

Anex

Cooler Master MWE Bronze 550

Lab ID#: CM19550052

Receipt Date: Jul 5, 2019

Test Date: Oct 6, 2019

Report:

Report Date: Jun 21, 2019

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Gospower
Series	MWE Bronze
Model Number	
Serial Number	MPE5501ACAAB1191400003
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	8-4
Rated Frequency (Hz)	50-60
Rated Power (W)	550
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (DF1202512SELN)
Semi-Passive Operation	✓
Cable Design	Fixed cables

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	45.8	3	0.3
	Watts	120		549.6	15	3.6
Total Max. Power (W)		550				

CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-20AWG	No
4+4 pin EPS12V (630mm)	1	1	18AWG	No
6+2 pin PCIe (530mm+120mm)	1	2	18AWG	No
SATA (520mm+120mm+120mm)	2	6	18AWG	No
4-pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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General Data	
Manufacturer (OEM)	Gospower
PCB Type	Single Sided
Primary Side	
Transient Filter	3x Y caps, 2x X caps, 2x CM chokes
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x GBU1508 (800V, 15A @ 100°C)
APFC MOSFETS	2x Sanrise Tech SRC60R200 (630V, 7.1A @ 125°C, 0.2Ohm)
APFC Boost Diode	1x Jilin Sino Microelectronics 15F60UHF (600V, 15A @ 100°C)
Hold-up Cap(s)	1x Elite (420V, 470uF, 2000h @ 85°C, GM)
Main Switchers	2x Jilin Sino Microelectronics JCS18N50FH (500V, 11A @ 100°C, 0.27Ohm)
APFC Controller	Champion CM6500UNX
Resonant Controllers	Champion CU6901V
Topology	Primary side: Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x Nce Power NCEP40T11K (40V, 85A @ 100°C, 2.8mOhm)
5V & 3.3V	DC-DC Converters: 4x IPS FTD05N03NA (30V, 75A @ 100°C, 6mOhm) PWM Controllers: ANPEC APW7159C
Filtering Capacitors	Electrolytics: 4x Elite (2-5,000h @ 105°C, ED), 5x Elite (2,000h @ 105°C, EL), 2x CapXon (2-5,000h @ 105°C, KF), 1x CapXon (3-10,000h @ 105°C, GH) Polymers: CapXon
Supervisor IC	IN1S313I-SAG
Fan Model	Thermal Control DF1202512SELN (120mm, 12V, 0.25A, Rifle Bearing Fan)
5VSB Circuit	
Rectifier	-
Standby PWM Controller	On-Bright OB2365SP

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RESULTS

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

115V

Average Efficiency	85.897%
Efficiency With 10W (≤500W) or 2% (>500W)	70.319
Average Efficiency 5VSB	78.118%
Standby Power Consumption (W)	0.0753202
Average PF	0.976
Avg Noise Output	25.27 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	88.179%
Average Efficiency 5VSB	77.245%
Standby Power Consumption (W)	0.1873250
Average PF	0.904
Avg Noise Output	24.66 dB(A)
Efficiency Rating (ETA)	
Noise Rating (LAMBDA)	A

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
UPS	CyberPower OLS3000E 3kVA x2

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

Hold-Up Time (ms)	20.90
AC Loss to PWR_OK Hold Up Time (ms)	19.30
PWR_OK Inactive to DC Loss Delay (ms)	1.60

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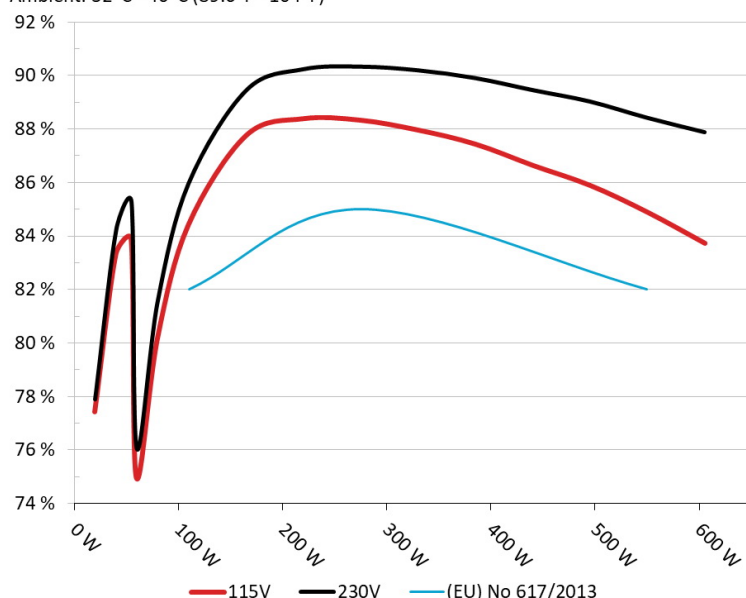
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE Bronze 550

