



Raijintek Cratos 1000W

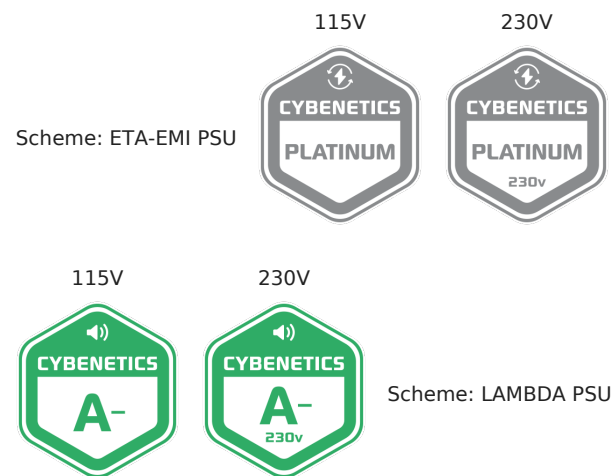
Serial Number

Lab ID RJ10002332

Certification ID 252332

Test Result Report ID: 24PS2332A

Certificate Issue Date: Jan 26, 2024



A handwritten signature in blue ink, appearing to read 'A. Bitziopoulos', is written over a faint circular stamp.

Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, 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
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	Raijintek
Model	Cratos 1000W
OEM/ODM	SANR
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6.5
Rated Frequency (Hz)	47-63

Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dynamic Bearing Fan (CF-D12025H12M)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	RJ10002332
Date of receipt	Dec 28, 2023
Testing Date	Jan 22, 2024
Report Issued Date	Jan 26, 2024
Engineer Name	Georgios Theodoros Sarimpalas
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18-22AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (650mm+150mm)	2	4	18AWG	No
6+2 pin PCIe (550mm)	1	1	18AWG	No
12+4 pin PCIe (610mm) (600W)	1	1	16-26AWG	No
SATA (450mm+150mm+150mm+150mm)	2	8	18AWG	No
4-pin Molex (500mm+150mm+150mm)	1	3	18AWG	No
FDD Adapter (105mm)	1	1	18AWG	No

AC Power Cord (1100mm) - C13 coupler	1	1	18AWG	-
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Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83	3	0.3
	Watts	130	1000	15	3.6	
Total Max. Power (W)		1000				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.240%
Average Noise Output (>1450 Load Combinations)	27.69dBA
Average PF (>1450 Load Combinations)	0.988
Efficiency With 10W (≤500W) or 2% (>500W) Load	71.750%
Standby Power Consumption	0.0500W
Non-Accredited	
12V Ripple (Full Load)	43.58mV
5V Ripple (Full Load)	33.82mV
3.3V Ripple (Full Load)	33.20mV
5VSB Ripple (Full Load)	29.39mV

12V Load Regulation	0.31%
5V Load Regulation	0.36%
3.3V Load Regulation	0.42%
5VSB Load Regulation	1.75%
Inrush Current	19.660A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.414%	
Average Noise Output (>1450 Load Combinations)	27.01dBA	
Average PF (>1450 Load Combinations)	0.955	
Efficiency With 10W (≤500W) or 2% (>500W) Load	71.750%	
Standby Power Consumption	0.1058W	
Non-Accredited		
12V Ripple (Full Load)	44.80mV	
5V Ripple (Full Load)	31.24mV	
3.3V Ripple (Full Load)	33.79mV	
5VSB Ripple (Full Load)	27.92mV	
12V Load Regulation	0.31%	
5V Load Regulation	0.38%	
3.3V Load Regulation	0.45%	
5VSB Load Regulation	1.73%	
Inrush Current	36.060A	
12V Transient Response (200%)	11.31V	
5V Transient Response (200%)	4.909V	
3.3V Transient Response (200%)	3.198V	
5VSB Transient Response (200%)	4.836V	
Hold-Up Time & PWR_OK Signal	23.20ms	
AC Loss to PWR_OK Hold Up Time	20.30ms	
PWR_OK Inactive to DC Loss Delay	2.90ms	
PSU Timings: T1 (20% / 100%)	102.0ms	102.0ms
PSU Timings: T3 (20% / 100%)	118.0ms	120.0ms

OPP (29.45°C / 44.57°C)	149.87%	146.28%
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Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	23.2
AC Loss to PWR_OK Hold Up Time (ms)	20.3
PWR_OK Inactive to DC Loss Delay (ms)	2.9

Vampire Power

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.85 V	114.79 V	113.85 V	114.90 V	116.15 V	PASS
Mains Frequency:	60.01 Hz	59.99 Hz	59.40 Hz	60.03 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.420	1.418	1.340	1.422	1.490	PASS
Mains Voltage THD:	0.15 %	0.09 %	N/A	0.25 %	2.00 %	PASS
Real Power:	0.050 W	0.035 W	N/A	0.066 W	N/A	N/A
Apparent Power:	8.753 W	8.732 W	N/A	8.778 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

