# Thermaltake Toughpower GF A3 1050W (CE-Link)

Serial Number PSTPD1050FNFAGULBSVHO1583

Lab ID TT10503365

Certification ID 263365

Test Result Report ID: 26PS3365A

Certificate Issue Date: Jul 28, 2026

Scheme: ETA-EMI PSU

115V




230V




Scheme: LAMBDA PSU

115V




230V







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 | Thermaltake |
| Model | Toughpower GF A3 1050W (CE-Link) |
| OEM/ODM | CE-Link |
| Serial Number | PSTPD1050FNFAGULBSVHO1583 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |

| | |
|---|---|
| Rated Current (Arms) | 8-16 |
| Rated Frequency (Hz) | 50-60 |
| Rated Power (W) | 1050 |
| Operating Temperature (Continuous Full Load) (°C) | 0 - 45 |
| Type | ATX12V |
| Cable Design | Fully Modular |
| Warranty | 10 years |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | 150 x 85 x 140mm |
| Weight | 1.58 kg (3.48 lb) |
| Cooling | 120mm Fluid Dynamic Bearing Fan (GQR1225D12H) |
| Semi-Passive Operation | ✓ (selectable) |
| Cybenetics Testing Information | |
| Lab ID | TT10503365 |
| Date of receipt | Jul 3, 2026 |
| Testing Date | Jul 22, 2026 |
| Report Issued Date | Jul 28, 2026 |
| Engineer Name | Ioannis Kalyviotis |
| Authorized By the Laboratory Technical Manager | Aristeidis Bitziopoulos |
| Signature |  |

## Cables and Connectors
## (Non-accredited measurements)

| Modular Cables | | | | |
|---|---|---|---|---|
| **Description** | **Cable Count** | **Connector Count (Total)** | **Gauge** | **Cable Type** |
| ATX connector 24 pin (600mm) | 1 | 1 | 18-22AWG | Tinned Copper |
| 4+4 pin EPS12V (650mm) | 2 | 2 | 16AWG | Tinned Copper |
| 6+2 pin PCIe (500mm+150mm) | 2 | 4 | 16-18AWG | Tinned Copper |
| 6+2 pin PCIe (500mm) | 1 | 1 | 16AWG | Tinned Copper |
| 12+4 pin PCIe (600mm) (600W) | 1 | 1 | 16-26AWG | Tinned Copper |

| **Modular Cables** | | | | |
|---|---|---|---|---|
| SATA (500mm+150mm+150mm+150mm) | 3 | 12 | 18AWG | Tinned Copper |
| 4-pin Molex (500mm+150mm+150mm+150mm) / FFD (+155mm) | 1 | 4 / 1 | 18-22AWG | Tinned Copper |
| AC Power Cord (1400mm) - C13 coupler | 1 | 1 | 16AWG | - |

## Protection Features

| | |
|---|---|
| Under Voltage Protection | ✓ |
| Over Power Protection | ✓ |
| Over Current (+12V) Protection | ✓ |
| Over Temperature Protection | ✓ |
| Short Circuit Protection | ✓ |
| Surge Protection | ✓ |
| Inrush Current Protection | ✓ |
| Fan Failure Protection | ✗ |

## Power Specifications

| Rail | | 3.3V | 5V | 12V | 5VSB | -12V |
|---|---|---|---|---|---|---|
| Max. Power | Amps | 20 | 20 | 87.5 | 3 | 0.3 |
| | Watts | 100 | | 1050 | 15 | 3.6 |
| Total Max. Power (W) | | 1050 | | | | |

## Parts Description

| **General Data** | |
|---|---|
| Manufacturer (OEM) | CE-Link |
| PCB Type | Double-Sided |
| **Primary Side** | |
| Transient Filter | 4x Y caps, 2x X caps, 2x CM chokes, 1x MOV |
| Inrush Protection | 1x Cantherm MF72-5D15 (5 Ohm @ 25°C) & Relay |
| Bridge Rectifier | 2x HY GBU2506 (600V, 25A @ 100°C) |

| | |
|---|---|
| APFC MOSFETs | 2x LonFET LSD55R140GT (550V, 15A @ 100°C, Rds(on): 0.14Ohm) |
| APFC Boost Diode | Maplesemi MSP10065G1 (650V, 10A @ 150°C) |
| Bulk Cap(s) | 1x Nippon Chemi-Con (400V, 820uF, 2000h @ 105°C, KMW ) |
| Main Switchers | 4x LonFET LSD55R140GF (550V, 15A @ 100°C, Rds(on): 0.14Ohm) |
| APFC Controller | Champion CM6500UNX &<br>Champion CM03AX (reducing no load consumption) |
| Resonant Controller | Champion CU6901T6X |
| Topology | Primary side: APFC, Full-Bridge & LLC Resonant Converter<br>Secondary side: [12V] Synchronous Rectification & [Minor Rails] DC-DC converters |
| **Secondary Side** | |
| +12V MOSFETs | 8x LonFET LSGN04R013WE (40V, 122A @ 100°C, Rds(on): 1.35mOhm) |
| 5V & 3.3V | DC-DC Converters: 6x Vgsemi VS3610GPMT (30V, 72A @ 100°C, Rds(on): 3.2mOhm)<br>PWM Controller(s): 1x Anpec APW7159C |
| Filtering Capacitors | Electrolytic:<br>11x 12 Kuang Gin ( @ 105°C, WE )<br>1x Teapo (2000 ~ 3000h @ 105°C, SC )<br>Polymer:<br>26x Teapo |
| Supervisor IC | Grenergy GR8313 |
| Fan Model | TT-1225 GQR1225D12H (120mm, 12V, 0.35A, Fluid Dynamic Bearing Fan) |
| **5VSB Circuit** | |
| Rectifier | P43R1M |
| Standby PWM Controller | Sanken A6069H |

# 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 v3.1 PSU Power Excursion | ✓ |
| Conducted Emissions EN 55032 & CISPR 32 | Passed |

## Performance Summary

### 115V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 89.995% |
| Average Noise Output (>1450 Load Combinations) | 41.33dBA |
| Average PF (>1450 Load Combinations) | 0.984 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 70.199% |
| Standby Power Consumption | 0.0364W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 41.56mV |
| 5V Ripple (Full Load) | 37.40mV |
| 3.3V Ripple (Full Load) | 37.28mV |
| 5VSB Ripple (Full Load) | 27.00mV |
| 12V Load Regulation | 0.70% |
| 5V Load Regulation | 0.28% |
| 3.3V Load Regulation | 0.45% |
| 5VSB Load Regulation | 2.39% |
| Inrush Current | 31.140A |

### 230V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 92.016% |
| Average Noise Output (>1450 Load Combinations) | 41.42dBA |
| Average PF (>1450 Load Combinations) | 0.937 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 72.081% |
| Standby Power Consumption | 0.0710W |

| | | |
|---|---|---|
| Non-Accredited | | |
| 12V Ripple (Full Load) | | 30.11mV |
| 5V Ripple (Full Load) | | 22.77mV |
| 3.3V Ripple (Full Load) | | 24.30mV |
| 5VSB Ripple (Full Load) | | 17.91mV |
| 12V Load Regulation | | 0.68% |
| 5V Load Regulation | | 0.30% |
| 3.3V Load Regulation | | 0.57% |
| 5VSB Load Regulation | | 2.39% |
| Inrush Current | | 81.250A |
| 12V Transient Response (200%) | | 11.34V |
| 5V Transient Response (200%) | | 4.960V |
| 3.3V Transient Response (200%) | | 3.196V |
| 5VSB Transient Response (200%) | | 4.913V |
| Hold-Up Time & PWR_OK Signal | | 15.50ms |
| AC Loss to PWR_OK Hold Up Time | | 12.60ms |
| PWR_OK Inactive to DC Loss Delay | | 2.90ms |
| PSU Timings: T1 (20% / 100%) | 104.0ms | 105.0ms |
| PSU Timings: T3 (20% / 100%) | 130.0ms | 130.0ms |
| 12V OCP (30.2°C / 41.8°C) | 107.60A (122.97%), 11.989V | 108.20A (123.66%), 11.980V |
| 5V OCP (30.2°C / 41.8°C) | 23.2A (116.00%), 5.045V | 22.50A (112.50%), 5.046V |
| 3.3V OCP (30.2°C / 41.8°C) | 22.70A (113.50%), 3.333V | 22.7A (113.50%), 3.337V |
| 5VSB OCP (30.2°C / 41.8°C) | 6.5A (216.67%), 4.849V | 6A (200.00%), 4.861V |
| OPP (30.43°C / 41.85°C) | 121.20% | 121.20% |

## Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 15.5 |
| AC Loss to PWR_OK Hold Up Time (ms) | 12.6 |
| PWR_OK Inactive to DC Loss Delay (ms) | 2.9 |