Ambient: 32°C - 40°C (89.6°F - 104°F)



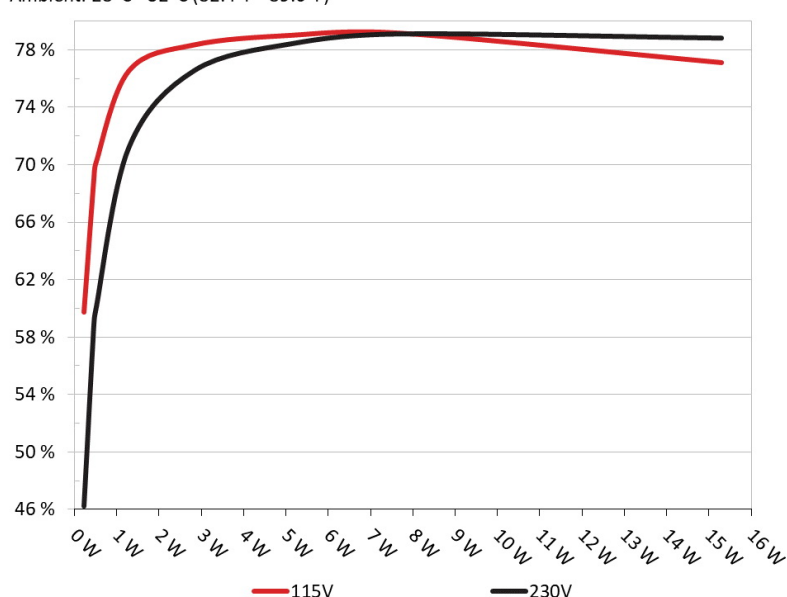
INFO

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 Bronze 550

Ambient: 28°C - 32°C (82.4°F - 89.6°F)



INFO

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

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Cooler Master MWE Bronze 550

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233	59.744%	0.224
	5.135V	0.390		115.12V
2	0.090A	0.466	69.037%	0.043
	5.170V	0.675		115.12V
3	0.550A	2.838	78.355%	0.203
	5.159V	3.622		115.12V
4	1.000A	5.150	79.024%	0.305
	5.148V	6.517		115.12V
5	1.500A	7.706	79.166%	0.373
	5.136V	9.734		115.12V
6	3.000A	15.296	77.120%	0.464
	5.099V	19.834		115.11V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233	46.230%	0.010
	5.172V	0.504		230.29V
2	0.090A	0.466	58.838%	0.015
	5.171V	0.792		230.29V
3	0.550A	2.839	76.544%	0.070
	5.160V	3.709		230.29V
4	1.000A	5.150	78.422%	0.119
	5.149V	6.567		230.29V
5	1.500A	7.707	79.095%	0.168
	5.137V	9.744		230.29V
6	3.000A	15.299	78.804%	0.277
	5.100V	19.414		230.29V

