



## Seasonic Snow Silent 1050W

□ R1410AA1A1490005

Lab ID 155

Certification ID 25155

Test Result Report ID: 19PS155A

Certificate Issue Date: Jul 8, 2018

115V

230V

Scheme: ETA-EMI PSU



115V

230V



Scheme: LAMBDA PSU

A handwritten signature in blue ink, appearing to read 'A. Bitziopoulos'.

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                             | Snow Silent 1050W |
| OEM/ODM                           | Seasonic          |
| Serial Number                     | R1410AA1A1490005  |
| Product Specifications            |                   |
| Manufacturer-Provided Information |                   |
| □□□□ (Vrms)                       | 100-240           |
| □□□□ (Arms)                       | 13-6.5            |
| □□□□ (Hz)                         | 50-60             |

|                                                   |                                                                                     |
|---------------------------------------------------|-------------------------------------------------------------------------------------|
| □□□□ (W)                                          | 1050                                                                                |
| Operating Temperature (Continuous Full Load) (°C) |                                                                                     |
| □□                                                | ATX12V                                                                              |
| □□□□                                              | Fully Modular                                                                       |
| Warranty                                          | -                                                                                   |
| Cybenetics Measurements                           |                                                                                     |
| Dimensions (W x H x D)                            |                                                                                     |
| Weight                                            |                                                                                     |
| □□                                                | 120mm Double Ball-Bearing Fan<br>(9S1212H403)                                       |
| □□□□                                              | ✓ (selectable)                                                                      |
| Cybenetics Testing Information                    |                                                                                     |
| Lab ID                                            | 155                                                                                 |
| Date of receipt                                   | Jun 29, 2018                                                                        |
| Testing Date                                      | Jul 4, 2018                                                                         |
| Report Issued Date                                | Jul 8, 2018                                                                         |
| Engineer Name                                     | -                                                                                   |
| Authorized By the Laboratory Technical Manager    | Aristeidis Bitziopoulos                                                             |
| Signature                                         |  |

□□□□ **(Non-accredited measurements)**

| □□□□                                                |       |       |          |
|-----------------------------------------------------|-------|-------|----------|
| □□                                                  | □□□□  | □□□□□ | Gauge    |
| ATX □□ 20+4 pin (610mm)                             | 1     | 1     | 18-22AWG |
| 4+4 pin EPS 12V □□ (650mm)                          | 1     | 1     | 18AWG    |
| 8 pin EPS 12V □□ (650mm)                            | 1     | 1     | 18AWG    |
| 6+2pin PCIe□□ (560mm+100mm) / 6+2pin PCIe□□ (600mm) | 2 / 4 | 4 / 4 | 18AWG    |
| SATA□□ (400mm+110mm+115mm+120mm)                    | 3     | 12    | 18AWG    |
| SATA□□ (310mm+115mm)                                | 1     | 2     | 18AWG    |
| □ 4pin Molex□□ (410mm+125mm+125mm)                  | 1     | 3     | 18AWG    |
| □ 4pin Molex□□ (310mm+125mm)                        | 1     | 2     | 18AWG    |

|               |   |   |       |
|---------------|---|---|-------|
| 4pin (+105mm) | 1 | 1 | 22AWG |
|---------------|---|---|-------|

|     |  |      |      |     |      |      |
|-----|--|------|------|-----|------|------|
|     |  | 3.3V | 5V   | 12V | 5VSB | -12V |
|     |  | 25   | 25   | 87  | 3    | 0.5  |
|     |  | 125  | 1044 | 15  | 6    |      |
| (W) |  | 1050 |      |     |      |      |

Test Results

Temperature & Compliance Info

|                  |                   |
|------------------|-------------------|
| (°C /°F)         | 28-32 / 82.4-89.6 |
| ErP Lot3/6       | ✓                 |
| (EU) No 617/2013 | ✓                 |

