

Anex

Maxpower MP-0550W-B

Lab ID#: MP55002320
 Receipt Date: Dec 12, 2023
 Test Date: Jan 8, 2024

Report: 24PS2320A
 Report Date: Jan 9, 2024

DUT INFORMATION	
Brand	Maxpower
Manufacturer (OEM)	Maxpower
Series	Cyclops M1
Model Number	M1-550B
Serial Number	
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	4-9
Rated Frequency (Hz)	47-63
Rated Power (W)	550
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (BDH12025S)
Semi-Passive Operation	X
Cable Design	Fixed cables

TEST EQUIPMENT	
Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, 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, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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

Anex

Maxpower MP-0550W-B

RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	ErP Lot 6 2013: Partially ErP Lot 3 2014 & CEC: Partially
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	84.526%
Efficiency With 10W (≤500W) or 2% (>500W)	59.039
Average Efficiency 5VSB	71.700%
Standby Power Consumption (W)	0.1255000
Average PF	0.964
Avg Noise Output	30.93 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	85.653%
Average Efficiency 5VSB	67.979%
Standby Power Consumption (W)	0.3108000
Average PF	0.883
Avg Noise Output	30.43 dB(A)
Efficiency Rating (ETA)	
Noise Rating (LAMBDA)	Standard++

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	8	9	38.5	2	0.5
	Watts	71		462	10	6
Total Max. Power (W)		550				

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

Hold-Up Time (ms)	9.4
AC Loss to PWR_OK Hold Up Time (ms)	15.5
PWR_OK Inactive to DC Loss Delay (ms)	-6.1

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

CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 24 pin (550mm)	1	1	18AWG	No
4+4 pin EPS12V (660mm)	1	1	18AWG	No
6+2 pin PCIe (580mm+145mm)	1	2	18AWG	No
SATA (460mm+150mm)	2	4	18AWG	No
4-pin Molex (480mm+150mm)	1	2	18AWG	No

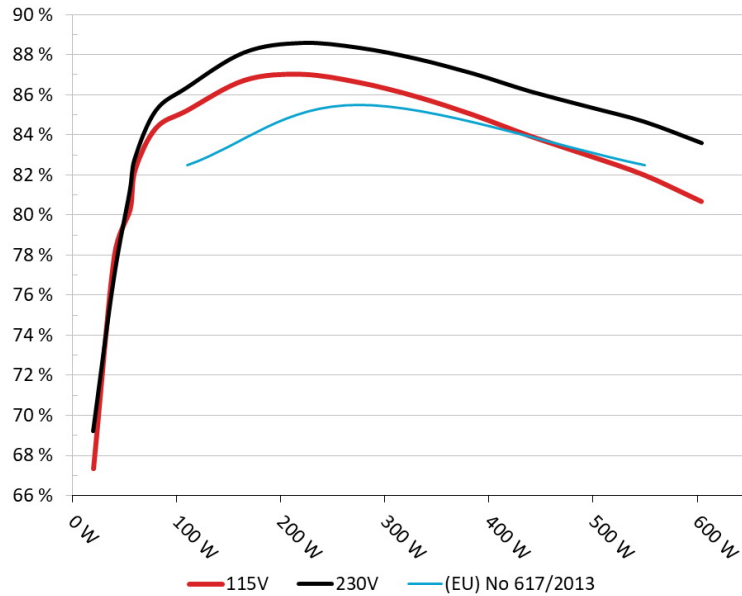
All data and graphs included in this test report can be used by any individual on the following conditions:

- > 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

EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Gamdias Cyclops M1 550B

Ambient: 30°C - 40°C (86°F - 104°F)