# Stromverbrauch im Ruhezustand

## Tables

### 115V

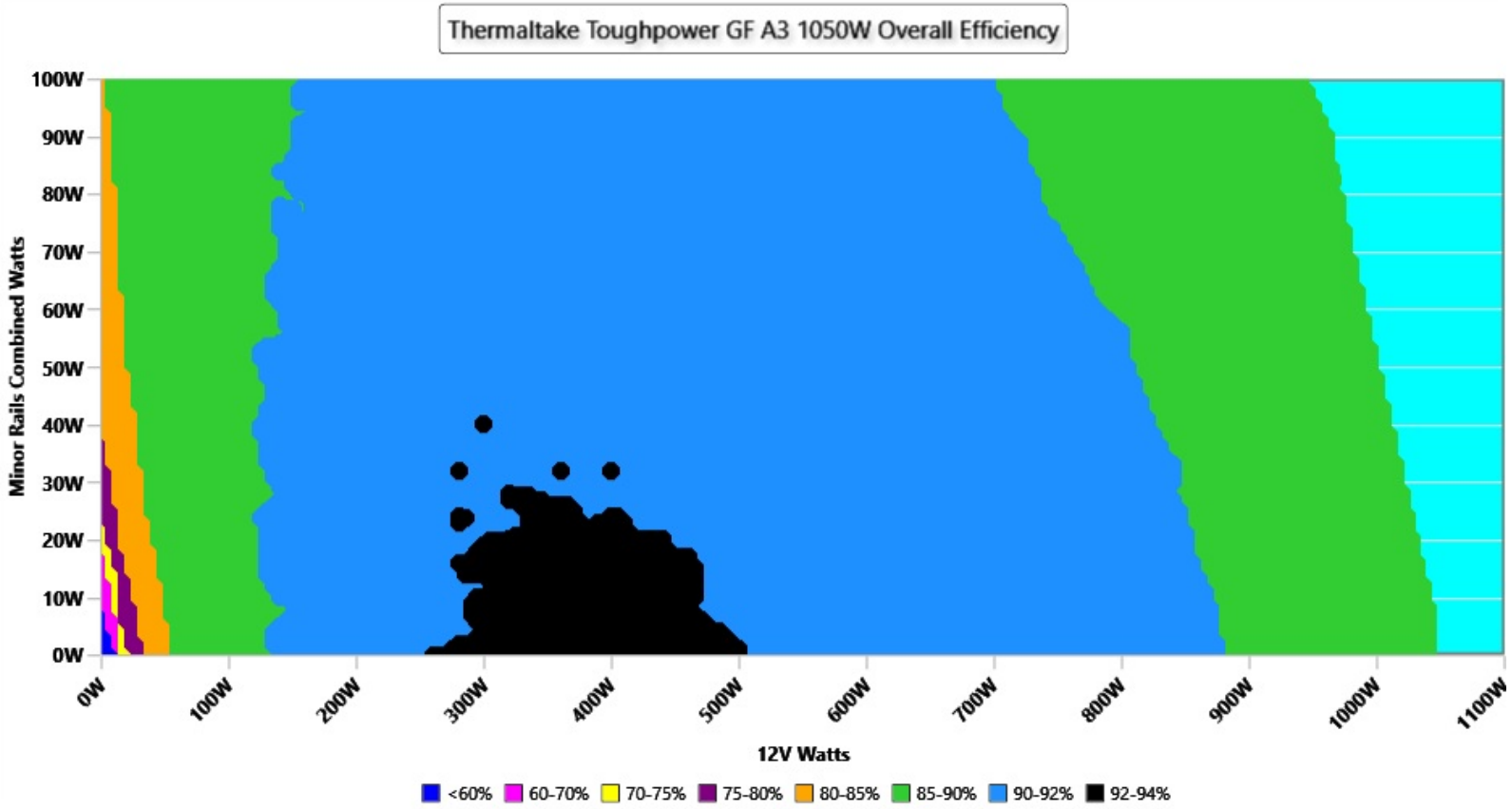
| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 114.98 V | 114.95 V | 113.85 V | 114.99 V | 116.15 V | PASS |
| Mains Frequency: | 60.00 Hz | 59.99 Hz | 59.40 Hz | 60.01 Hz | 60.60 Hz | PASS |
| Mains Voltage CF: | 1.416 | 1.415 | 1.340 | 1.416 | 1.490 | PASS |
| Mains Voltage THD: | 0.13 % | 0.10 % | N/A | 0.17 % | 2.00 % | PASS |
| Real Power: | 0.036 W | -0.006 W | N/A | 0.073 W | N/A | N/A |
| Apparent Power: | 7.972 W | 7.945 W | N/A | 7.998 W | N/A | N/A |
| Power Factor: | 0.007 | N/A | N/A | N/A | N/A | N/A |

### 230V

| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 229.99 V | 229.95 V | 227.70 V | 230.00 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: | 1.415 | 1.415 | 1.340 | 1.416 | 1.490 | PASS |
| Mains Voltage THD: | 0.14 % | 0.13 % | N/A | 0.16 % | 2.00 % | PASS |
| Real Power: | 0.071 W | 0.033 W | N/A | 0.128 W | N/A | N/A |
| Apparent Power: | 25.782 W | 25.743 W | N/A | 25.820 W | N/A | N/A |
| Power Factor: | 0.002 | N/A | N/A | N/A | N/A | N/A |

