# Cougar GEX X2 850

Serial Number 12BC02GX85000091

Lab ID CG85002171

Certification ID 252171

Test Result Report ID: 23PS2171A

Certificate Issue Date: Apr 24, 2023

Scheme: ETA-EMI PSU

115V 230V

Scheme: LAMBDA PSU

115V 230V

Outside Validation Scope

# General Information

## Test Equipment

| | |
|---|---|
| Electronic Loads | Chroma 63601-5 x2<br>Chroma 63600-2<br>Chroma 63640-80-80 x10<br>Chroma 63610-80-20 |
| AC Sources | Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500 |
| Power Analyzers | Rohde & Schwarz HMC8015 & NPA701 |
| Oscilloscopes | Picoscope 4444, Siglent SDS2104X PLUS |
| Sound Analyzer | Bruel & Kjaer 2270 G4 |
| Microphone | Bruel & Kjaer Type 4955-A |
| Temperature Logger | Picoscope TC-08 |
| Tachometer | UNI-T UT372 |
| Multimeters | Keysight 34465A |
| EMI Analyzer | TekBox TBMR-110M-EU |
| Isolation Transformer | 4kVA |
| UPS | FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA |
| Testing Methodology | Cybenetics PSU Test Protocol |

## DUT Information(Non-accredited measurements)

| | |
|---|---|
| Product Identification Details | |
| Brand | Cougar |
| Model | GEX X2 850 |
| OEM/ODM | XHY-Power |
| Serial Number | 12BC02GX85000091 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |
| Rated Current (Arms) | 12-6 |

| | |
|---|---|
| Rated Frequency (Hz) | 50-60 |
| Rated Power (W) | 850 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | ATX12V |
| Cable Design | Fully Modular |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 120mm Hydraulic Dynamic Bearing Fan<br>(EFH-12E12H) |
| Semi-Passive Operation | ✓ |
| Cybenetics Testing Information | |
| Lab ID | CG85002171 |
| Date of receipt | Apr 12, 2023 |
| Testing Date | Apr 19, 2023 |
| Report Issued Date | Apr 24, 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 (660mm) | 1 | 1 | 18AWG | No |
| 4+4 pin EPS12V (650mm) | 1 | 1 | 18AWG | No |
| 8 pin EPS12V (650mm) | 1 | 1 | 18AWG | No |
| 6+2 pin PCIe (650mm+100mm) | 2 | 4 | 18AWG | No |
| 12+4 pin PCIe (650mm) (450W) | 1 | 1 | 16-28AWG | No |
| SATA (510mm+115mm+115mm+115mm) | 1 | 4 | 18AWG | No |
| SATA (500mm+115mm+115mm) / 4-pin Molex (+115mm) | 2 | 6 / 2 | 18AWG | No |

| | | | | |
|---|---|---|---|---|
| AC Power Cord (1360mm) - C13 coupler | 1 | 1 | 18AWG | - |

## Power Specifications

| Rail | | 3.3V | 5V | 12V | 5VSB | -12V |
|---|---|---|---|---|---|---|
| Max. Power | Amps | 20 | 20 | 70.8 | 3 | 0.3 |
| | Watts | 100 | | 850 | 15 | 3.6 |
| Total Max. Power (W) | | 850 | | | | |

## Parts Description

| | |
|---|---|
| General Data | - |
| Manufacturer (OEM) | HEC |
| PCB Type | Double Sided |
| Primary Side | - |
| Transient Filter | 4x Y caps, 2x X caps, 2x CM chokes, 1x Mov |
| Inrush Protection | NTC Thermistor MF72 5D15 & Relay HF46F-G |
| Bridge Rectifier(s) | 2x GBU15J (600V, 15A @ 100°C) |
| APFC MOSFETs | 2x Ncepower NCE65TF130 (650V, 28A @ 100°C, Rds(on): 140mOhm) |
| APFC Boost Diode | 1x DS065006C3 |
| Bulk Cap(s) | 1x TK (420V, 680uF, 2000h @ 105°C, LGW) |
| Main Switchers | 4x CS13N50FA9R (500V, 8.5A @ 100°C, Rds(on): 0.5Ohm) |
| APFC Controller | Champion CM6500UNX |
| Resonant Controller | Champion CM6901T6 |
| Topology | Primary side: APFC, Full-Bridge & LLC converter<br>Secondary side: Synchronous Rectification & DC-DC converters |
| Secondary Side | - |
| +12V MOSFETs | 4x CRSM016N06L2 (60V, 136A @ 100°C, Rds(on): 2.4mOhm) |
| 5V & 3.3V | DC-DC Converters: 6x Excelliance MOS EMB07N03H (20V, 35A @ 100°C, Rds(on): 7mOhm)<br>PWM Controller(s): uPI-Semi uP3861P |
| Filtering Capacitors | Electrolytic: 9x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 3x Nichicon (2-8,000h @ 105°C), 2x PLH,<br>Polymer: 21x FPCAP |
| Supervisor IC | Infino IN1S424I (OCP, OVP, UVP, SCP, PG) |
| Fan Model | DWPH EFH-12E12H (120mm, 12V, 0.5A, Hydraulic Dynamic Bearing Fan) |

| | |
|---|---|
| 5VSB Circuit | - |
| Rectifier | 1x HM69-60R10 SBR (42V, 22A) |
| Standby PWM Controller | Excelliance MOS EM8569C |

