

Lab ID#: CM19500053
Receipt Date: Jul 5, 2019
Test Date: Nov 6, 2019

Report:
Report Date: Jun 21, 2019

DUT INFORMATION	
Brand	Cooler Master
Manufacturer (OEM)	Gospower
Series	MWE Bronze
Model Number	
Serial Number	MPE5001ACAAB1191400001
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	8-4
Rated Frequency (Hz)	50-60
Rated Power (W)	500
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (DF1202512SELN)
Semi-Passive Operation	✓
Cable Design	Fixed cables

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
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	85.601%
Efficiency With 10W (≤500W) or 2% (>500W)	68.580
Average Efficiency 5VSB	78.447%
Standby Power Consumption (W)	0.0756239
Average PF	0.974
Avg Noise Output	30.07 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	87.864%
Average Efficiency 5VSB	77.951%
Standby Power Consumption (W)	0.1812340
Average PF	0.896
Avg Noise Output	29.96 dB(A)
Efficiency Rating (ETA)	
Noise Rating (LAMBDA)	A-

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	41.6	3	0.3
	Watts	120		499.2	15	3.6
Total Max. Power (W)		500				

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CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (620mm)	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 (510mm+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, 0.20hm)
APFC Boost Diode	1x Jilin Sino Microelectronics 15F60UHF (600V, 15A @ 100°C)
Hold-up Cap(s)	1x Elite (420V, 390uF, 2000h @ 85°C, GM)
Main Switchers	2x Jilin Sino Microelectronics JCS13N50FC (500V, 8A @ 100°C, 0.490hm)
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 NCE4080 (40V, 56A @ 100°C, 6.5mOhm)
5V & 3.3V	DC-DC Converters: 4x IPS FTD05N03NA (30V, 75A @ 100°C, 6mOhm) PWM Controllers: ANPEC APW7159C
Filtering Capacitors	Electrolytics: 5x Elite (2-5,000h @ 105°C, ED), 4x 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

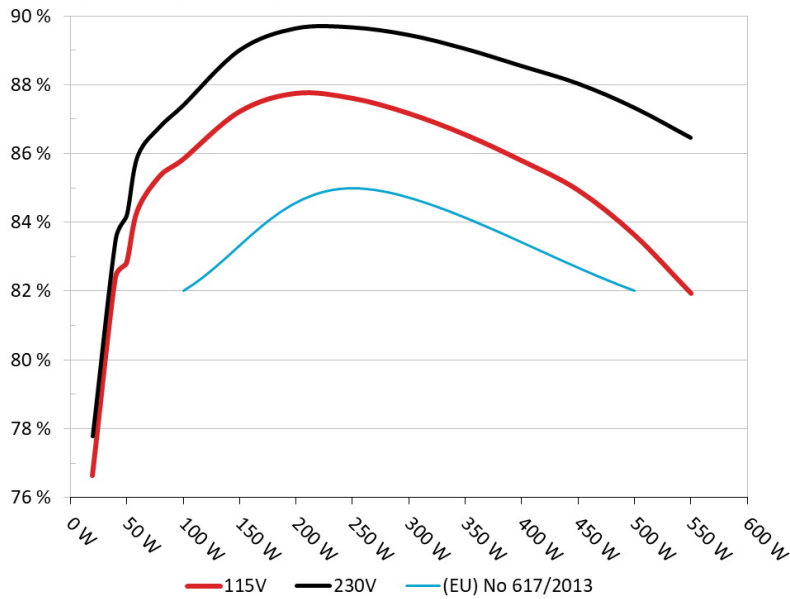
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE Bronze 500

Ambient: 32°C - 40°C (89.6°F - 104°F)



