SILVERSTONE

# SilverStone GM800 2U Gold

Serial Number DXGM802G21340050

Lab ID SL80001936

Certification ID 251936

Test Result Report ID: 21PS1936A

Certificate Issue Date: Nov 19, 2021

230V

Scheme: ETA-EMI PSU






Aristeidis Bitziopoulos, Certification Body General Manager

# 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 | SilverStone |
| Model | GM800 2U Gold |
| OEM/ODM | TC Sure Star Computer Co. |
| Serial Number | DXGM802G21340050 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |
| Rated Current (Arms) | 13-6 |
| Rated Frequency (Hz) | 47-63 |

| | |
|---|---|
| Rated Power (W) | 800 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | 2U |
| Cable Design | Fixed cables |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 40mm Double Ball Bearing Fan<br>(04028DA-12S-AUG) |
| Semi-Passive Operation | ✗ |
| Cybenetics Testing Information | |
| Lab ID | SL80001936 |
| Date of receipt | Sep 17, 2021 |
| Testing Date | Nov 12, 2021 |
| Report Issued Date | Nov 19, 2021 |
| DUT Notes | SST-2M0800FCGD-A |
| Engineer Name | - |
| Authorized By the Laboratory Technical Manager | Aristeidis Bitziopoulos |
| Signature |  |

## Power Specifications

| Rail | | 12V | 5VSB |
|---|---|---|---|
| Max. Power | Amps | 66.5 | 3.5 |
| | Watts | 798 | 17.5 |
| Total Max. Power (W) | | 800 | |

# Test Results

## Temperature & Compliance Info

| | |
|---|---|
| Temperature Range (°C /°F) | 28-32 / 82.4-89.6 |

## Performance Summary 230V

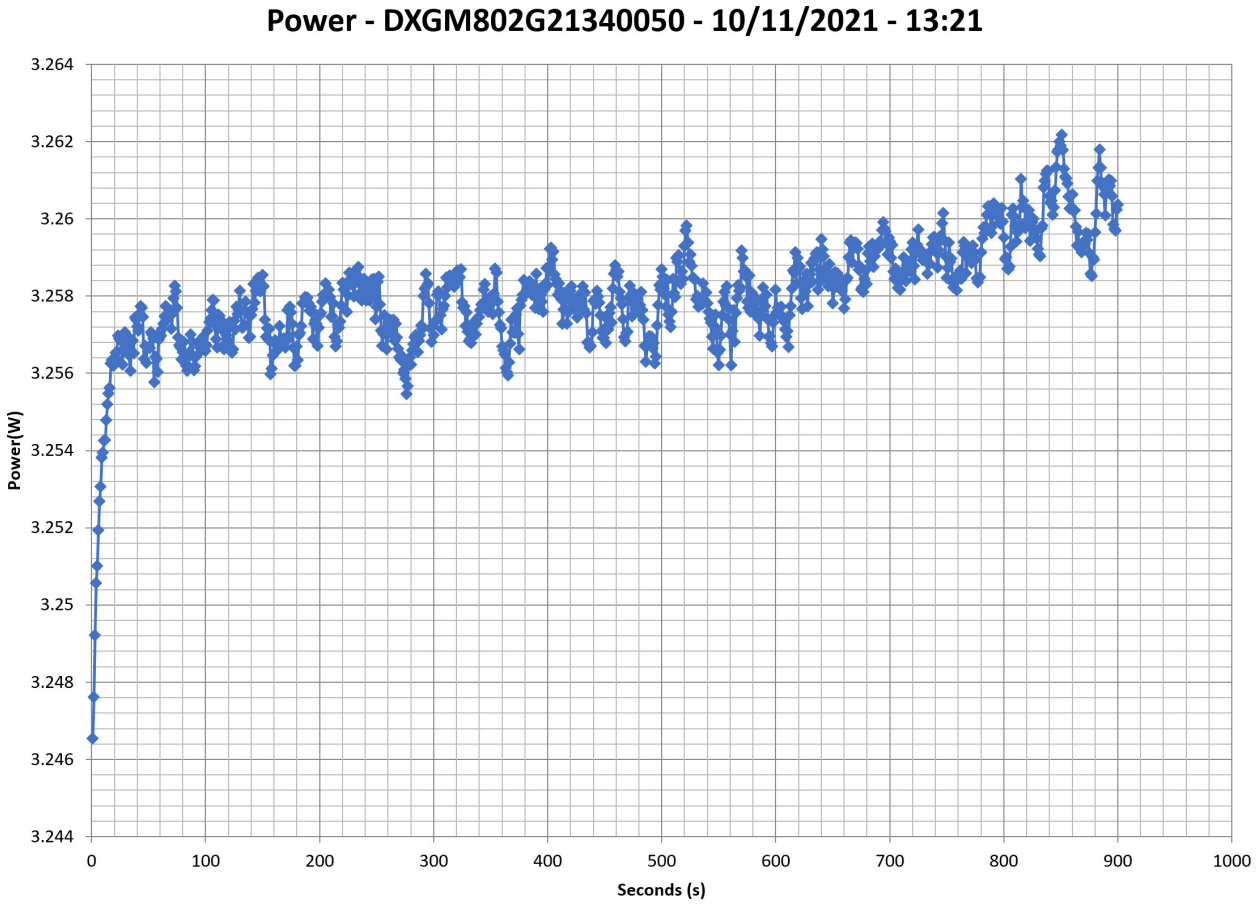
| | | |
|---|---|---|
| Accredited | | |
| Average Efficiency (>1450 load combinations) | | 89.527% |
| Average PF (>1450 Load Combinations) | | 0.932 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | | - |
| Standby Power Consumption | | 3.2604W |
| Non-Accredited | | |
| 12V Ripple (Full Load) | | 599.70mV |
| 5VSB Ripple (Full Load) | | 55.87mV |
| 12V Load Regulation | | 3.07% |
| 5VSB Load Regulation | | 6.75% |
| Inrush Current | | 92.270A |
| Hold-Up Time & PWR_OK Signal | | 1.50ms |
| AC Loss to PWR_OK Hold Up Time | | 10.70ms |
| PWR_OK Inactive to DC Loss Delay | | -9.20ms |
| PSU Timings: T1 (20% / 100%) | 186.0ms | 186.0ms |
| PSU Timings: T3 (20% / 100%) | 258.0ms | 257.0ms |

# Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 1.5 |
| AC Loss to PWR_OK Hold Up Time (ms) | 10.7 |
| PWR_OK Inactive to DC Loss Delay (ms) | -9.2 |

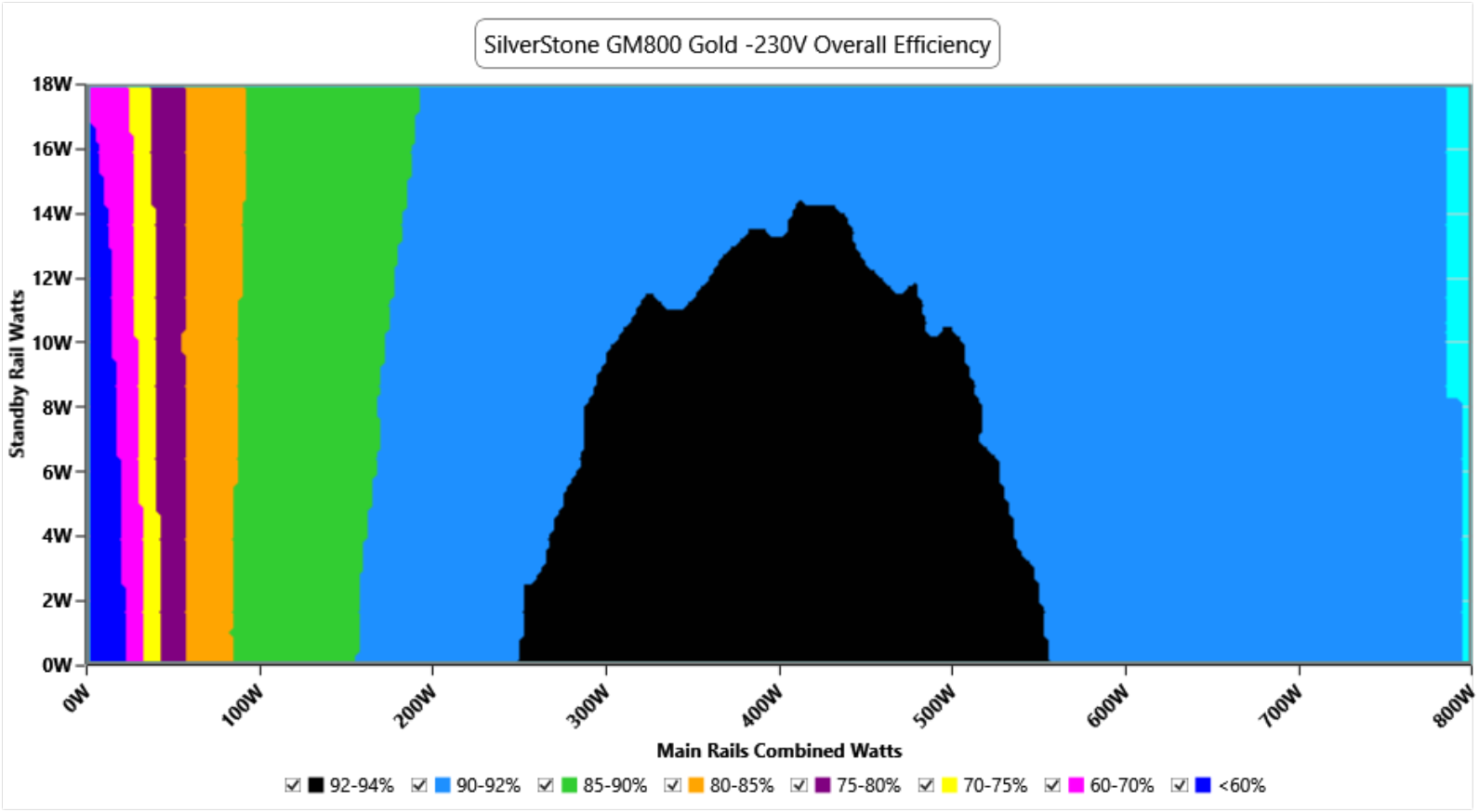
## Vampire Power

### Graphs 230V



## Efficiency Graph

### 230V

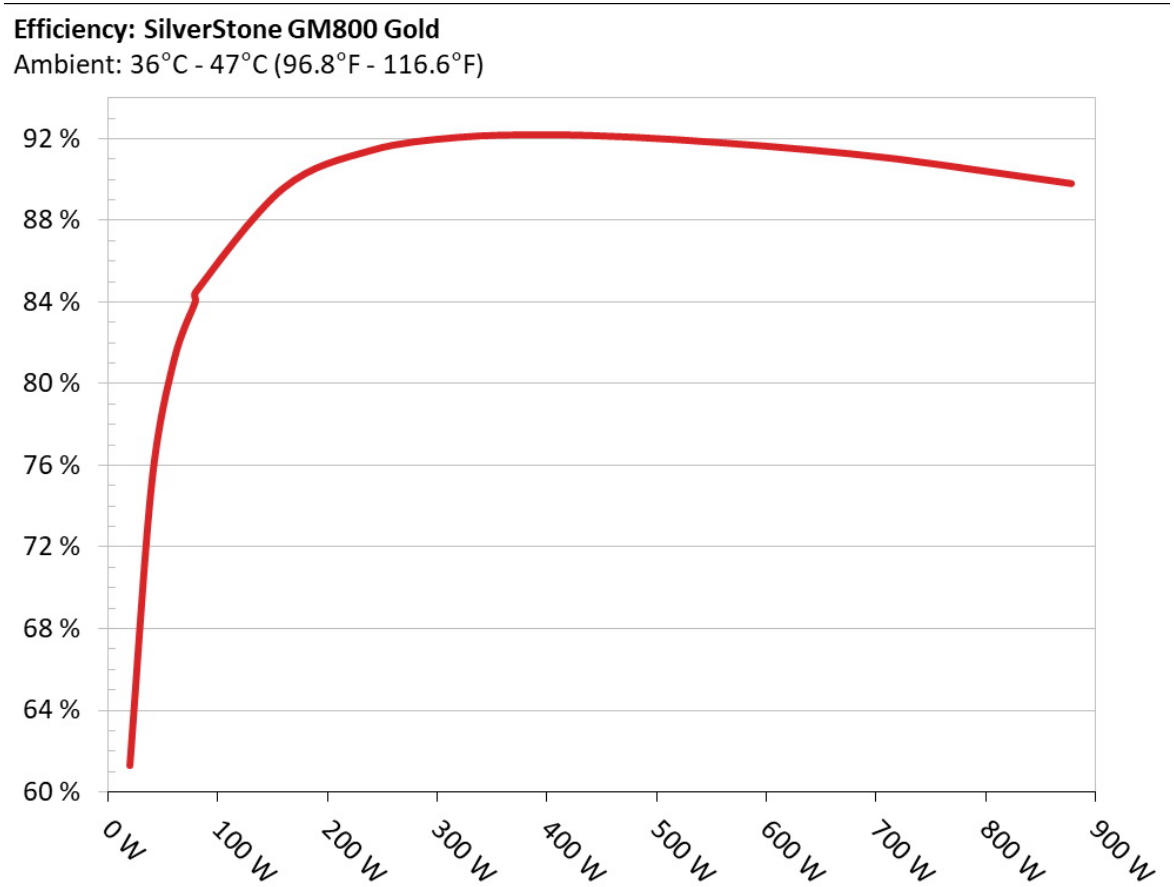