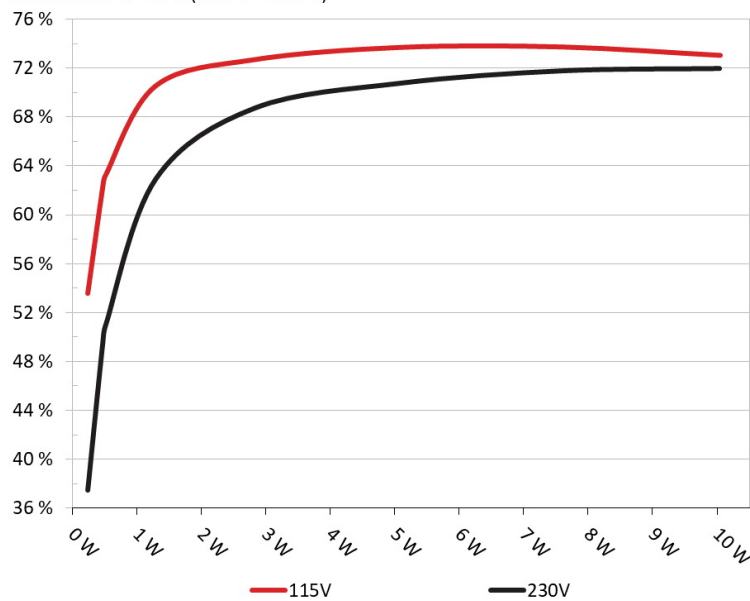
INFO

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: Gamdias Cyclops M1 550B

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

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233W	53.06%	0.066
	5.178V	0.439W		114.93V
2	0.09A	0.466W	61.784%	0.11
	5.174V	0.754W		114.93V
3	0.55A	2.826W	72.2%	0.332
	5.139V	3.914W		114.91V
4	1A	5.103W	73.202%	0.387
	5.103V	6.971W		114.91V
5	1.5A	7.597W	73.231%	0.418
	5.064V	10.373W		114.9V
6	2A	10.049W	72.547%	0.437
	5.024V	13.852W		114.91V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233W	36.952%	0.029
	5.177V	0.633W		229.89V
2	0.09A	0.466W	49.009%	0.043
	5.174V	0.952W		229.88V
3	0.55A	2.826W	68.244%	0.166
	5.138V	4.147W		229.88V
4	1A	5.102W	70.293%	0.245
	5.102V	7.258W		229.88V
5	1.5A	7.594W	71.299%	0.292
	5.062V	10.653W		229.88V
6	2A	10.042W	71.489%	0.327
	5.021V	14.044W		229.88V

