# Corsair CX550

Serial Number 16527135000017690613

Lab ID 184

Certification ID 25184

Test Result Report ID:

Certificate Issue Date: Sep 29, 2018

Scheme: ETA-EMI PSU

115V




230V




Scheme: LAMBDA PSU

115V




230V






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 | Corsair |
| Model | CX550 |
| OEM/ODM | Great Wall |
| Serial Number | 16527135000017690613 |
| Product Specifications | |
| Manufacturer-Provided Information | |
| Rated Voltage (Vrms) | 100-240 |
| Rated Current (Arms) | 10-5 |
| Rated Frequency (Hz) | 47-63 |

| | |
|---|---|
| Rated Power (W) | 550 |
| Operating Temperature (Continuous Full Load) (°C) | |
| Type | ATX12V |
| Cable Design | Fixed cables |
| Warranty | - |
| Cybenetics Measurements | |
| Dimensions (W x H x D) | |
| Weight | |
| Cooling | 120mm Fluid Dynamic Bearing Fan<br>(HA1225M12F-Z) |
| Semi-Passive Operation | ✗ |
| Cybenetics Testing Information | |
| Lab ID | 184 |
| Date of receipt | Sep 20, 2018 |
| Testing Date | Sep 27, 2018 |
| Report Issued Date | Sep 29, 2018 |
| Engineer Name | - |
| Authorized By the Laboratory Technical Manager | Aristeidis Bitziopoulos |
| Signature |  |

## Cables and Connectors(Non-accredited measurements)

| Captive Cables | | | |
|---|---|---|---|
| Description | Cable Count | Connector Count (Total) | Gauge |
| ATX connector 20+4 pin (600mm) | 1 | 1 | 18-20AWG |
| 4+4 pin EPS12V (650mm) | 1 | 1 | 18AWG |
| 6+2 pin PCIe (580mm) | 2 | 2 | 18AWG |
| SATA (400mm+120mm+120mm) | 1 | 3 | 18AWG |
| SATA (400mm+120mm) | 1 | 2 | 18AWG |
| 4 pin Molex (400mm+120mm+120mm+120mm) | 1 | 4 | 18AWG |

### Power Specifications

| Rail | | 3.3V | 5V | 12V | 5VSB | -12V |
|---|---|---|---|---|---|---|
| Max. Power | Amps | 25 | 20 | 45.8 | 3 | 0.8 |
| | Watts | 120 | | 549.6 | 15 | 9.6 |
| Total Max. Power (W) | | 550 | | | | |

## 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) | 85.720% |
| Average Noise Output (>1450 Load Combinations) | 23.69dBA |
| Average PF (>1450 Load Combinations) | 0.996 |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | - |
| Standby Power Consumption | 0.0554W |
| Non-Accredited | |
| 12V Ripple (Full Load) | 32.34mV |
| 5V Ripple (Full Load) | 11.40mV |
| 3.3V Ripple (Full Load) | 11.53mV |
| 5VSB Ripple (Full Load) | 19.87mV |
| 12V Load Regulation | 0.54% |
| 5V Load Regulation | 0.36% |
| 3.3V Load Regulation | 0.45% |

| | |
|---|---|
| 5VSB Load Regulation | 1.98% |
| Inrush Current | 34.858A |

**230V**

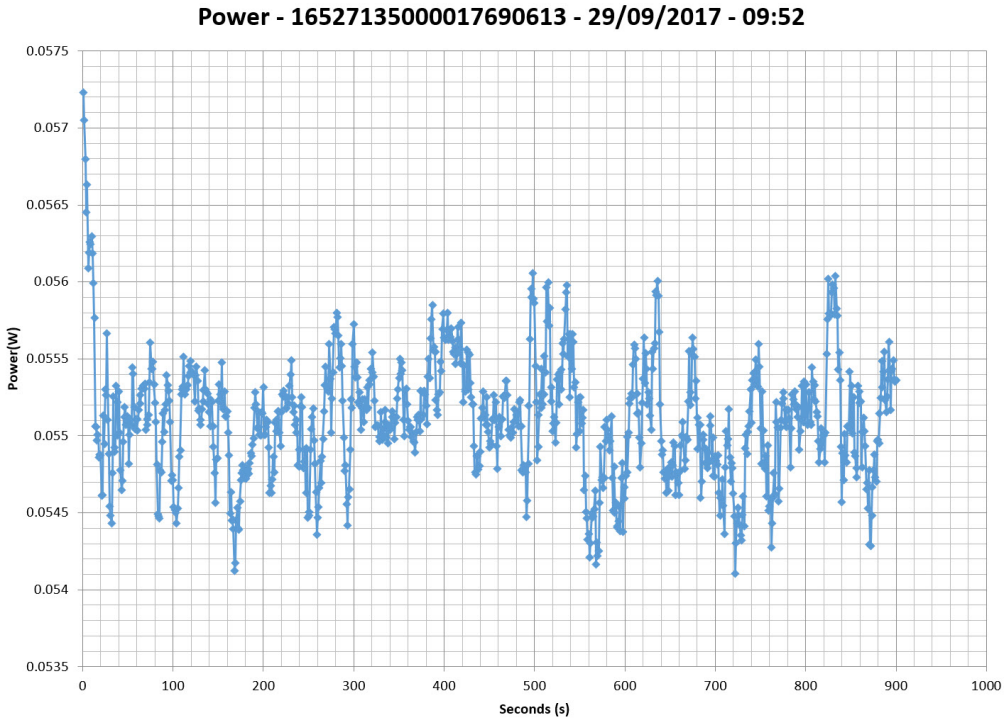
| | | |
|---|---|---|
| Accredited | | |
| Average Efficiency (>1450 load combinations) | 88.024% | |
| Average Noise Output (>1450 Load Combinations) | 25.42dBA | |
| Average PF (>1450 Load Combinations) | 0.975 | |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | - | |
| Standby Power Consumption | 0.0703W | |
| Non-Accredited | | |
| 12V Ripple (Full Load) | 33.03mV | |
| 5V Ripple (Full Load) | 18.05mV | |
| 3.3V Ripple (Full Load) | 13.11mV | |
| 5VSB Ripple (Full Load) | 17.23mV | |
| 12V Load Regulation | 0.45% | |
| 5V Load Regulation | 0.38% | |
| 3.3V Load Regulation | 0.66% | |
| 5VSB Load Regulation | 1.83% | |
| Inrush Current | 40.550A | |
| Hold-Up Time & PWR_OK Signal | 11.93ms | |
| AC Loss to PWR_OK Hold Up Time | 9.90ms | |
| PWR_OK Inactive to DC Loss Delay | 2.03ms | |
| OPP (0.00°C / 0.00°C) | - | - |

