# FSP Technology Mega TI 1650W

Serial Number S4441000030

Lab ID FS16503009

Certification ID 253009

Test Result Report ID: 25PS3009A

Certificate Issue Date: Oct 27, 2025

Scheme: ETA-EMI PSU

115V




230V

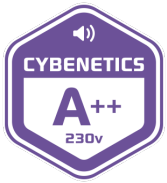



Scheme: LAMBDA PSU

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 | FSP Technology |
| Model | Mega TI 1650W |
| OEM/ODM | FSP Technology |
| Serial Number | S4441000030 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 200-240 |
| Rated Current (Arms) | 10 |

| | |
|---|---|
| Rated Frequency (Hz) | 50-60 |
| Rated Power (W) | 1650 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | ATX12V |
| Cable Design | Fully Modular |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 135mm Hydro Dynamic Bearing Fan (PLA13525S12M) |
| Semi-Passive Operation | ✓ (selectable) |
| Cybenetics Testing Information | |
| Lab ID | FS16503009 |
| Date of receipt | Oct 16, 2025 |
| Testing Date | Oct 24, 2025 |
| Report Issued Date | Oct 27, 2025 |
| DUT Notes | Some protections features need adjustment. |
| Engineer Name | Georgios Theodoros Sarimpalas |
| Authorized By the Laboratory Technical Manager | Aristeidis Bitziopoulos |
| Signature |  |

## Cables and Connectors(Non-accredited measurements)

| **Modular Cables** | | | | |
|---|---|---|---|---|
| **Description** | **Cable Count** | **Connector Count (Total)** | **Gauge** | Cable Type |
| ATX connector 20+4 pin (600mm) | 1 | 1 | 16-22AWG | Tinned Copper |
| 4+4 pin EPS12V (700mm) | 2 | 2 | 16AWG | Tinned Copper |
| 6+2 pin PCIe (650mm) | 6 | 6 | 16AWG | Tinned Copper |
| 12+4 pin PCIe (700mm) (600W) | 2 | 2 | 16-24AWG | Tinned Copper |
| SATA (500mm+150mm+150mm+150mm) | 2 | 8 | 18AWG | Tinned Copper |
| SATA (500mm+150mm) / 4-pin Molex (+150mm+150mm) | 1 | 2 / 2 | 18AWG | Tinned Copper |

| | | | | |
|---|---|---|---|---|
| 4-pin Molex (500mm+150mm+150mm+150mm) | 1 | 4 | 18AWG | Tinned Copper |
| AC Power cord (1700mm) - C19 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 | 137.5 | 4 | 0.3 |
| | Watts | 120 | | 1650 | 20 | 3.6 |
| Total Max. Power (W) | | 1650 | | | | |

## Parts Description

| | |
|---|---|
| **General Data** | |
| Manufacturer (OEM) | FSP |
| PCB Type | Double-Sided |
| **Primary Side** | |
| Transient Filter | 4x Y caps, 2x X caps, 2x CM chokes, 1x MOV |
| Inrush Protection | 3x NTC Thermistor SCK-2R515 (2.5 Ohm @ 25°C) & Relay |
| Rectifier FETs | 8x CEL68N60SF (600V, 43A @ 100°C, Rds(on): 37mOhm) |
| APFC MOSFETs | 4x Infineon IPA60R120C7 (650V, 7A @ 100°C, Rds(on): 0.120Ohm) |
| APFC Boost Diode | 2x Infineon IDH10G65C6 (650V, 10A @ 140°C) |
| Bulk Cap(s) | 3x Nippon Chemi-Con (450V, 560uF each or 1680uF combined, 2,000h @ 105°C,KMW) |
| Main Switchers | 4x Cmsemicon CMS6047B |
| APFC Controller | Texas Instrument UCC28070 |

| | |
|---|---|
| Resonant Controller | Champion CM6901T2X |
| IC Driver | 2x Sillumin Semiconductor SLMi8233BD |
| Topology | Primary side: Bridgeless PFC, Full-Bridge & LLC Resonant converter<br>Secondary side: [12V] Synchronous Rectification & [Minor Rails] DC-DC converters |
| **Secondary Side** | |
| +12V MOSFETs | 12x Cmsemicon CMR009N04NS |
| 5V & 3.3V | DC-DC Converters: 6x Infineon BSC0902NS (30V, 67A @ 100°C, Rds(on): 2.6mOhm)<br>PWM Controller(s):ANPEC APW7159C |
| Filtering Capacitors | Electrolytic:<br>2x Nippon Chemi-Con (4-10,000 @ 105°C, KY)<br>4x Rubycon (4-10,000 @ 105°C, YXJ)<br>Polymer:<br>41x Nippon Chemi-Con |
| Supervisor IC | Weltrend WT7527RA (OCP, OVP, UVP, SCP,PG) |
| Fan Controller | APW9010 |
| Fan Model | Power Logic PLA13525S12M (135mm, 12V, 0.40A, Hydro Dynamic Bearing Fan) |
| **5VSB Circuit** | |
| Rectifier | Secos SSD61N06S-C (60V, 40A @ 100°C, Rds(on): 9mOhm) |
| Standby PWM Controller | Power Integrations INN3166C |

# 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 | ✓ |

## Performance Summary

### 115V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 91.300% |
| Average Noise Output (>1450 Load Combinations) | 13.30dBA |
| Average PF (>1450 Load Combinations) | 0.980 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 69.637% |
| Standby Power Consumption | 0.0637W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 31.75mV |
| 5V Ripple (Full Load) | 17.37mV |
| 3.3V Ripple (Full Load) | 18.39mV |
| 5VSB Ripple (Full Load) | 19.80mV |
| 12V Load Regulation | 0.35% |
| 5V Load Regulation | 0.46% |
| 3.3V Load Regulation | 0.51% |
| 5VSB Load Regulation | 2.47% |
| Inrush Current | - |

