



be quiet! Pure Power 13 M 550W

□ EUS5081000876  
Lab ID BQ55002851  
Certification ID 252851

Test Result Report ID: 25PS2851A  
Certificate Issue Date: Jun 18, 2025

Scheme: ETA-EMI PSU

115V

230V

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        | 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                             | be quiet!            |
| Model                             | Pure Power 13 M 550W |
| OEM/ODM                           | FSP                  |
| Serial Number                     | EUS5081000876        |
| Product Specifications            |                      |
| Manufacturer-Provided Information |                      |
| $V_{rms}$                         | 100-240              |
| $I_{rms}$                         | 5-10                 |

|                                                   |                                                                                     |
|---------------------------------------------------|-------------------------------------------------------------------------------------|
| □□□□ (Hz)                                         | 50-60                                                                               |
| □□□□ (W)                                          | 550                                                                                 |
| Operating Temperature (Continuous Full Load) (°C) |                                                                                     |
| □□                                                | ATX12V                                                                              |
| □□□□                                              | Fully Modular                                                                       |
| Warranty                                          | -                                                                                   |
| Cybenetics Measurements                           |                                                                                     |
| Dimensions (W x H x D)                            |                                                                                     |
| Weight                                            |                                                                                     |
| □□                                                | 120mm Rifle Bearing Fan (BQ QF2-12025-LS)                                           |
| □□□□                                              | ✓                                                                                   |
| Cybenetics Testing Information                    |                                                                                     |
| Lab ID                                            | BQ55002851                                                                          |
| Date of receipt                                   | May 9, 2025                                                                         |
| Testing Date                                      | Jun 16, 2025                                                                        |
| Report Issued Date                                | Jun 18, 2025                                                                        |
| Engineer Name                                     | -                                                                                   |
| Authorized By the Laboratory Technical Manager    | Aristeidis Bitziopoulos                                                             |
| Signature                                         |  |

### □□□□ (Non-accredited measurements)

| □□□□                                              |      |       |          |                     |
|---------------------------------------------------|------|-------|----------|---------------------|
| □□                                                | □□□□ | □□□□□ | Gauge    | In Cable Capacitors |
| ATX □□ 24 pin (550mm)                             | 1    | 1     | 18-22AWG | □                   |
| 4+4 pin EPS 12V □□ (650mm)                        | 1    | 1     | 18AWG    | □                   |
| 2x 6+2pin PCIe□□ (500mm)                          | 2    | 2     | 18AWG    | □                   |
| 12+4 pin PCIe (600mm) (300W)                      | 1    | 1     | 16-28AWG | □                   |
| SATA□□ (500mm+150mm+150mm)                        | 1    | 3     | 16-28AWG | □                   |
| SATA□□ (510mm+150mm) / 4-pin Molex (+150mm+145mm) | 1    | 2 / 2 | 18AWG    | □                   |
| AC Power Cord (1350mm) - C13 Coupler              | 1    | 1     | 18AWG    | -                   |

Protection Features(Manufacturer)

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

□□□□

|          |    |      |    |      |      |      |
|----------|----|------|----|------|------|------|
| □        |    | 3.3V | 5V | 12V  | 5VSB | -12V |
| □□□      | □□ | 20   | 20 | 45.8 | 3    | 0.3  |
|          | □  | 120  |    | 550  | 15   | 3.6  |
| □□□□ (W) |    | 550  |    |      |      |      |

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   | NTC Thermistor SCK085A & Relay                                         |
| Bridge Rectifier(s) | 2x Yangjie GBJ1508 (800V, 15A @ 87°C)                                  |
| APFC MOSFETs        | 2x STMicroelectronics STF18N60M2 (650V, 8A @ 100°C, Rds(on): 0.280Ohm) |
| APFC Boost Diode    | 1x DSC06C065 (650V, 6A @ 25°C)                                         |
| Bulk Cap(s)         | 2x Elite (420V, 270uF each or 540uF combined, 3000h @ 85°C,GSF(M))     |

|                                  |                                                                                                                                                                                                          |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main Switchers                   | 2x Toshiba TK12A60W (600V, 11.5A @ 25°C, Rds(on): 0.30hm)                                                                                                                                                |
| IC Driver                        | Novosense NSI6602                                                                                                                                                                                        |
| APFC Controller                  | Champion CM6500UNX                                                                                                                                                                                       |
| Resonant Controller              | Champion CM6901X                                                                                                                                                                                         |
| Topology                         | <ul style="list-style-type: none"><li>• Primary side: APFC, Half-Bridge &amp; LLC Resonant Converter</li><li>• Secondary side: [12V] Synchronous Rectification, [Minor Rails] DC-DC converters</li></ul> |
| <b>Secondary Side</b>            |                                                                                                                                                                                                          |
| +12V MOSFETs                     | 4x Champion CMR024N04NS (40V, 144A @ 25°C, Rds(on): 2.4mOhm)                                                                                                                                             |
| 5V & 3.3V                        | DC-DC Converters: 4x Nexperia PSMN3RO-30YLD (30V, 100A @ 25°C, Rds(on): 3.1mOhm) PWM Controller(s): ANPECAPW7159C                                                                                        |
| Filtering Capacitors             | Electrolytic: 3x Elite (2,000 @ 105°C, EL) 2x Elite (2-5,000 @ 105°C, ED) 1x Elite (4-10,000 @ 105°C, EY) 2x Elite (3-6,000 @ 105°C, EV) Polymer: 19x Apaq, 8 Elite (CS), 9x Biostar                     |
| Supervisor IC                    | IN1S4241-SDG (OCP, OVP, UVP, SCP, PG)                                                                                                                                                                    |
| Fan Controller                   | Greenergy GR8031                                                                                                                                                                                         |
| Fan Model                        | BQ QF2-12025-LS (120mm, 12V, 0.12A, Rifle Bearing Fan)                                                                                                                                                   |
| <b>5VSB Circuit</b>              |                                                                                                                                                                                                          |
| Synchronous Rectification Driver | Leadtrend LD8926AA13 Synchronous Rectification IC                                                                                                                                                        |

## Test Results

### Temperature & Compliance Info

|                                              |                   |
|----------------------------------------------|-------------------|
| □□□□ (°C / °F)                               | 28-32 / 82.4-89.6 |
| □□ ErP Lot3/6□□                              | ✓                 |
| □□ (EU) No 617/2013□□                        | ✓                 |
| ALPM (Alternative Low Power Mode) compatible | ✓                 |
| ATX v3.1 PSU Power Excursion                 | ✓                 |

## Performance Summary

### 115V

|                                                        |         |
|--------------------------------------------------------|---------|
| Accredited                                             |         |
| THD (%) (>1450 load combinations)                      | 90.603% |
| Average Noise Output (>1450 Load Combinations)         | 6.00dBA |
| PF (%) (>1450 Load Combinations)                       | 0.987   |
| Efficiency With 10W ( $\leq 500W$ ) or 2% (>500W) Load | 69.680% |
| THD (%)                                                | 0.0434W |
| Non-Accredited                                         |         |
| 12V Ripple (Full Load)                                 | 25.54mV |
| 5V Ripple (Full Load)                                  | 14.90mV |
| 3.3V Ripple (Full Load)                                | 16.33mV |
| 5VSB Ripple (Full Load)                                | 19.20mV |
| 12V Load Regulation                                    | 0.45%   |
| 5V Load Regulation                                     | 0.90%   |
| 3.3V Load Regulation                                   | 1.49%   |
| 5VSB Load Regulation                                   | 2.04%   |
| Inrush Current                                         | 31.290A |