## Hold-Up Time & PWR_OK Signal

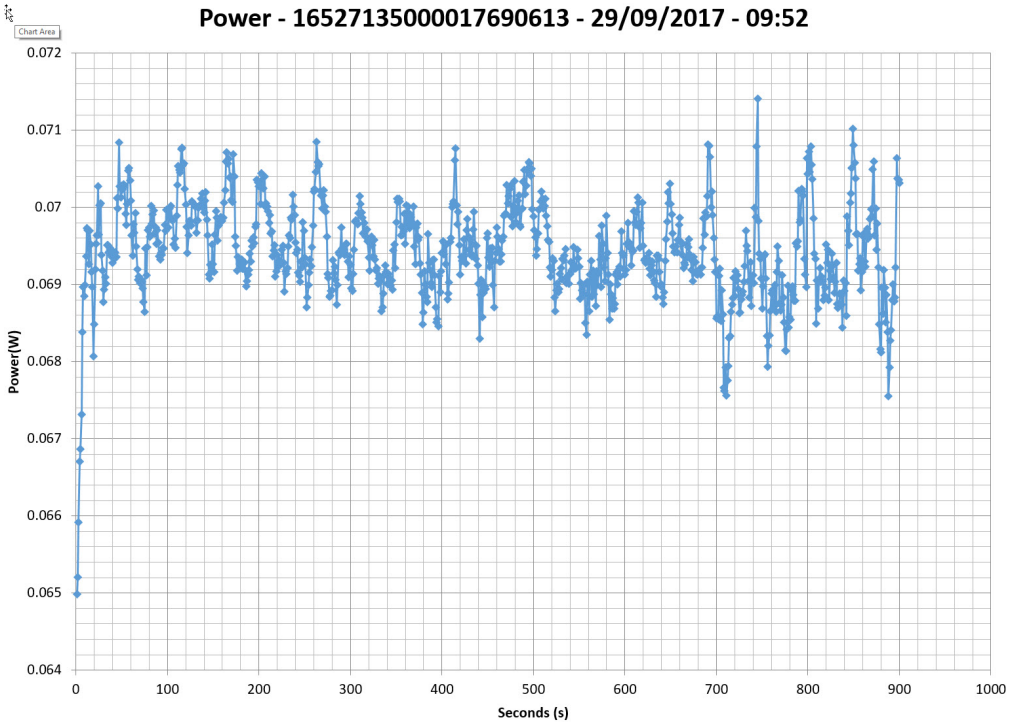
| | |
|---|---|
| Hold-Up Time (ms) | 11.93 |
| AC Loss to PWR_OK Hold Up Time (ms) | 9.90 |
| PWR_OK Inactive to DC Loss Delay (ms) | 2.03 |

