

Anex

Cooler Master MWE Bronze 750

Lab ID#: CM19750038

Receipt Date: Jul 5, 2019

Test Date: May 17, 2019

Report:

Report Date: Jun 21, 2019

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Gospower
Series	MWE Bronze
Model Number	
Serial Number	MPE7501ACAAB1191400001
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-6
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✓
Cable Design	Fixed cables

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	120		750	15	3.6
Total Max. Power (W)		750				

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
8 pin EPS12V (630mm) / 4+4 pin EPS12V (120mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (530mm+120mm)	2	4	16-18AWG	No
SATA (530mm+120mm+120mm+120mm)	2	8	18AWG	No
4-pin Molex (520mm+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 GBU2508 (800V, 25A @ 100°C)
APFC MOSFETS	2x Sanrise Tech SRC60R140B (630V, 11.2A @ 125°C, 0.14Ohm)
APFC Boost Diode	1x Cengol CGC1S06510 (650V, 10A @ 150°C)
Hold-up Cap(s)	1x Elite (420V, 680uF, 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	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Fluid Dynamic 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	85.672%
Efficiency With 10W (≤500W) or 2% (>500W)	72.857
Average Efficiency 5VSB	78.167%
Standby Power Consumption (W)	0.0765161
Average PF	0.972
Avg Noise Output	42.09 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	S

230V

Average Efficiency	87.845%
Average Efficiency 5VSB	77.554%
Standby Power Consumption (W)	0.1901850
Average PF	0.907
Avg Noise Output	42.23 dB(A)
Efficiency Rating (ETA)	
Noise Rating (LAMBDA)	S

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	Brüel & Kjær 2270 G4
Microphone	Brüel & Kjær 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)	22.4
AC Loss to PWR_OK Hold Up Time (ms)	21
PWR_OK Inactive to DC Loss Delay (ms)	1.4

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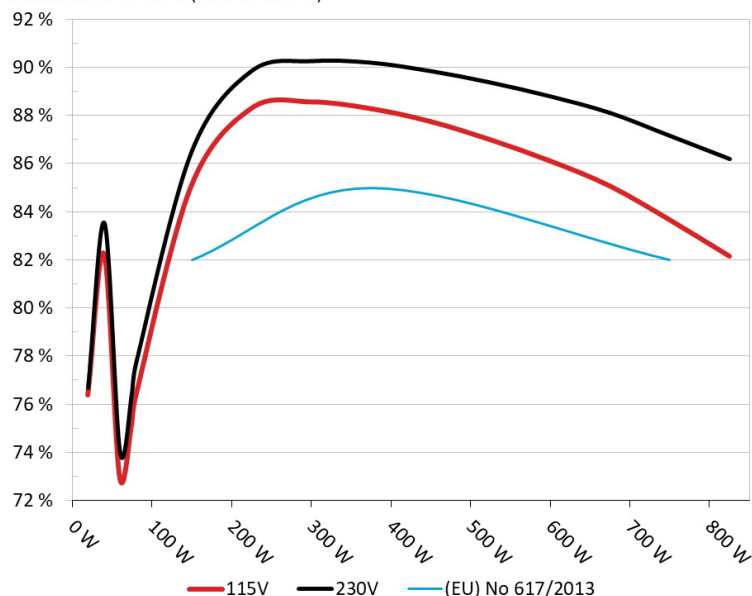
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE Bronze 750

Ambient: 32°C - 40°C (89.6°F - 104°F)