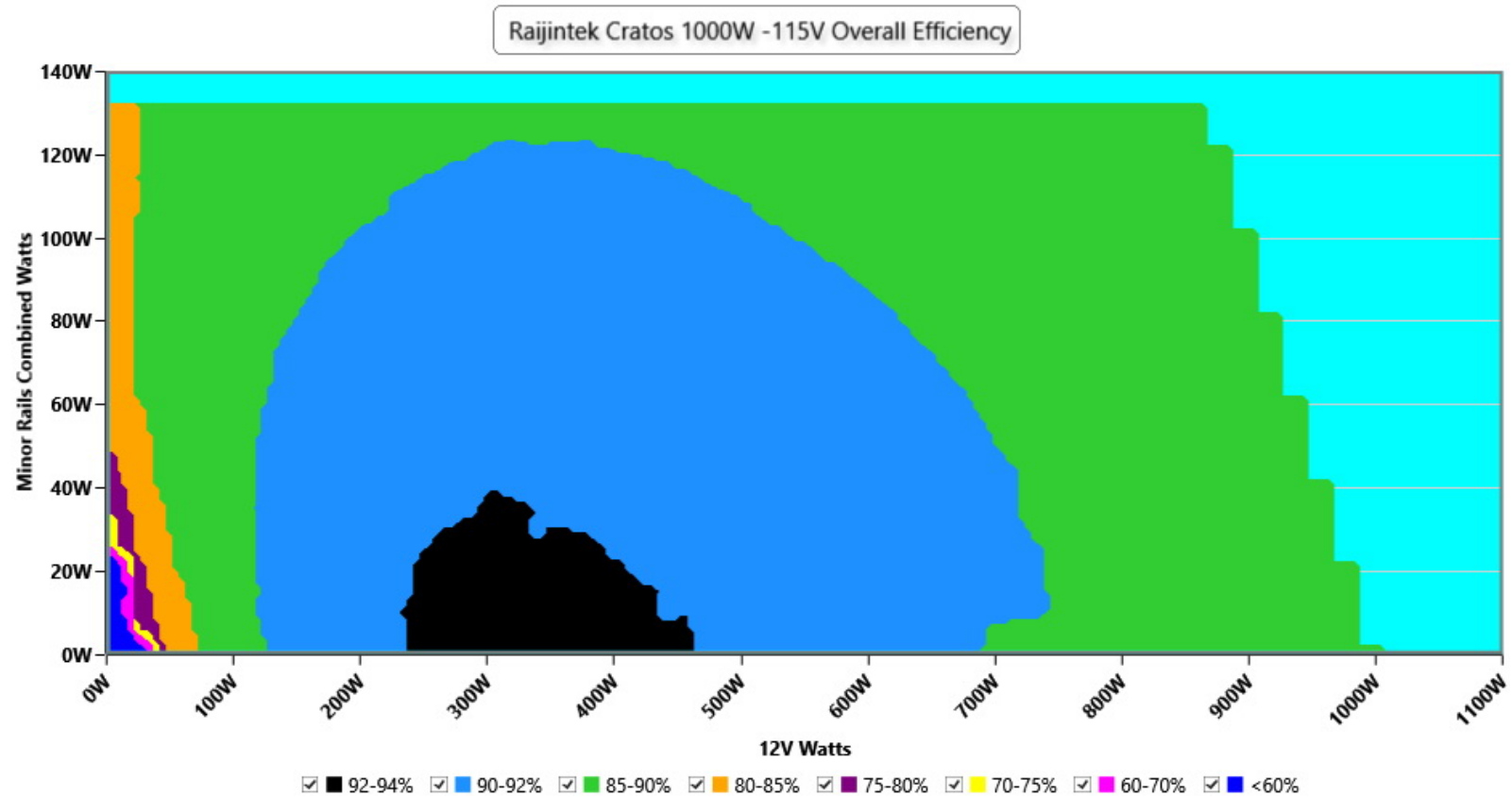
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.89 V	229.82 V	227.70 V	229.95 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.418	1.417	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.13 %	0.08 %	N/A	0.18 %	2.00 %	PASS

Real Power:	0.106 W	0.076 W	N/A	0.143 W	N/A	N/A
Apparent Power:	30.470 W	30.415 W	N/A	30.512 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

