# 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 |
| 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(Manufacturer)

| | |
|---|---|
| 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 |

## Tables

### 115V

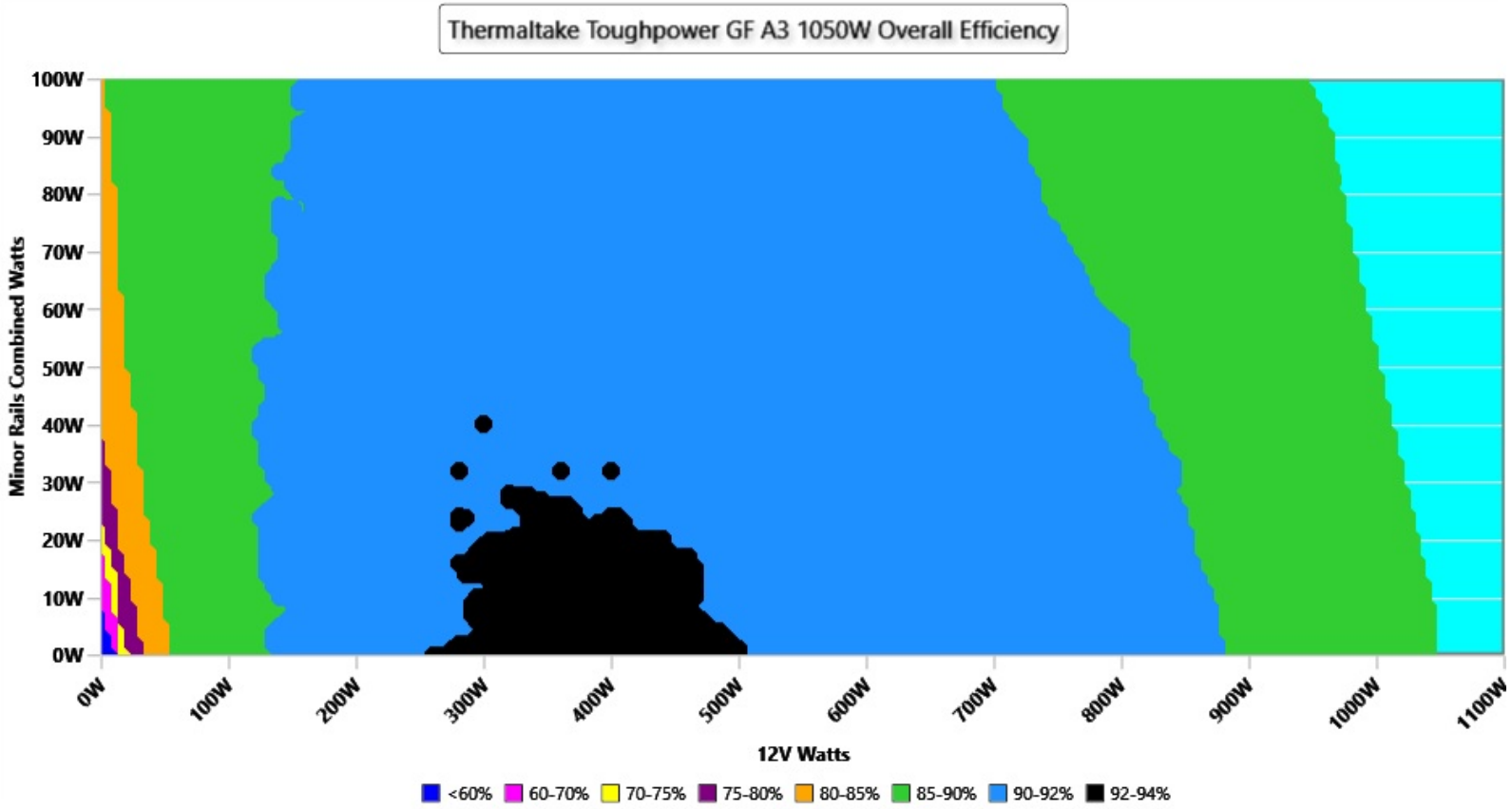
| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 114.98 V | 114.95 V | 113.85 V | 114.99 V | 116.15 V | PASS |
| Mains Frequency: | 60.00 Hz | 59.99 Hz | 59.40 Hz | 60.01 Hz | 60.60 Hz | PASS |
| Mains Voltage 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