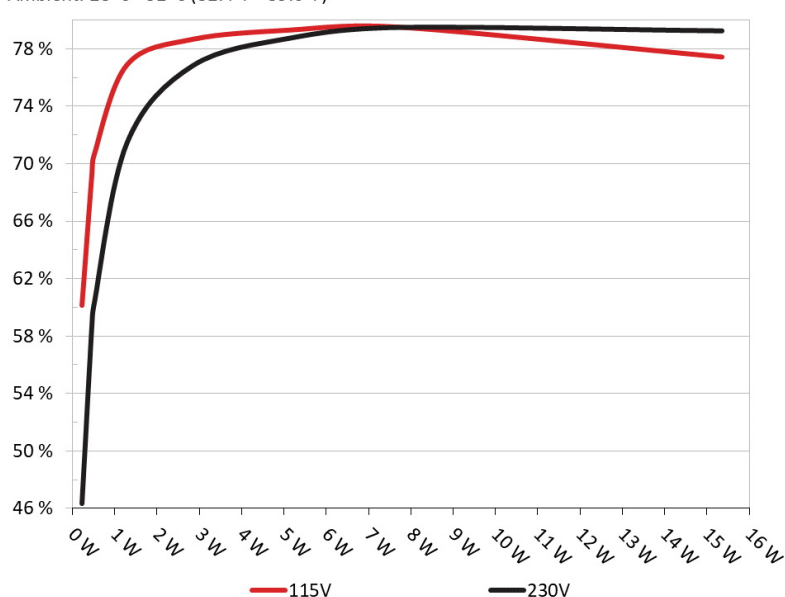
INFO

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 750

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 750

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.234	60.154%	0.025
	5.188V	0.389		115.13V
2	0.090A	0.467	69.288%	0.043
	5.187V	0.674		115.13V
3	0.550A	2.848	78.696%	0.203
	5.177V	3.619		115.12V
4	1.000A	5.167	79.346%	0.304
	5.166V	6.512		115.12V
5	1.500A	7.733	79.541%	0.369
	5.154V	9.722		115.12V
6	3.000A	15.356	77.462%	0.447
	5.118V	19.824		115.12V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.234	46.337%	0.010
	5.188V	0.505		230.30V
2	0.090A	0.467	58.742%	0.016
	5.187V	0.795		230.30V
3	0.550A	2.848	76.828%	0.070
	5.177V	3.707		230.33V
4	1.000A	5.167	78.765%	0.120
	5.166V	6.560		230.31V
5	1.500A	7.733	79.500%	0.169
	5.154V	9.727		230.31V
6	3.000A	15.356	79.261%	0.276
	5.119V	19.374		230.31V

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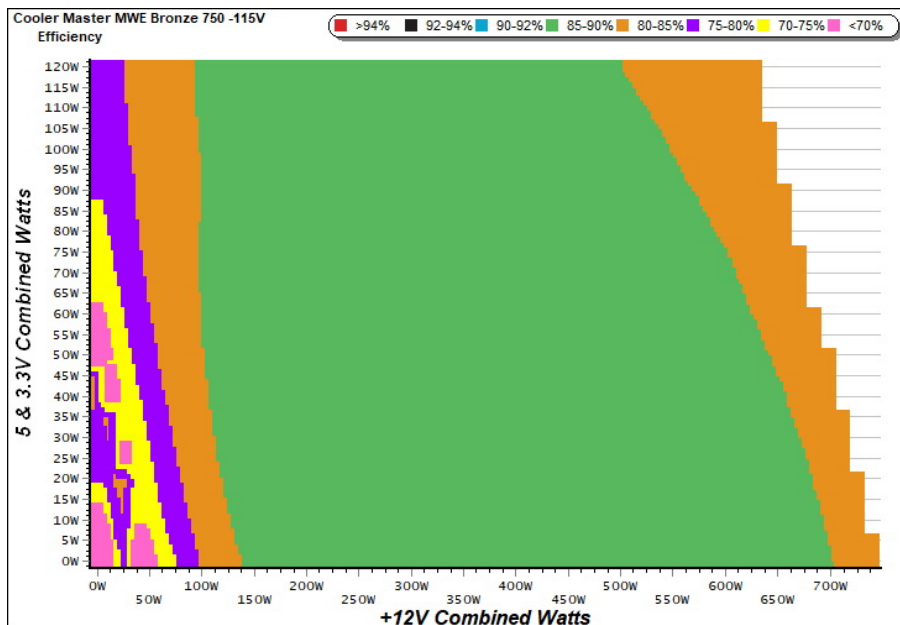
115V