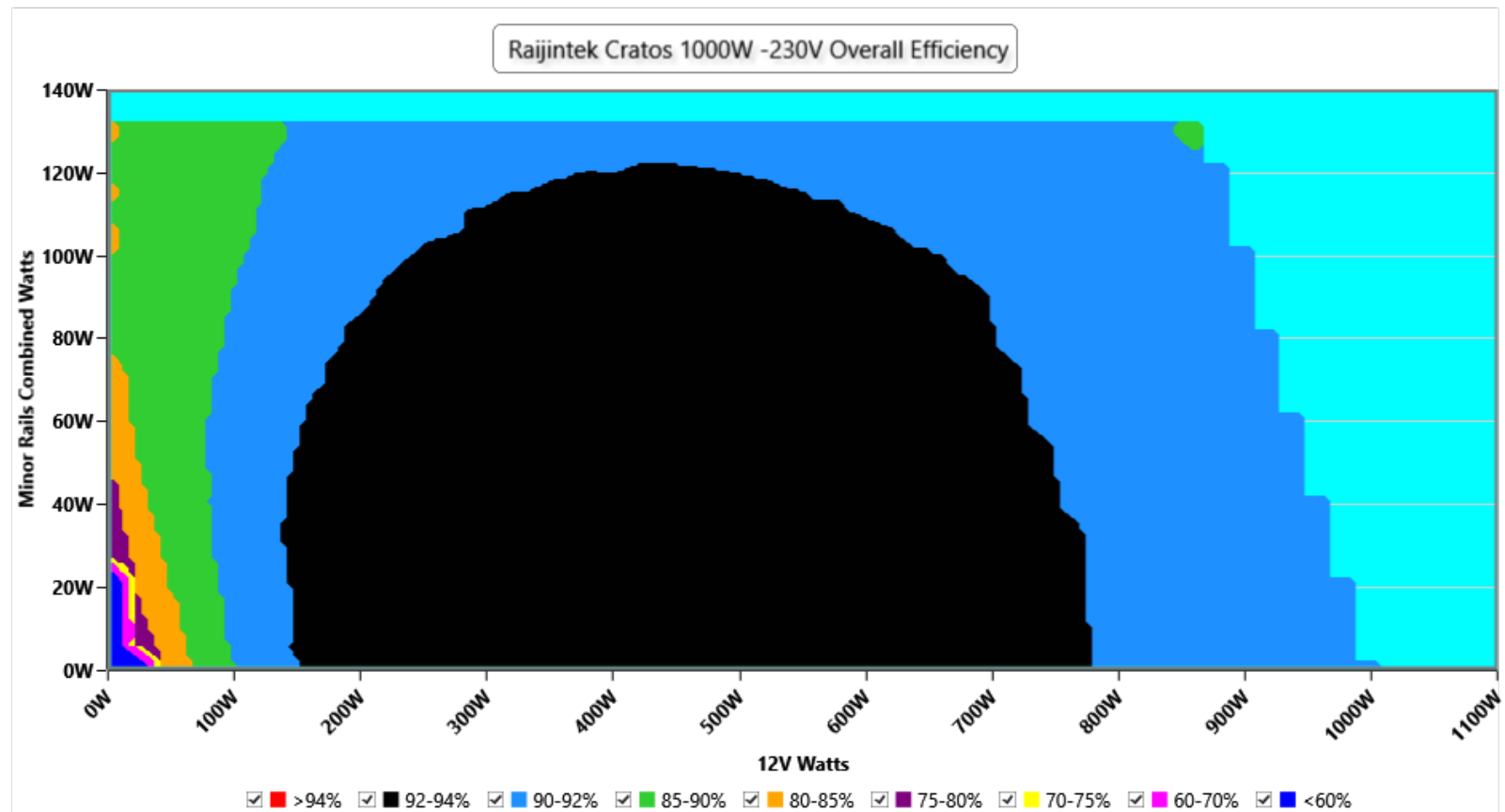
Efficiency Graph

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

