# Seasonic Prime TX-1300 (ATX v3.0)

Serial Number R2304AA132930002

Lab ID SS13002266

Certification ID 252266

Test Result Report ID: 23PS2266A

Certificate Issue Date: Oct 26, 2023

Scheme: ETA-EMI PSU

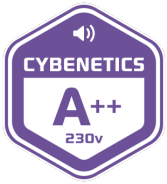






Scheme: LAMBDA PSU







Outside Validation Scope



# General Information

## Test Equipment

| | |
|---|---|
| Electronic Loads | Chroma 63601-5 x2<br>Chroma 63600-2<br>Chroma 63640-80-80 x10<br>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 | Seasonic |
| Model | Prime TX-1300 (ATX v3.0) |
| OEM/ODM | Seasonic |
| Serial Number | R2304AA132930002 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |

| | |
|---|---|
| Rated Current (Arms) | 15-8 |
| Rated Frequency (Hz) | 50-60 |
| Rated Power (W) | 1300 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | ATX12V |
| Cable Design | Fully Modular |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 135mm Fluid Dynamic Bearing Fan<br>(HA13525H12SF-Z) |
| Semi-Passive Operation | ✓ (selectable) |
| Cybenetics Testing Information | |
| Lab ID | SS13002266 |
| Date of receipt | Sep 29, 2023 |
| Testing Date | Oct 23, 2023 |
| Report Issued Date | Oct 26, 2023 |
| Engineer Name | - |
| 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 (610mm) | 1 | 1 | 16-18AWG | No |
| 4+4 pin EPS12V (700mm) | 3 | 3 | 16AWG | No |
| 6+2 pin PCIe (750mm) | 6 | 6 | 16AWG | No |
| 12+4 pin PCIe (750mm) (600W) | 1 | 1 | 16-28AWG | No |

| | | | | |
|---|---|---|---|---|
| SATA (510mm+155mm+155mm+155mm) | 4 | 16 | 18AWG | No |
| SATA (410mm+150mm) | 1 | 2 | 18AWG | No |
| 4-pin Molex (460mm+125mm+125mm) | 1 | 3 | 18AWG | No |
| AC Power Cord (1390mm) - C19 coupler | 1 | 1 | 14AWG | - |

## Power Specifications

| Rail | | 3.3V | 5V | 12V | 5VSB | -12V |
|---|---|---|---|---|---|---|
| Max. Power | Amps | 25 | 25 | 108.33 | 3 | 0.5 |
| | Watts | 125 | | 1300 | 15 | 6 |
| Total Max. Power (W) | | 1300 | | | | |

## Parts Description

| | |
|---|---|
| General Data | - |
| Manufacturer (OEM) | Seasonic |
| PCB Type | Double-Sided |
| Primary Side | - |
| Transient Filter | 6x Y caps, 2x X caps, 2x CM chokes, 1x MOV |
| Inrush Protection | 2x NTC Thermistor MF72-20D20M (20 Ohm) & Relay |
| Rectifier FETs | 4x IPB60R040C7 |
| APFC MOSFETs | 4x Infineon IPW60R125P6 (600V, 19A @ 100°C, Rds(on): 0.125Ohm) |
| APFC Boost Diode | 2x CREE C6D08065A (650V, 30A @ 25°C) |
| Bulk Cap(s) | 2x Nippon Chemi-Con (420V, 680uF each or 1360uF combined, 2000h @ 105°C, KMZ) &<br>1x Nippon Chemi-Con (420V, 820uF, 2000h @ 105°C, KHE) |
| Main Switchers | 4x Infineon IPW60R125P6 (600V, 19A @ 100°C, Rds(on): 0.125Ohm) |
| IC Driver | 2x Silicon Labs Si8230BD |
| APFC Controller | Texas Instruments UCC28070 |
| Resonant Controller | Champion CM6901T2X |
| Topology | Primary side: Bridgeless, Interleaved PFC, Full-Bridge & LLC converter<br>Secondary side: Synchronous Rectification & DC-DC converters |
| Secondary Side | - |
| +12V MOSFETs | 8x Nexperia PSMN1R0-40YLD (40V, 198A @ 100°C, Rds(on): 1.93mOhm) |

| | |
|---|---|
| 5V & 3.3V | DC-DC Converters: 2x<br>PWM Controllers: 1x |
| Filtering Capacitors | Electrolytic: Nippon Chemi-Con (2-5,000 @ 105°C, KZE),<br>Nippon Chemi-Con (5-6,000 @ 105°C, KZH)<br>5x Nippon Chemi-Con (@ 105°C, W)<br>3x Nichicon (6,000 @ 105°C, HV),<br>Polymer: 39x CAP |
| Supervisor IC | Weltrend WT7527RA (OCP, OVP, UVP, SCP, PG) |
| Fan Controller | Nuvoton M031FB0AE |
| Fan Model | Hong Hua HA13525H12SF-Z (135mm, 12V, 0.5A, Fluid Dynamic Bearing Fan) |
| 5VSB Circuit | - |
| Rectifier | 1x Infineon BSC100N06LS3 FET (60V, 36A @ 100°C, Rds(on): 10mOhm) |
| Standby PWM Controller | Power Integrations INN3164C |

# 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 | ✓ |
| ATX v3.0 Compliance | ✓ |

## Performance Summary

### 115V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 92.559% |
| Average Noise Output (>1450 Load Combinations) | 11.02dBA |
| Average PF (>1450 Load Combinations) | 0.985 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 72.918% |
| Standby Power Consumption | 0.0192W |

| Non-Accredited | |
|---|---|
| 12V Ripple (Full Load) | 19.85mV |
| 5V Ripple (Full Load) | 12.50mV |
| 3.3V Ripple (Full Load) | 18.03mV |
| 5VSB Ripple (Full Load) | 32.89mV |
| 12V Load Regulation | 0.37% |
| 5V Load Regulation | 0.40% |
| 3.3V Load Regulation | 0.73% |
| 5VSB Load Regulation | 0.85% |
| Inrush Current | 66.180A |

## 230V

| Accredited | |
|---|---|
| Average Efficiency (>1450 load combinations) | 94.044% |
| Average Noise Output (>1450 Load Combinations) | 11.44dBA |
| Average PF (>1450 Load Combinations) | 0.940 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 71.549% |
| Standby Power Consumption | 0.1095W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 20.90mV |
| 5V Ripple (Full Load) | 11.84mV |
| 3.3V Ripple (Full Load) | 18.14mV |
| 5VSB Ripple (Full Load) | 34.40mV |
| 12V Load Regulation | 0.38% |
| 5V Load Regulation | 0.42% |
| 3.3V Load Regulation | 0.73% |
| 5VSB Load Regulation | 0.79% |
| Inrush Current | 131.400A |
| 12V Transient Response (200%) | 11.45V |
| 5V Transient Response (200%) | 4.950V |
| 3.3V Transient Response (200%) | 3.161V |
| 5VSB Transient Response (200%) | 4.887V |

| | | |
|---|---|---|
| Hold-Up Time & PWR_OK Signal | | 22.60ms |
| AC Loss to PWR_OK Hold Up Time | | 19.20ms |
| PWR_OK Inactive to DC Loss Delay | | 3.40ms |
| PSU Timings: T1 (20% / 100%) | 39.0ms | 38.0ms |
| PSU Timings: T3 (20% / 100%) | 128.0ms | 132.0ms |
| OPP (25.21°C / 39.32°C) | 134.55% | 134.55% |

## Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 22.6 |
| AC Loss to PWR_OK Hold Up Time (ms) | 19.2 |
| PWR_OK Inactive to DC Loss Delay (ms) | 3.4 |

