.963A	3.028A	1374.410	85.666%	1907	44.9	46.61°C	0.993
	12.139V	4.989V	3.312V	4.953V	1604.391				57.27°C	115.06V
CL1	0.115A	14.000A	13.997A	0.000A	118.249	82.181%	907	22.6	42.45°C	0.979
	12.180V	5.015V	3.332V	5.099V	143.888				50.05°C	115.16V

CL2	103.988A	1.000A	0.999A	1.000A	1275.938	86.918%	1900	44.6	45.18°C	0.992
	12.139V	4.996V	3.323V	5.013V	1467.974				54.43°C	115.07V

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
1	8.495A	1.991A	1.974A	0.982A	125.015	90.019%	0	<6.0	44.79°C	0.909
	12.175V	5.019V	3.342V	5.090V	138.876				40.67°C	230.32V
2	18.002A	2.991A	2.965A	1.182A	250.003	92.720%	0	<6.0	46.29°C	0.948
	12.171V	5.015V	3.339V	5.076V	269.631				41.36°C	230.32V
3	27.797A	3.492A	3.463A	1.383A	374.264	93.310%	0	<6.0	47.40°C	0.961
	12.167V	5.012V	3.336V	5.063V	401.098				41.71°C	230.32V
4	37.672A	3.993A	3.960A	1.584A	499.443	93.261%	0	<6.0	48.37°C	0.967
	12.164V	5.010V	3.333V	5.049V	535.531				41.96°C	230.32V
5	47.229A	4.992A	4.951A	1.788A	624.802	92.981%	907	22.6	42.39°C	0.971
	12.160V	5.009V	3.331V	5.034V	671.969				49.53°C	230.33V
6	56.724A	5.994A	5.950A	1.992A	749.343	92.581%	965	24.6	43.07°C	0.974
	12.156V	5.006V	3.328V	5.020V	809.395				50.99°C	230.32V
7	66.298A	6.996A	6.947A	2.197A	874.617	91.965%	1698	41.6	43.38°C	0.977
	12.150V	5.003V	3.325V	5.005V	951.034				51.55°C	230.32V
8	75.879A	8.002A	7.943A	2.404A	999.943	91.372%	1877	44.2	44.32°C	0.979
	12.145V	5.000V	3.322V	4.990V	1094.362				53.16°C	230.32V
9	85.839A	8.506A	8.439A	2.408A	1124.826	90.788%	1888	44.5	45.30°C	0.981
	12.143V	4.996V	3.317V	4.981V	1238.965				54.58°C	230.32V
10	95.557A	9.012A	8.957A	3.025A	1249.654	90.146%	1892	44.5	45.10°C	0.982
	12.139V	4.993V	3.315V	4.958V	1386.261				55.20°C	230.31V
11	105.888A	9.015A	8.964A	3.030A	1374.324	89.710%	1895	44.6	46.56°C	0.984
	12.132V	4.991V	3.313V	4.950V	1531.970				57.35°C	230.31V
CL1	0.115A	14.001A	13.997A	0.000A	118.295	83.380%	900	22.4	42.28°C	0.911
	12.178V	5.017V	3.333V	5.098V	141.875				49.78°C	230.33V

CL2	103.996A	1.000A	1.000A	1.000A	1276.148	90.478%	1895	44.6	45.08°C	0.983
	12.143V	4.994V	3.321V	5.010V	1410.444				55.71°C	230.31V

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])	PF/AC Volts
1	1.218A	0.498A	0.493A	0.196A	19.977	66.741%	0	<6.0	0.921
	12.169V	5.022V	3.348V	5.115V	29.932				115.15V
2	2.437A	0.995A	0.985A	0.391A	39.966	78.334%	0	<6.0	0.951
	12.175V	5.024V	3.350V	5.109V	51.020				115.14V
3	3.660A	1.493A	1.476A	0.588A	59.998	82.939%	0	<6.0	0.969
	12.174V	5.023V	3.348V	5.103V	72.340				115.15V
4	4.876A	1.990A	1.972A	0.784A	79.951	85.875%	0	<6.0	0.970
	12.174V	5.022V	3.347V	5.097V	93.102				115.14V

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])	PF/AC Volts
1	1.219A	0.496A	0.493A	0.196A	19.978	68.714%	0	<6.0	0.631
	12.171V	5.020V	3.344V	5.115V	29.074				230.32V
2	2.436A	0.995A	0.987A	0.391A	39.966	79.517%	0	<6.0	0.770
	12.179V	5.022V	3.347V	5.109V	50.261				230.32V
3	3.658A	1.494A	1.480A	0.588A	59.999	84.202%	0	<6.0	0.831
	12.178V	5.021V	3.345V	5.103V	71.256				230.32V
4	4.874A	1.991A	1.975A	0.785A	79.951	86.773%	0	<6.0	0.870
	12.177V	5.020V	3.344V	5.097V	92.138				230.32V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.70mV	3.00mV	7.50mV	8.10mV	Pass
20% Load	14.50mV	3.60mV	7.70mV	8.30mV	Pass
30% Load	9.90mV	3.80mV	8.10mV	9.10mV	Pass
40% Load	9.30mV	3.70mV	7.80mV	10.30mV	Pass
50% Load	9.40mV	4.50mV	9.20mV	10.30mV	Pass
60% Load	9.50mV	5.10mV	9.40mV	10.80mV	Pass
70% Load	11.10mV	5.60mV	8.90mV	11.10mV	Pass
80% Load	11.90mV	6.60mV	12.20mV	12.10mV	Pass
90% Load	12.70mV	9.10mV	14.90mV	12.00mV	Pass
100% Load	19.80mV	10.20mV	15.70mV	14.50mV	Pass
110% Load	22.00mV	11.50mV	16.30mV	15.80mV	Pass
Crossload1	15.70mV	6.10mV	14.80mV	11.20mV	Pass
Crossload2	20.50mV	9.60mV	12.30mV	13.90mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.90mV	3.20mV	6.80mV	8.10mV	Pass
20% Load	15.20mV	3.70mV	7.30mV	7.70mV	Pass
30% Load	10.60mV	3.70mV	8.90mV	8.50mV	Pass
40% Load	9.80mV	3.80mV	8.00mV	9.60mV	Pass
50% Load	9.80mV	5.00mV	8.90mV	10.20mV	Pass
60% Load	9.90mV	5.40mV	9.50mV	10.90mV	Pass
70% Load	10.40mV	5.30mV	9.00mV	10.70mV	Pass
80% Load	11.00mV	6.30mV	11.80mV	11.10mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	12.00mV	8.90mV	13.60mV	11.30mV	Pass
100% Load	19.40mV	10.80mV	16.30mV	12.70mV	Pass
110% Load	23.70mV	11.40mV	15.70mV	13.10mV	Pass
Crossload1	16.10mV	6.00mV	14.60mV	11.20mV	Pass
Crossload2	19.70mV	9.70mV	12.40mV	11.80mV	Pass

The results above are not used in the certification process

Cooler Master MWE Gold 1250 V2 (GX Gold 1250)

Top side

Power specifications label

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 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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