ASUS ROG-THOR-1000P2-GAMING

Lab ID AS10001844

Certification ID 251844

Test Result Report ID: 21PS1844A

Certificate Issue Date: May 12, 2021

115V

Scheme: ETA-EMI PSU



115V



Scheme: LAMBDA PSU



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	ASUS
Model	ROG-THOR-1000P2-GAMING
OEM/ODM	Seasonic
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	15-7.5
□□□□ (Hz)	50-60

□□□□ (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Double Ball Bearing Fan (CF1325H12D)
□□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	AS10001844
Date of receipt	May 8, 2021
Testing Date	May 11, 2021
Report Issued Date	May 12, 2021
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (610mm)	1	1	18-20AWG	□
4+4 pin EPS 12V □□ (650mm)	2	2	18AWG	□
6+2pin PCIe□□ (680mm)	4	4	18AWG	□
6+2pin PCIe□□ (680mm+70mm)	2	4	18AWG	□
SATA□□ (350mm+150mm+150mm+150mm)	1	4	18AWG	□
SATA□□ (400mm+115mm+115mm+115mm)	2	8	18AWG	□
□ 4pin Molex□□ to SATA□□ 3.3 Adapter (160mm+160mm)	1	2	18AWG	□
□ 4pin Molex□□ (350mm+120mm)	1	2	18AWG	□

□ 4pin Molex□□ (450mm+120mm+120mm)	1	3	18AWG	□
□ 4pin □□ (+110mm)	1	1	22AWG	□
RGB Cable (800mm)	1	1	22AWG	□
RGB Sync Cable (800mm)	1	1	24AWG	□

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	25	25	83	3	0.3
	□	125		996	15	3.6
□□□□□ (W)		1000				

Parts Description

General Data	-
Manufacturer (OEM)	Seasonic
PCB Type	Double Sided
Primary Side	-
Transient Filter	6x Y caps, 3x X caps, 2x CM chokes, 1x MOV, 1x Champion CM02X (Discharge IC)
Inrush Protection	NTC Thermistor MF72 5D-20L (5 Ohm) & Relay
Bridge Rectifier(s)	2x Vishay LVB2560 (600V, 25A @ 105°C)
APFC MOSFETs	2x Infineon IPP60R080P7 (600V, 23A @ 100°C, Rds(on): 0.08Ohm)
APFC Boost Diode	1x CREE C3D08060 (600V, 8A @ 152°C)
Bulk Cap(s)	2x Nippon Chemi-Con (420V, 680uF & 390uF each or 1,070uF combined, 2,000h @ 105°C, KHE)
Main Switchers	4x Infineon IPP60R180P7 (600V, 11A @ 100°C, Rds(on): 0.18Ohm)
IC Drivers	2x Silicon Labs Si8230BD
APFC Controller	On Semiconductor NCP1654
Resonant Controller	Champion CM6901T2X
Current Sensor IC	Allegro ACS725T
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	8x Nexperia PSMN1R4-40YLD (40V, 214A @ 100°C, Rds(on): 2.65mOhm)
5V & 3.3V	DC-DC Converters

Filtering Capacitors	Electrolytic: 2x Nippon Chemi-Con (105°C, W), 8x Nippon Chemi-Con (4-10,000h @ 105°C, KY),2x Rubycon (3-6,000h @ 105°C, ZLQ), 1x Rubycon (3-6,000h @ 105°C, YXG), 1x Rubycon (6-10,000h @ 105°C, ZLJ) Polymer: 30x FPCAP, 12x NIC
Supervisor IC	Weltrend WT7527V (OCP, OVP, UVP, SCP, PG)
Fan Model	Champion CF1325H12D (135mm, 12V, 0.60A, Double Ball Bearing Fan)
Fan Controller	Atmel SAM4N8
Flash Memory	Microchip SST26VF016B
5VSB Circuit	-
Rectifier	1x MCC MBR1045ULPS SBR (45V, 10A) & 1x Infineon IPA65R1K5CE FET (650V, 3.3A @ 100°C, Rds(on): 1.5Ohm)
Standby PWM Controller	Leadtrend LD7750R