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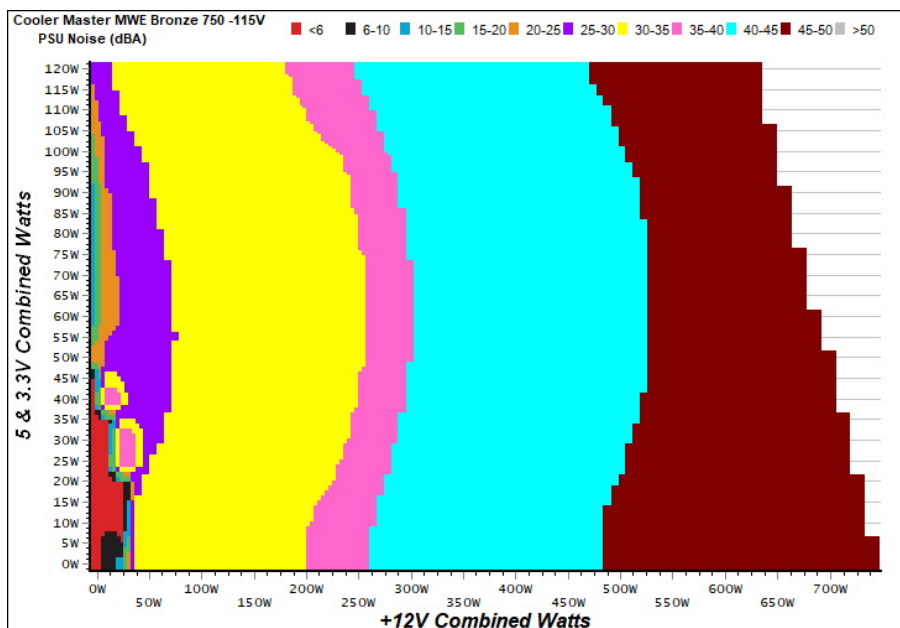
EFFICIENCY GRAPH 115V



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

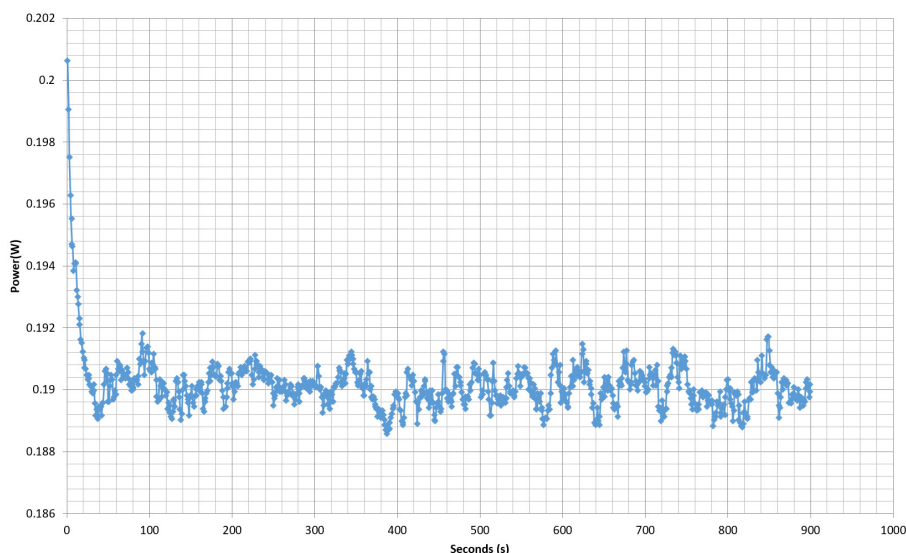
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - MPE7501ACAAB1191400001 - 16/05/2019 - 10:53