# 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) | 89.408% |
| Average Noise Output (>1450 Load Combinations) | 19.01dBA |
| Average PF (>1450 Load Combinations) | 0.984 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 66.748% |
| Standby Power Consumption | 0.0432W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 27.86mV |
| 5V Ripple (Full Load) | 18.79mV |
| 3.3V Ripple (Full Load) | 19.84mV |
| 5VSB Ripple (Full Load) | 12.82mV |
| 12V Load Regulation | 1.50% |
| 5V Load Regulation | 0.28% |
| 3.3V Load Regulation | 0.51% |
| 5VSB Load Regulation | 2.24% |

| | |
|---|---|
| Inrush Current | 67.380A |

## 230V

| | | |
|---|---|---|
| Accredited | | |
| Average Efficiency (>1450 load combinations) | | 91.438% |
| Average Noise Output (>1450 Load Combinations) | | 19.15dBA |
| Average PF (>1450 Load Combinations) | | 0.955 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | | - |
| Standby Power Consumption | | 0.1258W |
| Non-Accredited | | |
| 12V Ripple (Full Load) | | 26.84mV |
| 5V Ripple (Full Load) | | 19.59mV |
| 3.3V Ripple (Full Load) | | 19.73mV |
| 5VSB Ripple (Full Load) | | 13.27mV |
| 12V Load Regulation | | 1.41% |
| 5V Load Regulation | | 0.28% |
| 3.3V Load Regulation | | 0.48% |
| 5VSB Load Regulation | | 2.22% |
| Inrush Current | | 82.870A |
| 12V Transient Response (200%) | | 11.21V |
| 5V Transient Response (200%) | | 4.951V |
| 3.3V Transient Response (200%) | | 3.227V |
| 5VSB Transient Response (200%) | | 4.916V |
| Hold-Up Time & PWR_OK Signal | | 24.90ms |
| AC Loss to PWR_OK Hold Up Time | | 20.80ms |
| PWR_OK Inactive to DC Loss Delay | | 4.10ms |
| PSU Timings: T1 (20% / 100%) | 56.0ms | 57.0ms |
| PSU Timings: T3 (20% / 100%) | 139.0ms | 138.0ms |
| OPP (26.76°C / 36.98°C) | 128.54% | 128.54% |

## Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 24.9 |
| AC Loss to PWR_OK Hold Up Time (ms) | 20.8 |
| PWR_OK Inactive to DC Loss Delay (ms) | 4.1 |

## Tables

### 115V

| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 114.88 V | 114.80 V | 113.85 V | 114.95 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: | 1.419 | 1.417 | 1.340 | 1.422 | 1.490 | PASS |
| Mains Voltage THD: | 0.21 % | 0.17 % | N/A | 0.30 % | 2.00 % | PASS |
| Real Power: | 0.043 W | -0.001 W | N/A | 0.081 W | N/A | N/A |
| Apparent Power: | 6.488 W | 6.451 W | N/A | 6.531 W | N/A | N/A |
| Power Factor: | 0.007 | N/A | N/A | N/A | N/A | N/A |