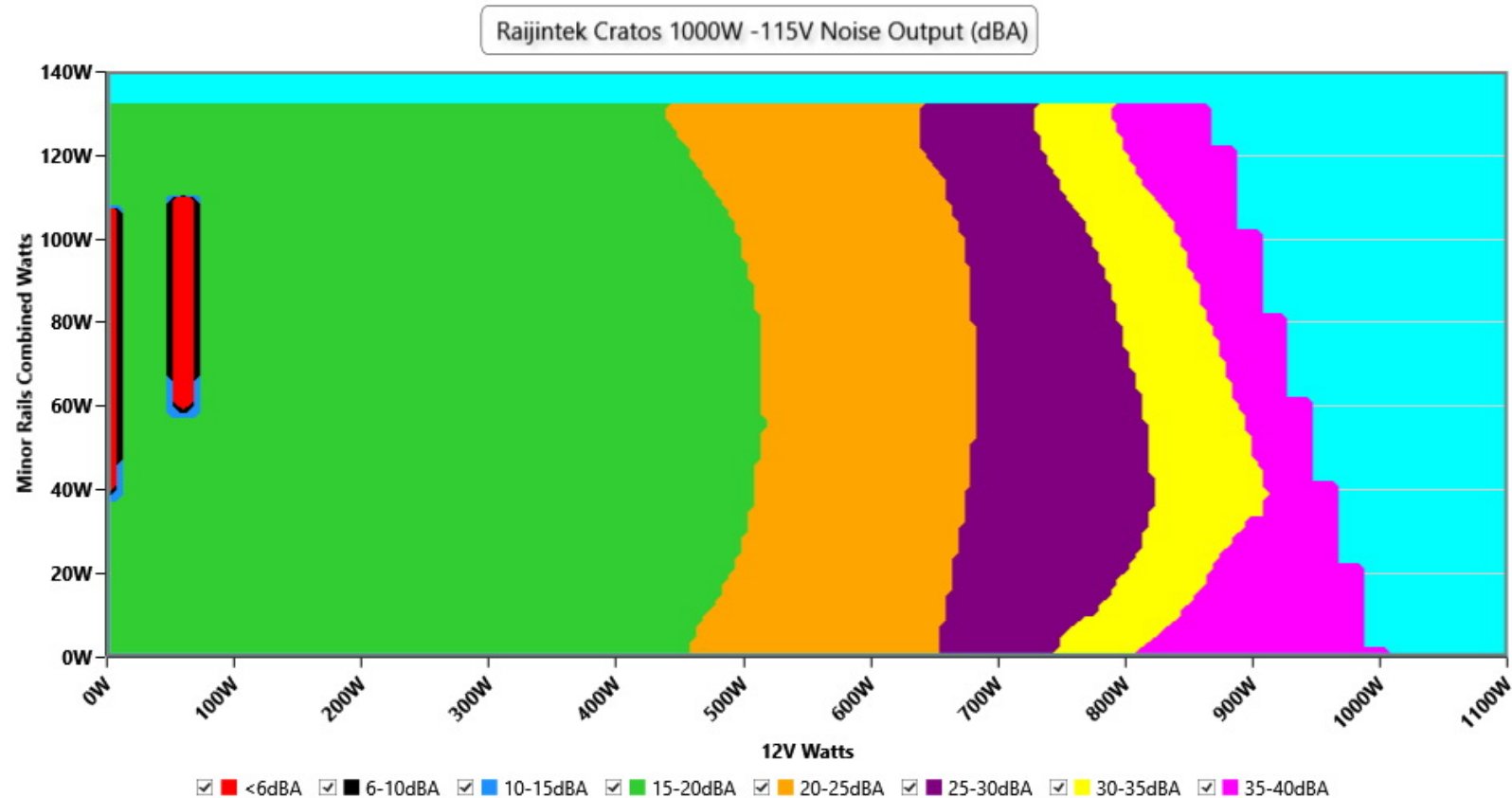


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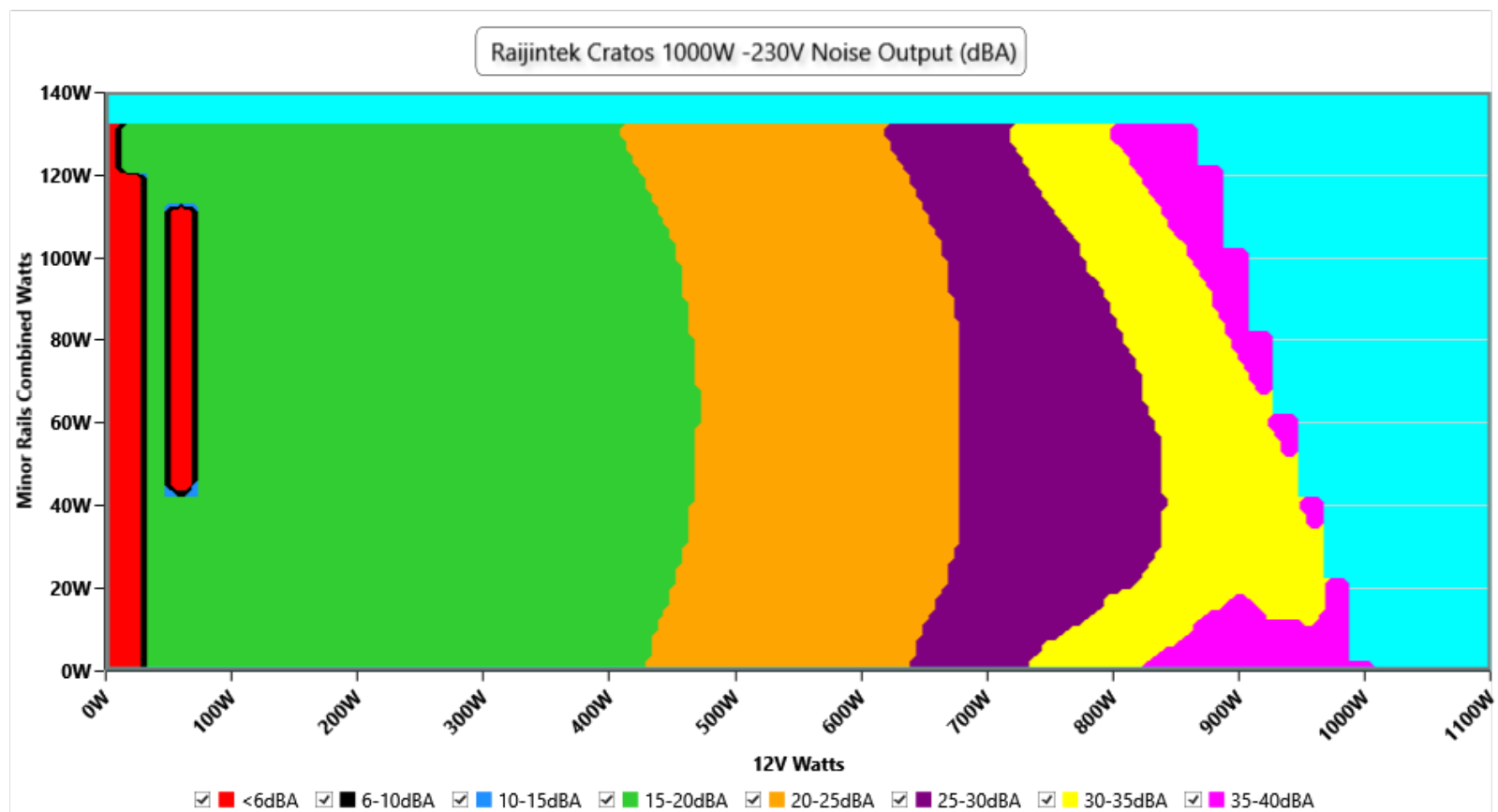
Noise Graph

