

Anex

Montech Titan Gold 1000W

Lab ID#: MT10002119
 Receipt Date: Jan 20, 2023
 Test Date: Jan 25, 2023

Report: 23PS2119A
 Report Date: Jan 27, 2023

DUT INFORMATION

Brand	Montech
Manufacturer (OEM)	CWT
Series	Titan
Model Number	TIS0125
Serial Number	TTTAN1000221100186
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	6.5-15
Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12SF-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

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

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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	✓
ATX 3.0 Ready	✓

115V

Average Efficiency	88.950%
Efficiency With 10W (≤500W) or 2% (>500W)	83.377
Average Efficiency 5VSB	79.054%
Standby Power Consumption (W)	0.0170000
Average PF	0.989
Avg Noise Output	30.93 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	90.954%
Average Efficiency 5VSB	77.924%
Standby Power Consumption (W)	0.0563000
Average PF	0.964
Avg Noise Output	29.11 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	83.5	3	0.3
	Watts	120		1000	15	3.6
Total Max. Power (W)		1000				

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

Hold-Up Time (ms)	20.3
AC Loss to PWR_OK Hold Up Time (ms)	17.8
PWR_OK Inactive to DC Loss Delay (ms)	2.5

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CABLES AND CONNECTORS

Modular Cables

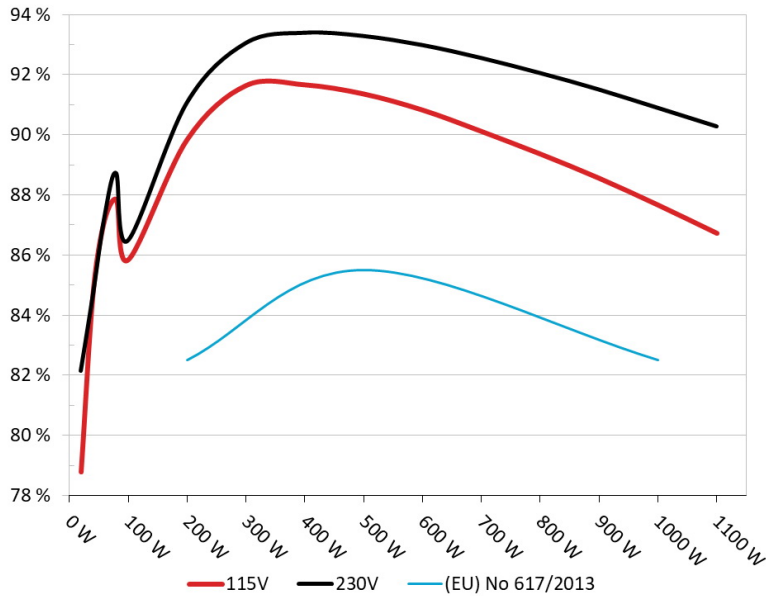
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-18AWG	No
4+4 pin EPS12V (700mm)	1	1	16AWG	No
8 pin EPS12V (700mm)	1	1	16AWG	No
6+2 pin PCIe (500mm+150mm)	2	4	16-18AWG	No
6+2 pin PCIe (600mm)	1	1	16AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	16-24AWG	No
SATA (500mm+150mm+150mm+150mm)	3	12	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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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Montech Titan Gold 1000W
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

