be quiet!

# be quiet! Dark Power 14 1000W

Serial Number 020EUL5220000100

Lab ID BQ10002953

Certification ID 252953

Test Result Report ID: 25PS2953A

Certificate Issue Date: Sep 2, 2025

Scheme: ETA-EMI PSU

115V: CYBENETICS TITANIUM

230V: CYBENETICS TITANIUM 230v

Scheme: LAMBDA PSU

115V: CYBENETICS A++

230V: CYBENETICS A++ 230v

CYBENETICS ATX 3.1 PASS

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 | Dark Power 14 1000W |
| OEM/ODM | CWT |
| Serial Number | 020EUL5220000100 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |
| Rated Current (Arms) | 6-13 |

| | |
|---|---|
| Rated Frequency (Hz) | 50-60 |
| Rated Power (W) | 1000 |
| 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 (BQ SIW4-13525-MF) |
| Semi-Passive Operation | ✓ (selectable) |
| Cybenetics Testing Information | |
| Lab ID | BQ10002953 |
| Date of receipt | Aug 22, 2025 |
| Testing Date | Aug 30, 2025 |
| Report Issued Date | Sep 2, 2025 |
| Engineer Name | Georgios Theodoros Sarimpalas |
| Authorized By the Laboratory Technical Manager | Aristeidis Bitziopoulos |
| Signature | |

## Cables and Connectors(Non-accredited measurements)

| **Modular Cables** | | | | |
|---|---|---|---|---|
| **Description** | **Cable Count** | **Connector Count (Total)** | **Gauge** | Cable Type |
| ATX connector 20+4 pin (600mm) | 1 | 1 | 16-18AWG | Tinned Copper |
| 8 pin ATX12V (700mm) | 1 | 1 | 16AWG | Tinned Copper |
| 4+4 pin ATX12V (700mm) | 1 | 1 | 16AWG | Tinned Copper |
| 2x 6+2 pin PCIe (750mm) | 4 | 4 | 18AWG | Tinned Copper |
| 12+4 pin PCIe PCIe (600mm) | 1 | 1 | 16-24AWG | Tinned Copper |
| SATA (600mm+155mm+155mm+155mm) | 2 | 8 | 18AWG | Tinned Copper |
| SATA (600mm+155mm+155mm) | 1 | 3 | 18AWG | Tinned Copper |

| | | | | |
|---|---|---|---|---|
| SATA (605mm+155mm) / 4-pin Molex (+155mm+150mm) | 1 | 2 / 2 | 18AWG | Tinned Copper |
| AC Power Cord (1380mm) | 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 | ✗ |

## Power Specifications

| Rail | | 3.3V | 5V | 12V(1) | 12V(2) | 12V(3) | 12V(4) | 5VSB | -12V |
|---|---|---|---|---|---|---|---|---|---|
| Max. Power | Amps | 25 | 24 | 33 | 33 | 40 | 40 | 3 | 0.5 |
| | Watts | 120 | | 996 | | | | 15 | 6 |
| Total Max. Power (W) | | 1000 | | | | | | | |

## Parts Description

| | |
|---|---|
| **General Data** | |
| Manufacturer (OEM) | CWT |
| PCB Type | Double-Sided |
| **Primary Side** | |
| Transient Filter | 6x Y caps, 2x X caps, 2x CM chokes, 1x MOV |
| Inrush Protection | NTC Thermistor SCK-0510 (5 Ohm @ 25°C) & Relay |
| Rectifier MOSFETs | 4x Toshiba TK055U60Z1 (600V, 40A @ 25°C, Rds(on): 0.055Ohm) |
| APFC MOSFETs | 2x Infineon IPA60R099P7 (650V, 31A @ 25°C, Rds(on): 0.099Ohm) |
| APFC Boost Diode | Infineon IDH10G65C6 (650V, 10A @ 140°C) |
| Bulk Cap(s) | 2x Nippon Chemic-Con (420V, 560uF each or 1120uF combined, 2000h @ 105°C,KMR) |
| Main Switchers | 4x Alpha & Omega AOTF29S50 (600V, 29A @ 25°C, Rds(on): 0.15Ohm) |

| | |
|---|---|
| APFC Controller | Champion CM6500UNX &<br>Sync Power SPN5003 (reducing no load consumption) |
| Resonant Controller | Champion CM6901T2X |
| IC Driver | 2x Novosense NSI6602BD |
| Topology | Primary side: Bridgeless PFC, Full-Bridge & LLC Resonant Converter<br>Secondary side: [12V] Synchronous Rectification & [Minor Rails] DC-DC converters |
| **Secondary Side** | |
| +12V MOSFETs | 6x Infineon BSC010N04LS (40V, 206A @ 100°C, Rds(on): 1.0mOhm) |
| 5V & 3.3V | DC-DC Converters: 4x UBIQ Semi QN3107M6N (30V, 70A @ 100°C, Rds(on): 2.6mOhm)<br>PWM Controller(s): UPI-Semi uP3861P |
| Filtering Capacitors | Electrolytic:<br>6x Nichicon (2-5,000 @ 105°C, HD(M))<br>3x Rubycon (4-10,000 @ 105°C, YXJ)<br>Rubycon (3-6,000 @ 105°C, YXS)<br>Rubycon (10,000 @ 105°C, YXM)<br>Nichicon (4-10,000 @ 105°C, HE(M))<br>Polymer:<br>23x Nippon Chemi-con, 19x FPCAP |
| Supervisor IC | Weltrend WT7518 (OVP, UVP, OCP, PG) |
| MCU / Fan Controller | Nuvoton MS51FB9AE |
| Fan Model | BQ SIW4-13525-MF (135mm, 12V, 0.4A, Fluid Dynamic Bearing Fan) |
| **5VSB Circuit** | |
| Rectifier (High Side) | Dongke DK5V45R10V (45V, 10mOhm) |
| Standby PWM Controller | On-Bright OB2365T |

# Test Results

## Temperature & Compliance Info

| | |
|---|---|
| Temperature Range (°C /°F) | 28-32 / 82.4-89.6 |
| ErP Lot 3/6 Ready | ✓ |
| (EU) No 617/2013 Compliance | ✓ |
| ALPM (Alternative Low Power Mode) compatible | ✓ |

| | |
|---|---|
| ATX v3.1 PSU Power Excursion | ✓ |

## Performance Summary

### 115V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 91.631% |
| Average Noise Output (>1450 Load Combinations) | 10.34dBA |
| Average PF (>1450 Load Combinations) | 0.992 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 73.197% |
| Standby Power Consumption | 0.0899W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 21.32mV |
| 5V Ripple (Full Load) | 16.66mV |
| 3.3V Ripple (Full Load) | 16.32mV |
| 5VSB Ripple (Full Load) | 14.84mV |
| 12V Load Regulation | 0.61% |
| 5V Load Regulation | 0.46% |
| 3.3V Load Regulation | 0.67% |
| 5VSB Load Regulation | 3.51% |
| Inrush Current | 35.940A |

