# Seasonic S12III-650

Serial Number R2002RA1C5251091

Lab ID SS65001679

Certification ID 251679

Test Result Report ID: 20PS1679A

Certificate Issue Date: Jul 17, 2020

Scheme: ETA-EMI PSU

115V

230V

115V

230V

Scheme: LAMBDA PSU

Aristeidis Bitziopoulos, Certification Body General Manager

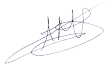
# General Information

## 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 | Seasonic |
| Model | S12III-650 |
| OEM/ODM | Seasonic |
| Serial Number | R2002RA1C5251091 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 110-240 |
| Rated Current (Arms) | 10-5 |
| Rated Frequency (Hz) | 50-60 |

| | |
|---|---|
| Rated Power (W) | 650 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | ATX12V |
| Cable Design | Fixed cables |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 120mm Rifle Bearing Fan (DF1202512SEHN) |
| Semi-Passive Operation | ✗ |
| Cybenetics Testing Information | |
| Lab ID | SS65001679 |
| Date of receipt | Jul 7, 2020 |
| Testing Date | Jul 10, 2020 |
| Report Issued Date | Jul 17, 2020 |
| Engineer Name | - |
| Authorized By the Laboratory Technical Manager | Aristeidis Bitziopoulos |
| Signature |  |

## Cables and Connectors(Non-accredited measurements)

| Native Cables | | | | |
|---|---|---|---|---|
| Description | Cable Count | Connector Count (Total) | Gauge | In Cable Caps |
| ATX connector 20+4 pin (550mm) | 1 | 1 | 18-24AWG | No |
| 4+4 pin EPS12V (610mm) | 1 | 1 | 18AWG | No |
| 6+2 pin PCIe (550mm+150mm) | 2 | 4 | 18-22AWG | No |
| SATA (580mm+125mm+125mm) | 1 | 3 | 20AWG | No |
| SATA (450mm+125mm+125mm) | 1 | 3 | 20AWG | No |
| 4-pin Molex (450mm+120mm+120mm) / FDD(+120mm) | 1 | 3 / 1 | 20AWG | No |
| Modular Cables | | | | |
| AC Power Cord (1100mm) - C13 coupler | 1 | 1 | 18AWG | - |

## Power Specifications

| Rail | | 3.3V | 5V | 12V | 5VSB | -12V |
|---|---|---|---|---|---|---|
| Max. Power | Amps | 20 | 20 | 54 | 2.5 | 0.3 |
| | Watts | 100 | | 648 | 12.5 | 3.6 |
| Total Max. Power (W) | | 650 | | | | |

## Parts Description

| | |
|---|---|
| General Data | - |
| Manufacturer (OEM) | Seasonic |
| PCB Type | Single Sided |
| Primary Side | - |
| Transient Filter | 4x Y caps, 5x X caps, 2x CM chokes, 1x MOV |
| Inrush Protection | NTC Thermistor 5D-11 & Relay |
| Bridge Rectifier(s) | 1x HY GBU1506 (600V, 15A @ 100°C) |
| APFC MOSFETs | 2x Oriental Semiconductor OSG55R140F (550V, 14.5A @ 100°C, Rds(on): 0.14Ohm) |
| APFC Boost Diode | 1x WeEn BYC15-600P (600V, 15A @ 121°C) |
| Bulk Cap(s) | 1x Teapo (400V, 470uF, 2,000h @ 85°C, LH) |
| Main Switchers | 2x SI23N50F |
| APFC Controller | Infineon ICE2PCS01G |
| Resonant Controller | MPS HR1000A |
| Topology | Primary side: APFC, Half-Bridge & LLC converter<br>Secondary side: Group Regulation & Passive Rectification |
| Secondary Side | - |
| +12V & 5V SBRs | 2x MHCHXM EBR60L45PT (45V, 60A) |
| 3.3V SBRs | 2x MHCHXM EBR3EL45 |
| Filtering Capacitors | Electrolytic: 14x Teapo (1-3,000h @ 105°C, SC)<br>Polymer: - |
| Supervisor IC | Grenergy GR8313 (OVP, UVP, PG) |
| Fan Model | DF1202512SEHN (120mm, 12V, 0.23A, Rifle Bearing Fan) |
| 5VSB Circuit | - |
| Rectifier | 1x JX MBR1060CT SBR (60V, 10A) |

| | |
|---|---|
| Standby PWM Controller | Excelliance MOS EM8564A |
| -12V | - |
| Rectifier | 1x STMicroelectronics L7912CV (-12V, 1.5A) |

# 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 | ✓ |

## Performance Summary

### 115V

| | |
|---|---|
| Accredited | |
| Average Efficiency (>1450 load combinations) | 83.683% |
| Average Noise Output (>1450 Load Combinations) | 38.63dBA |
| Average PF (>1450 Load Combinations) | 0.993 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 59.867% |
| Standby Power Consumption | 0.0382W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 50.89mV |
| 5V Ripple (Full Load) | 24.45mV |
| 3.3V Ripple (Full Load) | 36.72mV |
| 5VSB Ripple (Full Load) | 19.31mV |
| 12V Load Regulation | 0.26% |
| 5V Load Regulation | 0.25% |
| 3.3V Load Regulation | 0.69% |
| 5VSB Load Regulation | 2.34% |
| Inrush Current | 29.620A |

| 230V | | |
|---|---|---|
| Accredited | | |
| Average Efficiency (>1450 load combinations) | | 86.091% |
| Average Noise Output (>1450 Load Combinations) | | 38.28dBA |
| Average PF (>1450 Load Combinations) | | 0.949 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | | - |
| Standby Power Consumption | | 0.0786W |
| Non-Accredited | | |
| 12V Ripple (Full Load) | | 56.69mV |
| 5V Ripple (Full Load) | | 24.89mV |
| 3.3V Ripple (Full Load) | | 35.85mV |
| 5VSB Ripple (Full Load) | | 18.50mV |
| 12V Load Regulation | | 0.37% |
| 5V Load Regulation | | 0.31% |
| 3.3V Load Regulation | | 0.57% |
| 5VSB Load Regulation | | 2.40% |
| Inrush Current | | 98.720A |
| Hold-Up Time & PWR_OK Signal | | 14.40ms |
| AC Loss to PWR_OK Hold Up Time | | 18.00ms |
| PWR_OK Inactive to DC Loss Delay | | -3.60ms |
| PSU Timings: T1 (20% / 100%) | 65.0ms | 61.0ms |
| PSU Timings: T3 (20% / 100%) | 291.0ms | 289.0ms |
| OPP (24.00°C / 0.00°C) | 133.49% | - |