### 230V

|                                                        |         |
|--------------------------------------------------------|---------|
| Accredited                                             |         |
| THD (%) (>1450 load combinations)                      | 92.463% |
| Average Noise Output (>1450 Load Combinations)         | 6.00dBA |
| PF (%) (>1450 Load Combinations)                       | 0.957   |
| Efficiency With 10W ( $\leq 500W$ ) or 2% (>500W) Load | 71.581% |
| THD (%)                                                | 0.1319W |
| Non-Accredited                                         |         |
| 12V Ripple (Full Load)                                 | 26.53mV |
| 5V Ripple (Full Load)                                  | 14.78mV |
| 3.3V Ripple (Full Load)                                | 15.76mV |

|                                  |                           |                           |
|----------------------------------|---------------------------|---------------------------|
| 5VSB Ripple (Full Load)          | 18.79mV                   |                           |
| 12V Load Regulation              | 0.45%                     |                           |
| 5V Load Regulation               | 0.88%                     |                           |
| 3.3V Load Regulation             | 1.46%                     |                           |
| 5VSB Load Regulation             | 2.00%                     |                           |
| Inrush Current                   | 65.170A                   |                           |
| 12V Transient Response (200%)    | 11.77V                    |                           |
| 5V Transient Response (200%)     | 4.962V                    |                           |
| 3.3V Transient Response (200%)   | 3.242V                    |                           |
| 5VSB Transient Response (200%)   | 5.020V                    |                           |
| □□□□ & PG□□                      | 25.30ms                   |                           |
| AC Loss to PWR_OK Hold Up Time   | 23.40ms                   |                           |
| PWR_OK Inactive to DC Loss Delay | 1.90ms                    |                           |
| PSU Timings: T1 (20% / 100%)     | 67.0ms                    | 68.0ms                    |
| PSU Timings: T3 (20% / 100%)     | 130.0ms                   | 131.0ms                   |
| 12V OCP (28.6°C / 41.3°C)        | 58.30A (127.29%), 12.078V | 54.00A (117.90%), 12.090V |
| 5V OCP (28.6°C / 41.3°C)         | 29.4A (147.00%), 5.022V   | 28A (140.00%), 5.022V     |
| 3.3V OCP (28.6°C / 41.3°C)       | 29.2A (146.00%), 3.295V   | 29.3A (146.50%), 3.293V   |
| 5VSB OCP (28.6°C / 41.3°C)       | 4.3A (143.33%), 5.029V    | 4.3A (143.33%), 5.027V    |
| OPP (28.66°C / 40.94°C)          | 125.93%                   | 124.18%                   |

□□□□ & PG□□

|                                       |      |
|---------------------------------------|------|
| Hold-Up Time (ms)                     | 25.3 |
| AC Loss to PWR_OK Hold Up Time (ms)   | 23.4 |
| PWR_OK Inactive to DC Loss Delay (ms) | 1.9  |



## Tables

### 115V

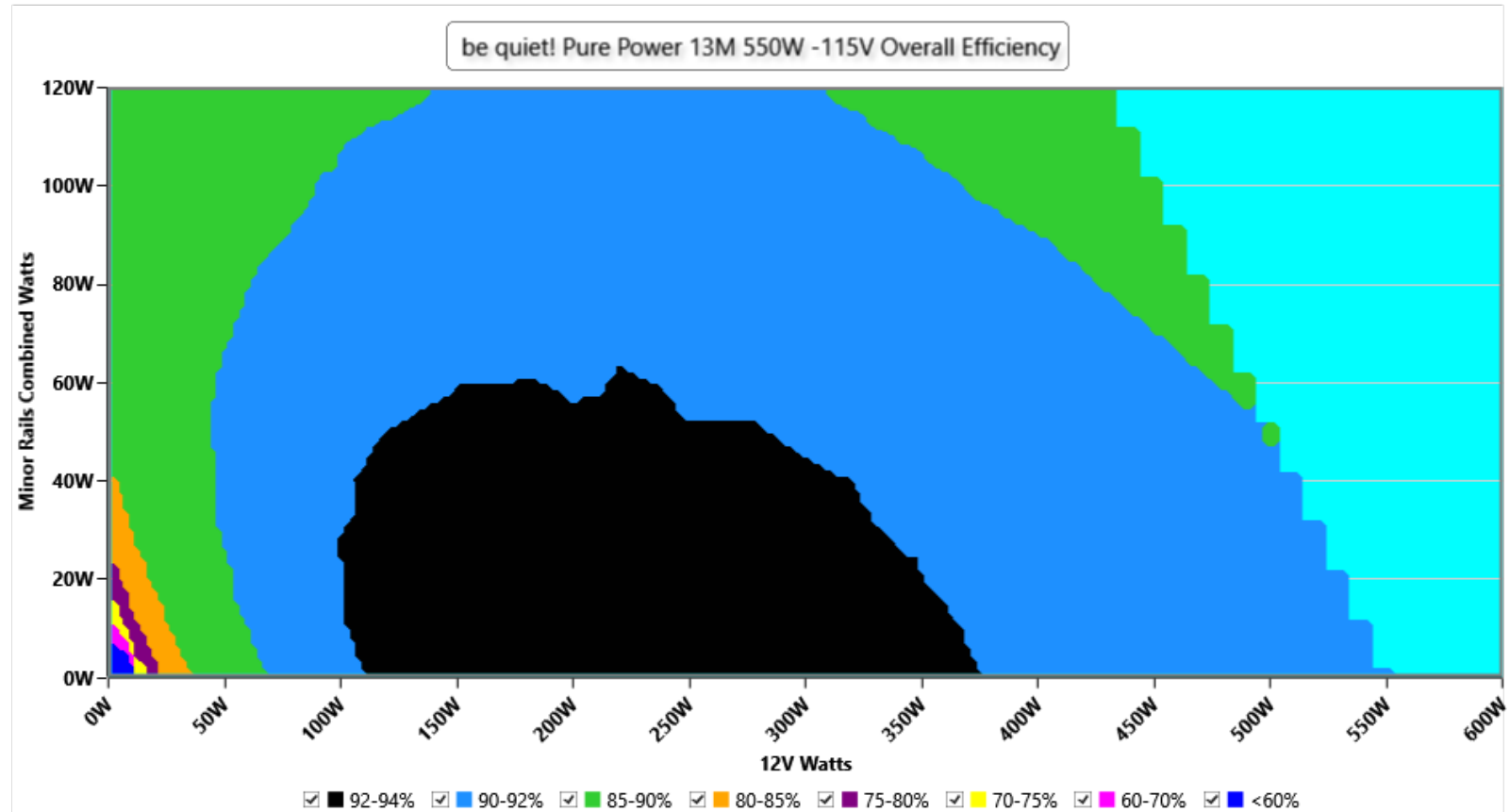
| Detailed Results   |          |          |           |          |           |        |
|--------------------|----------|----------|-----------|----------|-----------|--------|
|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
| Mains Voltage RMS: | 114.84 V | 114.78 V | 113.85 V  | 114.88 V | 116.15 V  | PASS   |
| Mains Frequency:   | 60.00 Hz | 59.98 Hz | 59.40 Hz  | 60.02 Hz | 60.60 Hz  | PASS   |
| Mains Voltage CF:  | 1.421    | 1.419    | 1.340     | 1.423    | 1.490     | PASS   |
| Mains Voltage THD: | 0.15 %   | 0.09 %   | N/A       | 0.26 %   | 2.00 %    | PASS   |
| Real Power:        | 0.043 W  | 0.017 W  | N/A       | 0.063 W  | N/A       | N/A    |
| Apparent Power:    | 8.816 W  | 8.797 W  | N/A       | 8.836 W  | N/A       | N/A    |
| Power Factor:      | 0.006    | N/A      | N/A       | N/A      | N/A       | N/A    |