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓

Performance Summary 115V

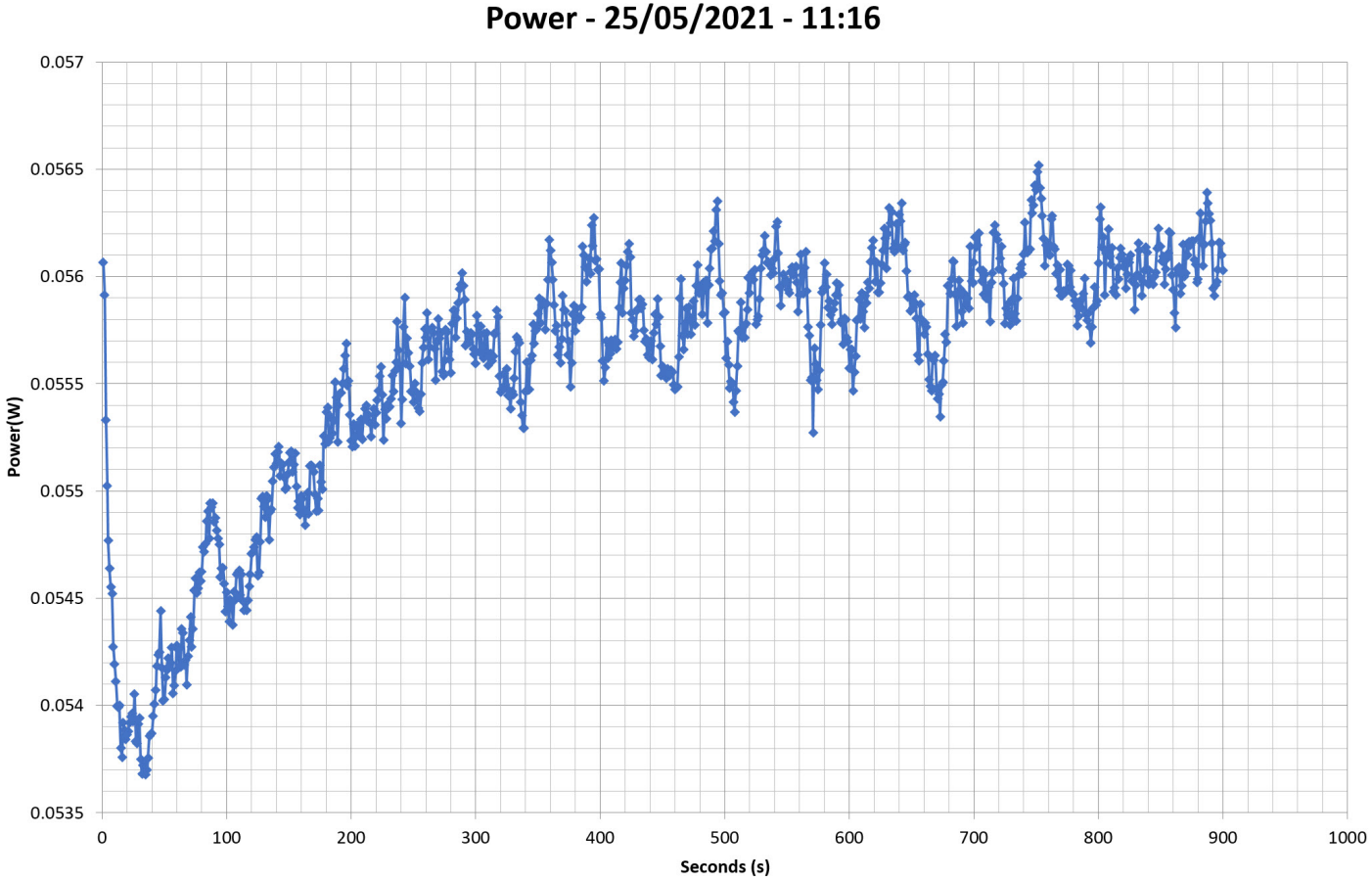
Accredited	
□□□□ (>1450 load combinations)	89.879%
Average Noise Output (>1450 Load Combinations)	11.39dBA
PF□□□ (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	63.468%
□□□□□□	0.0560W
Non-Accredited	
12V Ripple (Full Load)	20.60mV
5V Ripple (Full Load)	11.50mV
3.3V Ripple (Full Load)	17.35mV
5VSB Ripple (Full Load)	28.77mV
12V Load Regulation	0.23%