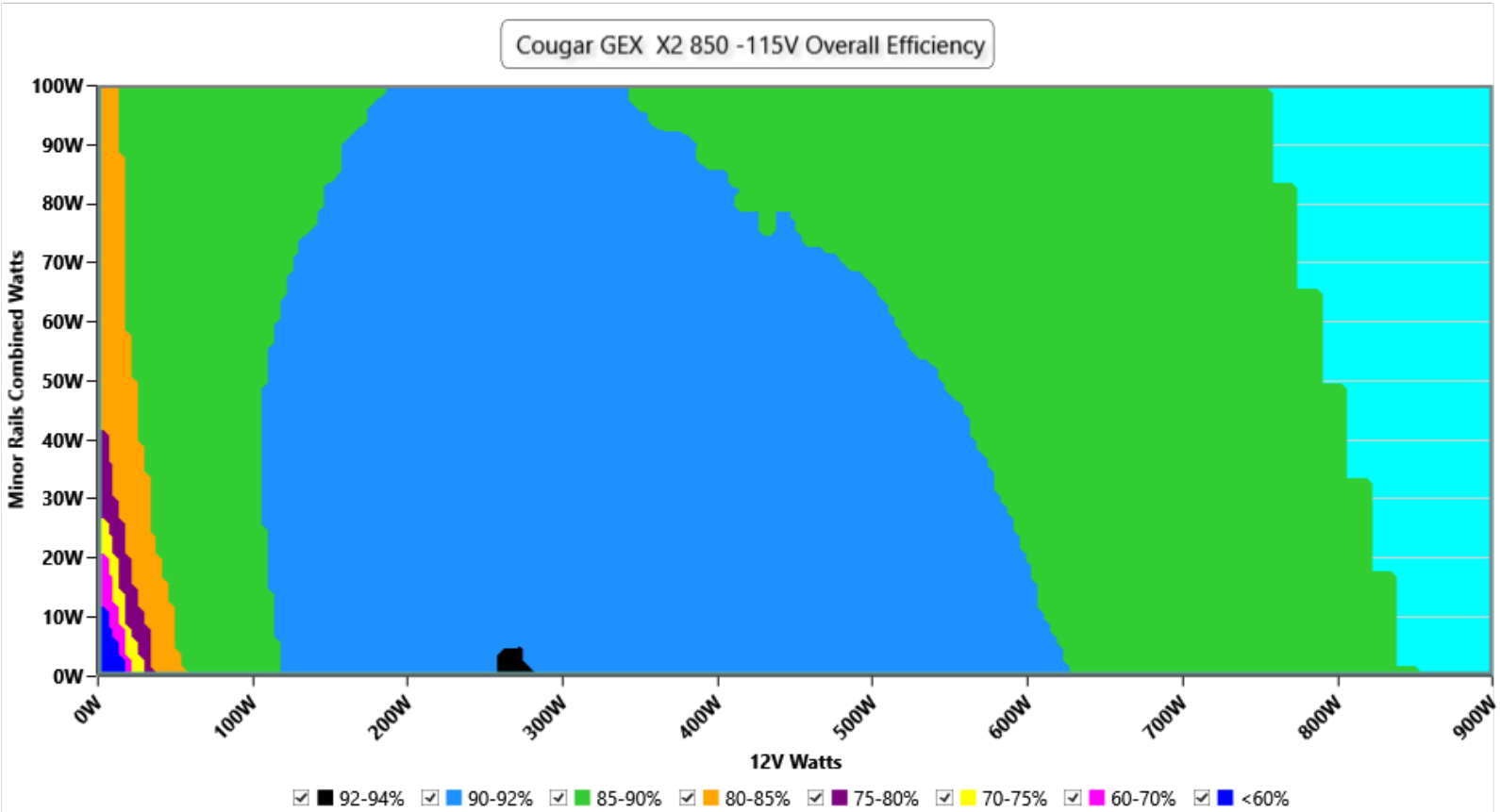
### 230V

| Detailed Results | | | | | | |
|---|---|---|---|---|---|---|
| | Average | Min | Limit Min | Max | Limit Max | Result |
| Mains Voltage RMS: | 229.76 V | 229.70 V | 227.70 V | 229.84 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 | 1.418 | 1.490 | PASS |
| Mains Voltage THD: | 0.15 % | 0.13 % | N/A | 0.19 % | 2.00 % | PASS |
| Real Power: | 0.126 W | 0.078 W | N/A | 0.170 W | N/A | N/A |
| Apparent Power: | 22.554 W | 22.512 W | N/A | 22.593 W | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| Power Factor: | 0.006 | N/A | N/A | N/A | N/A | N/A |