## Vampire Power

### Tables

#### 115V

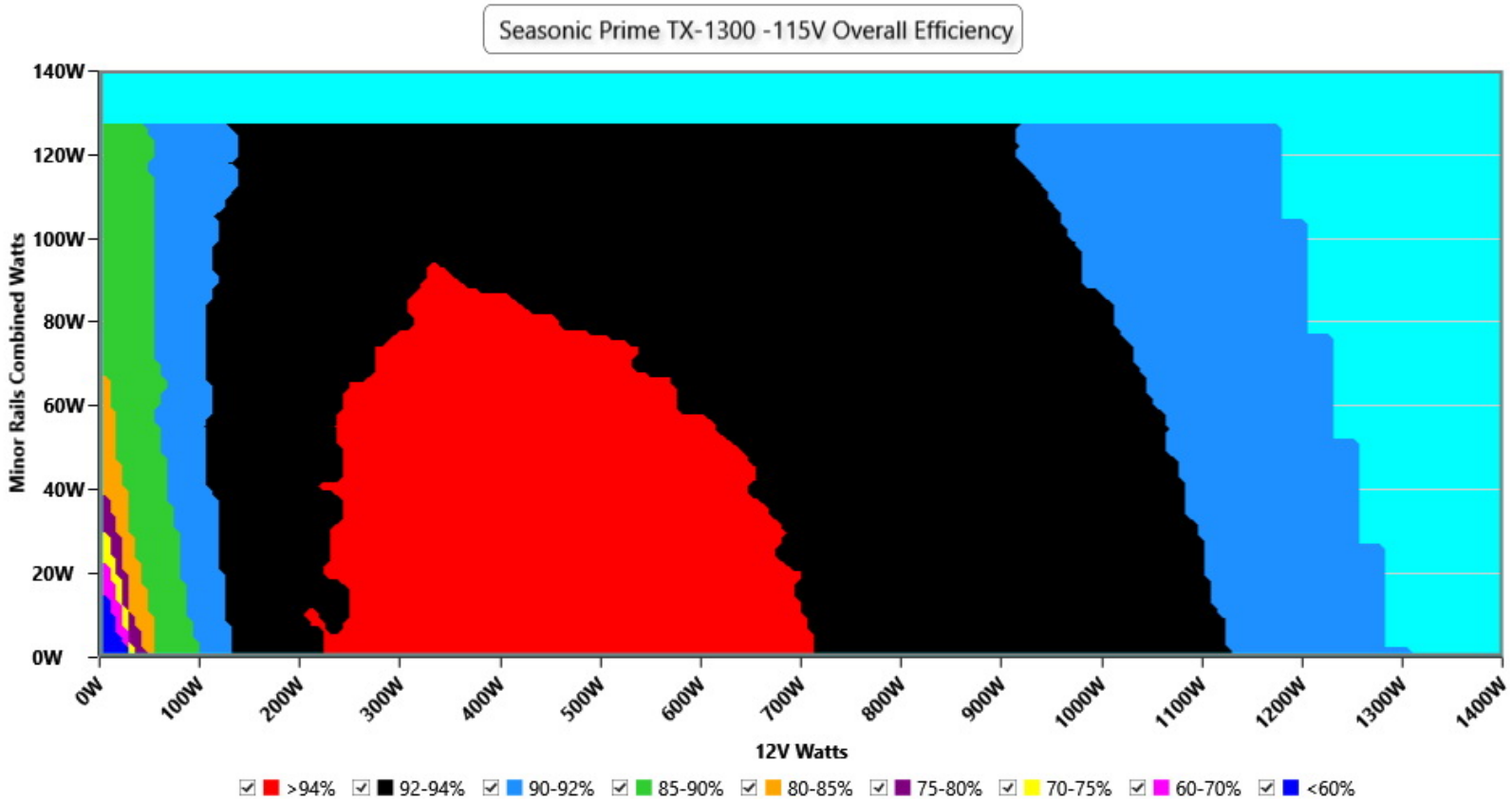
| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 114.85 V | 114.79 V | 113.85 V | 114.91 V | 116.15 V | PASS |
| Mains Frequency: | 60.00 Hz | 59.98 Hz | 59.40 Hz | 60.02 Hz | 60.60 Hz | PASS |
| Mains Voltage CF: | 1.419 | 1.418 | 1.340 | 1.421 | 1.490 | PASS |
| Mains Voltage THD: | 0.15 % | 0.10 % | N/A | 0.27 % | 2.00 % | PASS |
| Real Power: | 0.019 W | 0.006 W | N/A | 0.035 W | N/A | N/A |
| Apparent Power: | 11.679 W | 11.648 W | N/A | 11.720 W | N/A | N/A |
| Power Factor: | 0.003 | N/A | N/A | N/A | N/A | N/A |

## 230V

| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 229.88 V | 229.80 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: | 0.16 % | 0.12 % | N/A | 0.21 % | 2.00 % | PASS |
| Real Power: | 0.110 W | 0.074 W | N/A | 0.176 W | N/A | N/A |
| Apparent Power: | 40.532 W | 40.485 W | N/A | 40.591 W | N/A | N/A |
| Power Factor: | 0.002 | N/A | N/A | N/A | N/A | N/A |

