



# Montech Titan PLA 750W

Serial Number

Lab ID MT75002311

Certification ID 252311

Test Result Report ID: 23PS2311A

Certificate Issue Date: Dec 22, 2023

115V

230V

Scheme: ETA-EMI PSU





115V

230V

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        | Brueel & Kjaer 2270 G4                                                              |
| Microphone            | Brueel & 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                             | Montech        |
| Model                             | Titan PLA 750W |
| OEM/ODM                           | Seasonic       |
| Serial Number                     |                |
| Product Specifications            |                |
| Manufacturer-Provided Information |                |
| Rated Voltage (Vrms)              | 100-240        |
| Rated Current (Arms)              | 10-5           |

|                                                   |                                                                                     |
|---------------------------------------------------|-------------------------------------------------------------------------------------|
| Rated Frequency (Hz)                              | 50-60                                                                               |
| Rated Power (W)                                   | 750                                                                                 |
| 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>(HA13525H12F-Z)                                  |
| Semi-Passive Operation                            | ✓ (selectable)                                                                      |
| Cybenetics Testing Information                    |                                                                                     |
| Lab ID                                            | MT75002311                                                                          |
| Date of receipt                                   | Nov 30, 2023                                                                        |
| Testing Date                                      | Dec 21, 2023                                                                        |
| Report Issued Date                                | Dec 22, 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 (630mm)  | 1           | 1                       | 16-18AWG | No                  |
| 4+4 pin EPS12V (710mm)          | 2           | 2                       | 16AWG    | No                  |
| 6+2 pin PCIe (760mm)            | 2           | 2                       | 16-18AWG | No                  |
| 12+4 pin PCIe (760mm) (600W)    | 1           | 1                       | 16-28AWG | No                  |
| SATA 3.3 (410mm+155mm)          | 1           | 2                       | 18AWG    | No                  |
| SATA (510mm+155mm+155mm+155mm)  | 4           | 16                      | 18AWG    | No                  |
| 4-pin Molex (460mm+125mm+125mm) | 1           | 3                       | 18AWG    | No                  |

## Power Specifications

|                      |       |      |    |     |      |      |
|----------------------|-------|------|----|-----|------|------|
| Rail                 |       | 3.3V | 5V | 12V | 5VSB | -12V |
| Max. Power           | Amps  | 20   | 20 | 62  | 3    | 0.3  |
|                      | Watts | 100  |    | 744 | 15   | 3.6  |
| Total Max. Power (W) |       | 750  |    |     |      |      |

## Parts Description

|                      |                                                                                                                                                                                                               |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Data         |                                                                                                                                                                                                               |
| Manufacturer (OEM)   | Seasonic                                                                                                                                                                                                      |
| PCB Type             | Double-Sided                                                                                                                                                                                                  |
| Primary Side         |                                                                                                                                                                                                               |
| Transient Filter     | 4x Y caps, 2x X caps, 2x CM chokes, 1x MOV                                                                                                                                                                    |
| Inrush Protection    | 1x NTC Thermistor MF72 5D-20 (5 Ohm) & Relay                                                                                                                                                                  |
| Bridge Rectifier(s)  | 2x                                                                                                                                                                                                            |
| APFC MOSFETs         | 2x InfineonIPA60R190P6 (600V, 12.7A @ 100°C, Rds(on): 0.190Ohm)                                                                                                                                               |
| APFC Boost Diode     | 1x IDH08G65C6 (650V, 8A @ 145°C)                                                                                                                                                                              |
| Bulk Cap(s)          | 2x Nippon Chemi-con (420V, 330uF each or 660uF combined, 2,000h @ 105°C, KMR)                                                                                                                                 |
| Main Switchers       | 4x Infineon IPA60R230P6 (600V, 10.7A @ 100°C, Rds(on): 0.230Ohm)                                                                                                                                              |
| APFC Controller      | Champion CM6500UNX                                                                                                                                                                                            |
| Resonant Controller  | Champion CU6901VPA                                                                                                                                                                                            |
| Topology             | Primary side: APFC, Full-Bridge & LLC converter<br>Secondary side: Synchronous Rectification & DC-DC converters                                                                                               |
| Secondary Side       |                                                                                                                                                                                                               |
| +12V MOSFETs         | 6x Nexperia PSMN1R4-40YLD (40V, 240A @ 25°C, Rds(on): 1.4mOhm)                                                                                                                                                |
| 5V & 3.3V            | DC-DC Converters: 6x Nexperia PSMN4R0-30YLD (30V, 95A @ 25°C, Rds(on): 4mOhm)<br>PWM Controller(s): ANPEC APW7159C                                                                                            |
| Filtering Capacitors | Electrolytic: 1x Nichicon (2-5,000h @ 105°C, HD),<br>4x Nippon Chemi-Con (5-6,000h @ 105°C, KZH),<br>3x Nippon Chemi-Con (2-5,000h @ 105°C, KZE)<br>4x Rubycon (3-6,000h @ 105°C, YXG),<br>Polymer: 22x FPCAP |
| Supervisor IC        | Weltrend WT7527RA (OCP, OVP, UVP, SCP, PG)                                                                                                                                                                    |

|                        |                                                                      |
|------------------------|----------------------------------------------------------------------|
| Fan Controller         | Nuvoton M031                                                         |
| Fan Model              | Hong Hua HA13525H12F-Z (135mm, 12V, 0.5A, Fluid Dynamic Bearing Fan) |
| 5VSB Circuit           |                                                                      |
| Rectifier              | 1x                                                                   |
| Standby PWM Controller | Excelliance MOS EM85690                                              |

## 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)   | 90.326%  |
| Average Noise Output (>1450 Load Combinations) | 18.35dBA |
| Average PF (>1450 Load Combinations)           | 0.977    |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 67.176%  |
| Standby Power Consumption                      | 0.0445W  |
| Non-Accredited                                 |          |
| 12V Ripple (Full Load)                         | 26.41mV  |
| 5V Ripple (Full Load)                          | 15.25mV  |
| 3.3V Ripple (Full Load)                        | 14.48mV  |
| 5VSB Ripple (Full Load)                        | 28.77mV  |
| 12V Load Regulation                            | 0.16%    |
| 5V Load Regulation                             | 0.44%    |

|                      |         |
|----------------------|---------|
| 3.3V Load Regulation | 0.72%   |
| 5VSB Load Regulation | 2.01%   |
| Inrush Current       | 31.700A |