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	4.365A	2.019A	1.981A	0.970A	74.479	75.170%	1434	31.8	34.35°C	0.963
	12.113V	4.955V	3.331V	5.157V	99.081				39.76°C	115.12V
2	9.788A	3.035A	2.978A	1.167A	149.347	85.065%	1845	38.3	35.18°C	0.949
	12.101V	4.943V	3.323V	5.144V	175.569				40.87°C	115.11V
3	15.624A	3.546A	3.465A	1.364A	224.870	88.301%	1761	38.0	35.56°C	0.956
	12.089V	4.934V	3.317V	5.133V	254.663				41.99°C	115.11V
4	21.430A	4.062A	3.988A	1.562A	299.650	88.569%	1944	40.1	35.72°C	0.969
	12.060V	4.925V	3.310V	5.121V	338.325				42.61°C	115.11V
5	26.899A	5.090A	4.995A	1.762A	374.580	88.289%	2162	42.6	36.18°C	0.977
	12.048V	4.913V	3.302V	5.108V	424.266				43.63°C	115.10V
6	32.383A	6.122A	6.011A	1.963A	449.509	87.756%	2314	44.0	36.54°C	0.981
	12.034V	4.902V	3.294V	5.095V	512.226				45.24°C	115.10V
7	37.907A	7.159A	7.030A	2.165A	524.829	86.998%	2469	46.0	37.29°C	0.985
	12.022V	4.890V	3.286V	5.082V	603.268				46.35°C	115.10V
8	43.446A	8.201A	8.056A	2.368A	600.158	86.112%	2469	46.0	37.93°C	0.987
	12.009V	4.878V	3.278V	5.069V	696.951				47.39°C	115.09V
9	49.361A	8.730A	8.560A	2.372A	674.692	85.079%	2467	46.0	38.63°C	0.988
	11.997V	4.869V	3.271V	5.060V	793.018				49.13°C	115.09V
10	55.087A	9.262A	9.101A	2.979A	749.930	83.670%	2468	46.0	39.36°C	0.990
	11.985V	4.859V	3.264V	5.036V	896.291				50.63°C	115.11V
11	61.431A	9.276A	9.117A	2.983A	825.164	82.157%	2469	46.0	40.18°C	0.992
	11.972V	4.852V	3.258V	5.029V	1004.371				52.57°C	115.12V
CL1	0.149A	14.000A	14.000A	0.000A	116.448	76.782%	2461	45.9	36.03°C	0.955
	12.097V	4.890V	3.299V	5.153V	151.660				43.56°C	115.12V
CL2	62.523A	1.002A	1.001A	1.000A	763.013	84.112%	2468	46.0	39.53°C	0.990
	11.991V	4.904V	3.285V	5.098V	907.143				50.70°C	115.09V

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Cooler Master MWE Bronze 750

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	1.197A	0.504A	0.478A	0.193A	19.562	76.390%	0	<6.0	0.732
	12.083V	4.968V	3.339V	5.182V	25.608				115.13V
2	2.456A	1.008A	0.987A	0.387A	39.984	82.251%	0	<6.0	0.890
	12.087V	4.964V	3.336V	5.175V	48.612				115.12V
3	3.638A	1.512A	1.470A	0.581A	59.478	72.990%	1295	28.6	0.938
	12.116V	4.959V	3.333V	5.168V	81.488				115.12V
4	4.891A	2.018A	1.979A	0.775A	79.826	76.362%	1386	30.5	0.965
	12.112V	4.954V	3.330V	5.160V	104.536				115.12V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.6 mV	18.9 mV	18.8 mV	17.7 mV	Pass
20% Load	15.1 mV	19.3 mV	14.1 mV	16.7 mV	Pass
30% Load	27.7 mV	19.1 mV	15.2 mV	15.3 mV	Pass
40% Load	23.4 mV	19.1 mV	15.7 mV	15.2 mV	Pass
50% Load	22.7 mV	19.7 mV	17.0 mV	15.5 mV	Pass
60% Load	31.0 mV	22.2 mV	19.3 mV	18.5 mV	Pass
70% Load	22.0 mV	19.9 mV	19.6 mV	18.0 mV	Pass
80% Load	28.2 mV	20.9 mV	24.0 mV	19.8 mV	Pass
90% Load	23.8 mV	20.7 mV	24.7 mV	20.8 mV	Pass
100% Load	36.2 mV	21.9 mV	24.7 mV	23.7 mV	Pass
110% Load	35.2 mV	22.4 mV	25.6 mV	23.9 mV	Pass
Crossload 1	18.9 mV	26.0 mV	29.1 mV	16.5 mV	Pass
Crossload 2	33.2 mV	21.5 mV	16.1 mV	20.6 mV	Pass