## Hold-Up Time & PWR_OK Signal

| | |
|---|---|
| Hold-Up Time (ms) | 14.4 |
| AC Loss to PWR_OK Hold Up Time (ms) | 18 |
| PWR_OK Inactive to DC Loss Delay (ms) | -3.6 |

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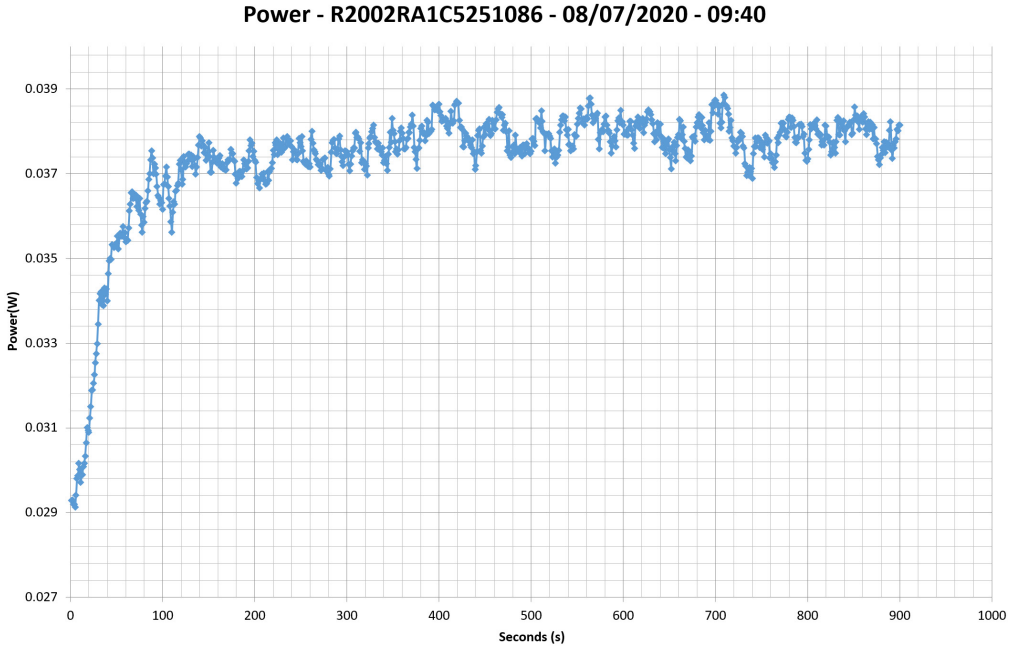
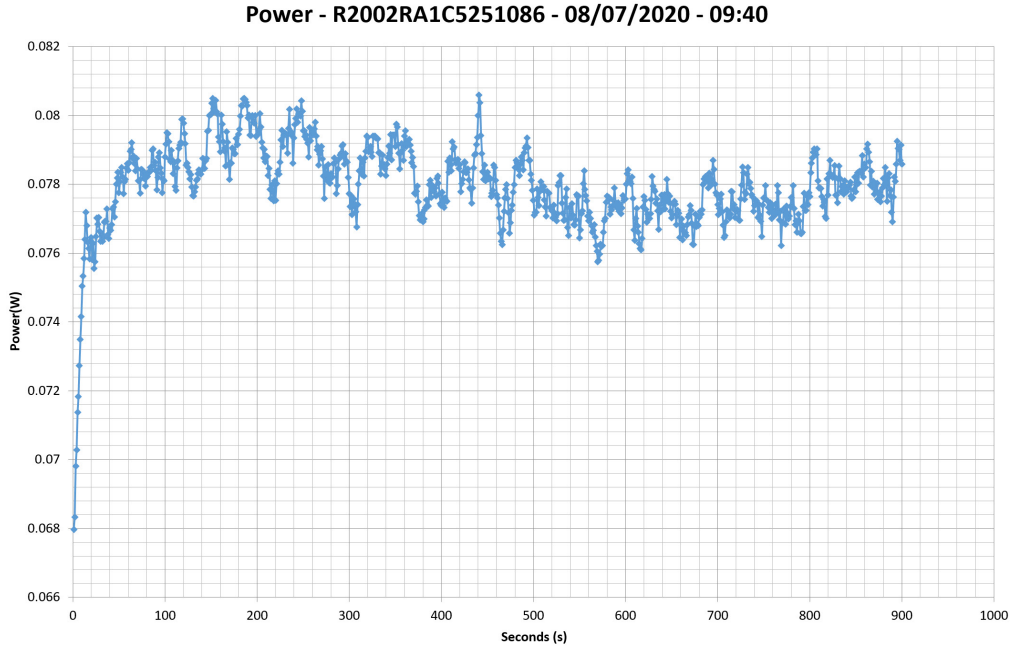
## Graphs