## Graphs

### 115V

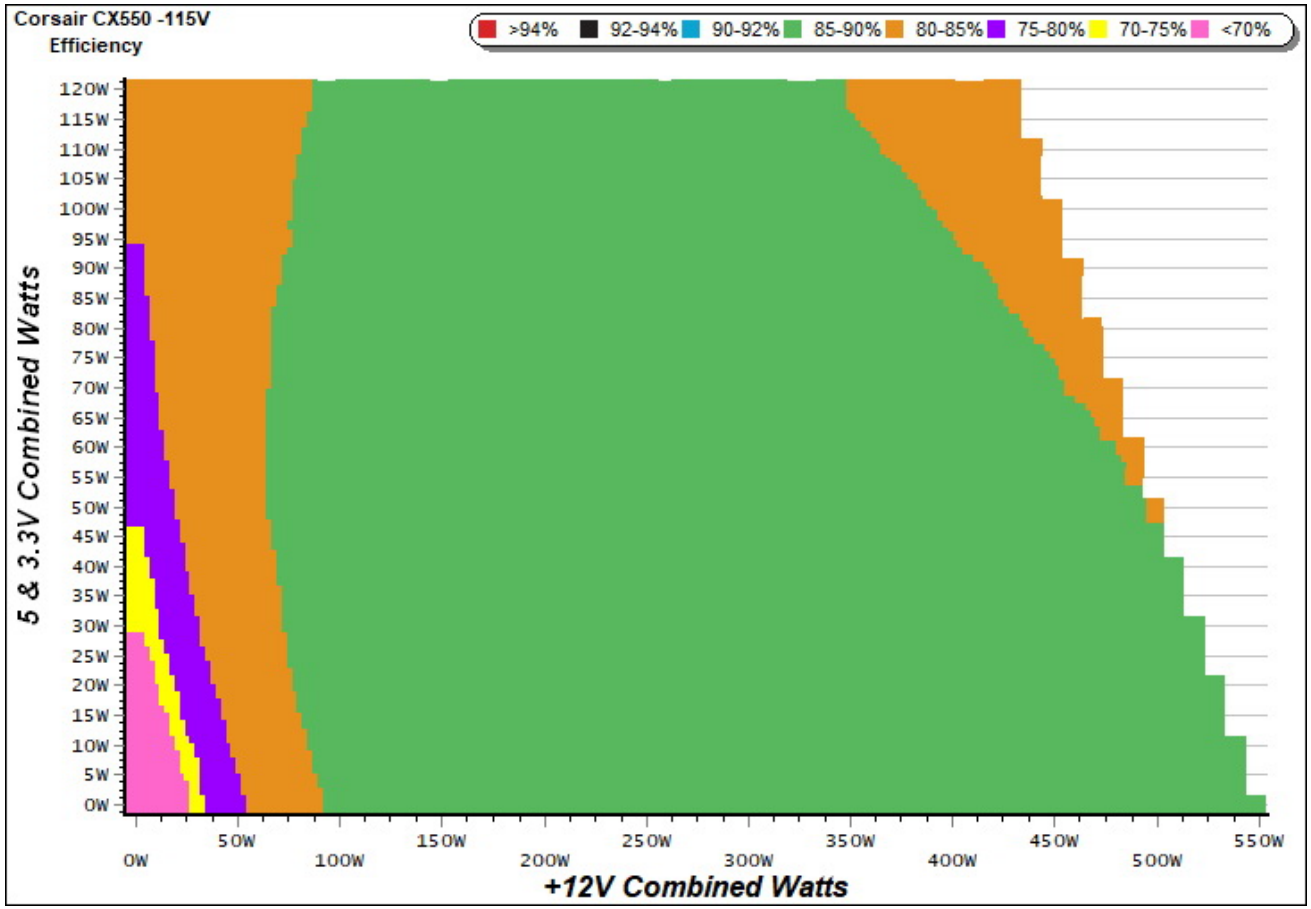



### 230V



## Efficiency Graph

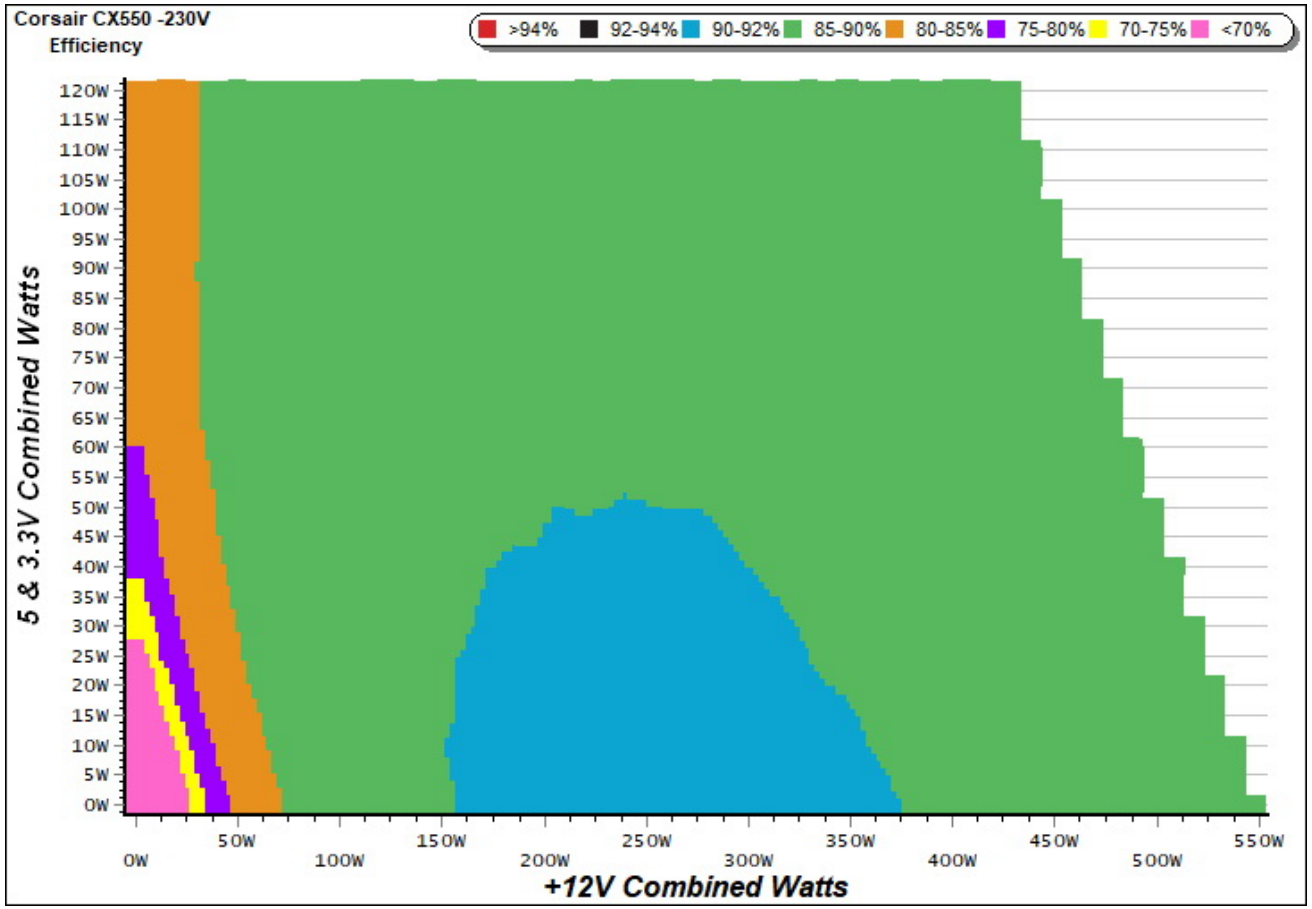
### 115V




### 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

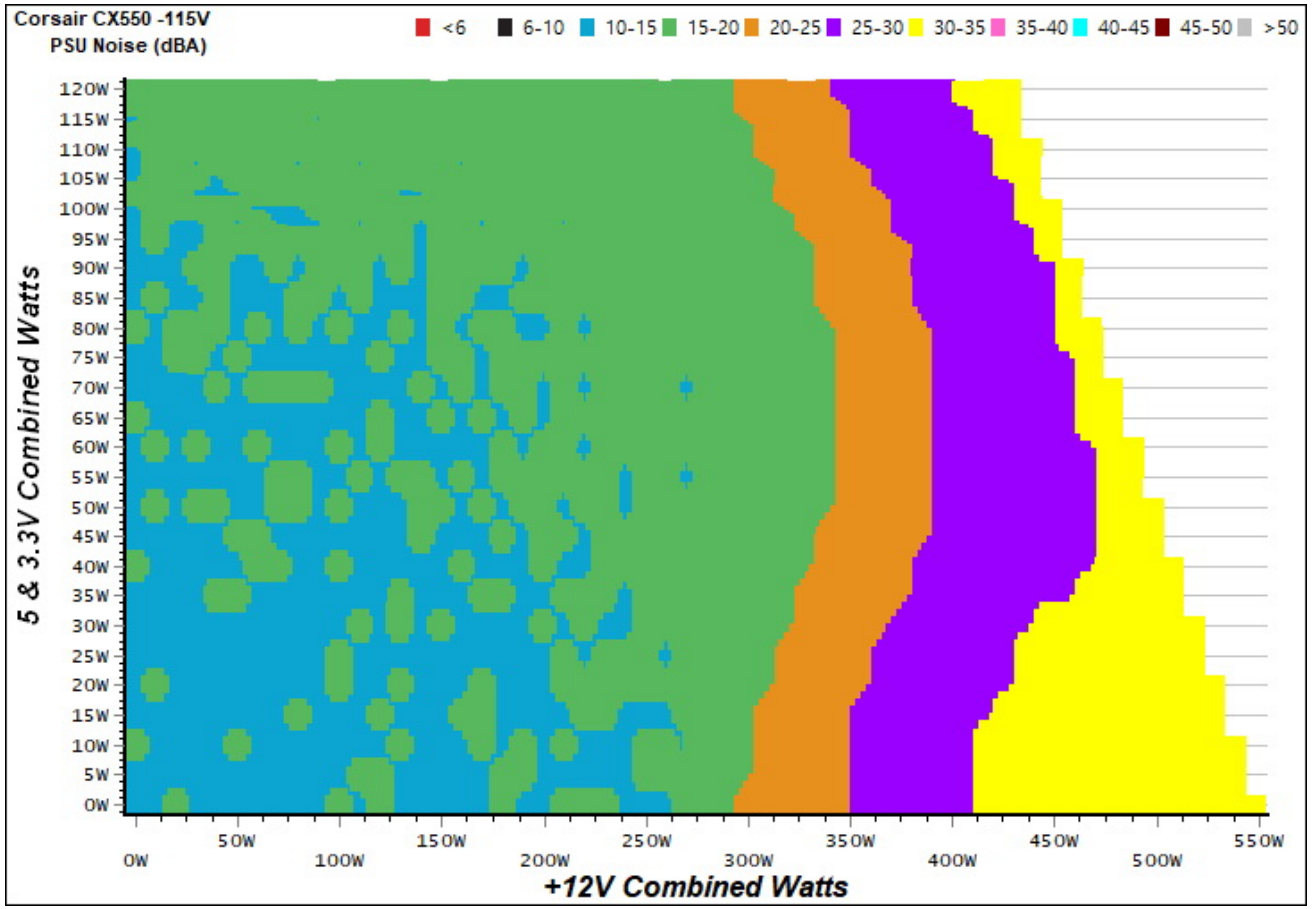



### INFO

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

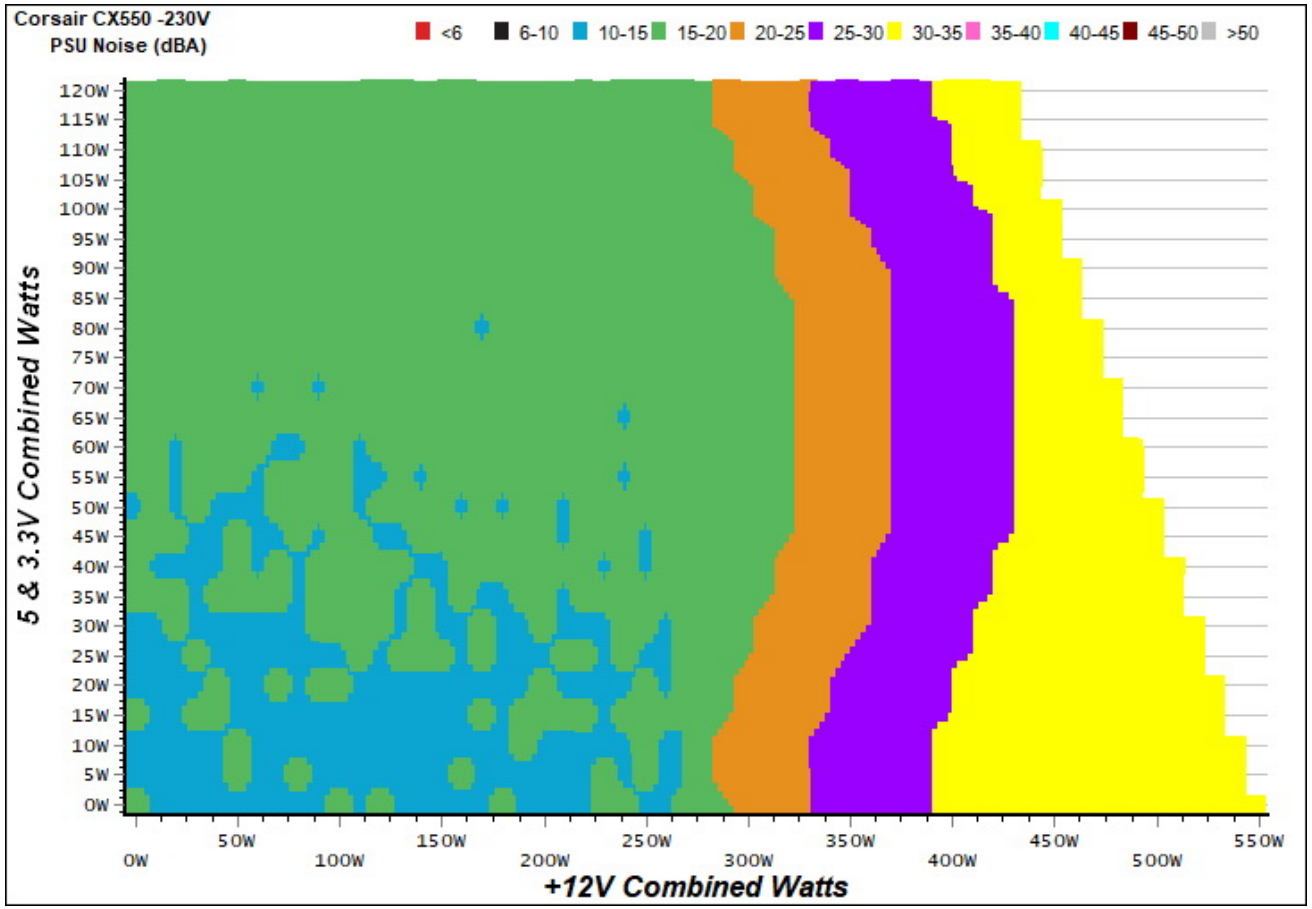