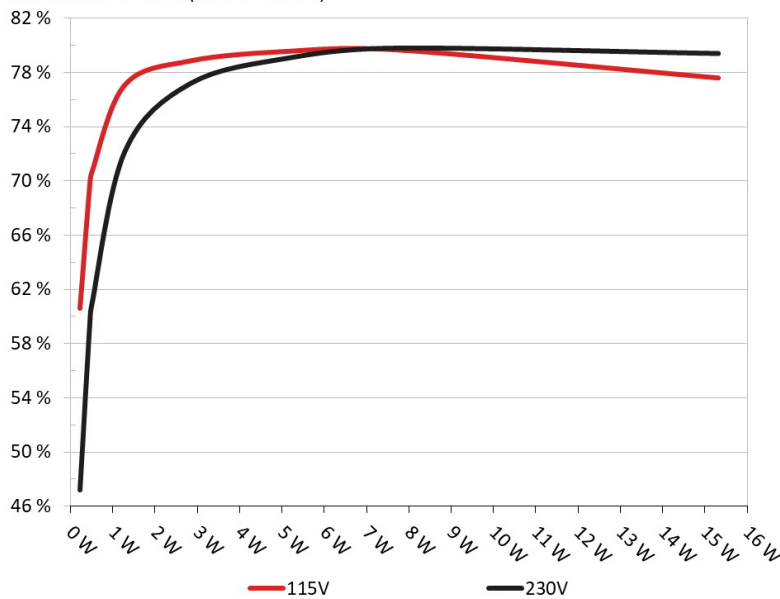
INFO

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 500

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.234	60.622%	0.025
	5.178V	0.386		115.13V
2	0.090A	0.467	69.806%	0.044
	5.177V	0.669		115.13V
3	0.550A	2.842	78.835%	0.207
	5.166V	3.605		115.13V
4	1.000A	5.156	79.543%	0.310
	5.155V	6.482		115.12V
5	1.500A	7.715	79.643%	0.376
	5.142V	9.687		115.13V
6	3.000A	15.314	77.579%	0.455
	5.105V	19.740		115.14V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.234	47.177%	0.010
	5.178V	0.496		230.29V
2	0.090A	0.467	59.566%	0.015
	5.177V	0.784		230.28V
3	0.550A	2.842	77.186%	0.070
	5.166V	3.682		230.29V
4	1.000A	5.156	79.068%	0.120
	5.155V	6.521		230.29V
5	1.500A	7.715	79.799%	0.169
	5.142V	9.668		230.29V
6	3.000A	15.314	79.401%	0.277
	5.105V	19.287		230.29V

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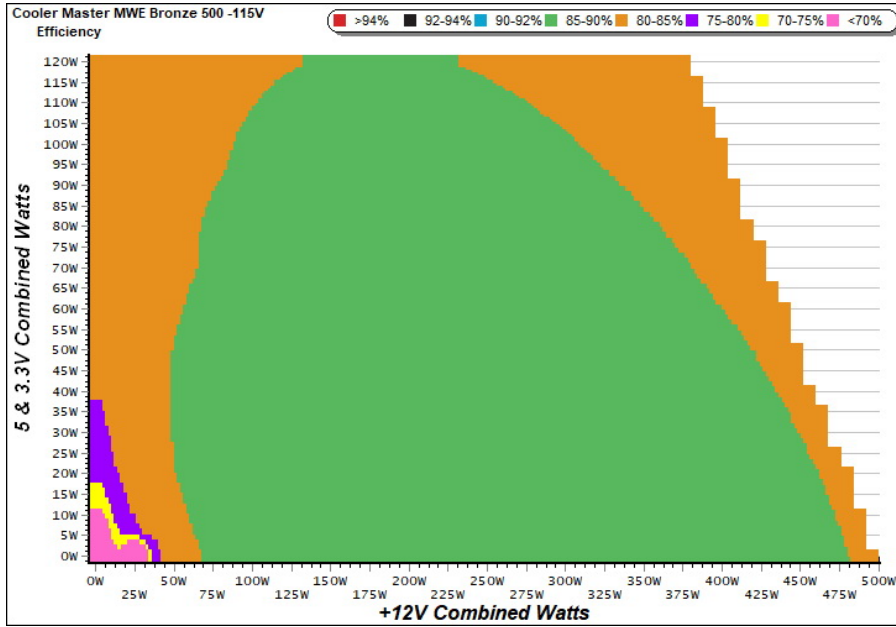
115V