### 230V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 93.457% |
| Average Noise Output (>1450 Load Combinations) | 10.37dBA |
| Average PF (>1450 Load Combinations) | 0.965 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 75.067% |
| Standby Power Consumption | 0.1392W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 20.56mV |

| | | |
|---|---|---|
| 5V Ripple (Full Load) | 16.70mV | |
| 3.3V Ripple (Full Load) | 16.04mV | |
| 5VSB Ripple (Full Load) | 13.40mV | |
| 12V Load Regulation | 0.65% | |
| 5V Load Regulation | 0.42% | |
| 3.3V Load Regulation | 0.70% | |
| 5VSB Load Regulation | 3.51% | |
| Inrush Current | 67.510A | |
| 12V Transient Response (200%) | 11.51V | |
| 5V Transient Response (200%) | 4.972V | |
| 3.3V Transient Response (200%) | 3.183V | |
| 5VSB Transient Response (200%) | 4.910V | |
| Hold-Up Time & PWR_OK Signal | 17.00ms | |
| AC Loss to PWR_OK Hold Up Time | 14.90ms | |
| PWR_OK Inactive to DC Loss Delay | 2.10ms | |
| PSU Timings: T1 (20% / 100%) | 52.0ms | 52.0ms |
| PSU Timings: T3 (20% / 100%) | 122.0ms | 122.0ms |
| 12V OCP (28.5°C / 45.7°C) | 99.20A (150.31%), 11.835V | 96.30A (145.91%), 11.840V |
| 5V OCP (28.5°C / 45.7°C) | 31.3A (130.42%), 5.057V | 31.6A (131.67%), 5.069V |
| 3.3V OCP (28.5°C / 45.7°C) | 30.3A (121.20%), 3.27V | 30.1A (120.40%), 3.264V |
| 5VSB OCP (28.5°C / 45.7°C) | 5A (166.67%), 4.884V | 4.8A (160.00%), 4.862V |
| OPP (26.92°C / 40.33°C) | 125.71% | 118.81% |

## Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 17 |
| AC Loss to PWR_OK Hold Up Time (ms) | 14.9 |
| PWR_OK Inactive to DC Loss Delay (ms) | 2.1 |

## Tables

### 115V

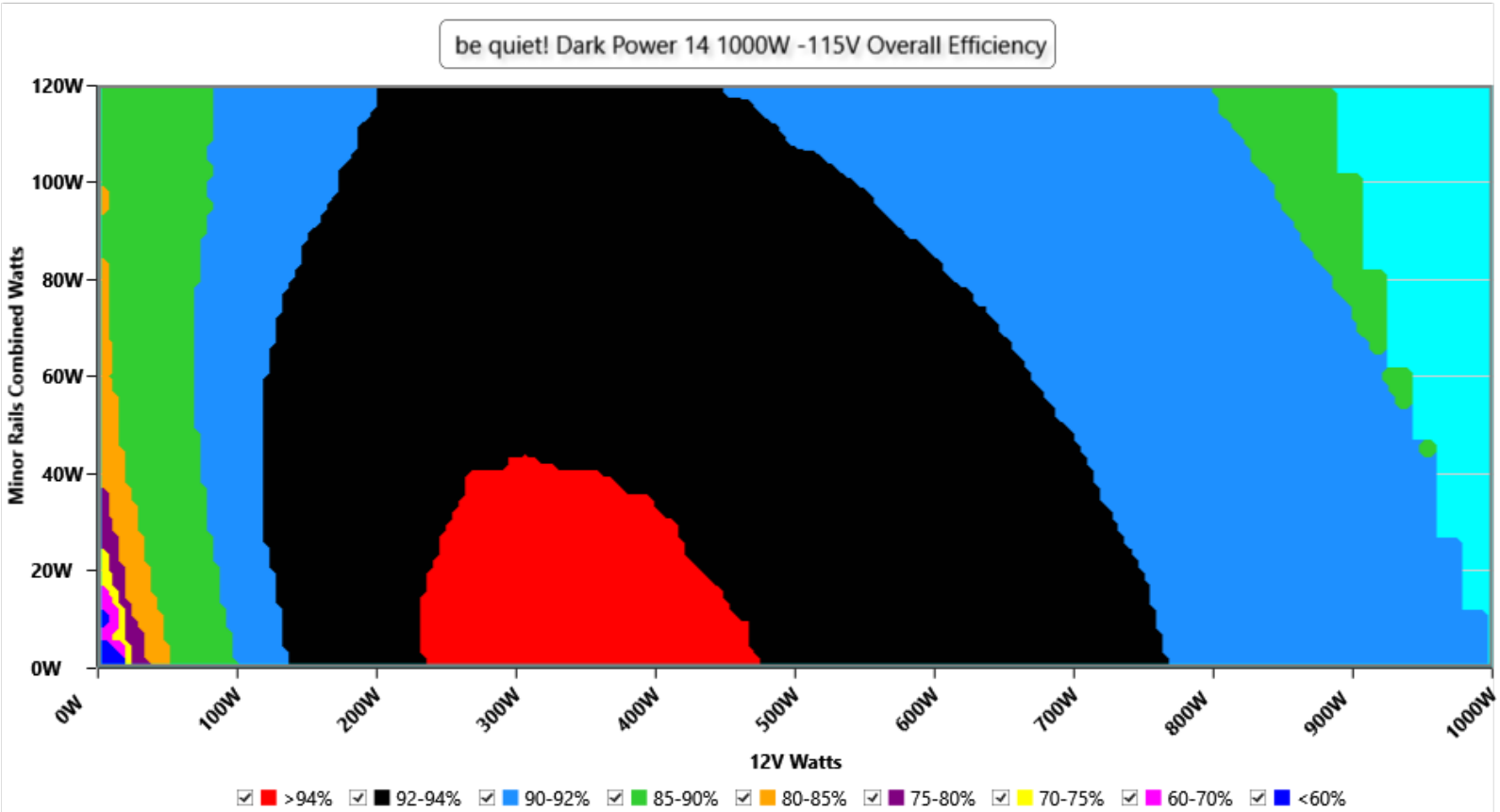
| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 115.08 V | 115.05 V | 113.85 V | 115.13 V | 116.15 V | PASS |
| Mains Frequency: | 60.00 Hz | 59.99 Hz | 59.40 Hz | 60.01 Hz | 60.60 Hz | PASS |
| Mains Voltage CF: | 1.416 | 1.415 | 1.340 | 1.440 | 1.490 | PASS |
| Mains Voltage THD: | 0.13 % | 0.10 % | N/A | 0.18 % | 2.00 % | PASS |
| Real Power: | 0.090 W | 0.061 W | N/A | 0.155 W | N/A | N/A |
| Apparent Power: | 10.056 W | 9.984 W | N/A | 10.128 W | N/A | N/A |
| Power Factor: | 0.010 | N/A | N/A | N/A | N/A | N/A |