### 115V

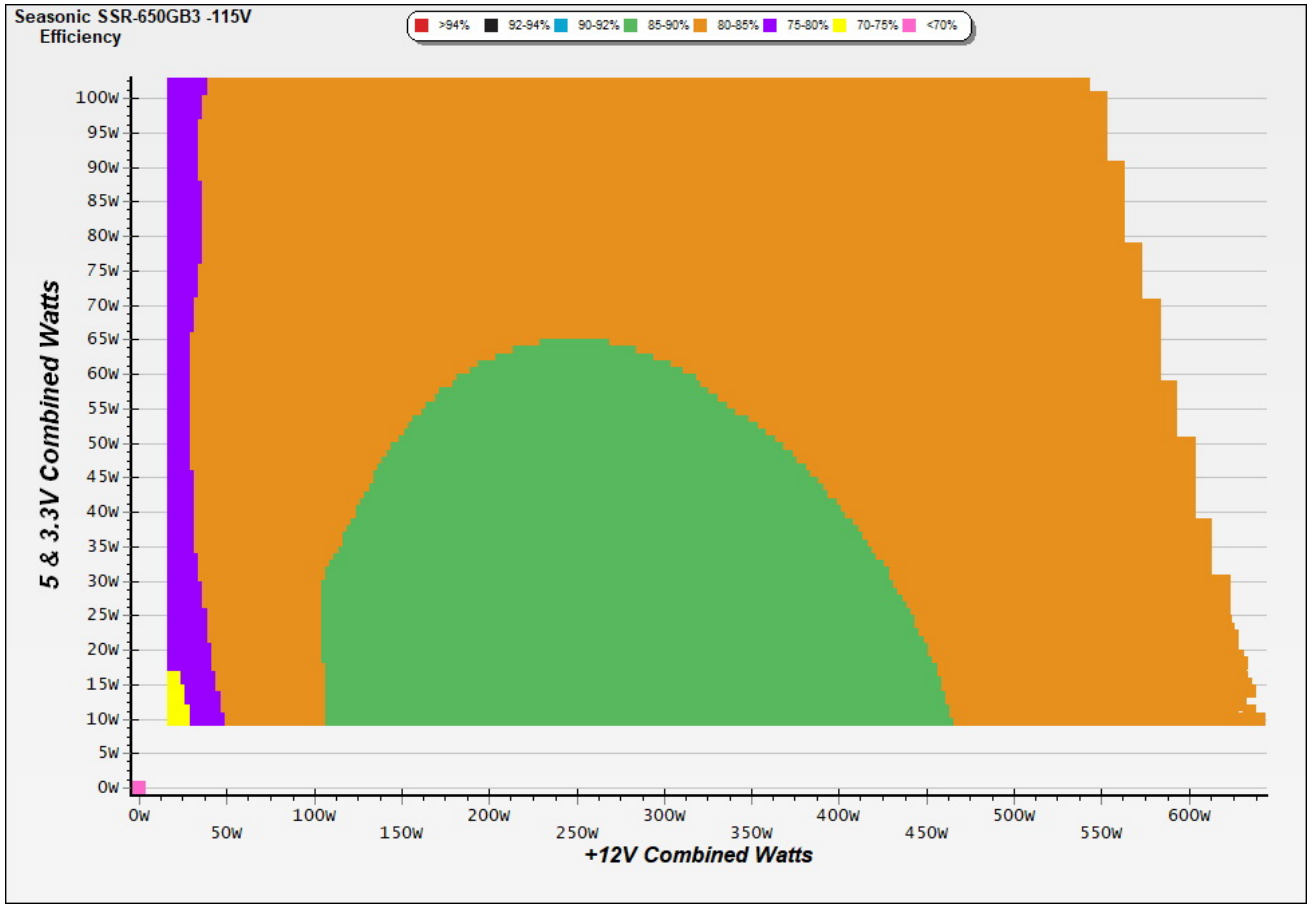



### 230V



# Efficiency Graph

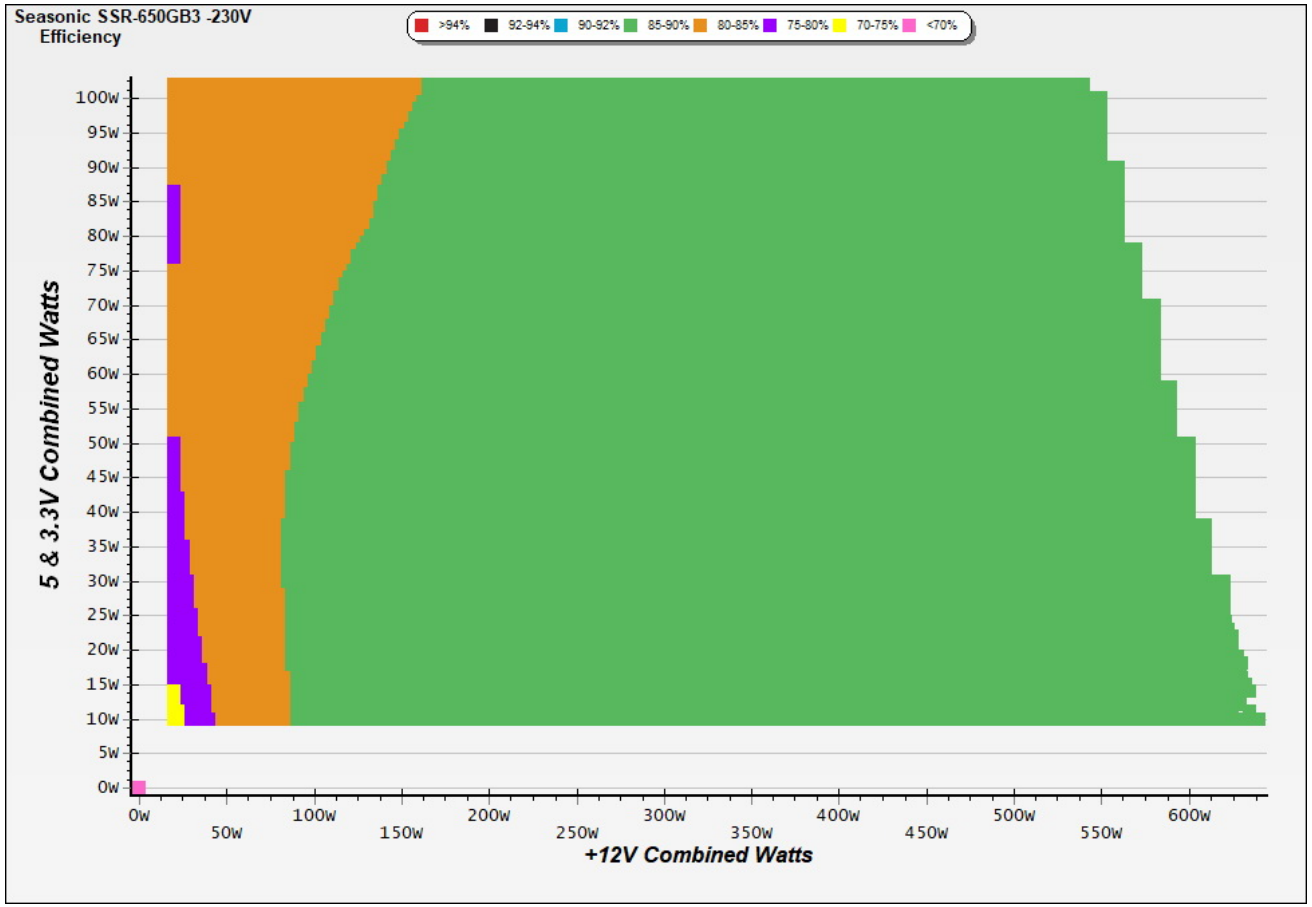
**115V**




**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

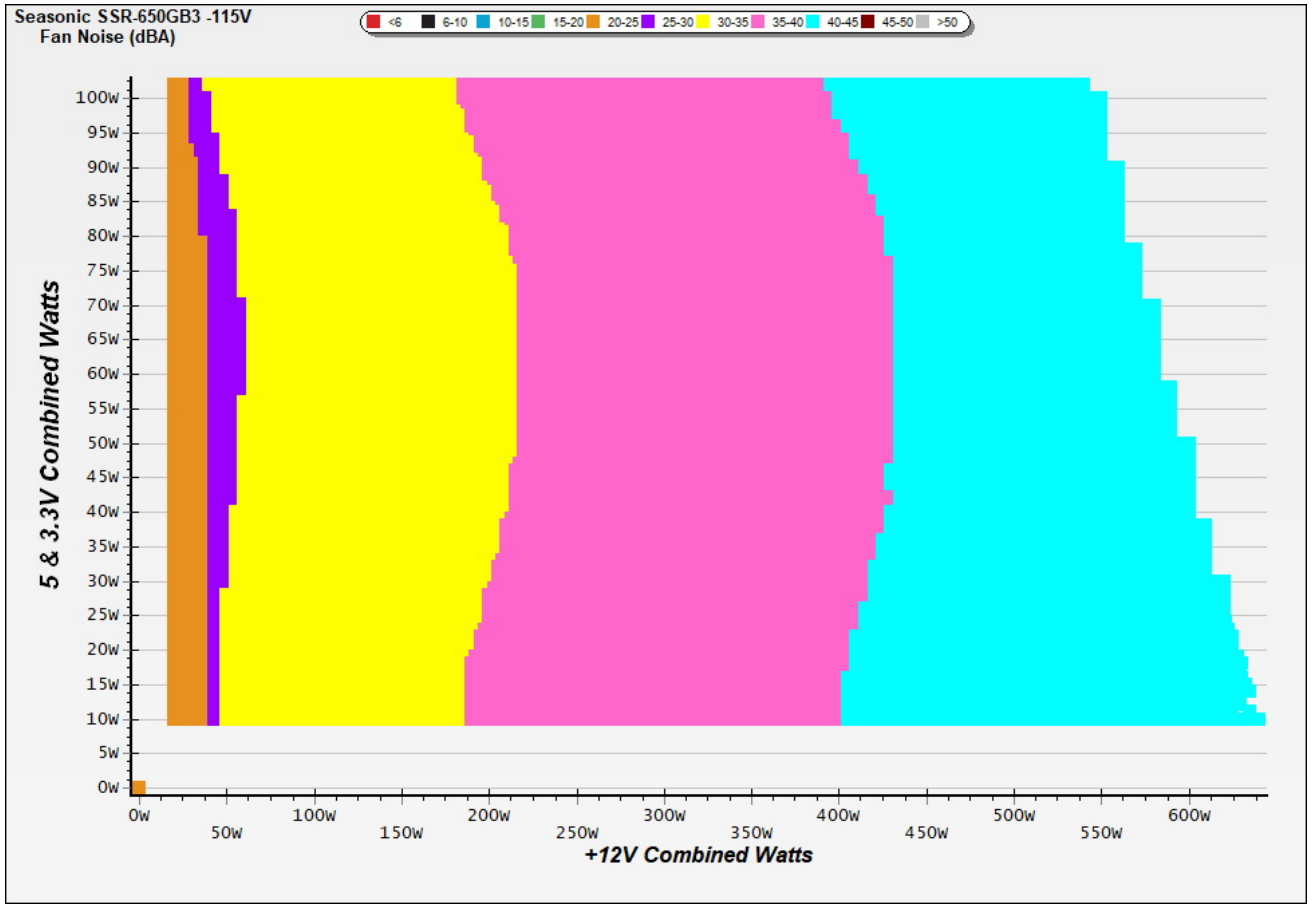



### INFO

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

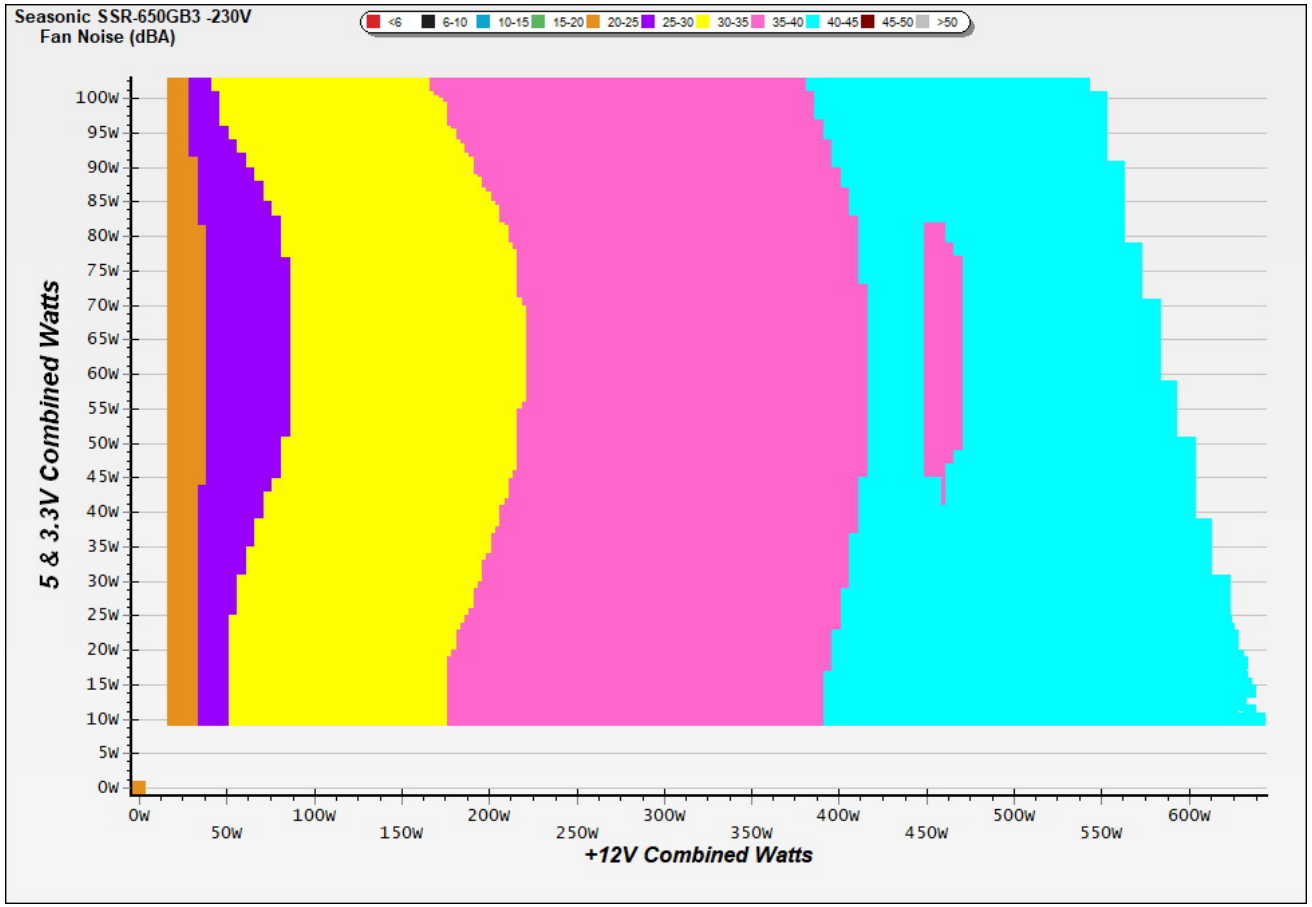