### 230V

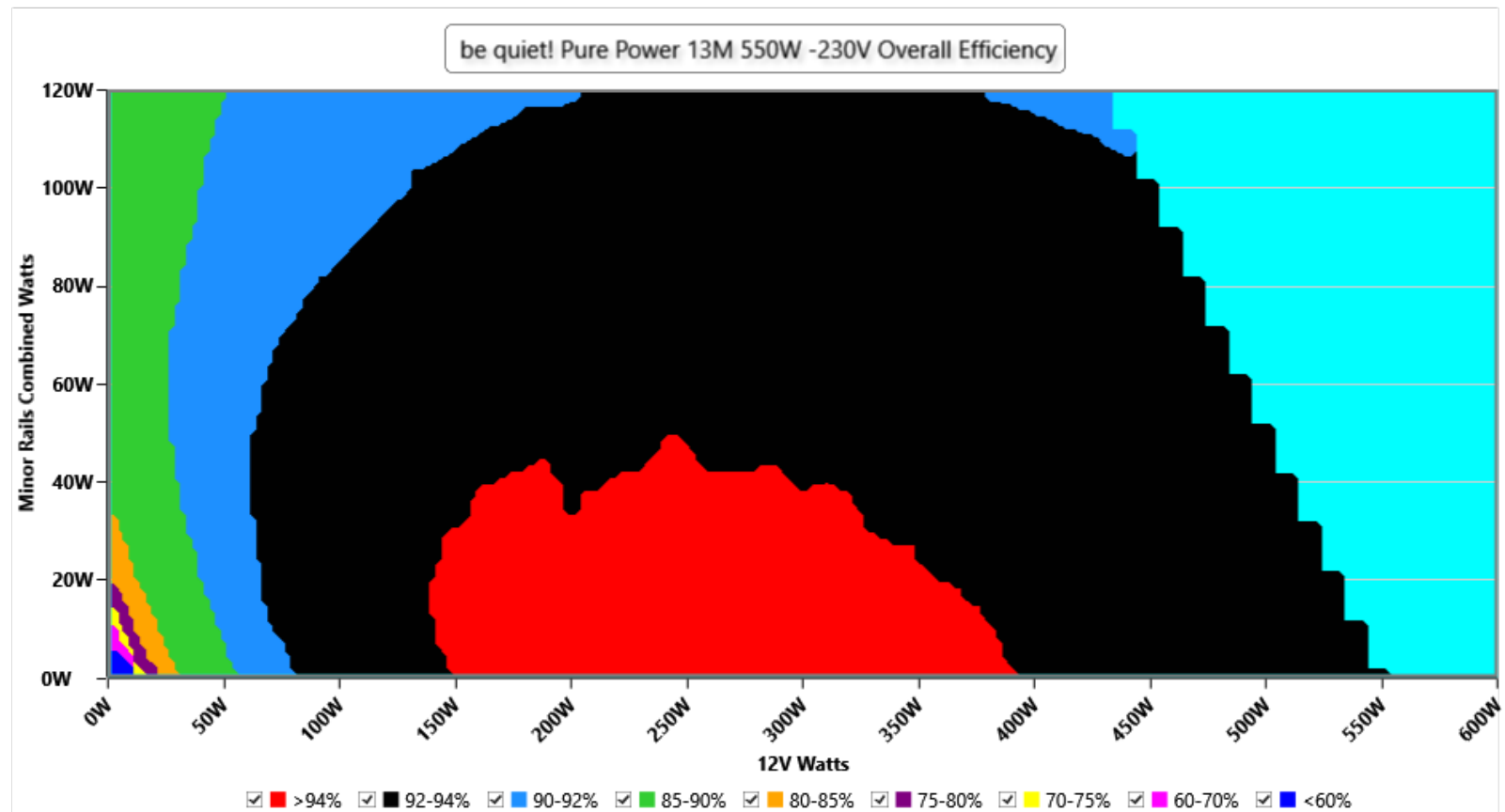
| Detailed Results   |          |          |           |          |           |        |
|--------------------|----------|----------|-----------|----------|-----------|--------|
|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
| Mains Voltage RMS: | 229.85 V | 229.76 V | 227.70 V  | 229.91 V | 232.30 V  | PASS   |
| Mains Frequency:   | 50.00 Hz | 49.99 Hz | 49.50 Hz  | 50.01 Hz | 50.50 Hz  | PASS   |
| Mains Voltage CF:  | 1.419    | 1.418    | 1.340     | 1.420    | 1.490     | PASS   |
| Mains Voltage THD: | 0.14 %   | 0.10 %   | N/A       | 0.19 %   | 2.00 %    | PASS   |
| Real Power:        | 0.132 W  | 0.111 W  | N/A       | 0.163 W  | N/A       | N/A    |
| Apparent Power:    | 29.920 W | 29.897 W | N/A       | 29.945 W | N/A       | N/A    |
| Power Factor:      | 0.005    | N/A      | N/A       | N/A      | N/A       | N/A    |



115V



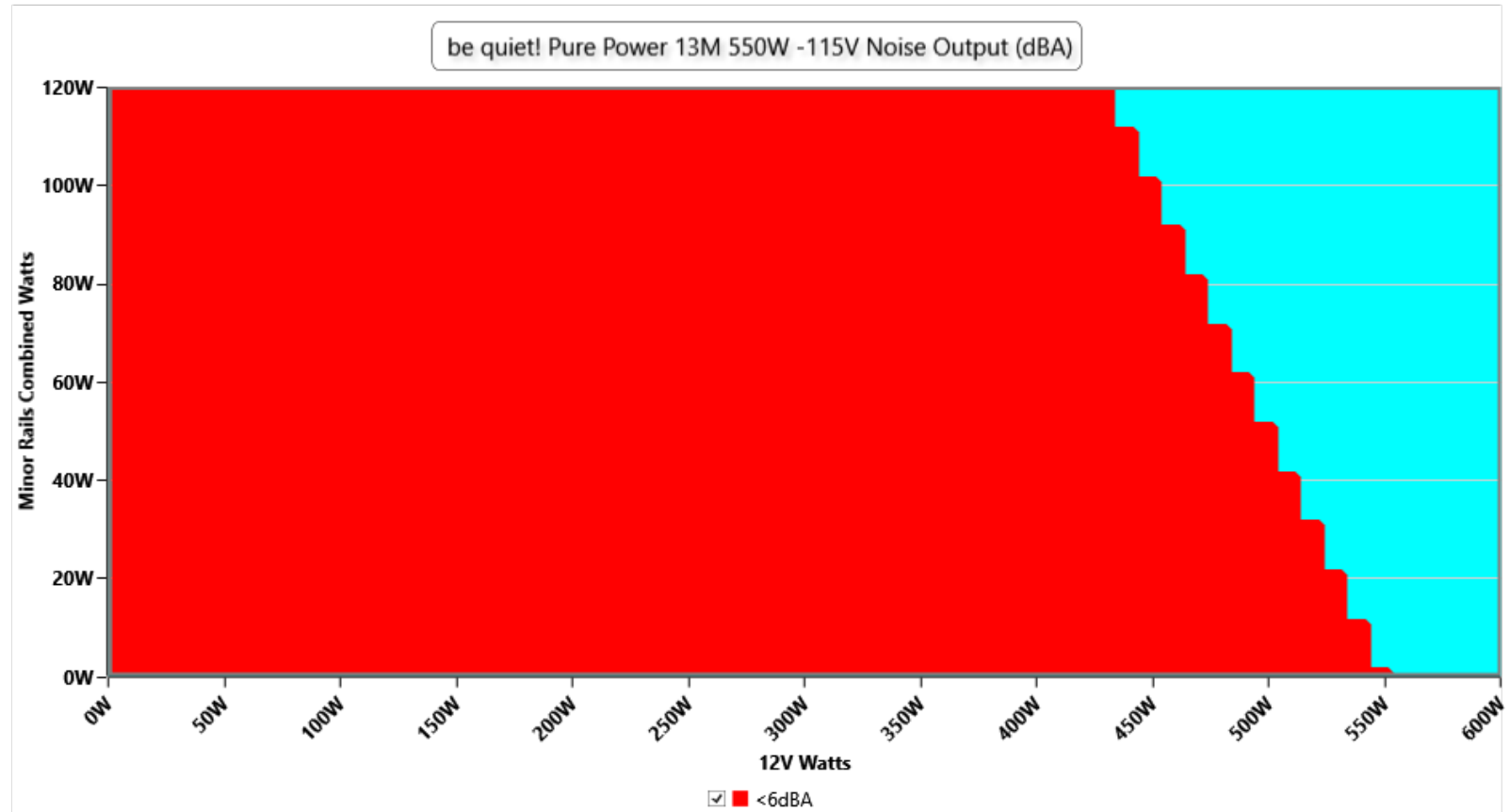
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