## Efficiency Graph

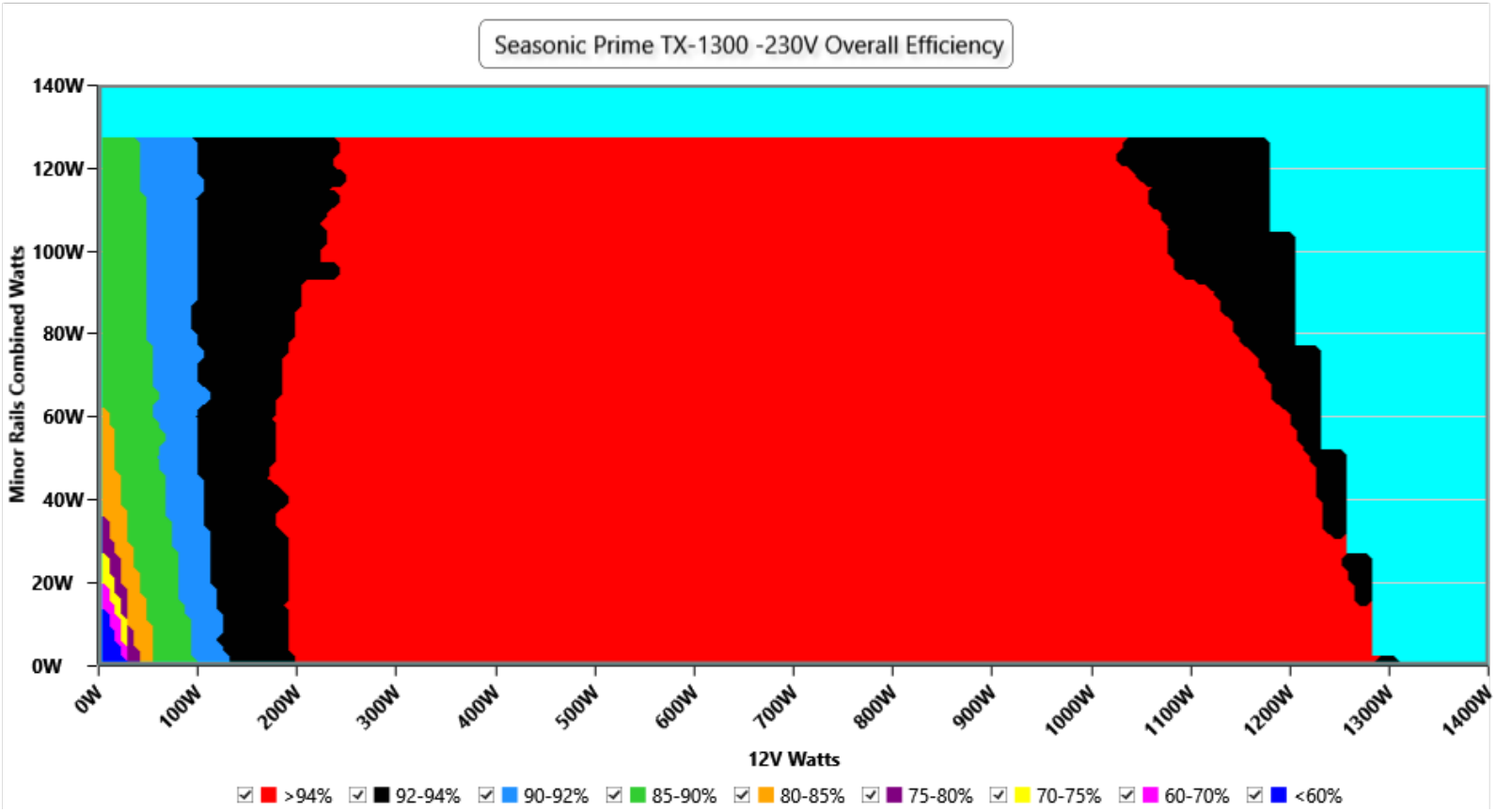
**115V**




### 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

## 230V




### INFO

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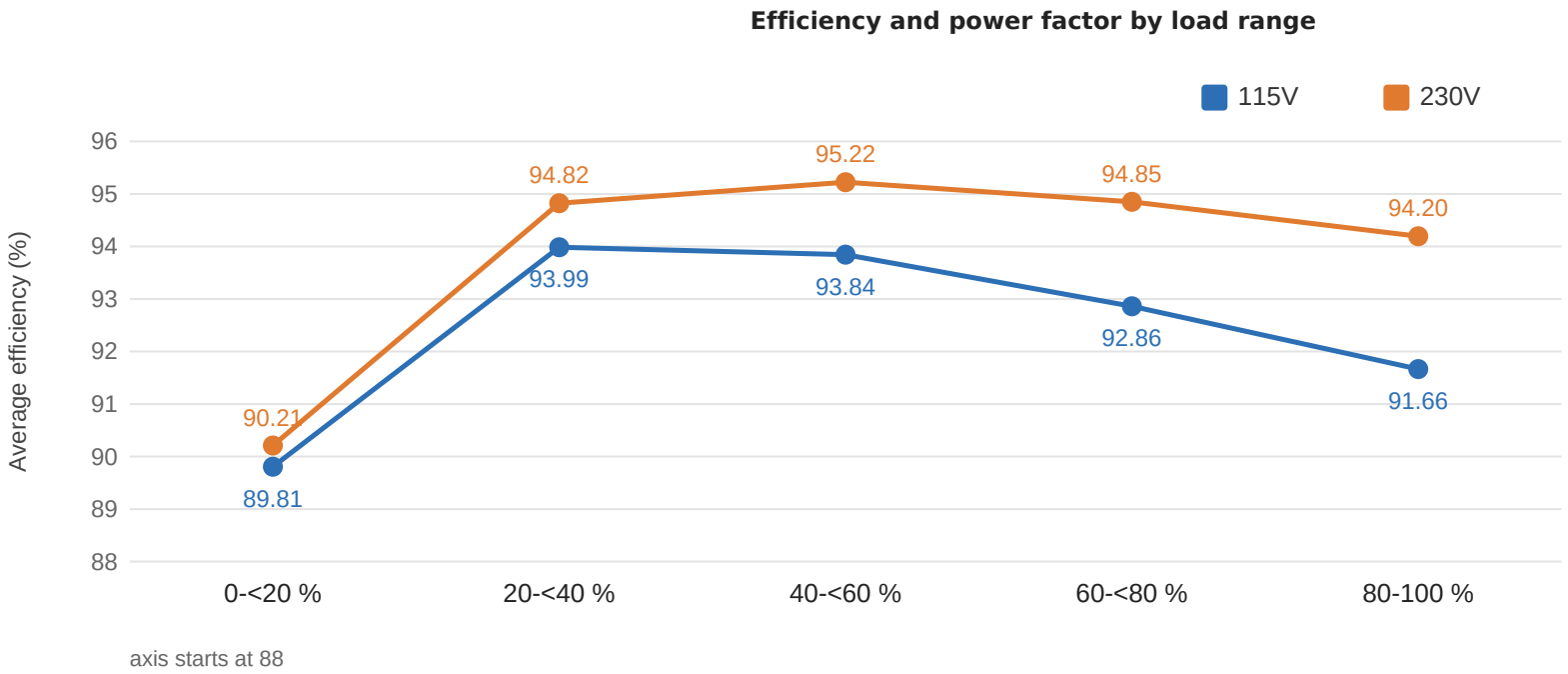
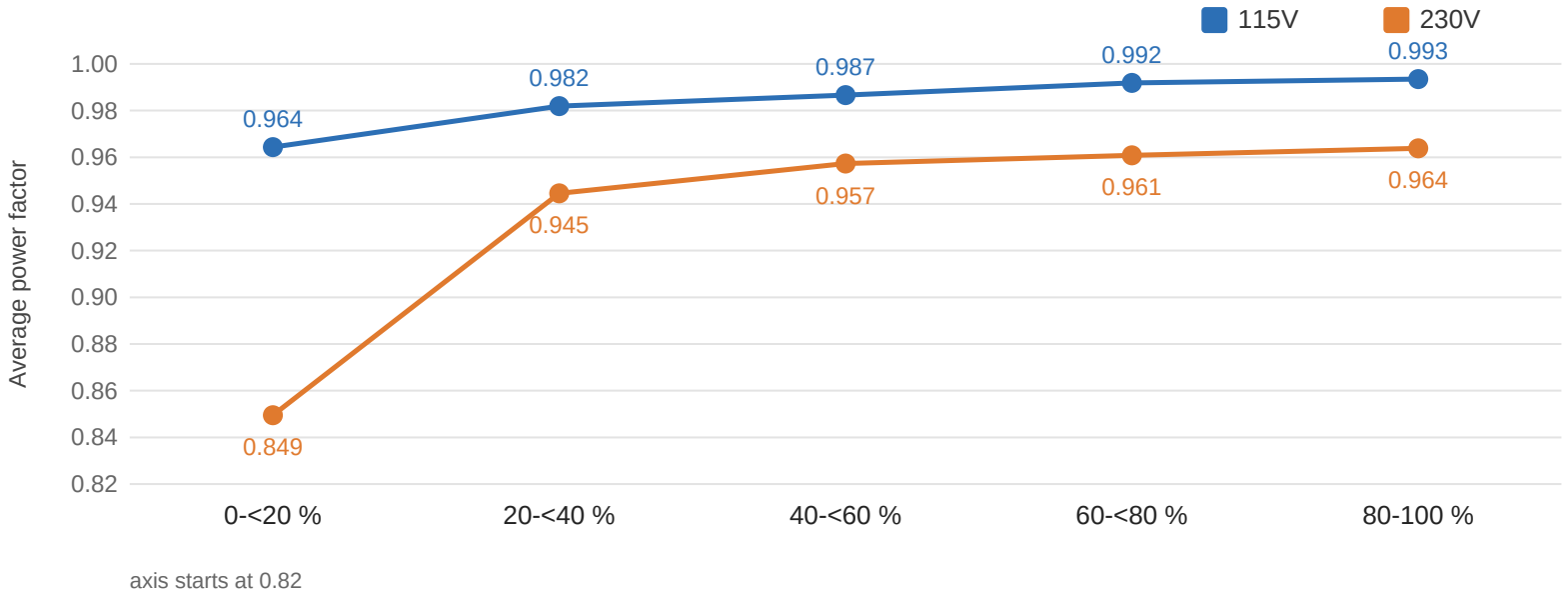



axis starts at 88




axis starts at 0.82

| Load range | Points | Efficiency 115V | Efficiency 230V | PF 115V | PF 230V |
|---|---|---|---|---|---|
| 0-<20 % | 237 / 236 | 89.81% | 90.21% | 0.964 | 0.849 |
| 20-<40 % | 310 / 311 | 93.99% | 94.82% | 0.982 | 0.945 |
| 40-<60 % | 310 / 310 | 93.84% | 95.22% | 0.987 | 0.957 |
| 60-<80 % | 310 / 310 | 92.86% | 94.85% | 0.992 | 0.961 |
| 80-100 % | 314 / 314 | 91.66% | 94.20% | 0.993 | 0.964 |
| 70-100 % (High-Load) | 470 / 470 | 91.97% | 94.37% | 0.993 | 0.962 |
| All (published average) | 1481 / 1481 | 92.56% | 94.04% | 0.985 | 0.940 |