## 115V




### 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

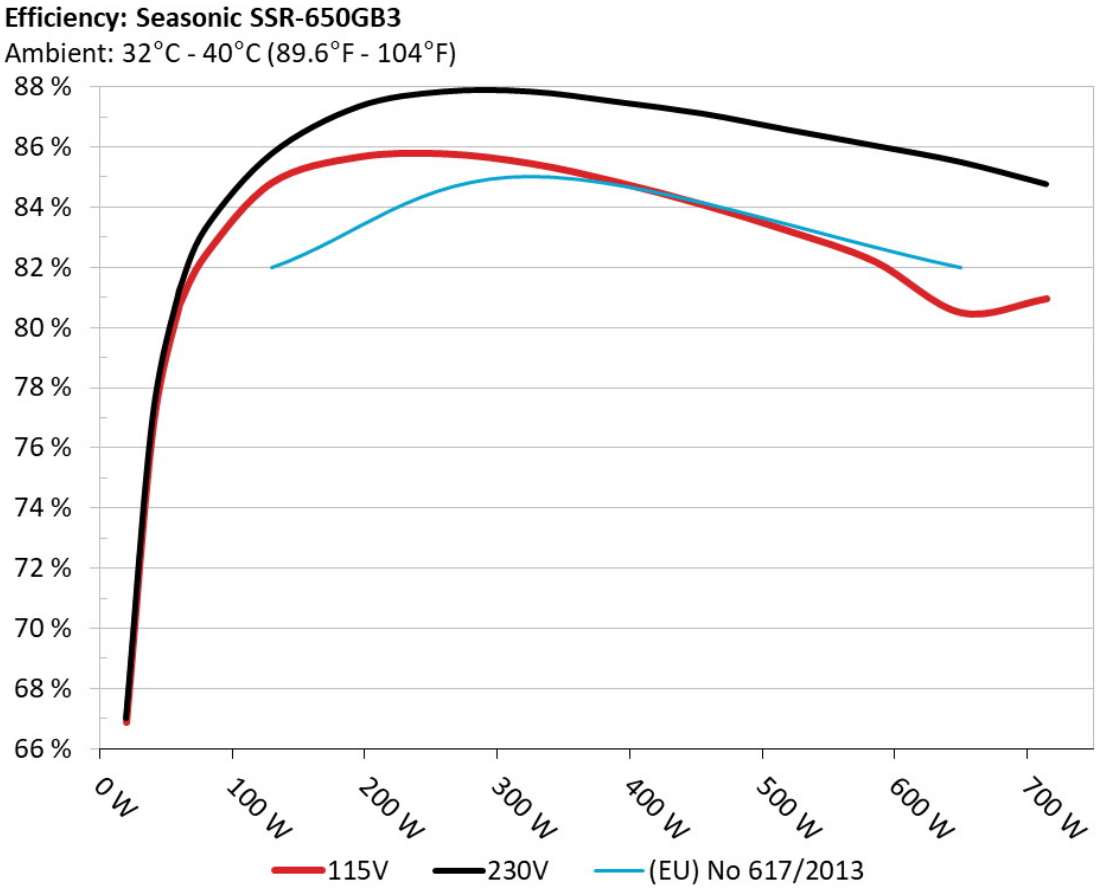



### INFO

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

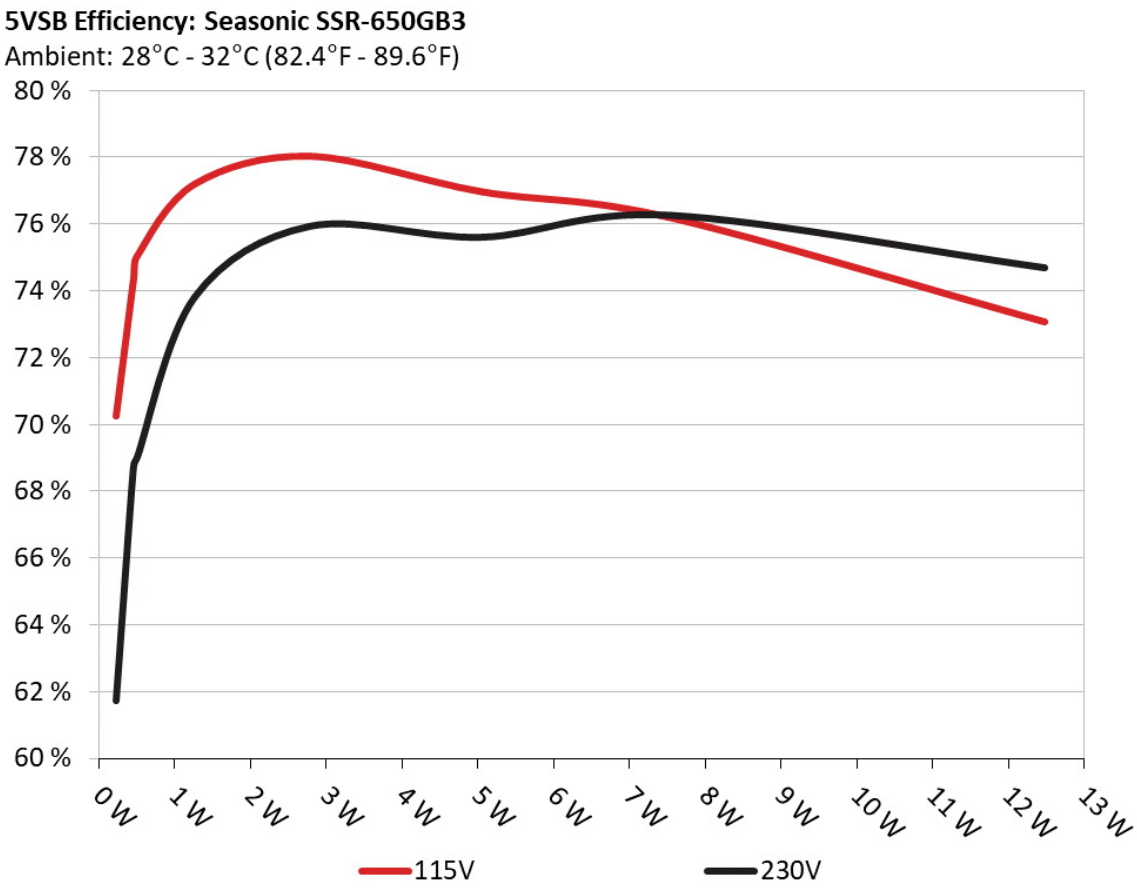
### Efficiency under high ambient temperature




**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 | 0.229 | 70.245% | 0.015 |
| | 5.083V | 0.326 | | 115.17V |
| 2 | 0.090A | 0.457 | 74.309% | 0.028 |
| | 5.082V | 0.615 | | 115.16V |