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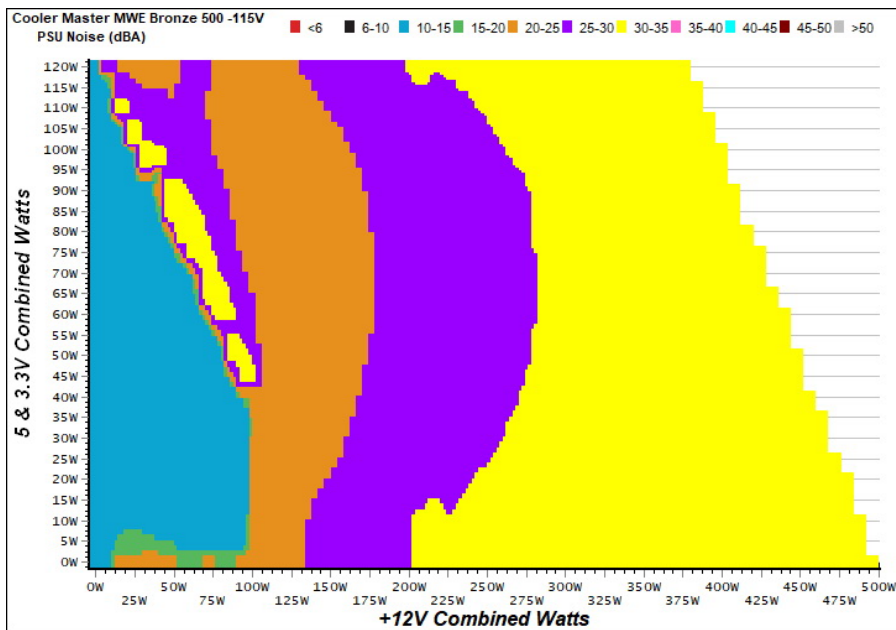
EFFICIENCY GRAPH 115V



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

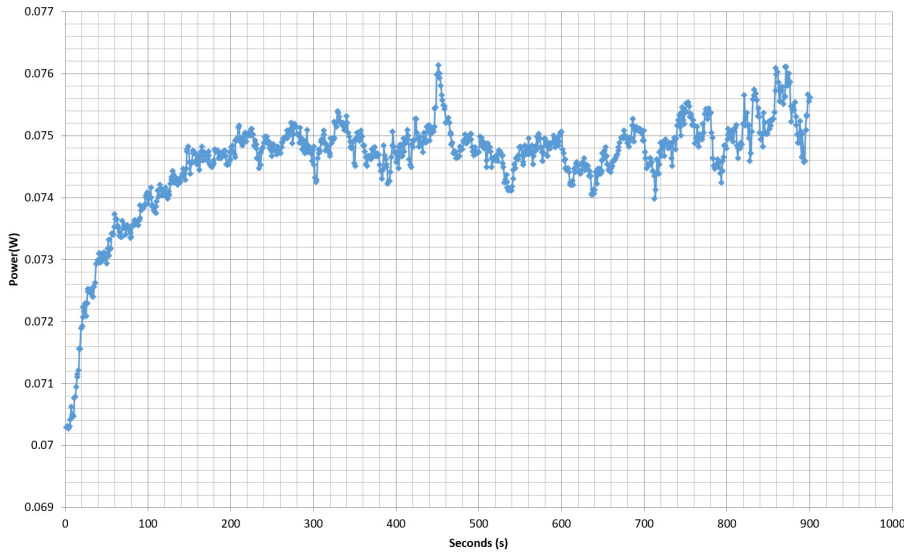
The PSU's noise in its entire operational range and under 30-32 °C (+-2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - MPE5001ACAAB1191400001 - 07/06/2019 - 10:05



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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COMMISSION REGULATION (EU) NO 617/2013 TESTING 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
2	5.688A	3.005A	2.956A	1.169A	99.854	85.826%	0	<6.0	41.17°C	0.964
	12.122V	4.995V	3.348V	5.131V	116.345				34.88°C	115.13V
5	16.500A	5.040A	4.965A	1.766A	249.881	87.604%	1251	29.1	36.05°C	0.977
	12.083V	4.963V	3.323V	5.096V	285.238				44.55°C	115.13V
10	34.115A	9.160A	9.044A	2.986A	499.885	83.626%	1489	33.1	39.31°C	0.989
	12.023V	4.914V	3.284V	5.026V	597.760				50.30°C	115.12V