### 115V




### 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

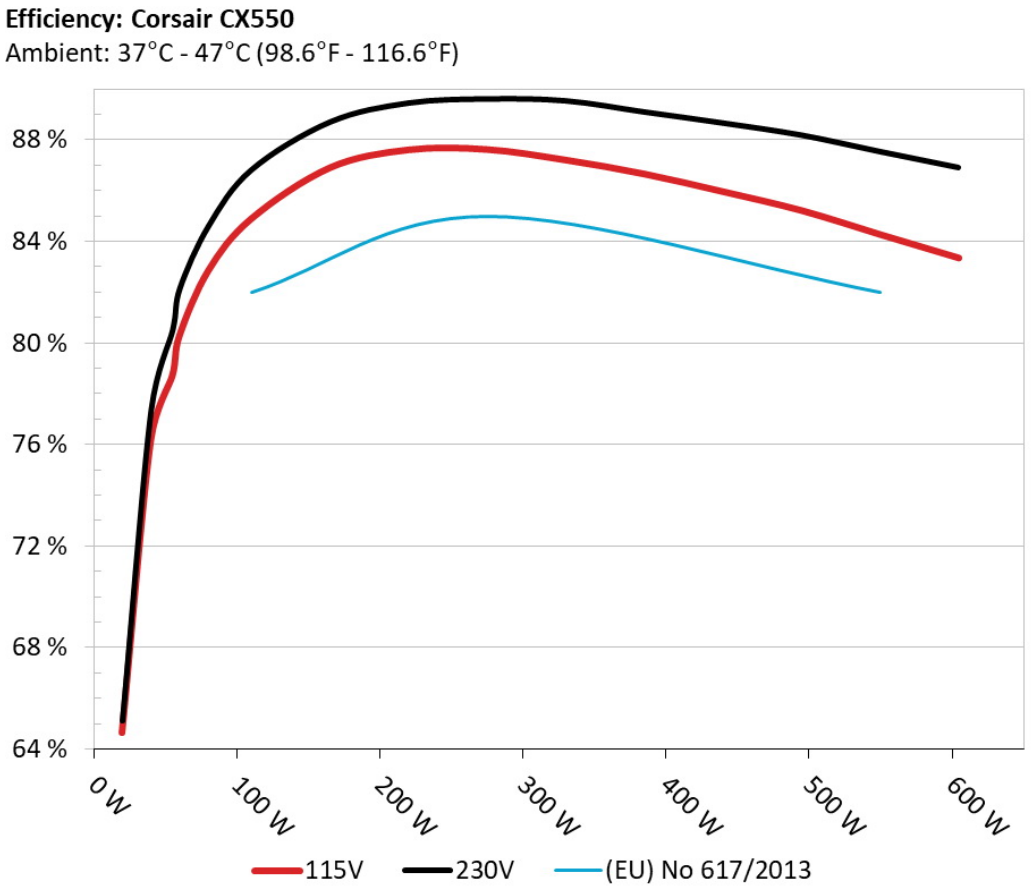



### INFO

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

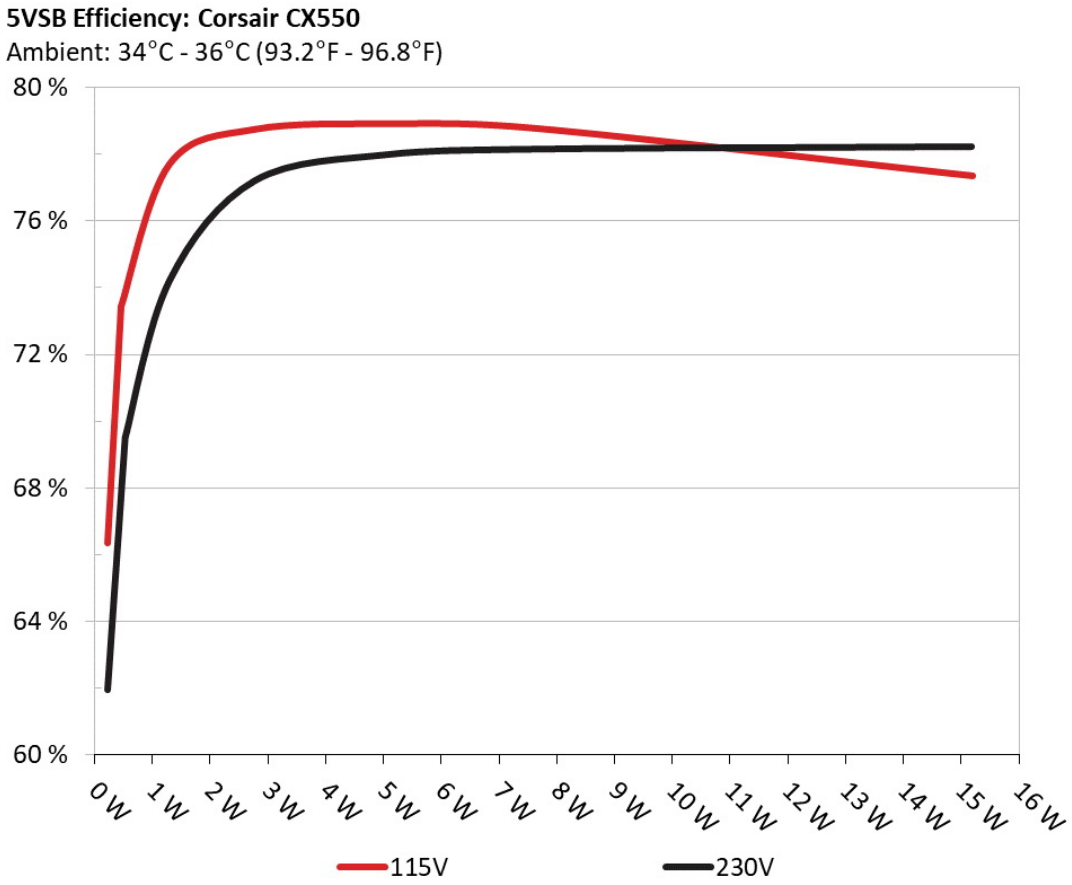
### Efficiency under high ambient temperature




**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 | 0.042A | 0.215 | 66.358% | 0.043 |
| | 5.107V | 0.324 | | 115.08V |
| 2 | 0.088A | 0.448 | 73.322% | 0.079 |
| | 5.106V | 0.611 | | 115.08V |
