

## Anex

Deepcool PX1300P

Lab ID#: DC13002177  
Receipt Date: May 9, 2023  
Test Date: May 12, 2023

Report: 23PS2177A  
Report Date: May 15, 2023

| DUT INFORMATION    |            | DUT SPECIFICATIONS     |   |
|--------------------|------------|------------------------|---|
| Brand              | Deepcool   | Rated Voltage (Vrms)   | 100-240   |
| Manufacturer (OEM) | CWT        | Rated Current (Arms)   | 15-7.5  |
| Series             | PXP        | Rated Frequency (Hz)   | 50-60   |
| Model Number       | PXD00P-FC  | Rated Power (W)        | 1300  |
| Serial Number      | 2023000002 | Type                   | ATX12V  |
| DUT Notes          |            | Cooling                | 120mm Fluid Dynamic Bearing Fan (HA1225H12SF-Z) |
|                    |            | Semi-Passive Operation | ✓ (selectable)                                  |
|                    |            | Cable Design           | Fully Modular                                   |

| TEST EQUIPMENT        |   |
|-----------------------|---|
| Electronic Loads      | Chroma 63601-5 x2<br>Chroma 63600-2<br>63640-80-80 x10<br>63610-80-20 |
| AC Sources            | Chroma 6530, APM SP300VAC4000W-P                                      |
| Power Analyzers       | RS HMC8015, N4L PPA1530, N4L PPA5530                                  |
| Oscilloscopes         | Picoscope 4444, Rigol DS7014, 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, Keithley 2015 - THD                                  |
| UPS                   | FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA                        |
| Isolation Transformer | 4kVA  |

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### RESULTS

|  |                 |
|--|-----------------|
| Temperature Range (°C /°F)                   | 30-32 / 86-89.6 |
| ErP Lot 3/6 Ready                            | ✓               |
| (EU) No 617/2013 Compliance                  | ✓               |
| ALPM (Alternative Low Power Mode) compatible | ✓               |
| ATX v3.0 PSU Power Excursion                 | ✓               |

### 115V

|   |             |
|---|-------------|
| Average Efficiency                        | 89.880%     |
| Efficiency With 10W (≤500W) or 2% (>500W) | 69.168      |
| Average Efficiency 5VSB                   | 78.838%     |
| Standby Power Consumption (W)             | 0.0228000   |
| Average PF                                | 0.986       |
| Avg Noise Output                          | 37.91 dB(A) |
| Efficiency Rating (ETA)                   | PLATINUM    |
| Noise Rating (LAMBDA)                     | Standard+   |

### POWER SPECIFICATIONS

| Rail                 |       | 3.3V | 5V | 12V   | 5VSB | -12V |
|----------------------|-------|------|----|-------|------|------|
| Max. Power           | Amps  | 25   | 25 | 108.3 | 3    | 0.3  |
|                      | Watts | 130  |    | 1300  | 15   | 3.6  |
| Total Max. Power (W) |       | 1300 |    |       |      |      |

### HOLD-UP TIME & POWER OK SIGNAL (230V)

|                                       |      |
|---------------------------------------|------|
| Hold-Up Time (ms)                     | 25.5 |
| AC Loss to PWR_OK Hold Up Time (ms)   | 17.4 |
| PWR_OK Inactive to DC Loss Delay (ms) | 8.1  |

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### CABLES AND CONNECTORS

#### Modular Cables

| Description  | Cable Count | Connector Count (Total) | Gauge    | In Cable Capacitors |
|--|-------------|-------------------------|----------|---------------------|
| ATX connector 20+4 pin (600mm)                     | 1           | 1                       | 16AWG    | No                  |
| 4+4 pin EPS12V (700mm)                             | 2           | 2                       | 16AWG    | No                  |
| 6+2 pin PCIe (650mm)                               | 5           | 5                       | 16AWG    | No                  |
| 2x 8 pin connector to 12+2 pin PCIe (650mm) (600W) | 1           | 1                       | 16-24AWG | No                  |
| 12+4 pin PCIe (650mm) (600W)                       | 1           | 1                       | 16-24AWG | No                  |
| SATA (500mm+150mm+150mm+150mm)                     | 2           | 8                       | 18AWG    | No                  |
| 4-pin Molex (500mm+150mm+150mm+150mm)              | 1           | 4                       | 18AWG    | No                  |