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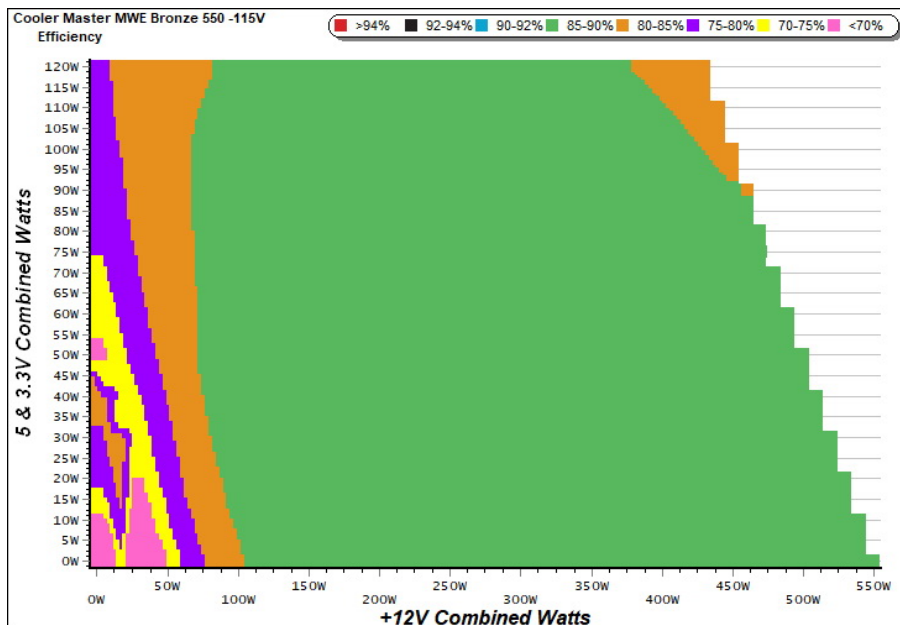
115V

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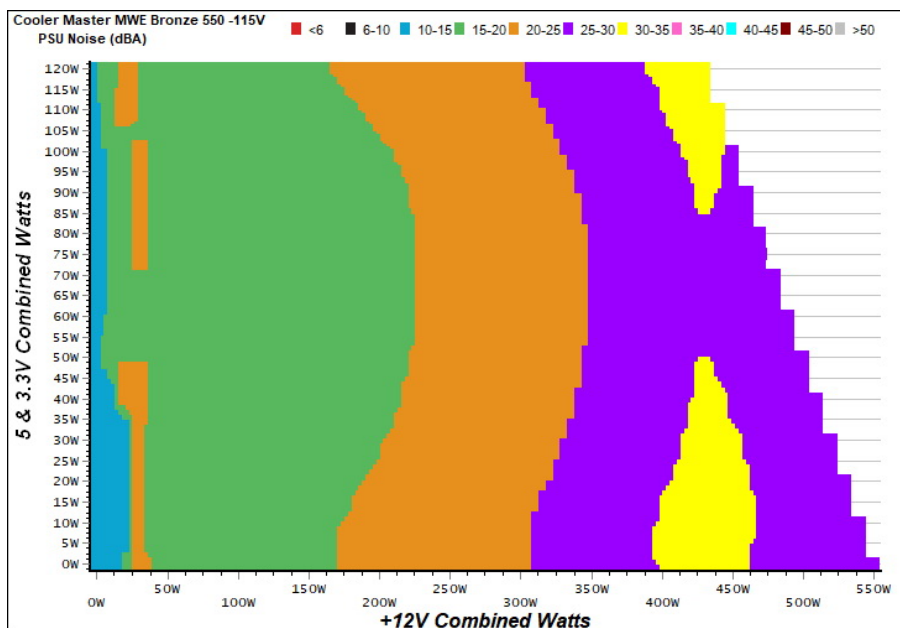
EFFICIENCY GRAPH 115V