### 230V

| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 231.05 V | 230.94 V | 227.70 V | 231.13 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: | 1.417 | 1.416 | 1.340 | 1.419 | 1.490 | PASS |
| Mains Voltage THD: | 0.17 % | 0.14 % | N/A | 0.28 % | 2.00 % | PASS |
| Real Power: | 0.139 W | 0.090 W | N/A | 0.253 W | N/A | N/A |
| Apparent Power: | 34.355 W | 34.062 W | N/A | 34.630 W | N/A | N/A |
| Power Factor: | 0.004 | N/A | N/A | N/A | N/A | N/A |

## Efficiency Graph

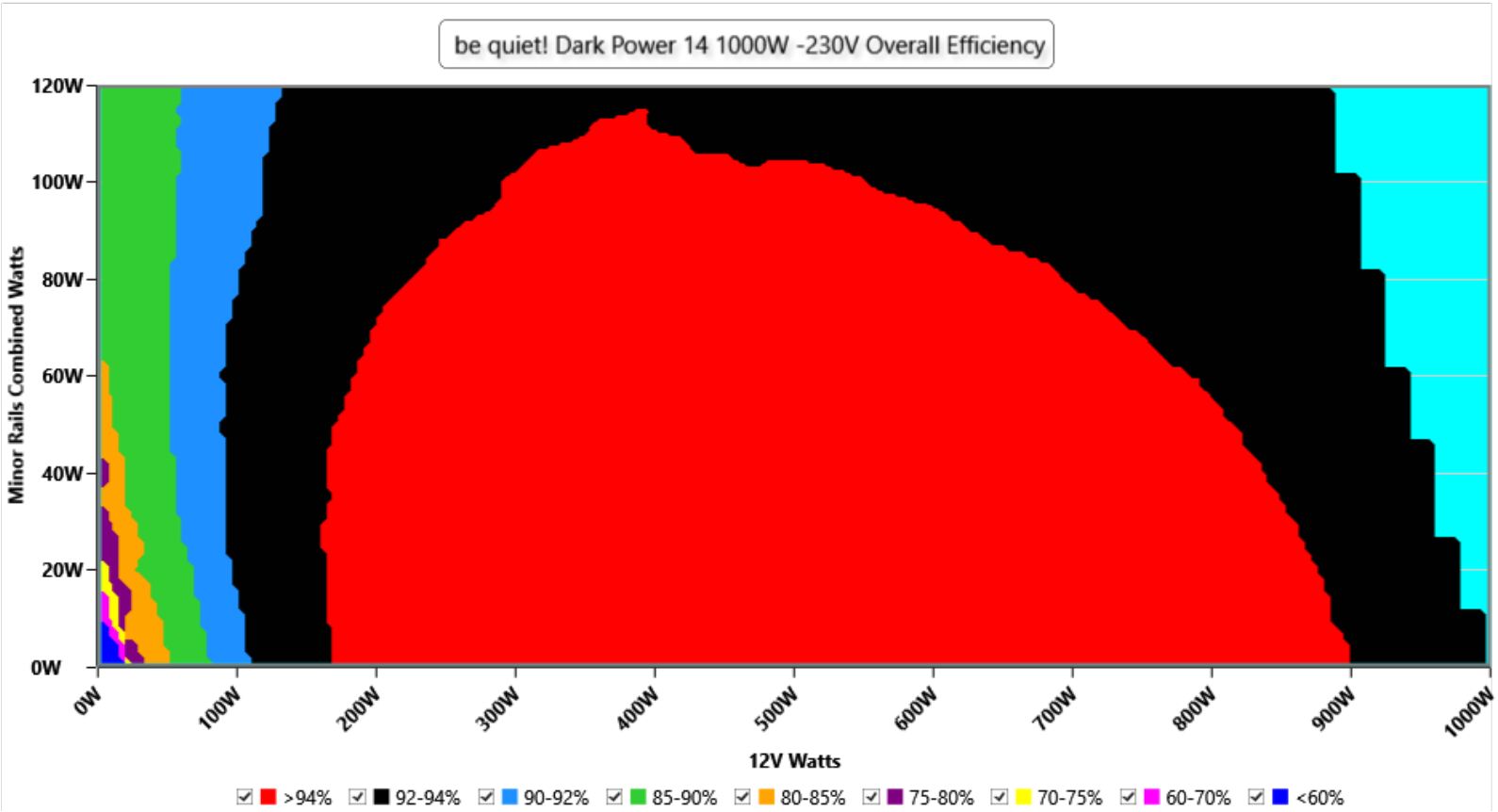
**115V**




**INFO**

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

## 230V

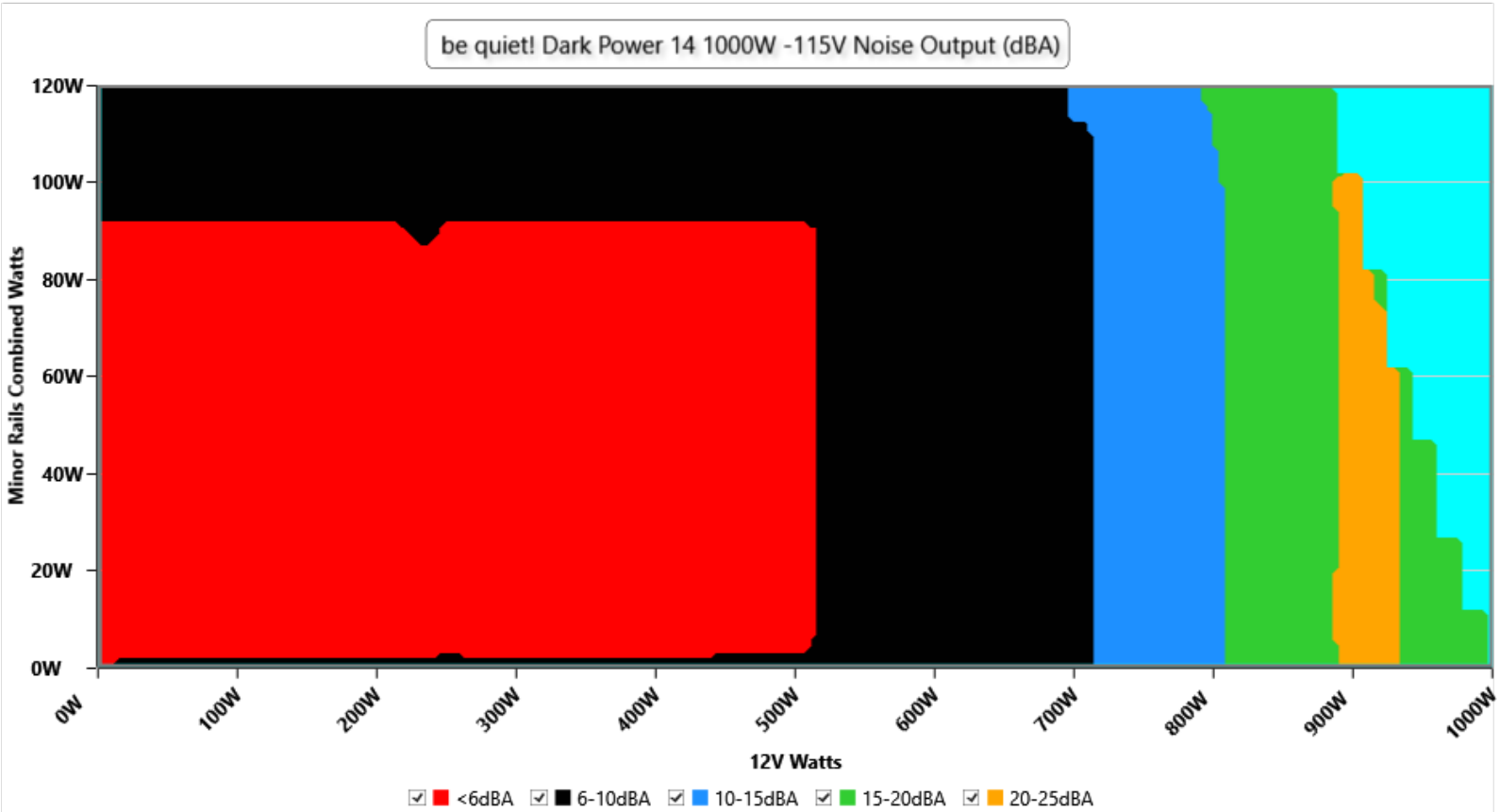



### INFO

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

## Noise Graph

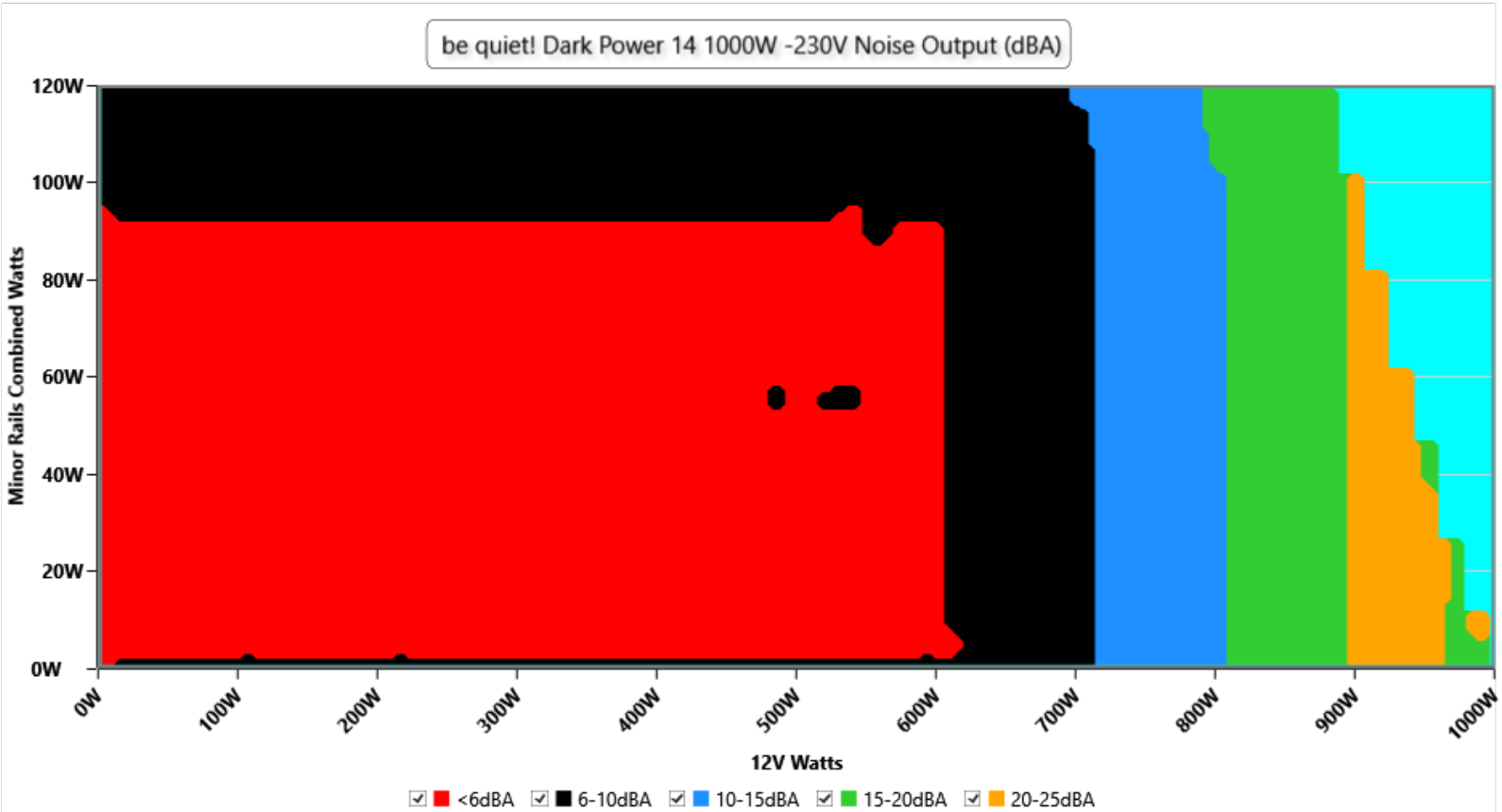
**115V**




**INFO**

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