5V Load Regulation	0.45%
3.3V Load Regulation	0.62%
5VSB Load Regulation	3.61%
Inrush Current	68.210A

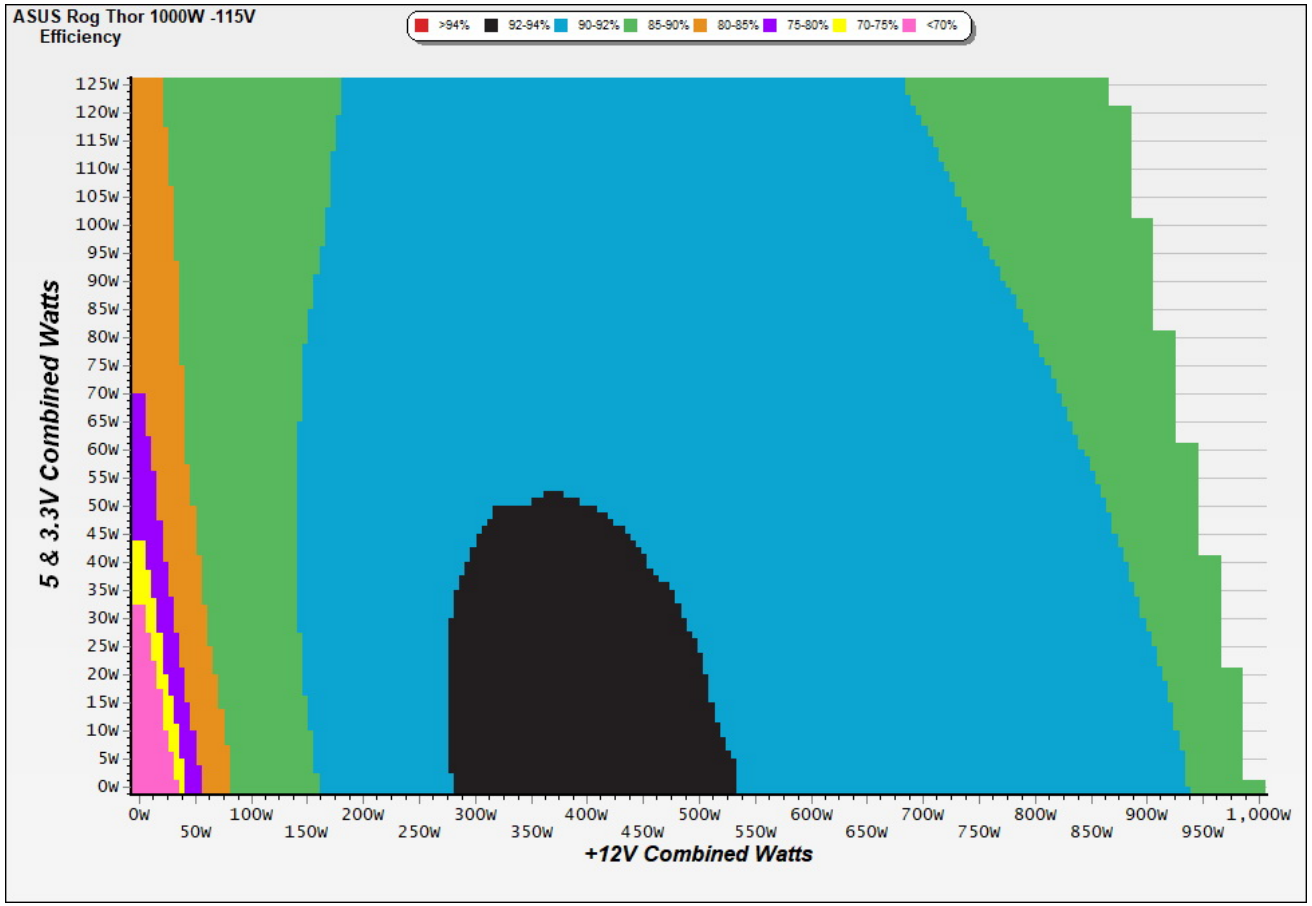
□□□□ & PG□□

Hold-Up Time (ms)	26.1
AC Loss to PWR_OK Hold Up Time (ms)	22
PWR_OK Inactive to DC Loss Delay (ms)	4.1