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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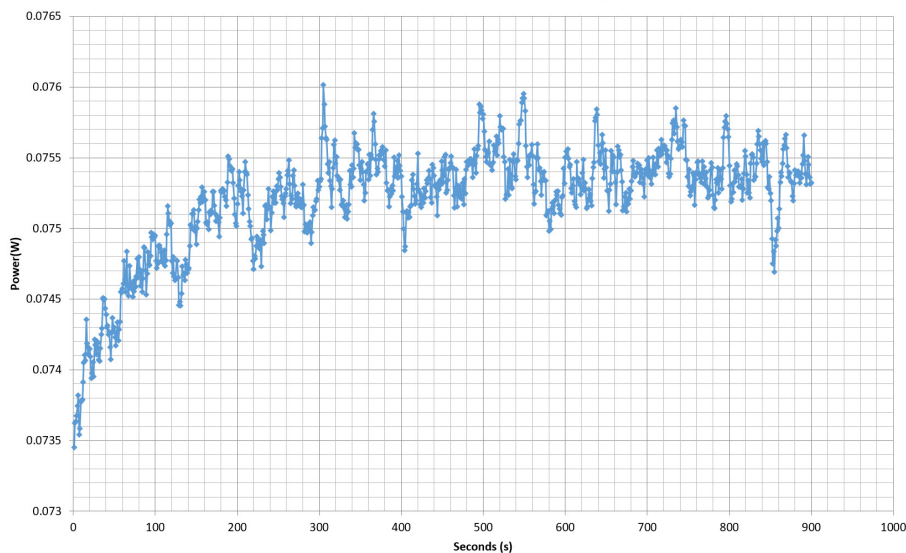
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Anex

Cooler Master MWE Bronze 550

VAMPIRE POWER -115V

Power - MPE5501ACAAB1191400003 - 06/06/2019 - 08:32



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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Cooler Master MWE Bronze 550

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	2.720A	1.998A	1.960A	0.974A	54.538	83.870%	0	<6.0	40.73°C	0.915
	12.108V	5.010V	3.363V	5.137V	65.027				35.29°C	115.12V
2	6.510A	3.003A	2.949A	1.171A	109.433	84.407%	929	20.6	35.44°C	0.967
	12.064V	4.997V	3.354V	5.124V	129.649				41.40°C	115.12V
3	10.697A	3.509A	3.437A	1.370A	164.925	87.752%	861	17.6	36.01°C	0.967
	12.052V	4.988V	3.346V	5.111V	187.944				42.36°C	115.12V
4	14.849A	4.019A	3.953A	1.569A	219.739	88.378%	970	21.7	36.59°C	0.974
	12.023V	4.979V	3.339V	5.098V	248.636				43.41°C	115.12V
5	18.665A	5.036A	4.954A	1.770A	274.645	88.321%	1040	24.2	37.26°C	0.981
	12.008V	4.967V	3.331V	5.085V	310.963				44.36°C	115.12V
6	22.490A	6.057A	5.960A	1.972A	329.558	87.954%	1241	28.9	38.10°C	0.985
	11.994V	4.955V	3.322V	5.071V	374.694				45.98°C	115.12V
7	26.358A	7.083A	6.969A	2.176A	384.879	87.428%	1351	31.6	38.53°C	0.987
	11.980V	4.943V	3.314V	5.057V	440.222				46.97°C	115.12V
8	30.234A	8.114A	7.988A	2.380A	440.194	86.630%	1474	33.1	39.03°C	0.988
	11.966V	4.931V	3.305V	5.043V	508.133				47.84°C	115.12V
9	34.486A	8.636A	8.489A	2.385A	494.721	85.890%	1477	33.1	39.41°C	0.990
	11.953V	4.922V	3.298V	5.034V	575.991				48.91°C	115.12V
10	38.551A	9.164A	9.027A	2.995A	549.939	84.885%	1480	33.1	39.86°C	0.991
	11.938V	4.912V	3.290V	5.010V	647.864				49.82°C	115.13V
11	43.224A	9.175A	9.040A	3.000A	605.162	83.724%	1482	33.1	40.31°C	0.991
	11.925V	4.906V	3.285V	5.002V	722.810				51.81°C	115.14V
CL1	0.151A	14.004A	14.001A	0.000A	117.525	78.741%	1414	32.2	37.25°C	0.963
	12.049V	4.939V	3.324V	5.124V	149.256				44.01°C	115.14V
CL2	45.851A	1.003A	1.000A	1.000A	561.012	85.608%	1480	33.1	39.44°C	0.992
	11.944V	4.961V	3.316V	5.077V	655.327				49.54°C	115.13V

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Cooler Master MWE Bronze 550

