

## Anex

## Cooler Master MWE Gold 1050W V2

Lab ID#: CM10501858  
 Receipt Date: May 28, 2021  
 Test Date: Jun 17, 2021

Report: 21PS1858A  
 Report Date: Jun 17, 2021

### DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Xin Hui Yuan Tech (Fusion Power)
Series	MWE Gold V2
Model Number	MPE-A501-AFCAG
Serial Number	MPEAC501AFCAG001
DUT Notes	

### DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6
Rated Frequency (Hz)	50-60
Rated Power (W)	1050
Type	ATX12V
Cooling	140mm Rifle Bearing Fan (EFS-14E12D)
Semi-Passive Operation	✓
Cable Design	Fully Modular

### TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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### RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

### 115V

Average Efficiency	89.133%
Efficiency With 10W (≤500W) or 2% (>500W)	71.309
Average Efficiency 5VSB	81.454%
Standby Power Consumption (W)	0.0515070
Average PF	0.986
Avg Noise Output	37.49 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard+

### 230V

Average Efficiency	91.150%
Average Efficiency 5VSB	80.620%
Standby Power Consumption (W)	0.0915485
Average PF	0.961
Avg Noise Output	37.11 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard+

### POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	87.5	3	0.3
	Watts	120		1050	15	3.6
Total Max. Power (W)		1050				

### HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	31.2
AC Loss to PWR_OK Hold Up Time (ms)	27.2
PWR_OK Inactive to DC Loss Delay (ms)	4

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### CABLES AND CONNECTORS

#### 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)	2	4	16-18AWG	No
6+2 pin PCIe (600mm+120mm)	1	2	16-18AWG	No
SATA (520mm+120mm+120mm+120mm)	2	8	18AWG	No
4 pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

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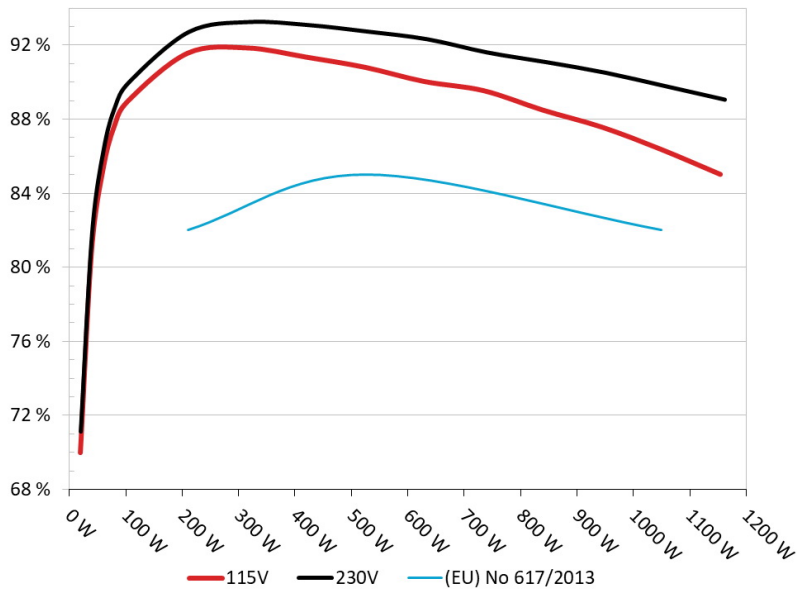
<b>General Data</b>	-
Manufacturer (OEM)	Xin Hui Yuan Tech (Fusion Power)
PCB Type	Double Sided
<b>Primary Side</b>	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor MF72-5D15 (5 Ohm) & Relay
Bridge Rectifier(s)	2x GBU1510 (1000V, 15A @ 100°C)
APFC MOSFETs	2x Infineon IPW60R120P7 (600V, 16A @ 100°C, Rds(on): 0.12Ohm)
APFC Boost Diode	1x Global Power Technology G3S06506A (650V, 6A @ 155°C)
Bulk Cap(s)	2x TK (420V, 560uF each or 1120uF combined, 2,000h @ 105°C, LGW)
Main Switchers	4x Great Power GPT18N50DG (500V, 18A, Rds(on): 0.27Ohm)
APFC Controller	Champion CM6500UN
Resonant Controller	Champion CM6901T6X
Topology	Primary side: Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
<b>Secondary Side</b>	-
+12V MOSFETs	4x 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: 20x FPCAP, 9x United Chemi-Con
Supervisor IC	IN1S424I-SDG
Fan Model	DWPH EFS-14E12D (140mm, 12V, 0.80A, Rifle Bearing Fan)
<b>5VSB Circuit</b>	-
Rectifier	1x 60R10S
Standby PWM Controller	Excelliance MOS Corp EM8569C