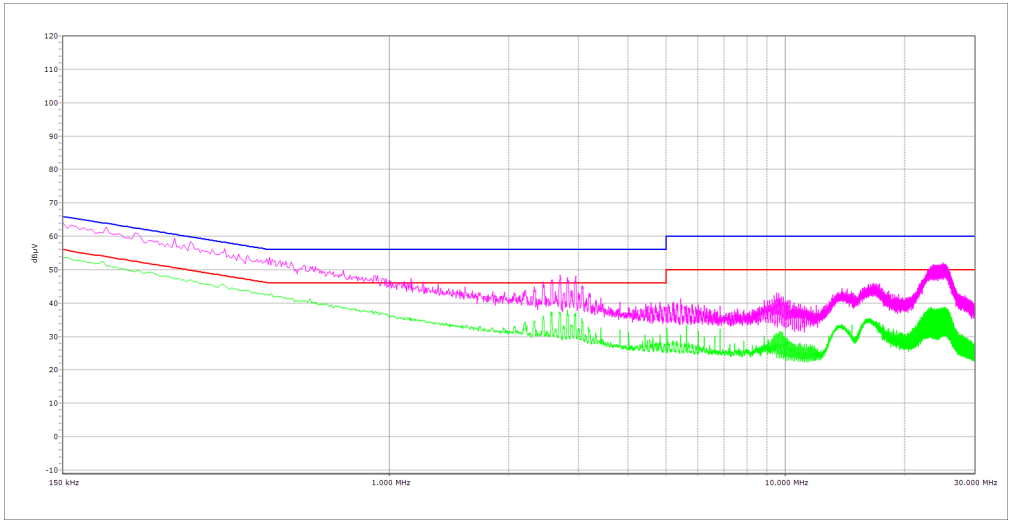
## 230V



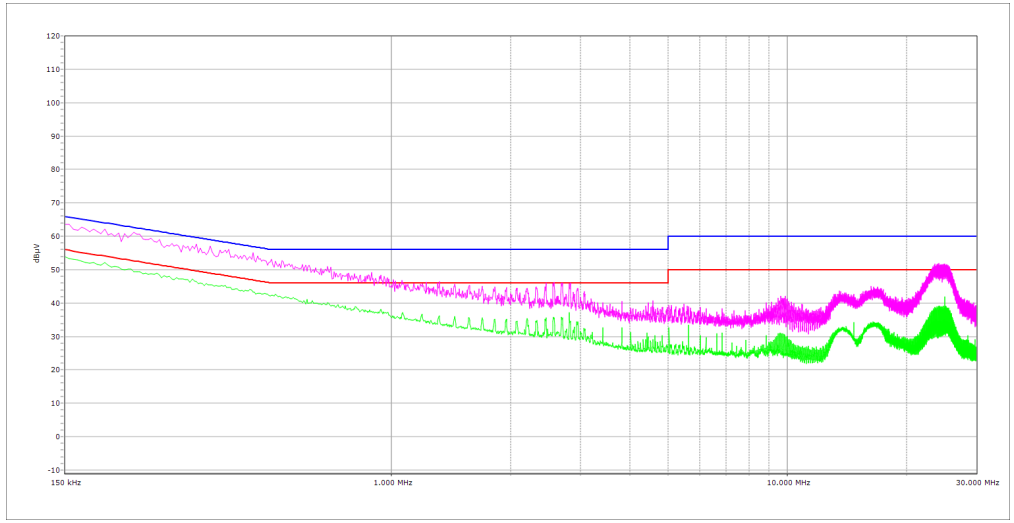

### INFO

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

## Conducted Emissions EN 55032 & CISPR 32



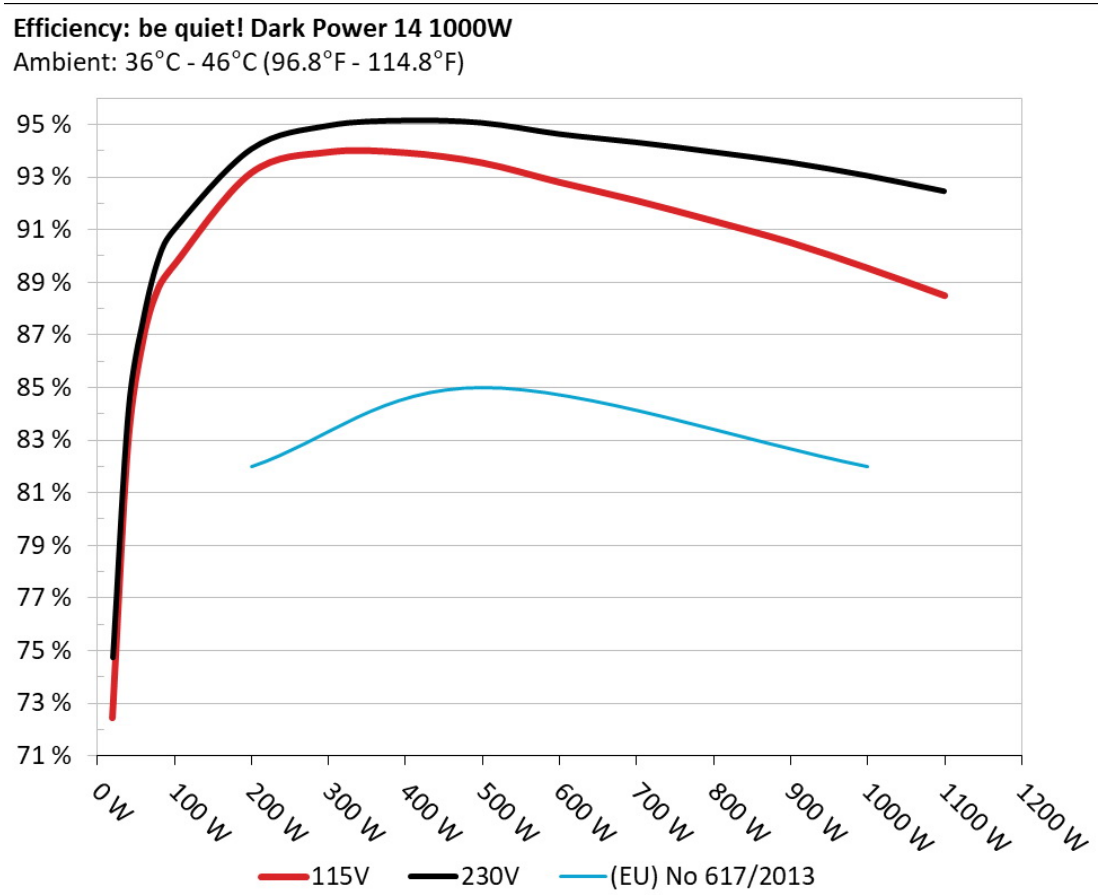

NEUTRAL




PHASE

## Indicative Performance

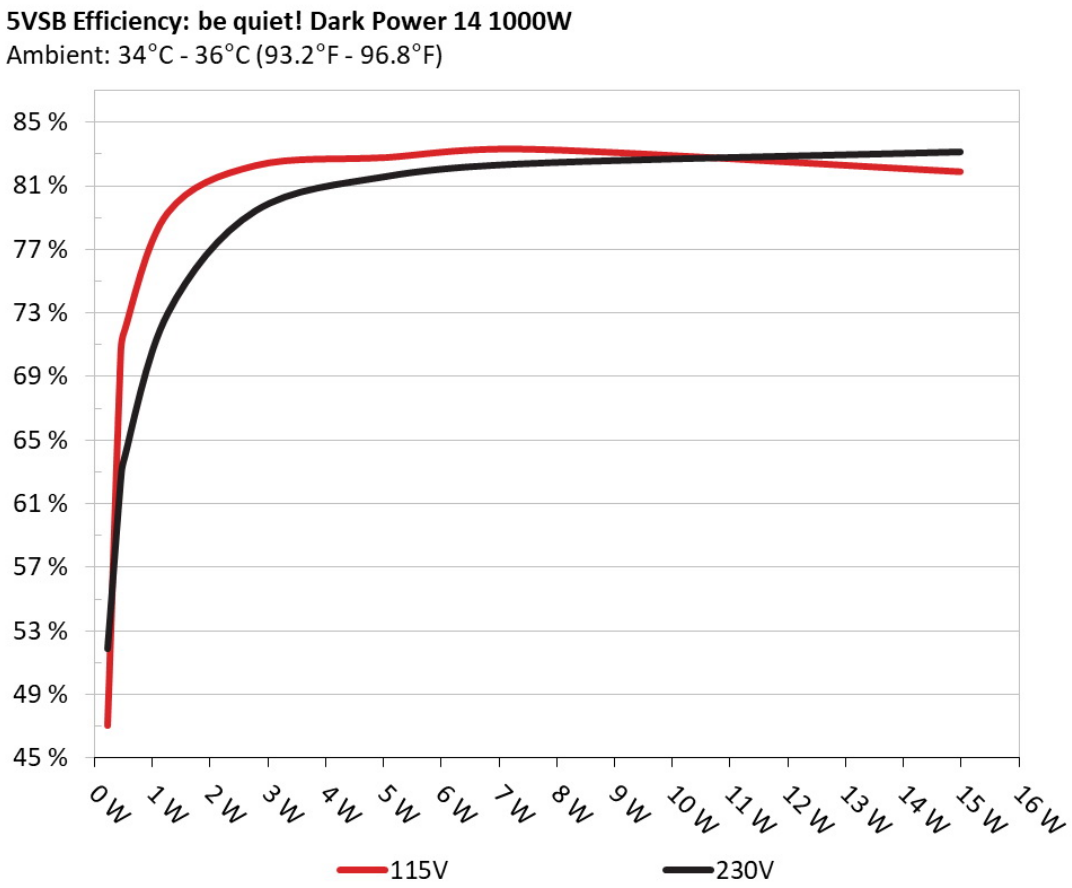
### Efficiency under high ambient temperature