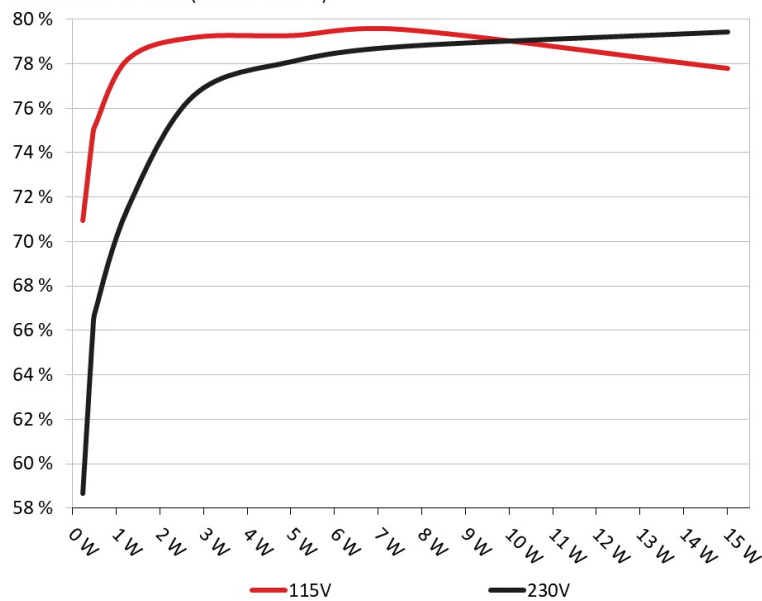


INFO

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: Montech Titan Gold 1000W
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	0.228W	71.234%	0.032
	5.057V	0.32W		114.87V
2	0.09A	0.455W	75.085%	0.06
	5.056V	0.606W		114.86V
3	0.55A	2.775W	79.492%	0.27
	5.047V	3.491W		114.87V
4	1A	5.038W	79.573%	0.361
	5.038V	6.331W		114.87V
5	1.5A	7.544W	79.848%	0.422
	5.029V	9.448W		114.86V
6	3A	15.006W	78.093%	0.5
	5.002V	19.215W		114.86V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	58.961%	0.011
	5.055V	0.385W		229.88V
2	0.09A	0.455W	66.241%	0.02
	5.054V	0.687W		229.88V
3	0.55A	2.775W	76.885%	0.103
	5.045V	3.61W		229.87V
4	1A	5.037W	78.412%	0.172
	5.037V	6.424W		229.88V
5	1.5A	7.542W	79.08%	0.233
	5.028V	9.537W		229.88V
6	3A	15.003W	79.734%	0.334
	5.001V	18.816W		229.88V

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Montech Titan Gold 1000W

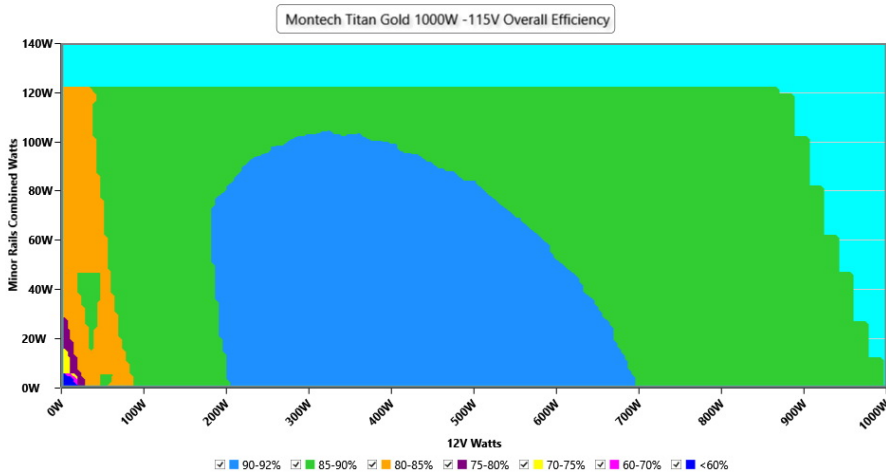
115V

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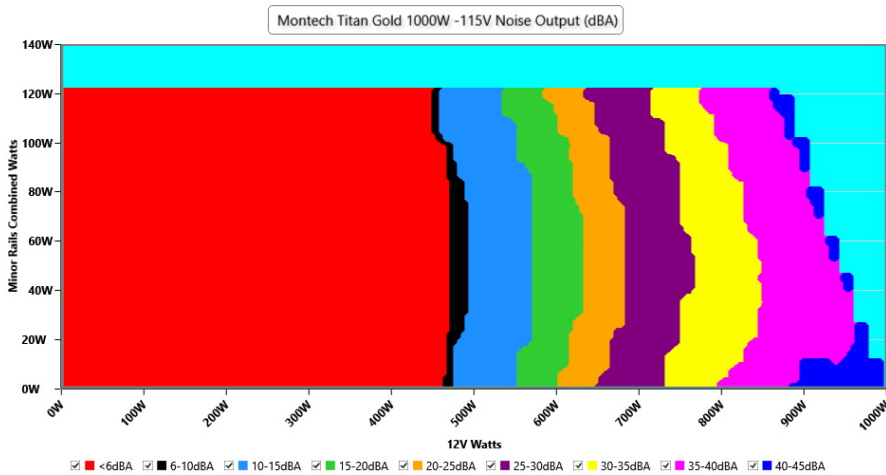
EFFICIENCY GRAPH 115V



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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.87 V	114.84 V	113.85 V	114.91 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.93 Hz	59.40 Hz	60.02 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.14 %	0.12 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.017 W	0.015 W	N/A	0.019 W	N/A	N/A
Apparent Power:	9.987 W	9.962 W	N/A	10.009 W	N/A	N/A
Power Factor:	0.002	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