## Efficiency Graph

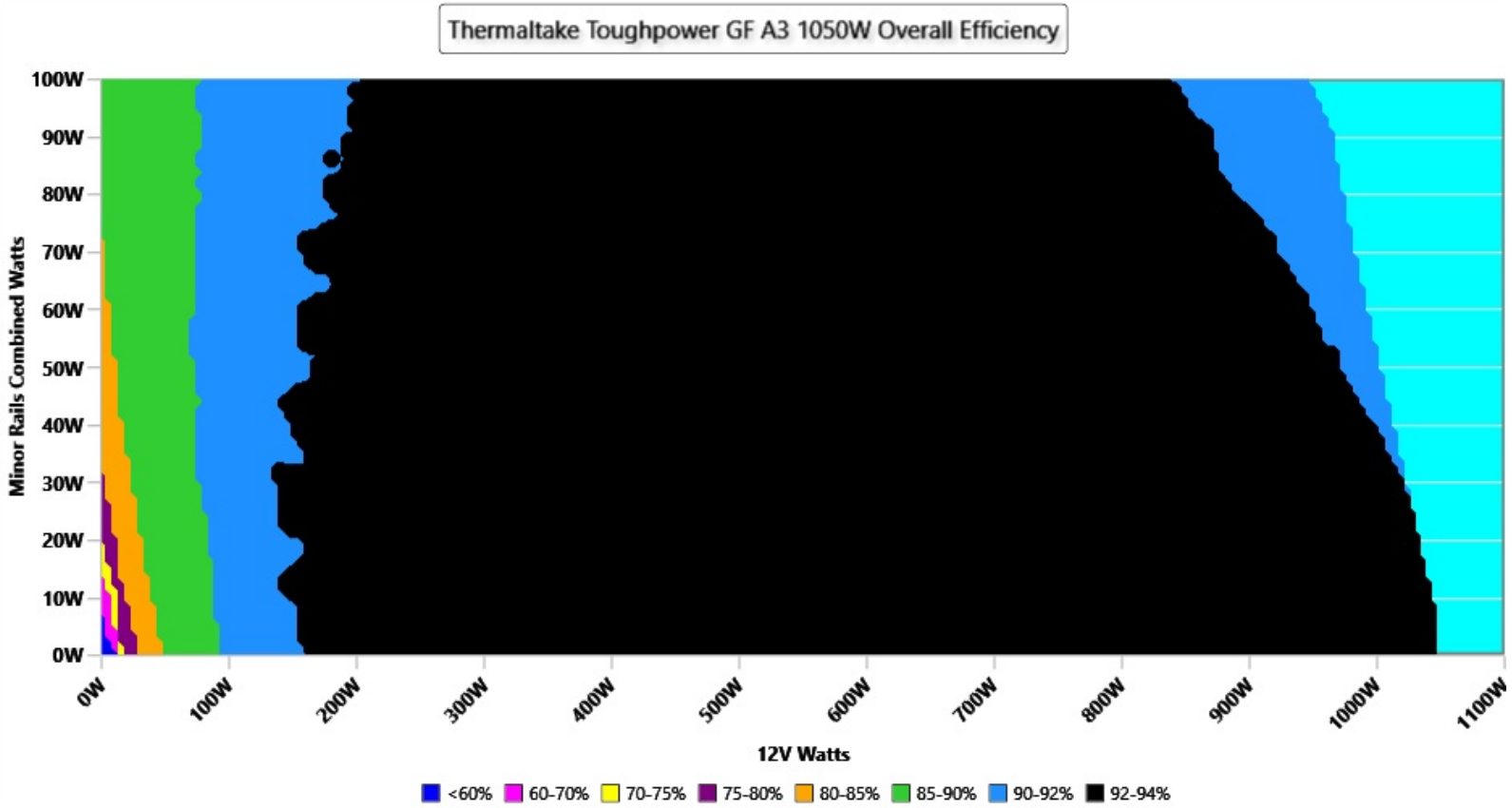
**115V**




**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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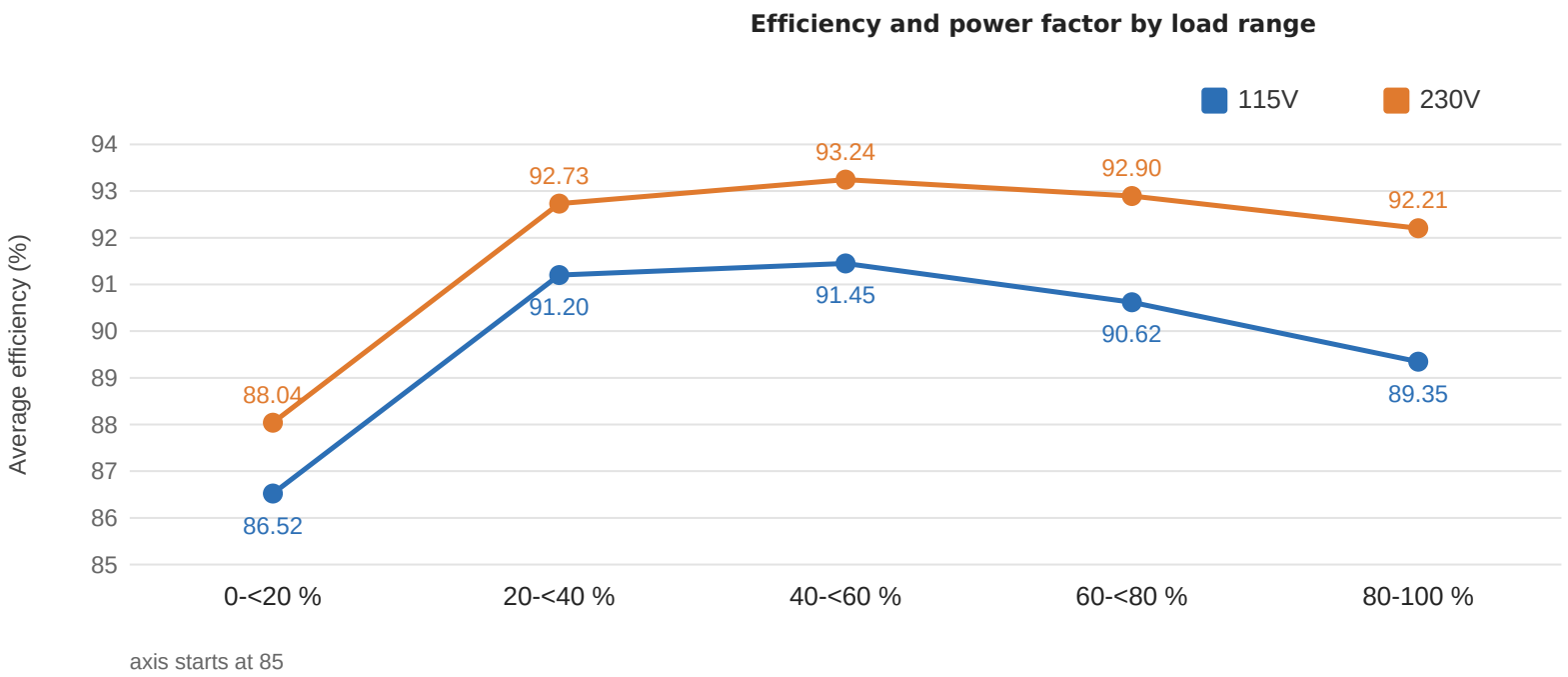
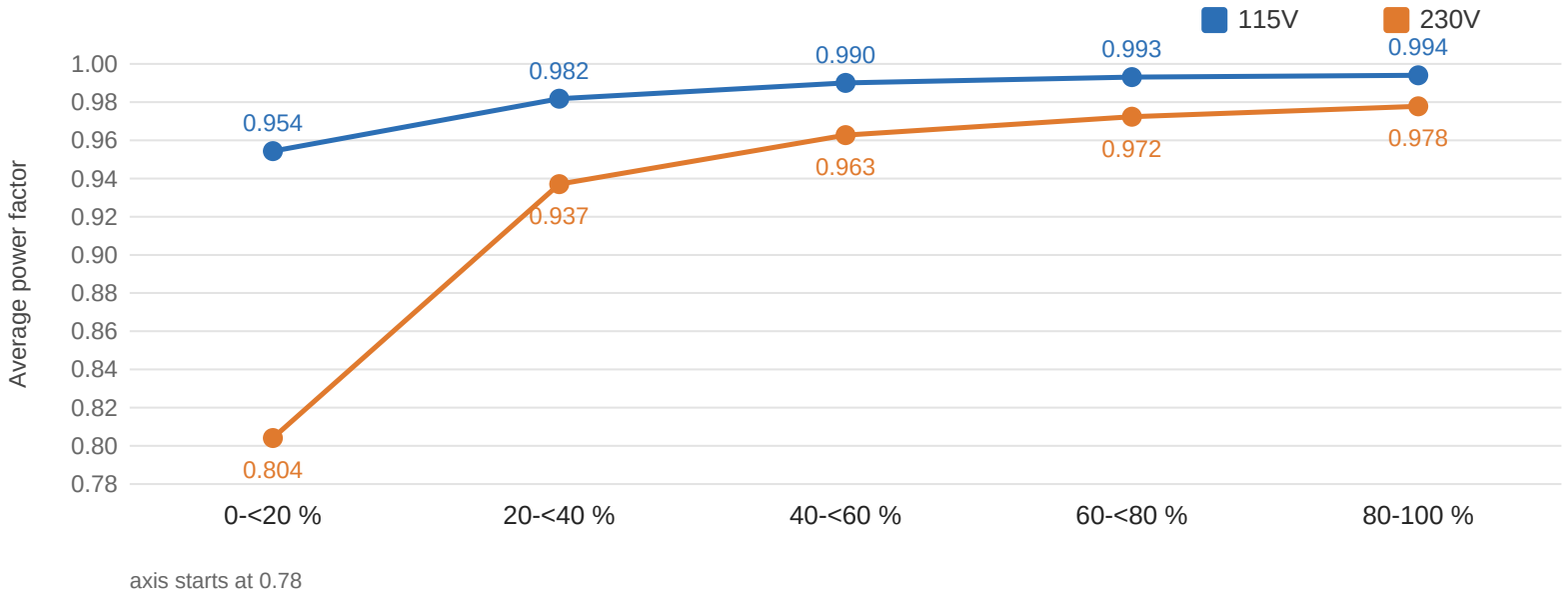



axis starts at 85




axis starts at 0.78

| Load range | Points | Efficiency 115V | Efficiency 230V | PF 115V | PF 230V |
|---|---|---|---|---|---|
| 0-<20 % | 247 / 247 | 86.52% | 88.04% | 0.954 | 0.804 |
| 20-<40 % | 327 / 327 | 91.20% | 92.73% | 0.982 | 0.937 |
| 40-<60 % | 325 / 324 | 91.45% | 93.24% | 0.990 | 0.963 |
| 60-<80 % | 326 / 327 | 90.62% | 92.90% | 0.993 | 0.972 |
| 80-100 % | 330 / 330 | 89.35% | 92.21% | 0.994 | 0.978 |
| 70-100 % (High-Load) | 494 / 491 | 89.67% | 92.38% | 0.994 | 0.977 |
| All (published average) | 1555 / 1555 | 89.99% | 92.02% | 0.984 | 0.937 |