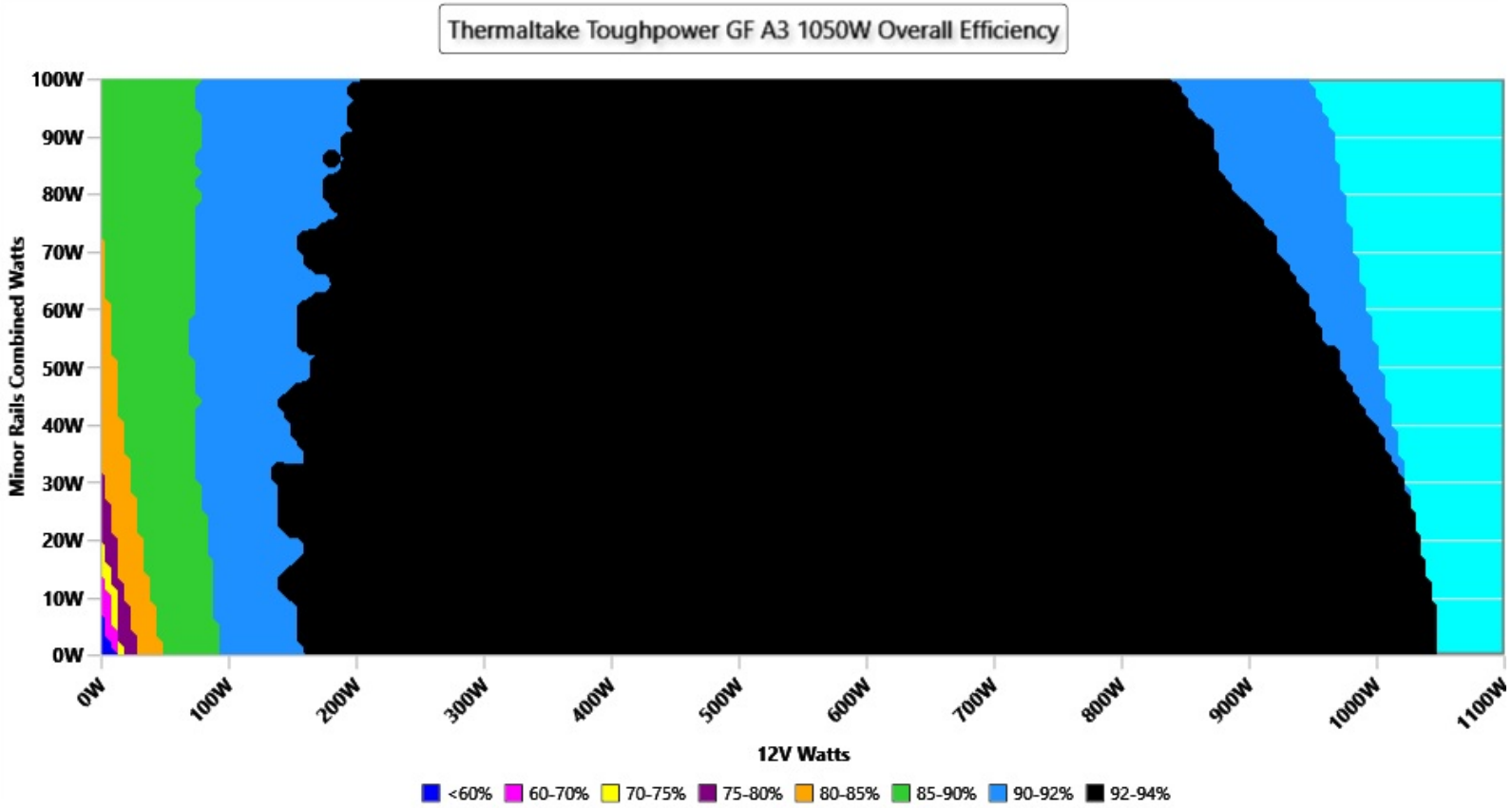
**115V**




**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