| 3 | 0.550A | 2.786 | 78.017% | 0.151 |
| | 5.066V | 3.571 | | 115.16V |
| 4 | 1.000A | 5.049 | 76.955% | 0.248 |
| | 5.050V | 6.561 | | 115.17V |
| 5 | 1.500A | 7.548 | 76.173% | 0.324 |
| | 5.032V | 9.909 | | 115.16V |
| 6 | 2.499A | 12.474 | 73.063% | 0.416 |
| | 4.991V | 17.073 | | 115.16V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| 1 | 0.045A | 0.229 | 61.725% | 0.005 |
| | 5.082V | 0.371 | | 230.30V |
| 2 | 0.090A | 0.457 | 68.722% | 0.009 |
| | 5.081V | 0.665 | | 230.30V |
| 3 | 0.550A | 2.786 | 75.933% | 0.049 |
| | 5.066V | 3.669 | | 230.30V |
| 4 | 1.000A | 5.049 | 75.606% | 0.087 |
| | 5.050V | 6.678 | | 230.30V |
| 5 | 1.500A | 7.547 | 76.263% | 0.126 |
| | 5.032V | 9.896 | | 230.30V |
| 6 | 2.499A | 12.485 | 74.693% | 0.197 |
| | 4.995V | 16.715 | | 230.30V |