Performance Summary 115V

|                                                |          |
|------------------------------------------------|----------|
| Accredited                                     |          |
| (>1450 load combinations)                      | 89.513%  |
| Average Noise Output (>1450 Load Combinations) | 26.13dBA |
| PF(>1450 Load Combinations)                    | 0.990    |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | -        |
|                                                | 0.0959W  |
| Non-Accredited                                 |          |
| 12V Ripple (Full Load)                         | 45.56mV  |
| 5V Ripple (Full Load)                          | 20.06mV  |
| 3.3V Ripple (Full Load)                        | 22.28mV  |
| 5VSB Ripple (Full Load)                        | 24.34mV  |
| 12V Load Regulation                            | 0.33%    |
| 5V Load Regulation                             | 0.41%    |
| 3.3V Load Regulation                           | 0.39%    |

|                      |         |
|----------------------|---------|
| 5VSB Load Regulation | 2.80%   |
| Inrush Current       | 25.255A |

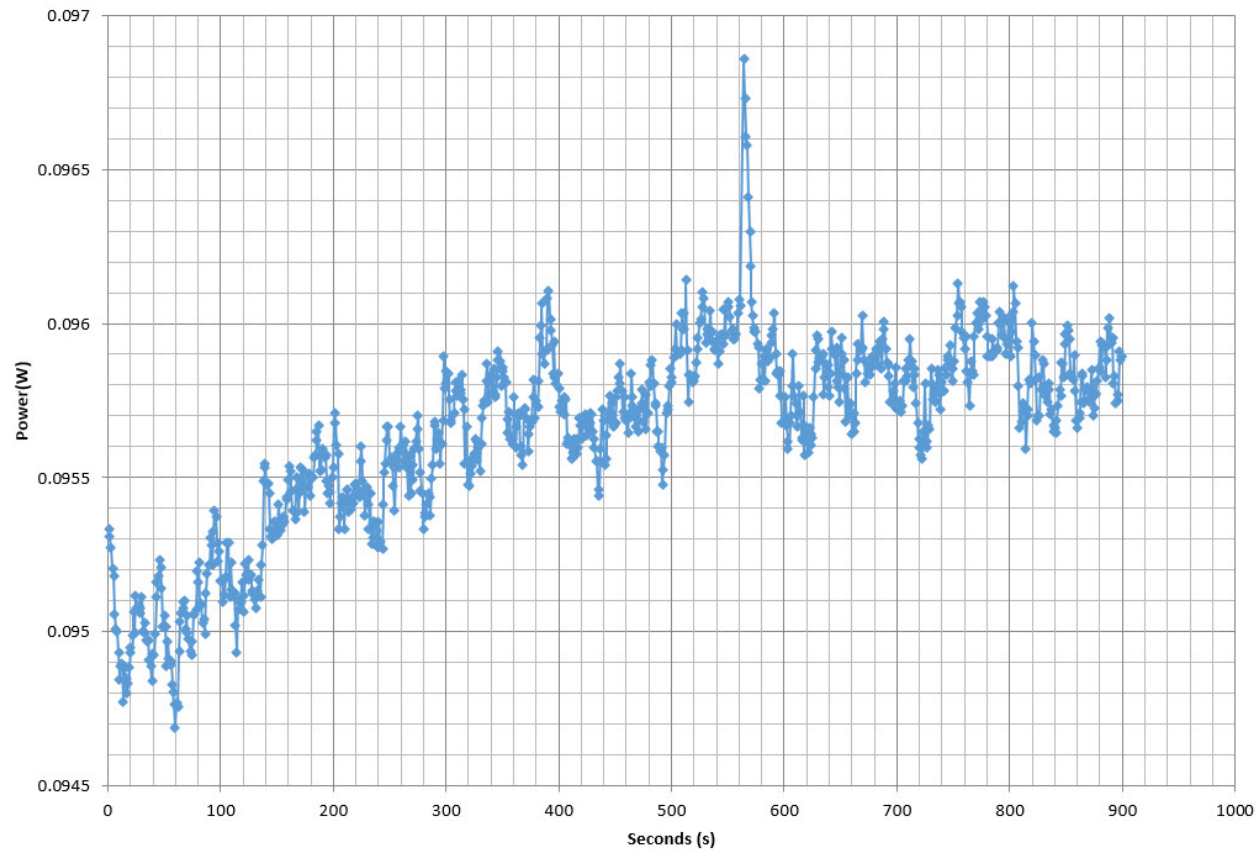
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|                                       |      |
|---------------------------------------|------|
| Hold-Up Time (ms)                     | 20.5 |
| AC Loss to PWR_OK Hold Up Time (ms)   | 17.1 |
| PWR_OK Inactive to DC Loss Delay (ms) | 3.4  |