| 3 | 0.542A | 2.766 | 78.759% | 0.296 |
| | 5.099V | 3.512 | | 115.06V |
| 4 | 1.002A | 5.104 | 78.924% | 0.370 |
| | 5.092V | 6.467 | | 115.06V |
| 5 | 1.502A | 7.636 | 78.787% | 0.408 |
| | 5.084V | 9.692 | | 115.07V |
| 6 | 3.002A | 15.189 | 77.365% | 0.458 |
| | 5.060V | 19.633 | | 115.07V |

### 230V

| Test # | 5VSB | DC/AC (Watts) | Efficiency | PF/AC Volts |
|---|---|---|---|---|
| 1 | 0.102A | 0.519 | 69.385% | 0.030 |
| | 5.106V | 0.748 | | 230.22V |
| 2 | 0.252A | 1.287 | 74.221% | 0.068 |
| | 5.104V | 1.734 | | 230.22V |
| 3 | 0.543A | 2.766 | 77.219% | 0.130 |
| | 5.098V | 3.582 | | 230.23V |
| 4 | 1.003A | 5.104 | 78.007% | 0.206 |
| | 5.091V | 6.543 | | 230.23V |
| 5 | 1.502A | 7.635 | 78.163% | 0.260 |
| | 5.083V | 9.768 | | 230.23V |
| 6 | 3.002A | 15.185 | 78.237% | 0.341 |
| | 5.059V | 19.409 | | 230.23V |