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



INFO

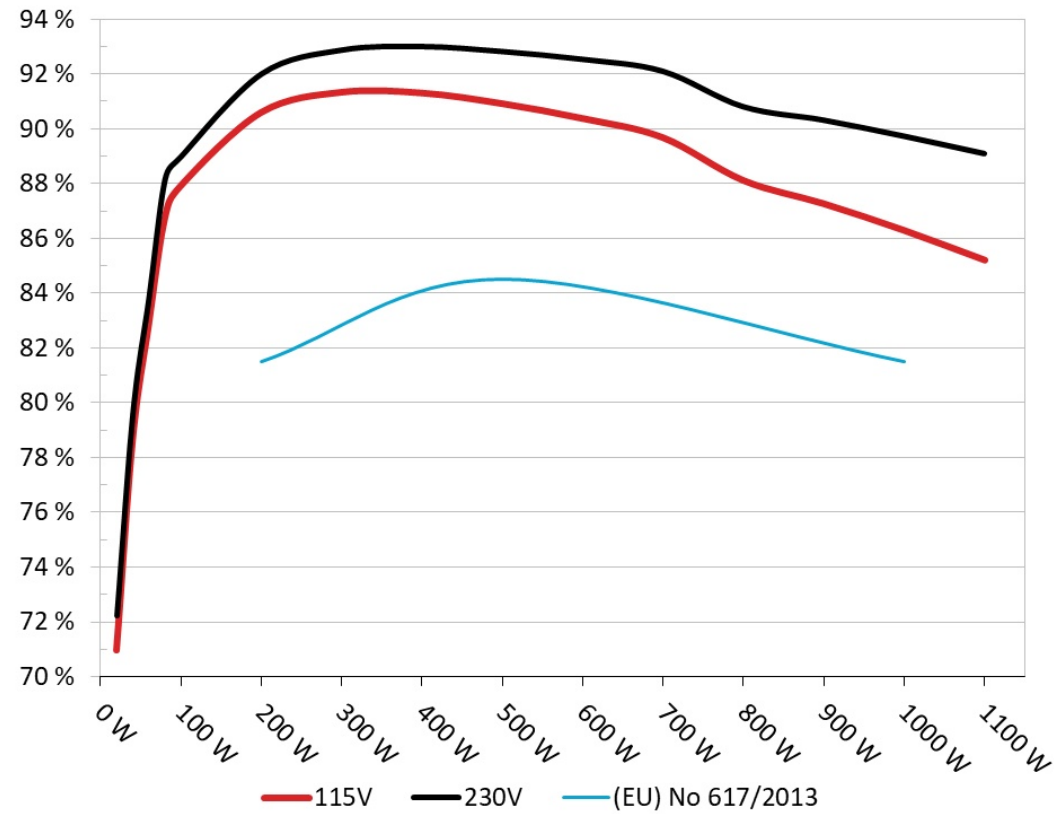
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Raijintek Cratos 1000W