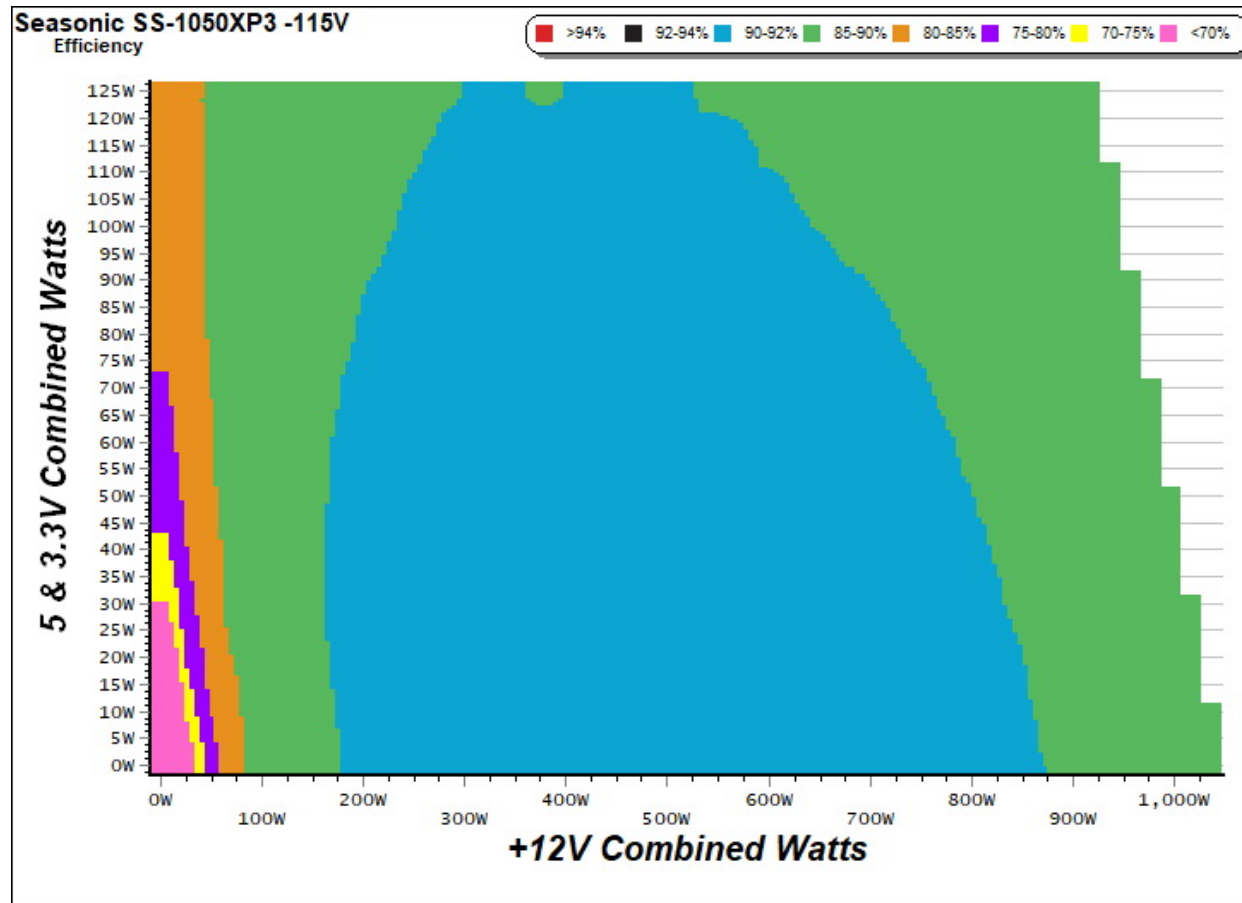
## Graphs 115V

Power - R1501AA1C2330062 - 03/08/2017 - 13:36