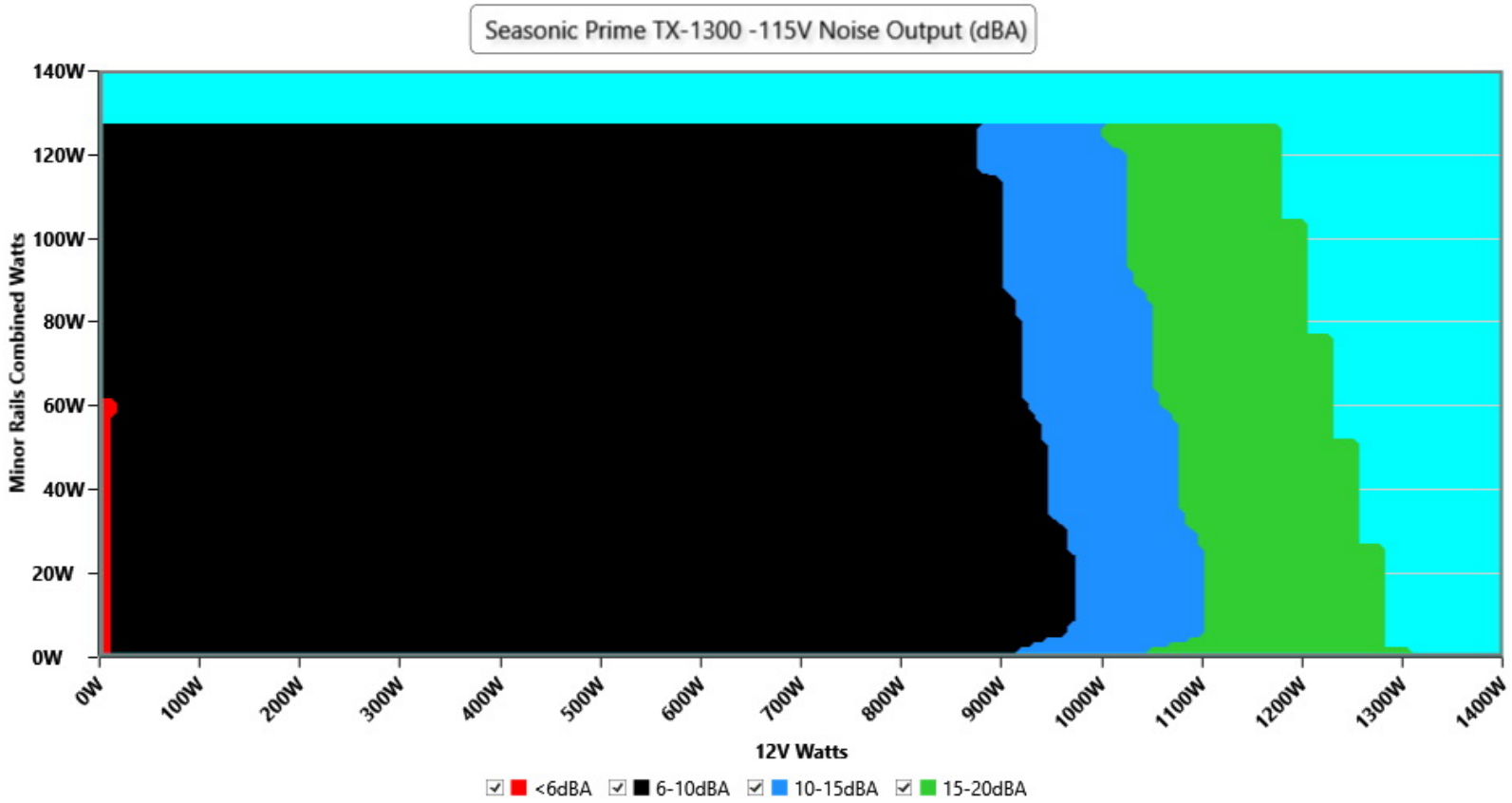
**INFO**

The average efficiency and power factor in five ranges of load. Calculated from the 1481 (115V) and 1481 (230V) load combinations of the certification sweep, the same data that ETA and LAMBDA use (test 0 excluded). Load is the total DC output as a share of the rated 1300 W. These are plain averages of the valid readings, as for the ETA rating, so the ranges combined give back the published averages.