## Efficiency Graph

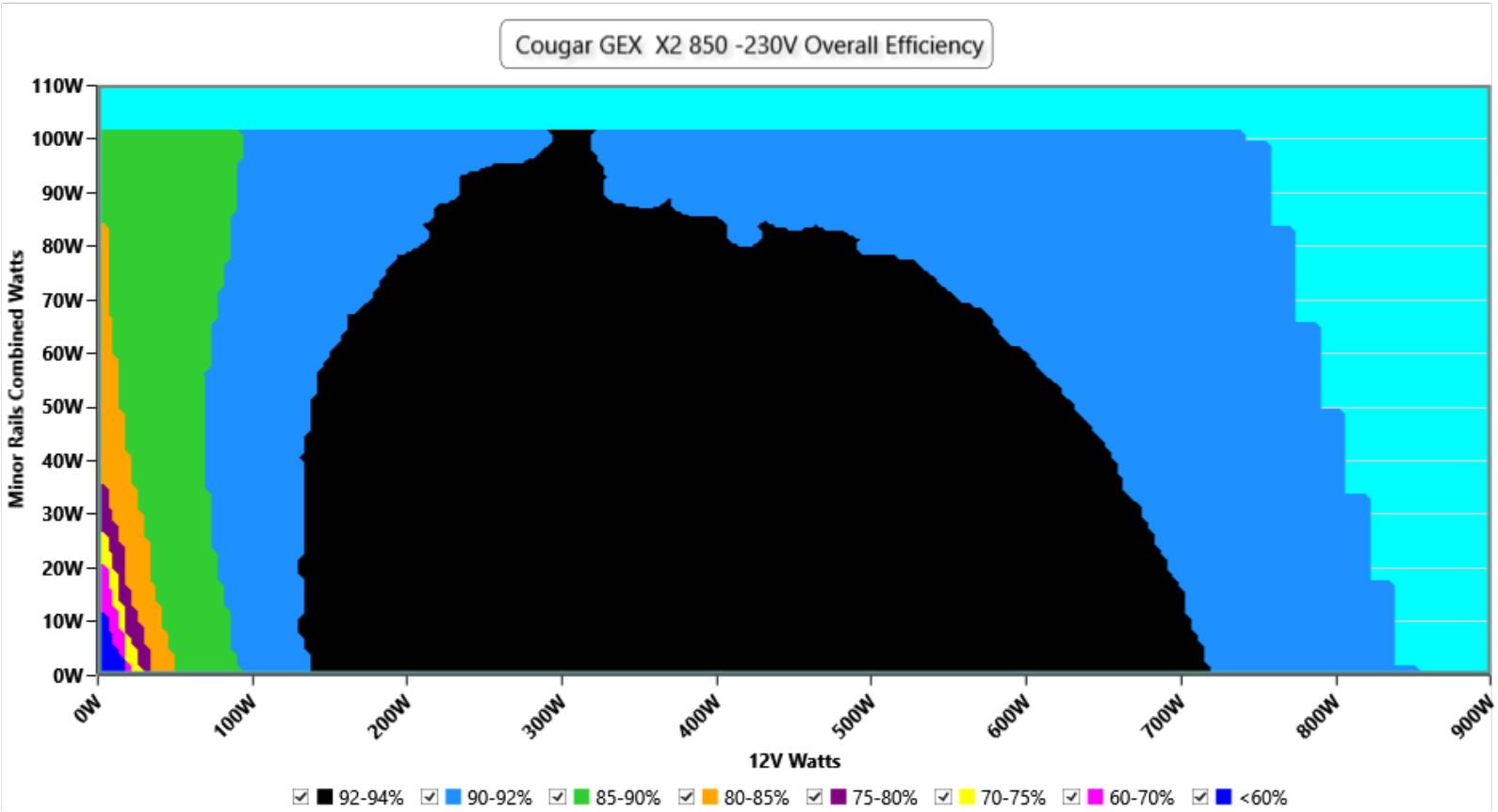
**115V**




**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

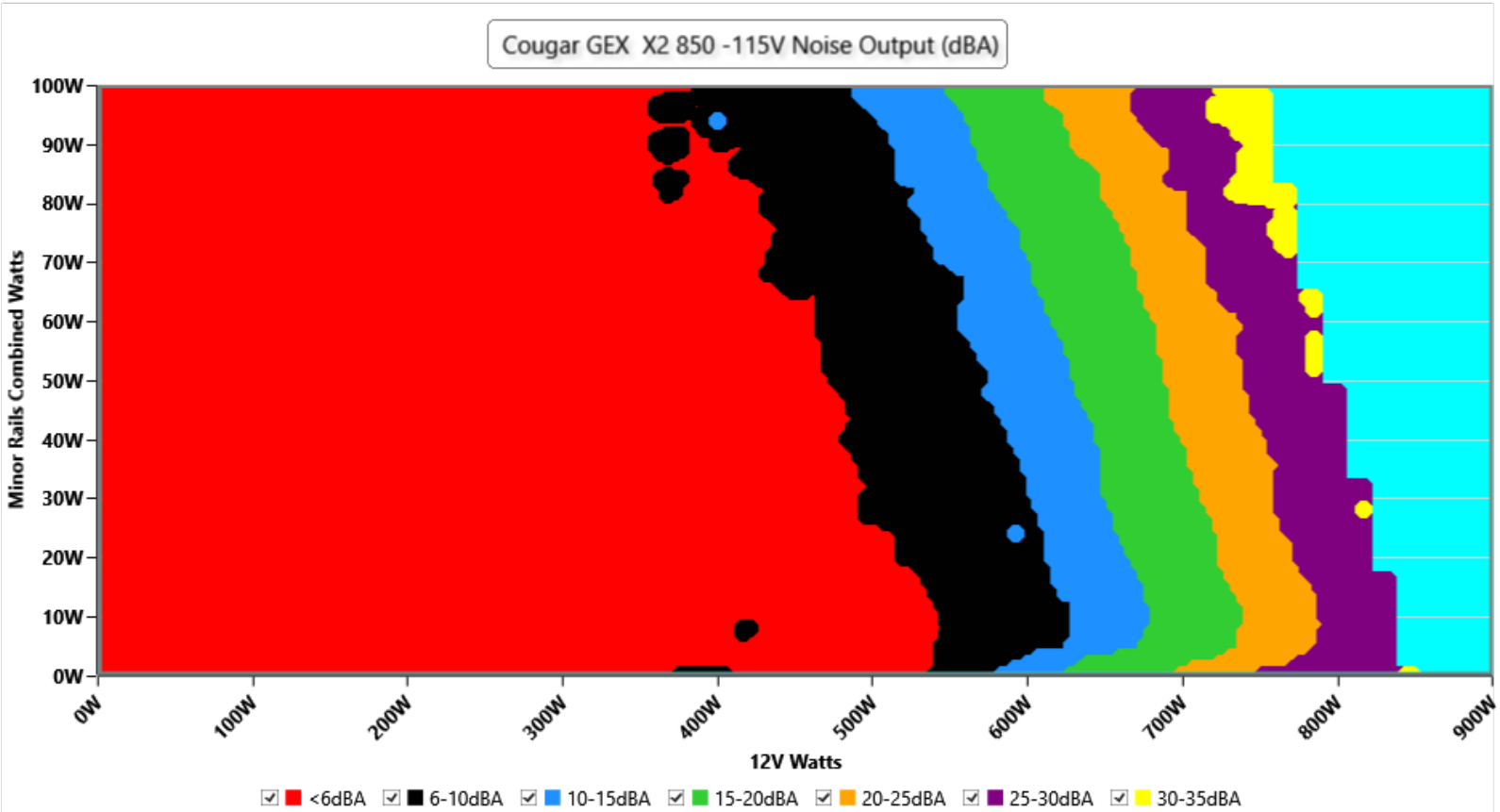



### INFO

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

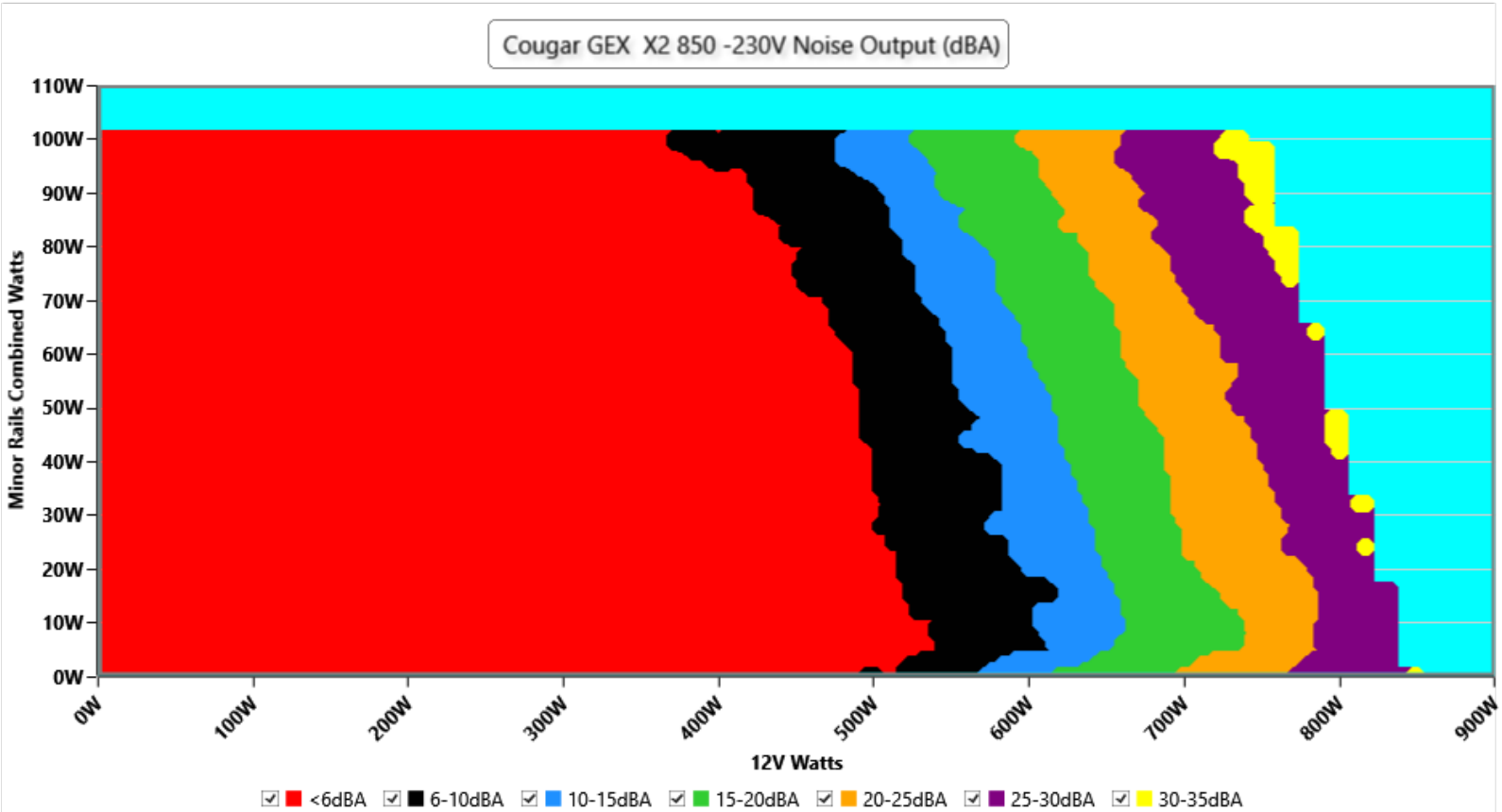