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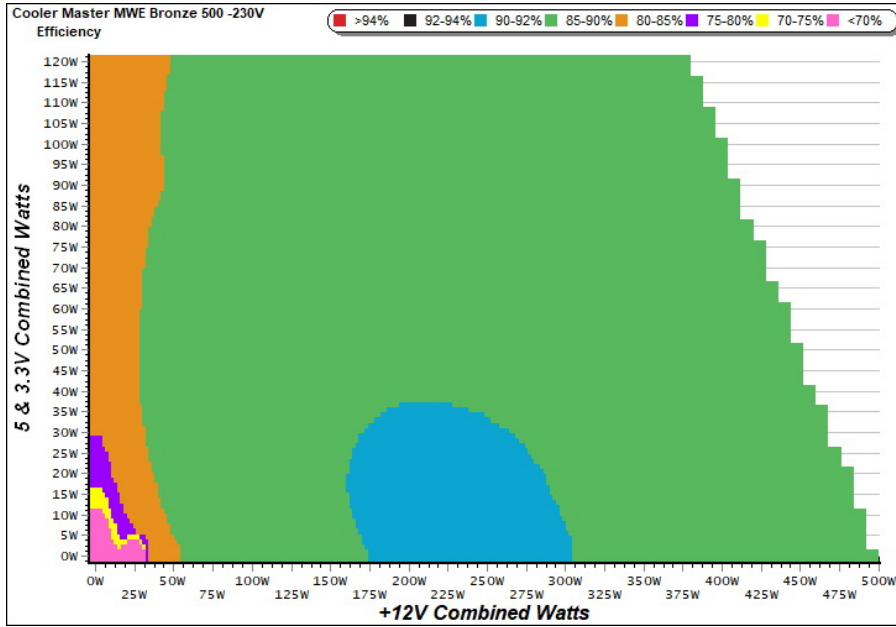
230V

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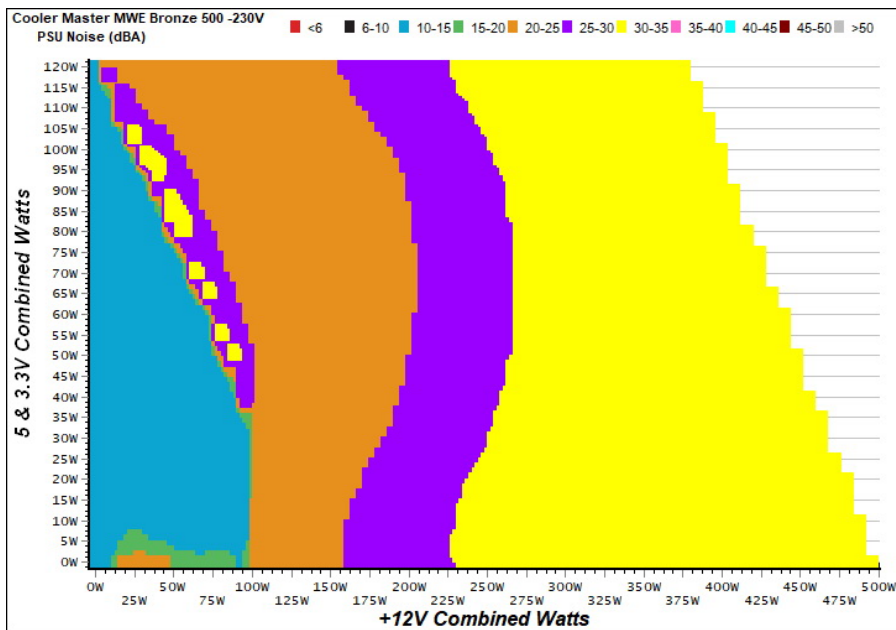
EFFICIENCY GRAPH 230V