*Informational. Not part of the ETA or LAMBDA rating.*

## Noise Graph

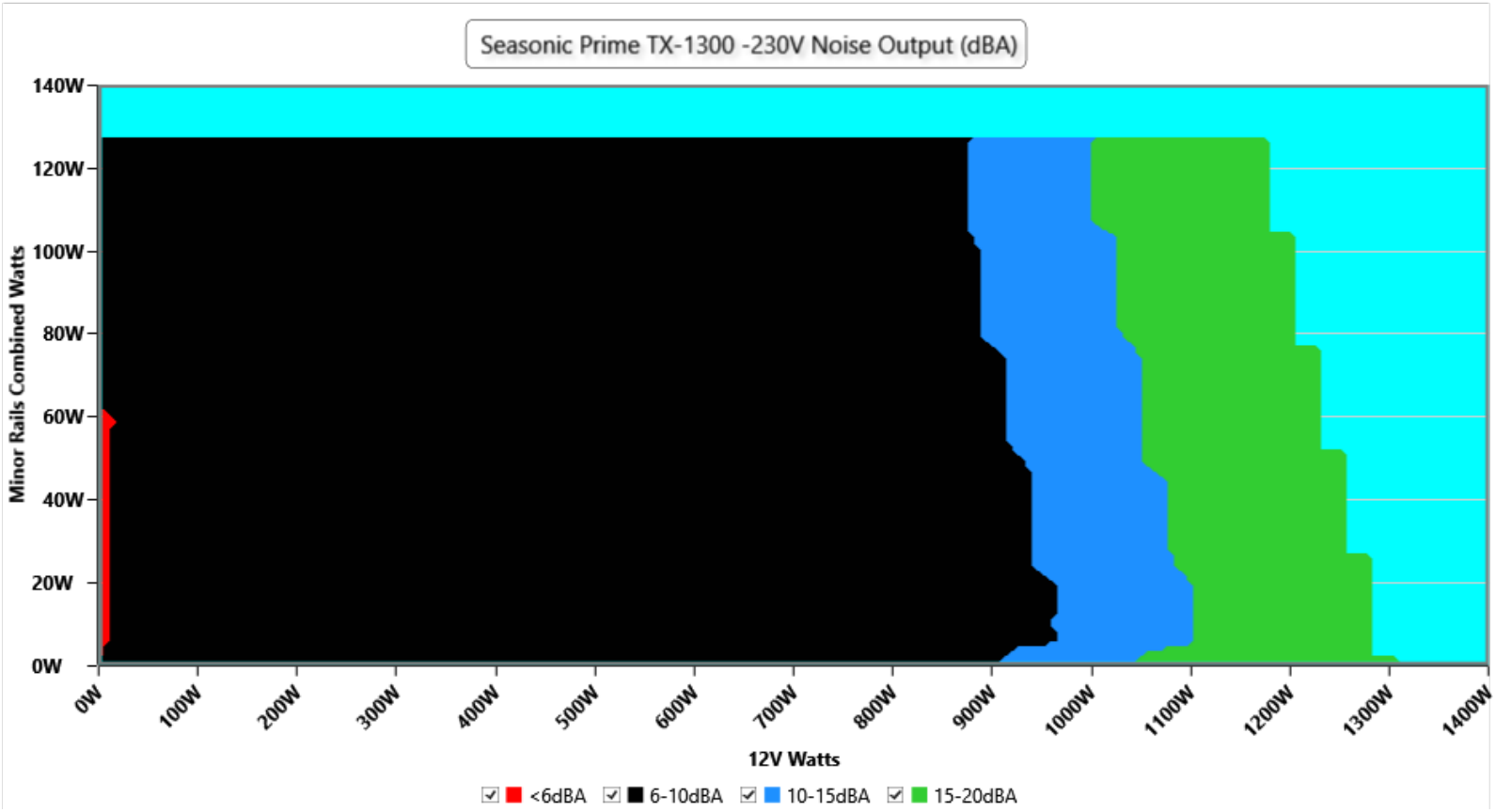
**115V**




**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

## 230V




### INFO

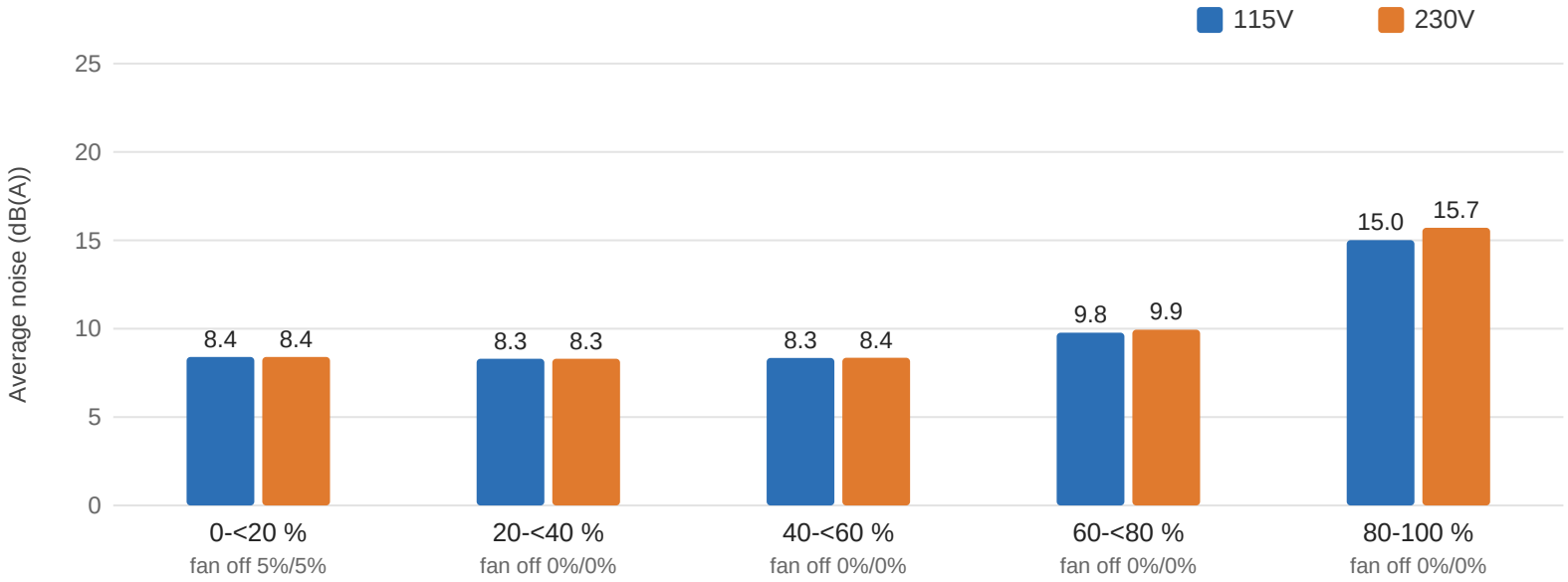
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

### Noise by load range

**High-Load Index (70-100 % load)**

Noise **14.0 dB(A)** at 115V and **14.6 dB(A)** at 230V · loudest point 18.4 dB(A)

Efficiency 91.97% / 94.37% · power factor 0.993 / 0.962 (115V / 230V)




| Load range | Noise 115V<br>avg (loudest) | Noise 230V<br>avg (loudest) | Fan off<br>115V / 230V |
|---|---|---|---|
| 0-<20 % | 8.4 (9.8) | 8.4 (9.8) | 5% / 5% |
| 20-<40 % | 8.3 (8.4) | 8.3 (8.4) | 0% / 0% |
| 40-<60 % | 8.3 (8.4) | 8.4 (8.4) | 0% / 0% |
| 60-<80 % | 9.8 (12.7) | 9.9 (12.7) | 0% / 0% |
| 80-100 % | 15.0 (18.4) | 15.7 (18.4) | 0% / 0% |
| 70-100 % (High-Load) | 14.0 (18.4) | 14.6 (18.4) | 0% / 0% |
| All (published average) | 11.0 (18.4) | 11.4 (18.4) | 1% / 1% |

**INFO**

The average noise in five ranges of load, the share of points with the fan stopped (semi-passive operation), and the High-Load Index: the same figures for all points at 70 % of the rated output and above. Calculated from the 1481 (115V) and 1481 (230V) load combinations of the certification sweep, the same data that ETA and LAMBDA use (test 0 excluded). Load is the total DC output as a share of the rated 1300 W. Noise is averaged on the energy scale, as for LAMBDA, so the ranges combined give back the published average noise. Each load combination is held for about five seconds; the stabilized readings at fixed loads are under "Noise under high ambient temperature". Below 6 dB(A), the floor of our sound meter, the table and the chart show <6.0. In the averages a stopped fan counts as 5 dB(A),

as in the published average.

*Informational. Not part of the ETA or LAMBDA rating.*

## Noise under high ambient temperature (indicative)

### 115V

| Load | Normal ambient<br>fan · noise · intake | High ambient<br>fan · noise · intake | Noise change |
|---|---|---|---|
| 10% | 0 RPM · <6.0 dB(A) · 44.5 °C | 0 RPM · <6.0 dB(A) · 44.5 °C | fan off in both |
| 20% | 0 RPM · <6.0 dB(A) · 45.3 °C | 0 RPM · <6.0 dB(A) · 45.3 °C | fan off in both |
| 50% | 497 RPM · 9.7 dB(A) · 42.3 °C | 497 RPM · 9.7 dB(A) · 42.3 °C | **+0.0 dB(A)** |
| 100% | 637 RPM · 17.7 dB(A) · 45.5 °C | 637 RPM · 17.7 dB(A) · 45.5 °C | **+0.0 dB(A)** |

### 230V

| Load | Normal ambient<br>fan · noise · intake | High ambient<br>fan · noise · intake | Noise change |
|---|---|---|---|
| 10% | 0 RPM · <6.0 dB(A) · 44.4 °C | 0 RPM · <6.0 dB(A) · 44.4 °C | fan off in both |
| 20% | 0 RPM · <6.0 dB(A) · 45.5 °C | 0 RPM · <6.0 dB(A) · 45.5 °C | fan off in both |
| 50% | 499 RPM · 9.8 dB(A) · 42.1 °C | 499 RPM · 9.8 dB(A) · 42.1 °C | **+0.0 dB(A)** |
| 100% | 639 RPM · 17.8 dB(A) · 46.0 °C | 639 RPM · 17.8 dB(A) · 46.0 °C | **+0.0 dB(A)** |