### INFO

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

## Indicative Performance

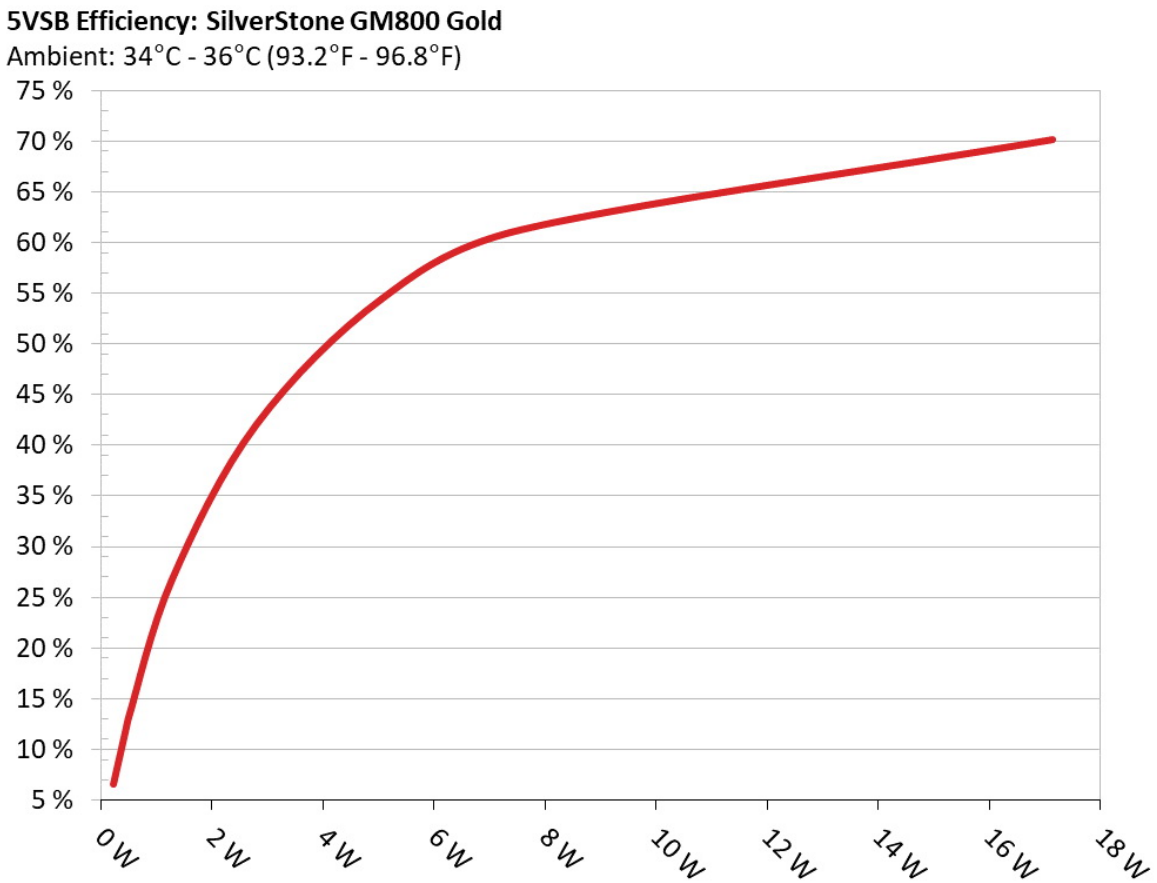
### Efficiency under high ambient temperature