Graphs 115V


Power - 25/05/2021 - 11:16
Power(W)
0.057
0.0565
0.056
0.0555
0.055
0.0545
0.054
0.0535
0
100
200
300
400
500
600
700
800
900
1000
Seconds (s)

115V

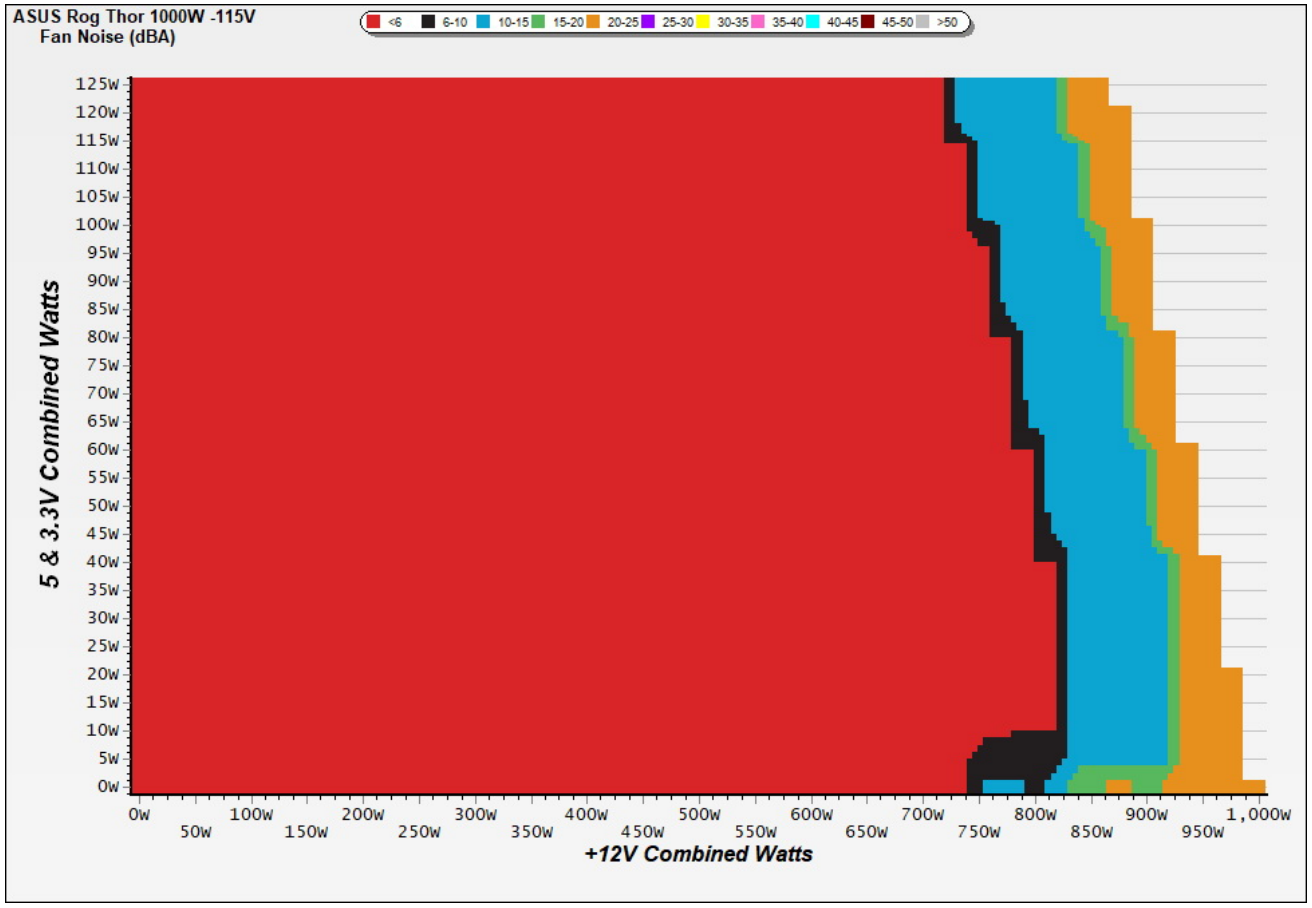


□□

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

□□□□□

115V



□□

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

Noise under high ambient temperature (indicative)