## 230V

|                                                             |                           |                           |
|-------------------------------------------------------------|---------------------------|---------------------------|
| Accredited                                                  |                           |                           |
| Average Efficiency (>1450 load combinations)                |                           | 92.284%                   |
| Average Noise Output (>1450 Load Combinations)              |                           | 17.91dBA                  |
| Average PF (>1450 Load Combinations)                        |                           | 0.935                     |
| Efficiency With 10W ( $\leq 500W$ ) or 2% ( $> 500W$ ) Load |                           | 66.365%                   |
| Standby Power Consumption                                   |                           | 0.1252W                   |
| Non-Accredited                                              |                           |                           |
| 12V Ripple (Full Load)                                      |                           | 27.98mV                   |
| 5V Ripple (Full Load)                                       |                           | 15.23mV                   |
| 3.3V Ripple (Full Load)                                     |                           | 14.84mV                   |
| 5VSB Ripple (Full Load)                                     |                           | 28.40mV                   |
| 12V Load Regulation                                         |                           | 0.16%                     |
| 5V Load Regulation                                          |                           | 0.44%                     |
| 3.3V Load Regulation                                        |                           | 0.69%                     |
| 5VSB Load Regulation                                        |                           | 2.01%                     |
| Inrush Current                                              |                           | 64.900A                   |
| 12V Transient Response (200%)                               |                           | 11.73V                    |
| 5V Transient Response (200%)                                |                           | 4.948V                    |
| 3.3V Transient Response (200%)                              |                           | 3.213V                    |
| 5VSB Transient Response (200%)                              |                           | 5.014V                    |
| Hold-Up Time & PWR_OK Signal                                |                           | 21.80ms                   |
| AC Loss to PWR_OK Hold Up Time                              |                           | 17.00ms                   |
| PWR_OK Inactive to DC Loss Delay                            |                           | 4.80ms                    |
| PSU Timings: T1 (20% / 100%)                                | 70.0ms                    | 71.0ms                    |
| PSU Timings: T3 (20% / 100%)                                | 126.0ms                   | 128.0ms                   |
| 12V OCP (22.6°C / 39.2°C)                                   | 84.20A (135.80%), 12.216V | 84.20A (135.81%), 12.246V |
| 5V OCP (22.6°C / 39.2°C)                                    | 29.1A (145.50%), 4.99V    | 29A (145.00%), 4.99V      |

|                            |                         |                       |
|----------------------------|-------------------------|-----------------------|
| 3.3V OCP (22.6°C / 39.2°C) | 29.1A (145.50%), 3.315V | 29A (145.00%), 3.318V |
| 5VSB OCP (22.6°C / 39.2°C) | 6.3A (210.00%), 5V      | 6.3A (210.00%), 5V    |
| OPP (26.85°C / 39.94°C)    | 139.29%                 | 136.60%               |

### Hold-Up Time & PWR\_OK Signal

|                                       |      |
|---------------------------------------|------|
| Hold-Up Time (ms)                     | 21.8 |
| AC Loss to PWR_OK Hold Up Time (ms)   | 17   |
| PWR_OK Inactive to DC Loss Delay (ms) | 4.8  |

### Vampire Power

#### Tables

#### 115V

| Detailed Results   |          |          |           |          |           |        |
|--------------------|----------|----------|-----------|----------|-----------|--------|
|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
| Mains Voltage RMS: | 114.87 V | 114.83 V | 113.85 V  | 114.91 V | 116.15 V  | PASS   |
| Mains Frequency:   | 60.00 Hz | 59.99 Hz | 59.40 Hz  | 60.02 Hz | 60.60 Hz  | PASS   |
| Mains Voltage CF:  | 1.416    | 1.416    | 1.340     | 1.418    | 1.490     | PASS   |
| Mains Voltage THD: | 0.14 %   | 0.11 %   | N/A       | 0.18 %   | 2.00 %    | PASS   |
| Real Power:        | 0.044 W  | -0.002 W | N/A       | 0.080 W  | N/A       | N/A    |
| Apparent Power:    | 10.293 W | 10.265 W | N/A       | 10.328 W | N/A       | N/A    |
| Power Factor:      | 0.007    | N/A      | N/A       | N/A      | N/A       | N/A    |