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

Anex

Maxpower MP-0550W-B

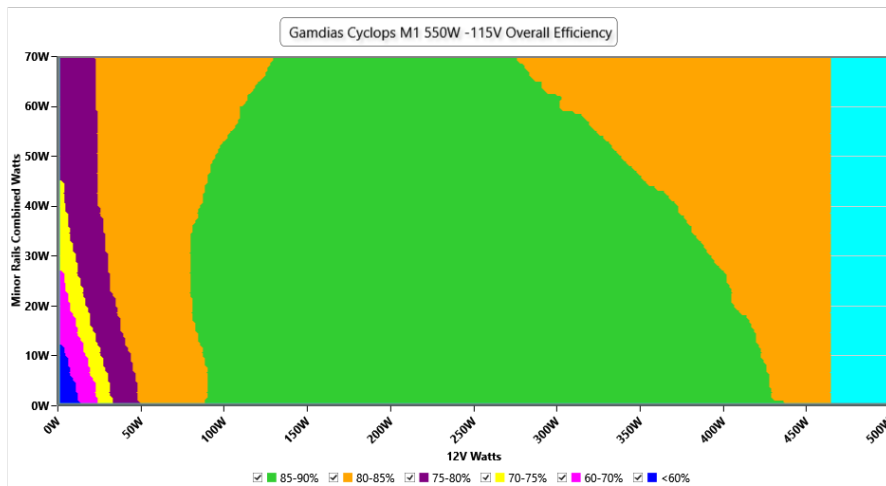
115V

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

PAGE 6/16

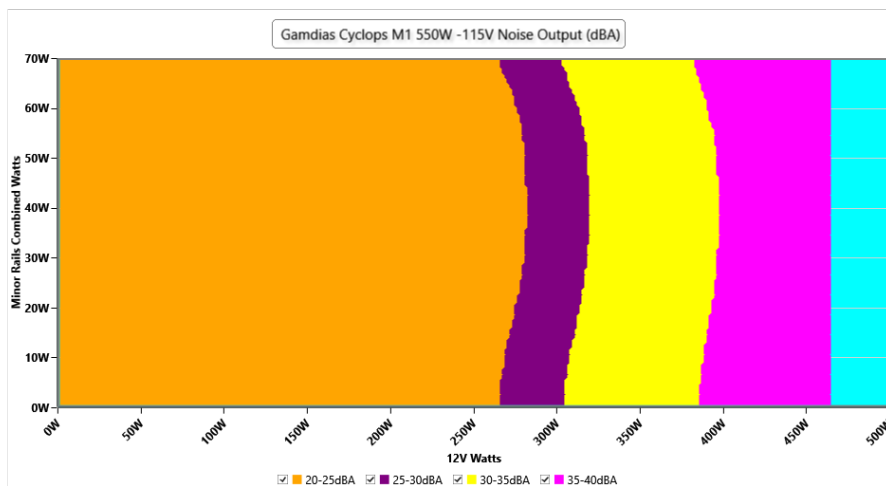
EFFICIENCY GRAPH 115V



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

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

VAMPIRE POWER -115V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.94 V	114.86 V	113.85 V	115.03 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.421	1.419	1.340	1.423	1.490	PASS
Mains Voltage THD:	0.30 %	0.22 %	N/A	0.40 %	2.00 %	PASS
Real Power:	0.126 W	0.112 W	N/A	0.140 W	N/A	N/A
Apparent Power:	6.478 W	6.462 W	N/A	6.499 W	N/A	N/A
Power Factor:	0.019	N/A	N/A	N/A	N/A	N/A

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

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

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
10%	2.684A	1.941A	1.947A	0.986A	55.003	79.746%	926	21.7	34.24°C	0.94
	12.445V	5.152V	3.39V	5.073V	68.973				38.49°C	114.9V
20%	6.364A	2.929A	2.938A	1.191A	109.94	84.726%	925	21.7	34.93°C	0.939
	12.420V	5.121V	3.37V	5.039V	129.765				39.51°C	114.88V
30%	10.399A	3.433A	3.445A	1.398A	164.938	86.23%	926	21.7	35.31°C	0.956
	12.394V	5.099V	3.353V	5.006V	191.276				40.39°C	114.86V
40%	14.458A	3.941A	3.956A	1.609A	220.02	86.53%	937	22.2	35.7°C	0.966
	12.368V	5.075V	3.337V	4.973V	254.269				41.22°C	114.84V
50%	18.191A	4.96A	4.979A	1.824A	275.013	86.121%	1118	27.1	36.34°C	0.972
	12.342V	5.041V	3.314V	4.936V	319.333				42.39°C	114.81V
60%	21.938A	5.992A	6.015A	2A	329.814	85.421%	1342	31.9	36.61°C	0.978
	12.317V	5.007V	3.292V	4.903V	386.093				43.28°C	114.8V
70%	25.704A	7.043A	7.068A	2.263A	385.006	84.501%	1579	36.3	37.48°C	0.983
	12.289V	4.971V	3.269V	4.86V	455.625				44.51°C	114.77V
80%	29.487A	8.107A	8.135A	2.381A	439.481	83.447%	1737	38.5	37.88°C	0.986
	12.262V	4.933V	3.245V	4.83V	526.658				46.01°C	114.75V
90%	33.673A	8.66A	8.678A	2.498A	494.479	82.495%	1856	40.9	38.47°C	0.989
	12.235V	4.907V	3.227V	4.803V	599.4				47.54°C	114.73V
100%	38.089A	9.223A	9.262A	2A	549.165	81.502%	1881	41.0	39.97°C	0.992
	12.204V	4.878V	3.207V	4.829V	673.803				49.98°C	114.7V
110%	42.000A	10.334A	10.478A	2A	604.12	80.183%	1883	41.0	40.12°C	0.993
	12.172V	4.838V	3.178V	4.807V	753.424				51.06°C	114.68V
CL1	0.112A	8.541A	8.511A	0A	72.283	76.566%	988	23.5	34.09°C	0.939
	12.418V	4.999V	3.313V	5.116V	94.413				39.61°C	114.88V
CL2	0.111A	8.94A	0A	0A	46.375	75.945%	930	21.9	34.7°C	0.914
	12.439V	5.033V	3.387V	5.146V	61.062				41.8°C	114.89V
CL3	0.111A	0A	7.866A	0A	27.777	68.541%	928	21.8	34.1°C	0.842
	12.446V	5.173V	3.356V	5.147V	40.526				43.19°C	114.9V
CL4	44.948A	0A	0A	0A	549.479	83.38%	1836	40.8	39.73°C	0.992
	12.225V	5.094V	3.32V	5.056V	659.015				50.67°C	114.71V