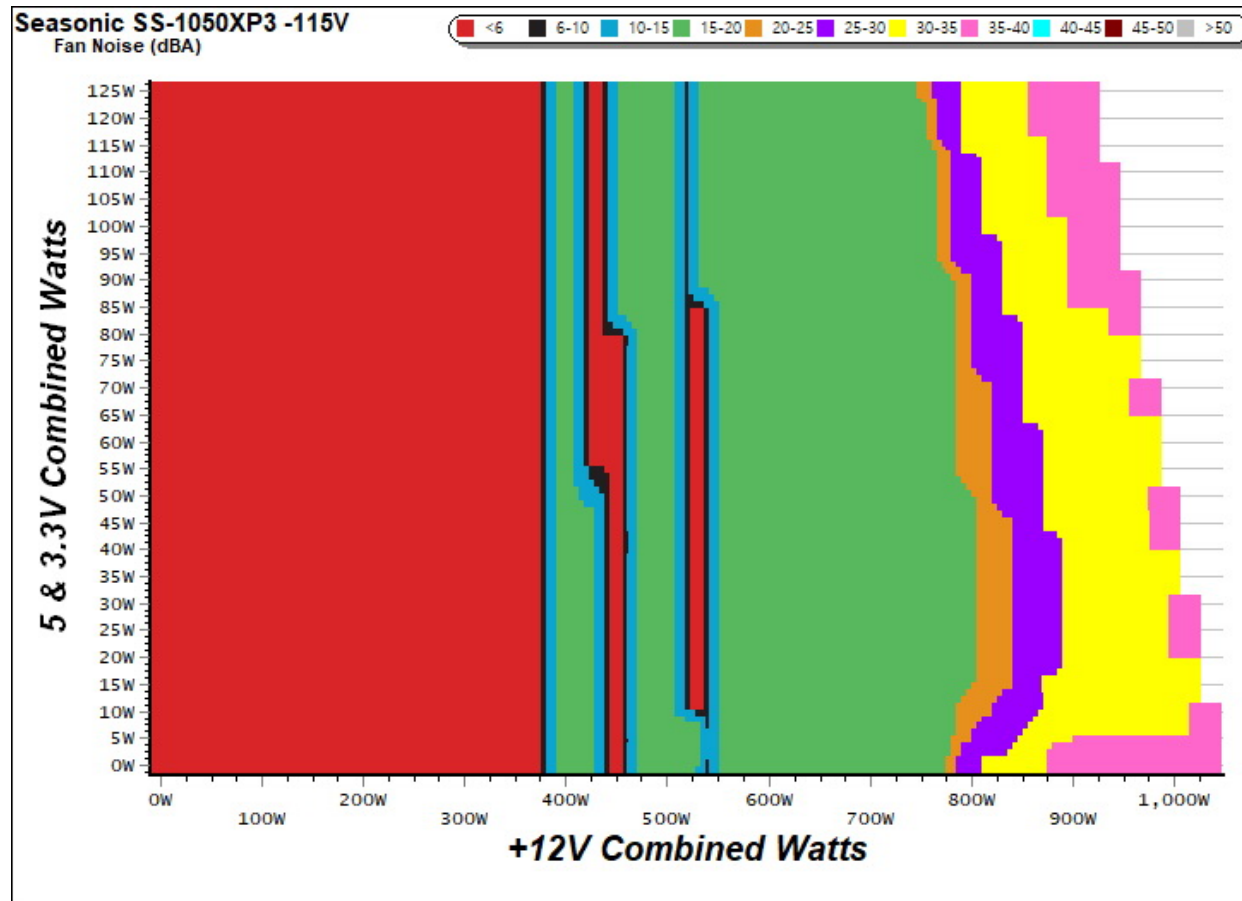
115V



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.