**115V**




**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

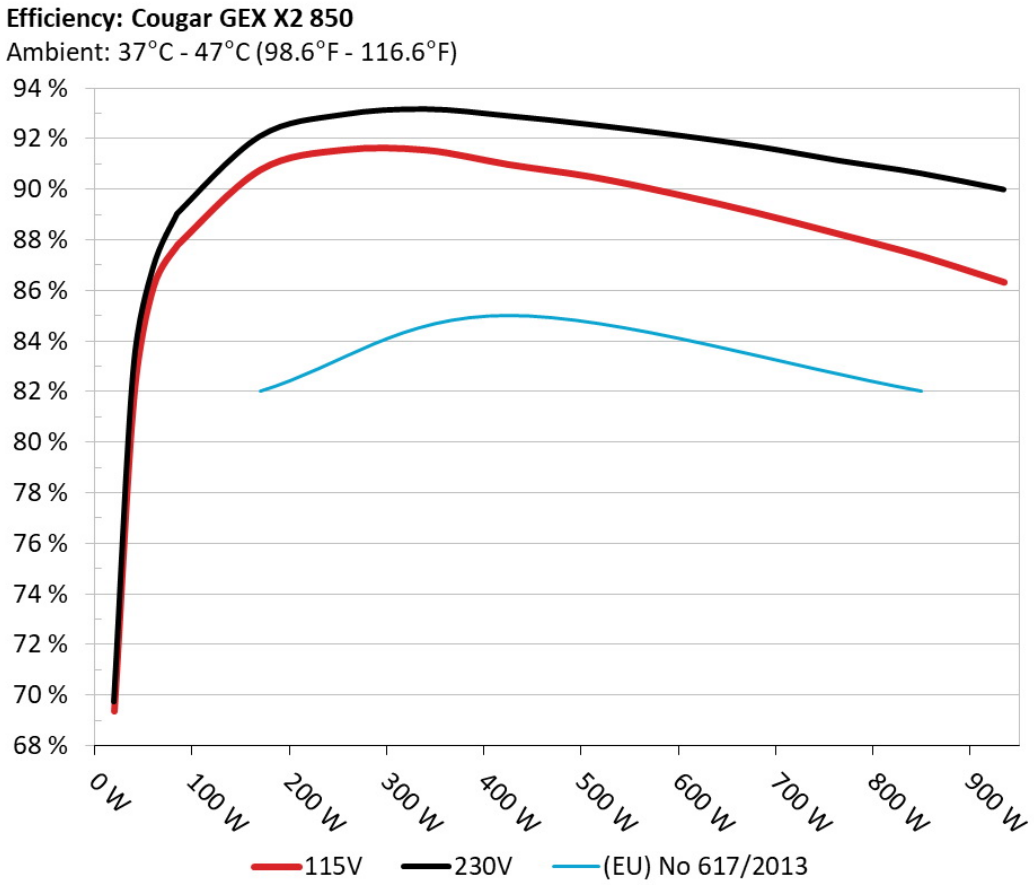



### INFO

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

## Indicative Performance

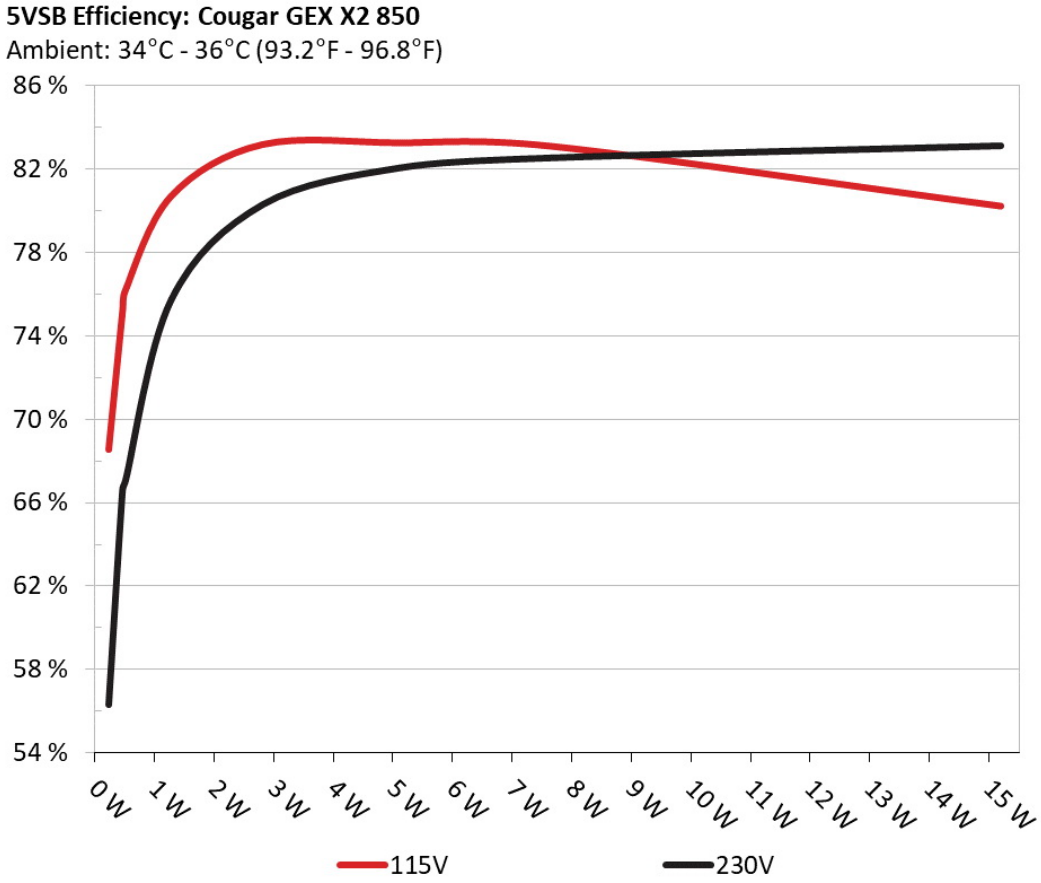
### Efficiency under high ambient temperature