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### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

**Efficiency: Cooler Master MWE Gold 1050 V2**  
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

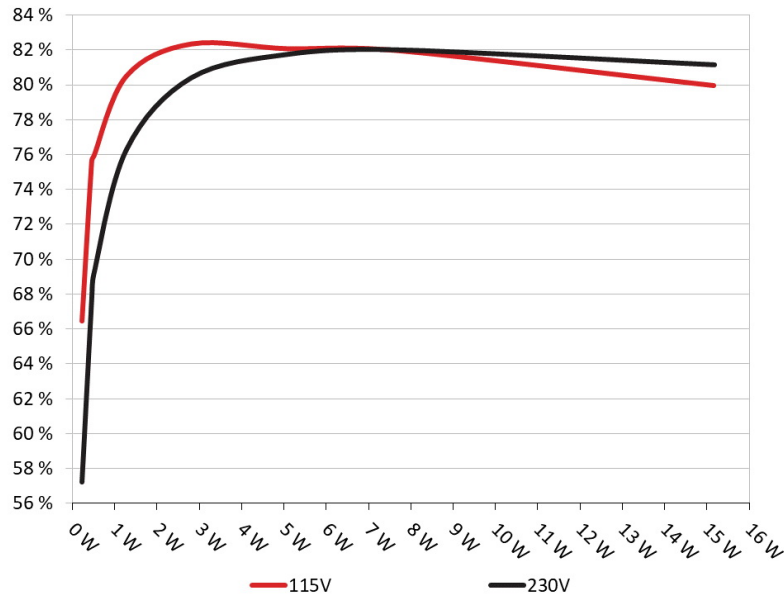


#### INFO

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 MWE Gold 1050 V2**  
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

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### 5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	66.437%	0.025
	5.124V	0.149W		115.17V
2	0.09A	0.461W	75.635%	0.098
	5.122V	0.61W		115.16V
3	0.55A	2.812W	82.347%	0.328
	5.112V	3.415W		115.15V
4	1A	5.103W	82.072%	0.4
	5.102V	6.218W		115.15V
5	1.5A	7.637W	81.979%	0.438
	5.09V	9.316W		115.15V
6	3A	15.167W	79.961%	0.487
	5.055V	18.968W		115.14V

### 5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	57.23%	0.02
	5.123V	0.404W		230.34V
2	0.09A	0.461W	67.737%	0.034
	5.122V	0.681W		230.34V
3	0.55A	2.812W	80.42%	0.157
	5.112V	3.497W		230.33V
4	1A	5.103W	81.772%	0.237
	5.102V	6.241W		230.33V
5	1.5A	7.637W	82.025%	0.295
	5.09V	9.311W		230.33V
6	3A	15.17W	81.166%	0.378
	5.056V	18.69W		230.33V