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Cooler Master MWE Bronze 750

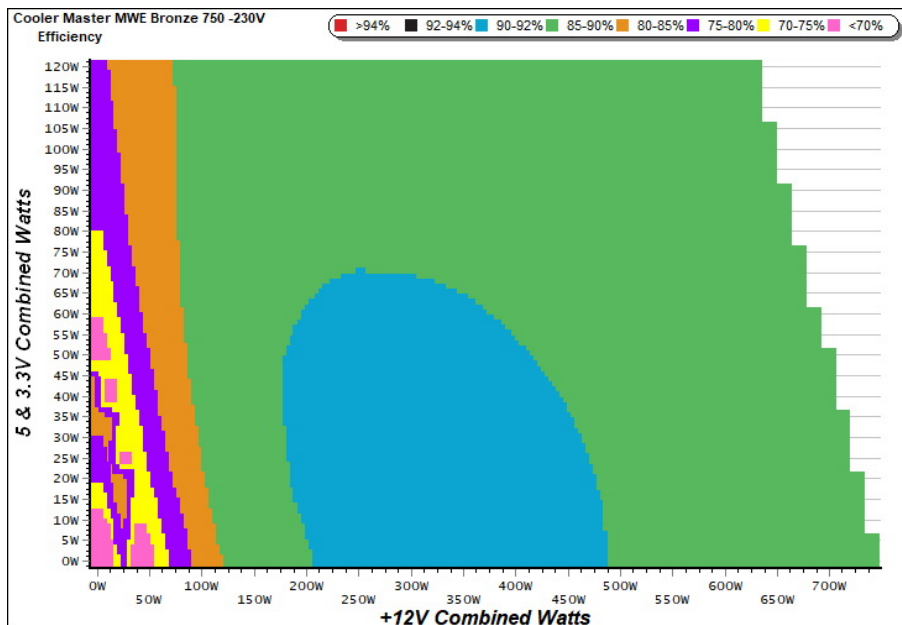
230V

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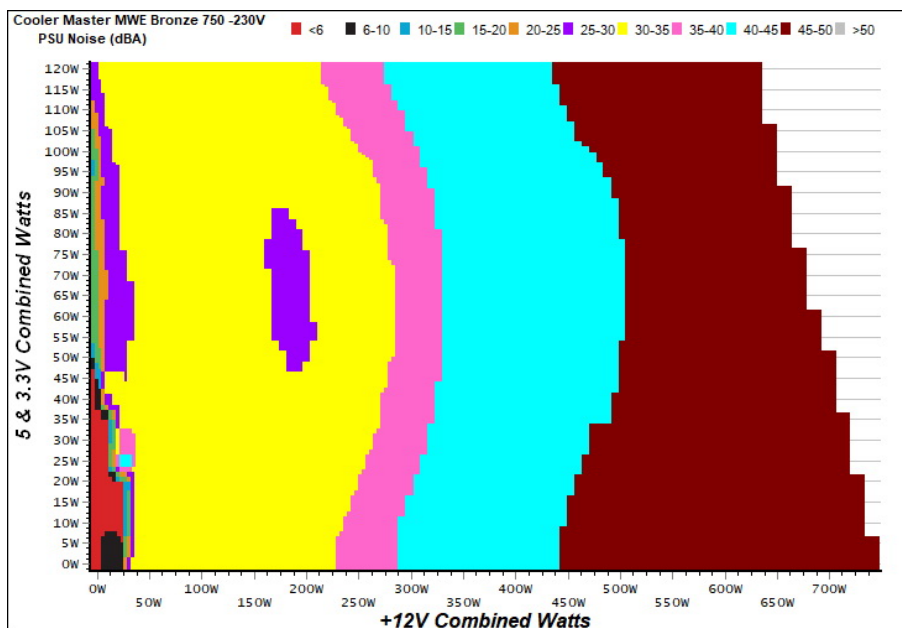
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