115V

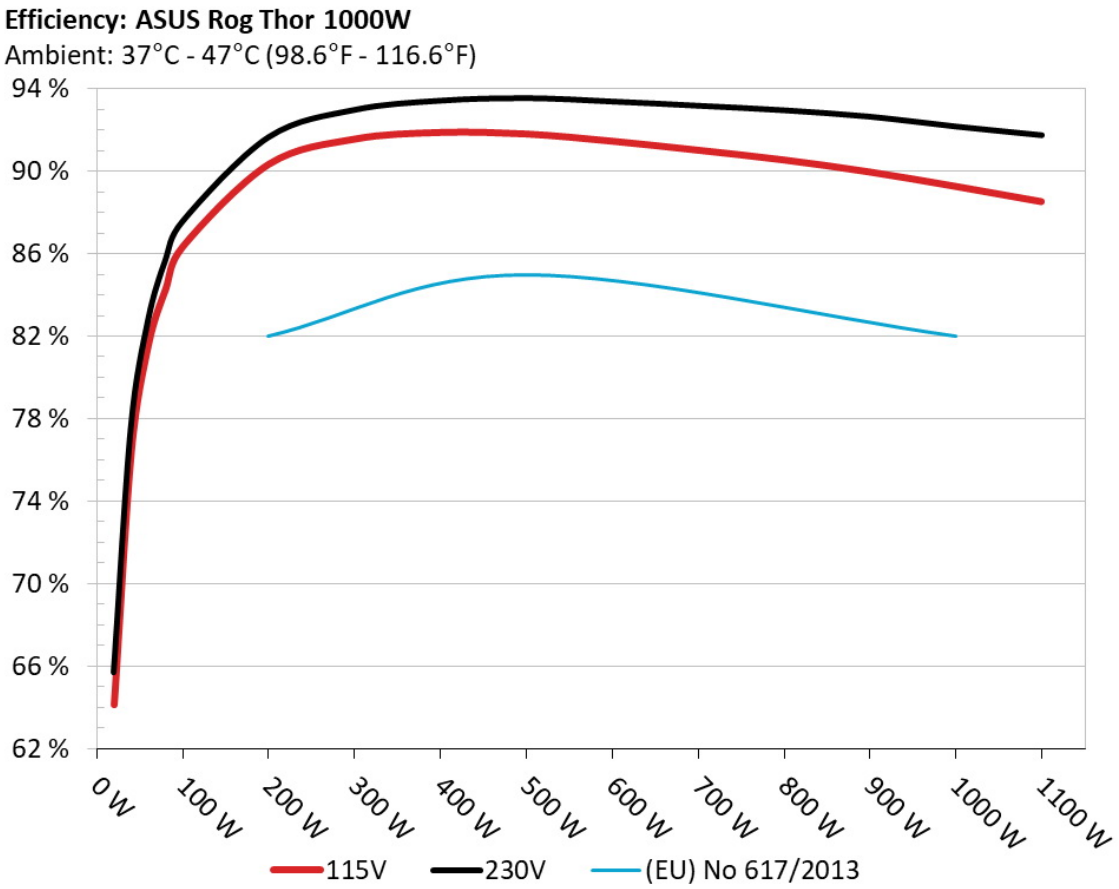
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 45.7 °C	0 RPM · <6.0 dB(A) · 45.7 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 46.8 °C	0 RPM · <6.0 dB(A) · 46.8 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 49.6 °C	0 RPM · <6.0 dB(A) · 49.6 °C	fan off in both
100%	1196 RPM · 33.6 dB(A) · 45.6 °C	1196 RPM · 33.6 dB(A) · 45.6 °C	**+0.0 dB(A)**

INFO

Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter, with the fan stopped; with the fan stopped, the intake sensor can read higher than the chamber air.