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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
10%	6.440A	1.989A	2.014A	0.992A	99.961	85.348%	0	<6.0	44.36°C	0.983
	12.169V	5.026V	3.277V	5.039V	117.121				40.04°C	114.83V
20%	13.889A	2.985A	3.024A	1.193A	199.899	89.341%	0	<6.0	45.79°C	0.99
	12.168V	5.024V	3.273V	5.031V	223.75				41°C	114.8V
30%	21.732A	3.484A	3.531A	1.372A	299.935	91.141%	0	<6.0	46.73°C	0.991
	12.143V	5.022V	3.271V	5.101V	329.086				41.52°C	114.77V
40%	29.552A	3.984A	4.039A	1.57A	399.35	91.166%	0	<6.0	47.33°C	0.988
	12.119V	5.019V	3.268V	5.097V	438.047				41.76°C	114.73V
50%	37.062A	4.981A	5.055A	1.768A	499.142	90.864%	412	<6.0	42.28°C	0.99
	12.105V	5.018V	3.264V	5.09V	549.329				48.23°C	114.71V
60%	44.648A	5.978A	6.071A	1.968A	599.684	90.328%	668	15.8	42.72°C	0.992
	12.092V	5.018V	3.262V	5.083V	663.901				49.17°C	114.66V
70%	52.187A	6.975A	7.088A	2.167A	699.437	89.62%	989	28.6	43.51°C	0.993
	12.078V	5.018V	3.259V	5.075V	780.445				50.57°C	114.62V
80%	59.823A	7.974A	8.105A	2.269A	799.461	88.868%	1351	38.8	43.75°C	0.994
	12.062V	5.017V	3.257V	5.067V	899.606				52.01°C	114.59V
90%	67.797A	8.474A	8.604A	2.372A	899.273	88.064%	1649	43.4	44.67°C	0.994
	12.048V	5.015V	3.254V	5.06V	1021.159				53.74°C	114.55V
100%	75.537A	8.976A	9.134A	2.975A	999.312	87.174%	1989	48.4	45.58°C	0.995
	12.042V	5.013V	3.251V	5.043V	1146.349				55.61°C	114.52V
110%	83.215A	9.978A	10.251A	2.978A	1099.934	86.229%	2161	50.3	46.51°C	0.995
	12.037V	5.011V	3.248V	5.037V	1275.607				57.42°C	114.47V
CL1	1.972A	14.391A	14.596A	0.496A	146.418	84.454%	496	8.4	40.39°C	0.989
	12.176V	5.018V	3.268V	5.041V	173.369				45.85°C	114.81V
CL2	1.970A	21.272A	1.007A	0.495A	136.415	83.331%	419	<6.0	40.66°C	0.988
	12.182V	5.012V	3.276V	5.047V	163.703				47.68°C	114.82V
CL3	1.970A	0.995A	20.728A	0.496A	99.1	79.22%	419	<6.0	42.01°C	0.985
	12.181V	5.024V	3.261V	5.042V	125.097				51.03°C	114.83V
CL4	82.082A	0.996A	1.013A	0.491A	999.499	87.762%	1996	48.5	45.77°C	0.995
	12.045V	5.019V	3.257V	5.095V	1138.883				56.62°C	114.52V

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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	1.224A	0.495A	0.502A	0.198A	19.983	78.294%	0	<6.0	39.57°C	0.802
	12.125V	5.046V	3.287V	5.055V	25.522				36.5°C	114.86V
40W	2.696A	0.694A	0.703A	0.297A	39.985	84.194%	0	<6.0	41.11°C	0.927
	12.121V	5.045V	3.287V	5.053V	47.49				37.78°C	114.85V
60W	4.166A	0.894A	0.905A	0.396A	59.984	86.687%	0	<6.0	42.44°C	0.959
	12.127V	5.034V	3.28V	5.05V	69.2				38.68°C	114.85V
80W	5.632A	1.093A	1.107A	0.495A	79.911	87.336%	0	<6.0	43.19°C	0.974
	12.126V	5.029V	3.278V	5.048V	91.499				39.28°C	114.83V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.87mV	8.16mV	9.23mV	6.57mV	Pass
20% Load	10.38mV	8.83mV	9.13mV	7.13mV	Pass
30% Load	14.63mV	8.67mV	10.31mV	7.95mV	Pass
40% Load	15.60mV	9.03mV	10.16mV	7.54mV	Pass
50% Load	14.52mV	9.70mV	10.62mV	7.60mV	Pass
60% Load	15.70mV	9.60mV	11.49mV	7.49mV	Pass
70% Load	14.37mV	10.62mV	17.08mV	8.83mV	Pass
80% Load	14.78mV	9.96mV	12.78mV	9.60mV	Pass
90% Load	15.96mV	9.75mV	13.80mV	9.44mV	Pass
100% Load	20.64mV	10.42mV	13.97mV	12.53mV	Pass
110% Load	21.24mV	10.11mV	14.32mV	12.92mV	Pass
Crossload1	12.37mV	10.19mV	14.35mV	6.98mV	Pass
Crossload2	18.92mV	19.24mV	9.90mV	7.60mV	Pass
Crossload3	11.87mV	8.57mV	15.70mV	7.08mV	Pass
Crossload4	19.50mV	9.38mV	11.60mV	7.77mV	Pass