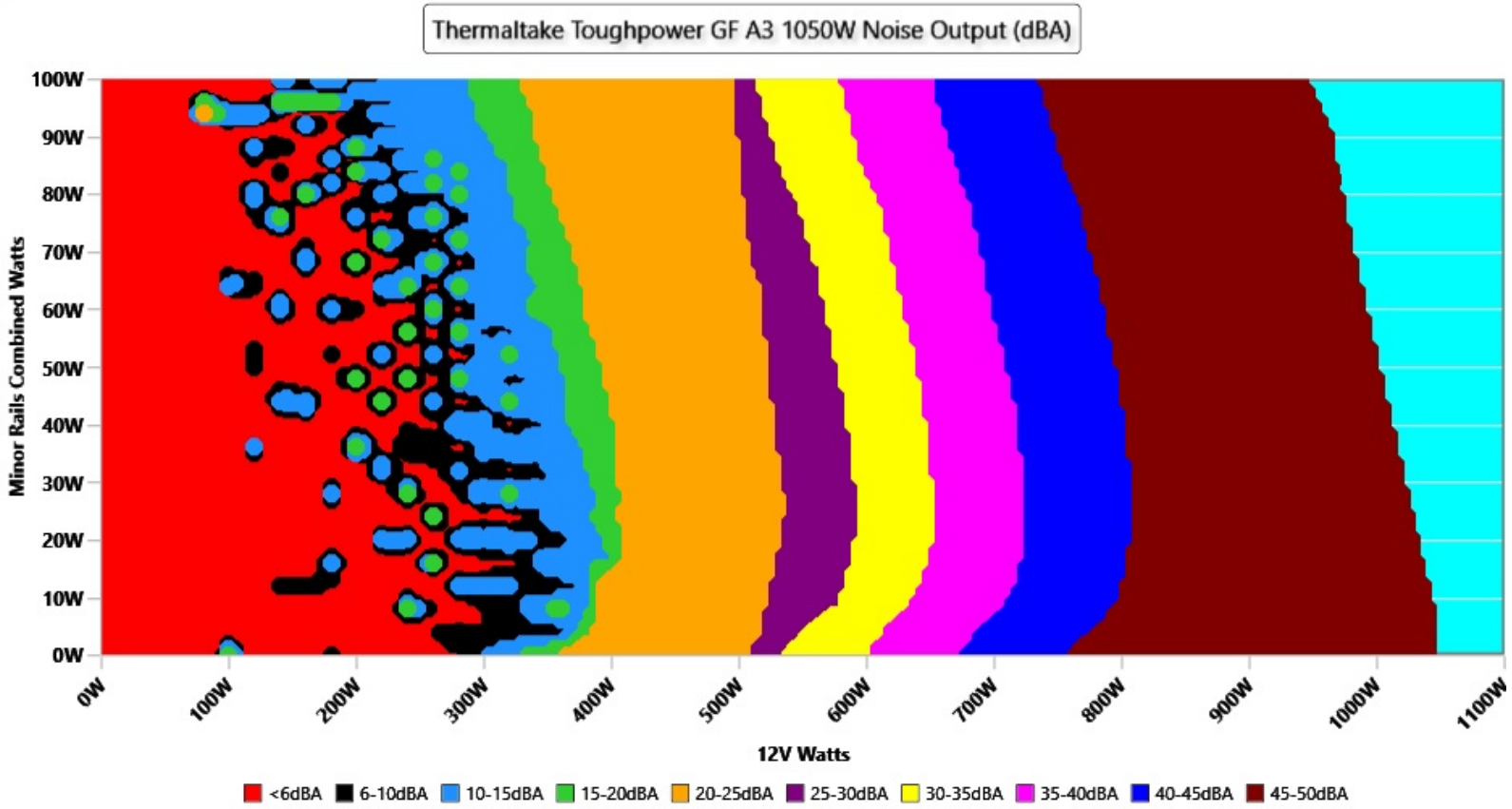
**INFO**

The average efficiency and power factor in five ranges of load. Calculated from the 1555 (115V) and 1555 (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 1050 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

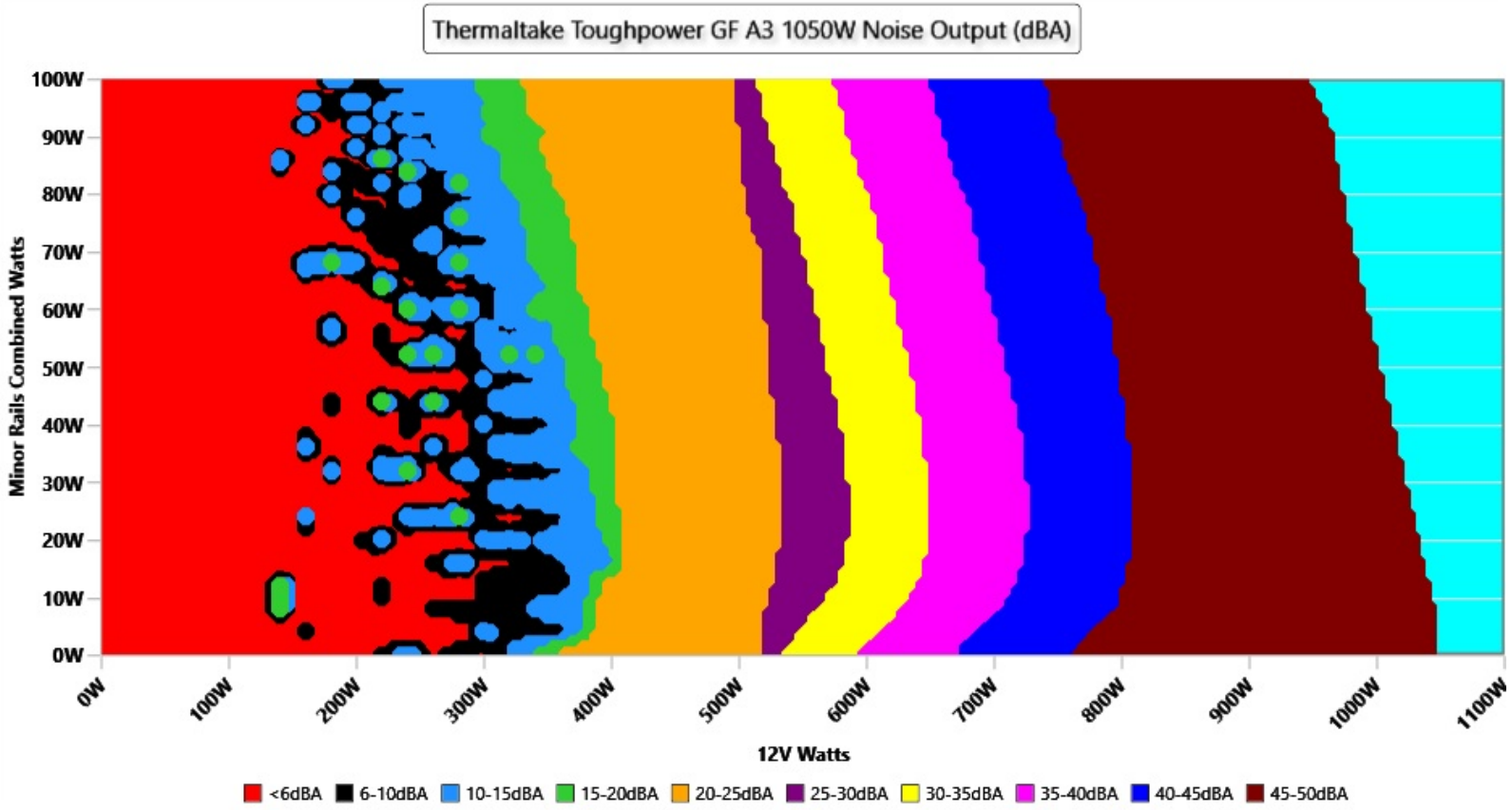
### 115V




### 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

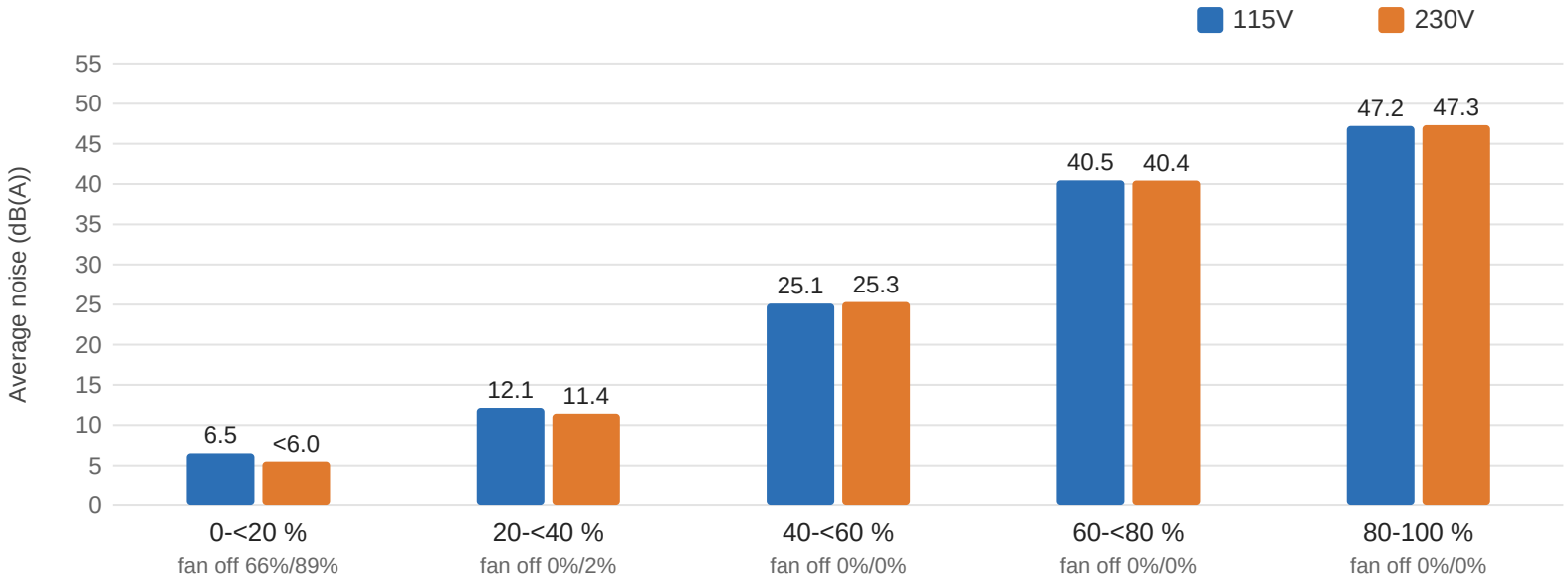
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