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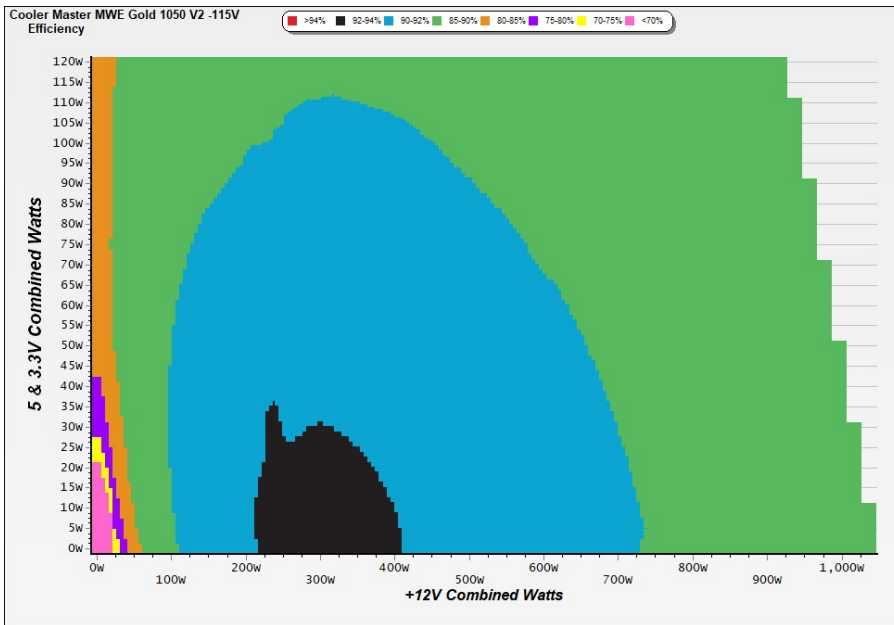
# 115V

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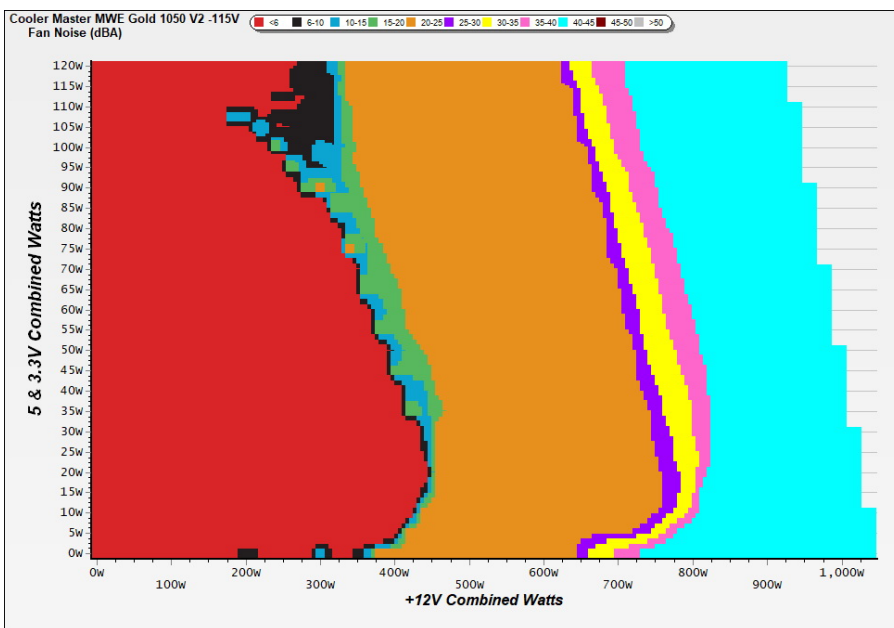
### EFFICIENCY GRAPH 115V



#### 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

### 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

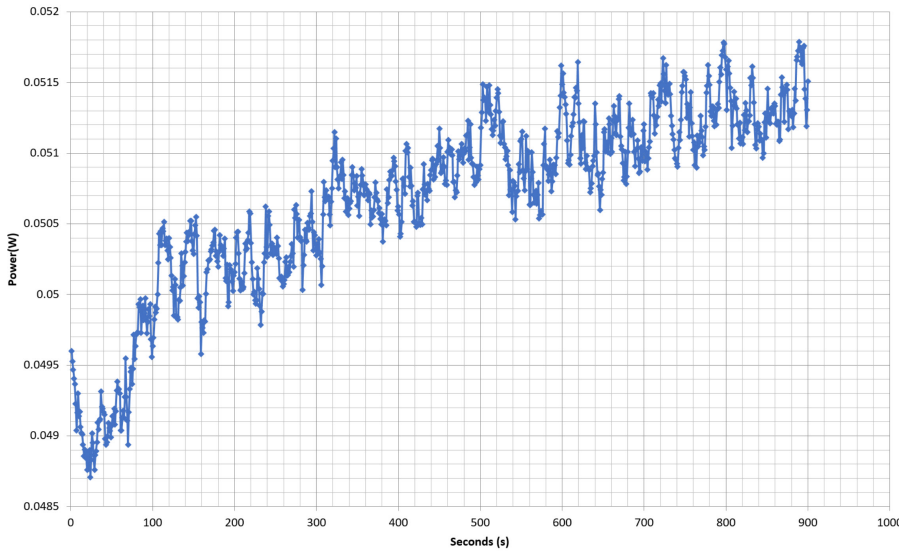
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**VAMPIRE POWER -115V**