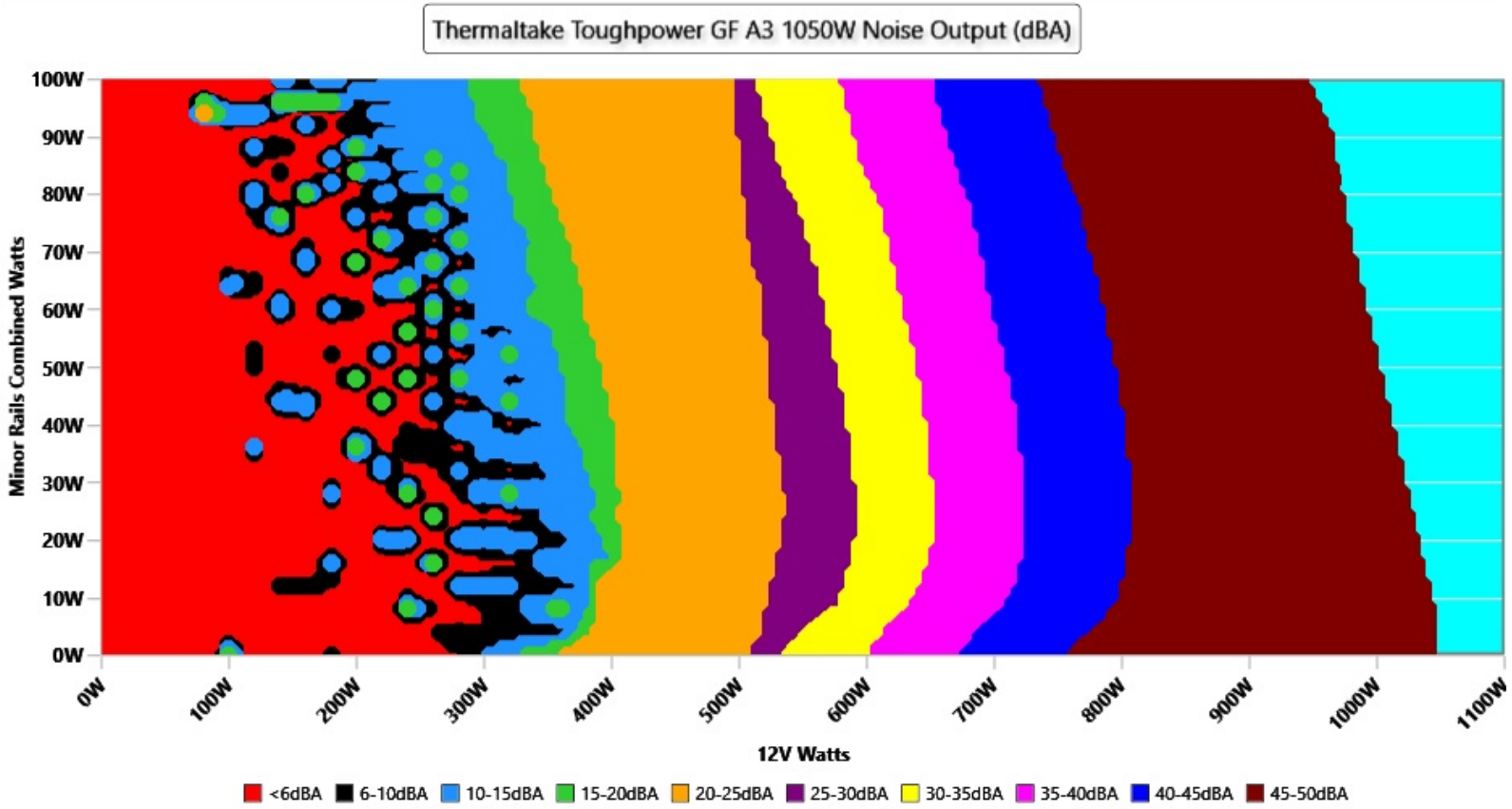



### INFO

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