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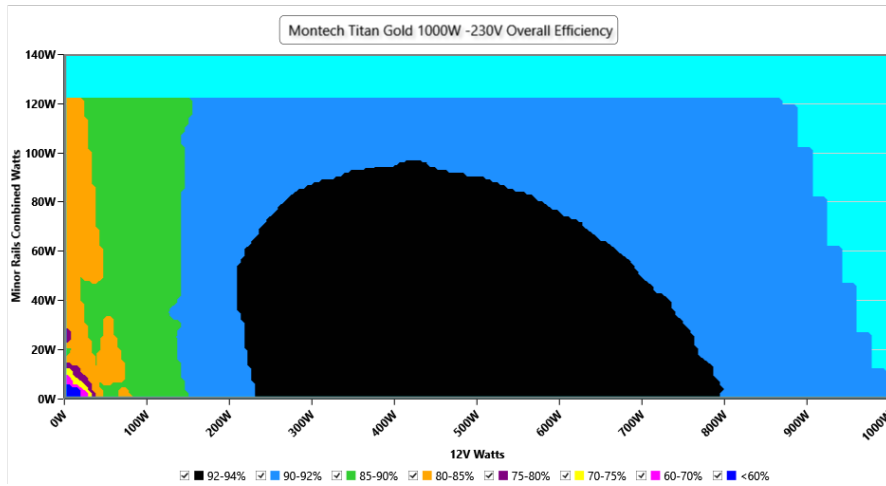
230V

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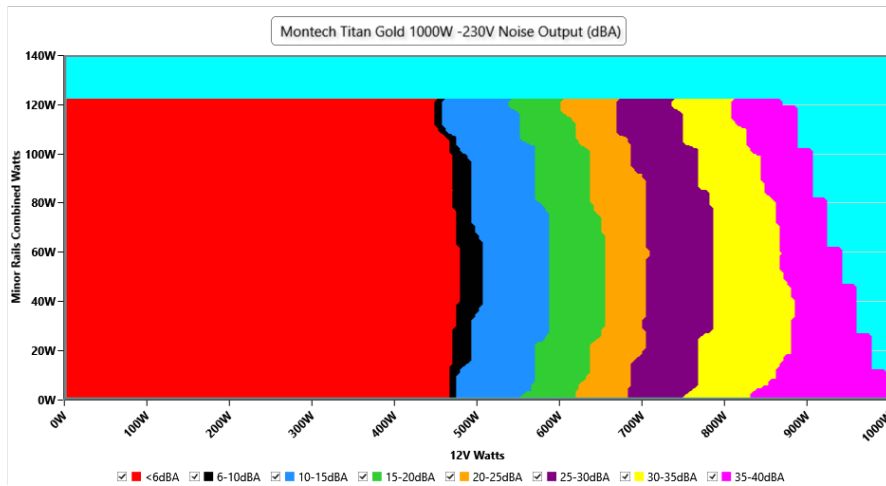
EFFICIENCY GRAPH 230V



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

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 -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.88 V	229.82 V	227.70 V	229.91 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.417	1.490	PASS
Mains Voltage THD:	0.14 %	0.12 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.056 W	0.053 W	N/A	0.060 W	N/A	N/A
Apparent Power:	33.608 W	33.584 W	N/A	33.632 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