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

20-80W 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
20W	1.192A	0.482A	0.483A	0.194A	20.002	66.845%	925	21.7	30.43°C	0.779
	12.459V	5.187V	3.413V	5.152V	29.922				33.52°C	114.9V
40W	2.626A	0.675A	0.678A	0.292A	40.001	77.46%	924	21.7	31.59°C	0.889
	12.453V	5.181V	3.408V	5.14V	51.641				34.95°C	114.9V
60W	4.060A	0.87A	0.873A	0.39A	60	81.775%	923	21.6	32.67°C	0.942
	12.445V	5.173V	3.402V	5.127V	73.372				36.46°C	114.9V
80W	5.494A	1.065A	1.069A	0.489A	79.948	83.844%	924	21.7	33.38°C	0.935
	12.436V	5.165V	3.396V	5.113V	95.354				37.37°C	114.88V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.69mV	15.89mV	20.31mV	14.94mV	Pass
20% Load	16.83mV	16.91mV	21.08mV	15.45mV	Pass
30% Load	24.05mV	17.17mV	21.85mV	16.16mV	Pass
40% Load	27.22mV	18.65mV	22.56mV	17.04mV	Pass
50% Load	33.97mV	18.29mV	23.89mV	18.52mV	Pass
60% Load	47.02mV	19.21mV	25.83mV	18.05mV	Pass
70% Load	58.83mV	19.93mV	28.24mV	19.90mV	Pass
80% Load	70.50mV	21.30mV	31.36mV	19.69mV	Pass
90% Load	52.08mV	21.97mV	32.74mV	20.87mV	Pass
100% Load	73.05mV	25.55mV	38.11mV	24.62mV	Pass
110% Load	81.91mV	27.97mV	40.81mV	27.56mV	Pass
Crossload1	22.97mV	24.37mV	29.98mV	13.82mV	Pass
Crossload2	17.14mV	22.07mV	16.52mV	11.20mV	Pass
Crossload3	16.42mV	18.98mV	25.17mV	11.51mV	Pass
Crossload4	69.38mV	17.89mV	26.57mV	19.61mV	Pass