**INFO**

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

## 5VSB Efficiency




**INFO**

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

## 5VSB Efficiency (ERP LOT 3/6 & CEC)

### 115V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| **1** | **0.045A** | 0.228W | 47.066% | 0.021 |
| | 5.073V | 0.216W | | 114.87V |
| **2** | **0.09A** | 0.457W | 70.703% | 0.062 |
| | 5.072V | 0.647W | | 114.87V |
| **3** | **0.55A** | 2.783W | 82.313% | 0.259 |
| | 5.06V | 3.382W | | 114.87V |
| **4** | **1A** | 5.048W | 82.827% | 0.34 |
| | 5.048V | 6.095W | | 114.87V |
| **5** | **1.5A** | 7.552W | 83.345% | 0.4 |
| | 5.034V | 9.062W | | 114.86V |
| **6** | **3A** | 14.98W | 81.931% | 0.476 |
| | 4.993V | 18.283W | | 114.86V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| **1** | **0.045A** | 0.228W | 51.883% | 0.013 |
| | 5.074V | 0.441W | | 229.91V |
| **2** | **0.09A** | 0.457W | 62.565% | 0.021 |
| | 5.072V | 0.731W | | 229.9V |
| **3** | **0.55A** | 2.783W | 79.409% | 0.097 |
| | 5.06V | 3.505W | | 229.89V |
| **4** | **1A** | 5.048W | 81.574% | 0.162 |
| | 5.047V | 6.188W | | 229.88V |
| **5** | **1.5A** | 7.551W | 82.396% | 0.198 |
| | 5.033V | 9.165W | | 229.88V |
| **6** | **3A** | 14.978W | 83.116% | 0.307 |
| | 4.992V | 18.019W | | 229.88V |

## Protection Features

| | |
|---|---|
| OCP (Normal @ 28.5°C) | 12V: 99.20A (150.31%), 11.835V<br>5V: 31.3A (130.42%), 5.057V<br>3.3V: 30.3A (121.20%), 3.27V<br>5VSB: 5A (166.67%), 4.884V |
| OCP (Hot @ 45.7°C) | 12V: 96.30A (145.91%), 11.840V<br>5V: 31.6A (131.67%), 5.069V<br>3.3V: 30.1A (120.40%), 3.264V<br>5VSB: 4.8A (160.00%), 4.862V |
| OPP (Normal @ 26.9°C) | 1257.13W (125.71%) |
| OPP (Hot @ 40.3°C) | 1188.10W (118.81%) |
| OTP | ✓ (118°C @ Heat Sink) |
| SCP | 12V to Earth: ✓<br>5V to Earth: ✓<br>3.3V to Earth: ✓<br>5VSB to Earth: ✓<br>-12V to Earth: ✓ |
| PWR_OK | Proper Operation |
| UVP (Full Load @ 90V) | ✓ |
| UVP (No Damage @ 80V) | ✓ |
| Conducted Emissions EN55032 & CISPR 32 | ✓ |
| NLO | ✓ |
| Fan Failure Protection | ✗ |
| SIP | Surge: MOV<br>Inrush: NTC & Bypass Relay |

## Supplementary Tests (For Reference)

### Typical Load Tests

**115V**

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **10%** | **6.507A** | **1.974A** | **2A** | **0.992A** | 99.997 | 89.641% | 0 | <6.0 | 43.23°C | 0.967 |
| | 12.048V | 5.065V | 3.3V | 5.04V | 111.555 | | | | 40.13°C | 114.84V |
| **20%** | **14.040A** | **2.963A** | **3.002A** | **1.194A** | 199.946 | 93.147% | 0 | <6.0 | 43.98°C | 0.986 |
| | 12.040V | 5.062V | 3.297V | 5.024V | 214.658 | | | | 40.55°C | 114.81V |
| **30%** | **21.934A** | **3.458A** | **3.505A** | **1.398A** | 299.993 | 93.938% | 0 | <6.0 | 43.88°C | 0.993 |
| | 12.033V | 5.06V | 3.296V | 5.009V | 319.352 | | | | 41.15°C | 114.77V |
| **40%** | **29.797A** | **3.954A** | **4.008A** | **1.602A** | 399.543 | 93.916% | 0 | <6.0 | 46.67°C | 0.996 |
| | 12.026V | 5.058V | 3.294V | 4.994V | 425.427 | | | | 41.65°C | 114.74V |
| **50%** | **37.337A** | **4.945A** | **5.014A** | **1.808A** | 499.265 | 93.535% | 0 | <6.0 | 47.19°C | 0.997 |
| | 12.019V | 5.056V | 3.291V | 4.979V | 533.775 | | | | 42.01°C | 114.71V |
| **60%** | **44.953A** | **5.938A** | **6.022A** | **2A** | 599.732 | 92.797% | 440 | 6.5 | 42.93°C | 0.997 |
| | 12.012V | 5.053V | 3.288V | 4.964V | 646.283 | | | | 49.24°C | 114.67V |
| **70%** | **52.520A** | **6.93A** | **7.03A** | **2.223A** | 699.528 | 92.098% | 441 | 6.5 | 43.04°C | 0.998 |
| | 12.003V | 5.051V | 3.286V | 4.95V | 759.553 | | | | 50.06°C | 114.64V |
| **80%** | **60.161A** | **7.922A** | **8.039A** | **2.329A** | 799.542 | 91.323% | 639 | 8.9 | 43.8°C | 0.998 |
| | 11.995V | 5.049V | 3.284V | 4.938V | 875.504 | | | | 50.55°C | 114.6V |
| **90%** | **68.145A** | **8.419A** | **8.529A** | **2.436A** | 899.324 | 90.51% | 948 | 19.8 | 44.54°C | 0.998 |
| | 11.987V | 5.047V | 3.283V | 4.926V | 993.621 | | | | 50.83°C | 114.57V |
| **100%** | **75.950A** | **8.915A** | **9.049A** | **3.062A** | 999.343 | 89.537% | 1516 | 33.2 | 45.01°C | 0.998 |
| | 11.978V | 5.047V | 3.282V | 4.9V | 1116.121 | | | | 50.77°C | 114.52V |
| **110%** | **83.685A** | **9.911A** | **10.153A** | **3.069A** | 1099.989 | 88.485% | 1946 | 40.2 | 46°C | 0.998 |
| | 11.970V | 5.045V | 3.279V | 4.889V | 1243.139 | | | | 53.92°C | 114.49V |
| **CL1** | **0.116A** | **14.316A** | **14.554A** | **0A** | 121.3 | 84.981% | 581 | 7.8 | 41.87°C | 0.974 |
| | 12.050V | 5.044V | 3.277V | 5.049V | 142.742 | | | | 49.23°C | 114.83V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **CL2** | **0.115A** | **23.771A** | **0A** | **0A** | 121.246 | 84.397% | 1228 | 27.5 | 40.32°C | 0.973 |
| | 12.050V | 5.042V | 3.281V | 5.056V | 143.662 | | | | 44.32°C | 114.83V |
| **CL3** | **0.115A** | **0A** | **25.216A** | **0A** | 83.88 | 76.875% | 1504 | 33 | 41.04°C | 0.967 |
| | 12.047V | 5.045V | 3.272V | 5.054V | 109.111 | | | | 44.46°C | 114.85V |
| **CL4** | **83.471A** | **0A** | **0A** | **0A** | 999.909 | 90.398% | 1017 | 21.9 | 45.23°C | 0.998 |
| | 11.979V | 5.06V | 3.296V | 4.998V | 1106.125 | | | | 50.54°C | 114.54V |