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## Deepcool PX1300P

| General Data                | -   |
|-----------------------------|---|
| Manufacturer (OEM)          | CWT   |
| Platform                    | CTT   |
| PCB Type                    | Double Sided  |
| Primary Side                | -   |
| Transient Filter            | 6x Y caps, 2x X caps, 2x CM chokes, 1x MOV  |
| Inrush Protection           | NTC Thermistor SCK-0510 (5 Ohm) & Relay   |
| Bridge Rectifier(s)         | 2x GBJ2506 (600V, 25A @ 100°C)  |
| APFC MOSFETs                | 2x Infineon IPA60R099P6 (600V, 24A @ 100°C, Rds(on): 0.099Ohm) & 1x SYNC Power SPN5003 (to reduce no load consumption)  |
| APFC Boost Diode            | 2x CREE C3D10060A (600V, 10A @ 153°C)   |
| Bulk Cap(s)                 | 2x Rubycon (420V, 680uF each or 1360uF, 2,000h @ 105°C, MXE)  |
| Main Switchers              | 4x Alpha & Omega AOTF29S50 (500V, 18A @ 100°C, Rds(on): 0.15Ohm)  |
| IC Drivers                  | 2x Novosense NSi6602 & 1x Infineon 2EDN752x   |
| Digital APFC Controller     | Texas Instruments UCD3138RMH  |
| Digital Resonant Controller | Texas Instruments UCD3138A  |
| Topology                    | Primary side: Semi-Digital, Interleaved PFC, Full-Bridge & LLC converter<br>Secondary side: Synchronous Rectification & DC-DC converters  |
| Secondary Side              | -   |
| +12V MOSFETs                | 8x Infineon BSC014N06NS (60V, 152A @ 100°C, Rds(on): 1.45mOhm)  |
| 5V & 3.3V                   | DC-DC Converters: 3x UBIQ QN3107M6N (30V, 70A @ 100°C, Rds(on): 2.6mOhm) & 2x UBIQ QM3054M6 (30V, 61A @ 100°C, Rds(on): 4.8mOhm)<br>PWM Controller(s): uPlsemi uP3861P  |
| Filtering Capacitors        | Electrolytic: 6x Nippon Chemi-Con (105°C, W), 2x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Rubycon (4-10,000h @ 105°C, YXJ), 3x Rubycon (4-10,000h @ 105°C, YXF), 1x Nichicon (4-10,000h @ 105°C, HE)<br>Polymer: 6x Nippon Chemi-Con, 25x FPCAP, 6x NIC |
| Supervisor IC               | Weltrend WT7502R (OVP, UVP, SCP, PG)  |
| Fan Model                   | Hong Hua HA1225H12SF-Z (120mm, 12V, 0.58A, Fluid Dynamic Bearing Fan)   |
| 5VSB Circuit                | -   |
| Rectifier(s)                | 1x PS1045L SBR (45V, 10A) & 1x UBIQ QM3016D FET (30V, 68A @ 100°C, Rds(on): 4mOhm)  |
| Standby PWM Controller      | On Bright OB2365T   |

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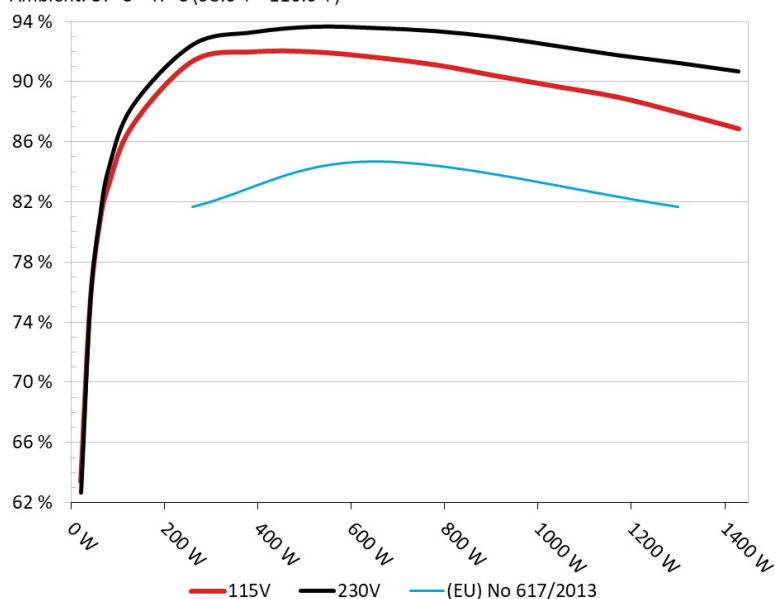
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### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