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

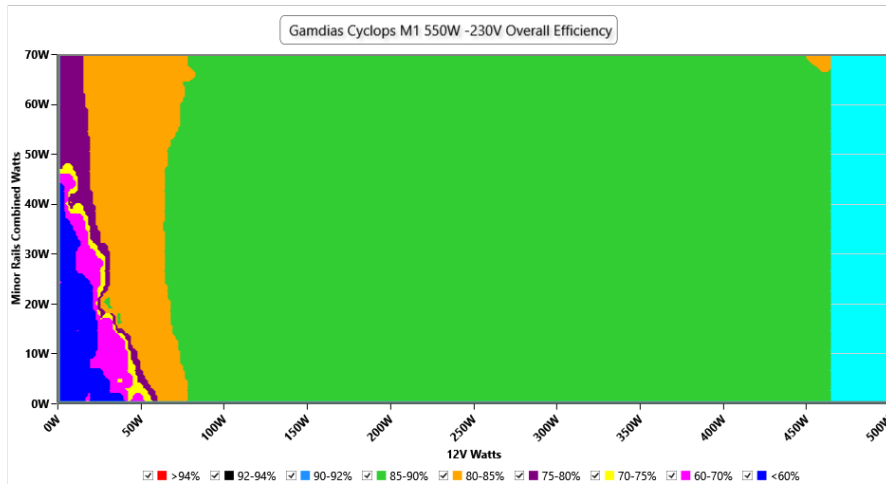
230V

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

PAGE 11/16

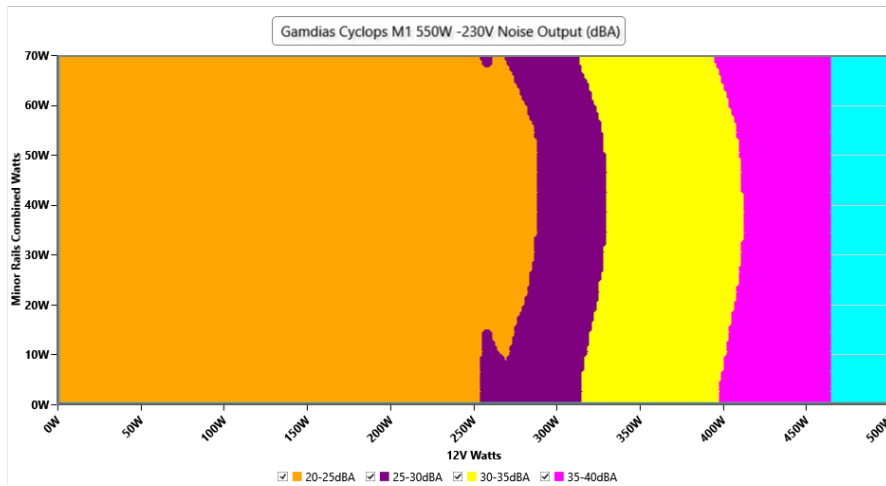
EFFICIENCY GRAPH 230V



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

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

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

VAMPIRE POWER -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.89 V	229.78 V	227.70 V	229.99 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.98 Hz	49.50 Hz	50.02 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.418	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.19 %	0.15 %	N/A	0.26 %	2.00 %	PASS
Real Power:	0.311 W	0.258 W	N/A	0.368 W	N/A	N/A
Apparent Power:	22.026 W	21.982 W	N/A	22.082 W	N/A	N/A
Power Factor:	0.015	N/A	N/A	N/A	N/A	N/A