**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 | 0.23W | 68.056% | 0.053 |
| | 5.115V | 0.338W | | 114.88V |
| 2 | 0.09A | 0.46W | 74.635% | 0.094 |
| | 5.114V | 0.616W | | 114.88V |
| 3 | 0.55A | 2.808W | 82.655% | 0.325 |
| | 5.106V | 3.398W | | 114.88V |
| 4 | 1A | 5.098W | 82.739% | 0.396 |
| | 5.098V | 6.162W | | 114.88V |
| 5 | 1.5A | 7.635W | 82.578% | 0.438 |
| | 5.09V | 9.245W | | 114.87V |
| 6 | 3A | 15.188W | 79.707% | 0.493 |
| | 5.063V | 19.055W | | 114.87V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| 1 | 0.045A | 0.23W | 55.822% | 0.019 |
| | 5.115V | 0.412W | | 229.77V |
| 2 | 0.09A | 0.46W | 66.084% | 0.032 |
| | 5.114V | 0.696W | | 229.77V |
| 3 | 0.55A | 2.808W | 79.797% | 0.146 |
| | 5.106V | 3.519W | | 229.77V |
| 4 | 1A | 5.098W | 81.558% | 0.225 |
| | 5.099V | 6.25W | | 229.77V |
| 5 | 1.5A | 7.635W | 82.041% | 0.286 |
| | 5.09V | 9.306W | | 229.77V |
| 6 | 3A | 15.189W | 82.621% | 0.37 |
| | 5.064V | 18.384W | | 229.77V |

## 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% | 5.332A | 1.986A | 1.979A | 0.982A | 84.992 | 87.776% | 0 | <6.0 | 44.54°C | 0.961 |
| | 11.888V | 5.033V | 3.334V | 5.09V | 96.831 | | | | 40.14°C | 114.85V |
| 20% | 11.691A | 2.982A | 2.971A | 1.181A | 169.92 | 90.779% | 0 | <6.0 | 45.68°C | 0.973 |
| | 11.892V | 5.03V | 3.332V | 5.079V | 187.179 | | | | 40.89°C | 114.82V |
| 30% | 18.409A | 3.48A | 3.467A | 1.381A | 254.916 | 91.566% | 0 | <6.0 | 46.39°C | 0.98 |
| | 11.890V | 5.029V | 3.331V | 5.07V | 278.398 | | | | 41.29°C | 114.79V |
| 40% | 25.131A | 3.979A | 3.964A | 1.581A | 339.998 | 91.56% | 0 | <6.0 | 47.26°C | 0.986 |
| | 11.890V | 5.027V | 3.33V | 5.06V | 371.335 | | | | 41.72°C | 114.77V |
| 50% | 31.475A | 4.975A | 4.958A | 1.782A | 424.783 | 90.99% | 396 | <6.0 | 42.04°C | 0.989 |
| | 11.891V | 5.025V | 3.328V | 5.05V | 466.843 | | | | 48.24°C | 114.73V |
| 60% | 37.808A | 5.969A | 5.953A | 1.984A | 509.299 | 90.506% | 745 | 17.4 | 42.6°C | 0.991 |
| | 11.889V | 5.026V | 3.326V | 5.04V | 562.729 | | | | 49.31°C | 114.7V |
| 70% | 44.225A | 6.965A | 6.949A | 2.187A | 594.647 | 89.835% | 1187 | 31.4 | 43.12°C | 0.992 |
| | 11.884V | 5.025V | 3.324V | 5.03V | 661.93 | | | | 50.17°C | 114.67V |
| 80% | 50.649A | 7.961A | 7.946A | 2.29A | 679.487 | 89.079% | 1717 | 41.8 | 43.56°C | 0.993 |
| | 11.878V | 5.025V | 3.322V | 5.022V | 762.793 | | | | 51.57°C | 114.63V |
| 90% | 57.481A | 8.458A | 8.431A | 2.393A | 764.892 | 88.233% | 2249 | 48.5 | 44.62°C | 0.994 |
| | 11.872V | 5.024V | 3.321V | 5.014V | 866.899 | | | | 53.69°C | 114.6V |
| 100% | 64.027A | 8.96A | 8.948A | 3.002A | 849.719 | 87.361% | 2266 | 48.5 | 45.12°C | 0.994 |
| | 11.870V | 5.022V | 3.319V | 4.997V | 972.648 | | | | 55.22°C | 114.56V |
| 110% | 70.426A | 9.962A | 10.038A | 3.006A | 934.322 | 86.326% | 2283 | 48.8 | 46.88°C | 0.995 |
| | 11.871V | 5.019V | 3.317V | 4.99V | 1082.315 | | | | 57.82°C | 114.53V |
| CL1 | 0.116A | 11.986A | 11.946A | 0A | 101.293 | 83.486% | 0 | <6.0 | 46.21°C | 0.974 |
| | 11.908V | 5.022V | 3.324V | 5.098V | 121.327 | | | | 40.73°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 | 0.116A | 19.972A | 0A | 0A | 101.342 | 81.808% | 462 | 7.3 | 40.68°C | 0.973 |
| | 11.910V | 5.005V | 3.329V | 5.101V | 123.875 | | | | 47.73°C | 114.83V |
| CL3 | 0.116A | 0A | 19.907A | 0A | 67.396 | 75.835% | 0 | <6.0 | 49.68°C | 0.956 |
| | 11.912V | 5.013V | 3.316V | 5.1V | 88.871 | | | | 40.58°C | 114.85V |
| CL4 | 71.576A | 0A | 0A | 0A | 849.53 | 87.907% | 2270 | 48.6 | 45.2°C | 0.994 |
| | 11.869V | 5.026V | 3.329V | 5.057V | 966.403 | | | | 56.01°C | 114.57V |