#### Efficiency: Deepcool PX1300P

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



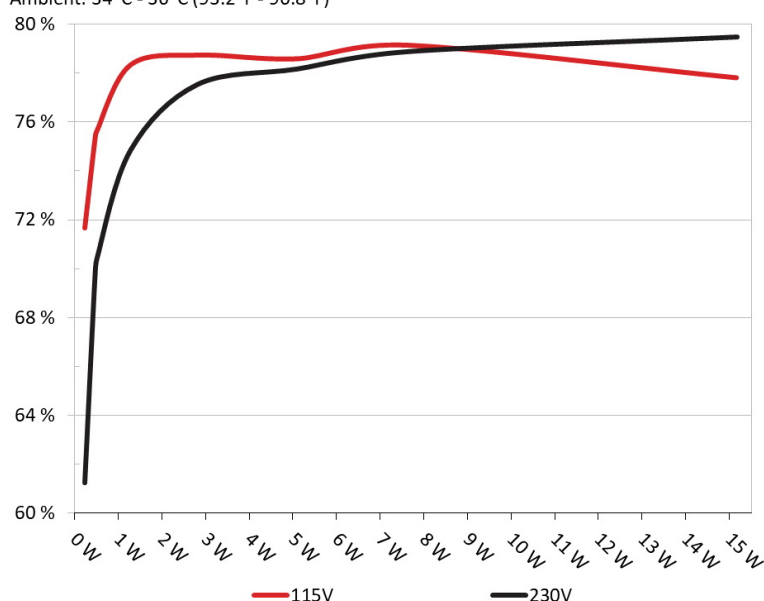
#### INFO

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

#### 5VSB Efficiency: Deepcool PX1300P

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



#### INFO

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

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## 5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

| Test # | 5VSB   | DC/AC (Watts) | Efficiency | PF/AC Volts |
|--------|--------|---------------|------------|-------------|
| 1      | 0.045A | 0.23W         | 71.681%    | 0.026       |
|        | 5.113V | 0.321W        |            | 115.16V     |
| 2      | 0.09A  | 0.46W         | 75.27%     | 0.048       |
|        | 5.112V | 0.611W        |            | 115.16V     |
| 3      | 0.55A  | 2.807W        | 78.748%    | 0.235       |
|        | 5.102V | 3.564W        |            | 115.16V     |
| 4      | 1A     | 5.095W        | 78.596%    | 0.339       |
|        | 5.093V | 6.482W        |            | 115.16V     |
| 5      | 1.5A   | 7.627W        | 79.153%    | 0.398       |
|        | 5.084V | 9.636W        |            | 115.16V     |
| 6      | 3A     | 15.167W       | 77.822%    | 0.479       |
|        | 5.055V | 19.49W        |            | 115.14V     |

## 5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

| Test # | 5VSB   | DC/AC (Watts) | Efficiency | PF/AC Volts |
|--------|--------|---------------|------------|-------------|
| 1      | 0.045A | 0.23W         | 61.257%    | 0.009       |
|        | 5.114V | 0.376W        |            | 230.36V     |
| 2      | 0.09A  | 0.46W         | 69.604%    | 0.016       |
|        | 5.113V | 0.663W        |            | 230.36V     |
| 3      | 0.55A  | 2.808W        | 77.548%    | 0.084       |
|        | 5.104V | 3.622W        |            | 230.36V     |
| 4      | 1A     | 5.096W        | 78.186%    | 0.143       |
|        | 5.095V | 6.518W        |            | 230.35V     |
| 5      | 1.5A   | 7.629W        | 78.894%    | 0.197       |
|        | 5.085V | 9.67W         |            | 230.35V     |
| 6      | 3A     | 15.169W       | 79.493%    | 0.306       |
|        | 5.056V | 19.084W       |            | 230.35V     |

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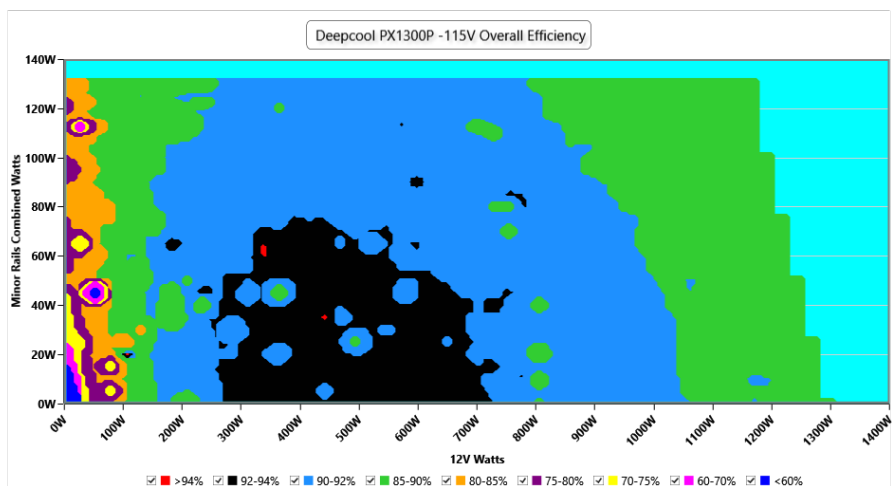
# 115V