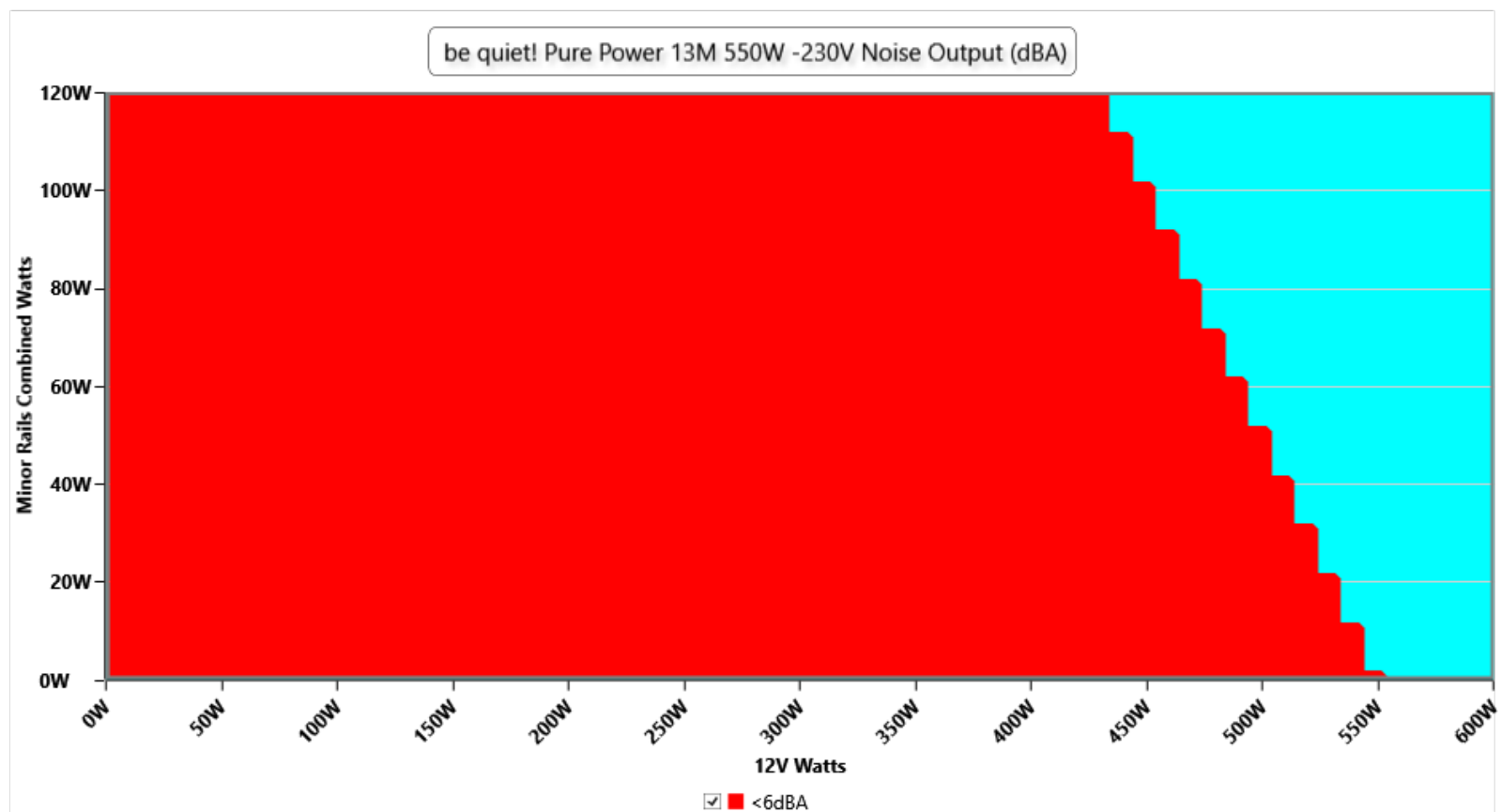
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V