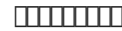


## 115V



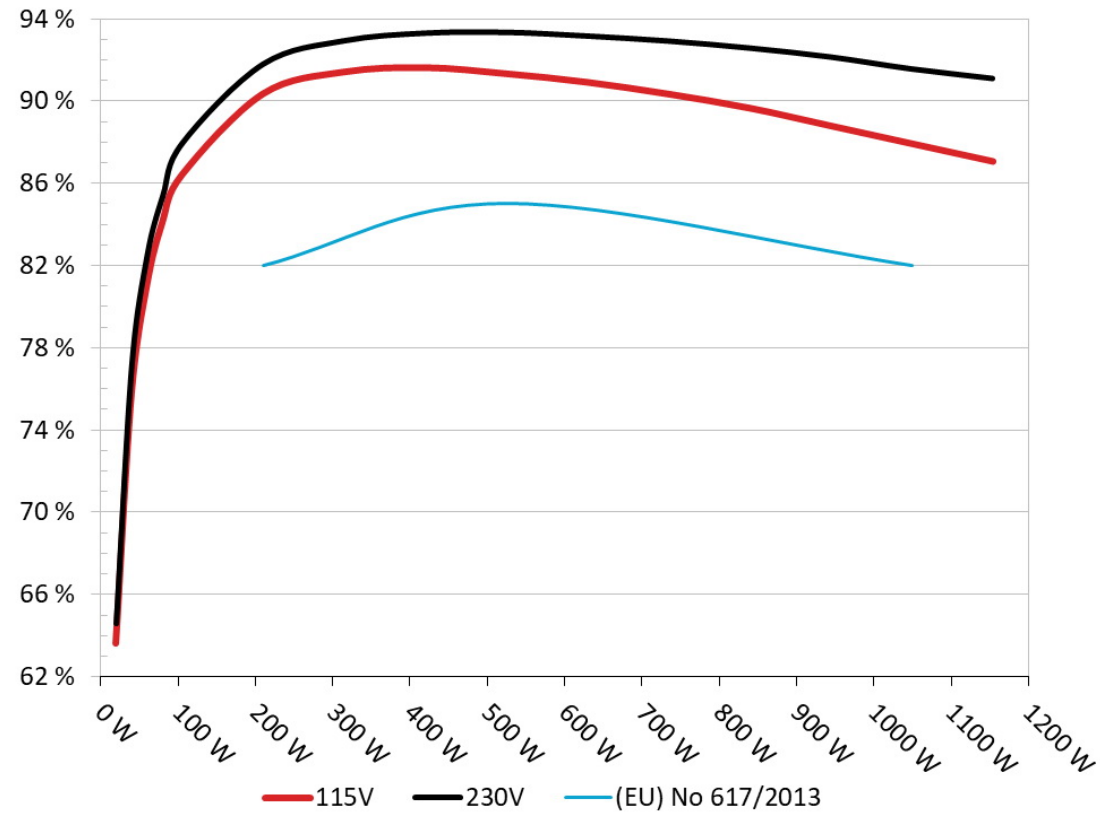
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

## Indicative Performance



### Efficiency: Seasonic SS-1050XP3

Ambient: 37°C - 46°C (98.6°F - 114.8°F)