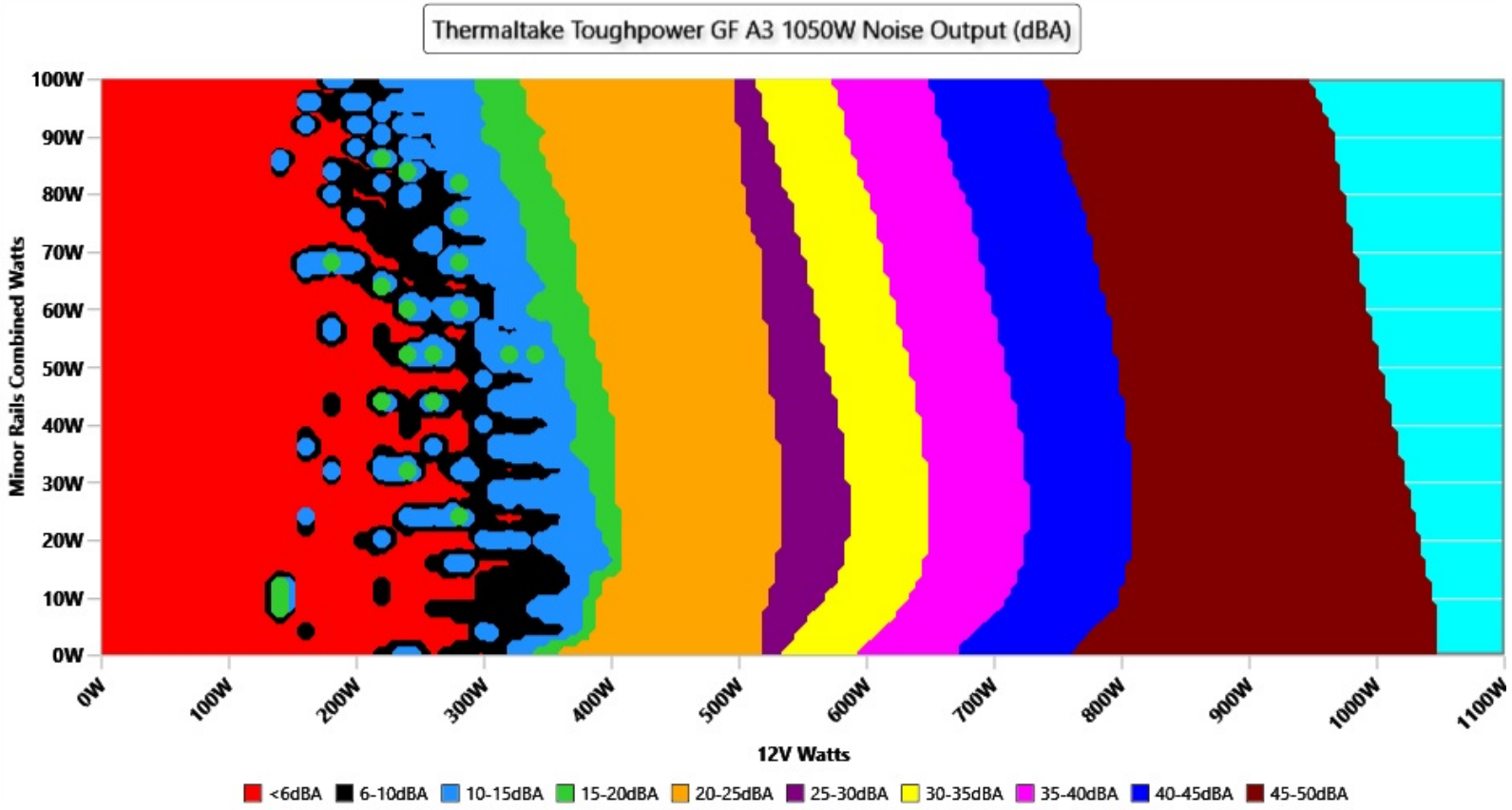
### 115V




### 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

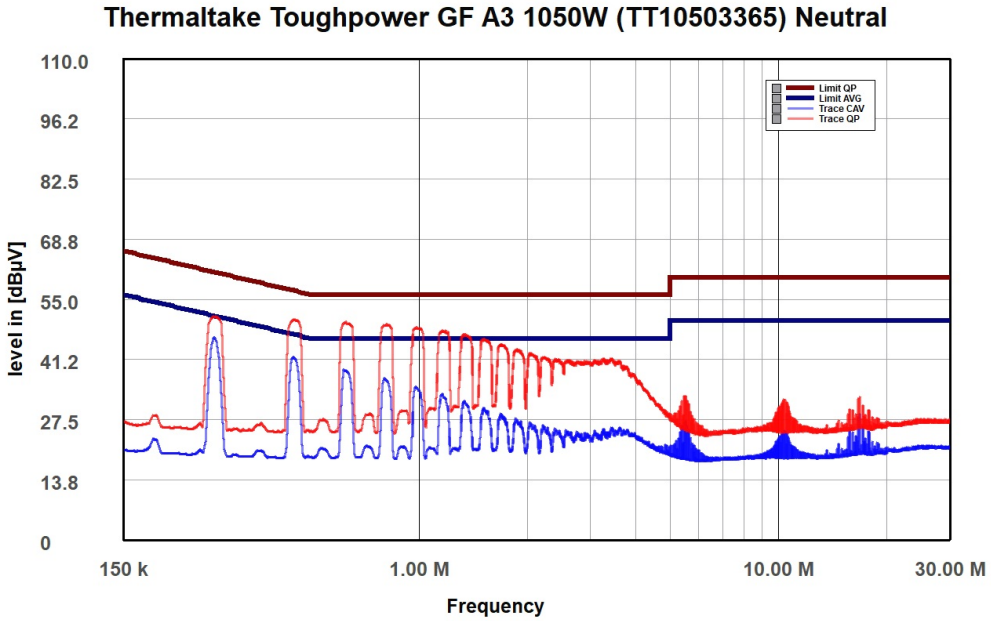