### 230V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 93.173% |
| Average Noise Output (>1450 Load Combinations) | 11.91dBA |
| Average PF (>1450 Load Combinations) | 0.954 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 71.821% |
| Standby Power Consumption | 0.1511W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 33.16mV |
| 5V Ripple (Full Load) | 20.07mV |
| 3.3V Ripple (Full Load) | 18.22mV |

| | | |
|---|---|---|
| 5VSB Ripple (Full Load) | | 20.79mV |
| 12V Load Regulation | | 0.42% |
| 5V Load Regulation | | 0.60% |
| 3.3V Load Regulation | | 0.73% |
| 5VSB Load Regulation | | 2.57% |
| Inrush Current | | - |
| 12V Transient Response (200%) | | 11.37V |
| 5V Transient Response (200%) | | 4.936V |
| 3.3V Transient Response (200%) | | 3.172V |
| 5VSB Transient Response (200%) | | 4.884V |
| Hold-Up Time & PWR_OK Signal | | 28.30ms |
| AC Loss to PWR_OK Hold Up Time | | 23.30ms |
| PWR_OK Inactive to DC Loss Delay | | 5.00ms |
| PSU Timings: T1 (20% / 100%) | 58.0ms | 58.0ms |
| PSU Timings: T3 (20% / 100%) | 121.0ms | 121.0ms |
| 12V OCP (28.2°C / 42.5°C) | 164.20A (119.42%), 11.974V | 161.60A (117.53%), 11.986V |
| 5V OCP (28.2°C / 42.5°C) | 26.6A (133.00%), 4.992V | 24.5A (122.50%), 5.002V |
| 3.3V OCP (28.2°C / 42.5°C) | 27.2A (136.00%), 3.328V | 25.9A (129.50%), 3.331V |
| 5VSB OCP (28.2°C / 42.5°C) | 4.9A (122.50%), 4.888V* Voltage Drop (2.471V @ 5.6A) | 4.9A (122.50%), 4.882V* Voltage Drop (2.476V @ 5.6A) |
| OPP (25.82°C / 42.40°C) | 124.41% | 119.56% |

## Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 28.3 |
| AC Loss to PWR_OK Hold Up Time (ms) | 23.3 |
| PWR_OK Inactive to DC Loss Delay (ms) | 5 |

## Tables

### 115V

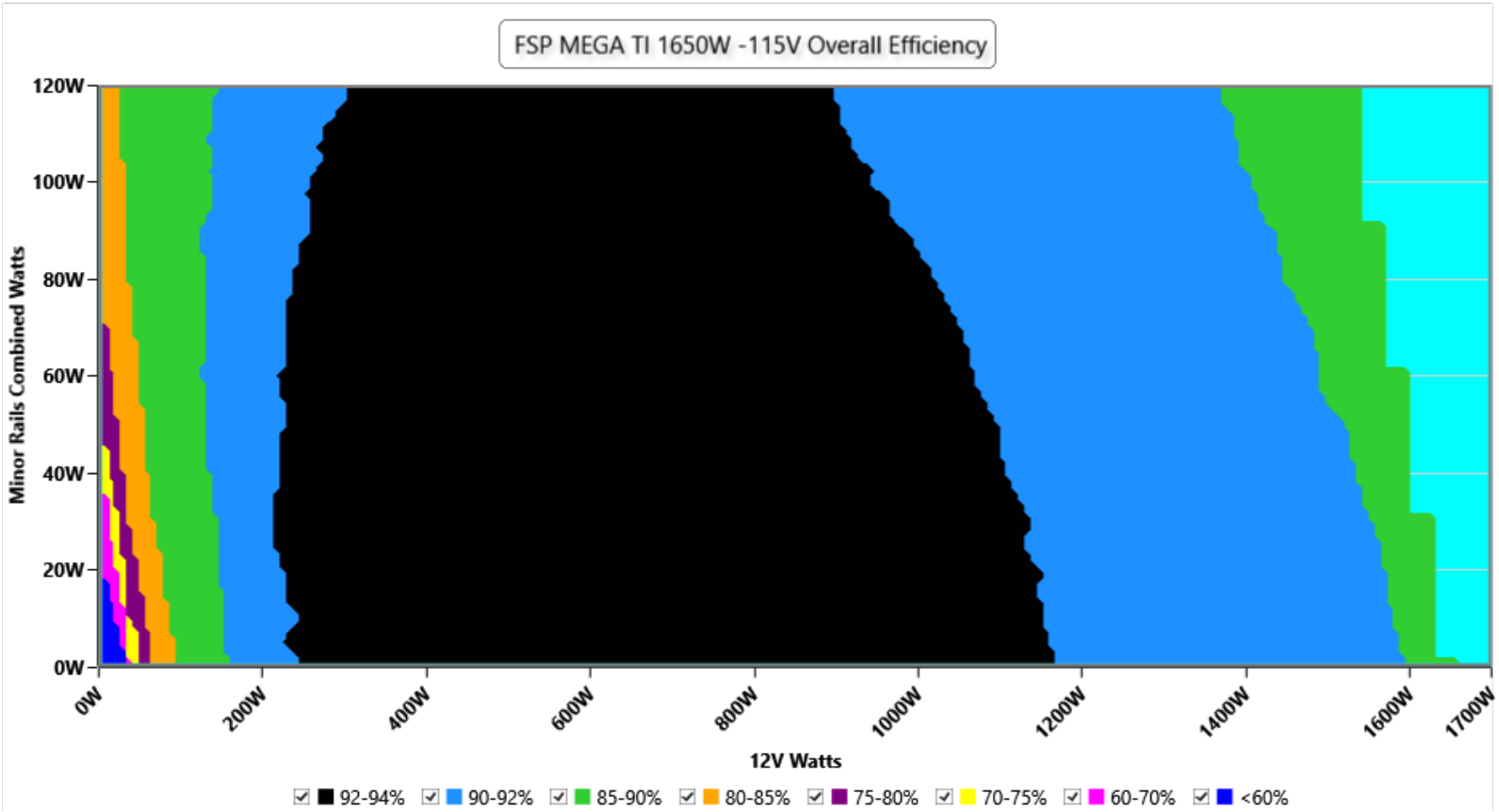
| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 115.01 V | 114.97 V | 113.85 V | 115.07 V | 116.15 V | PASS |
| Mains Frequency: | 60.00 Hz | 59.99 Hz | 59.40 Hz | 60.01 Hz | 60.60 Hz | PASS |
| Mains Voltage CF: | 1.416 | 1.415 | 1.340 | 1.417 | 1.490 | PASS |
| Mains Voltage THD: | 0.13 % | 0.10 % | N/A | 0.16 % | 2.00 % | PASS |
| Real Power: | 0.064 W | 0.042 W | N/A | 0.084 W | N/A | N/A |
| Apparent Power: | 10.389 W | 10.367 W | N/A | 10.411 W | N/A | N/A |
| Power Factor: | 0.006 | N/A | N/A | N/A | N/A | N/A |

### 230V

| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 230.02 V | 229.97 V | 227.70 V | 230.15 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: | 0.151 W | 0.099 W | N/A | 0.408 W | N/A | N/A |
| Apparent Power: | 32.867 W | 32.819 W | N/A | 32.949 W | N/A | N/A |
| Power Factor: | 0.004 | N/A | N/A | N/A | N/A | N/A |