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% | 5.332A | 1.986A | 1.978A | 0.982A | 84.991 | 88.924% | 0 | <6.0 | 44.51°C | 0.844 |
| | 11.890V | 5.034V | 3.336V | 5.09V | 95.575 | | | | 40.24°C | 229.76V |
| 20% | 11.694A | 2.98A | 2.968A | 1.181A | 169.912 | 92.111% | 0 | <6.0 | 45.29°C | 0.929 |
| | 11.888V | 5.033V | 3.335V | 5.08V | 184.462 | | | | 40.55°C | 229.75V |
| 30% | 18.411A | 3.478A | 3.464A | 1.38A | 254.906 | 92.968% | 0 | <6.0 | 46.22°C | 0.954 |
| | 11.887V | 5.031V | 3.334V | 5.071V | 274.18 | | | | 41.02°C | 229.73V |
| 40% | 25.133A | 3.977A | 3.961A | 1.581A | 339.984 | 93.189% | 0 | <6.0 | 47.19°C | 0.967 |
| | 11.888V | 5.029V | 3.332V | 5.061V | 364.834 | | | | 41.64°C | 229.72V |
| 50% | 31.474A | 4.974A | 4.954A | 1.782A | 424.739 | 92.922% | 309 | <6.0 | 42.4°C | 0.973 |
| | 11.891V | 5.026V | 3.331V | 5.051V | 457.091 | | | | 48.48°C | 229.7V |
| 60% | 37.800A | 5.968A | 5.948A | 1.984A | 509.251 | 92.578% | 689 | 14.8 | 42.67°C | 0.979 |
| | 11.890V | 5.027V | 3.329V | 5.041V | 550.083 | | | | 49.27°C | 229.69V |
| 70% | 44.214A | 6.963A | 6.943A | 2.186A | 594.599 | 92.178% | 1145 | 30.4 | 43.31°C | 0.981 |
| | 11.885V | 5.027V | 3.327V | 5.031V | 645.057 | | | | 50.35°C | 229.67V |
| 80% | 50.635A | 7.959A | 7.938A | 2.289A | 679.436 | 91.718% | 1638 | 40.2 | 43.51°C | 0.983 |
| | 11.880V | 5.026V | 3.325V | 5.023V | 740.787 | | | | 51.58°C | 229.66V |
| 90% | 57.463A | 8.456A | 8.423A | 2.392A | 764.842 | 91.15% | 2247 | 48.5 | 44.06°C | 0.985 |
| | 11.875V | 5.025V | 3.324V | 5.015V | 839.098 | | | | 53.14°C | 229.64V |

| Test | 12V | 5V | 3.3V | 5VSB | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|---|
| 100% | 64.006A | 8.957A | 8.939A | 3.001A | 849.667 | 90.642% | 2268 | 48.6 | 45.35°C | 0.987 |
| | 11.874V | 5.023V | 3.323V | 4.998V | 937.383 | | | | 55.43°C | 229.62V |
| 110% | 70.398A | 9.96A | 10.028A | 3.005A | 934.278 | 90.003% | 2280 | 48.8 | 46.58°C | 0.988 |
| | 11.876V | 5.02V | 3.321V | 4.991V | 1038.053 | | | | 57.52°C | 229.61V |
| CL1 | 0.116A | 11.983A | 11.935A | 0A | 101.286 | 84.875% | 0 | <6.0 | 46.1°C | 0.879 |
| | 11.910V | 5.023V | 3.327V | 5.098V | 119.338 | | | | 40.59°C | 229.75V |
| CL2 | 0.116A | 19.968A | 0A | 0A | 101.338 | 83.063% | 377 | <6.0 | 40.43°C | 0.882 |
| | 11.912V | 5.006V | 3.332V | 5.101V | 121.995 | | | | 47.44°C | 229.75V |
| CL3 | 0.116A | 0A | 19.889A | 0A | 67.392 | 77.038% | 0 | <6.0 | 50.14°C | 0.826 |
| | 11.914V | 5.013V | 3.319V | 5.101V | 87.484 | | | | 41.11°C | 229.76V |
| CL4 | 71.566A | 0A | 0A | 0A | 849.501 | 91.159% | 2264 | 48.5 | 45.48°C | 0.986 |
| | 11.871V | 5.027V | 3.332V | 5.057V | 931.895 | | | | 56.45°C | 229.62V |

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 | 0.496A | 0.494A | 0.196A | 19.989 | 69.344% | 0 | <6.0 | 39.72°C | 0.859 |
| | 12.048V | 5.036V | 3.336V | 5.109V | 28.824 | | | | 36.65°C | 114.87V |
| 40W | 2.748A | 0.695A | 0.693A | 0.294A | 39.989 | 81.73% | 0 | <6.0 | 41.01°C | 0.925 |
| | 11.890V | 5.034V | 3.335V | 5.106V | 48.932 | | | | 37.57°C | 114.86V |
| 60W | 4.250A | 0.893A | 0.89A | 0.392A | 59.989 | 86.126% | 0 | <6.0 | 42.24°C | 0.945 |
| | 11.888V | 5.035V | 3.335V | 5.103V | 69.652 | | | | 38.43°C | 114.86V |
| 80W | 5.746A | 1.092A | 1.088A | 0.49A | 79.926 | 87.807% | 0 | <6.0 | 43.33°C | 0.956 |
| | 11.888V | 5.034V | 3.335V | 5.099V | 91.022 | | | | 39.37°C | 114.85V |