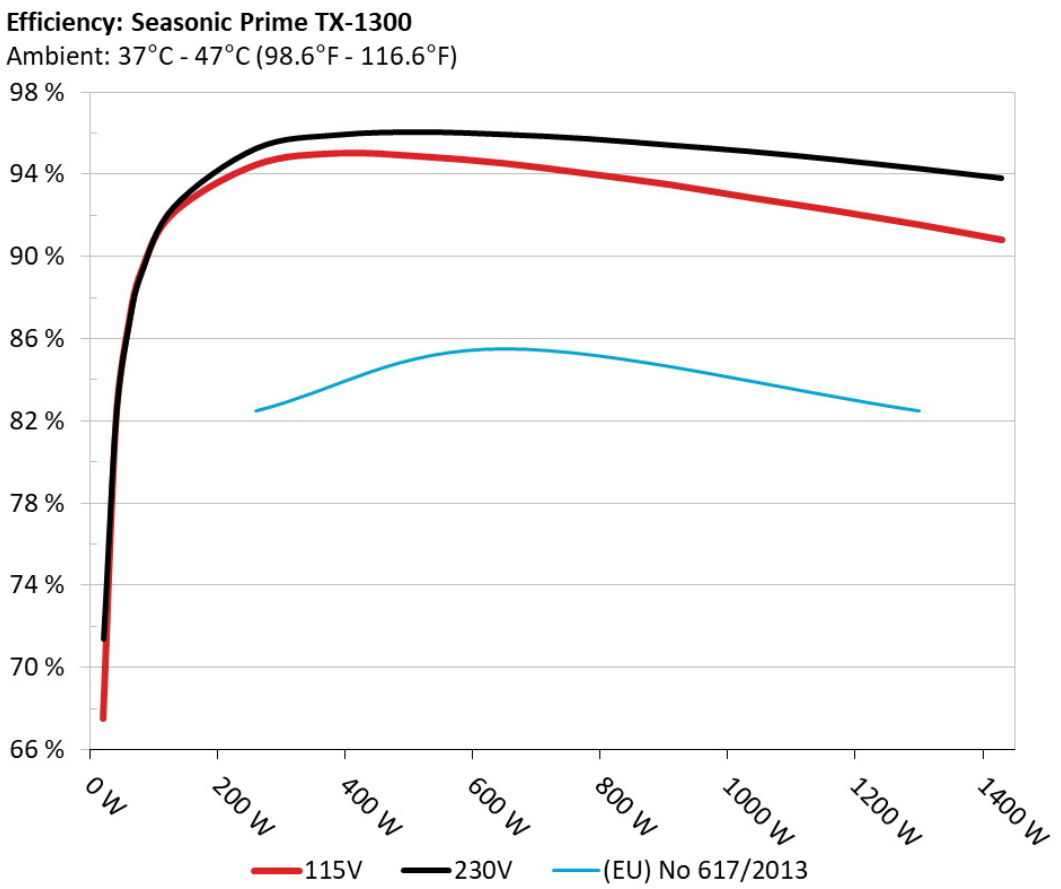
### INFO

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: the fan is stopped or too quiet to measure (the fan speed column says which); 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

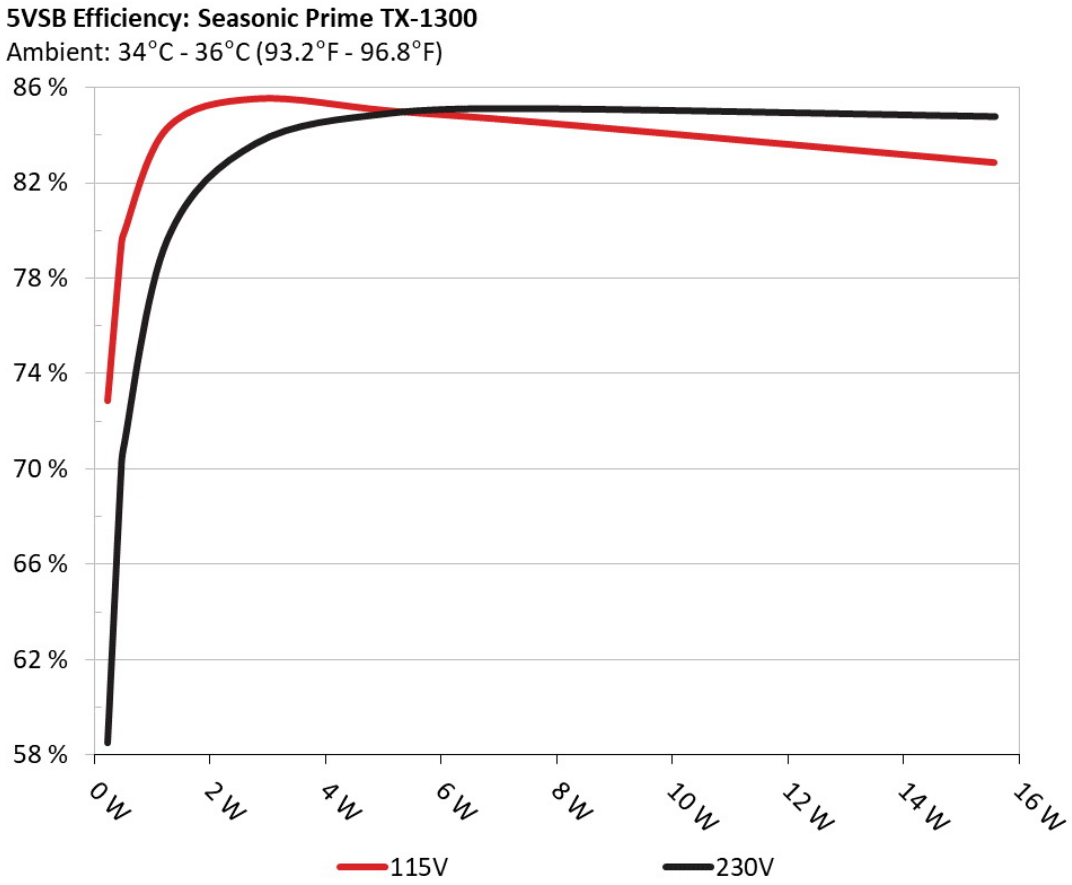
### Efficiency under high ambient temperature




**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




### 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 | 0.228W | 73.061% | 0.03 |
| | 5.064V | 0.312W | | 114.84V |
| 2 | 0.09A | 0.456W | 79.386% | 0.054 |
| | 5.063V | 0.574W | | 114.85V |
| 3 | 0.55A | 2.791W | 85.748% | 0.255 |
| | 5.075V | 3.255W | | 114.85V |
| 4 | 1A | 5.101W | 85.242% | 0.369 |
| | 5.101V | 5.983W | | 114.84V |
| 5 | 1.5A | 7.704W | 84.753% | 0.425 |
| | 5.136V | 9.09W | | 114.85V |
| 6 | 3A | 15.574W | 83.066% | 0.523 |
| | 5.191V | 18.748W | | 114.84V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| 1 | 0.045A | 0.228W | 58.687% | 0.011 |
| | 5.067V | 0.389W | | 229.85V |
| 2 | 0.09A | 0.456W | 69.843% | 0.018 |
| | 5.063V | 0.653W | | 229.85V |
| 3 | 0.55A | 2.792W | 83.867% | 0.091 |
| | 5.075V | 3.329W | | 229.85V |
| 4 | 1A | 5.103W | 85.137% | 0.156 |
| | 5.103V | 5.994W | | 229.84V |
| 5 | 1.5A | 7.697W | 85.331% | 0.218 |
| | 5.131V | 9.02W | | 229.85V |
| 6 | 3A | 15.596W | 85% | 0.322 |
| | 5.199V | 18.349W | | 229.85V |