## Efficiency Graph

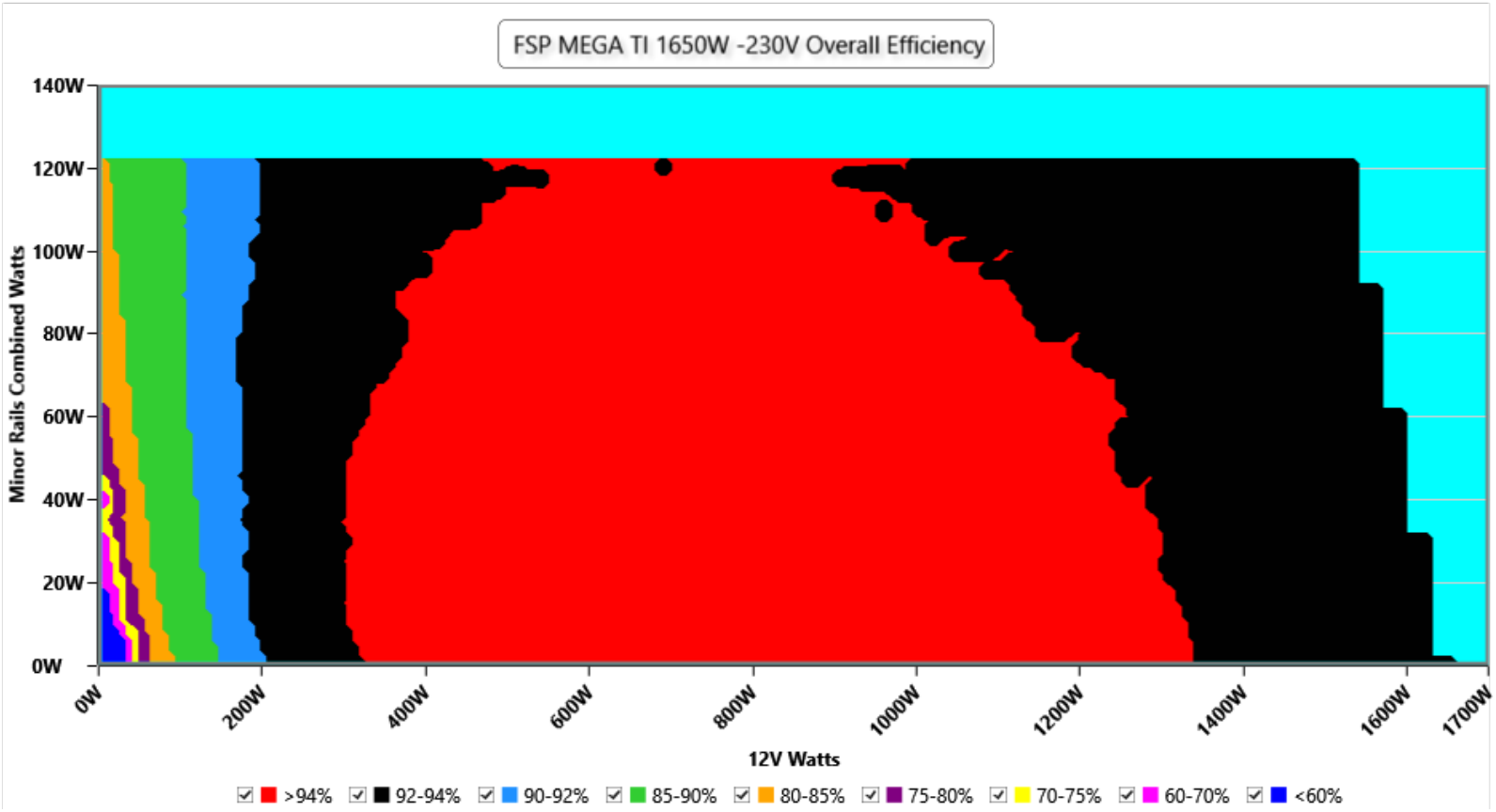
**115V**




**INFO**

This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

## 230V

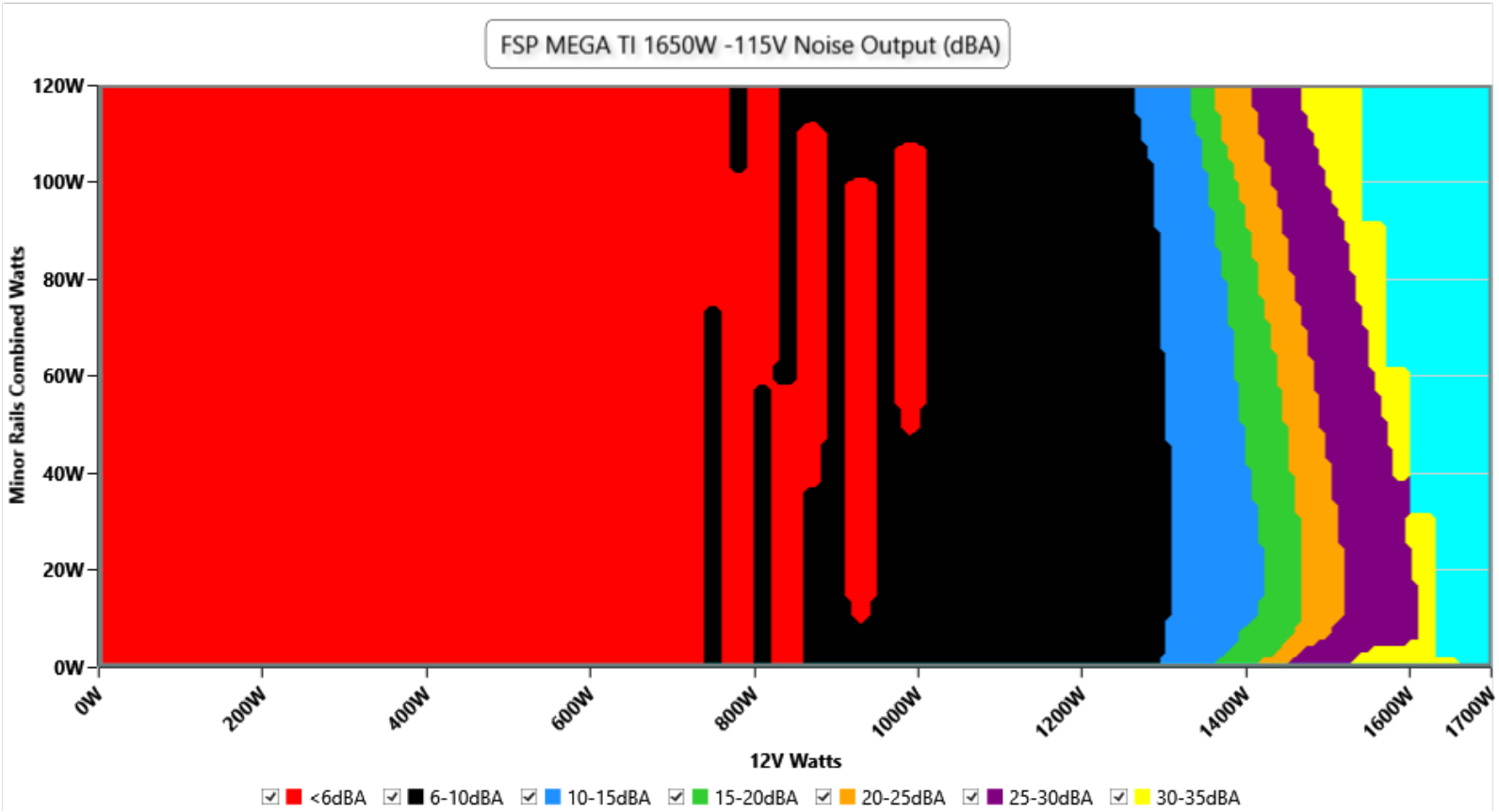



### INFO

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

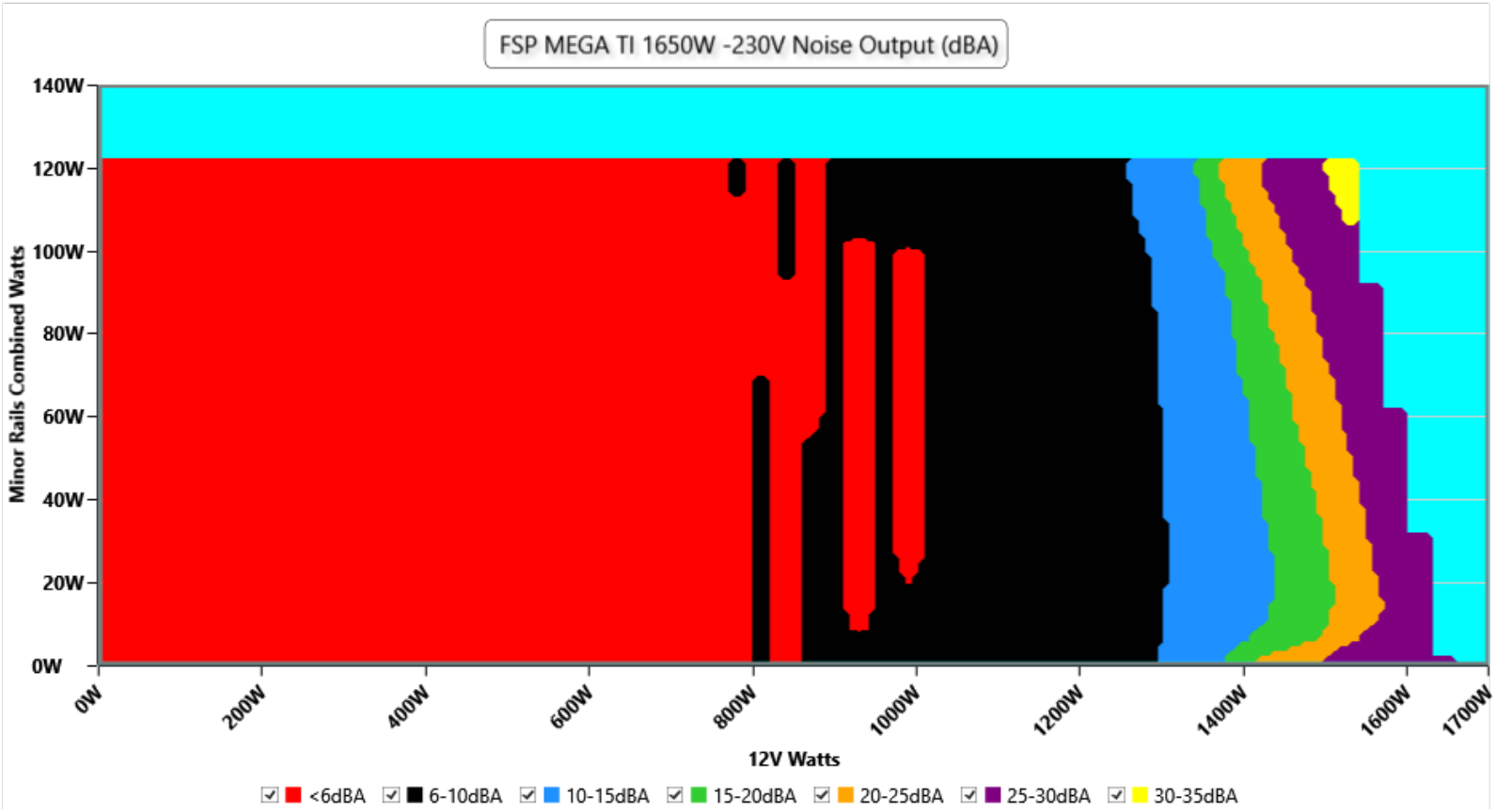
**115V**




**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

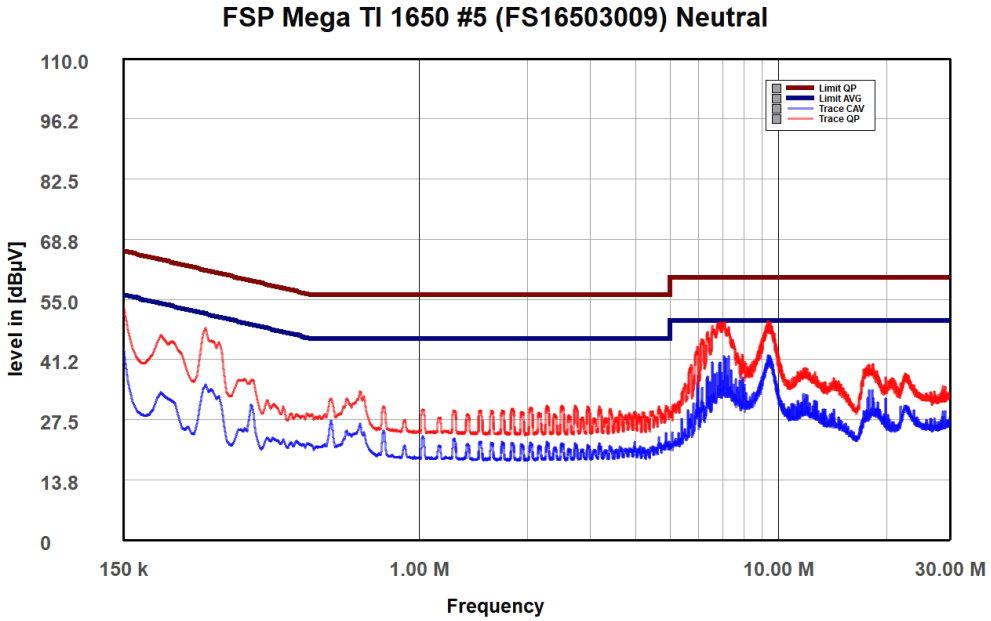
## 230V



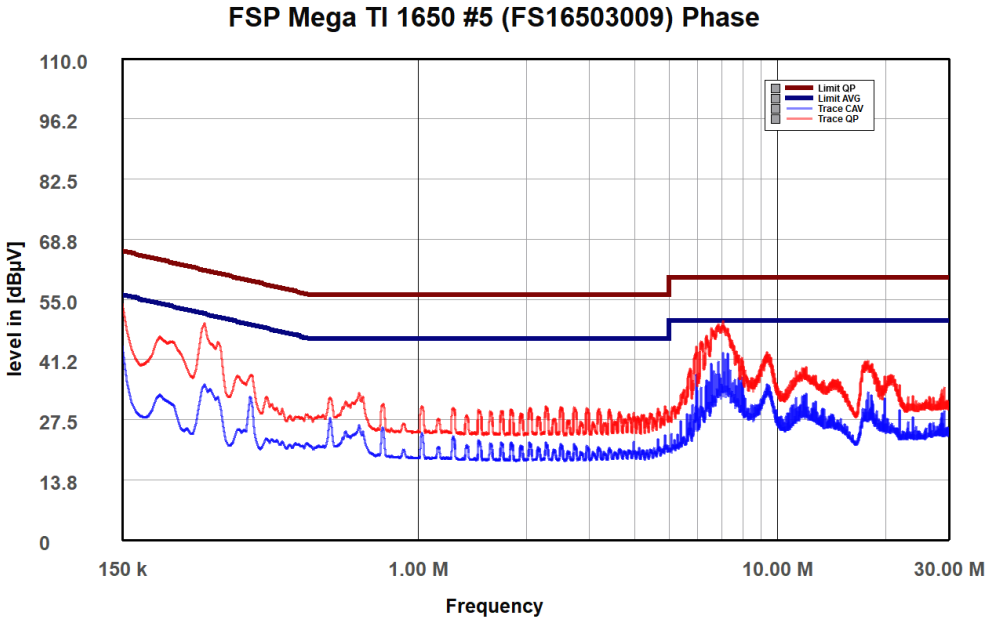