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



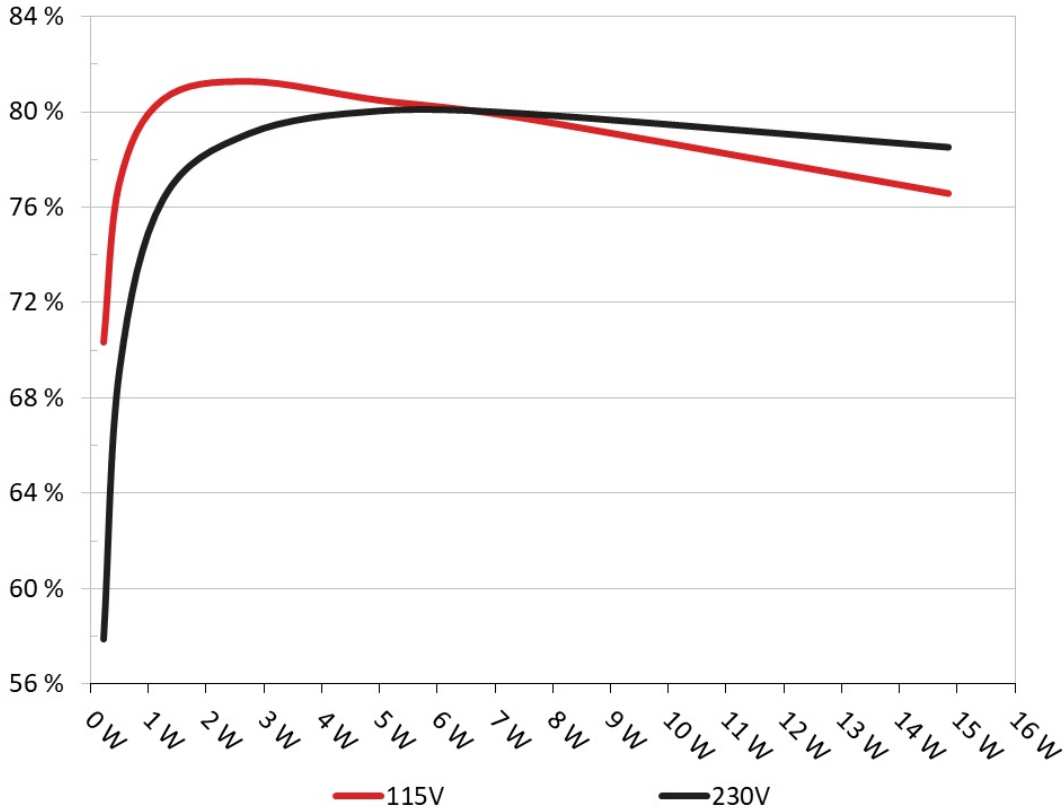
INFO

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: Raijintek Cratos 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

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.225W	70.34%	0.04
	5.004V	0.32W		114.86V
2	0.09A	0.45W	76.38%	0.072
	5.004V	0.589W		114.86V
3	0.55A	2.748W	81.278%	0.314
	4.995V	3.381W		114.86V
4	1A	4.987W	80.49%	0.426
	4.987V	6.196W		114.85V
5	1.5A	7.468W	79.748%	0.477
	4.978V	9.365W		114.87V
6	3A	14.852W	76.58%	0.55
	4.95V	19.394W		114.85V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.225W	57.875%	0.014
	5.004V	0.389W		229.86V
2	0.09A	0.45W	67.996%	0.024
	5.003V	0.662W		229.86V
3	0.55A	2.748W	79.12%	0.12
	4.995V	3.473W		229.86V
4	1A	4.987W	80.065%	0.199
	4.987V	6.229W		229.86V
5	1.5A	7.467W	79.957%	0.269
	4.978V	9.339W		229.86V
6	3A	14.852W	78.541%	0.378
	4.95V	18.909W		229.86V

Supplementary Tests (For Reference)