## 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% | 9.039A | 1.978A | 1.988A | 0.98A | 129.993 | 91.642% | 0 | <6.0 | 44.46°C | 0.967 |
| | 11.992V | 5.056V | 3.32V | 5.104V | 141.84 | | | | 40.23°C | 114.81V |
| 20% | 19.106A | 2.968A | 2.984A | 1.175A | 259.942 | 93.988% | 0 | <6.0 | 45.31°C | 0.978 |
| | 11.988V | 5.054V | 3.318V | 5.106V | 276.555 | | | | 40.63°C | 114.78V |
| 30% | 29.497A | 3.463A | 3.483A | 1.369A | 389.522 | 94.549% | 0 | <6.0 | 46.22°C | 0.983 |
| | 11.983V | 5.053V | 3.316V | 5.113V | 411.982 | | | | 41.13°C | 114.73V |
| 40% | 39.930A | 3.959A | 3.983A | 1.568A | 519.521 | 94.387% | 0 | <6.0 | 47.46°C | 0.983 |
| | 11.979V | 5.052V | 3.314V | 5.102V | 550.423 | | | | 41.93°C | 114.69V |
| 50% | 50.040A | 4.951A | 4.982A | 1.763A | 649.694 | 94.055% | 497 | 9.7 | 42.33°C | 0.987 |
| | 11.974V | 5.049V | 3.312V | 5.105V | 690.754 | | | | 48.34°C | 114.65V |
| 60% | 60.158A | 5.944A | 5.983A | 1.961A | 779.849 | 93.554% | 499 | 9.8 | 42.65°C | 0.989 |
| | 11.969V | 5.048V | 3.31V | 5.101V | 833.577 | | | | 49.19°C | 114.6V |
| 70% | 70.258A | 6.937A | 6.982A | 2.156A | 909.768 | 93.013% | 497 | 9.7 | 43.39°C | 0.992 |
| | 11.966V | 5.046V | 3.308V | 5.103V | 978.122 | | | | 50.43°C | 114.56V |
| 80% | 80.388A | 7.928A | 7.984A | 2.256A | 1039.438 | 92.363% | 544 | 12.4 | 43.7°C | 0.993 |
| | 11.961V | 5.045V | 3.306V | 5.096V | 1125.377 | | | | 51.74°C | 114.52V |
| 90% | 90.937A | 8.425A | 8.473A | 2.357A | 1169.724 | 91.74% | 590 | 15.1 | 44.52°C | 0.993 |
| | 11.956V | 5.044V | 3.304V | 5.09V | 1275.044 | | | | 53.56°C | 114.46V |
| 100% | 101.226A | 8.922A | 8.993A | 2.941A | 1299.362 | 91.07% | 637 | 17.7 | 45.47°C | 0.994 |
| | 11.950V | 5.043V | 3.302V | 5.101V | 1426.761 | | | | 55.56°C | 114.42V |
| 110% | 111.456A | 9.916A | 10.09A | 2.947A | 1429.606 | 90.332% | 899 | 29.0 | 46.72°C | 0.994 |
| | 11.945V | 5.042V | 3.3V | 5.09V | 1582.614 | | | | 57.58°C | 114.36V |
| CL1 | 0.117A | 14.924A | 15.02A | 0A | 126.301 | 87.611% | 499 | 9.8 | 41.9°C | 0.968 |
| | 11.991V | 5.046V | 3.302V | 5.057V | 144.168 | | | | 47.38°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 | 0.115A | 24.726A | 0A | 0A | 126.232 | 86.311% | 499 | 9.8 | 40.52°C | 0.968 |
| | 11.991V | 5.049V | 3.314V | 5.06V | 146.25 | | | | 47.56°C | 114.81V |
| CL3 | 0.115A | 0A | 24.995A | 0A | 83.883 | 81.152% | 498 | 9.7 | 40.16°C | 0.958 |
| | 11.991V | 5.055V | 3.301V | 5.06V | 103.361 | | | | 49.23°C | 114.81V |
| CL4 | 108.807A | 0A | 0A | 0.001A | 1299.941 | 91.443% | 637 | 17.7 | 44.88°C | 0.994 |
| | 11.947V | 5.06V | 3.318V | 4.994V | 1421.583 | | | | 55.86°C | 114.41V |

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% | 9.038A | 1.977A | 1.988A | 0.98A | 129.993 | 91.891% | 0 | <6.0 | 44.41°C | 0.837 |
| | 11.993V | 5.057V | 3.32V | 5.104V | 141.466 | | | | 40.21°C | 229.83V |
| 20% | 19.108A | 2.968A | 2.984A | 1.175A | 259.959 | 94.747% | 0 | <6.0 | 45.49°C | 0.906 |
| | 11.988V | 5.055V | 3.317V | 5.107V | 274.373 | | | | 40.92°C | 229.81V |
| 30% | 29.505A | 3.463A | 3.484A | 1.37A | 389.611 | 95.399% | 0 | <6.0 | 46.2°C | 0.93 |
| | 11.983V | 5.053V | 3.316V | 5.111V | 408.405 | | | | 41.13°C | 229.79V |
| 40% | 39.939A | 3.959A | 3.983A | 1.568A | 519.612 | 95.532% | 0 | <6.0 | 47.35°C | 0.939 |
| | 11.979V | 5.052V | 3.314V | 5.102V | 543.913 | | | | 41.87°C | 229.77V |
| 50% | 50.052A | 4.951A | 4.982A | 1.763A | 649.747 | 95.416% | 499 | 9.8 | 42.05°C | 0.946 |
| | 11.972V | 5.05V | 3.312V | 5.105V | 680.962 | | | | 48.07°C | 229.75V |
| 60% | 60.160A | 5.943A | 5.983A | 1.961A | 779.849 | 95.212% | 496 | 9.7 | 42.62°C | 0.95 |
| | 11.969V | 5.048V | 3.31V | 5.101V | 819.081 | | | | 49.25°C | 229.73V |
| 70% | 70.281A | 6.936A | 6.984A | 2.157A | 909.926 | 94.897% | 503 | 10.0 | 43.3°C | 0.955 |
| | 11.964V | 5.047V | 3.308V | 5.1V | 958.849 | | | | 50.39°C | 229.71V |
| 80% | 80.407A | 7.927A | 7.986A | 2.257A | 1039.523 | 94.58% | 548 | 12.6 | 43.74°C | 0.96 |
| | 11.959V | 5.045V | 3.306V | 5.095V | 1099.096 | | | | 51.76°C | 229.69V |
| 90% | 90.950A | 8.424A | 8.474A | 2.358A | 1169.767 | 94.192% | 594 | 15.3 | 44.18°C | 0.964 |
| | 11.954V | 5.045V | 3.304V | 5.09V | 1241.892 | | | | 53.22°C | 229.67V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| 100% | 101.235A | 8.922A | 8.993A | 2.94A | 1299.401 | 93.762% | 639 | 17.8 | 46°C | 0.968 |
| | 11.949V | 5.044V | 3.302V | 5.101V | 1385.854 | | | | 56.07°C | 229.64V |
| 110% | 111.460A | 9.916A | 10.09A | 2.946A | 1429.616 | 93.295% | 806 | 25.5 | 46.84°C | 0.972 |
| | 11.944V | 5.042V | 3.3V | 5.092V | 1532.35 | | | | 57.72°C | 229.62V |
| CL1 | 0.117A | 14.924A | 15.02A | 0A | 126.302 | 87.796% | 501 | 9.9 | 41.27°C | 0.84 |
| | 11.991V | 5.046V | 3.302V | 5.058V | 143.843 | | | | 46.77°C | 229.83V |
| CL2 | 0.115A | 24.729A | 0A | 0A | 126.236 | 86.465% | 500 | 9.8 | 40.72°C | 0.842 |
| | 11.992V | 5.049V | 3.314V | 5.061V | 145.984 | | | | 47.76°C | 229.83V |
| CL3 | 0.115A | 0A | 24.994A | 0A | 83.882 | 80.827% | 499 | 9.8 | 40°C | 0.789 |
| | 11.991V | 5.055V | 3.301V | 5.061V | 103.785 | | | | 49.05°C | 229.84V |
| CL4 | 108.807A | 0A | 0A | 0.001A | 1299.957 | 94.065% | 639 | 17.8 | 45.17°C | 0.968 |
| | 11.947V | 5.06V | 3.318V | 4.994V | 1381.981 | | | | 56.09°C | 229.64V |