### INFO

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



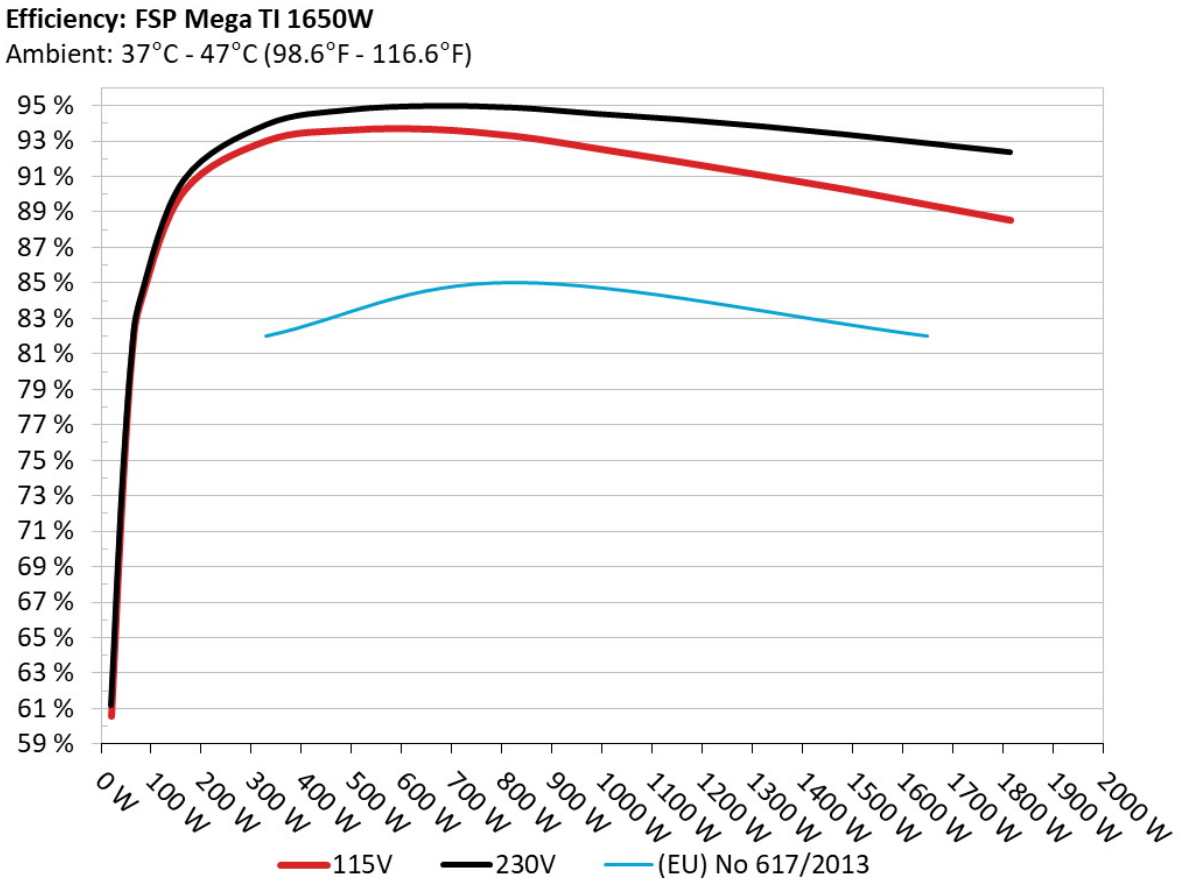

NEUTRAL




PHASE

## Indicative Performance

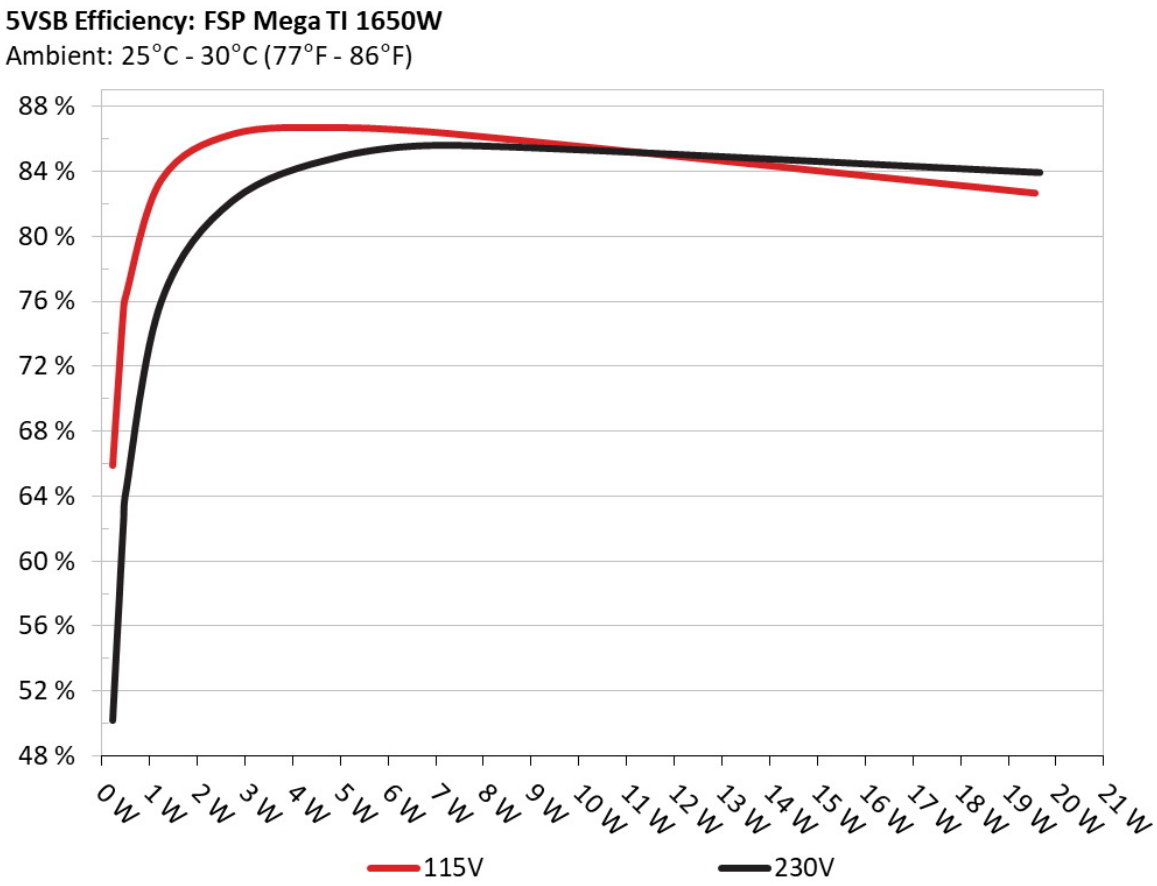
### Efficiency under high ambient temperature




**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 | 65.885% | 0.033 |
| | 5.02V | 0.343W | | 114.87V |
| **2** | **0.09A** | 0.45W | 75.437% | 0.057 |