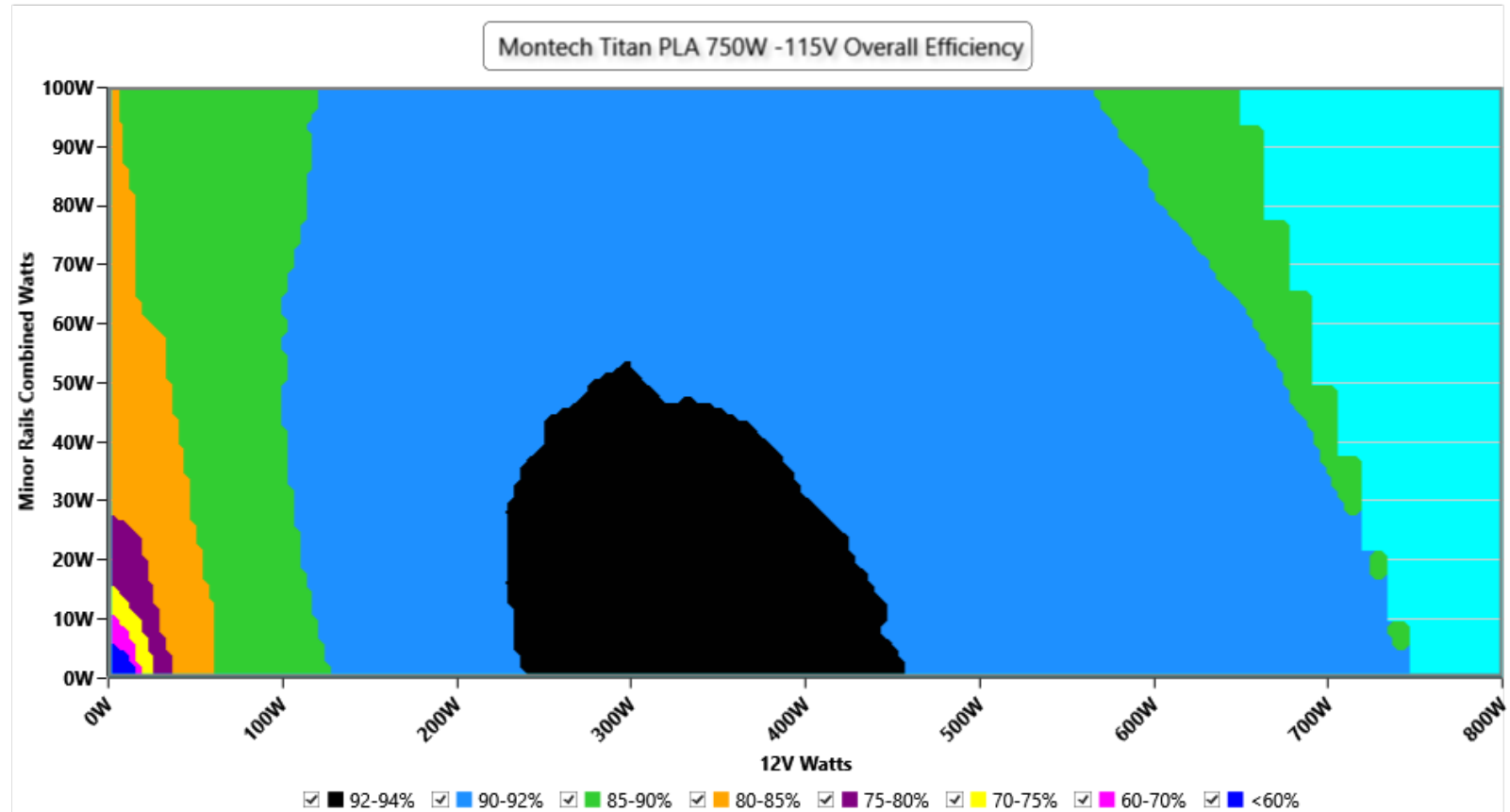
#### 230V

| Detailed Results   |          |          |           |          |           |        |
|--------------------|----------|----------|-----------|----------|-----------|--------|
|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
| Mains Voltage RMS: | 229.99 V | 229.92 V | 227.70 V  | 230.02 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:  | 1.416    | 1.415    | 1.340 | 1.417    | 1.490  | PASS |
| Mains Voltage THD: | 0.13 %   | 0.11 %   | N/A   | 0.15 %   | 2.00 % | PASS |
| Real Power:        | 0.125 W  | 0.068 W  | N/A   | 0.196 W  | N/A    | N/A  |
| Apparent Power:    | 34.743 W | 34.689 W | N/A   | 34.797 W | N/A    | N/A  |
| Power Factor:      | 0.003    | N/A      | N/A   | N/A      | N/A    | N/A  |