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 | 1.238A | 0.494A | 0.496A | 0.197A | 19.998 | 67.04% | 0 | <6.0 | 39.85°C | 0.845 |
| | 11.989V | 5.063V | 3.326V | 5.07V | 29.837 | | | | 36.78°C | 114.85V |
| 40W | 2.728A | 0.691A | 0.695A | 0.295A | 39.999 | 81.459% | 0 | <6.0 | 40.82°C | 0.907 |
| | 11.986V | 5.062V | 3.325V | 5.077V | 49.101 | | | | 37.53°C | 114.83V |
| 60W | 4.213A | 0.889A | 0.894A | 0.394A | 59.999 | 86.214% | 0 | <6.0 | 42.17°C | 0.941 |
| | 11.994V | 5.059V | 3.323V | 5.077V | 69.593 | | | | 38.36°C | 114.84V |
| 80W | 5.696A | 1.087A | 1.093A | 0.492A | 79.944 | 88.81% | 0 | <6.0 | 42.99°C | 0.951 |
| | 11.994V | 5.058V | 3.322V | 5.083V | 90.015 | | | | 39.07°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 | 1.238A | 0.494A | 0.496A | 0.197A | 19.997 | 70.88% | 0 | <6.0 | 39.7°C | 0.463 |
| | 11.989V | 5.065V | 3.326V | 5.071V | 28.22 | | | | 36.63°C | 229.85V |
| 40W | 2.727A | 0.691A | 0.695A | 0.295A | 39.995 | 81.789% | 0 | <6.0 | 40.99°C | 0.634 |
| | 11.984V | 5.064V | 3.325V | 5.077V | 48.91 | | | | 37.69°C | 229.84V |
| 60W | 4.212A | 0.889A | 0.893A | 0.394A | 59.994 | 86.206% | 0 | <6.0 | 41.95°C | 0.711 |
| | 11.995V | 5.061V | 3.323V | 5.077V | 69.596 | | | | 38.39°C | 229.85V |
| 80W | 5.694A | 1.087A | 1.093A | 0.492A | 79.932 | 88.697% | 0 | <6.0 | 42.89°C | 0.763 |
| | 11.995V | 5.059V | 3.322V | 5.081V | 90.112 | | | | 39.04°C | 229.84V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 13.40mV | 11.80mV | 13.85mV | 20.27mV | Pass |
| 20% Load | 12.28mV | 9.70mV | 11.80mV | 25.76mV | Pass |
| 30% Load | 12.63mV | 10.72mV | 12.93mV | 26.22mV | Pass |
| 40% Load | 14.73mV | 12.83mV | 14.88mV | 26.89mV | Pass |
| 50% Load | 14.98mV | 12.63mV | 15.65mV | 14.21mV | Pass |
| 60% Load | 15.34mV | 13.19mV | 15.49mV | 22.17mV | Pass |
| 70% Load | 12.84mV | 10.16mV | 13.90mV | 27.45mV | Pass |
| 80% Load | 13.04mV | 10.62mV | 13.96mV | 31.35mV | Pass |
| 90% Load | 12.99mV | 10.98mV | 15.44mV | 31.71mV | Pass |
| 100% Load | 19.85mV | 12.50mV | 18.03mV | 32.89mV | Pass |
| 110% Load | 20.90mV | 12.33mV | 18.12mV | 32.54mV | Pass |
| Crossload1 | 16.98mV | 10.07mV | 16.01mV | 6.78mV | Pass |
| Crossload2 | 12.89mV | 17.76mV | 15.85mV | 7.18mV | Pass |

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| Crossload3 | 10.53mV | 10.11mV | 16.67mV | 7.13mV | Pass |
| Crossload4 | 21.13mV | 12.06mV | 15.57mV | 11.22mV | Pass |

The results above are not used in the certification process

**230V**

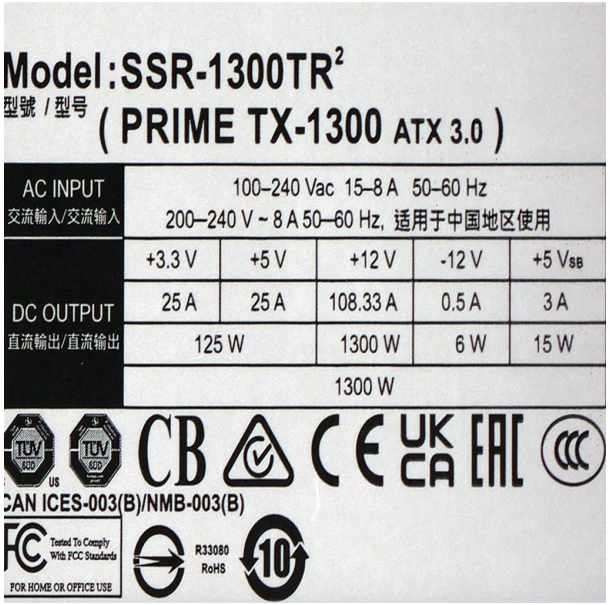
| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 12.43mV | 10.11mV | 11.95mV | 21.91mV | Pass |
| 20% Load | 13.19mV | 10.98mV | 12.78mV | 25.29mV | Pass |
| 30% Load | 13.40mV | 12.42mV | 13.19mV | 28.73mV | Pass |
| 40% Load | 13.96mV | 12.57mV | 15.19mV | 28.48mV | Pass |
| 50% Load | 14.27mV | 12.37mV | 15.08mV | 15.70mV | Pass |
| 60% Load | 12.07mV | 9.08mV | 11.95mV | 21.96mV | Pass |
| 70% Load | 11.97mV | 9.19mV | 12.93mV | 26.68mV | Pass |
| 80% Load | 12.22mV | 10.57mV | 13.70mV | 30.33mV | Pass |
| 90% Load | 12.63mV | 10.37mV | 14.37mV | 33.71mV | Pass |
| 100% Load | 20.90mV | 11.84mV | 18.14mV | 34.40mV | Pass |
| 110% Load | 21.44mV | 11.92mV | 18.71mV | 31.21mV | Pass |
| Crossload1 | 18.00mV | 10.75mV | 15.57mV | 7.06mV | Pass |
| Crossload2 | 12.84mV | 18.06mV | 16.06mV | 7.95mV | Pass |
| Crossload3 | 11.56mV | 10.78mV | 18.73mV | 7.44mV | Pass |
| Crossload4 | 20.20mV | 11.88mV | 17.31mV | 11.30mV | Pass |

The results above are not used in the certification process

## Seasonic Prime TX-1300 (ATX v3.0)




Top side




Power specifications label

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 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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com