Typical 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%	6.553A	1.987A	1.976A	1.003A	99.984	88.405%	906	17.2	40.17°C	0.98
	11.962V	5.032V	3.34V	4.984V	113.099				44.41°C	114.82V
20%	14.125A	2.982A	2.965A	1.206A	199.93	91.08%	921	17.8	40.97°C	0.978
	11.967V	5.03V	3.339V	4.977V	219.511				45.48°C	114.79V
30%	22.066A	3.48A	3.46A	1.408A	299.976	91.816%	966	19.4	41.34°C	0.985
	11.960V	5.029V	3.338V	4.97V	326.713				46.38°C	114.77V
40%	29.970A	3.978A	3.956A	1.612A	399.498	91.79%	1024	21.4	41.79°C	0.989
	11.955V	5.028V	3.337V	4.963V	435.238				47.3°C	114.72V
50%	37.547A	4.975A	4.948A	1.816A	499.225	91.402%	1083	23.3	42.22°C	0.992
	11.951V	5.026V	3.335V	4.956V	546.184				48.23°C	114.7V
60%	45.199A	5.972A	5.94A	2A	599.673	90.858%	1162	25.4	42.83°C	0.993
	11.947V	5.024V	3.334V	4.95V	660.013				49.41°C	114.66V
70%	52.787A	6.971A	6.933A	2.226A	699.489	90.16%	1235	27.4	43.12°C	0.994
	11.942V	5.021V	3.332V	4.942V	775.832				50.14°C	114.62V
80%	60.441A	7.97A	7.927A	2.33A	799.522	88.596%	1711	37.0	43.88°C	0.995
	11.940V	5.018V	3.33V	4.937V	902.44				52.01°C	114.58V
90%	68.446A	8.47A	8.41A	2.434A	899.306	87.751%	1766	37.9	44.88°C	0.996
	11.935V	5.017V	3.329V	4.931V	1024.844				54.01°C	114.54V
100%	76.255A	8.972A	8.922A	3.052A	999.327	86.776%	1762	37.8	45.26°C	0.996
	11.929V	5.016V	3.329V	4.915V	1151.62				55.33°C	114.51V
110%	84.003A	9.974A	10.008A	3.055A	1099.968	85.686%	1764	37.8	46.57°C	0.996
	11.924V	5.013V	3.327V	4.911V	1283.714				57.5°C	114.46V
CL1	0.117A	15.627A	15.518A	0A	131.302	81.676%	1745	37.5	40.63°C	0.976
	11.979V	5.011V	3.325V	5.002V	160.76				46.12°C	114.81V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.116A	19.939A	0A	0A	101.34	81.955%	995	20.5	40.24°C	0.98
	11.973V	5.013V	3.339V	5.003V	123.653				47.34°C	114.82V
CL3	0.115A	0A	19.845A	0A	67.382	76.082%	1016	21.1	40.41°C	0.965
	11.974V	5.027V	3.326V	5.003V	88.568				49.48°C	114.84V
CL4	83.885A	0A	0A	0.002A	999.939	87.625%	1779	38.1	45.29°C	0.996
	11.920V	5.029V	3.339V	4.973V	1141.159				56.25°C	114.52V

The results above are not used in the certification process

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%	6.554A	1.987A	1.976A	1.003A	99.991	89.498%	907	17.2	40.06°C	0.835
	11.962V	5.033V	3.34V	4.984V	111.726				44.33°C	229.84V
20%	14.127A	2.981A	2.966A	1.206A	199.939	92.508%	916	17.6	40.54°C	0.927
	11.966V	5.031V	3.338V	4.977V	216.137				45.05°C	229.83V
30%	22.068A	3.479A	3.461A	1.409A	299.986	93.379%	968	19.5	41.34°C	0.955
	11.960V	5.03V	3.338V	4.97V	321.254				46.38°C	229.81V
40%	29.972A	3.978A	3.956A	1.612A	399.515	93.508%	1025	21.4	41.91°C	0.965
	11.955V	5.028V	3.337V	4.963V	427.252				47.44°C	229.8V
50%	37.549A	4.974A	4.947A	1.816A	499.233	93.328%	1091	23.5	42.06°C	0.973
	11.951V	5.026V	3.335V	4.956V	534.919				48.15°C	229.78V
60%	45.201A	5.972A	5.94A	2A	599.669	93.041%	1160	25.4	42.82°C	0.978
	11.946V	5.024V	3.334V	4.949V	644.521				49.39°C	229.76V
70%	52.786A	6.97A	6.933A	2.226A	699.479	92.606%	1229	27.2	43.08°C	0.98
	11.942V	5.022V	3.332V	4.942V	755.327				50.19°C	229.75V
80%	60.441A	7.968A	7.927A	2.33A	799.517	91.314%	1716	37.1	43.89°C	0.983
	11.939V	5.02V	3.33V	4.936V	875.571				51.95°C	229.73V
90%	68.447A	8.47A	8.409A	2.434A	899.306	90.824%	1769	37.9	44.4°C	0.985
	11.934V	5.017V	3.329V	4.93V	990.168				53.46°C	229.71V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	76.256A	8.971A	8.922A	3.052A	999.332	90.239%	1770	37.9	45.87°C	0.987
	11.929V	5.016V	3.328V	4.915V	1107.425				55.89°C	229.69V
110%	84.000A	9.972A	10.007A	3.055A	1099.96	89.601%	1768	37.9	46.95°C	0.988
	11.924V	5.014V	3.327V	4.911V	1227.627				57.88°C	229.68V
CL1	0.117A	15.625A	15.52A	0A	131.302	82.947%	1748	37.6	40.79°C	0.898
	11.980V	5.012V	3.325V	5.002V	158.301				46.26°C	229.84V
CL2	0.116A	19.936A	0A	0A	101.34	83.05%	1001	20.5	40.55°C	0.854
	11.974V	5.014V	3.34V	5.003V	122.027				47.64°C	229.85V
CL3	0.115A	0A	19.844A	0A	67.382	77.696%	1014	21.0	40.72°C	0.778
	11.974V	5.028V	3.326V	5.003V	86.728				49.79°C	229.85V
CL4	83.871A	0A	0A	0.002A	999.91	91.047%	1783	38.1	46.14°C	0.986
	11.922V	5.03V	3.339V	4.973V	1098.241				57.09°C	229.69V