**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) 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| 1 | 0.045A | 0.233W | 6.602% | 0.085 |
| | 5.193V | 3.529W | | 230.26V |

| | | | | |
|---|---|---|---|---|
| 2 | 0.09A | 0.465W | 12.228% | 0.091 |
| | 5.172V | 3.803W | | 230.26V |
| 3 | 0.55A | 2.804W | 42.043% | 0.144 |
| | 5.101V | 6.67W | | 230.25V |
| 4 | 1A | 5.069W | 54.473% | 0.181 |
| | 5.07V | 9.306W | | 230.25V |
| 5 | 1.5A | 7.564W | 61.242% | 0.212 |
| | 5.044V | 12.352W | | 230.25V |
| 6 | 3.499A | 17.13W | 70.128% | 0.276 |
| | 4.896V | 24.427W | | 230.25V |

## Supplementary Tests (For Reference)

### Typical Load Tests 230V

| Test | Main Rail | Standby Rail | DC/AC (Watts) | Efficiency | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|
| 10% | 6.157A | 0.992A | 79.777 | 84.063% | 38.46°C | 0.847 |
| | 12.145V | 5.04V | 94.902 | | 42.28°C | 230.28V |
| 20% | 12.667A | 1.196A | 159.572 | 89.583% | 39.28°C | 0.908 |
| | 12.124V | 5.018V | 178.127 | | 43.73°C | 230.27V |
| 30% | 19.199A | 1.394A | 239.376 | 91.443% | 40.45°C | 0.933 |
| | 12.104V | 5.02V | 261.777 | | 45.24°C | 230.27V |
| 40% | 25.745A | 1.601A | 319.182 | 92.089% | 41.76°C | 0.947 |
| | 12.087V | 4.997V | 346.601 | | 46.85°C | 230.27V |
| 50% | 32.279A | 1.809A | 398.388 | 92.217% | 42.27°C | 0.958 |
| | 12.063V | 4.975V | 432.013 | | 47.67°C | 230.27V |
| 60% | 38.988A | 2A | 478.535 | 92.097% | 42.87°C | 0.964 |
| | 12.020V | 4.955V | 519.6 | | 48.68°C | 230.27V |
| 70% | 45.704A | 2.229A | 558.061 | 91.826% | 43.45°C | 0.969 |
| | 11.970V | 4.932V | 607.738 | | 49.73°C | 230.26V |
| 80% | 52.572A | 2.337A | 637.826 | 91.482% | 44.28°C | 0.974 |
| | 11.914V | 4.918V | 697.218 | | 51.18°C | 230.26V |

| | | | | | | |
|---|---|---|---|---|---|---|
| 90% | 59.519A | 2.445A | 717.594 | 91.04% | 44.85°C | 0.977 |
| | 11.855V | 4.906V | 788.217 | | 52.49°C | 230.26V |
| 100% | 66.125A | 3.634A | 797.574 | 90.442% | 45.49°C | 0.979 |
| | 11.797V | 4.814V | 881.864 | | 53.56°C | 230.25V |
| 110% | 73.312A | 3.639A | 877.636 | 89.823% | 46.78°C | 0.982 |
| | 11.733V | 4.807V | 977.075 | | 55.58°C | 230.25V |