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%	6.439A	1.99A	2.015A	0.992A	99.974	85.994%	0	<6.0	44.67°C	0.876
	12.172V	5.026V	3.276V	5.039V	116.256				40.34°C	229.87V
20%	13.888A	2.986A	3.025A	1.193A	199.918	90.567%	0	<6.0	45.63°C	0.951
	12.169V	5.023V	3.272V	5.03V	220.741				40.89°C	229.86V
30%	21.732A	3.485A	3.532A	1.372A	299.962	92.556%	0	<6.0	46.25°C	0.97
	12.144V	5.022V	3.27V	5.102V	324.094				41.09°C	229.84V
40%	29.539A	3.983A	4.04A	1.569A	399.446	92.901%	0	<6.0	47.29°C	0.978
	12.128V	5.021V	3.268V	5.099V	429.968				41.6°C	229.83V
50%	37.057A	4.981A	5.054A	1.768A	499.178	92.795%	415	<6.0	41.95°C	0.981
	12.108V	5.019V	3.265V	5.09V	537.94				47.85°C	229.81V
60%	44.648A	5.979A	6.069A	1.968A	599.729	92.492%	751	19.7	42.54°C	0.983
	12.093V	5.018V	3.262V	5.082V	648.414				48.83°C	229.79V
70%	52.197A	6.976A	7.086A	2.168A	699.478	92.065%	991	28.6	43.39°C	0.985
	12.077V	5.017V	3.26V	5.073V	759.765				50.43°C	229.77V
80%	59.835A	7.975A	8.104A	2.27A	799.511	91.565%	1367	38.9	43.74°C	0.986
	12.060V	5.016V	3.257V	5.066V	873.168				51.82°C	229.76V
90%	67.805A	8.475A	8.603A	2.372A	899.321	91.018%	1759	45.6	44.55°C	0.987
	12.047V	5.015V	3.254V	5.059V	988.076				53.65°C	229.74V
100%	75.543A	8.977A	9.133A	2.975A	999.351	90.409%	2003	48.6	45.01°C	0.988
	12.042V	5.013V	3.252V	5.042V	1105.372				55.02°C	229.72V
110%	83.225A	9.979A	10.25A	2.979A	1099.965	89.789%	2162	50.3	46.5°C	0.989
	12.036V	5.011V	3.248V	5.035V	1225.059				57.36°C	229.7V
CL1	1.972A	14.392A	14.595A	0.496A	146.421	85.165%	514	9.2	42.17°C	0.93
	12.176V	5.017V	3.268V	5.04V	171.922				47.65°C	229.86V
CL2	1.970A	21.272A	1.007A	0.495A	136.425	83.996%	422	<6.0	42°C	0.924
	12.183V	5.012V	3.276V	5.046V	162.419				49.06°C	229.86V
CL3	1.970A	0.995A	20.728A	0.496A	99.102	80.169%	420	<6.0	42.37°C	0.887
	12.183V	5.024V	3.261V	5.042V	123.619				51.41°C	229.87V
CL4	82.088A	0.996A	1.013A	0.491A	999.533	90.994%	1993	48.5	45.86°C	0.988
	12.045V	5.019V	3.257V	5.094V	1098.466				56.74°C	229.73V

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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	0.399A	0.495A	0.502A	0.198A	9.988	71.098%	0	<6.0	39.58°C	0.269
	12.128V	5.046V	3.287V	5.057V	14.052				36.53°C	229.89V
40W	1.046A	0.694A	0.703A	0.297A	19.988	81.035%	0	<6.0	40.59°C	0.43
	12.128V	5.045V	3.287V	5.054V	25.393				37.24°C	229.89V
60W	1.692A	0.894A	0.905A	0.396A	29.987	81.449%	0	<6.0	41.75°C	0.529
	12.128V	5.034V	3.281V	5.052V	36.819				38.26°C	229.89V
80W	2.339A	1.093A	1.107A	0.495A	39.988	83.788%	0	<6.0	42.85°C	0.625
	12.125V	5.029V	3.279V	5.05V	47.735				39.04°C	229.89V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.66mV	7.90mV	8.98mV	6.57mV	Pass
20% Load	12.33mV	8.62mV	9.70mV	6.57mV	Pass
30% Load	14.99mV	9.24mV	10.42mV	8.05mV	Pass
40% Load	15.75mV	9.44mV	10.21mV	7.59mV	Pass
50% Load	14.42mV	8.88mV	10.36mV	7.34mV	Pass
60% Load	12.63mV	8.93mV	12.88mV	7.80mV	Pass
70% Load	14.47mV	12.83mV	17.08mV	9.29mV	Pass
80% Load	14.37mV	9.29mV	12.52mV	9.29mV	Pass
90% Load	15.70mV	9.70mV	13.49mV	8.98mV	Pass
100% Load	23.07mV	10.71mV	14.28mV	12.01mV	Pass
110% Load	23.60mV	11.48mV	15.49mV	11.68mV	Pass
Crossload1	13.74mV	10.62mV	13.64mV	7.79mV	Pass
Crossload2	16.11mV	18.02mV	10.16mV	7.18mV	Pass
Crossload3	13.76mV	8.83mV	15.49mV	7.59mV	Pass
Crossload4	22.77mV	10.67mV	11.47mV	8.62mV	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

Montech Titan Gold 1000W



Top side



Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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