### Noise by load range

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

Noise **46.2 dB(A)** at 115V and **46.3 dB(A)** at 230V · loudest point 47.6 dB(A)

Efficiency 89.67% / 92.38% · power factor 0.994 / 0.977 (115V / 230V)




| Load range | Noise 115V<br>avg (loudest) | Noise 230V<br>avg (loudest) | Fan off<br>115V / 230V |
|---|---|---|---|
| 0-<20 % | 6.5 (20.3) | <6.0 (15.8) | 66% / 89% |
| 20-<40 % | 12.1 (22.0) | 11.4 (22.0) | 0% / 2% |
| 40-<60 % | 25.1 (36.9) | 25.3 (36.9) | 0% / 0% |
| 60-<80 % | 40.5 (46.8) | 40.4 (47.6) | 0% / 0% |
| 80-100 % | 47.2 (47.6) | 47.3 (47.6) | 0% / 0% |
| 70-100 % (High-Load) | 46.2 (47.6) | 46.3 (47.6) | 0% / 0% |
| All (published average) | 41.3 (47.6) | 41.4 (47.6) | 11% / 15% |

**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 1555 (115V) and 1555 (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 1050 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) · 32.3 °C | 562 RPM · 9.1 dB(A) · 40.5 °C | fan starts (<6.0 → 9.1) |
| 20% | 0 RPM · <6.0 dB(A) · 31.0 °C | 795 RPM · 18.4 dB(A) · 40.5 °C | fan starts (<6.0 → 18.4) |
| 50% | 939 RPM · 23.3 dB(A) · 30.6 °C | 1487 RPM · 36.6 dB(A) · 42.5 °C | **+13.3 dB(A)** |
| 100% | 2253 RPM · 44.3 dB(A) · 30.8 °C | 2261 RPM · 44.4 dB(A) · 45.4 °C | **+0.1 dB(A)** |

### 230V

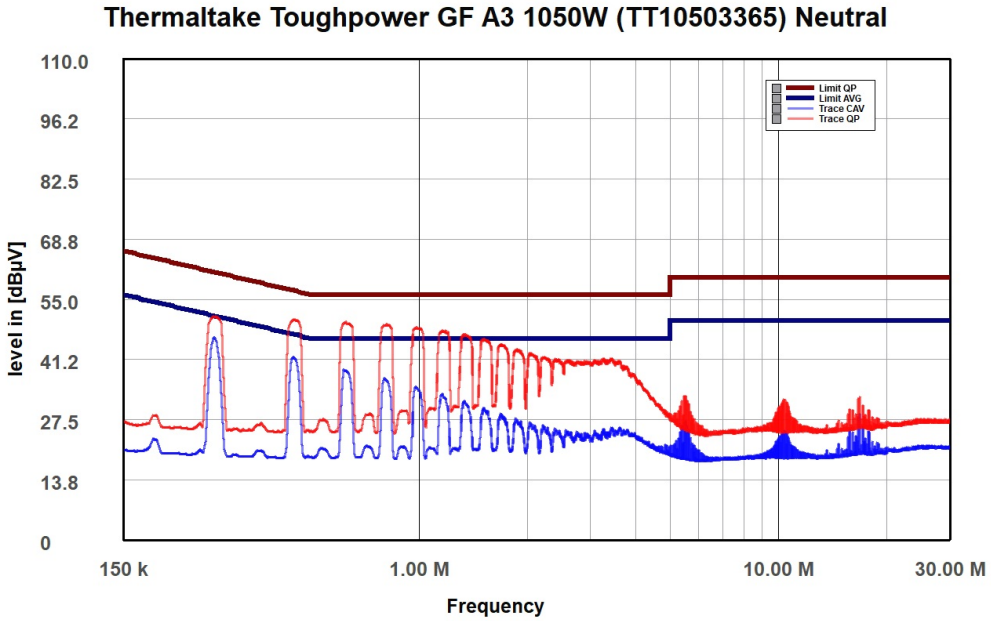
| Load | Normal ambient<br>fan · noise · intake | High ambient<br>fan · noise · intake | Noise change |
|---|---|---|---|
| 10% | 0 RPM · <6.0 dB(A) · 35.3 °C | 472 RPM · <6.0 dB(A) · 40.4 °C | <6.0 in both |
| 20% | 129 RPM · <6.0 dB(A) · 30.3 °C | 568 RPM · 9.5 dB(A) · 41.0 °C | <6.0 → 9.5 dB(A) |
| 50% | 916 RPM · 22.5 dB(A) · 30.5 °C | 1451 RPM · 35.8 dB(A) · 42.2 °C | **+13.3 dB(A)** |
| 100% | 2252 RPM · 44.3 dB(A) · 30.9 °C | 2269 RPM · 44.5 dB(A) · 45.9 °C | **+0.2 dB(A)** |

### INFO

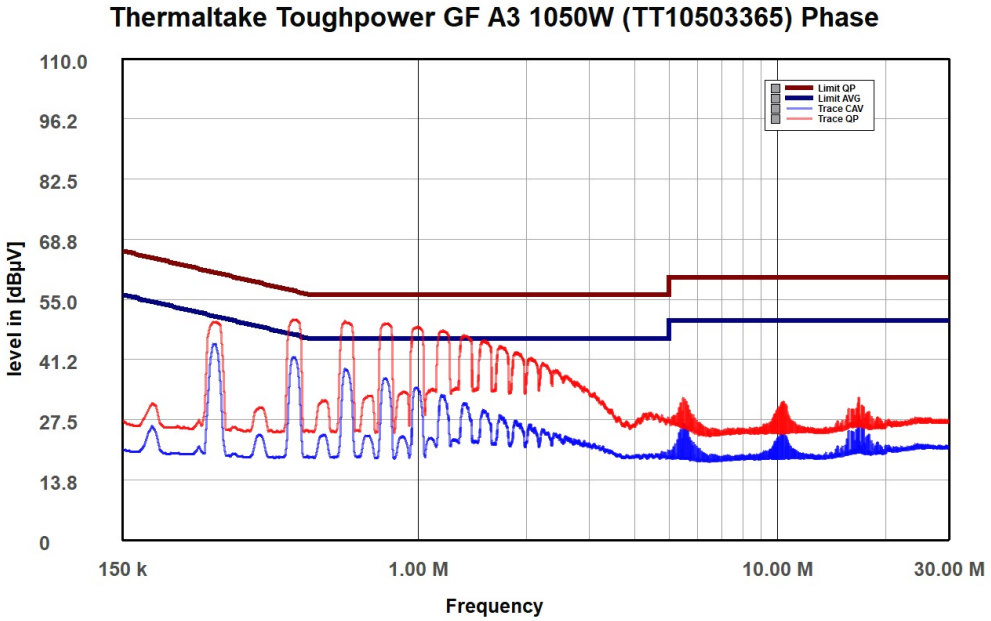
Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative 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.*