**230V**



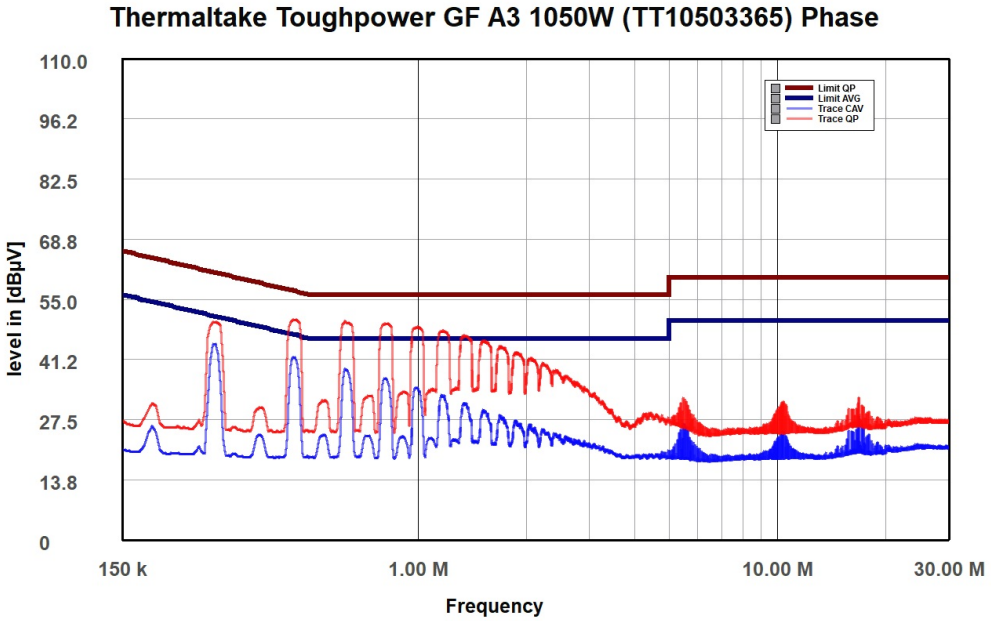

**INFO**

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