# 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.589A | 1.949A | 1.982A | 0.991A | 64.954 | 80.767% | 1064 | 27.2 | 34.28°C | 0.945 |
| | 12.081V | 5.130V | 3.328V | 5.046V | 80.421 | | | | 37.43°C | 115.16V |
| 2 | 8.205A | 2.924A | 2.975A | 1.192A | 130.008 | 84.822% | 1247 | 32.2 | 34.84°C | 0.984 |
| | 12.080V | 5.129V | 3.325V | 5.035V | 153.271 | | | | 38.32°C | 115.16V |
| 3 | 13.168A | 3.413A | 3.477A | 1.393A | 195.006 | 85.667% | 1391 | 35.5 | 35.12°C | 0.992 |
| | 12.071V | 5.128V | 3.323V | 5.025V | 227.633 | | | | 39.12°C | 115.16V |
| 4 | 18.133A | 3.901A | 3.974A | 1.596A | 260.007 | 85.776% | 1532 | 37.3 | 35.80°C | 0.995 |
| | 12.067V | 5.126V | 3.321V | 5.014V | 303.122 | | | | 40.81°C | 115.16V |
| 5 | 22.755A | 4.879A | 4.970A | 1.799A | 325.041 | 85.451% | 1630 | 38.7 | 36.02°C | 0.996 |
| | 12.065V | 5.125V | 3.319V | 5.004V | 380.385 | | | | 42.01°C | 115.16V |
| 6 | 27.314A | 5.857A | 5.971A | 2.000A | 389.336 | 84.845% | 1730 | 40.2 | 36.72°C | 0.997 |
| | 12.065V | 5.123V | 3.316V | 4.993V | 458.880 | | | | 43.81°C | 115.15V |
| 7 | 31.962A | 6.835A | 6.974A | 2.207A | 454.676 | 84.086% | 1828 | 41.2 | 37.32°C | 0.998 |
| | 12.063V | 5.122V | 3.314V | 4.983V | 540.726 | | | | 45.24°C | 115.15V |
| 8 | 36.629A | 7.816A | 7.971A | 2.413A | 519.944 | 83.204% | 1891 | 42.4 | 37.98°C | 0.998 |
| | 12.054V | 5.120V | 3.312V | 4.973V | 624.906 | | | | 46.69°C | 115.15V |
| 9 | 41.676A | 8.302A | 8.460A | 2.416A | 584.858 | 82.188% | 1961 | 43.1 | 38.09°C | 0.998 |
| | 12.054V | 5.119V | 3.309V | 4.968V | 711.613 | | | | 47.79°C | 115.14V |
| 10 | 46.678A | 8.790A | 8.981A | 2.521A | 649.601 | 80.496% | 2029 | 43.5 | 38.99°C | 0.999 |
| | 12.049V | 5.118V | 3.306V | 4.958V | 807.000 | | | | 49.83°C | 115.13V |
| 11 | 51.561A | 8.800A | 8.969A | 2.502A | 714.222 | 80.958% | 1766 | 40.4 | 39.91°C | 0.999 |
| | 12.161V | 5.113V | 3.311V | 4.995V | 882.218 | | | | 51.50°C | 115.13V |
| CL1 | 0.098A | 11.998A | 11.998A | 0.000A | 96.740 | 76.106% | 1675 | 39.4 | 36.67°C | 0.973 |
| | 12.251V | 5.049V | 2.914V | 5.102V | 127.113 | | | | 42.34°C | 115.17V |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL2 | 53.987A | 0.999A | 1.001A | 1.000A | 670.995 | 82.266% | 1823 | 41.0 | 38.60°C | 0.999 |
| | 12.179V | 5.120V | 3.315V | 5.054V | 815.639 | | | | 49.35°C | 115.13V |

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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.545A | 1.948A | 1.982A | 0.985A | 64.955 | 81.213% | 925 | 23.7 | 34.44°C | 0.689 |
| | 12.229V | 5.132V | 3.332V | 5.078V | 79.981 | | | | 37.62°C | 230.33V |
| 2 | 8.106A | 2.924A | 2.973A | 1.184A | 130.012 | 85.768% | 1033 | 27.3 | 34.73°C | 0.865 |
| | 12.227V | 5.130V | 3.329V | 5.069V | 151.586 | | | | 38.51°C | 230.34V |
| 3 | 13.012A | 3.413A | 3.471A | 1.384A | 195.009 | 87.322% | 1221 | 31.4 | 35.01°C | 0.925 |
| | 12.216V | 5.129V | 3.327V | 5.059V | 223.323 | | | | 39.33°C | 230.33V |
| 4 | 17.917A | 3.902A | 3.970A | 1.585A | 260.009 | 87.829% | 1342 | 34.1 | 35.15°C | 0.954 |
| | 12.212V | 5.127V | 3.325V | 5.048V | 296.039 | | | | 39.78°C | 230.34V |
| 5 | 22.490A | 4.878A | 4.966A | 1.787A | 325.040 | 87.828% | 1481 | 36.3 | 35.55°C | 0.971 |
| | 12.207V | 5.125V | 3.323V | 5.038V | 370.085 | | | | 41.29°C | 230.33V |
| 6 | 26.998A | 5.856A | 5.963A | 1.989A | 389.321 | 87.492% | 1621 | 38.5 | 36.15°C | 0.979 |
| | 12.205V | 5.124V | 3.321V | 5.028V | 444.977 | | | | 42.77°C | 230.32V |
| 7 | 31.596A | 6.834A | 6.961A | 2.192A | 454.639 | 87.098% | 1715 | 40.1 | 36.64°C | 0.985 |
| | 12.202V | 5.122V | 3.319V | 5.017V | 521.984 | | | | 43.75°C | 230.32V |
| 8 | 36.201A | 7.816A | 7.956A | 2.397A | 519.949 | 86.555% | 1811 | 40.8 | 37.34°C | 0.988 |
| | 12.197V | 5.120V | 3.317V | 5.005V | 600.716 | | | | 45.60°C | 230.32V |
| 9 | 41.200A | 8.300A | 8.444A | 2.400A | 584.842 | 86.033% | 1904 | 42.7 | 37.86°C | 0.990 |
| | 12.193V | 5.119V | 3.316V | 5.001V | 679.790 | | | | 47.00°C | 230.32V |
| 10 | 46.152A | 8.794A | 8.959A | 2.503A | 649.552 | 85.488% | 1922 | 42.8 | 38.12°C | 0.991 |
| | 12.185V | 5.117V | 3.314V | 4.994V | 759.814 | | | | 48.83°C | 230.31V |
| 11 | 51.497A | 8.796A | 8.969A | 2.505A | 714.368 | 84.751% | 2003 | 43.2 | 39.62°C | 0.992 |
| | 12.179V | 5.115V | 3.311V | 4.989V | 842.905 | | | | 51.35°C | 230.31V |
| CL1 | 0.100A | 11.997A | 11.998A | 0.000A | 96.197 | 76.751% | 1866 | 42.1 | 35.83°C | 0.823 |
| | 12.256V | 5.049V | 2.867V | 5.099V | 125.337 | | | | 41.03°C | 230.32V |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL2 | 54.005A | 1.000A | 1.000A | 1.000A | 671.699 | 85.911% | 1977 | 43.4 | 38.91°C | 0.992 |
| | 12.188V | 5.121V | 3.315V | 5.051V | 781.856 | | | | 49.18°C | 230.31V |