## Conducted Emissions EN 55032 & CISPR 32



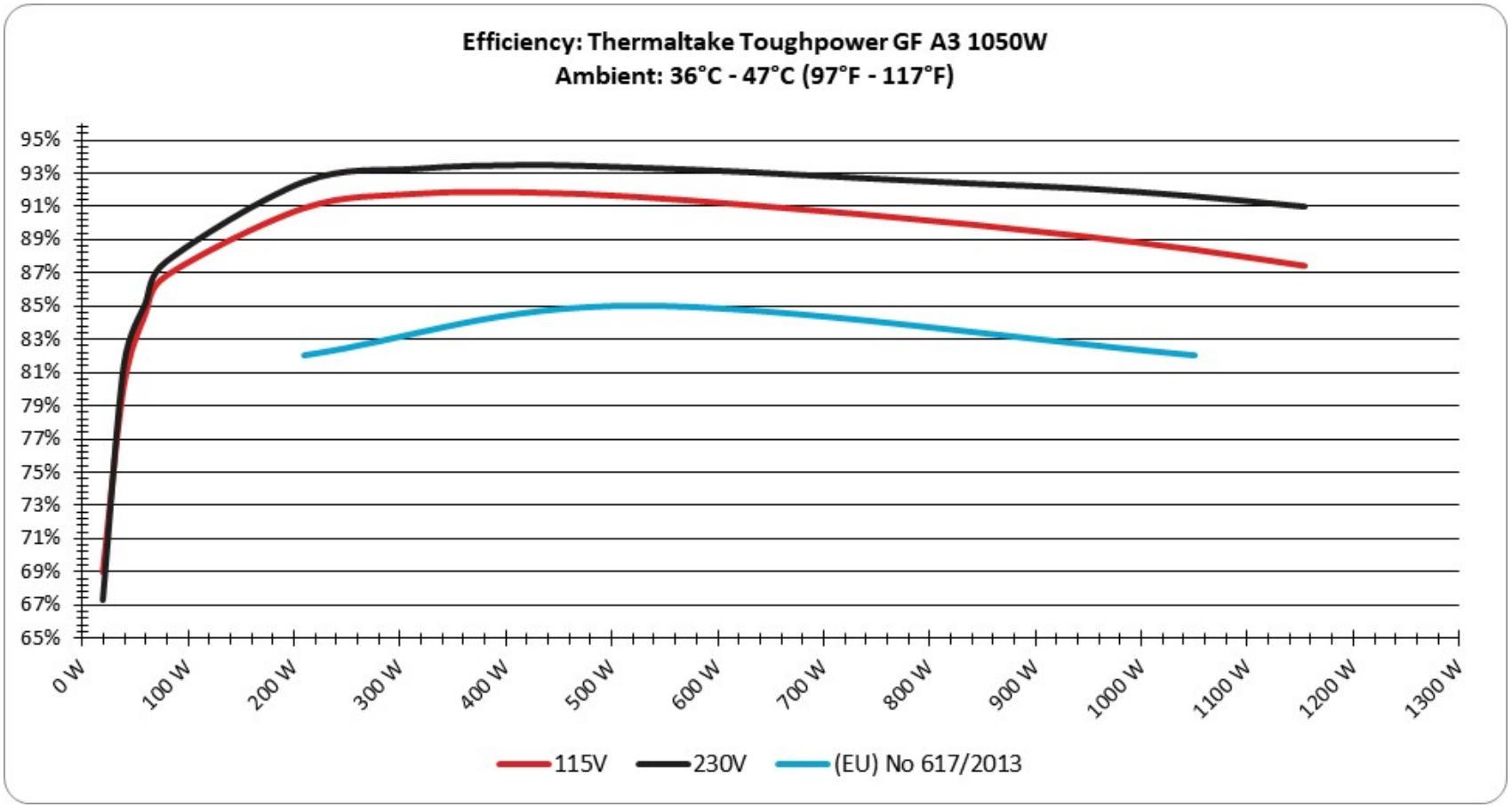

NEUTRAL




PHASE

## Indicative Performance

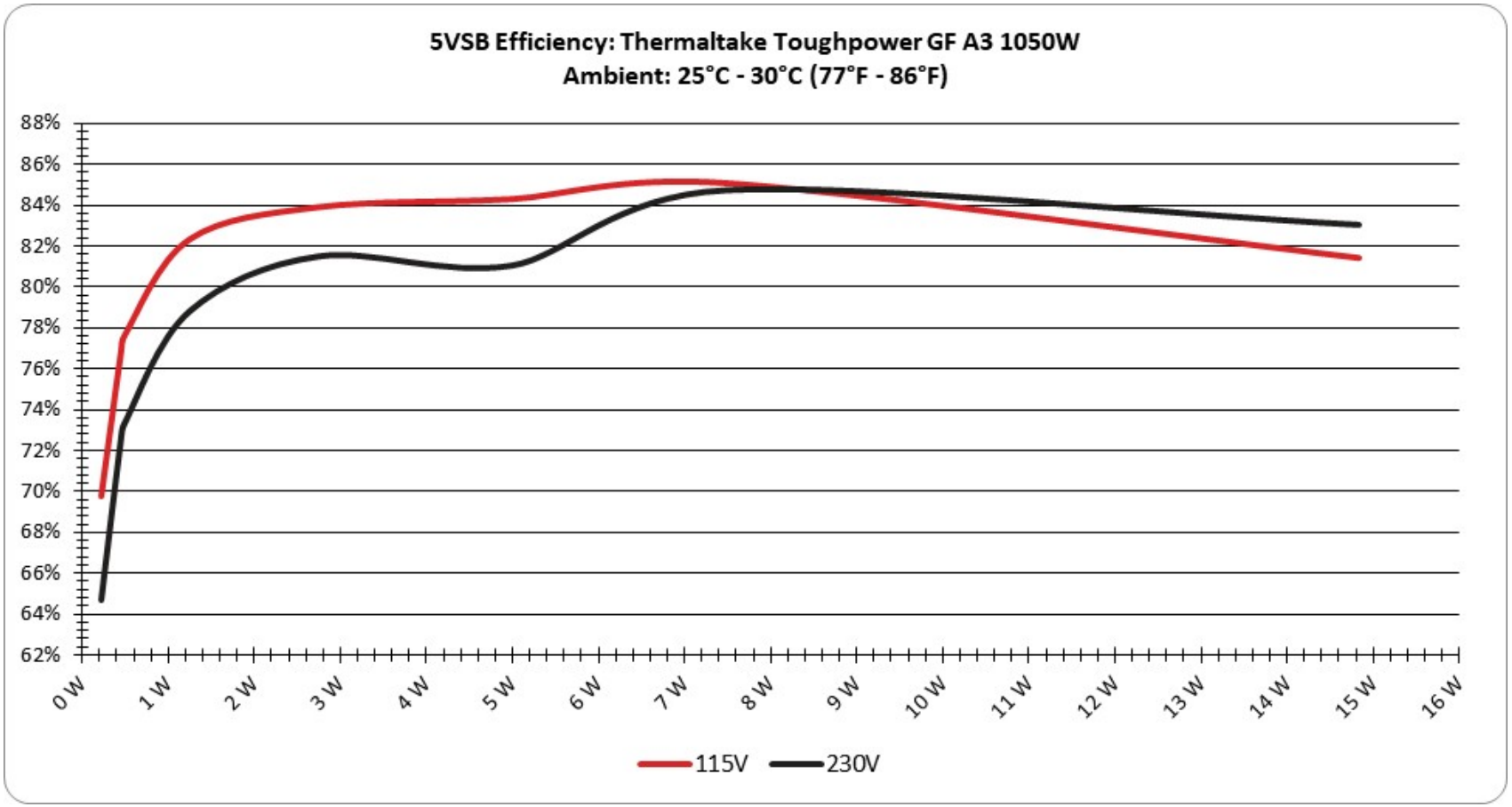
### Efficiency under high ambient temperature




**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** | 0.226W | 69.746% | 0.041 |
| | 5.02V | 0.324W | | 115.11V |
| **2** | **0.09A** | 0.452W | 76.702% | 0.074 |
| | 5.019V | 0.589W | | 115.1V |
| **3** | **0.55A** | 2.754W | 83.912% | 0.296 |
| | 5.008V | 3.282W | | 115.1V |
| **4** | **1A** | 4.996W | 84.306% | 0.386 |
| | 4.996V | 5.926W | | 115.09V |
| **5** | **1.5A** | 7.476W | 85.086% | 0.429 |
| | 4.984V | 8.787W | | 115.09V |
| **6** | **3A** | 14.832W | 81.423% | 0.49 |
| | 4.944V | 18.216W | | 115.08V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| **1** | **0.045A** | 0.226W | 64.698% | 0.014 |
| | 5.021V | 0.349W | | 230.26V |
| **2** | **0.09A** | 0.452W | 72.43% | 0.024 |
| | 5.02V | 0.624W | | 230.27V |
| **3** | **0.55A** | 2.754W | 81.474% | 0.124 |
| | 5.008V | 3.38W | | 230.29V |
| **4** | **1A** | 4.997W | 81.023% | 0.202 |
| | 4.997V | 6.167W | | 230.3V |
| **5** | **1.5A** | 7.477W | 84.701% | 0.256 |
| | 4.984V | 8.827W | | 230.3V |
| **6** | **3A** | 14.84W | 83.01% | 0.351 |
| | 4.947V | 17.877W | | 230.3V |