| | 4.994V | 0.597W | | 114.88V |
| **3** | **0.55A** | 2.743W | 86.282% | 0.25 |
| | 4.986V | 3.179W | | 114.87V |
| **4** | **1A** | 4.984W | 86.678% | 0.358 |
| | 4.984V | 5.75W | | 114.87V |
| **5** | **1.5A** | 7.471W | 86.259% | 0.417 |
| | 4.98V | 8.661W | | 114.87V |
| **6** | **4A** | 19.554W | 82.648% | 0.538 |
| | 4.888V | 23.659W | | 114.86V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| **1** | **0.045A** | 0.226W | 50.198% | 0.013 |
| | 5.021V | 0.457W | | 229.89V |
| **2** | **0.09A** | 0.45W | 62.353% | 0.021 |
| | 4.996V | 0.722W | | 229.88V |
| **3** | **0.55A** | 2.743W | 82.226% | 0.092 |
| | 4.987V | 3.336W | | 229.89V |
| **4** | **1A** | 4.984W | 84.925% | 0.154 |
| | 4.984V | 5.869W | | 229.89V |
| **5** | **1.5A** | 7.472W | 85.627% | 0.213 |
| | 4.981V | 8.726W | | 229.89V |
| **6** | **4A** | 19.65W | 83.955% | 0.371 |
| | 4.912V | 23.406W | | 229.89V |