Power - MPEAC501AFCAG001 - 08/06/2021 - 14:27



**INFO**

*This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing*

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### 10-110% 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	6.874A	1.989A	1.963A	0.981A	104.969	89.004%	0	<6.0	44.23°C	0.986
	12.129V	5.028V	3.363V	5.095V	117.938				40.56°C	115.15V
2	14.774A	2.986A	2.947A	1.181A	209.966	91.567%	0	<6.0	45.09°C	0.988
	12.120V	5.024V	3.360V	5.082V	229.303				40.73°C	115.11V
3	23.030A	3.487A	3.441A	1.381A	314.983	91.854%	0	<6.0	46.33°C	0.986
	12.112V	5.020V	3.357V	5.069V	342.917				41.68°C	115.10V
4	31.300A	3.986A	3.934A	1.583A	419.775	91.361%	895	22.0	41.84°C	0.984
	12.095V	5.019V	3.356V	5.055V	459.471				47.17°C	115.09V
5	39.269A	4.986A	4.921A	1.786A	525.108	90.804%	907	22.6	42.96°C	0.985
	12.086V	5.015V	3.353V	5.041V	578.288				48.75°C	115.11V
6	47.195A	5.987A	5.911A	1.990A	629.658	90.041%	1273	33.4	43.04°C	0.987
	12.075V	5.012V	3.350V	5.027V	699.299				49.41°C	115.12V
7	55.056A	6.985A	6.900A	2.195A	734.816	89.549%	1499	38.3	43.45°C	0.988
	12.092V	5.012V	3.348V	5.013V	820.578				50.35°C	115.09V
8	63.022A	7.988A	7.894A	2.301A	839.791	88.499%	1884	44.4	43.63°C	0.990
	12.089V	5.009V	3.344V	4.998V	948.928				51.15°C	115.08V
9	71.398A	8.492A	8.379A	2.407A	945.194	87.574%	1891	44.5	44.86°C	0.991
	12.084V	5.005V	3.341V	4.986V	1079.306				52.86°C	115.06V
10	79.484A	8.999A	8.899A	3.024A	1050.061	86.371%	1895	44.6	45.84°C	0.991
	12.083V	5.001V	3.338V	4.962V	1215.763				54.31°C	115.06V
11	87.460A	10.005A	9.988A	3.030A	1154.708	85.027%	1900	44.6	46.67°C	0.992
	12.079V	4.998V	3.334V	4.951V	1358.056				55.51°C	115.06V
CL1	0.116A	14.341A	14.240A	0.000A	121.313	83.307%	900	22.4	43.00°C	0.985
	12.133V	5.035V	3.350V	5.095V	145.623				48.38°C	115.17V
CL2	86.920A	0A	0A	0.001A	1049.784	86.983%	1897	44.6	46.05°C	0.991
	12.078V	4.993V	3.343V	5.048V	1206.879				54.64°C	115.05V

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## Cooler Master MWE Gold 1050W V2

### 20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.224A	0.497A	0.49A	0.195A	20.003	66.668%	0	<6.0	0.906
	12.134V	5.028V	3.364V	5.121V	28.574				115.18V
2	2.694A	0.696A	0.686A	0.293A	40.001	78.908%	0	<6.0	0.956
	12.133V	5.029V	3.366V	5.117V	49.415				115.17V
3	4.165A	0.895A	0.882A	0.391A	60.000	83.397%	0	<6.0	0.970
	12.131V	5.029V	3.366V	5.114V	70.357				115.16V
4	5.633A	1.094A	1.079A	0.489A	79.959	85.811%	0	<6.0	0.980
	12.130V	5.029V	3.365V	5.110V	91.259				115.15V

### RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.1 mV	4.6 mV	3.8 mV	6.8 mV	Pass
20% Load	12.7 mV	5.1 mV	4.6 mV	7.6 mV	Pass
30% Load	13.6 mV	6.5 mV	5.5 mV	8.6 mV	Pass
40% Load	10.9 mV	6.1 mV	5.6 mV	9.3 mV	Pass
50% Load	10.9 mV	7.7 mV	7.2 mV	10.8 mV	Pass
60% Load	12.0 mV	8.5 mV	8.7 mV	11.4 mV	Pass
70% Load	12.8 mV	9.3 mV	8.3 mV	11.9 mV	Pass
80% Load	13.0 mV	10.6 mV	19.2 mV	12.8 mV	Pass
90% Load	13.4 mV	12.4 mV	20.5 mV	14.7 mV	Pass
100% Load	21.5 mV	13.4 mV	22.7 mV	17.5 mV	Pass
110% Load	50.3 mV	32.2 mV	38.7 mV	58.8 mV	Fail
Crossload 1	15.4 mV	5.7 mV	17.4 mV	11.1 mV	Pass
Crossload 2	21.2 mV	13.5 mV	12.0 mV	18.7 mV	Pass

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# 230V

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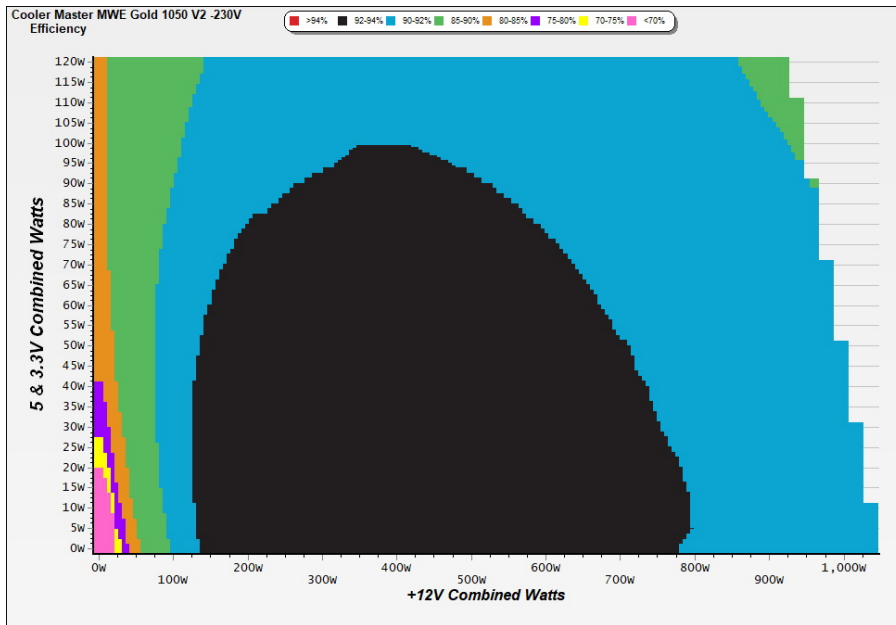
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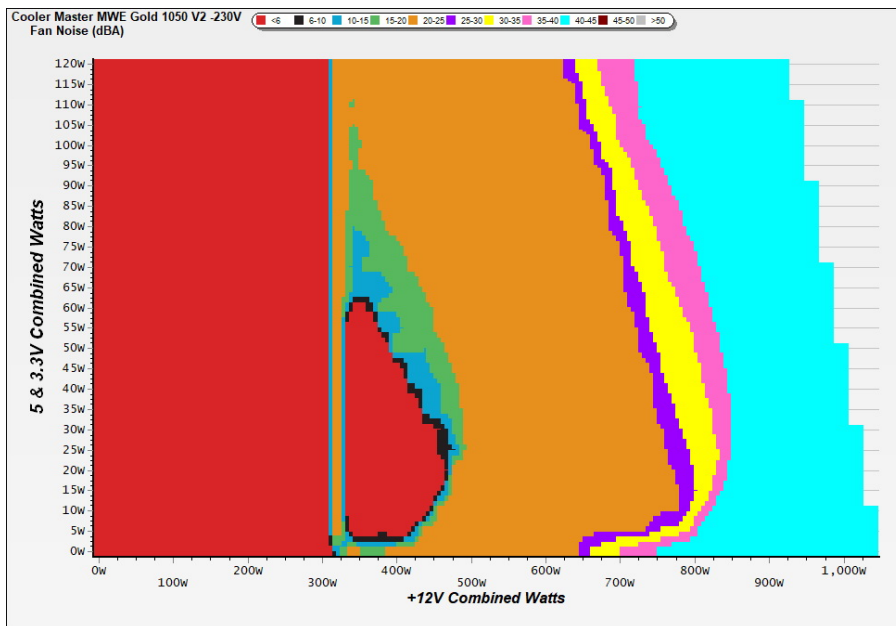
### EFFICIENCY GRAPH 230V