## Protection Features

| | |
|---|---|
| OCP (Normal @ 30.2°C) | 12V: 107.6A (122.97%), 11.989V<br>5V: 23.2A (116%), 5.045V<br>3.3V: 22.7A (113.5%), 3.333V<br>5VSB: 6.5A (216.67%), 4.849V |
| OCP (Hot @ 41.8°C) | 12V: 108.2A (123.66%), 11.98V<br>5V: 22.5A (112.5%), 5.046V<br>3.3V: 22.7A (113.5%), 3.337V<br>5VSB: 6A (200%), 4.861V |
| OPP (Normal @ 30.4°C) | 1272.57W (121.2%) |
| OPP (Hot @ 41.9°C) | 1272.6W (121.2%) |
| OTP | ✓ (188°C @ 12V Heatsink) |
| SCP | 12V to Earth: ✓<br>5V to Earth: ✓<br>3.3V to Earth: ✓<br>5VSB to Earth: ✓<br>-12V to Earth: ✓ |
| PWR_OK | Proper Operation |
| UVP (Typical Load @ 90V) | ✓ |
| UVP (No Damage @ 80V) | ✓ |
| Conducted Emissions EN55032 & CISPR 32 | ✓ |
| NLO | ✓ |
| Fan Failure Protection | ✗ |
| SIP | Surge: MOV<br>Inrush: NTC & Bypass Relay |

## 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%** | **6.907A** | **1.978A** | **1.972A** | **0.997A** | 104.958 | 88.114% | 562 | 9.1 | 40.45°C | 0.963 |
| | 12.069V | 5.056V | 3.347V | 5.016V | 119.116 | | | | 41.97°C | 115.07V |
| **20%** | **14.845A** | **2.968A** | **2.96A** | **1.198A** | 209.957 | 90.894% | 795 | 18.4 | 40.53°C | 0.978 |
| | 12.061V | 5.054V | 3.345V | 5.008V | 230.991 | | | | 42.91°C | 115.04V |
| **30%** | **23.138A** | **3.464A** | **3.455A** | **1.4A** | 314.964 | 91.754% | 919 | 22.7 | 41.46°C | 0.982 |
| | 12.054V | 5.053V | 3.343V | 4.999V | 343.27 | | | | 43.47°C | 115V |
| **40%** | **31.406A** | **3.959A** | **3.95A** | **1.603A** | 419.524 | 91.838% | 937 | 23.2 | 41.79°C | 0.987 |
| | 12.046V | 5.053V | 3.342V | 4.99V | 456.811 | | | | 44.57°C | 114.97V |
| **50%** | **39.400A** | **4.95A** | **4.94A** | **1.806A** | 524.816 | 91.566% | 1487 | 36.6 | 42.47°C | 0.99 |
| | 12.038V | 5.051V | 3.34V | 4.982V | 573.155 | | | | 44.95°C | 114.94V |
| **60%** | **47.340A** | **5.942A** | **5.931A** | **2A** | 629.277 | 91.077% | 2022 | 44.2 | 42.89°C | 0.992 |
| | 12.030V | 5.05V | 3.339V | 4.976V | 690.932 | | | | 45.12°C | 114.91V |
| **70%** | **55.360A** | **6.934A** | **6.922A** | **2.214A** | 734.661 | 90.531% | 2248 | 44.3 | 43.3°C | 0.993 |
| | 12.022V | 5.049V | 3.338V | 4.968V | 811.505 | | | | 45.77°C | 114.87V |
| **80%** | **63.394A** | **7.924A** | **7.911A** | **2.316A** | 839.462 | 89.909% | 2254 | 44.3 | 43.82°C | 0.994 |
| | 12.013V | 5.048V | 3.336V | 4.966V | 933.682 | | | | 46.99°C | 114.84V |
| **90%** | **71.840A** | **8.42A** | **8.393A** | **2.418A** | 944.847 | 89.202% | 2256 | 44.3 | 44.81°C | 0.994 |
| | 12.004V | 5.047V | 3.336V | 4.961V | 1059.227 | | | | 48.66°C | 114.81V |
| **100%** | **80.032A** | **8.917A** | **8.906A** | **3.04A** | 1049.652 | 88.399% | 2261 | 44.4 | 45.37°C | 0.994 |
| | 11.995V | 5.046V | 3.334V | 4.934V | 1187.405 | | | | 50.11°C | 114.79V |
| **110%** | **88.118A** | **9.909A** | **9.987A** | **3.038A** | 1154.271 | 87.426% | 2264 | 44.5 | 47.05°C | 0.995 |
| | 11.983V | 5.045V | 3.334V | 4.936V | 1320.287 | | | | 52.91°C | 114.73V |
| **CL1** | **0.115A** | **11.923A** | **11.859A** | **0A** | 101.28 | 83.583% | 954 | 23.7 | 40.72°C | 0.964 |
| | 12.058V | 5.049V | 3.347V | 5.103V | 121.173 | | | | 43.79°C | 115.08V |

| 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** | **19.819A** | **0A** | **0A** | 101.381 | 82.682% | 929 | 23.0 | 41.16°C | 0.964 |
| | 12.063V | 5.046V | 3.351V | 5.14V | 122.615 | | | | 43.69°C | 115.08V |
| **CL3** | **0.114A** | **0A** | **19.701A** | **0A** | 67.375 | 77.02% | 919 | 22.7 | 40.85°C | 0.942 |
| | 12.060V | 5.06V | 3.35V | 5.057V | 87.478 | | | | 43.31°C | 115.08V |
| **CL4** | **87.400A** | **0A** | **0A** | **0A** | 1049.47 | 88.857% | 2276 | 44.7 | 45.87°C | 0.994 |
| | 12.007V | 5.057V | 3.337V | 5.044V | 1181.072 | | | | 49.44°C | 114.77V |

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%** | **6.904A** | **1.978A** | **1.971A** | **0.997A** | 104.933 | 89.479% | 472 | <6.0 | 40.35°C | 0.799 |
| | 12.070V | 5.056V | 3.347V | 5.016V | 117.271 | | | | 42.48°C | 230.32V |
| **20%** | **14.841A** | **2.968A** | **2.96A** | **1.198A** | 209.921 | 92.492% | 568 | 9.5 | 40.97°C | 0.906 |
| | 12.062V | 5.054V | 3.345V | 5.008V | 226.961 | | | | 43.66°C | 230.31V |
| **30%** | **23.133A** | **3.464A** | **3.455A** | **1.4A** | 314.926 | 93.272% | 916 | 22.5 | 41.38°C | 0.939 |
| | 12.056V | 5.053V | 3.343V | 4.999V | 337.641 | | | | 46.07°C | 230.29V |
| **40%** | **31.398A** | **3.959A** | **3.949A** | **1.603A** | 419.451 | 93.5% | 936 | 23.2 | 41.69°C | 0.955 |
| | 12.047V | 5.053V | 3.342V | 4.99V | 448.608 | | | | 48.44°C | 230.28V |
| **50%** | **39.394A** | **4.95A** | **4.94A** | **1.806A** | 524.765 | 93.337% | 1451 | 35.8 | 42.18°C | 0.963 |
| | 12.039V | 5.051V | 3.34V | 4.983V | 562.225 | | | | 47.98°C | 230.27V |
| **60%** | **47.337A** | **5.943A** | **5.932A** | **2A** | 629.252 | 93.07% | 1894 | 42.4 | 42.51°C | 0.969 |
| | 12.031V | 5.049V | 3.338V | 4.976V | 676.103 | | | | 46.88°C | 230.25V |
| **70%** | **55.360A** | **6.935A** | **6.925A** | **2.214A** | 734.672 | 92.717% | 2237 | 44.3 | 43.17°C | 0.973 |
| | 12.023V | 5.048V | 3.336V | 4.968V | 792.379 | | | | 45.61°C | 230.22V |
| **80%** | **63.389A** | **7.926A** | **7.916A** | **2.316A** | 839.482 | 92.389% | 2245 | 44.3 | 43.86°C | 0.976 |
| | 12.014V | 5.047V | 3.334V | 4.965V | 908.637 | | | | 46.5°C | 230.2V |
| **90%** | **71.830A** | **8.422A** | **8.399A** | **2.419A** | 944.856 | 92.093% | 2249 | 44.3 | 44.08°C | 0.978 |
| | 12.006V | 5.046V | 3.333V | 4.961V | 1025.984 | | | | 47.61°C | 230.17V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **100%** | **80.025A** | **8.918A** | **8.908A** | **3.04A** | 1049.646 | 91.616% | 2269 | 44.5 | 45.9°C | 0.98 |
| | 11.995V | 5.046V | 3.334V | 4.935V | 1145.706 | | | | 53.28°C | 230.16V |
| **110%** | **88.123A** | **9.909A** | **9.986A** | **3.038A** | 1154.279 | 90.995% | 2270 | 44.5 | 46.15°C | 0.982 |
| | 11.983V | 5.046V | 3.334V | 4.938V | 1268.512 | | | | 58.12°C | 230.15V |
| **CL1** | **0.115A** | **11.923A** | **11.858A** | **0A** | 101.284 | 84.883% | 969 | 24.1 | 40.39°C | 0.803 |
| | 12.058V | 5.049V | 3.347V | 5.105V | 119.322 | | | | 46.4°C | 230.32V |
| **CL2** | **0.115A** | **19.819A** | **0A** | **0A** | 101.382 | 83.994% | 926 | 22.8 | 40.25°C | 0.805 |
| | 12.063V | 5.045V | 3.351V | 5.144V | 120.702 | | | | 44.72°C | 230.31V |
| **CL3** | **0.115A** | **0A** | **19.699A** | **0A** | 67.377 | 78.42% | 371 | <6.0 | 40.32°C | 0.725 |
| | 12.060V | 5.061V | 3.35V | 5.058V | 85.919 | | | | 43.58°C | 230.32V |
| **CL4** | **87.391A** | **0A** | **0A** | **0A** | 1049.479 | 92.045% | 2268 | 44.5 | 45.63°C | 0.98 |
| | 12.009V | 5.056V | 3.336V | 5.043V | 1140.184 | | | | 48.64°C | 230.16V |