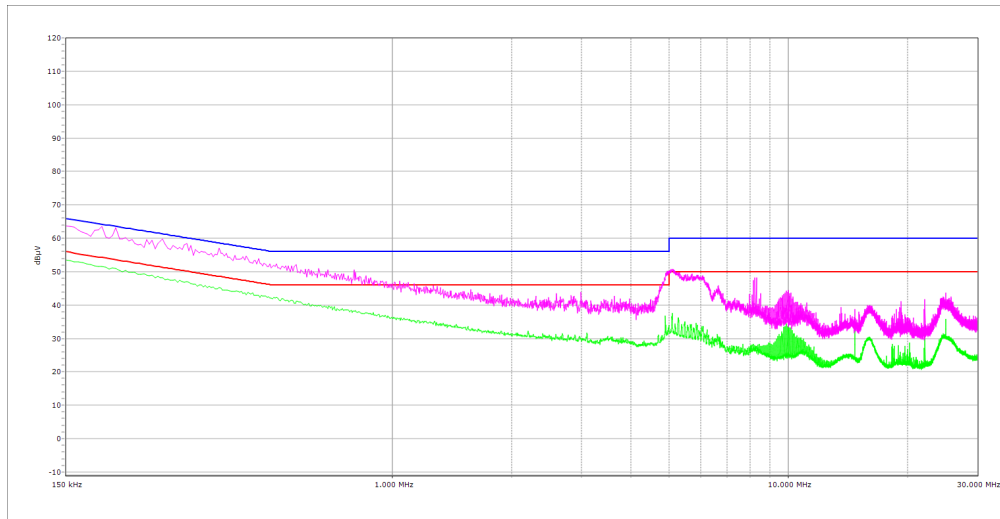


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

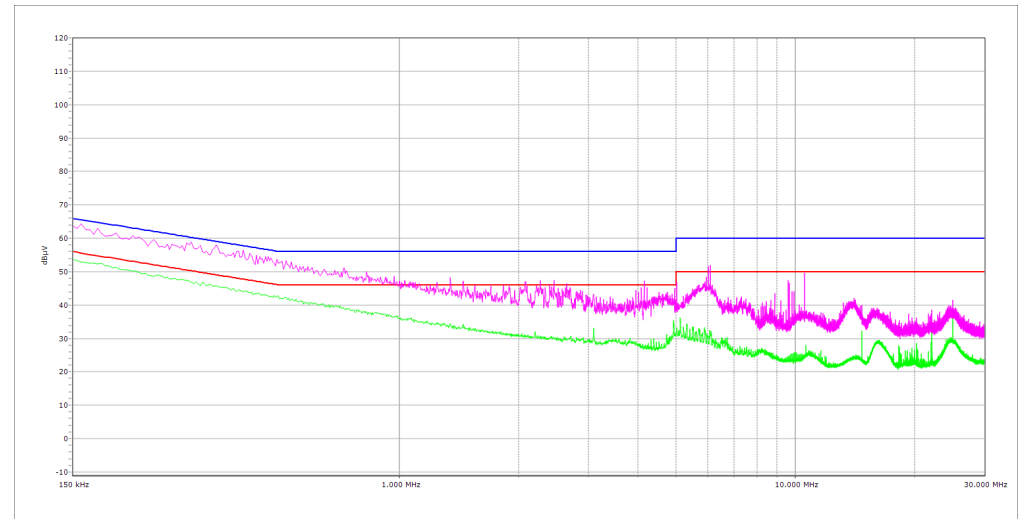


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

## Conducted Emissions EN 55032 & CISPR 32

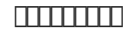


NEUTRAL



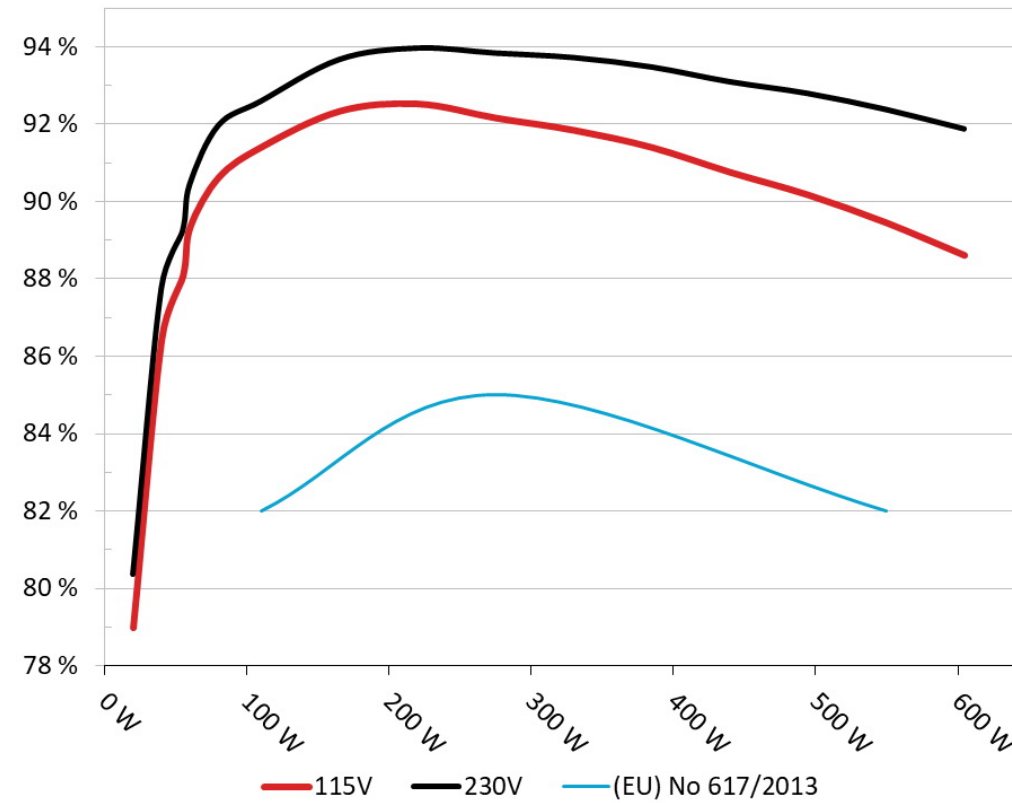
PHASE

## Indicative Performance



### Efficiency: be quiet! Pure Power 13M 550W

Ambient: 36°C - 48°C (96.8°F - 118.4°F)

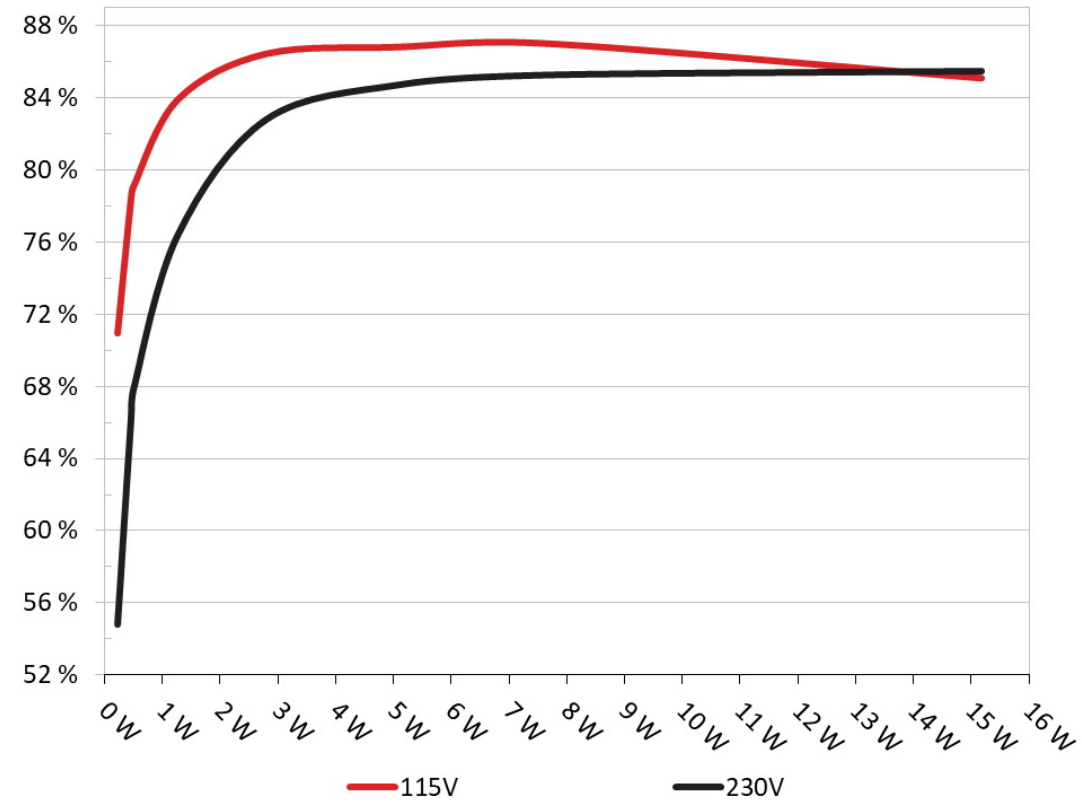


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

### 5Vsb□□□

#### 5VSB Efficiency: be quiet! Pure Power 13M 550W

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



□□

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

5Vsb (ErP Lot3/6 & CEC)

115V

| # | 5VSB   | DC/AC (%) |         | PF/AC   |
|---|--------|-----------|---------|---------|
| 1 | 0.045A | 0.23W     | 70.928% | 0.037   |
|   | 5.111V | 0.324W    |         | 114.94V |
| 2 | 0.09A  | 0.46W     | 78.332% | 0.065   |
|   | 5.11V  | 0.587W    |         | 114.95V |
| 3 | 0.55A  | 2.806W    | 86.466% | 0.278   |
|   | 5.102V | 3.245W    |         | 114.93V |
| 4 | 1A     | 5.094W    | 86.837% | 0.379   |
|   | 5.094V | 5.866W    |         | 114.92V |
| 5 | 1.5A   | 7.628W    | 87.036% | 0.42    |
|   | 5.085V | 8.764W    |         | 114.92V |
| 6 | 3A     | 15.173W   | 85.11%  | 0.49    |
|   | 5.058V | 17.828W   |         | 114.91V |