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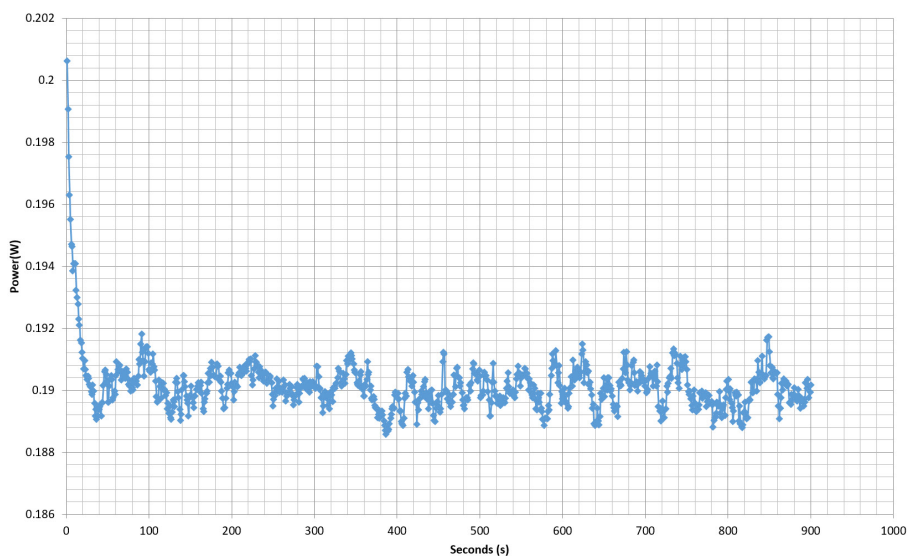
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10-110% LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.368A	2.019A	1.981A	0.970A	74.509	76.434%	1428	31.6	34.10°C	0.734
	12.112V	4.955V	3.331V	5.156V	97.482				40.15°C	230.31V
2	9.793A	3.036A	2.977A	1.167A	149.398	86.484%	1875	38.4	34.86°C	0.850
	12.100V	4.943V	3.323V	5.144V	172.746				41.33°C	230.32V
3	15.630A	3.548A	3.467A	1.364A	224.922	89.851%	1763	38.1	35.00°C	0.886
	12.087V	4.934V	3.316V	5.132V	250.328				42.08°C	230.32V
4	21.437A	4.064A	3.987A	1.563A	299.724	90.260%	1986	40.8	35.74°C	0.915
	12.059V	4.925V	3.310V	5.120V	332.066				43.47°C	230.33V
5	26.913A	5.090A	4.998A	1.762A	374.677	90.195%	2156	42.7	36.03°C	0.930
	12.045V	4.913V	3.302V	5.107V	415.410				44.55°C	230.34V
6	32.394A	6.123A	6.010A	1.963A	449.603	89.845%	2394	44.6	36.61°C	0.938
	12.033V	4.901V	3.294V	5.094V	500.420				45.62°C	230.34V
7	37.925A	7.161A	7.033A	2.165A	524.935	89.369%	2469	46.0	37.16°C	0.944
	12.019V	4.889V	3.285V	5.081V	587.379				46.95°C	230.34V
8	43.466A	8.205A	8.055A	2.369A	600.271	88.791%	2467	46.0	37.53°C	0.951
	12.006V	4.877V	3.277V	5.068V	676.051				47.88°C	230.35V
9	49.382A	8.733A	8.561A	2.372A	674.803	88.107%	2460	45.9	38.29°C	0.956
	11.994V	4.868V	3.271V	5.059V	765.889				49.24°C	230.35V
10	55.108A	9.265A	9.103A	2.979A	750.017	87.154%	2466	46.0	39.74°C	0.960
	11.982V	4.858V	3.263V	5.035V	860.564				51.26°C	230.35V
11	61.449A	9.276A	9.119A	2.984A	825.246	86.189%	2467	46.0	40.23°C	0.963
	11.970V	4.851V	3.257V	5.028V	957.482				52.44°C	230.34V
CL1	0.152A	14.002A	14.003A	0.000A	116.504	78.120%	2458	45.9	36.26°C	0.831
	12.096V	4.890V	3.299V	5.153V	149.134				44.47°C	230.34V
CL2	62.530A	1.003A	1.001A	1.000A	762.912	87.656%	2468	46.0	39.99°C	0.960
	11.988V	4.903V	3.284V	5.097V	870.348				51.31°C	230.34V