The results above are not used in the certification process

## 230V

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **10%** | **6.505A** | **1.975A** | **2.002A** | **0.993A** | 99.996 | 91.018% | 0 | <6.0 | 43.43°C | 0.858 |
| | 12.051V | 5.064V | 3.297V | 5.038V | 109.864 | | | | 40.36°C | 229.88V |
| **20%** | **14.036A** | **2.964A** | **3.005A** | **1.195A** | 199.947 | 94.071% | 0 | <6.0 | 44.34°C | 0.945 |
| | 12.043V | 5.061V | 3.294V | 5.023V | 212.547 | | | | 40.7°C | 229.86V |
| **30%** | **21.930A** | **3.459A** | **3.508A** | **1.398A** | 299.994 | 94.958% | 0 | <6.0 | 44.58°C | 0.97 |
| | 12.035V | 5.059V | 3.292V | 5.008V | 315.915 | | | | 41.43°C | 229.84V |
| **40%** | **29.791A** | **3.955A** | **4.012A** | **1.602A** | 399.532 | 95.154% | 0 | <6.0 | 45.41°C | 0.978 |
| | 12.028V | 5.057V | 3.29V | 4.993V | 419.879 | | | | 41.58°C | 229.83V |
| **50%** | **37.331A** | **4.947A** | **5.02A** | **1.808A** | 499.274 | 95.065% | 0 | <6.0 | 45.95°C | 0.983 |
| | 12.021V | 5.054V | 3.287V | 4.977V | 525.194 | | | | 42.25°C | 229.82V |
| **60%** | **44.951A** | **5.939A** | **6.028A** | **2A** | 599.725 | 94.638% | 447 | 6.5 | 42.79°C | 0.987 |
| | 12.013V | 5.052V | 3.285V | 4.964V | 633.702 | | | | 48.12°C | 229.8V |
| **70%** | **52.518A** | **6.931A** | **7.038A** | **2.223A** | 699.533 | 94.325% | 458 | 6.5 | 43.07°C | 0.99 |
| | 12.004V | 5.05V | 3.283V | 4.949V | 741.625 | | | | 48.61°C | 229.79V |
| **80%** | **60.158A** | **7.923A** | **8.048A** | **2.33A** | 799.535 | 93.958% | 643 | 9.1 | 43.87°C | 0.992 |
| | 11.995V | 5.048V | 3.28V | 4.937V | 850.951 | | | | 49.16°C | 229.77V |
| **90%** | **68.147A** | **8.42A** | **8.538A** | **2.437A** | 899.317 | 93.559% | 871 | 17.4 | 44.15°C | 0.993 |
| | 11.986V | 5.047V | 3.279V | 4.925V | 961.237 | | | | 49.01°C | 229.75V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| **100%** | **75.949A** | **8.916A** | **9.059A** | **3.062A** | 999.328 | 93.058% | 1488 | 32.7 | 45.03°C | 0.994 |
| | 11.978V | 5.047V | 3.278V | 4.899V | 1073.88 | | | | 48.8°C | 229.73V |
| **110%** | **83.690A** | **9.91A** | **10.163A** | **3.069A** | 1099.951 | 92.464% | 1946 | 40.2 | 46.11°C | 0.995 |
| | 11.969V | 5.045V | 3.276V | 4.889V | 1189.601 | | | | 50.23°C | 229.71V |
| **CL1** | **0.116A** | **14.314A** | **14.569A** | **0A** | 121.297 | 86.371% | 579 | 7.8 | 40.75°C | 0.903 |
| | 12.048V | 5.044V | 3.274V | 5.05V | 140.44 | | | | 46.85°C | 229.88V |
| **CL2** | **0.115A** | **23.765A** | **0A** | **0A** | 121.246 | 85.557% | 1230 | 27.5 | 40.16°C | 0.903 |
| | 12.049V | 5.043V | 3.28V | 5.056V | 141.677 | | | | 44.35°C | 229.87V |
| **CL3** | **0.115A** | **0A** | **25.229A** | **0A** | 83.88 | 78% | 1474 | 32.5 | 41.05°C | 0.852 |
| | 12.047V | 5.045V | 3.27V | 5.054V | 107.534 | | | | 43.62°C | 229.88V |
| **CL4** | **83.482A** | **0A** | **0A** | **0A** | 1000.025 | 93.617% | 1580 | 34.3 | 43.17°C | 0.994 |
| | 11.979V | 5.062V | 3.295V | 4.996V | 1068.21 | | | | 46.91°C | 229.73V |