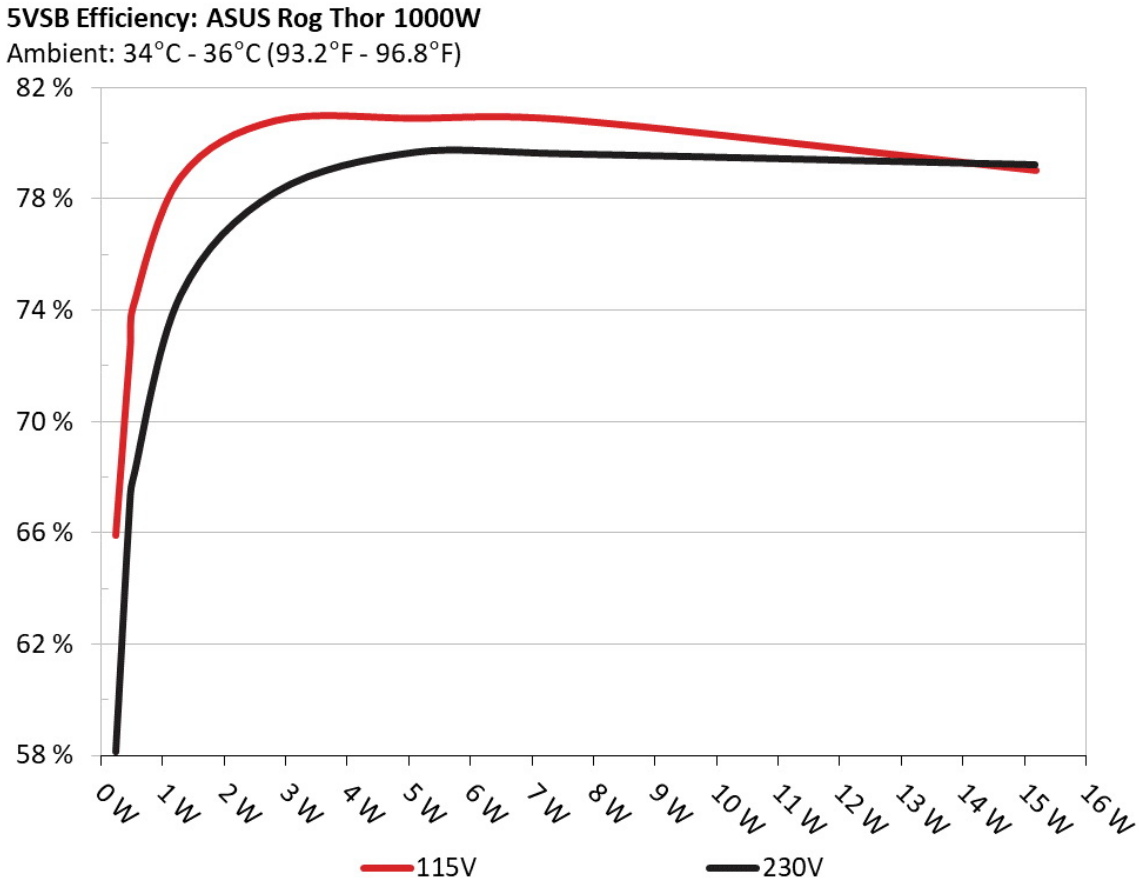
Informational. Not part of the ETA or LAMBDA rating.

Indicative Performance



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□□□□



□□

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

□□□□ □□ 5Vsb □□ (ErP Lot3/6 & CEC) 115V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.232	65.909%	0.036
	5.159V	0.352		115.15V

2	0.090A	0.464	72.613%	0.064
	5.157V	0.639		115.15V
3	0.550A	2.829	80.805%	0.266
	5.144V	3.501		115.17V
4	1.000A	5.129	80.886%	0.361
	5.130V	6.341		115.16V
5	1.500A	7.671	80.815%	0.415
	5.114V	9.492		115.16V
6	2.999A	15.189	79.015%	0.493
	5.065V	19.223		115.15V

Supplementary Tests (For Reference)

10-110%□□□□ 115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	6.444A	1.956A	1.963A	0.975A	99.978	86.345%	0	<6.0	45.69°C	0.973
	12.165V	5.106V	3.363V	5.126V	115.789				40.63°C	115.15V
2	13.904A	2.939A	2.945A	1.174A	199.997	90.337%	0	<6.0	46.76°C	0.983
	12.162V	5.104V	3.360V	5.111V	221.389				41.07°C	115.15V
3	21.704A	3.432A	3.440A	1.373A	299.957	91.561%	0	<6.0	47.82°C	0.981
	12.159V	5.102V	3.358V	5.096V	327.603				41.60°C	115.15V
4	29.469A	3.923A	3.934A	1.574A	399.433	91.883%	0	<6.0	48.64°C	0.986
	12.156V	5.100V	3.356V	5.081V	434.720				41.77°C	115.14V
5	36.951A	4.905A	4.921A	1.777A	499.578	91.810%	0	<6.0	49.61°C	0.990
	12.153V	5.098V	3.354V	5.066V	544.141				42.29°C	115.14V
6	44.436A	5.889A	5.910A	1.981A	599.719	91.461%	318	<6.0	42.79°C	0.992
	12.150V	5.096V	3.352V	5.049V	655.708				50.73°C	115.14V
7	51.891A	6.874A	6.899A	2.185A	699.442	91.025%	318	<6.0	43.10°C	0.993
	12.147V	5.094V	3.350V	5.032V	768.409				51.59°C	115.14V
8	59.417A	7.858A	7.886A	2.392A	799.965	90.549%	476	<6.0	43.45°C	0.994
	12.144V	5.092V	3.347V	5.016V	883.457				52.25°C	115.13V