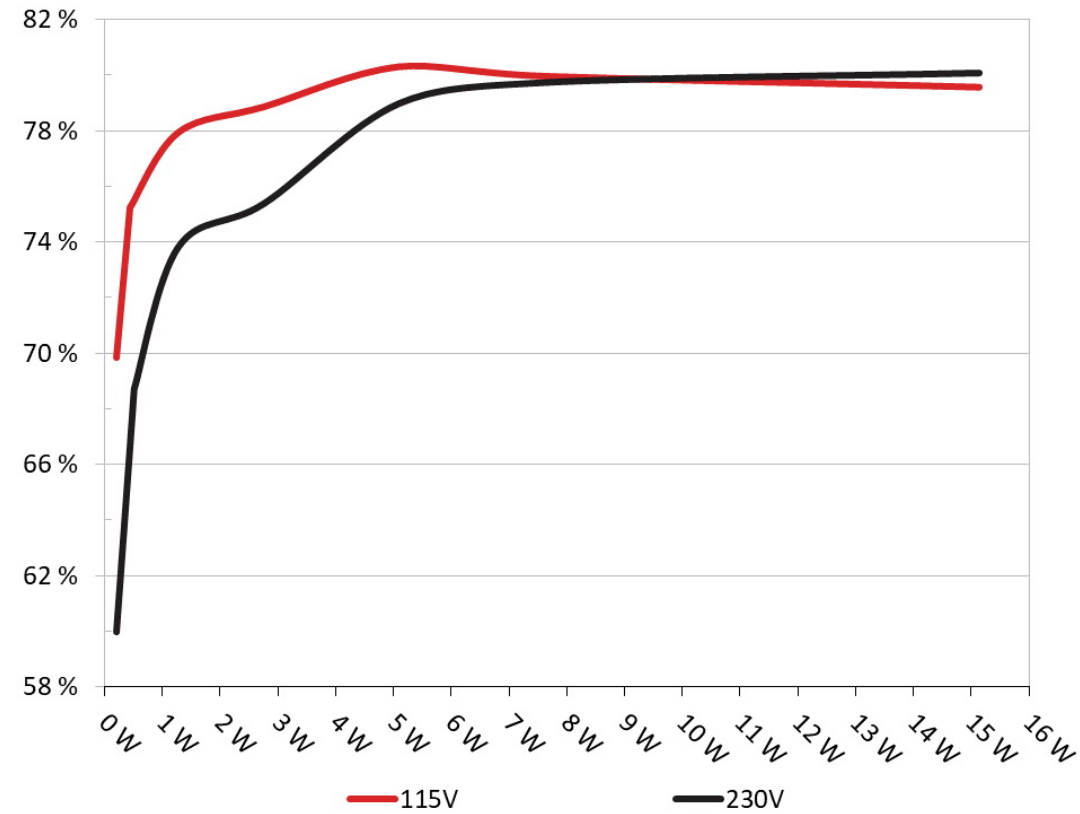


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used.

# 5Vsb

## 5VSB Efficiency: Seasonic SS-1050XP3

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input.

## 5Vsb (ErP Lot3/6 & CEC) 115V

| # | 5VSB   | DC/AC ( ) |         | PF/AC   |
|---|--------|-----------|---------|---------|
| 1 | 0.042A | 0.213     | 69.836% | 0.050   |
|   | 5.116V | 0.305     |         | 115.14V |

|   |        |        |         |         |
|---|--------|--------|---------|---------|
| 2 | 0.087A | 0.446  | 75.084% | 0.094   |
|   | 5.115V | 0.594  |         | 115.16V |
| 3 | 0.542A | 2.766  | 78.848% | 0.336   |
|   | 5.103V | 3.508  |         | 115.13V |
| 4 | 1.002A | 5.103  | 80.286% | 0.409   |
|   | 5.093V | 6.356  |         | 115.14V |
| 5 | 1.502A | 7.630  | 79.946% | 0.448   |
|   | 5.081V | 9.544  |         | 115.14V |
| 6 | 3.001A | 15.142 | 79.552% | 0.499   |
|   | 5.045V | 19.034 |         | 115.14V |

Supplementary Tests (For Reference)

| 10-110%115V |         |        |        |        |           |         |       |         |         |         |
|-------------|---------|--------|--------|--------|-----------|---------|-------|---------|---------|---------|
| #           | 12V     | 5V     | 3.3V   | 5VSB   | DC/AC ( ) |         | (RPM) | (dB[A]) | ( / )   | PF/AC   |
| 1           | 6.781A  | 1.976A | 1.964A | 0.981A | 104.789   | 86.411% | 0     | 6       | 44.03°C | 0.980   |
|             | 12.269V | 5.063V | 3.360V | 5.087V | 121.268   |         |       |         | 38.66°C | 115.18V |
| 2           | 14.574A | 2.960A | 2.944A | 1.181A | 209.632   | 90.366% | 0     | 6       | 45.02°C | 0.983   |
|             | 12.266V | 5.062V | 3.359V | 5.075V | 231.982   |         |       |         | 39.06°C | 115.16V |
| 3           | 22.729A | 3.459A | 3.454A | 1.380A | 314.827   | 91.437% | 0     | 6       | 45.87°C | 0.982   |
|             | 12.264V | 5.059V | 3.356V | 5.064V | 344.309   |         |       |         | 39.52°C | 115.15V |
| 4           | 30.866A | 3.957A | 3.930A | 1.580A | 419.630   | 91.649% | 0     | 6       | 47.57°C | 0.987   |
|             | 12.261V | 5.058V | 3.355V | 5.052V | 457.868   |         |       |         | 40.20°C | 115.15V |
| 5           | 38.680A | 4.951A | 4.916A | 1.784A | 524.568   | 91.353% | 745   | 16.3    | 41.13°C | 0.991   |
|             | 12.256V | 5.055V | 3.354V | 5.040V | 574.220   |         |       |         | 50.36°C | 115.15V |
| 6           | 46.514A | 5.935A | 5.905A | 1.985A | 629.473   | 90.937% | 745   | 16.3    | 42.05°C | 0.993   |
|             | 12.248V | 5.055V | 3.351V | 5.028V | 692.206   |         |       |         | 51.83°C | 115.16V |
| 7           | 54.343A | 6.932A | 6.886A | 2.191A | 734.407   | 90.363% | 1020  | 27.5    | 43.41°C | 0.995   |
|             | 12.243V | 5.052V | 3.352V | 5.013V | 812.733   |         |       |         | 53.43°C | 115.15V |
| 8           | 62.174A | 7.924A | 7.878A | 2.398A | 839.283   | 89.679% | 1610  | 38.5    | 44.30°C | 0.996   |
|             | 12.238V | 5.049V | 3.351V | 5.000V | 935.871   |         |       |         | 54.52°C | 115.15V |