## Conducted Emissions EN 55032 & CISPR 32



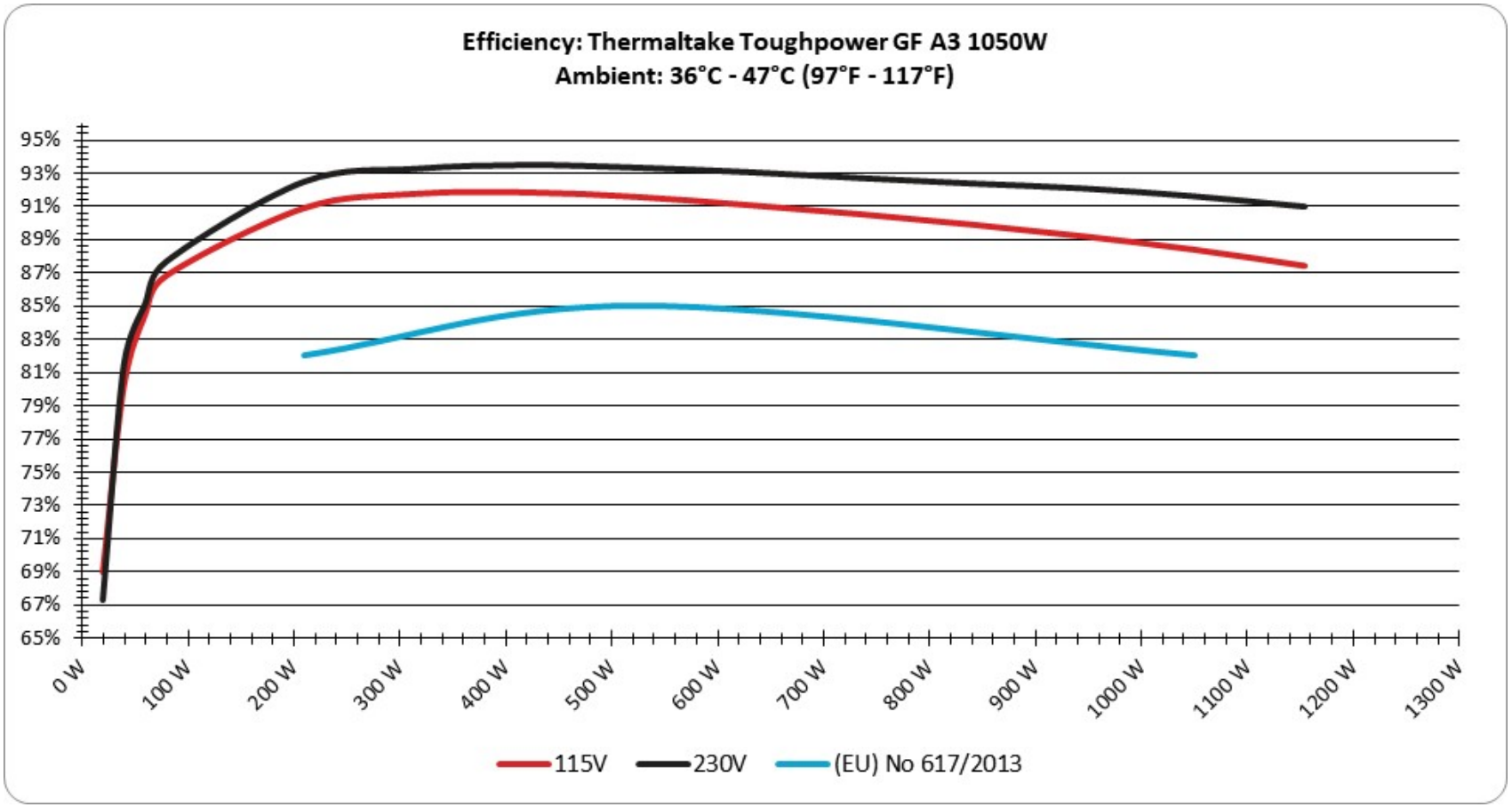

NEUTRAL




PHASE