## Protection Features

| | |
|---|---|
| OCP (Normal @ 28.2°C) | 12V: 164.20A (119.42%), 11.974V<br>5V: 26.6A (133.00%), 4.992V<br>3.3V: 27.2A (136.00%), 3.328V<br>5VSB: 4.9A (122.50%), 4.888V* Voltage Drop (2.471V @ 5.6A) |
| OCP (Hot @ 42.5°C) | 12V: 161.60A (117.53%), 11.986V<br>5V: 24.5A (122.50%), 5.002V<br>3.3V: 25.9A (129.50%), 3.331V<br>5VSB: 4.9A (122.50%), 4.882V* Voltage Drop (2.476V @ 5.6A) |
| OPP (Normal @ 25.8°C) | 2052.71W (124.41%) |
| OPP (Hot @ 42.4°C) | 1972.73W (119.56%) |
| OTP | ✓ (135°C @ Heat Sink) |
| 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 (Full 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%** | **11.920A** | **1.992A** | **1.983A** | **1.004A** | 164.977 | 90.216% | 0 | <6.0 | 45.93°C | 0.967 |
| | 12.027V | 5.021V | 3.328V | 4.982V | 182.864 | | | | 40.34°C | 114.82V |
| **20%** | **24.876A** | **2.989A** | **2.977A** | **1.206A** | 330.002 | 93.034% | 0 | <6.0 | 46.18°C | 0.955 |
| | 12.023V | 5.018V | 3.326V | 4.976V | 354.707 | | | | 40.72°C | 114.76V |
| **30%** | **38.140A** | **3.489A** | **3.474A** | **1.409A** | 494.47 | 93.637% | 0 | <6.0 | 45.81°C | 0.968 |
| | 12.019V | 5.017V | 3.325V | 4.968V | 528.071 | | | | 41.26°C | 114.71V |
| **40%** | **51.474A** | **3.988A** | **3.972A** | **1.614A** | 659.662 | 93.682% | 0 | <6.0 | 46.44°C | 0.978 |
| | 12.015V | 5.015V | 3.324V | 4.958V | 704.144 | | | | 41.86°C | 114.65V |
| **50%** | **64.480A** | **4.988A** | **4.967A** | **1.819A** | 825.015 | 93.301% | 0 | <6.0 | 47.66°C | 0.984 |
| | 12.011V | 5.013V | 3.322V | 4.948V | 884.256 | | | | 42.36°C | 114.59V |
| **60%** | **77.418A** | **5.988A** | **5.963A** | **2.001A** | 989.384 | 92.591% | 511 | 9.9 | 42.87°C | 0.989 |
| | 12.009V | 5.011V | 3.321V | 4.937V | 1068.566 | | | | 53.44°C | 114.54V |
| **70%** | **90.440A** | **6.991A** | **6.962A** | **2.234A** | 1154.844 | 91.844% | 524 | 10.6 | 43.24°C | 0.991 |
| | 12.005V | 5.008V | 3.319V | 4.925V | 1257.401 | | | | 66.49°C | 114.47V |
| **80%** | **103.481A** | **7.993A** | **7.96A** | **2.339A** | 1319.64 | 91.077% | 583 | 13.8 | 43.94°C | 0.993 |
| | 12.000V | 5.004V | 3.316V | 4.917V | 1448.921 | | | | 68.52°C | 114.41V |
| **90%** | **116.927A** | **8.497A** | **8.447A** | **2.444A** | 1485.032 | 90.289% | 982 | 29.9 | 44.75°C | 0.994 |
| | 11.995V | 5.001V | 3.315V | 4.911V | 1644.758 | | | | 66.96°C | 114.33V |
| **100%** | **129.733A** | **9.002A** | **8.965A** | **4.114A** | 1650.013 | 89.416% | 1426 | 40 | 45.7°C | 0.995 |
| | 11.989V | 4.999V | 3.312V | 4.862V | 1845.302 | | | | 65.2°C | 114.27V |
| **110%** | **142.813A** | **10.009A** | **10.058A** | **4.12A** | 1814.608 | 88.55% | 1871 | 47.9 | 46.81°C | 0.996 |
| | 11.983V | 4.995V | 3.31V | 4.856V | 2049.262 | | | | 61.16°C | 114.18V |
| **CL1** | **0.117A** | **14.434A** | **14.362A** | **0A** | 121.312 | 83.352% | 0 | <6.0 | 45.21°C | 0.965 |
| | 12.040V | 5.002V | 3.321V | 4.982V | 145.543 | | | | 42.23°C | 114.82V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **CL2** | **0.116A** | **19.946A** | **0A** | **0A** | 101.35 | 80.89% | 0 | <6.0 | 44.85°C | 0.965 |
| | 12.042V | 5.011V | 3.321V | 4.983V | 125.29 | | | | 40.07°C | 114.84V |
| **CL3** | **0.115A** | **0A** | **19.793A** | **0A** | 67.388 | 75.746% | 0 | <6.0 | 43.42°C | 0.959 |
| | 12.042V | 5.018V | 3.334V | 4.981V | 88.961 | | | | 40.17°C | 114.84V |
| **CL4** | **137.577A** | **0A** | **0A** | **0A** | 1649.546 | 89.948% | 1345 | 38.2 | 45.74°C | 0.995 |
| | 11.990V | 5.018V | 3.322V | 4.938V | 1833.915 | | | | 65.24°C | 114.29V |

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%** | **11.913A** | **1.991A** | **1.983A** | **1.003A** | 164.974 | 90.777% | 0 | <6.0 | 41.17°C | 0.926 |
| | 12.034V | 5.023V | 3.329V | 4.988V | 181.735 | | | | 40.36°C | 229.86V |
| **20%** | **24.862A** | **2.988A** | **2.977A** | **1.204A** | 329.981 | 93.902% | 0 | <6.0 | 41.69°C | 0.954 |
| | 12.029V | 5.02V | 3.326V | 4.983V | 351.412 | | | | 40.93°C | 229.84V |
| **30%** | **38.119A** | **3.487A** | **3.474A** | **1.407A** | 494.398 | 94.733% | 0 | <6.0 | 44.2°C | 0.945 |
| | 12.024V | 5.018V | 3.325V | 4.975V | 521.885 | | | | 41.14°C | 229.81V |
| **40%** | **51.448A** | **3.987A** | **3.972A** | **1.611A** | 659.585 | 94.959% | 0 | <6.0 | 44.58°C | 0.95 |
| | 12.019V | 5.017V | 3.323V | 4.967V | 694.6 | | | | 41.93°C | 229.78V |
| **50%** | **64.454A** | **4.986A** | **4.969A** | **1.816A** | 824.964 | 94.865% | 0 | <6.0 | 44.36°C | 0.957 |
| | 12.016V | 5.014V | 3.321V | 4.956V | 869.612 | | | | 42.2°C | 229.76V |
| **60%** | **77.400A** | **5.988A** | **5.967A** | **2A** | 989.361 | 94.516% | 522 | 10.5 | 42.83°C | 0.965 |
| | 12.012V | 5.011V | 3.319V | 4.947V | 1046.756 | | | | 59.16°C | 229.72V |
| **70%** | **90.433A** | **6.992A** | **6.969A** | **2.23A** | 1154.814 | 94.2% | 525 | 10.7 | 43.26°C | 0.97 |
| | 12.005V | 5.007V | 3.315V | 4.935V | 1225.911 | | | | 59.73°C | 229.7V |
| **80%** | **103.472A** | **7.995A** | **7.97A** | **2.336A** | 1319.655 | 93.81% | 600 | 14.6 | 43.98°C | 0.974 |
| | 12.001V | 5.003V | 3.312V | 4.925V | 1406.702 | | | | 61.24°C | 229.67V |
| **90%** | **116.932A** | **8.5A** | **8.46A** | **2.441A** | 1485.044 | 93.354% | 979 | 29.9 | 44.99°C | 0.978 |
| | 11.994V | 5V | 3.309V | 4.918V | 1590.764 | | | | 59.5°C | 229.64V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **100%** | **129.732A** | **9.005A** | **8.98A** | **4.114A** | 1650.024 | 92.854% | 1364 | 38.6 | 45.47°C | 0.981 |
| | 11.988V | 4.997V | 3.307V | 4.863V | 1777.007 | | | | 57.94°C | 229.61V |
| **110%** | **142.815A** | **10.012A** | **10.077A** | **4.118A** | 1814.615 | 92.354% | 1815 | 47.4 | 45.38°C | 0.983 |
| | 11.982V | 4.994V | 3.304V | 4.857V | 1964.86 | | | | 55.06°C | 229.58V |
| **CL1** | **0.117A** | **14.439A** | **14.399A** | **0A** | 121.312 | 83.908% | 0 | <6.0 | 44.18°C | 0.911 |
| | 12.040V | 5V | 3.312V | 4.984V | 144.58 | | | | 42.16°C | 229.87V |
| **CL2** | **0.116A** | **19.956A** | **0A** | **0A** | 101.349 | 81.426% | 0 | <6.0 | 43.87°C | 0.896 |
| | 12.042V | 5.008V | 3.321V | 4.985V | 124.467 | | | | 42.17°C | 229.88V |
| **CL3** | **0.115A** | **0A** | **19.863A** | **0A** | 67.386 | 76.113% | 0 | <6.0 | 43.5°C | 0.846 |
| | 12.042V | 5.018V | 3.322V | 4.983V | 88.533 | | | | 40.92°C | 229.88V |
| **CL4** | **137.570A** | **0A** | **0A** | **0A** | 1649.534 | 93.321% | 1184 | 34.8 | 44.84°C | 0.981 |
| | 11.990V | 5.018V | 3.322V | 4.941V | 1767.594 | | | | 57.17°C | 229.61V |