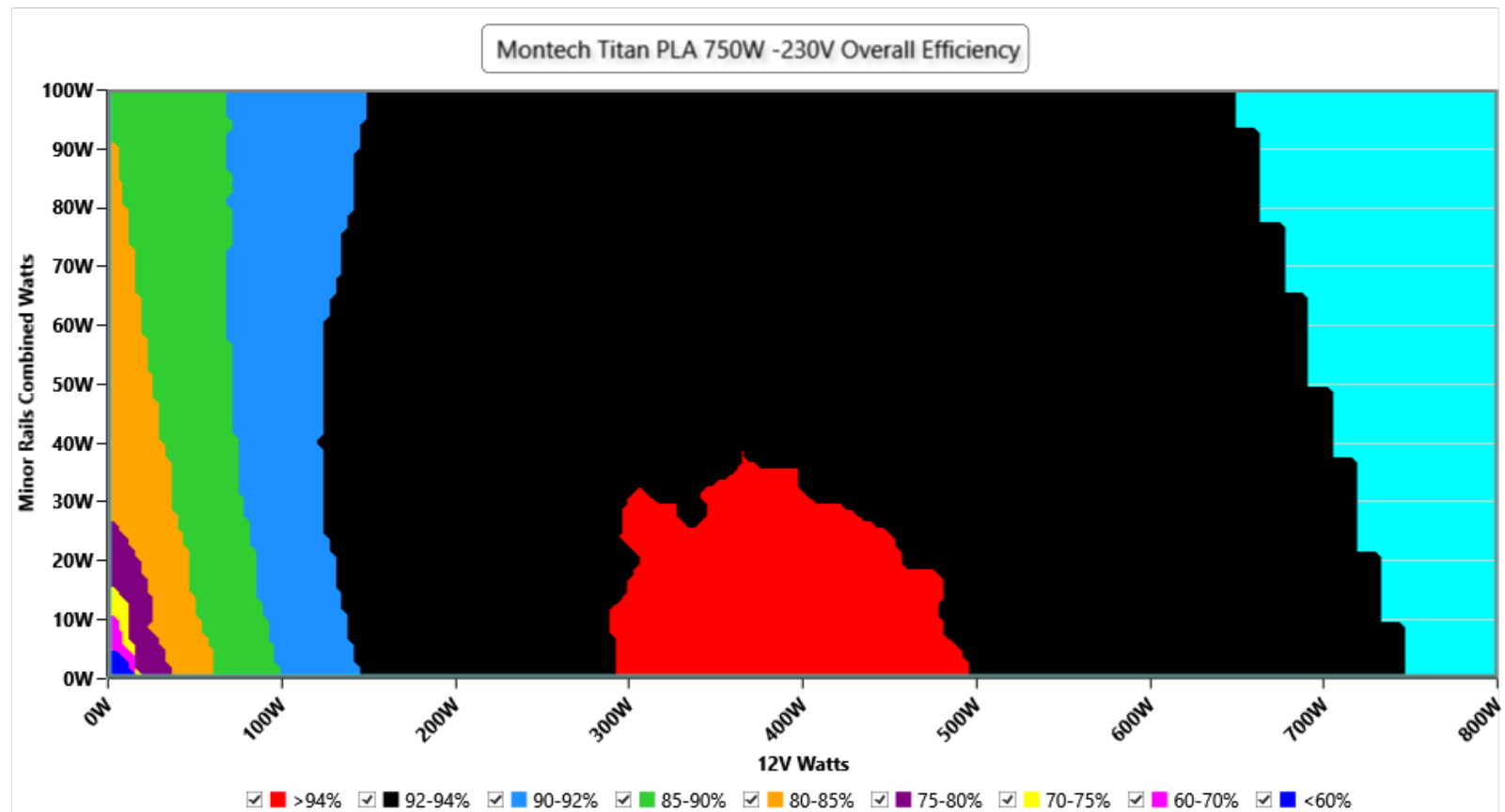
## Efficiency Graph

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

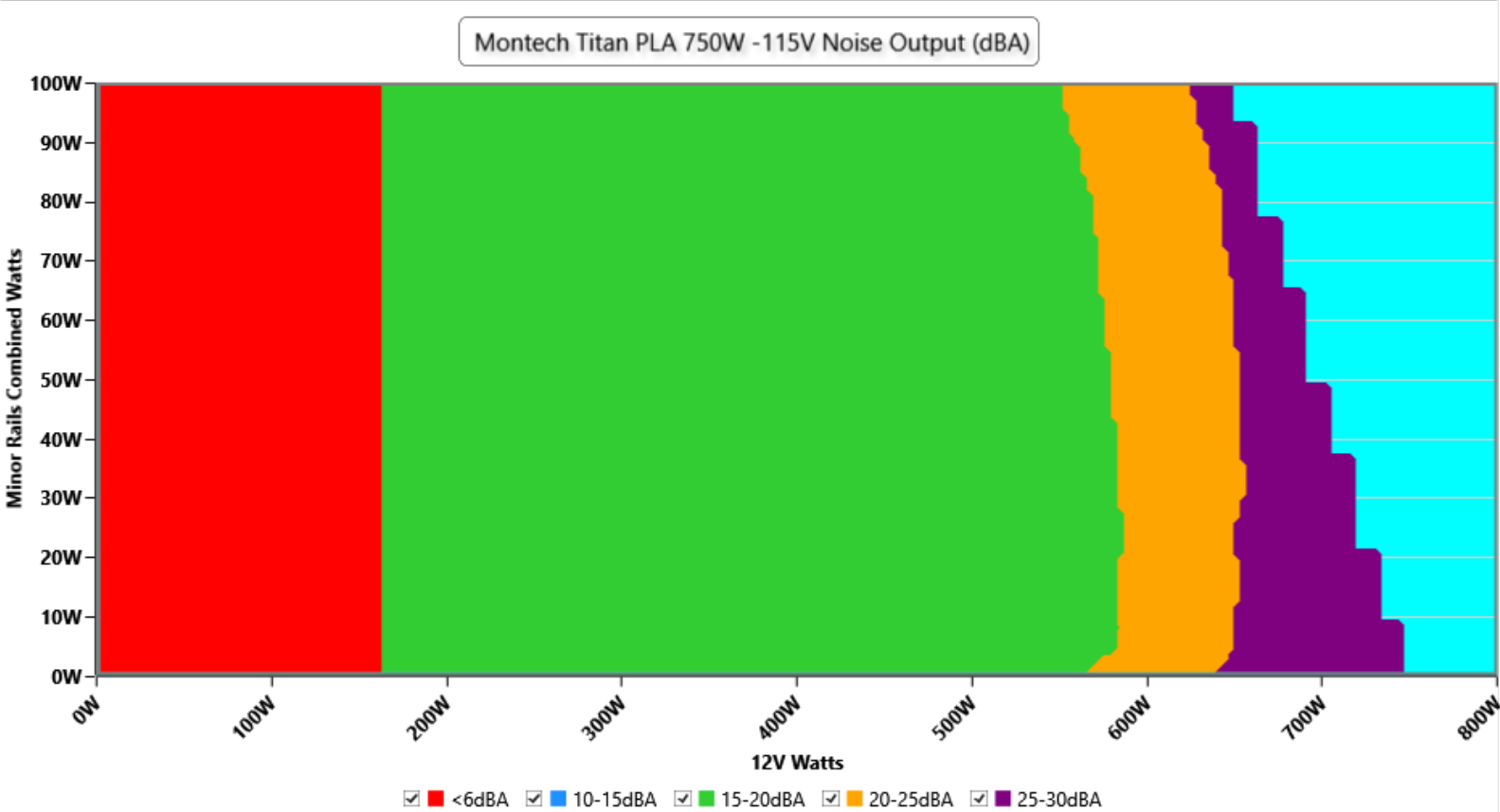


### INFO

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