## Indicative Performance

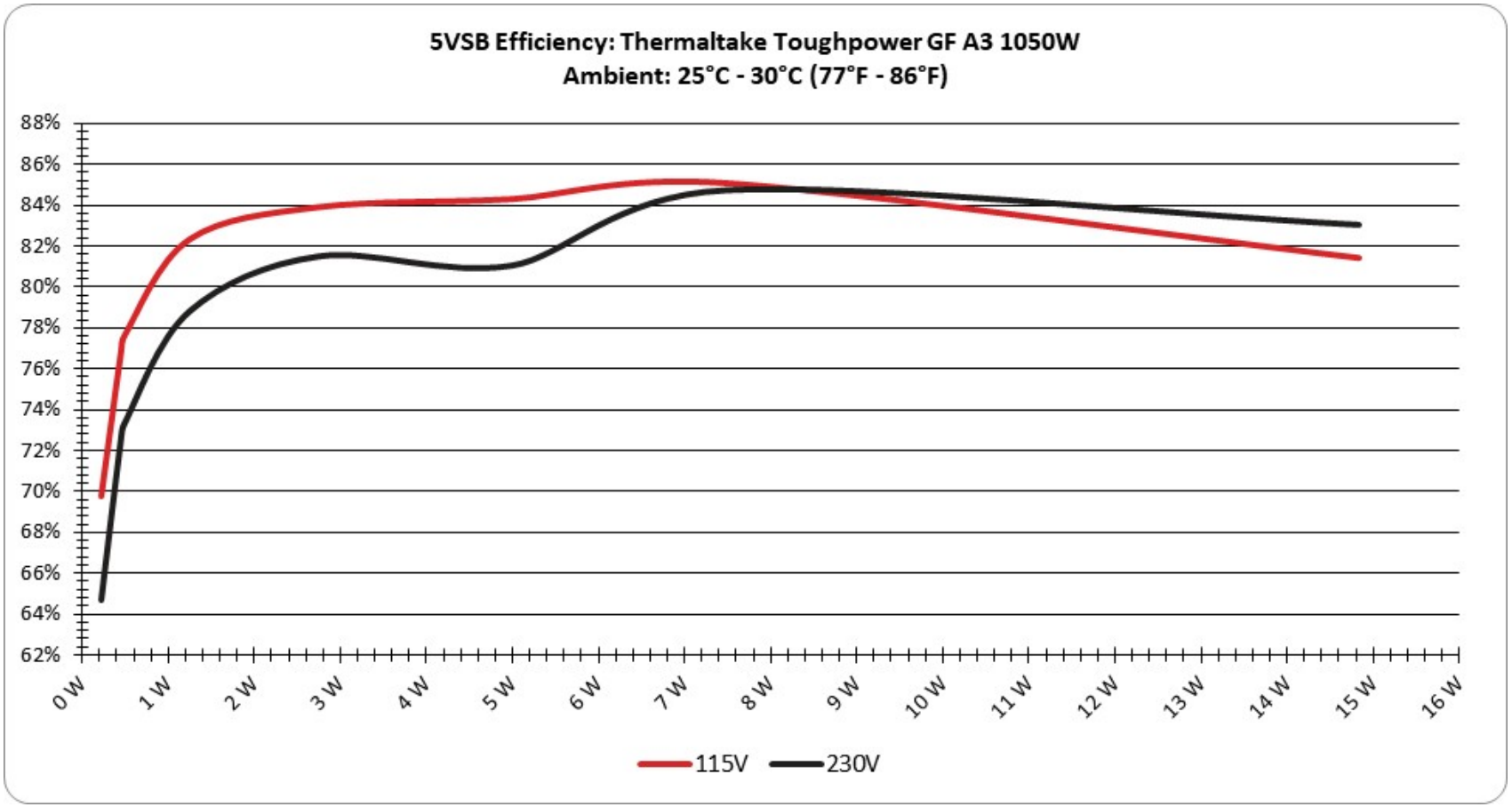
### Efficiency under high ambient temperature