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]) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.228A | 0.487A | 0.495A | 0.197A | 19.981 | 66.880% | 847 | 21.6 | 0.761 |
| | 12.080V | 5.131V | 3.330V | 5.077V | 29.876 | | | | 115.16V |
| 2 | 2.456A | 0.975A | 0.991A | 0.395A | 39.971 | 76.658% | 876 | 21.5 | 0.890 |
| | 12.079V | 5.131V | 3.329V | 5.069V | 52.142 | | | | 115.16V |
| 3 | 3.689A | 1.462A | 1.485A | 0.593A | 60.003 | 80.524% | 904 | 22.4 | 0.935 |
| | 12.079V | 5.130V | 3.328V | 5.060V | 74.516 | | | | 115.16V |
| 4 | 4.914A | 1.949A | 1.985A | 0.792A | 79.955 | 82.431% | 1026 | 26.8 | 0.957 |
| | 12.078V | 5.130V | 3.327V | 5.052V | 96.996 | | | | 115.16V |

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]) | PF/AC Volts |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.212A | 0.487A | 0.495A | 0.196A | 19.983 | 66.996% | 884 | 22.0 | 0.343 |
| | 12.236V | 5.134V | 3.334V | 5.109V | 29.827 | | | | 230.33V |
| 2 | 2.426A | 0.975A | 0.989A | 0.392A | 39.973 | 76.982% | 886 | 22.0 | 0.531 |
| | 12.231V | 5.133V | 3.333V | 5.101V | 51.925 | | | | 230.34V |
| 3 | 3.644A | 1.461A | 1.485A | 0.589A | 60.005 | 81.027% | 898 | 22.4 | 0.662 |
| | 12.228V | 5.132V | 3.333V | 5.093V | 74.056 | | | | 230.33V |
| 4 | 4.855A | 1.948A | 1.982A | 0.786A | 79.956 | 83.282% | 916 | 23.3 | 0.748 |
| | 12.226V | 5.132V | 3.332V | 5.086V | 96.006 | | | | 230.33V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 8.80mV | 7.50mV | 8.40mV | 5.00mV | Pass |
| 20% Load | 12.50mV | 9.10mV | 11.90mV | 6.10mV | Pass |
| 30% Load | 16.10mV | 10.90mV | 15.20mV | 7.60mV | Pass |
| 40% Load | 17.80mV | 13.00mV | 19.20mV | 11.80mV | Pass |
| 50% Load | 20.90mV | 13.30mV | 20.40mV | 14.00mV | Pass |
| 60% Load | 23.30mV | 14.40mV | 22.30mV | 15.80mV | Pass |
| 70% Load | 26.40mV | 16.60mV | 24.70mV | 16.00mV | Pass |
| 80% Load | 31.20mV | 18.40mV | 29.50mV | 15.40mV | Pass |
| 90% Load | 42.40mV | 21.30mV | 32.60mV | 14.40mV | Pass |
| 100% Load | 50.90mV | 24.50mV | 36.70mV | 19.30mV | Pass |
| 110% Load | 66.20mV | 27.50mV | 41.80mV | 21.60mV | Pass |
| Crossload1 | 13.90mV | 79.10mV | 73.10mV | 9.60mV | Fail |
| Crossload2 | 71.40mV | 24.50mV | 38.50mV | 25.10mV | Pass |

The results above are not used in the certification process

### 230V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 8.50mV | 7.20mV | 8.40mV | 5.70mV | Pass |
| 20% Load | 12.30mV | 8.60mV | 11.50mV | 7.60mV | Pass |
| 30% Load | 14.80mV | 10.40mV | 14.90mV | 10.80mV | Pass |
| 40% Load | 17.20mV | 11.90mV | 16.80mV | 15.20mV | Pass |
| 50% Load | 19.30mV | 13.40mV | 19.00mV | 17.10mV | Pass |
| 60% Load | 21.60mV | 14.30mV | 21.90mV | 18.30mV | Pass |
| 70% Load | 24.90mV | 15.70mV | 23.80mV | 16.70mV | Pass |
| 80% Load | 28.50mV | 17.10mV | 27.40mV | 16.30mV | Pass |

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 90% Load | 37.00mV | 19.60mV | 30.00mV | 15.80mV | Pass |
| 100% Load | 56.70mV | 24.90mV | 35.90mV | 18.50mV | Pass |
| 110% Load | 71.20mV | 28.20mV | 38.80mV | 20.00mV | Pass |
| Crossload1 | 8.90mV | 19.80mV | 24.10mV | 8.50mV | Pass |
| Crossload2 | 70.50mV | 25.00mV | 33.20mV | 23.60mV | Pass |

The results above are not used in the certification process

## Seasonic S12III-650

Top side

Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

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