The results above are not used in the certification process

## Light Load Tests 230V

| Test | Main Rail | Standby Rail | DC/AC (Watts) | Efficiency | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|
| 10W | 1.562A | 0.195A | 19.994 | 61.271% | 35.89°C | 0.577 |
| | 12.159V | 5.139V | 32.632 | | 37.23°C | 230.31V |
| 20W | 3.167A | 0.293A | 39.995 | 75.154% | 36.24°C | 0.727 |
| | 12.156V | 5.116V | 53.217 | | 38.16°C | 230.3V |
| 30W | 4.773A | 0.392A | 59.992 | 81.112% | 37.1°C | 0.802 |
| | 12.150V | 5.103V | 73.962 | | 39.36°C | 230.29V |
| 40W | 6.374A | 0.491A | 79.917 | 84.498% | 37.59°C | 0.846 |
| | 12.145V | 5.087V | 94.579 | | 40.25°C | 230.28V |

The results above are not used in the certification process

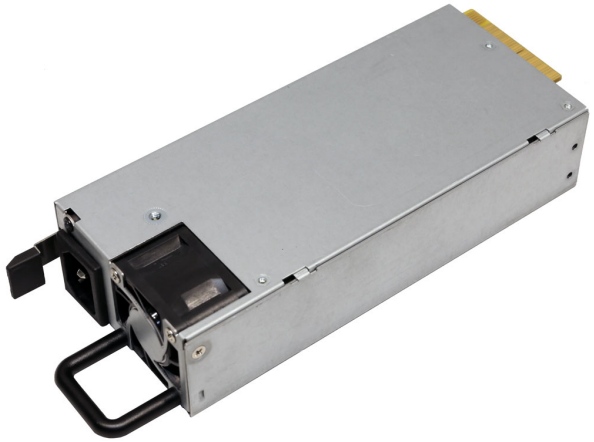
## Ripple Measurements 230V

| Test | Main Rail | Standby Rail | Pass/Fail |
|---|---|---|---|
| 10% Load | 24.3 mV | 15.0 mV | Pass |
| 20% Load | 35.0 mV | 17.1 mV | Pass |
| 30% Load | 49.3 mV | 30.2 mV | Pass |
| 40% Load | 66.1 mV | 31.9 mV | Pass |
| 50% Load | 127.4 mV | 36.0 mV | Fail |
| 60% Load | 183.5 mV | 43.5 mV | Fail |
| 70% Load | 200.0 mV | 43.1 mV | Fail |
| 80% Load | 200.0 mV | 45.8 mV | Fail |

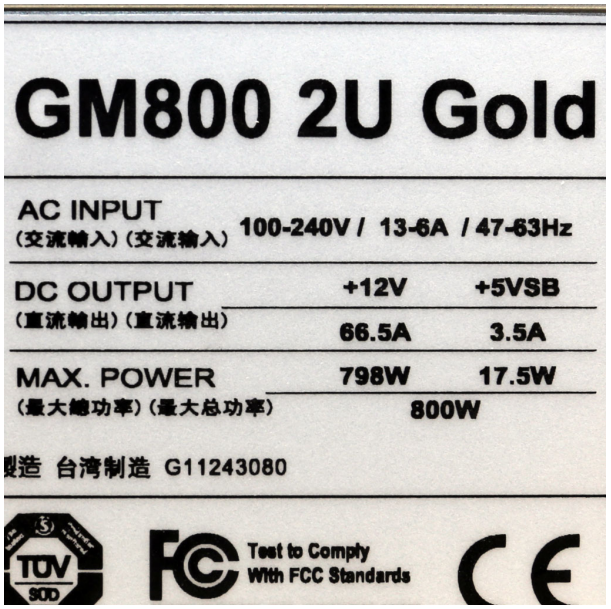
| | | | |
|---|---|---|---|
| 90% Load | 200.0 mV | 47.9 mV | Fail |
| 100% Load | 599.7 mV | 55.9 mV | Fail |
| 110% Load | 693.2 mV | 57.1 mV | Fail |

The results above are not used in the certification process

**SilverStone GM800 2U Gold**



Top side




Power specifications label

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 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

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