230V

| # | 5VSB   | DC/AC (%) |         | PF/AC   |
|---|--------|-----------|---------|---------|
| 1 | 0.045A | 0.23W     | 54.793% | 0.01    |
|   | 5.11V  | 0.342W    |         | 242.26V |
| 2 | 0.09A  | 0.46W     | 66.091% | 0.022   |
|   | 5.11V  | 0.667W    |         | 229.8V  |
| 3 | 0.55A  | 2.806W    | 82.814% | 0.108   |
|   | 5.102V | 3.389W    |         | 229.89V |
| 4 | 1A     | 5.094W    | 84.726% | 0.178   |
|   | 5.094V | 6.013W    |         | 229.89V |
| 5 | 1.5A   | 7.628W    | 85.267% | 0.24    |
|   | 5.085V | 8.947W    |         | 229.89V |
| 6 | 3A     | 15.173W   | 85.482% | 0.33    |
|   | 5.058V | 17.75W    |         | 229.89V |

## Protection Features

|                                        |                                                                                                                                |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| OCP (Normal @ 28.6°C)                  | 12V: 58.30A (127.29%), 12.078V<br>5V: 29.4A (147.00%), 5.022V<br>3.3V: 29.2A (146.00%), 3.295V<br>5VSB: 4.3A (143.33%), 5.029V |
| OCP (Hot @ 41.3°C)                     | 12V: 54.00A (117.90%), 12.090V<br>5V: 28A (140.00%), 5.022V<br>3.3V: 29.3A (146.50%), 3.293V<br>5VSB: 4.3A (143.33%), 5.027V   |
| OPP (Normal @ 28.7°C)                  | 692.59W (125.93%)                                                                                                              |
| OPP (Hot @ 40.9°C)                     | 683.02W (124.18%)                                                                                                              |
| OTP                                    | ✓ (151°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)

10-110%☐☐☐☐

115V

| <input type="checkbox"/> | 12V     | 5V      | 3.3V    | 5VSB   | DC/AC ( ) | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (RPM) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (dB[A]) | <input type="checkbox"/> ( / ) | PF/AC   |
|--------------------------|---------|---------|---------|--------|-----------|--------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------|
| 10%                      | 2.753A  | 1.977A  | 1.977A  | 0.983A | 55.009    | 88.069%                  | 0                                                                                                         | <6.0                                                                                                                                                          | 44.31°C                        | 0.956   |
|                          | 12.135V | 5.058V  | 3.339V  | 5.087V | 62.463    |                          |                                                                                                           |                                                                                                                                                               | 40.13°C                        | 114.89V |
| 20%                      | 6.518A  | 2.969A  | 2.97A   | 1.182A | 109.959   | 91.399%                  | 0                                                                                                         | <6.0                                                                                                                                                          | 46.33°C                        | 0.976   |
|                          | 12.129V | 5.053V  | 3.334V  | 5.078V | 120.306   |                          |                                                                                                           |                                                                                                                                                               | 40.51°C                        | 114.88V |
| 30%                      | 10.632A | 3.466A  | 3.469A  | 1.381A | 164.96    | 92.331%                  | 0                                                                                                         | <6.0                                                                                                                                                          | 47.18°C                        | 0.98    |
|                          | 12.124V | 5.05V   | 3.33V   | 5.07V  | 178.661   |                          |                                                                                                           |                                                                                                                                                               | 41.12°C                        | 114.86V |
| 40%                      | 14.758A | 3.964A  | 3.969A  | 1.581A | 220.05    | 92.521%                  | 0                                                                                                         | <6.0                                                                                                                                                          | 50.83°C                        | 0.986   |
|                          | 12.119V | 5.046V  | 3.326V  | 5.062V | 237.84    |                          |                                                                                                           |                                                                                                                                                               | 41.96°C                        | 114.84V |
| 50%                      | 18.540A | 4.961A  | 4.971A  | 1.782A | 275.051   | 92.156%                  | 609                                                                                                       | <6.0                                                                                                                                                          | 42.42°C                        | 0.989   |
|                          | 12.112V | 5.04V   | 3.32V   | 5.052V | 298.463   |                          |                                                                                                           |                                                                                                                                                               | 50.37°C                        | 114.82V |
| 60%                      | 22.328A | 5.961A  | 5.975A  | 1.983A | 330.053   | 91.839%                  | 612                                                                                                       | <6.0                                                                                                                                                          | 42.73°C                        | 0.992   |
|                          | 12.103V | 5.034V  | 3.314V  | 5.044V | 359.378   |                          |                                                                                                           |                                                                                                                                                               | 51.13°C                        | 114.8V  |
| 70%                      | 26.117A | 6.962A  | 6.983A  | 2.185A | 385.061   | 91.394%                  | 614                                                                                                       | <6.0                                                                                                                                                          | 43.01°C                        | 0.993   |
|                          | 12.097V | 5.029V  | 3.309V  | 5.035V | 421.319   |                          |                                                                                                           |                                                                                                                                                               | 54.12°C                        | 114.78V |
| 80%                      | 29.913A | 7.961A  | 7.992A  | 2.288A | 439.625   | 90.756%                  | 618                                                                                                       | <6.0                                                                                                                                                          | 43.68°C                        | 0.995   |
|                          | 12.092V | 5.024V  | 3.304V  | 5.027V | 484.403   |                          |                                                                                                           |                                                                                                                                                               | 56.85°C                        | 114.76V |
| 90%                      | 34.098A | 8.464A  | 8.487A  | 2.391A | 494.652   | 90.168%                  | 621                                                                                                       | 6.3                                                                                                                                                           | 44.44°C                        | 0.995   |
|                          | 12.087V | 5.021V  | 3.3V    | 5.02V  | 548.593   |                          |                                                                                                           |                                                                                                                                                               | 59.62°C                        | 114.74V |
| 100%                     | 38.089A | 8.969A  | 9.014A  | 2.998A | 549.854   | 89.446%                  | 687                                                                                                       | 8.7                                                                                                                                                           | 45.48°C                        | 0.996   |
|                          | 12.081V | 5.017V  | 3.295V  | 5.004V | 614.733   |                          |                                                                                                           |                                                                                                                                                               | 61.94°C                        | 114.72V |
| 110%                     | 41.950A | 9.976A  | 10.123A | 3.002A | 604.852   | 88.603%                  | 907                                                                                                       | 18.5                                                                                                                                                          | 48.09°C                        | 0.997   |
|                          | 12.075V | 5.011V  | 3.29V   | 4.998V | 682.653   |                          |                                                                                                           |                                                                                                                                                               | 63.65°C                        | 114.7V  |
| CL1                      | 0.114A  | 14.363A | 14.44A  | 0A     | 121.285   | 86.362%                  | 625                                                                                                       | 7.3                                                                                                                                                           | 41.62°C                        | 0.977   |
|                          | 12.127V | 5.026V  | 3.304V  | 5.088V | 140.44    |                          |                                                                                                           |                                                                                                                                                               | 51.06°C                        | 114.86V |

|            |                |               |                |           |         |         |     |      |         |         |
|------------|----------------|---------------|----------------|-----------|---------|---------|-----|------|---------|---------|
| <b>CL2</b> | <b>0.114A</b>  | <b>19.84A</b> | <b>0A</b>      | <b>0A</b> | 101.349 | 85.036% | 622 | 6.5  | 41.67°C | 0.976   |
|            | 12.134V        | 5.038V        | 3.326V         | 5.094V    | 119.185 |         |     |      | 49.74°C | 114.87V |
| <b>CL3</b> | <b>0.114A</b>  | <b>0A</b>     | <b>19.929A</b> | <b>0A</b> | 67.396  | 80.6%   | 619 | <6.0 | 41.78°C | 0.971   |
|            | 12.134V        | 5.046V        | 3.312V         | 5.095V    | 83.619  |         |     |      | 47.59°C | 114.88V |
| <b>CL4</b> | <b>45.468A</b> | <b>0A</b>     | <b>0A</b>      | <b>0A</b> | 549.567 | 90.497% | 623 | 6.7  | 45.78°C | 0.996   |
|            | 12.087V        | 5.043V        | 3.323V         | 5.066V    | 607.276 |         |     |      | 58.73°C | 114.71V |