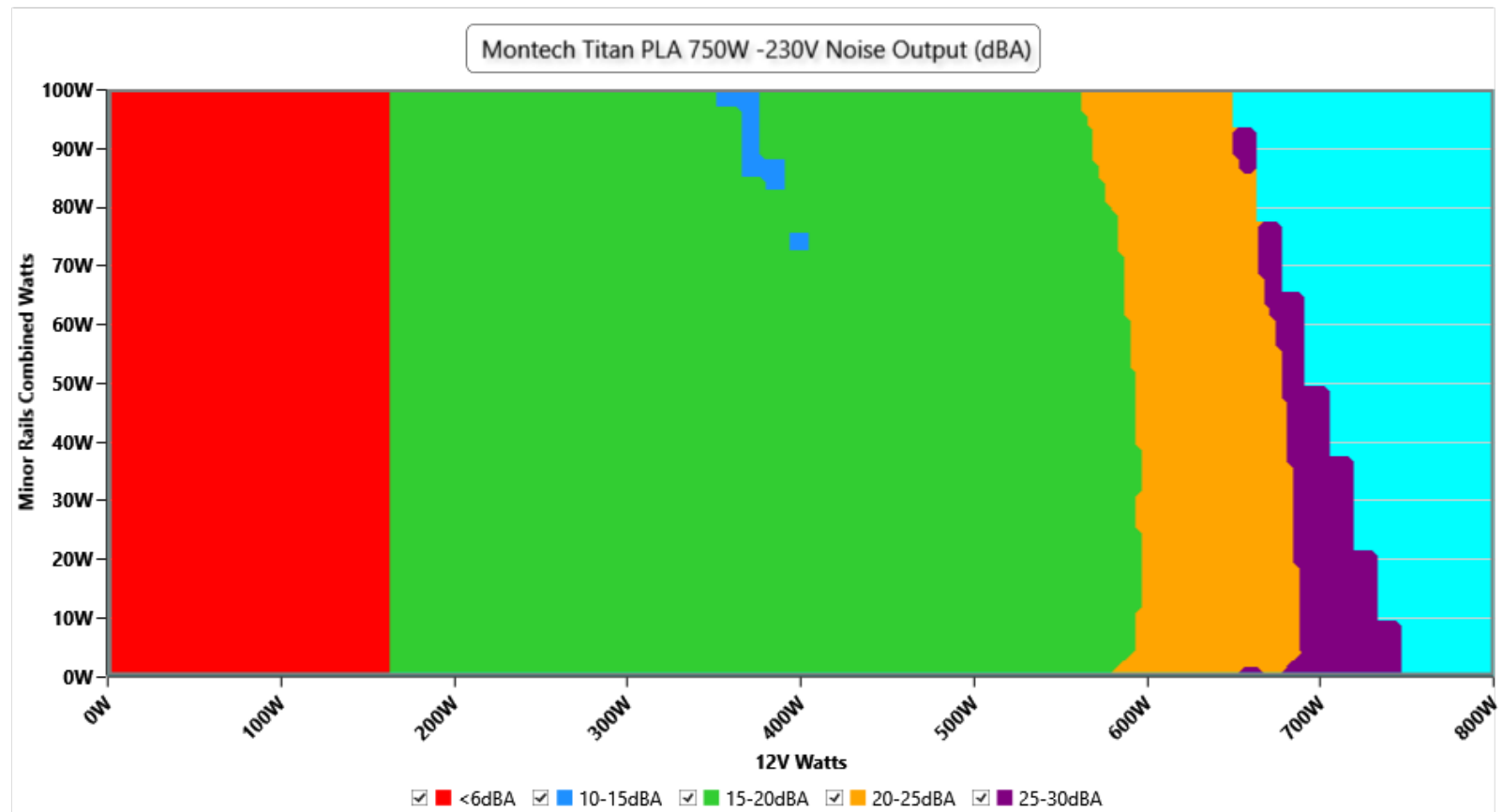
# Noise Graph

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



### INFO

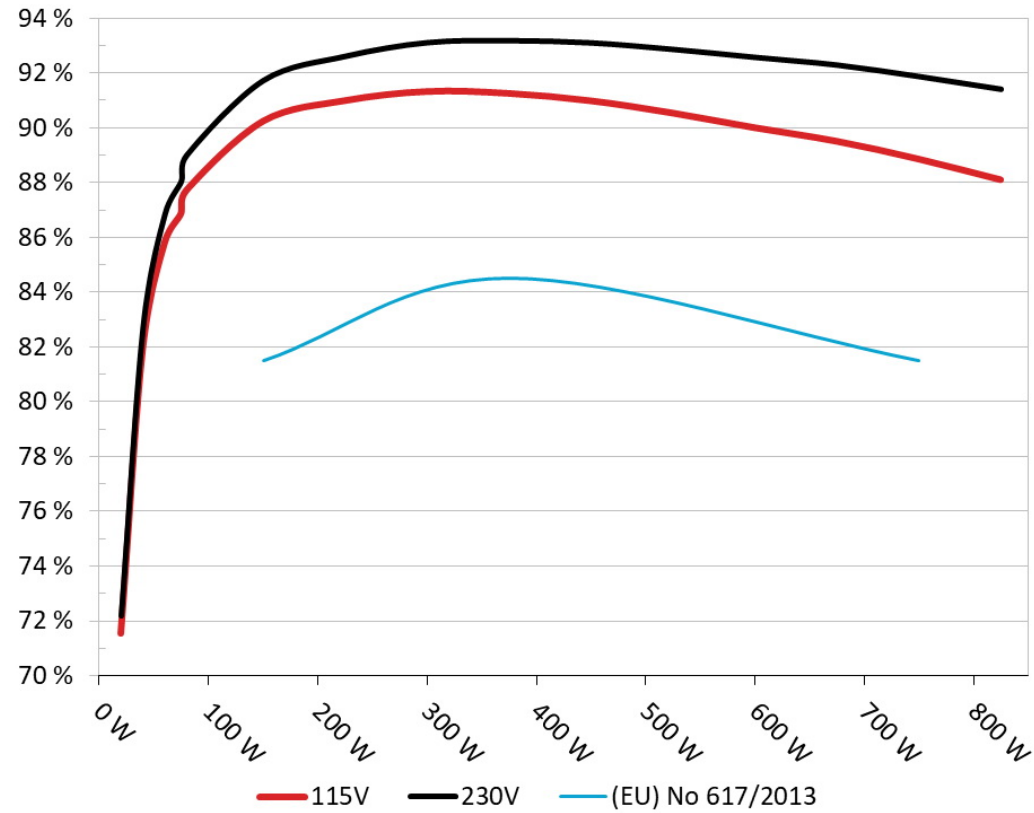
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