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 | 0.496A | 0.494A | 0.196A | 19.989 | 69.724% | 0 | <6.0 | 39.58°C | 0.563 |
| | 12.041V | 5.037V | 3.339V | 5.109V | 28.667 | | | | 36.52°C | 229.77V |
| 40W | 2.748A | 0.695A | 0.692A | 0.294A | 39.989 | 82.915% | 0 | <6.0 | 40.29°C | 0.694 |
| | 11.889V | 5.036V | 3.338V | 5.106V | 48.229 | | | | 37.03°C | 229.77V |
| 60W | 4.250A | 0.893A | 0.89A | 0.392A | 59.987 | 86.88% | 0 | <6.0 | 41.47°C | 0.778 |
| | 11.887V | 5.036V | 3.338V | 5.103V | 69.048 | | | | 38°C | 229.76V |
| 80W | 5.746A | 1.092A | 1.087A | 0.49A | 79.924 | 89.053% | 0 | <6.0 | 42.89°C | 0.832 |
| | 11.887V | 5.036V | 3.337V | 5.099V | 89.749 | | | | 39.11°C | 229.76V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 17.14mV | 13.69mV | 15.19mV | 9.26mV | Pass |
| 20% Load | 18.96mV | 13.64mV | 14.88mV | 8.49mV | Pass |
| 30% Load | 15.74mV | 14.31mV | 16.42mV | 9.00mV | Pass |
| 40% Load | 15.54mV | 14.61mV | 14.78mV | 9.77mV | Pass |
| 50% Load | 16.41mV | 16.30mV | 16.63mV | 10.54mV | Pass |
| 60% Load | 15.23mV | 15.63mV | 16.63mV | 10.43mV | Pass |
| 70% Load | 14.69mV | 16.04mV | 16.98mV | 11.30mV | Pass |
| 80% Load | 16.22mV | 17.58mV | 17.90mV | 11.92mV | Pass |
| 90% Load | 16.68mV | 18.65mV | 18.57mV | 11.15mV | Pass |
| 100% Load | 27.86mV | 18.79mV | 19.84mV | 12.82mV | Pass |
| 110% Load | 27.79mV | 19.39mV | 17.99mV | 12.06mV | Pass |
| Crossload1 | 29.95mV | 21.54mV | 20.35mV | 15.99mV | Pass |
| Crossload2 | 17.58mV | 31.27mV | 22.81mV | 15.70mV | Pass |

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| Crossload3 | 14.46mV | 20.18mV | 20.98mV | 15.60mV | Pass |
| Crossload4 | 26.29mV | 15.83mV | 15.42mV | 17.42mV | Pass |

The results above are not used in the certification process

**230V**

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 16.10mV | 11.85mV | 11.00mV | 8.90mV | Pass |
| 20% Load | 19.22mV | 11.85mV | 11.41mV | 9.05mV | Pass |
| 30% Load | 16.51mV | 11.96mV | 11.56mV | 9.16mV | Pass |
| 40% Load | 16.47mV | 13.74mV | 12.63mV | 9.72mV | Pass |
| 50% Load | 17.12mV | 15.12mV | 13.15mV | 10.59mV | Pass |
| 60% Load | 16.63mV | 13.95mV | 13.66mV | 10.43mV | Pass |
| 70% Load | 17.55mV | 13.95mV | 13.61mV | 11.46mV | Pass |
| 80% Load | 16.37mV | 15.38mV | 18.01mV | 11.30mV | Pass |
| 90% Load | 16.53mV | 17.07mV | 16.52mV | 11.87mV | Pass |
| 100% Load | 26.84mV | 19.59mV | 19.73mV | 13.27mV | Pass |
| 110% Load | 28.04mV | 19.34mV | 21.43mV | 12.92mV | Pass |
| Crossload1 | 22.45mV | 19.47mV | 20.30mV | 15.84mV | Pass |
| Crossload2 | 15.69mV | 31.22mV | 22.66mV | 15.65mV | Pass |
| Crossload3 | 13.59mV | 18.80mV | 21.64mV | 14.98mV | Pass |
| Crossload4 | 26.16mV | 14.01mV | 14.73mV | 16.19mV | Pass |

The results above are not used in the certification process

# Cougar GEX X2 850

Top side

| MODEL NO. 型號 / 型号 | GEX X2 850 | | | | |
|---|---|---|---|---|---|
| AC INPUT 交流輸入 / 交流输入 | 100-240V~ 50-60Hz 12-6A (200-240V~ 6A 50Hz 仅限中国地区使用) | | | | |
| DC OUTPUT 直流輸出 / 直流输出 | +3.3V | +5V | +12V | -12V | +5Vsb |
| MAX. A 最大電流 / 最大电流 | 20A | 20A | 70.8A | 0.3A | 3A |
| COMBINED 最大瓦特數 / 最大瓦特数 | 100W | | 850W | 3.6W | 15W |
| TOTAL MAX. OUTPUT POWER 總功率 / 总功率 | 850W | | | | |

CAN ICES-003(B)/NMB-003(B)

CAUTION! 警告

HAZARDOUS VOLTAGE INSIDE. / 內有危險电壓 / 內有危險电压 / Tension dangereuse à l'intérieur
DO NOT OPEN POWER SUPPLY UNIT. / 請勿打開機殼 / 请勿打开机壳 / Ne pas ouvrir l' alimentation
SELECT THE RIGHT INPUT VOLTAGE. / 選擇正確的輸入電壓 / 选择正确的输入电压 / Sélectionnez la bonne tension d'entrée
WARRANTY VOID IF SECURITY SEAL IS DAMAGED,REMOVED,OR LOST. / 如果封條黏紙被移動,遺失或損壞,本開關電源保固將失效/如果封条粘纸被移动,遗失或损坏,本开关电源保固将失效 / Annulation de la garantie si le sceau est endommagé, retiré ou perdu • attention ne pas ouvrir l' alimentation
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Switching Power Supply

GEX 850

REAL GEAR FOR REAL GAMERS

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