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

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

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%	2.684A	1.941A	1.947A	0.985A	55.001	80.663%	926	21.7	34.42°C	0.605
	12.443V	5.153V	3.39V	5.074V	68.449				38.62°C	229.88V
20%	6.364A	2.928A	2.939A	1.19A	109.936	85.87%	925	21.7	34.87°C	0.811
	12.419V	5.122V	3.369V	5.041V	128.023				39.39°C	229.87V
30%	10.398A	3.431A	3.445A	1.397A	164.932	87.62%	926	21.7	35.32°C	0.885
	12.395V	5.1V	3.353V	5.01V	188.232				40.38°C	229.86V
40%	14.456A	3.939A	3.957A	1.608A	220.013	88.098%	932	22.0	35.8°C	0.917
	12.369V	5.077V	3.336V	4.976V	249.739				41.31°C	229.85V
50%	18.189A	4.959A	4.98A	1.822A	275.006	87.857%	1123	27.2	36.48°C	0.931
	12.343V	5.042V	3.314V	4.939V	313.022				42.55°C	229.84V
60%	21.936A	5.991A	6.016A	2A	329.814	87.314%	1338	31.9	36.84°C	0.938
	12.318V	5.008V	3.291V	4.906V	377.731				43.39°C	229.83V
70%	25.700A	7.041A	7.069A	2.261A	385.002	86.563%	1572	36.2	37.48°C	0.944
	12.291V	4.972V	3.268V	4.865V	444.77				44.54°C	229.82V
80%	29.482A	8.105A	8.137A	2.379A	439.478	85.679%	1734	38.4	37.96°C	0.948
	12.264V	4.934V	3.245V	4.835V	512.939				45.98°C	229.81V
90%	33.667A	8.66A	8.68A	2.496A	494.479	84.92%	1852	40.9	38.31°C	0.953
	12.237V	4.907V	3.226V	4.808V	582.295				47.35°C	229.8V
100%	38.072A	9.22A	9.26A	2A	549.18	84.163%	1878	41.0	39.44°C	0.957
	12.209V	4.88V	3.208V	4.835V	652.523				49.46°C	229.79V
110%	41.967A	10.328A	10.475A	2A	604.14	83.1%	1880	41.0	40.32°C	0.96
	12.181V	4.84V	3.179V	4.815V	727.001				51.22°C	229.77V
CL1	0.112A	8.542A	8.512A	0A	72.285	77.463%	983	23.4	34.61°C	0.706
	12.417V	4.998V	3.313V	5.116V	93.316				39.98°C	229.87V
CL2	0.111A	8.942A	0A	0A	46.38	59.807%	931	21.9	34.35°C	0.532
	12.439V	5.032V	3.387V	5.146V	60.449				41.44°C	229.88V
CL3	0.111A	0A	7.869A	0A	27.783	50.75%	928	21.8	34.96°C	0.421
	12.446V	5.173V	3.355V	5.147V	40.775				43.98°C	229.88V
CL4	44.947A	0A	0A	0A	549.538	86.015%	1836	40.8	39.91°C	0.956
	12.227V	5.094V	3.32V	5.061V	638.902				50.89°C	229.79V

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

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	1.192A	0.481A	0.483A	0.194A	19.997	68.718%	925	21.7	30.31°C	0.36
	12.463V	5.192V	3.414V	5.154V	29.1				33.37°C	229.89V
40W	2.624A	0.675A	0.678A	0.292A	39.997	76.391%	923	21.6	31.59°C	0.52
	12.454V	5.184V	3.408V	5.141V	52.358				34.91°C	229.88V
60W	4.060A	0.869A	0.873A	0.39A	59.997	82.334%	923	21.6	32.49°C	0.625
	12.445V	5.175V	3.402V	5.128V	72.872				35.99°C	229.88V
80W	5.494A	1.064A	1.069A	0.489A	79.943	84.711%	923	21.6	33.13°C	0.714
	12.435V	5.166V	3.395V	5.114V	94.372				37.01°C	229.88V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.43mV	15.99mV	21.23mV	13.55mV	Pass
20% Load	12.99mV	16.45mV	21.79mV	14.07mV	Pass
30% Load	14.58mV	16.55mV	21.49mV	15.86mV	Pass
40% Load	14.94mV	17.73mV	22.30mV	16.57mV	Pass
50% Load	16.47mV	18.44mV	24.35mV	16.93mV	Pass
60% Load	17.50mV	19.11mV	25.78mV	16.78mV	Pass
70% Load	18.62mV	20.08mV	28.44mV	18.11mV	Pass
80% Load	21.64mV	21.30mV	30.54mV	18.26mV	Pass
90% Load	23.99mV	23.45mV	31.51mV	18.57mV	Pass
100% Load	34.64mV	26.61mV	36.83mV	21.61mV	Pass
110% Load	44.76mV	27.40mV	40.92mV	21.95mV	Pass
Crossload1	20.81mV	22.61mV	28.93mV	12.32mV	Pass
Crossload2	17.75mV	20.79mV	15.86mV	11.10mV	Pass
Crossload3	16.73mV	12.26mV	25.68mV	11.56mV	Pass
Crossload4	39.25mV	18.41mV	26.73mV	17.23mV	Pass

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

Anex

Maxpower MP-0550W-B

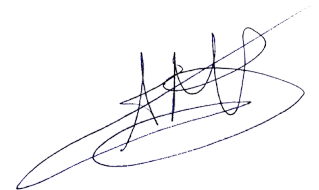


Top side



Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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