The results above are not used in the certification process

### 230V

| □□          | 12V            | 5V            | 3.3V          | 5VSB          | DC/AC (□ ) | □□      | □□□ (RPM) | □□□□□ (dB[A]) | □□ (□□ /□□ ) | PF/AC □□ |
|-------------|----------------|---------------|---------------|---------------|------------|---------|-----------|---------------|--------------|----------|
| <b>10%</b>  | <b>2.753A</b>  | <b>1.977A</b> | <b>1.977A</b> | <b>0.983A</b> | 55.01      | 89.236% | 0         | <6.0          | 45.67°C      | 0.808    |
|             | 12.135V        | 5.059V        | 3.339V        | 5.087V        | 61.646     |         |           |               | 40.13°C      | 229.88V  |
| <b>20%</b>  | <b>6.518A</b>  | <b>2.969A</b> | <b>2.97A</b>  | <b>1.182A</b> | 109.959    | 92.587% | 0         | <6.0          | 46.87°C      | 0.916    |
|             | 12.130V        | 5.054V        | 3.334V        | 5.078V        | 118.762    |         |           |               | 40.89°C      | 229.87V  |
| <b>30%</b>  | <b>10.630A</b> | <b>3.465A</b> | <b>3.469A</b> | <b>1.381A</b> | 164.946    | 93.663% | 0         | <6.0          | 49.12°C      | 0.947    |
|             | 12.125V        | 5.05V         | 3.33V         | 5.07V         | 176.107    |         |           |               | 41.22°C      | 229.86V  |
| <b>40%</b>  | <b>14.754A</b> | <b>3.963A</b> | <b>3.968A</b> | <b>1.581A</b> | 220.019    | 93.96%  | 612       | <6.0          | 41.88°C      | 0.962    |
|             | 12.120V        | 5.047V        | 3.326V        | 5.061V        | 234.163    |         |           |               | 44.54°C      | 229.85V  |
| <b>50%</b>  | <b>18.538A</b> | <b>4.961A</b> | <b>4.97A</b>  | <b>1.781A</b> | 275.011    | 93.83%  | 615       | <6.0          | 42.21°C      | 0.971    |
|             | 12.110V        | 5.039V        | 3.32V         | 5.053V        | 293.096    |         |           |               | 45.36°C      | 229.84V  |
| <b>60%</b>  | <b>22.323A</b> | <b>5.96A</b>  | <b>5.974A</b> | <b>1.983A</b> | 330.006    | 93.713% | 616       | <6.0          | 42.66°C      | 0.976    |
|             | 12.104V        | 5.034V        | 3.315V        | 5.044V        | 352.145    |         |           |               | 46.58°C      | 229.83V  |
| <b>70%</b>  | <b>26.110A</b> | <b>6.96A</b>  | <b>6.981A</b> | <b>2.185A</b> | 385.004    | 93.469% | 618       | <6.0          | 43.12°C      | 0.979    |
|             | 12.098V        | 5.029V        | 3.309V        | 5.035V        | 411.906    |         |           |               | 48.52°C      | 229.82V  |
| <b>80%</b>  | <b>29.901A</b> | <b>7.959A</b> | <b>7.99A</b>  | <b>2.287A</b> | 439.474    | 93.092% | 620       | 6.1           | 43.96°C      | 0.982    |
|             | 12.093V        | 5.025V        | 3.304V        | 5.028V        | 472.09     |         |           |               | 49.82°C      | 229.81V  |
| <b>90%</b>  | <b>34.086A</b> | <b>8.462A</b> | <b>8.484A</b> | <b>2.39A</b>  | 494.489    | 92.789% | 622       | 6.5           | 44.7°C       | 0.985    |
|             | 12.087V        | 5.021V        | 3.3V          | 5.021V        | 532.918    |         |           |               | 51.57°C      | 229.8V   |
| <b>100%</b> | <b>38.075A</b> | <b>8.967A</b> | <b>9.01A</b>  | <b>2.997A</b> | 549.685    | 92.373% | 662       | 7.6           | 45.46°C      | 0.986    |
|             | 12.081V        | 5.018V        | 3.296V        | 5.005V        | 595.068    |         |           |               | 53.5°C       | 229.79V  |

|             |                |                |                |           |         |         |     |     |         |         |
|-------------|----------------|----------------|----------------|-----------|---------|---------|-----|-----|---------|---------|
| <b>110%</b> | <b>41.933A</b> | <b>9.973A</b>  | <b>10.119A</b> | <b>3A</b> | 604.679 | 91.871% | 876 | 17  | 46.38°C | 0.988   |
|             | 12.076V        | 5.012V         | 3.291V         | 4.999V    | 658.184 |         |     |     | 54.87°C | 229.78V |
| <b>CL1</b>  | <b>0.114A</b>  | <b>14.359A</b> | <b>14.435A</b> | <b>0A</b> | 121.283 | 87.471% | 624 | 6.9 | 41.08°C | 0.931   |
|             | 12.127V        | 5.027V         | 3.305V         | 5.088V    | 138.655 |         |     |     | 47.8°C  | 229.86V |
| <b>CL2</b>  | <b>0.114A</b>  | <b>19.839A</b> | <b>0A</b>      | <b>0A</b> | 101.351 | 86.123% | 622 | 6.5 | 41.73°C | 0.915   |
|             | 12.133V        | 5.039V         | 3.327V         | 5.094V    | 117.681 |         |     |     | 46.83°C | 229.87V |
| <b>CL3</b>  | <b>0.114A</b>  | <b>0A</b>      | <b>19.926A</b> | <b>0A</b> | 67.393  | 81.68%  | 620 | 6.1 | 41.32°C | 0.866   |
|             | 12.134V        | 5.047V         | 3.313V         | 5.095V    | 82.509  |         |     |     | 45.31°C | 229.87V |
| <b>CL4</b>  | <b>45.466A</b> | <b>0A</b>      | <b>0A</b>      | <b>0A</b> | 549.534 | 93.229% | 625 | 7.3 | 45.26°C | 0.986   |
|             | 12.087V        | 5.043V         | 3.323V         | 5.066V    | 589.442 |         |     |     | 51.92°C | 229.79V |

The results above are not used in the certification process

### 20-80

| 115V       |               |               |               |               |           |         |       |         |         |         |
|------------|---------------|---------------|---------------|---------------|-----------|---------|-------|---------|---------|---------|
|            | 12V           | 5V            | 3.3V          | 5VSB          | DC/AC ( ) |         | (RPM) | (dB[A]) | ( / )   | PF/AC   |
| <b>20W</b> | <b>1.224A</b> | <b>0.494A</b> | <b>0.493A</b> | <b>0.196A</b> | 20.002    | 78.967% | 0     | <6.0    | 41.6°C  | 0.883   |
|            | 12.135V       | 5.062V        | 3.344V        | 5.106V        | 25.329    |         |       |         | 36.21°C | 114.92V |
| <b>40W</b> | <b>2.694A</b> | <b>0.692A</b> | <b>0.691A</b> | <b>0.294A</b> | 40.003    | 86.438% | 0     | <6.0    | 40.62°C | 0.942   |
|            | 12.134V       | 5.061V        | 3.343V        | 5.102V        | 46.281    |         |       |         | 37.39°C | 114.91V |
| <b>60W</b> | <b>4.165A</b> | <b>0.889A</b> | <b>0.889A</b> | <b>0.392A</b> | 60.003    | 89.334% | 0     | <6.0    | 41.73°C | 0.957   |
|            | 12.133V       | 5.06V         | 3.342V        | 5.099V        | 67.167    |         |       |         | 38.98°C | 114.9V  |
| <b>80W</b> | <b>5.632A</b> | <b>1.087A</b> | <b>1.087A</b> | <b>0.491A</b> | 79.959    | 90.612% | 0     | <6.0    | 44.81°C | 0.973   |
|            | 12.132V       | 5.059V        | 3.34V         | 5.095V        | 88.243    |         |       |         | 39.06°C | 114.9V  |