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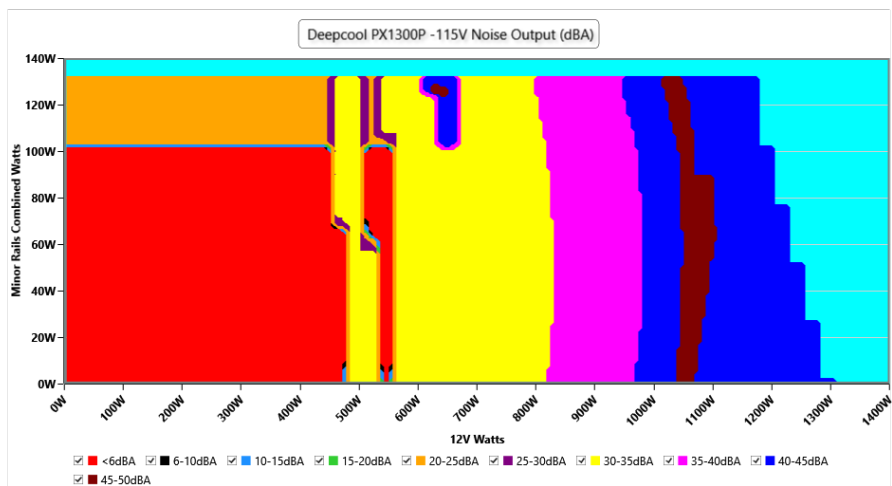
### EFFICIENCY GRAPH 115V



#### 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

### 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

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### VAMPIRE POWER -115V

#### Detailed Results

|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
|--------------------|----------|----------|-----------|----------|-----------|--------|
| Mains Voltage RMS: | 115.13 V | 115.12 V | 113.85 V  | 115.16 V | 116.15 V  | PASS   |
| Mains Frequency:   | 60.00 Hz | 59.99 Hz | 59.40 Hz  | 60.01 Hz | 60.60 Hz  | PASS   |
| Mains Voltage CF:  | 1.415    | 1.415    | 1.340     | 1.416    | 1.490     | PASS   |
| Mains Voltage THD: | 0.13 %   | 0.11 %   | N/A       | 0.15 %   | 2.00 %    | PASS   |
| Real Power:        | 0.023 W  | 0.020 W  | N/A       | 0.025 W  | N/A       | N/A    |
| Apparent Power:    | 12.508 W | 12.504 W | N/A       | 12.512 W | N/A       | N/A    |
| Power Factor:      | 0.002    | N/A      | N/A       | N/A      | N/A       | N/A    |

#### INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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### 10-110% LOAD TESTS 115V