|     |         |         |         |        |          |         |      |      |         |         |
|-----|---------|---------|---------|--------|----------|---------|------|------|---------|---------|
| 9   | 70.439A | 8.432A  | 8.386A  | 2.400A | 944.304  | 88.813% | 2220 | 46.1 | 44.89°C | 0.996   |
|     | 12.233V | 5.047V  | 3.349V  | 4.993V | 1063.254 |         |      |      | 55.16°C | 115.16V |
| 10  | 78.447A | 8.927A  | 8.868A  | 3.016A | 1049.036 | 87.947% | 2715 | 49.4 | 45.42°C | 0.997   |
|     | 12.229V | 5.044V  | 3.348V  | 4.970V | 1192.798 |         |      |      | 55.79°C | 115.16V |
| 11  | 87.059A | 8.932A  | 8.869A  | 3.020A | 1154.011 | 87.084% | 2745 | 49.6 | 46.48°C | 0.997   |
|     | 12.225V | 5.042V  | 3.347V  | 4.965V | 1325.171 |         |      |      | 57.22°C | 115.17V |
| CL1 | 0.097A  | 15.022A | 15.004A | 0.004A | 127.666  | 83.194% | 725  | 15.9 | 44.42°C | 0.988   |
|     | 12.272V | 5.057V  | 3.365V  | 5.095V | 153.455  |         |      |      | 53.73°C | 115.20V |
| CL2 | 86.937A | 1.003A  | 1.003A  | 1.002A | 1076.179 | 87.990% | 2745 | 49.6 | 46.20°C | 0.997   |
|     | 12.224V | 5.048V  | 3.349V  | 5.029V | 1223.074 |         |      |      | 54.15°C | 115.17V |

The results above are not used in the certification process

20-801115V

| # | 12V     | 5V     | 3.3V   | 5VSB   | DC/AC ( ) |         | (RPM) | (dB[A]) | PF/AC   |
|---|---------|--------|--------|--------|-----------|---------|-------|---------|---------|
| 1 | 1.188A  | 0.493A | 0.474A | 0.196A | 19.664    | 63.633% | 0     | 6       | 0.886   |
|   | 12.266V | 5.065V | 3.361V | 5.113V | 30.902    |         |       |         | 115.17V |
| 2 | 2.405A  | 0.981A | 0.979A | 0.390A | 39.753    | 75.724% | 0     | 6       | 0.941   |
|   | 12.267V | 5.065V | 3.361V | 5.105V | 52.497    |         |       |         | 115.17V |
| 3 | 3.621A  | 1.474A | 1.485A | 0.585A | 59.860    | 81.091% | 0     | 6       | 0.957   |
|   | 12.268V | 5.064V | 3.360V | 5.099V | 73.818    |         |       |         | 115.18V |
| 4 | 4.825A  | 1.975A | 1.963A | 0.784A | 79.785    | 84.121% | 0     | 6       | 0.976   |
|   | 12.269V | 5.063V | 3.360V | 5.092V | 94.845    |         |       |         | 115.17V |

The results above are not used in the certification process

1115V

| Test     | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|----------|---------|---------|---------|---------|-----------|
| 10% Load | 10.4 mV | 10.2 mV | 8.4 mV  | 6.9 mV  | Pass      |
| 20% Load | 15.3 mV | 11.0 mV | 9.7 mV  | 9.0 mV  | Pass      |
| 30% Load | 18.1 mV | 13.3 mV | 10.3 mV | 10.3 mV | Pass      |
| 40% Load | 20.7 mV | 14.8 mV | 12.3 mV | 12.8 mV | Pass      |