#### INFO

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### NOISE GRAPH 230V



#### INFO

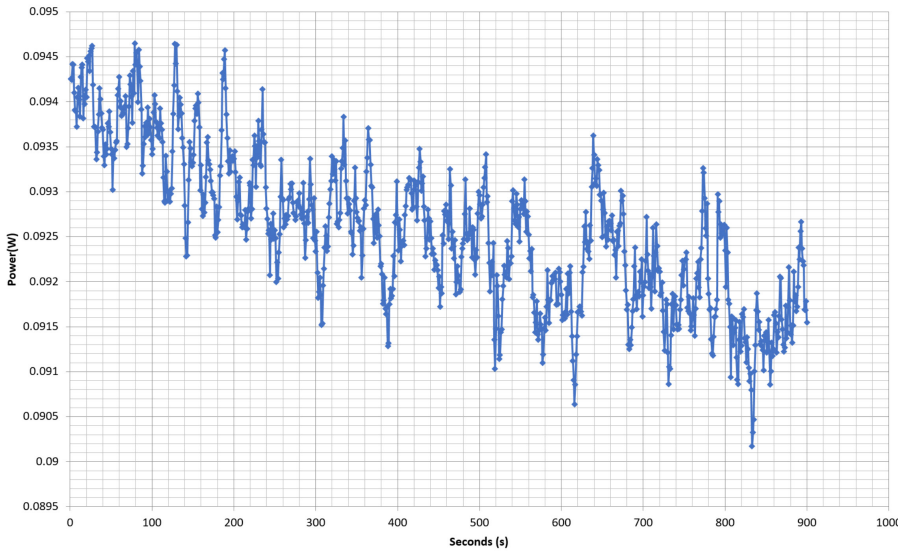
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### 10-110% LOAD TESTS 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	6.961A	2A	2A	1A	106.29	90.027%	0	<6.0	44.46°C	0.894
	12.127V	5.028V	3.363V	5.094V	118.065				40.58°C	230.37V
20%	14.922A	3.001A	3A	1.2A	212.056	92.733%	0	<6.0	45.46°C	0.949
	12.116V	5.025V	3.359V	5.08V	228.673				41.16°C	230.37V
30%	23.244A	3.501A	3.5A	1.4A	317.791	93.27%	0	<6.0	46.58°C	0.966
	12.105V	5.021V	3.356V	5.067V	340.722				41.85°C	230.36V
40%	31.567A	4.001A	4A	1.6A	423.344	93.107%	0	<6.0	47.33°C	0.972
	12.094V	5.017V	3.353V	5.054V	454.687				42.19°C	230.33V
50%	39.555A	5.001A	5A	1.8A	529.001	92.754%	904	22.6	42.73°C	0.975
	12.087V	5.014V	3.349V	5.039V	570.328				48.57°C	230.32V
60%	47.538A	6.001A	6A	2.001A	634.732	92.339%	1051	27.6	43.05°C	0.977
	12.085V	5.015V	3.35V	5.025V	687.396				49.18°C	230.32V
70%	55.528A	7.002A	7A	2.201A	740.512	91.627%	1868	44.2	43.84°C	0.979
	12.083V	5.012V	3.347V	5.01V	808.178				50.45°C	230.31V
80%	63.531A	8.002A	8A	2.3A	845.883	91.1%	1878	44.2	44.18°C	0.981
	12.081V	5.009V	3.344V	4.997V	928.521				51.25°C	230.31V
90%	71.904A	8.501A	8.499A	2.4A	951.005	90.528%	1887	44.5	44.59°C	0.982
	12.073V	5.006V	3.342V	4.986V	1050.513				52.62°C	230.31V
100%	80.050A	9.002A	9A	3A	1056.549	89.805%	1894	44.6	45.56°C	0.984
	12.075V	5V	3.337V	4.961V	1176.495				54.85°C	230.31V
110%	88.109A	10.001A	10A	3.001A	1162.296	89.074%	1899	44.6	47.24°C	0.984
	12.077V	4.997V	3.334V	4.95V	1304.861				57.18°C	230.32V
CL1	0.118A	14.459A	14.458A	0A	122.624	84.27%	906	22.6	42.67°C	0.914
	12.134V	5.033V	3.348V	5.094V	145.513				49.61°C	230.39V
CL2	87.519A	0A	0A	0.001A	1057.077	90.391%	1894	44.6	45.59°C	0.983
	12.078V	4.992V	3.343V	5.047V	1169.453				55.1°C	230.32V