9	67.273A	8.349A	8.365A	2.396A	899.235	89.969%	873	23.4	45.40°C	0.995
	12.141V	5.090V	3.345V	5.007V	999.490				54.76°C	115.13V
10	74.968A	8.845A	8.881A	3.016A	999.654	89.267%	1196	33.6	45.63°C	0.995
	12.138V	5.087V	3.344V	4.973V	1119.850				55.59°C	115.12V
11	83.229A	8.848A	8.885A	3.022A	1099.668	88.527%	2010	47.9	46.55°C	0.995
	12.135V	5.085V	3.342V	4.963V	1242.178				57.27°C	115.12V
CL1	0.117A	15.000A	14.997A	0.000A	128.252	83.328%	0	<6.0	48.66°C	0.975
	12.160V	5.102V	3.355V	5.144V	153.912				42.42°C	115.18V
CL2	82.990A	1.000A	0.999A	1.000A	1020.821	89.577%	1193	33.6	45.85°C	0.995
	12.138V	5.095V	3.347V	5.050V	1139.602				55.84°C	115.12V

The results above are not used in the certification process

20-80□□□□□ 115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.219A	0.489A	0.492A	0.194A	19.979	64.109%	0	<6.0	0.838
	12.158V	5.114V	3.369V	5.159V	31.164				115.16V
2	2.439A	0.978A	0.980A	0.388A	39.967	76.403%	0	<6.0	0.914
	12.166V	5.110V	3.365V	5.151V	52.311				115.16V
3	3.662A	1.468A	1.472A	0.583A	60.000	81.614%	0	<6.0	0.938
	12.166V	5.108V	3.364V	5.142V	73.517				115.16V
4	4.880A	1.957A	1.962A	0.779A	79.951	84.281%	0	<6.0	0.955
	12.164V	5.106V	3.363V	5.134V	94.862				115.15V

The results above are not used in the certification process

□□□□ 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.10mV	8.30mV	12.40mV	17.70mV	Pass
20% Load	15.20mV	8.10mV	12.60mV	16.90mV	Pass
30% Load	12.70mV	8.80mV	13.00mV	18.00mV	Pass
40% Load	9.50mV	9.10mV	13.20mV	18.50mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	10.40mV	8.30mV	13.30mV	19.50mV	Pass
60% Load	12.00mV	8.90mV	13.50mV	22.10mV	Pass
70% Load	13.10mV	8.80mV	13.60mV	21.50mV	Pass
80% Load	14.00mV	8.80mV	14.90mV	23.30mV	Pass
90% Load	14.30mV	10.50mV	16.50mV	24.70mV	Pass
100% Load	20.60mV	11.50mV	17.40mV	28.80mV	Pass
110% Load	23.30mV	12.50mV	17.90mV	31.20mV	Pass
Crossload1	16.40mV	8.10mV	13.00mV	16.30mV	Pass
Crossload2	22.40mV	9.80mV	16.90mV	26.10mV	Pass

The results above are not used in the certification process

ASUS ROG-THOR-1000P2-GAMING

Top side

Power specifications label

本测试报告中包含的所有数据和图表均可在以下条件下由任何人使用：使用过程需提及测试结果由 Cybenetics提供。
在任何情况下都应提供原始测试结果文档的网站链接

Cybenetics 提供自愿性认证计划：电源方面有 ETA (效率)、 LAMBDA (噪声) 与 SAFE (安全与正确运行)；散热产品方面有 DELTA (机箱隔音) 与 PHI (风扇风量与静压)

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