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

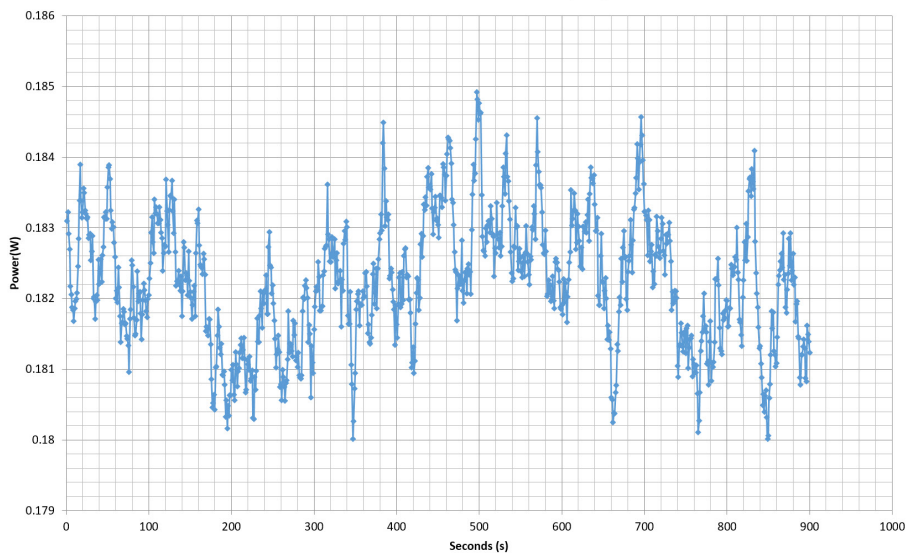
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VAMPIRE POWER -230V

Power - MPE5001ACAAB1191400001 - 07/06/2019 - 10:05



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COMMISSION REGULATION (EU) NO 617/2013 TESTING 230V

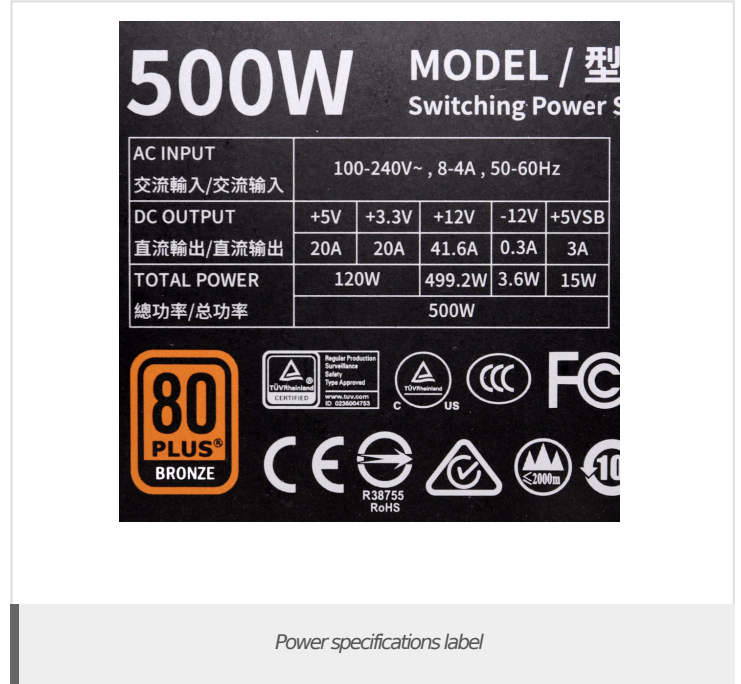
Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
2	5.690A	3.004A	2.956A	1.170A	99.865	87.397%	0	<6.0	40.97°C	0.782
	12.120V	4.994V	3.348V	5.131V	114.266				34.55°C	230.29V
5	16.505A	5.040A	4.967A	1.766A	249.872	89.662%	1246	28.5	36.25°C	0.921
	12.079V	4.962V	3.322V	5.096V	278.681				43.89°C	230.29V
10	34.131A	9.166A	9.053A	2.987A	499.886	87.331%	1495	33.2	39.90°C	0.959
	12.017V	4.912V	3.281V	5.024V	572.405				50.63°C	230.29V

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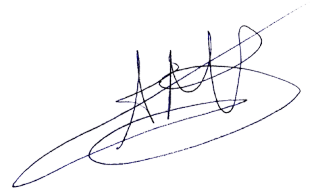


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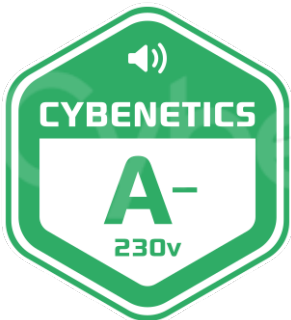
Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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