The results above are not used in the certification process

Light 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	1.240A	0.497A	0.494A	0.2A	19.993	71.451%	0	<6.0	39.65°C	0.809
	11.967V	5.034V	3.343V	5.001V	27.981				36.58°C	114.84V
40W	2.732A	0.695A	0.691A	0.3A	39.994	79.15%	897	16.9	37.06°C	0.919
	11.965V	5.034V	3.342V	4.999V	50.533				40.37°C	114.84V
60W	4.224A	0.894A	0.889A	0.4A	59.995	83.354%	901	17.0	38.34°C	0.954
	11.964V	5.034V	3.341V	4.996V	71.98				42.15°C	114.82V
80W	5.710A	1.092A	1.086A	0.501A	79.931	87.204%	903	17.1	39.1°C	0.966
	11.961V	5.034V	3.341V	4.994V	91.659				43.04°C	114.83V

The results above are not used in the certification process

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	1.241A	0.496A	0.494A	0.2A	19.998	72.731%	0	<6.0	39.72°C	0.46
	11.966V	5.035V	3.343V	5V	27.496				36.67°C	229.86V
40W	2.732A	0.695A	0.691A	0.3A	39.999	80.154%	897	16.9	37.38°C	0.621
	11.964V	5.035V	3.342V	4.998V	49.901				40.68°C	229.85V
60W	4.224A	0.894A	0.889A	0.4A	59.999	84.354%	903	17.1	38.3°C	0.728
	11.963V	5.035V	3.341V	4.996V	71.128				41.81°C	229.85V
80W	5.711A	1.092A	1.086A	0.501A	79.94	88.667%	903	17.1	39.15°C	0.787
	11.961V	5.034V	3.341V	4.993V	90.151				42.98°C	229.85V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	29.97mV	22.07mV	25.19mV	11.49mV	Pass
20% Load	41.33mV	22.02mV	25.55mV	12.01mV	Pass
30% Load	34.58mV	23.97mV	26.06mV	13.44mV	Pass
40% Load	34.32mV	24.63mV	26.37mV	14.88mV	Pass
50% Load	31.46mV	27.41mV	28.68mV	16.78mV	Pass
60% Load	31.25mV	29.92mV	30.84mV	18.32mV	Pass
70% Load	31.97mV	33.82mV	30.93mV	19.14mV	Pass
80% Load	30.74mV	32.13mV	32.27mV	21.96mV	Pass
90% Load	29.72mV	32.28mV	31.60mV	23.45mV	Pass
100% Load	43.58mV	33.82mV	33.20mV	29.39mV	Pass
110% Load	44.72mV	34.60mV	36.61mV	29.80mV	Pass
Crossload1	42.55mV	26.07mV	32.63mV	13.14mV	Pass
Crossload2	38.67mV	31.15mV	32.58mV	13.75mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	41.03mV	27.29mV	33.79mV	14.56mV	Pass
Crossload4	42.22mV	31.38mV	31.12mV	31.75mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	32.48mV	21.60mV	24.73mV	10.57mV	Pass
20% Load	41.38mV	21.71mV	27.70mV	11.39mV	Pass
30% Load	34.63mV	24.02mV	26.17mV	12.88mV	Pass
40% Load	32.69mV	23.56mV	26.32mV	14.47mV	Pass
50% Load	31.97mV	26.18mV	30.42mV	15.70mV	Pass
60% Load	32.48mV	28.38mV	29.14mV	17.19mV	Pass
70% Load	32.12mV	30.23mV	30.32mV	19.19mV	Pass
80% Load	30.49mV	31.00mV	31.91mV	21.40mV	Pass
90% Load	29.67mV	30.12mV	31.60mV	22.37mV	Pass
100% Load	44.80mV	31.24mV	33.79mV	27.92mV	Pass
110% Load	43.25mV	34.90mV	36.46mV	29.94mV	Pass
Crossload1	43.28mV	26.20mV	32.81mV	14.15mV	Pass
Crossload2	38.62mV	30.74mV	32.37mV	12.62mV	Pass
Crossload3	38.66mV	21.71mV	27.86mV	12.52mV	Pass
Crossload4	44.25mV	31.80mV	30.44mV	29.23mV	Pass

The results above are not used in the certification process

Raijintek Cratos 1000W



Top side

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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus



Power specifications label

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

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