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	1.199A	0.499A	0.475A	0.194A	19.600	77.428%	0	<6.0	0.715
	12.087V	5.021V	3.370V	5.164V	25.314				115.12V
2	2.454A	0.997A	0.979A	0.388A	39.988	83.343%	0	<6.0	0.880
	12.098V	5.017V	3.367V	5.156V	47.980				115.12V
3	3.652A	1.498A	1.456A	0.583A	59.506	74.972%	764	17.9	0.938
	12.075V	5.012V	3.364V	5.148V	79.371				115.12V
4	4.913A	1.999A	1.963A	0.778A	79.904	80.197%	856	17.2	0.950
	12.071V	5.006V	3.359V	5.139V	99.635				115.12V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	86.6 mV	22.3 mV	16.8 mV	17.9 mV	Pass
20% Load	16.8 mV	20.6 mV	18.2 mV	23.7 mV	Pass
30% Load	29.9 mV	21.9 mV	18.5 mV	21.1 mV	Pass
40% Load	30.3 mV	22.1 mV	19.1 mV	22.9 mV	Pass
50% Load	29.5 mV	23.4 mV	21.3 mV	22.7 mV	Pass
60% Load	28.5 mV	23.2 mV	22.1 mV	23.7 mV	Pass
70% Load	27.0 mV	23.2 mV	24.5 mV	23.7 mV	Pass
80% Load	43.8 mV	24.9 mV	29.5 mV	26.0 mV	Pass
90% Load	27.1 mV	27.4 mV	28.9 mV	25.7 mV	Pass
100% Load	42.8 mV	29.4 mV	32.7 mV	30.3 mV	Pass
110% Load	45.1 mV	29.9 mV	32.0 mV	31.0 mV	Pass
Crossload 1	25.1 mV	32.7 mV	33.8 mV	23.7 mV	Pass
Crossload 2	40.9 mV	26.1 mV	25.3 mV	28.3 mV	Pass

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Cooler Master MWE Bronze 550