## Indicative Performance

### Efficiency under high ambient temperature

#### Efficiency: Montech Titan PLA 750W

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



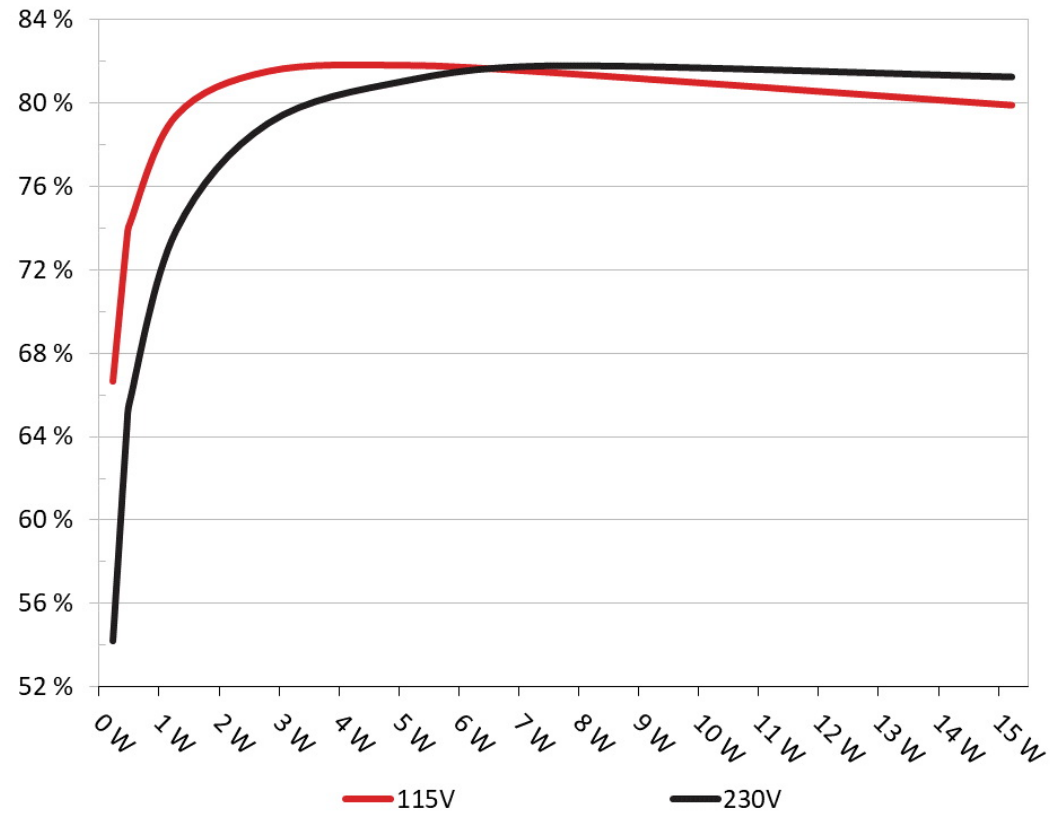
#### INFO

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

### 5VSB Efficiency: Montech Titan PLA 750W

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



## 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 | 0.231W        | 66.671%    | 0.034       |
|        | 5.136V | 0.347W        |            | 114.88V     |
| 2      | 0.09A  | 0.462W        | 73.445%    | 0.061       |
|        | 5.135V | 0.629W        |            | 114.88V     |
| 3      | 0.55A  | 2.819W        | 81.538%    | 0.267       |
|        | 5.125V | 3.457W        |            | 114.88V     |
| 4      | 1A     | 5.116W        | 81.824%    | 0.371       |
|        | 5.116V | 6.252W        |            | 114.88V     |
| 5      | 1.5A   | 7.658W        | 81.456%    | 0.426       |
|        | 5.105V | 9.401W        |            | 114.87V     |
| 6      | 3A     | 15.217W       | 79.911%    | 0.503       |
|        | 5.072V | 19.043W       |            | 114.87V     |

#### 230V

| Test # | 5VSB   | DC/AC (Watts) | Efficiency | PF/AC Volts |
|--------|--------|---------------|------------|-------------|
| 1      | 0.045A | 0.231W        | 54.227%    | 0.013       |
|        | 5.137V | 0.426W        |            | 229.95V     |
| 2      | 0.09A  | 0.462W        | 64.421%    | 0.021       |
|        | 5.135V | 0.718W        |            | 229.95V     |
| 3      | 0.55A  | 2.819W        | 79.045%    | 0.1         |
|        | 5.125V | 3.567W        |            | 229.94V     |
| 4      | 1A     | 5.116W        | 81.086%    | 0.167       |
|        | 5.116V | 6.31W         |            | 229.94V     |
| 5      | 1.5A   | 7.658W        | 81.806%    | 0.227       |
|        | 5.105V | 9.361W        |            | 229.94V     |
| 6      | 3A     | 15.221W       | 81.27%     | 0.337       |
|        | 5.073V | 18.73W        |            | 229.94V     |

Protection Features

|                        |                                                                                                                           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| OCP (Normal @ 22.6°C)  | 12V: 84.20A (135.80%), 12.216V<br>5V: 29.1A (145.50%), 4.99V<br>3.3V: 29.1A (145.50%), 3.315V<br>5VSB: 6.3A (210.00%), 5V |
| OCP (Hot @ 39.2°C)     | 12V: 84.20A (135.81%), 12.246V<br>5V: 29A (145.00%), 4.99V<br>3.3V: 29A (145.00%), 3.318V<br>5VSB: 6.3A (210.00%), 5V     |
| OPP (Normal @ 26.9°C)  | 1044.68W (139.29%)                                                                                                        |
| OPP (Hot @ 39.9°C)     | 1024.53W (136.60%)                                                                                                        |
| OTP                    | ✓ (135°C @ Primary 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                                                                                                          |
| 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%  | 4.364A  | 1.993A | 1.979A | 0.977A | 74.992        | 87.348%    | 0               | <6.0              | 44.31°C        | 0.93        |
|      | 12.236V | 5.016V | 3.334V | 5.115V | 85.855        |            |                 |                   | 40.03°C        | 114.85V     |

| Test | 12V     | 5V      | 3.3V    | 5VSB   | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|------|---------|---------|---------|--------|---------------|------------|-----------------|-------------------|----------------|-------------|
| 20%  | 9.738A  | 2.992A  | 2.971A  | 1.175A | 149.913       | 90.716%    | 0               | <6.0              | 44.97°C        | 0.956       |
|      | 12.221V | 5.014V  | 3.332V  | 5.107V | 165.258       |            |                 |                   | 40.47°C        | 114.83V     |
| 30%  | 15.458A | 3.492A  | 3.47A   | 1.373A | 224.909       | 91.471%    | 700             | 15.4              | 41.25°C        | 0.97        |
|      | 12.219V | 5.012V  | 3.329V  | 5.099V | 245.878       |            |                 |                   | 46.27°C        | 114.8V      |
| 40%  | 21.183A | 3.992A  | 3.968A  | 1.572A | 299.992       | 91.804%    | 697             | 15.1              | 41.95°C        | 0.975       |
|      | 12.217V | 5.01V   | 3.327V  | 5.09V  | 326.771       |            |                 |                   | 47.51°C        | 114.77V     |
| 50%  | 26.505A | 4.992A  | 4.964A  | 1.771A | 374.373       | 91.737%    | 693             | 15.0              | 42.43°C        | 0.979       |
|      | 12.219V | 5.008V  | 3.324V  | 5.081V | 408.089       |            |                 |                   | 48.45°C        | 114.75V     |
| 60%  | 31.871A | 5.993A  | 5.96A   | 1.971A | 449.294       | 91.466%    | 694             | 15.1              | 42.82°C        | 0.981       |
|      | 12.221V | 5.006V  | 3.322V  | 5.073V | 491.211       |            |                 |                   | 49.38°C        | 114.72V     |
| 70%  | 37.227A | 6.995A  | 6.958A  | 2.172A | 524.236       | 91.02%     | 798             | 19.7              | 43.06°C        | 0.984       |
|      | 12.226V | 5.004V  | 3.32V   | 5.064V | 575.961       |            |                 |                   | 50.11°C        | 114.69V     |
| 80%  | 42.656A | 7.998A  | 7.957A  | 2.274A | 599.421       | 90.484%    | 902             | 23.7              | 43.64°C        | 0.986       |
|      | 12.226V | 5.002V  | 3.318V  | 5.057V | 662.458       |            |                 |                   | 51.84°C        | 114.67V     |
| 90%  | 48.396A | 8.5A    | 8.444A  | 2.376A | 674.454       | 89.989%    | 985             | 26.4              | 44.36°C        | 0.987       |
|      | 12.232V | 5V      | 3.315V  | 5.051V | 749.481       |            |                 |                   | 53.44°C        | 114.64V     |
| 100% | 53.943A | 9.004A  | 8.964A  | 2.98A  | 749.683       | 89.339%    | 1313            | 35.3              | 45.2°C         | 0.989       |
|      | 12.235V | 4.998V  | 3.313V  | 5.033V | 839.152       |            |                 |                   | 55.29°C        | 114.6V      |
| 110% | 59.371A | 10.008A | 10.057A | 2.983A | 824.705       | 88.582%    | 1753            | 42.9              | 46.61°C        | 0.99        |
|      | 12.236V | 4.996V  | 3.31V   | 5.028V | 931.011       |            |                 |                   | 57.54°C        | 114.58V     |
| CL1  | 0.113A  | 12.03A  | 11.934A | 0A     | 101.278       | 85.527%    | 697             | 15.1              | 41.36°C        | 0.945       |
|      | 12.244V | 5.004V  | 3.326V  | 5.129V | 118.418       |            |                 |                   | 46.77°C        | 114.83V     |
| CL2  | 0.113A  | 19.999A | 0A      | 0A     | 101.361       | 84.134%    | 812             | 20.3              | 40.54°C        | 0.945       |
|      | 12.249V | 4.999V  | 3.336V  | 5.133V | 120.477       |            |                 |                   | 47.58°C        | 114.83V     |
| CL3  | 0.113A  | 0A      | 19.848A | 0A     | 67.377        | 79.013%    | 810             | 20.2              | 40.19°C        | 0.93        |
|      | 12.245V | 5.017V  | 3.325V  | 5.13V  | 85.275        |            |                 |                   | 49.27°C        | 114.84V     |
| CL4  | 61.318A | 0A      | 0A      | 0A     | 749.49        | 90.167%    | 996             | 26.8              | 45.06°C        | 0.988       |
|      | 12.223V | 5.01V   | 3.323V  | 5.103V | 831.23        |            |                 |                   | 55.99°C        | 114.61V     |