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** | **1.232A** | **0.493A** | **0.499A** | **0.197A** | 20.004 | 72.432% | 0 | <6.0 | 40.17°C | 0.819 |
| | 12.050V | 5.07V | 3.304V | 5.072V | 27.617 | | | | 36.02°C | 114.88V |
| **40W** | **2.714A** | **0.691A** | **0.699A** | **0.296A** | 40.007 | 82.756% | 0 | <6.0 | 40.88°C | 0.927 |
| | 12.050V | 5.068V | 3.303V | 5.066V | 48.345 | | | | 37.86°C | 114.86V |
| **60W** | **4.194A** | **0.888A** | **0.899A** | **0.395A** | 60.006 | 86.827% | 0 | <6.0 | 40.25°C | 0.954 |
| | 12.049V | 5.067V | 3.302V | 5.061V | 69.111 | | | | 38.28°C | 114.86V |
| **80W** | **5.670A** | **1.085A** | **1.099A** | **0.494A** | 79.951 | 88.793% | 0 | <6.0 | 42.65°C | 0.964 |
| | 12.049V | 5.067V | 3.302V | 5.056V | 90.041 | | | | 39.32°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** | **1.232A** | **0.493A** | **0.5A** | **0.197A** | 20.005 | 74.73% | 0 | <6.0 | 38.92°C | 0.405 |
| | 12.055V | 5.068V | 3.301V | 5.071V | 26.77 | | | | 36.21°C | 229.89V |
| **40W** | **2.712A** | **0.691A** | **0.7A** | **0.296A** | 40.001 | 84.083% | 0 | <6.0 | 40.06°C | 0.636 |
| | 12.055V | 5.067V | 3.3V | 5.065V | 47.583 | | | | 37.06°C | 229.89V |
| **60W** | **4.192A** | **0.888A** | **0.9A** | **0.395A** | 60.001 | 87.669% | 0 | <6.0 | 41.65°C | 0.736 |
| | 12.054V | 5.067V | 3.299V | 5.06V | 68.441 | | | | 38.78°C | 229.88V |
| **80W** | **5.668A** | **1.085A** | **1.1A** | **0.495A** | 79.944 | 89.959% | 0 | <6.0 | 41.86°C | 0.811 |
| | 12.053V | 5.066V | 3.299V | 5.055V | 88.868 | | | | 39.48°C | 229.88V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 19.03mV | 17.09mV | 16.42mV | 12.73mV | Pass |
| 20% Load | 21.12mV | 17.09mV | 16.98mV | 12.62mV | Pass |
| 30% Load | 20.51mV | 16.94mV | 16.16mV | 12.52mV | Pass |
| 40% Load | 22.04mV | 16.89mV | 17.18mV | 12.98mV | Pass |
| 50% Load | 23.78mV | 17.40mV | 16.72mV | 13.03mV | Pass |
| 60% Load | 20.46mV | 17.60mV | 17.14mV | 13.90mV | Pass |
| 70% Load | 20.97mV | 18.01mV | 17.24mV | 15.39mV | Pass |
| 80% Load | 20.81mV | 18.22mV | 17.55mV | 15.55mV | Pass |
| 90% Load | 21.79mV | 17.96mV | 18.57mV | 16.63mV | Pass |
| 100% Load | 21.32mV | 16.66mV | 16.32mV | 14.84mV | Pass |
| 110% Load | 22.55mV | 16.85mV | 16.49mV | 15.56mV | Pass |
| Crossload1 | 19.01mV | 17.09mV | 16.23mV | 11.61mV | Pass |
| Crossload2 | 21.63mV | 20.84mV | 17.44mV | 12.83mV | Pass |

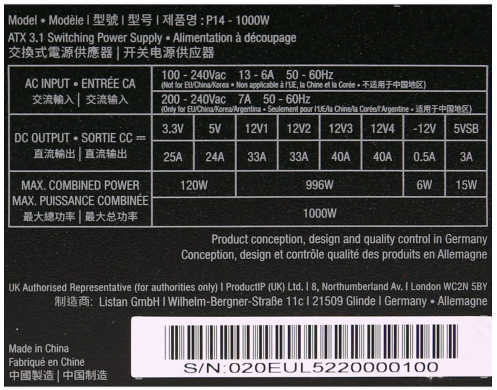
| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| Crossload3 | 19.79mV | 16.73mV | 19.44mV | 12.26mV | Pass |
| Crossload4 | 21.43mV | 17.34mV | 16.65mV | 13.90mV | Pass |

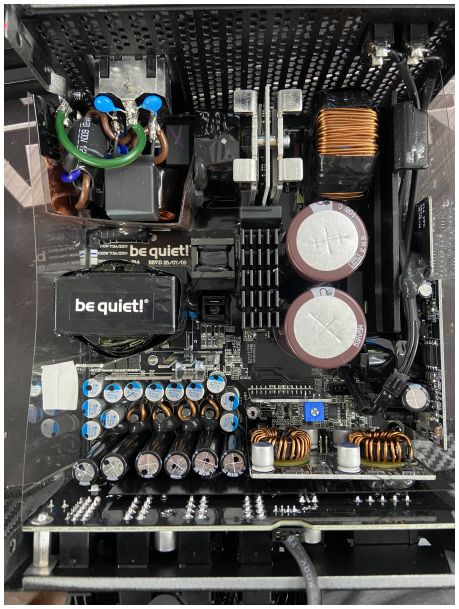
The results above are not used in the certification process

**230V**

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 19.38mV | 16.88mV | 15.70mV | 12.01mV | Pass |
| 20% Load | 20.66mV | 16.32mV | 14.83mV | 11.95mV | Pass |
| 30% Load | 21.17mV | 16.42mV | 14.83mV | 12.21mV | Pass |
| 40% Load | 21.28mV | 16.06mV | 15.03mV | 11.90mV | Pass |
| 50% Load | 20.97mV | 15.19mV | 14.16mV | 11.59mV | Pass |
| 60% Load | 20.87mV | 16.27mV | 15.23mV | 11.90mV | Pass |
| 70% Load | 19.23mV | 17.60mV | 16.01mV | 12.83mV | Pass |
| 80% Load | 20.30mV | 17.14mV | 16.26mV | 14.57mV | Pass |
| 90% Load | 21.53mV | 17.14mV | 16.21mV | 14.88mV | Pass |
| 100% Load | 20.56mV | 16.70mV | 16.04mV | 13.40mV | Pass |
| 110% Load | 20.96mV | 15.65mV | 15.87mV | 13.76mV | Pass |
| Crossload1 | 19.06mV | 15.18mV | 15.81mV | 10.92mV | Pass |
| Crossload2 | 18.98mV | 16.93mV | 14.11mV | 10.31mV | Pass |
| Crossload3 | 19.59mV | 17.09mV | 20.01mV | 12.06mV | Pass |
| Crossload4 | 20.51mV | 15.44mV | 15.27mV | 12.95mV | Pass |

The results above are not used in the certification process





## be quiet! Dark Power 14 1000W

Top side

Power specifications label

Fan

PSU Internals

Cybenetics 提供自願性認證方案: 電源供應器方面有 ETA (效率)、 LAMBDA (噪音) 與 SAFE (安全與正確運作)；散熱產品方面有 DELTA (機殼隔音) 與 PHI (風扇風量與靜壓)

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