The results above are not used in the certification process

230V

| 項目  | 12V     | 5V     | 3.3V   | 5VSB   | DC/AC (項目) | 項目      | 項目 (RPM) | 項目項目 (dB[A]) | 項目 (項目 /項目 ) | PF/AC 項目 |
|-----|---------|--------|--------|--------|------------|---------|----------|--------------|--------------|----------|
| 20W | 1.224A  | 0.494A | 0.493A | 0.196A | 20.004     | 80.36%  | 0        | <6.0         | 39.89°C      | 0.576    |
|     | 12.135V | 5.062V | 3.344V | 5.105V | 24.894     |         |          |              | 36.79°C      | 229.91V  |
| 40W | 2.694A  | 0.692A | 0.691A | 0.294A | 40.005     | 87.753% | 0        | <6.0         | 40.95°C      | 0.729    |
|     | 12.134V | 5.061V | 3.343V | 5.102V | 45.589     |         |          |              | 37.52°C      | 229.89V  |
| 60W | 4.166A  | 0.889A | 0.889A | 0.392A | 60.004     | 90.444% | 0        | <6.0         | 42.23°C      | 0.824    |
|     | 12.133V | 5.06V  | 3.342V | 5.098V | 66.346     |         |          |              | 38.17°C      | 229.88V  |
| 80W | 5.632A  | 1.087A | 1.087A | 0.491A | 79.96      | 91.956% | 0        | <6.0         | 43.71°C      | 0.873    |
|     | 12.131V | 5.059V | 3.34V  | 5.095V | 86.955     |         |          |              | 39.35°C      | 229.88V  |

The results above are not used in the certification process



115V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 28.34mV | 15.99mV | 17.65mV | 16.42mV | Pass      |
| 20% Load   | 27.06mV | 17.07mV | 17.03mV | 17.04mV | Pass      |
| 30% Load   | 23.99mV | 16.14mV | 17.65mV | 17.55mV | Pass      |
| 40% Load   | 24.10mV | 15.84mV | 17.04mV | 16.52mV | Pass      |
| 50% Load   | 25.32mV | 15.79mV | 17.24mV | 16.47mV | Pass      |
| 60% Load   | 25.32mV | 15.94mV | 16.68mV | 16.98mV | Pass      |
| 70% Load   | 25.73mV | 15.89mV | 17.08mV | 18.41mV | Pass      |
| 80% Load   | 27.06mV | 15.89mV | 18.01mV | 18.47mV | Pass      |
| 90% Load   | 27.37mV | 16.09mV | 17.85mV | 19.69mV | Pass      |
| 100% Load  | 25.54mV | 14.90mV | 16.33mV | 19.20mV | Pass      |
| 110% Load  | 27.88mV | 15.13mV | 16.40mV | 19.29mV | Pass      |
| Crossload1 | 26.17mV | 17.43mV | 16.59mV | 16.98mV | Pass      |
| Crossload2 | 27.22mV | 17.73mV | 16.78mV | 18.62mV | Pass      |

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| Crossload3 | 27.78mV | 15.84mV | 18.26mV | 18.67mV | Pass      |
| Crossload4 | 25.72mV | 16.19mV | 17.06mV | 18.11mV | Pass      |

The results above are not used in the certification process

## 230V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 29.78mV | 16.40mV | 16.93mV | 15.19mV | Pass      |
| 20% Load   | 27.63mV | 15.43mV | 17.03mV | 16.52mV | Pass      |
| 30% Load   | 25.73mV | 16.30mV | 17.39mV | 17.34mV | Pass      |
| 40% Load   | 23.94mV | 15.22mV | 16.42mV | 17.29mV | Pass      |
| 50% Load   | 24.61mV | 16.40mV | 17.34mV | 16.47mV | Pass      |
| 60% Load   | 25.73mV | 15.63mV | 16.37mV | 16.83mV | Pass      |
| 70% Load   | 25.68mV | 15.28mV | 16.47mV | 18.41mV | Pass      |
| 80% Load   | 26.76mV | 16.14mV | 18.21mV | 17.60mV | Pass      |
| 90% Load   | 28.14mV | 15.84mV | 17.19mV | 18.52mV | Pass      |
| 100% Load  | 26.53mV | 14.78mV | 15.76mV | 18.79mV | Pass      |
| 110% Load  | 27.20mV | 16.39mV | 18.04mV | 20.85mV | Pass      |
| Crossload1 | 24.16mV | 14.78mV | 17.09mV | 16.12mV | Pass      |
| Crossload2 | 27.06mV | 19.16mV | 16.93mV | 17.85mV | Pass      |
| Crossload3 | 29.22mV | 15.53mV | 17.29mV | 18.16mV | Pass      |
| Crossload4 | 27.86mV | 16.08mV | 16.96mV | 16.89mV | Pass      |

The results above are not used in the certification process

be quiet! Pure Power 13 M 550W



Top side

XXXXXXXXXXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

Cybenetics

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

be quiet! PURE POWER 13 M Model(型號 | 型号 | 제품명): L13-M-550W

ATX 3.1 Switching Power Supply(交換式電源供應器) / 开关电源供应器 [스위칭 전원 공급 장치]

|                                    |                                |     |       |      |      |
|------------------------------------|--------------------------------|-----|-------|------|------|
| AC Input<br>交流輸入   交流輸入   입력입력     | 100 - 240Vac 50 - 60Hz 10 - 5A |     |       |      |      |
| DC Output =<br>直流輸出   直流輸出   출력출력  | 3.3V                           | 5V  | 12V   | -12V | 5VSB |
| Max. Current<br>最大電流   最大電流        | 20A                            | 20A | 45.8A | 0.3A | 3A   |
| Max. Combined Power<br>最大功率   最大功率 | 120W                           |     | 550W  | 3.6W | 15W  |
|                                    | 550W                           |     |       |      |      |

製造商: Liston GmbH | Wilhelm-Bergner-Strasse 11c | 21509 Glinde | Germany

注意! 請勿自行拆裝! 僅能由專業合格人員進行檢修, 無任何物件需要進行維護  
注意! 請勿自行拆裝! 僅能由專業合格人員進行檢修, 無任何物件需要進行維護  
注意! 電源ユニットを自分で分解しないでください。修理は弊社修理センター  
にご依頼ください。内部パーツにメンテナンスの必要はありません

开关电源供应器 | 仅适用于海拔2000m以下地区安全使用

Product conception, design and quality control in Germany  
UK Authorized Representative (for authorities only) | Product  
(UK) Ltd | 8, Northumberland Av. | London WC2N 5BY

S/N: 024EUS081000876

ETA  
DELTA  
PHI  
LAMBDA  
SAFE

Made in China  
中國製造  
中国製造

Power specifications label

Cybenetics      ETA      LAMBDA      SAFE  
                                 DELTA      PHI

www.cybenetics.com - info@cybenetics.com