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%  | 4.363A  | 1.994A  | 1.979A  | 0.977A | 74.998        | 88.533%    | 0               | <6.0              | 44.22°C        | 0.778       |
|      | 12.239V | 5.016V  | 3.335V  | 5.115V | 84.711        |            |                 |                   | 40°C           | 229.94V     |
| 20%  | 9.736A  | 2.992A  | 2.971A  | 1.175A | 149.925       | 92.2%      | 0               | <6.0              | 45.44°C        | 0.883       |
|      | 12.225V | 5.014V  | 3.332V  | 5.107V | 162.608       |            |                 |                   | 40.89°C        | 229.92V     |
| 30%  | 15.454A | 3.492A  | 3.469A  | 1.373A | 224.922       | 93.083%    | 698             | 15.3              | 41.3°C         | 0.923       |
|      | 12.221V | 5.012V  | 3.329V  | 5.099V | 241.635       |            |                 |                   | 46.36°C        | 229.91V     |
| 40%  | 21.180A | 3.992A  | 3.968A  | 1.572A | 300.005       | 93.584%    | 696             | 15.2              | 41.95°C        | 0.942       |
|      | 12.220V | 5.01V   | 3.327V  | 5.09V  | 320.573       |            |                 |                   | 47.51°C        | 229.9V      |
| 50%  | 26.507A | 4.992A  | 4.963A  | 1.771A | 374.4         | 93.656%    | 693             | 15.1              | 42.03°C        | 0.953       |
|      | 12.220V | 5.008V  | 3.324V  | 5.081V | 399.762       |            |                 |                   | 48.05°C        | 229.89V     |
| 60%  | 31.868A | 5.994A  | 5.96A   | 1.971A | 449.325       | 93.576%    | 693             | 15.1              | 42.78°C        | 0.961       |
|      | 12.222V | 5.006V  | 3.322V  | 5.073V | 480.175       |            |                 |                   | 49.32°C        | 229.87V     |
| 70%  | 37.222A | 6.996A  | 6.958A  | 2.172A | 524.273       | 93.338%    | 788             | 19.3              | 43.41°C        | 0.966       |
|      | 12.228V | 5.004V  | 3.32V   | 5.064V | 561.698       |            |                 |                   | 50.44°C        | 229.88V     |
| 80%  | 42.648A | 7.999A  | 7.958A  | 2.274A | 599.454       | 93.047%    | 912             | 24.0              | 43.96°C        | 0.97        |
|      | 12.229V | 5.001V  | 3.317V  | 5.057V | 644.254       |            |                 |                   | 52.01°C        | 229.85V     |
| 90%  | 48.395A | 8.5A    | 8.445A  | 2.376A | 674.483       | 92.767%    | 993             | 26.7              | 44.12°C        | 0.973       |
|      | 12.232V | 5V      | 3.315V  | 5.051V | 727.071       |            |                 |                   | 53.18°C        | 229.84V     |
| 100% | 53.946A | 9.003A  | 8.963A  | 2.98A  | 749.705       | 92.346%    | 1312            | 35.3              | 45.2°C         | 0.975       |
|      | 12.235V | 4.998V  | 3.313V  | 5.033V | 811.839       |            |                 |                   | 55.24°C        | 229.83V     |
| 110% | 59.379A | 10.008A | 10.058A | 2.983A | 824.728       | 91.884%    | 1731            | 42.6              | 46.78°C        | 0.978       |
|      | 12.234V | 4.995V  | 3.31V   | 5.028V | 897.573       |            |                 |                   | 57.72°C        | 229.81V     |
| CL1  | 0.113A  | 12.03A  | 11.937A | 0A     | 101.28        | 86.817%    | 698             | 15.3              | 40.5°C         | 0.837       |
|      | 12.236V | 5.004V  | 3.325V  | 5.129V | 116.659       |            |                 |                   | 45.97°C        | 229.94V     |
| CL2  | 0.113A  | 19.998A | 0A      | 0A     | 101.359       | 85.367%    | 812             | 20.3              | 40.21°C        | 0.84        |
|      | 12.243V | 4.999V  | 3.336V  | 5.133V | 118.734       |            |                 |                   | 47.27°C        | 229.93V     |
| CL3  | 0.113A  | 0A      | 19.849A | 0A     | 67.378        | 80.05%     | 811             | 20.3              | 40.06°C        | 0.777       |
|      | 12.242V | 5.016V  | 3.325V  | 5.129V | 84.169        |            |                 |                   | 49.07°C        | 229.94V     |

| Test | 12V     | 5V    | 3.3V   | 5VSB   | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|------|---------|-------|--------|--------|---------------|------------|-----------------|-------------------|----------------|-------------|
| CL4  | 61.326A | 0A    | 0A     | 0A     | 749.503       | 93.092%    | 1001            | 27.0              | 45.55°C        | 0.975       |
|      | 12.222V | 5.01V | 3.324V | 5.103V | 805.123       |            |                 |                   | 56.52°C        | 229.82V     |