**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: 107.60A (122.97%), 11.989V<br>5V: 23.2A (116.00%), 5.045V<br>3.3V: 22.70A (113.50%), 3.333V<br>5VSB: 6.5A (216.67%), 4.849V |
| OCP (Hot @ 41.8°C) | 12V: 108.20A (123.66%), 11.980V<br>5V: 22.50A (112.50%), 5.046V<br>3.3V: 22.7A (113.50%), 3.337V<br>5VSB: 6A (200.00%), 4.861V |
| OPP (Normal @ 30.4°C) | 1272.57W (121.20%) |
| OPP (Hot @ 41.9°C) | 1272.60W (121.20%) |
| 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**

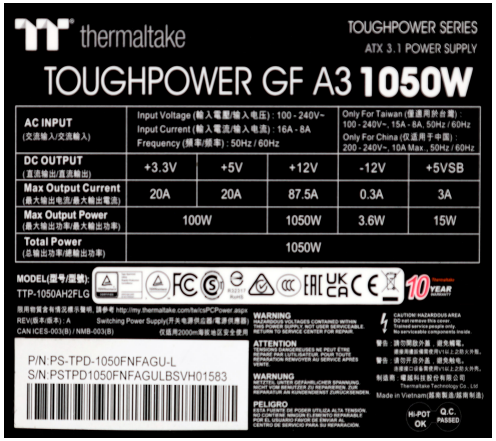
| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 23.66mV | 17.51mV | 17.84mV | 12.54mV | Pass |
| 20% Load | 26.60mV | 18.34mV | 18.36mV | 13.63mV | Pass |
| 30% Load | 25.99mV | 19.32mV | 19.65mV | 14.30mV | Pass |
| 40% Load | 25.52mV | 19.52mV | 19.34mV | 14.45mV | 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

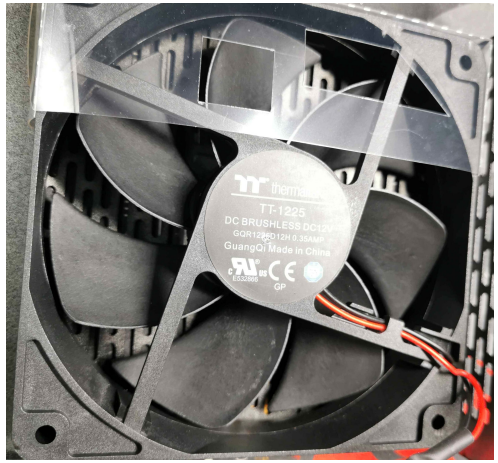
## Thermaltake Toughpower GF A3 1050W (CE-Link)



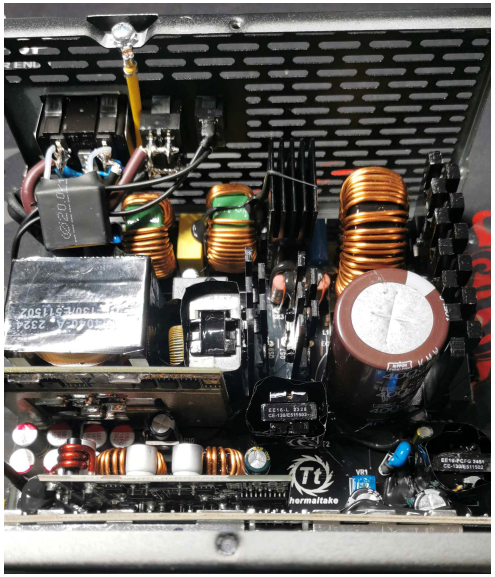

Top side




Power specifications label




Third Photo




Fourth Photo

Cybenetics [illegible] ETA[illegible] LAMBDA[illegible] SAFE[illegible] DELTA[illegible] PHI[illegible]

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