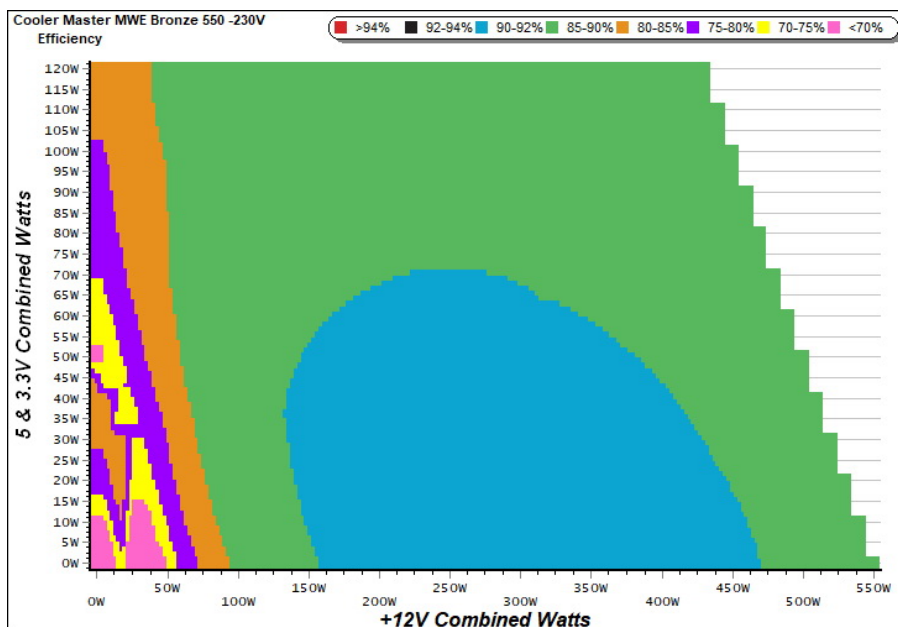
230V

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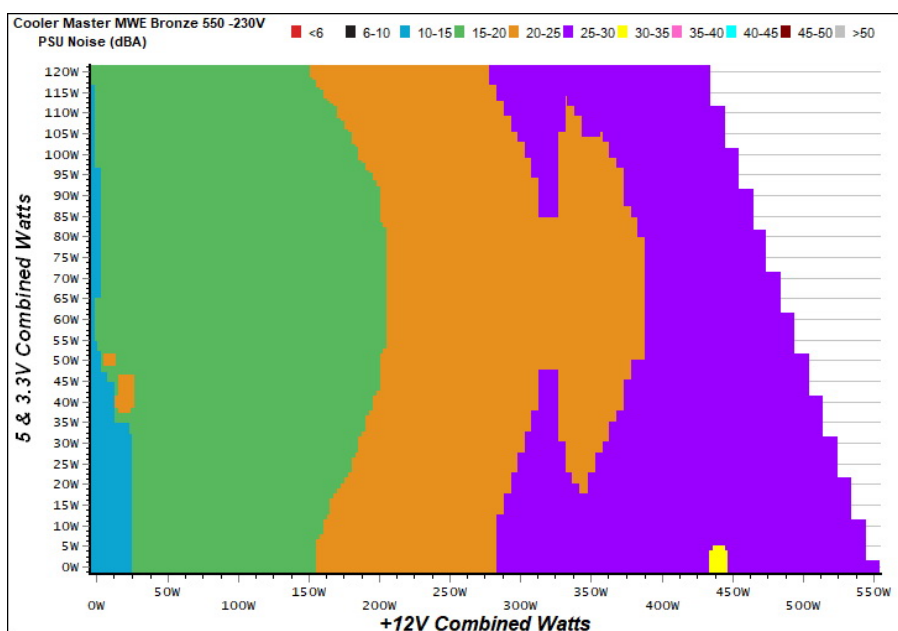
EFFICIENCY GRAPH 230V



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 230V



INFO

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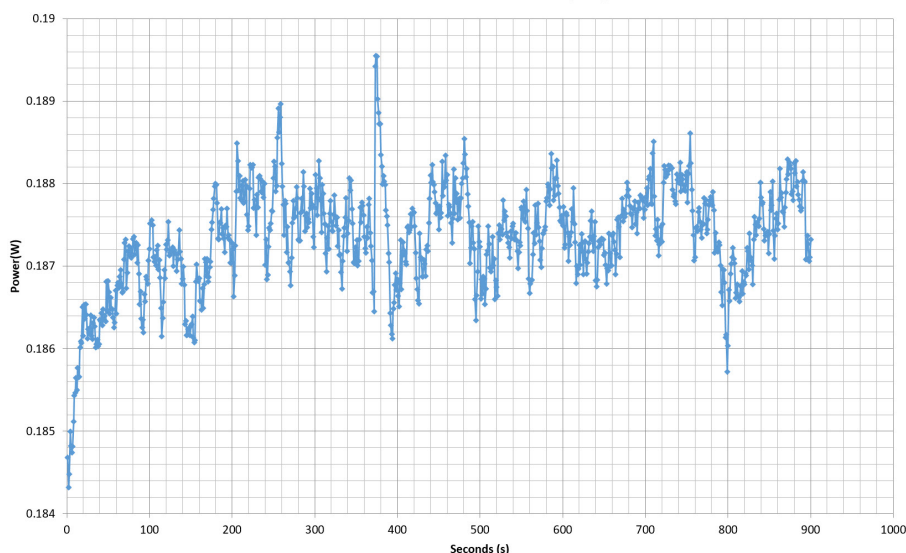
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Cooler Master MWE Bronze 550