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** | **1.230A** | **0.494A** | **0.493A** | **0.198A** | 19.997 | 69.017% | 0 | <6.0 | 41.65°C | 0.748 |
| | 12.079V | 5.06V | 3.349V | 5.052V | 28.974 | | | | 36.08°C | 115.11V |
| **40W** | **2.706A** | **0.692A** | **0.69A** | **0.297A** | 39.997 | 80.27% | 0 | <6.0 | 44.21°C | 0.878 |
| | 12.077V | 5.059V | 3.349V | 5.047V | 49.828 | | | | 37.18°C | 115.1V |
| **60W** | **4.184A** | **0.89A** | **0.887A** | **0.397A** | 60 | 84.521% | 0 | <6.0 | 44.17°C | 0.922 |
| | 12.075V | 5.058V | 3.349V | 5.042V | 70.988 | | | | 38.41°C | 115.09V |
| **80W** | **5.659A** | **1.088A** | **1.084A** | **0.496A** | 79.947 | 86.836% | 0 | <6.0 | 45.73°C | 0.945 |
| | 12.073V | 5.057V | 3.348V | 5.037V | 92.067 | | | | 39.4°C | 115.09V |

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** | **1.230A** | **0.494A** | **0.492A** | **0.198A** | 19.991 | 67.3% | 0 | <6.0 | 46.03°C | 0.502 |
| | 12.068V | 5.061V | 3.352V | 5.053V | 29.705 | | | | 36.35°C | 230.31V |
| **40W** | **2.706A** | **0.692A** | **0.689A** | **0.297A** | 39.992 | 81.51% | 0 | <6.0 | 41.51°C | 0.558 |
| | 12.076V | 5.06V | 3.351V | 5.048V | 49.064 | | | | 37.99°C | 230.32V |
| **60W** | **4.185A** | **0.89A** | **0.886A** | **0.397A** | 59.992 | 85.137% | 0 | <6.0 | 42.26°C | 0.665 |
| | 12.074V | 5.058V | 3.349V | 5.042V | 70.466 | | | | 38.58°C | 230.33V |
| **80W** | **5.657A** | **1.088A** | **1.084A** | **0.496A** | 79.925 | 87.692% | 0 | <6.0 | 42.63°C | 0.741 |
| | 12.073V | 5.057V | 3.348V | 5.037V | 91.143 | | | | 39.19°C | 230.33V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 24.18mV | 16.75mV | 18.05mV | 11.87mV | Pass |
| 20% Load | 26.09mV | 18.29mV | 18.72mV | 12.34mV | Pass |
| 30% Load | 25.93mV | 19.79mV | 19.55mV | 13.06mV | Pass |
| 40% Load | 24.95mV | 19.42mV | 19.39mV | 13.57mV | Pass |
| 50% Load | 25.06mV | 19.42mV | 19.39mV | 14.30mV | Pass |
| 60% Load | 25.52mV | 20.50mV | 19.75mV | 14.92mV | Pass |
| 70% Load | 26.71mV | 20.56mV | 20.73mV | 16.83mV | Pass |
| 80% Load | 28.15mV | 23.18mV | 23.22mV | 17.24mV | Pass |
| 90% Load | 29.59mV | 23.90mV | 24.46mV | 19.20mV | Pass |
| 100% Load | 41.56mV | 37.40mV | 37.28mV | 27.00mV | Pass |
| 110% Load | 41.97mV | 37.14mV | 36.98mV | 27.51mV | Pass |
| Crossload1 | 31.91mV | 24.16mV | 25.13mV | 15.38mV | Pass |
| Crossload2 | 24.39mV | 21.48mV | 18.93mV | 12.28mV | Pass |

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| Crossload3 | 23.30mV | 17.57mV | 21.05mV | 11.66mV | Pass |
| Crossload4 | 30.99mV | 24.21mV | 24.25mV | 19.98mV | Pass |

The results above are not used in the certification process

**230V**

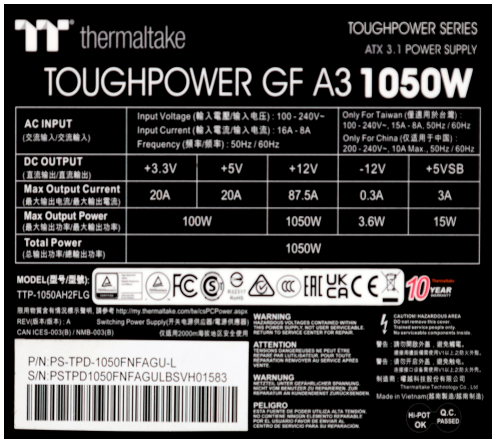
| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 23.66mV | 17.51mV | 17.84mV | 12.54mV | Pass |
| 20% Load | 26.60mV | 18.34mV | 18.36mV | 13.63mV | Pass |
| 30% Load | 25.99mV | 19.32mV | 19.65mV | 14.30mV | Pass |
| 40% Load | 25.52mV | 19.52mV | 19.34mV | 14.45mV | Pass |
| 50% Load | 25.52mV | 19.68mV | 19.75mV | 15.69mV | Pass |
| 60% Load | 25.68mV | 25.97mV | 26.79mV | 16.88mV | Pass |
| 70% Load | 27.17mV | 21.17mV | 21.10mV | 16.26mV | Pass |
| 80% Load | 28.05mV | 21.84mV | 22.13mV | 15.85mV | Pass |
| 90% Load | 28.56mV | 22.51mV | 22.65mV | 16.93mV | Pass |
| 100% Load | 30.11mV | 22.77mV | 24.30mV | 17.91mV | Pass |
| 110% Load | 43.46mV | 35.80mV | 37.13mV | 26.07mV | Pass |
| Crossload1 | 33.00mV | 26.48mV | 28.70mV | 18.07mV | Pass |
| Crossload2 | 24.38mV | 21.43mV | 17.79mV | 12.54mV | Pass |
| Crossload3 | 22.43mV | 16.85mV | 20.73mV | 11.77mV | Pass |
| Crossload4 | 30.52mV | 21.22mV | 20.06mV | 16.98mV | Pass |

The results above are not used in the certification process

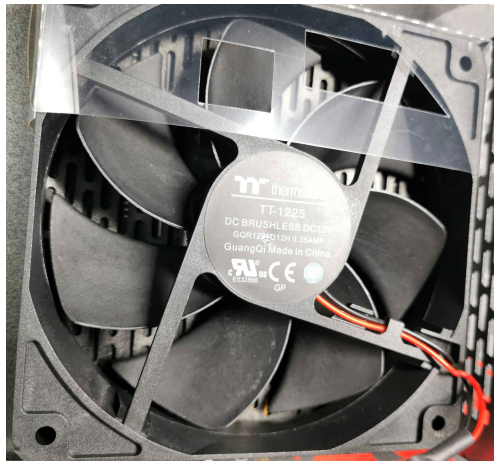
## Thermaltake Toughpower GF A3 1050W (CE-Link)



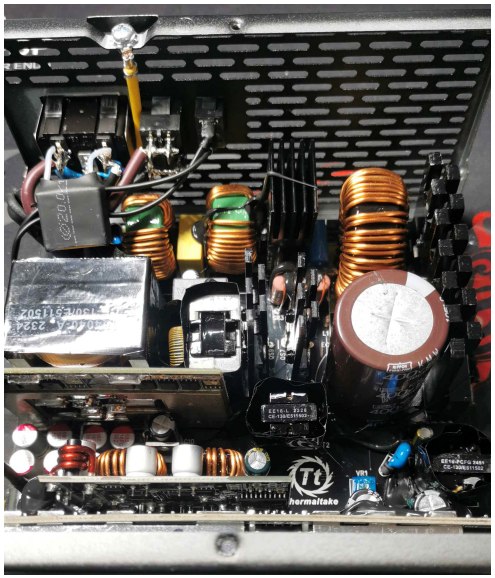

Top side




Power specifications label




Third Photo




Fourth Photo

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