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  | 1.214A  | 0.498A | 0.494A | 0.195A | 19.988        | 72.023%    | 0               | <6.0              | 39.62°C        | 0.821       |
|      | 12.229V | 5.02V  | 3.337V | 5.134V | 27.753        |            |                 |                   | 36.57°C        | 114.86V     |
| 40W  | 2.672A  | 0.697A | 0.692A | 0.292A | 39.989        | 82.427%    | 0               | <6.0              | 40.35°C        | 0.887       |
|      | 12.232V | 5.019V | 3.336V | 5.132V | 48.514        |            |                 |                   | 37°C           | 114.86V     |
| 60W  | 4.130A  | 0.897A | 0.89A  | 0.39A  | 59.989        | 86.286%    | 0               | <6.0              | 41.97°C        | 0.916       |
|      | 12.235V | 5.018V | 3.335V | 5.129V | 69.523        |            |                 |                   | 38.2°C         | 114.85V     |
| 80W  | 5.585A  | 1.096A | 1.088A | 0.488A | 79.922        | 88.196%    | 0               | <6.0              | 43.39°C        | 0.932       |
|      | 12.227V | 5.018V | 3.335V | 5.126V | 90.618        |            |                 |                   | 39.46°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  | 1.214A  | 0.498A | 0.494A | 0.195A | 19.994        | 72.674%    | 0               | <6.0              | 39.78°C        | 0.483       |
|      | 12.229V | 5.02V  | 3.336V | 5.134V | 27.514        |            |                 |                   | 36.72°C        | 229.94V     |
| 40W  | 2.672A  | 0.697A | 0.693A | 0.292A | 39.995        | 83.215%    | 0               | <6.0              | 40.54°C        | 0.643       |
|      | 12.232V | 5.018V | 3.336V | 5.131V | 48.063        |            |                 |                   | 37.22°C        | 229.94V     |
| 60W  | 4.130A  | 0.897A | 0.89A  | 0.39A  | 59.994        | 87.329%    | 0               | <6.0              | 41.68°C        | 0.734       |
|      | 12.236V | 5.018V | 3.335V | 5.129V | 68.701        |            |                 |                   | 38.2°C         | 229.94V     |
| 80W  | 5.586A  | 1.096A | 1.088A | 0.488A | 79.934        | 89.479%    | 0               | <6.0              | 42.97°C        | 0.789       |
|      | 12.228V | 5.017V | 3.335V | 5.126V | 89.331        |            |                 |                   | 39.16°C        | 229.93V     |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 19.82mV | 8.91mV  | 8.58mV  | 10.63mV | Pass      |
| 20% Load   | 25.85mV | 9.17mV  | 8.95mV  | 11.36mV | Pass      |
| 30% Load   | 24.20mV | 11.28mV | 11.43mV | 25.91mV | Pass      |
| 40% Load   | 18.83mV | 12.11mV | 10.39mV | 26.33mV | Pass      |
| 50% Load   | 16.67mV | 11.69mV | 10.65mV | 26.48mV | Pass      |
| 60% Load   | 15.02mV | 12.52mV | 10.39mV | 26.99mV | Pass      |
| 70% Load   | 15.12mV | 12.16mV | 11.02mV | 26.79mV | Pass      |
| 80% Load   | 15.16mV | 12.93mV | 13.14mV | 26.33mV | Pass      |
| 90% Load   | 16.10mV | 14.27mV | 13.75mV | 26.22mV | Pass      |
| 100% Load  | 26.41mV | 15.25mV | 14.48mV | 28.77mV | Pass      |
| 110% Load  | 27.47mV | 16.01mV | 15.57mV | 29.32mV | Pass      |
| Crossload1 | 31.45mV | 14.12mV | 12.42mV | 28.17mV | Pass      |
| Crossload2 | 23.79mV | 15.71mV | 9.72mV  | 25.70mV | Pass      |
| Crossload3 | 21.12mV | 13.03mV | 13.29mV | 25.91mV | Pass      |
| Crossload4 | 26.49mV | 14.52mV | 15.23mV | 27.92mV | Pass      |

The results above are not used in the certification process

### 230V

| Test     | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|----------|---------|---------|---------|---------|-----------|
| 10% Load | 22.77mV | 8.76mV  | 9.15mV  | 10.58mV | Pass      |
| 20% Load | 30.54mV | 9.58mV  | 8.79mV  | 11.10mV | Pass      |
| 30% Load | 27.19mV | 10.72mV | 9.78mV  | 25.71mV | Pass      |
| 40% Load | 20.18mV | 11.59mV | 10.14mV | 26.48mV | Pass      |
| 50% Load | 17.13mV | 12.00mV | 10.34mV | 26.69mV | Pass      |
| 60% Load | 16.67mV | 11.49mV | 10.91mV | 26.17mV | Pass      |

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 70% Load   | 15.95mV | 12.26mV | 11.01mV | 24.16mV | Pass      |
| 80% Load   | 16.51mV | 12.83mV | 12.41mV | 25.81mV | Pass      |
| 90% Load   | 18.06mV | 13.70mV | 13.34mV | 25.91mV | Pass      |
| 100% Load  | 27.98mV | 15.23mV | 14.84mV | 28.40mV | Pass      |
| 110% Load  | 29.31mV | 16.16mV | 16.09mV | 28.13mV | Pass      |
| Crossload1 | 34.99mV | 13.39mV | 11.92mV | 27.65mV | Pass      |
| Crossload2 | 28.63mV | 15.35mV | 9.67mV  | 25.60mV | Pass      |
| Crossload3 | 23.91mV | 12.26mV | 12.78mV | 25.08mV | Pass      |
| Crossload4 | 27.60mV | 14.76mV | 15.25mV | 27.34mV | Pass      |

The results above are not used in the certification process

Montech Titan PLA 750W



Top side

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 LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

MONTECH

Hi-POT

OK

Grounding

OK

80

PLUS

PLATINUM

TITAN PLA 750W

Switching Power Supply/スイッチモード電源/電源供應器/電源供應器

Model/モデル/型號/型号:TIX0123

AC INPUT

交流輸入/交流輸入

100-240 Vac 10-5A 50-60Hz 不适用于中国地区  
仅200-240 V ~ 5A 50-60Hz 适用于中国地区

DC OUTPUT

直流輸出/直流輸出

+3.3 V

20 A

100 W

+5 V

20 A

744 W

+12 V

62 A

744 W

-12 V

0.3 A

3.6 W

+5 V<sub>SB</sub>

3 A

15 W

750W

Power specifications label

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

[www.cybenetics.com](http://www.cybenetics.com) - [info@cybenetics.com](mailto:info@cybenetics.com)