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### 20-80W LOAD TESTS 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	1.240A	0.5A	0.5A	0.2A	20.271	71.137%	0	<6.0	39.44°C	0.615
	12.135V	5.028V	3.363V	5.121V	28.496				37.27°C	230.37V
40W	2.720A	0.7A	0.7A	0.3A	40.415	81.869%	0	<6.0	40.36°C	0.749
	12.133V	5.029V	3.366V	5.117V	49.366				37.88°C	230.37V
60W	4.224A	0.9A	0.9A	0.4A	60.842	86.362%	0	<6.0	41.51°C	0.817
	12.131V	5.029V	3.366V	5.113V	70.451				38.64°C	230.37V
80W	5.704A	1.1A	1.1A	0.5A	80.972	88.676%	0	<6.0	42.68°C	0.859
	12.129V	5.029V	3.365V	5.109V	91.311				39.51°C	230.37V

### RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.8 mV	5.0 mV	4.2 mV	7.0 mV	Pass
20% Load	13.2 mV	5.0 mV	4.2 mV	7.7 mV	Pass
30% Load	13.3 mV	6.2 mV	5.2 mV	8.1 mV	Pass
40% Load	11.3 mV	6.5 mV	5.3 mV	9.1 mV	Pass
50% Load	10.8 mV	7.9 mV	7.0 mV	10.2 mV	Pass
60% Load	12.6 mV	8.6 mV	13.7 mV	11.4 mV	Pass
70% Load	12.7 mV	9.5 mV	13.4 mV	12.0 mV	Pass
80% Load	13.0 mV	10.8 mV	18.9 mV	12.9 mV	Pass
90% Load	13.5 mV	12.1 mV	21.3 mV	13.9 mV	Pass
100% Load	23.1 mV	13.4 mV	22.8 mV	15.6 mV	Pass
110% Load	24.5 mV	14.3 mV	22.3 mV	16.1 mV	Pass
Crossload 1	15.5 mV	5.7 mV	17.5 mV	10.8 mV	Pass
Crossload 2	21.9 mV	13.4 mV	11.5 mV	18.1 mV	Pass

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

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- > The link to the original test results document should be provided in any case

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**Anex**

**Cooler Master MWE Gold 1050W V2**

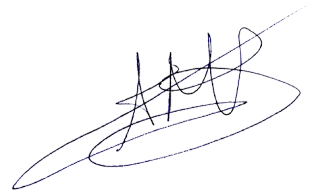


Top side

<b>1050W</b> MODEL / 型號					
AC INPUT	100-240V~, 13-6A, 50-60Hz				
交流輸入	200-240V~, 6A, 50-60Hz; For Korea Use Only				
交流輸入	200-240V~, 6A, 50-60Hz; 适用于中国地区使用				
DC OUTPUT	+12V	+5V	+3.3V	-12V	+5VSB
直流輸出/直流輸出	87.5A	20A	20A	0.3A	3A
TOTAL POWER	1050W	120W	3.6W	15W	
總功率/總功率	1050W				
 MPEC501AFCAG001					

Power specifications label

**CERTIFICATIONS 115V**

**Aristeidis Bitziopoulos**  
Lab Director

**CERTIFICATIONS 230V**



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