## 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 | 2.745A | 1.984A | 1.989A | 0.981A | 54.755 | 78.702% | 818 | 13.8 | 38.07°C | 0.979 |
| | 12.098V | 5.026V | 3.313V | 5.081V | 69.573 | | | | 44.81°C | 115.11V |
| 2 | 6.528A | 2.981A | 2.988A | 1.181A | 109.782 | 84.892% | 818 | 13.8 | 38.38°C | 0.991 |
| | 12.090V | 5.024V | 3.310V | 5.073V | 129.319 | | | | 45.86°C | 115.11V |
| 3 | 10.659A | 3.488A | 3.502A | 1.381A | 164.906 | 86.912% | 818 | 13.8 | 38.85°C | 0.997 |
| | 12.084V | 5.023V | 3.309V | 5.065V | 189.740 | | | | 47.43°C | 115.11V |
| 4 | 14.791A | 3.983A | 3.989A | 1.581A | 219.820 | 87.621% | 818 | 13.8 | 39.44°C | 0.998 |
| | 12.077V | 5.021V | 3.308V | 5.057V | 250.876 | | | | 49.36°C | 115.12V |
| 5 | 18.581A | 4.978A | 4.990A | 1.781A | 274.746 | 87.634% | 818 | 13.8 | 40.12°C | 0.998 |
| | 12.070V | 5.019V | 3.306V | 5.049V | 313.515 | | | | 50.52°C | 115.12V |
| 6 | 22.377A | 5.979A | 5.989A | 1.981A | 329.709 | 87.218% | 983 | 21.0 | 40.94°C | 0.998 |
| | 12.063V | 5.018V | 3.304V | 5.040V | 378.028 | | | | 51.49°C | 115.12V |
| 7 | 26.182A | 6.980A | 6.991A | 2.186A | 384.725 | 86.668% | 1180 | 26.2 | 41.77°C | 0.999 |
| | 12.055V | 5.016V | 3.303V | 5.031V | 443.909 | | | | 52.78°C | 115.12V |
| 8 | 29.983A | 7.980A | 7.995A | 2.387A | 439.578 | 85.971% | 1381 | 30.8 | 43.03°C | 0.999 |
| | 12.047V | 5.013V | 3.300V | 5.021V | 511.307 | | | | 54.65°C | 115.12V |
| 9 | 34.222A | 8.481A | 8.515A | 2.391A | 494.664 | 85.226% | 1578 | 34.4 | 44.23°C | 0.999 |
| | 12.041V | 5.012V | 3.300V | 5.015V | 580.413 | | | | 56.03°C | 115.12V |
| 10 | 38.210A | 8.987A | 9.002A | 2.999A | 549.559 | 84.280% | 1630 | 35.1 | 45.51°C | 0.999 |
| | 12.035V | 5.010V | 3.298V | 4.998V | 652.061 | | | | 58.26°C | 115.12V |
| 11 | 42.798A | 8.990A | 9.008A | 3.001A | 604.480 | 83.354% | 1630 | 35.1 | 46.70°C | 0.999 |
| | 12.028V | 5.009V | 3.296V | 4.993V | 725.193 | | | | 60.18°C | 115.14V |
| CL1 | 0.097A | 14.025A | 14.004A | 0.004A | 117.895 | 81.102% | 818 | 13.8 | 43.19°C | 0.994 |
| | 12.079V | 5.019V | 3.307V | 5.072V | 145.366 | | | | 55.91°C | 115.13V |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL2 | 45.787A | 1.004A | 1.003A | 1.002A | 564.588 | 84.877% | 1630 | 35.1 | 45.25°C | 0.999 |
| | 12.038V | 5.017V | 3.303V | 5.044V | 665.186 | | | | 58.69°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 | 2.747A | 1.985A | 1.989A | 0.981A | 54.781 | 80.669% | 818 | 13.8 | 38.04°C | 0.861 |
| | 12.100V | 5.026V | 3.310V | 5.080V | 67.908 | | | | 44.53°C | 230.11V |
| 2 | 6.530A | 2.977A | 2.990A | 1.181A | 109.813 | 87.010% | 818 | 13.8 | 38.41°C | 0.948 |
| | 12.094V | 5.024V | 3.308V | 5.073V | 126.208 | | | | 45.46°C | 230.11V |
| 3 | 10.659A | 3.486A | 3.503A | 1.381A | 164.939 | 88.881% | 818 | 13.8 | 38.73°C | 0.973 |
| | 12.089V | 5.022V | 3.306V | 5.065V | 185.572 | | | | 46.58°C | 230.12V |
| 4 | 14.787A | 3.981A | 3.992A | 1.580A | 219.837 | 89.619% | 818 | 13.8 | 38.88°C | 0.982 |
| | 12.083V | 5.020V | 3.304V | 5.057V | 245.303 | | | | 48.26°C | 230.13V |
| 5 | 18.573A | 4.977A | 4.996A | 1.781A | 274.765 | 89.770% | 818 | 13.8 | 39.33°C | 0.983 |
| | 12.077V | 5.019V | 3.300V | 5.049V | 306.076 | | | | 50.34°C | 230.13V |
| 6 | 22.366A | 5.977A | 6.001A | 1.981A | 329.748 | 89.507% | 1080 | 22.1 | 40.31°C | 0.990 |
| | 12.071V | 5.017V | 3.299V | 5.040V | 368.406 | | | | 50.87°C | 230.15V |
| 7 | 26.162A | 6.982A | 7.006A | 2.185A | 384.745 | 89.156% | 1286 | 28.5 | 41.56°C | 0.992 |
| | 12.065V | 5.015V | 3.296V | 5.031V | 431.539 | | | | 51.81°C | 230.15V |
| 8 | 29.964A | 7.981A | 8.012A | 2.386A | 439.682 | 88.675% | 1480 | 33.3 | 42.37°C | 0.994 |
| | 12.058V | 5.012V | 3.294V | 5.023V | 495.834 | | | | 52.63°C | 230.16V |
| 9 | 34.197A | 8.481A | 8.531A | 2.391A | 494.728 | 88.170% | 1630 | 35.1 | 43.35°C | 0.994 |
| | 12.052V | 5.011V | 3.293V | 5.017V | 561.108 | | | | 54.14°C | 230.18V |
| 10 | 38.176A | 8.989A | 9.025A | 2.996A | 549.581 | 87.447% | 1630 | 35.1 | 45.03°C | 0.995 |
| | 12.046V | 5.009V | 3.291V | 5.002V | 628.473 | | | | 56.89°C | 230.19V |
| 11 | 42.759A | 8.991A | 9.029A | 3.000A | 604.566 | 86.897% | 1630 | 35.1 | 46.01°C | 0.995 |
| | 12.041V | 5.007V | 3.289V | 4.997V | 695.726 | | | | 58.77°C | 230.21V |
| CL1 | 0.101A | 14.024A | 14.004A | 0.005A | 117.888 | 82.942% | 1015 | 21.1 | 43.84°C | 0.959 |
| | 12.077V | 5.019V | 3.303V | 5.079V | 142.133 | | | | 54.42°C | 230.20V |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL2 | 45.791A | 1.002A | 1.004A | 1.002A | 565.352 | 88.046% | 1630 | 35.1 | 44.70°C | 0.995 |
| | 12.054V | 5.013V | 3.297V | 5.044V | 642.109 | | | | 56.65°C | 230.22V |

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 | 1.207A | 0.490A | 0.481A | 0.196A | 19.667 | 64.635% | 818 | 13.8 | 0.920 |
| | 12.104V | 5.030V | 3.314V | 5.099V | 30.428 | | | | 115.11V |
| 2 | 2.440A | 0.990A | 0.997A | 0.391A | 39.797 | 76.181% | 818 | 13.8 | 0.965 |
| | 12.100V | 5.028V | 3.313V | 5.093V | 52.240 | | | | 115.10V |
| 3 | 3.672A | 1.485A | 1.509A | 0.586A | 59.870 | 80.302% | 818 | 13.8 | 0.979 |
| | 12.098V | 5.027V | 3.313V | 5.089V | 74.556 | | | | 115.10V |
| 4 | 4.895A | 1.986A | 1.989A | 0.786A | 79.768 | 82.837% | 818 | 13.8 | 0.986 |
| | 12.095V | 5.026V | 3.312V | 5.083V | 96.295 | | | | 115.11V |