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20-80W LOAD TESTS 230V

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1	1.202A	0.504A	0.478A	0.193A	19.631	76.669%	0	<6.0	0.354
	12.088V	4.970V	3.340V	5.181V	25.605				230.33V
2	2.460A	1.008A	0.987A	0.387A	40.041	83.523%	0	<6.0	0.528
	12.090V	4.965V	3.337V	5.174V	47.940				230.33V
3	3.642A	1.514A	1.470A	0.581A	59.533	74.029%	1433	31.7	0.679
	12.115V	4.959V	3.333V	5.167V	80.418				230.33V
4	4.896A	2.020A	1.979A	0.775A	79.892	77.708%	1450	32.3	0.746
	12.111V	4.954V	3.330V	5.160V	102.810				230.33V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.2 mV	19.0 mV	13.4 mV	16.9 mV	Pass
20% Load	14.9 mV	19.1 mV	14.4 mV	15.3 mV	Pass
30% Load	29.9 mV	19.9 mV	14.8 mV	14.9 mV	Pass
40% Load	25.5 mV	19.1 mV	15.6 mV	14.6 mV	Pass
50% Load	22.8 mV	19.7 mV	16.1 mV	14.8 mV	Pass
60% Load	22.0 mV	19.4 mV	19.0 mV	16.4 mV	Pass
70% Load	21.8 mV	20.2 mV	18.7 mV	16.6 mV	Pass
80% Load	30.7 mV	21.8 mV	22.4 mV	18.5 mV	Pass
90% Load	21.2 mV	20.6 mV	23.3 mV	18.7 mV	Pass
100% Load	37.1 mV	23.1 mV	25.1 mV	23.9 mV	Pass
110% Load	36.0 mV	22.6 mV	27.1 mV	24.2 mV	Pass
Crossload 1	17.6 mV	26.2 mV	28.5 mV	16.7 mV	Pass
Crossload 2	34.0 mV	21.6 mV	16.3 mV	19.1 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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Anex

Cooler Master MWE Bronze 750



Top side

750W MODEL / 型					
Switching Power S					
AC INPUT	100-240V~, 10-6A, 50-60Hz				
交流輸入/交流輸入					
DC OUTPUT	+5V	+3.3V	+12V	-12V	+5VSB
直流輸出/直流輸出	20A	20A	62.5A	0.3A	3A
TOTAL POWER	120W	750W	3.6W	15W	
總功率/總功率	750W				

Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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