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** | **1.236A** | **0.498A** | **0.496A** | **0.2A** | 19.995 | 60.559% | 0 | <6.0 | 44.98°C | 0.901 |
| | 12.016V | 5.021V | 3.327V | 4.979V | 33.018 | | | | 36.77°C | 114.88V |
| **40W** | **2.720A** | **0.697A** | **0.694A** | **0.301A** | 40.003 | 72.102% | 0 | <6.0 | 44.33°C | 0.942 |
| | 12.021V | 5.022V | 3.328V | 4.98V | 55.479 | | | | 37.46°C | 114.85V |
| **60W** | **4.200A** | **0.896A** | **0.892A** | **0.402A** | 60.004 | 80.695% | 0 | <6.0 | 43.67°C | 0.952 |
| | 12.029V | 5.022V | 3.329V | 4.98V | 74.357 | | | | 38.11°C | 114.85V |
| **80W** | **5.680A** | **1.095A** | **1.091A** | **0.502A** | 79.954 | 84.114% | 0 | <6.0 | 46.34°C | 0.96 |
| | 12.030V | 5.022V | 3.329V | 4.979V | 95.056 | | | | 39.75°C | 114.84V |

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** | **1.235A** | **0.497A** | **0.495A** | **0.2A** | 20.004 | 61.169% | 0 | <6.0 | 40.4°C | 0.569 |
| | 12.030V | 5.027V | 3.331V | 4.985V | 32.701 | | | | 36.8°C | 229.89V |
| **40W** | **2.718A** | **0.696A** | **0.693A** | **0.301A** | 40.006 | 72.482% | 0 | <6.0 | 40.83°C | 0.734 |
| | 12.030V | 5.026V | 3.331V | 4.985V | 55.244 | | | | 37.38°C | 229.88V |
| **60W** | **4.198A** | **0.895A** | **0.892A** | **0.401A** | 60.006 | 80.563% | 0 | <6.0 | 42.71°C | 0.81 |
| | 12.038V | 5.026V | 3.331V | 4.985V | 74.481 | | | | 38.04°C | 229.88V |
| **80W** | **5.676A** | **1.094A** | **1.09A** | **0.502A** | 79.956 | 84.258% | 0 | <6.0 | 42.34°C | 0.855 |
| | 12.038V | 5.025V | 3.33V | 4.985V | 94.905 | | | | 39.26°C | 229.88V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 29.77mV | 18.12mV | 16.47mV | 15.29mV | Pass |
| 20% Load | 35.54mV | 17.55mV | 17.19mV | 14.93mV | Pass |
| 30% Load | 35.09mV | 17.19mV | 15.85mV | 14.37mV | Pass |
| 40% Load | 32.43mV | 18.22mV | 16.52mV | 15.24mV | Pass |
| 50% Load | 29.97mV | 18.73mV | 17.70mV | 16.98mV | Pass |
| 60% Load | 34.63mV | 18.58mV | 19.19mV | 16.32mV | Pass |
| 70% Load | 33.65mV | 17.96mV | 17.91mV | 22.27mV | Pass |
| 80% Load | 32.48mV | 19.35mV | 18.42mV | 20.37mV | Pass |
| 90% Load | 31.40mV | 18.37mV | 18.27mV | 19.09mV | Pass |
| 100% Load | 31.75mV | 17.37mV | 18.39mV | 19.80mV | Pass |
| 110% Load | 33.20mV | 19.84mV | 19.07mV | 19.85mV | Pass |
| Crossload1 | 31.35mV | 17.96mV | 18.54mV | 10.84mV | Pass |
| Crossload2 | 39.54mV | 22.68mV | 16.42mV | 12.57mV | Pass |

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| Crossload3 | 88.33mV | 17.55mV | 21.19mV | 11.39mV | Pass |
| Crossload4 | 32.45mV | 17.13mV | 15.91mV | 11.94mV | Pass |

The results above are not used in the certification process

**230V**

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 28.69mV | 19.14mV | 17.39mV | 16.52mV | Pass |
| 20% Load | 35.44mV | 19.50mV | 19.14mV | 15.91mV | Pass |
| 30% Load | 38.66mV | 19.09mV | 17.65mV | 15.29mV | Pass |
| 40% Load | 34.22mV | 20.12mV | 19.03mV | 16.42mV | Pass |
| 50% Load | 31.61mV | 19.71mV | 18.93mV | 17.65mV | Pass |
| 60% Load | 35.44mV | 19.40mV | 18.73mV | 16.98mV | Pass |
| 70% Load | 33.91mV | 20.07mV | 19.34mV | 22.06mV | Pass |
| 80% Load | 33.45mV | 20.22mV | 20.01mV | 19.91mV | Pass |
| 90% Load | 36.06mV | 20.94mV | 20.21mV | 18.21mV | Pass |
| 100% Load | 33.16mV | 20.07mV | 18.22mV | 20.79mV | Pass |
| 110% Load | 33.74mV | 19.72mV | 19.25mV | 22.65mV | Pass |
| Crossload1 | 30.22mV | 19.38mV | 18.67mV | 12.66mV | Pass |
| Crossload2 | 45.11mV | 23.15mV | 17.08mV | 12.37mV | Pass |
| Crossload3 | 91.34mV | 18.73mV | 22.06mV | 12.41mV | Pass |
| Crossload4 | 32.14mV | 17.62mV | 17.48mV | 12.84mV | Pass |

The results above are not used in the certification process

## FSP Technology Mega TI 1650W



Top side




Power specifications label




Fan



PSU Internals