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 | 1.211A | 0.490A | 0.480A | 0.196A | 19.713 | 65.461% | 818 | 13.8 | 0.599 |
| | 12.105V | 5.030V | 3.313V | 5.097V | 30.114 | | | | 230.08V |
| 2 | 2.442A | 0.986A | 0.996A | 0.391A | 39.800 | 77.706% | 818 | 13.8 | 0.781 |
| | 12.102V | 5.028V | 3.312V | 5.092V | 51.219 | | | | 230.09V |
| 3 | 3.675A | 1.484A | 1.510A | 0.586A | 59.907 | 82.283% | 818 | 13.8 | 0.870 |
| | 12.100V | 5.027V | 3.310V | 5.087V | 72.806 | | | | 230.09V |
| 4 | 4.899A | 1.984A | 1.991A | 0.786A | 79.824 | 84.836% | 818 | 13.8 | 0.914 |
| | 12.098V | 5.026V | 3.310V | 5.081V | 94.092 | | | | 230.10V |

The results above are not used in the certification process

## Ripple Measurements

### 115V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 14.2 mV | 7.1 mV | 4.8 mV | 9.4 mV | Pass |
| 20% Load | 17.8 mV | 7.5 mV | 5.5 mV | 10.0 mV | Pass |
| 30% Load | 17.8 mV | 7.7 mV | 6.2 mV | 10.7 mV | Pass |
| 40% Load | 19.6 mV | 7.9 mV | 6.7 mV | 11.5 mV | Pass |
| 50% Load | 21.3 mV | 8.3 mV | 7.3 mV | 12.0 mV | Pass |
| 60% Load | 27.3 mV | 8.7 mV | 8.9 mV | 12.6 mV | Pass |
| 70% Load | 28.3 mV | 10.0 mV | 12.0 mV | 14.7 mV | Pass |
| 80% Load | 29.7 mV | 9.7 mV | 10.6 mV | 14.9 mV | Pass |
| 90% Load | 31.2 mV | 10.1 mV | 10.5 mV | 16.6 mV | Pass |
| 100% Load | 32.3 mV | 11.4 mV | 11.5 mV | 19.9 mV | Pass |
| 110% Load | 35.8 mV | 12.2 mV | 12.2 mV | 22.8 mV | Pass |
| Crossload 1 | 23.5 mV | 7.1 mV | 6.7 mV | 9.8 mV | Pass |
| Crossload 2 | 33.7 mV | 10.6 mV | 11.8 mV | 18.7 mV | Pass |

The results above are not used in the certification process

### 230V

| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 10% Load | 15.4 mV | 14.6 mV | 7.8 mV | 13.3 mV | Pass |
| 20% Load | 19.2 mV | 14.7 mV | 8.1 mV | 13.3 mV | Pass |
| 30% Load | 22.2 mV | 15.4 mV | 8.4 mV | 14.2 mV | Pass |
| 40% Load | 22.0 mV | 13.8 mV | 8.7 mV | 14.8 mV | Pass |
| 50% Load | 23.9 mV | 14.6 mV | 9.8 mV | 14.6 mV | Pass |
| 60% Load | 30.0 mV | 16.4 mV | 10.7 mV | 14.3 mV | Pass |
| 70% Load | 31.7 mV | 18.3 mV | 15.3 mV | 15.8 mV | Pass |
| 80% Load | 31.5 mV | 16.9 mV | 12.5 mV | 14.5 mV | Pass |

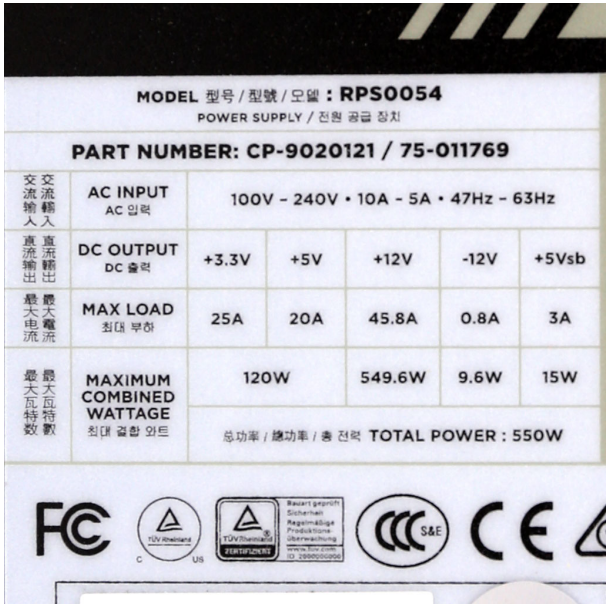
| Test | 12V | 5V | 3.3V | 5VSB | Pass/Fail |
|---|---|---|---|---|---|
| 90% Load | 34.9 mV | 16.0 mV | 11.8 mV | 14.7 mV | Pass |
| 100% Load | 33.0 mV | 18.1 mV | 13.1 mV | 17.2 mV | Pass |
| 110% Load | 38.4 mV | 18.6 mV | 13.6 mV | 18.0 mV | Pass |
| Crossload 1 | 25.5 mV | 16.7 mV | 8.9 mV | 14.6 mV | Pass |
| Crossload 2 | 37.2 mV | 17.3 mV | 12.5 mV | 16.4 mV | Pass |

The results above are not used in the certification process

## Corsair CX550




Top side




Power specifications table