# Corsair SF850L

Serial Number 22304850000001500307

Lab ID CR85002091

Certification ID 252091

Test Result Report ID: 22PS2091A

Certificate Issue Date: Nov 23, 2022

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 | Corsair |
| Model | SF850L |
| OEM/ODM | Great Wall |
| Serial Number | 22304850000001500307 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |
| Rated Current (Arms) | 10-5 |

| | |
|---|---|
| Rated Frequency (Hz) | 47-63 |
| Rated Power (W) | 850 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | SFX-L |
| Cable Design | Fully Modular |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 120mm Fluid Dynamic Bearing Fan<br>(NR1215) |
| Semi-Passive Operation | ✓ |
| Cybenetics Testing Information | |
| Lab ID | CR85002091 |
| Date of receipt | Nov 11, 2022 |
| Testing Date | Nov 22, 2022 |
| Report Issued Date | Nov 23, 2022 |
| 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 (300mm) | 1 | 1 | 16-20AWG | No |
| 4+4 pin EPS12V (400mm) | 2 | 2 | 16AWG | No |
| 12+2 pin PCIe (410mm) (600W) | 1 | 1 | 16-24AWG | No |
| 6+2 pin PCIe (410mm) | 2 | 2 | 16AWG | No |
| 6+2 pin PCIe (400mm+100mm) | 1 | 2 | 16-18AWG | No |
| SATA (110mm+115mm+115mm+115mm) | 2 | 8 | 18AWG | No |
| 4 pin Molex (100mm+110mm+110mm) | 1 | 3 | 18AWG | No |

| | | | | | |
|---|---|---|---|---|---|
| AC Power Cord (1380mm) - C13 coupler | 1 | 1 | 18AWG | - | |

## Power Specifications

| Rail | | 3.3V | 5V | 12V | 5VSB | -12V |
|---|---|---|---|---|---|---|
| Max. Power | Amps | 20 | 20 | 70.8 | 3 | 0 |
| | Watts | 150 | | 850 | 15 | 0 |
| Total Max. Power (W) | | 850 | | | | |

## Parts Description

| General Data | |
|---|---|
| Manufacturer (OEM) | Great Wall |
| PCB Type | Double Sided |
| Primary Side | |
| Transient Filter | 4x Y caps, 2x X caps, 3x CM chokes, 1x MOV |
| Inrush Protection | 1x NTC Thermistor SCK-056 (5 Ohm) & Relay |
| Bridge Rectifier(s) | 2x Shindengen US30KB8R (800V, 10A @ 97°C) |
| APFC MOSFETs | 1xVishay SiHG065N60E (600V, 25A @ 100°C, Rds(on): 0.065Ohm) |
| APFC Boost Diode | 1x ROHM SCS310AH (650V, 10A @ 135°C) |
| Bulk Cap(s) | 2x Rubycon (420V, 470uF & 330uF each or 800uf combined, 3,000h @ 105°C, MXK) |
| Main Switchers | 2x On Semiconductor FCP104N60F (600V, 24A @ 100°C, Rds(on): 0.104Ohm) |
| Driver IC | 1x NOVOSENSE NSi6602BD |
| APFC Controller | Champion CM6502UHHX |
| Resonant Controller | Champion CM6901X |
| Topology | Primary side: APFC, Half-Bridge & LLC converter<br>Secondary side: Synchronous Rectification & DC-DC converters |
| Secondary Side | |
| +12V MOSFETs | 6x Infineon BSC014N04LS (40V, 125A @ 100°C, Rds(on): 1.4mOhm) |
| 5V & 3.3V | DC-DC Converters: 4x Advanced Power AP4024GEMT (30V, 60A, Rds(on): 4.5mOhm)<br>PWM Controller(s): ANPEC APW7159C |
| Filtering Capacitors | Electrolytic: 2x Rubycon (3-6,000h @ 105°C, YXG), 2x Rubycon (4-10,000h @ 105°C, YXF),<br>Polymer: 9x NIC, 3x United Chemi-Con, 20x FPCAP, 4x Nichicon |
| Supervisor IC | IN1S429I-SCG (OCP,OVP, UVP, SCP, PG) |

| | |
|---|---|
| Fan Controller | Microchip PIC16F1824 |
| Fan Model | Corsair NR1215 (120mm, 12V, 0.55A, Fluid Dynamic Bearing Fan) |

5VSB Circuit

# Test Results

## Temperature & Compliance Info

| | |
|---|---|
| Temperature Range (°C /°F) | 28-32 / 82.4-89.6 |
| ErP Lot 3/6 Ready | ✓ |
| (EU) No 617/2013 Compliance | ✓ |
| ALPM (Alternative Low Power Mode) compatible | ✓ |
| ATX v3.0 Compliance | ✓ |

## Performance Summary

### 115V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 90.577% |
| Average Noise Output (>1450 Load Combinations) | 36.09dBA |
| Average PF (>1450 Load Combinations) | 0.984 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 74.797% |
| Standby Power Consumption | 0.0501W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 16.44mV |
| 5V Ripple (Full Load) | 11.99mV |
| 3.3V Ripple (Full Load) | 12.50mV |
| 5VSB Ripple (Full Load) | 12.56mV |
| 12V Load Regulation | 0.06% |
| 5V Load Regulation | 0.34% |
| 3.3V Load Regulation | 0.54% |
| 5VSB Load Regulation | 2.31% |
| Inrush Current | 32.390A |

### 230V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 92.333% |