VAMPIRE POWER -230V

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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
1	2.721A	1.998A	1.961A	0.974A	54.551	85.267%	0	0	40.47°C	0.609
	12.108V	5.009V	3.363V	5.137V	63.977				34.85°C	230.32V
2	6.510A	3.002A	2.951A	1.171A	109.424	85.967%	896	20.9	35.76°C	0.796
	12.062V	4.998V	3.354V	5.123V	127.286				41.56°C	230.33V
3	10.701A	3.510A	3.436A	1.370A	164.929	89.453%	870	18.5	36.44°C	0.868
	12.048V	4.987V	3.346V	5.111V	184.376				42.66°C	230.33V
4	14.853A	4.019A	3.953A	1.569A	219.740	90.237%	970	21.7	36.96°C	0.909
	12.020V	4.978V	3.339V	5.099V	243.513				43.51°C	230.33V
5	18.670A	5.036A	4.956A	1.770A	274.646	90.333%	1111	24.6	37.29°C	0.929
	12.005V	4.966V	3.330V	5.085V	304.038				44.28°C	230.33V
6	22.495A	6.058A	5.962A	1.972A	329.555	90.198%	1197	28.1	37.94°C	0.944
	11.991V	4.954V	3.322V	5.071V	365.370				45.60°C	230.33V
7	26.366A	7.084A	6.974A	2.176A	384.877	89.905%	1328	30.3	38.60°C	0.951
	11.976V	4.942V	3.313V	5.057V	428.092				47.04°C	230.33V
8	30.240A	8.115A	7.990A	2.380A	440.178	89.455%	1429	32.5	38.94°C	0.957
	11.963V	4.931V	3.304V	5.043V	492.064				47.89°C	230.33V
9	34.499A	8.637A	8.491A	2.384A	494.701	89.032%	1475	33.1	39.36°C	0.963
	11.948V	4.922V	3.297V	5.034V	555.643				48.81°C	230.33V
10	38.562A	9.164A	9.028A	2.995A	549.923	88.423%	1475	33.1	39.87°C	0.967
	11.934V	4.912V	3.290V	5.011V	621.921				49.88°C	230.33V
11	43.240A	9.177A	9.045A	2.999A	605.142	87.884%	1475	33.1	40.22°C	0.970
	11.920V	4.905V	3.284V	5.003V	688.570				51.43°C	230.33V
CL1	0.149A	14.001A	14.000A	0.000A	117.496	80.412%	1385	31.8	37.51°C	0.826
	12.046V	4.940V	3.324V	5.125V	146.118				44.32°C	230.33V
CL2	45.845A	1.002A	1.001A	1.000A	560.804	89.224%	1473	33.1	39.80°C	0.968
	11.941V	4.962V	3.317V	5.077V	628.537				49.84°C	230.33V

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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])	PF/AC Volts
1	1.202A	0.498A	0.474A	0.194A	19.630	77.894%	0	<6.0	0.343
	12.087V	5.024V	3.372V	5.164V	25.201				230.30V
2	2.456A	0.996A	0.979A	0.388A	40.012	84.255%	0	<6.0	0.517
	12.099V	5.019V	3.368V	5.155V	47.489				230.33V
3	3.654A	1.497A	1.455A	0.583A	59.521	76.070%	771	18.2	0.668
	12.075V	5.012V	3.364V	5.147V	78.245				230.33V
4	4.912A	2.000A	1.965A	0.779A	79.906	81.593%	818	18.5	0.731
	12.070V	5.006V	3.360V	5.139V	97.933				230.33V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	86.3 mV	21.7 mV	17.6 mV	17.0 mV	Pass
20% Load	11.8 mV	20.6 mV	34.2 mV	19.6 mV	Pass
30% Load	31.7 mV	22.7 mV	18.4 mV	19.9 mV	Pass
40% Load	30.8 mV	21.2 mV	19.7 mV	19.9 mV	Pass
50% Load	29.2 mV	22.7 mV	20.5 mV	21.8 mV	Pass
60% Load	29.2 mV	22.4 mV	22.8 mV	24.3 mV	Pass
70% Load	27.3 mV	23.9 mV	24.8 mV	24.8 mV	Pass
80% Load	38.1 mV	26.8 mV	28.4 mV	25.7 mV	Pass
90% Load	27.9 mV	24.6 mV	29.7 mV	27.5 mV	Pass
100% Load	42.4 mV	28.3 mV	31.7 mV	30.1 mV	Pass
110% Load	43.4 mV	27.8 mV	31.3 mV	30.7 mV	Pass
Crossload 1	20.8 mV	32.5 mV	32.9 mV	23.4 mV	Pass
Crossload 2	40.9 mV	26.1 mV	23.3 mV	25.8 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 Bronze 550



Top side

550W MODEL / 型 Switching Power S					
AC INPUT 交流輸入/交流輸入	100-240V~, 8-4A, 50-60Hz				
DC OUTPUT 直流輸出/直流輸出	+5V	+3.3V	+12V	-12V	+5VSB
	20A	20A	45.8A	0.3A	3A
TOTAL POWER 總功率/總功率	120W	549.6W	3.6W	15W	
	550W				



Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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