| Test | 12V      | 5V      | 3.3V    | 5VSB   | DC/AC<br>(Watts) | Efficiency | Fan<br>Speed<br>(RPM) | PSU Noise<br>(dB[A]) | Temps<br>(In/Out) | PF/AC<br>Volts |
|------|----------|---------|---------|--------|------------------|------------|-----------------------|----------------------|-------------------|----------------|
| 10%  | 8.964A   | 1.983A  | 2.001A  | 0.994A | 130.024          | 87.356%    | 0                     | <6.0                 | 44.16°C           | 0.979          |
|      | 12.095V  | 5.046V  | 3.299V  | 5.034V | 147.366          |            |                       |                      | 40.15°C           | 115.13V        |
| 20%  | 18.964A  | 2.976A  | 3.002A  | 1.193A | 259.999          | 91.676%    | 0                     | <6.0                 | 45.23°C           | 0.993          |
|      | 12.080V  | 5.042V  | 3.298V  | 5.029V | 283.671          |            |                       |                      | 40.94°C           | 115.1V         |
| 30%  | 29.300A  | 3.475A  | 3.504A  | 1.395A | 389.728          | 92.294%    | 1197                  | 30.3                 | 41.01°C           | 0.996          |
|      | 12.071V  | 5.037V  | 3.297V  | 5.021V | 422.296          |            |                       |                      | 45.72°C           | 115.06V        |
| 40%  | 39.662A  | 3.978A  | 4.009A  | 1.597A | 519.753          | 92.289%    | 1199                  | 30.5                 | 41.57°C           | 0.997          |
|      | 12.065V  | 5.029V  | 3.293V  | 5.011V | 563.108          |            |                       |                      | 46.65°C           | 115.03V        |
| 50%  | 49.731A  | 4.975A  | 5.01A   | 1.798A | 649.905          | 91.93%     | 1216                  | 31                   | 42.47°C           | 0.998          |
|      | 12.053V  | 5.027V  | 3.294V  | 5.008V | 706.873          |            |                       |                      | 48.01°C           | 115V           |
| 60%  | 59.810A  | 5.972A  | 6.013A  | 1.999A | 779.997          | 91.428%    | 1539                  | 37.1                 | 42.99°C           | 0.998          |
|      | 12.041V  | 5.025V  | 3.294V  | 5.004V | 853.742          |            |                       |                      | 48.99°C           | 114.96V        |
| 70%  | 69.910A  | 6.972A  | 7.016A  | 2.201A | 910.035          | 90.691%    | 1823                  | 41.9                 | 43.48°C           | 0.998          |
|      | 12.029V  | 5.022V  | 3.293V  | 4.999V | 1003.438         |            |                       |                      | 50.54°C           | 114.91V        |
| 80%  | 80.032A  | 7.972A  | 8.017A  | 2.304A | 1039.603         | 89.982%    | 2044                  | 44.5                 | 44.44°C           | 0.999          |
|      | 12.017V  | 5.017V  | 3.292V  | 4.993V | 1155.333         |            |                       |                      | 52.47°C           | 114.88V        |
| 90%  | 90.592A  | 8.475A  | 8.505A  | 2.405A | 1169.855         | 89.281%    | 2047                  | 44.6                 | 45.33°C           | 0.999          |
|      | 12.003V  | 5.014V  | 3.291V  | 4.99V  | 1310.222         |            |                       |                      | 54.34°C           | 114.85V        |
| 100% | 100.930A | 8.979A  | 9.022A  | 3.013A | 1299.507         | 88.265%    | 2047                  | 44.6                 | 45.16°C           | 0.999          |
|      | 11.987V  | 5.011V  | 3.291V  | 4.979V | 1472.204         |            |                       |                      | 55.25°C           | 114.99V        |
| 110% | 111.220A | 9.986A  | 10.12A  | 3.015A | 1429.705         | 87.17%     | 2047                  | 44.6                 | 46.54°C           | 0.999          |
|      | 11.971V  | 5.007V  | 3.289V  | 4.976V | 1640.147         |            |                       |                      | 57.45°C           | 114.84V        |
| CL1  | 0.116A   | 15.517A | 15.642A | 0A     | 131.279          | 80.049%    | 1607                  | 38                   | 43.07°C           | 0.88           |
|      | 12.082V  | 5.045V  | 3.298V  | 5.065V | 163.407          |            |                       |                      | 48.58°C           | 115.14V        |
| CL2  | 0.115A   | 24.686A | 0A      | 0A     | 126.381          | 81.362%    | 1201                  | 30.5                 | 41.34°C           | 0.943          |
|      | 12.097V  | 5.063V  | 3.301V  | 5.104V | 156.226          |            |                       |                      | 48.37°C           | 115.13V        |
| CL3  | 0.115A   | 0A      | 24.909A | 0A     | 83.876           | 73.718%    | 1196                  | 30.3                 | 40.04°C           | 0.774          |
|      | 12.089V  | 5.055V  | 3.311V  | 5.046V | 114.304          |            |                       |                      | 49.21°C           | 115.15V        |
| CL4  | 108.451A | 0A      | 0A      | 0A     | 1300.209         | 88.223%    | 2046                  | 44.6                 | 45.2°C            | 0.999          |
|      | 11.989V  | 5.029V  | 3.303V  | 5.037V | 1473.775         |            |                       |                      | 56.15°C           | 114.81V        |

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### 20-80W LOAD TESTS 115V

| Test | 12V     | 5V     | 3.3V   | 5VSB   | DC/AC<br>(Watts) | Efficiency | Fan Speed<br>(RPM) | PSU Noise<br>(dB[A]) | Temps<br>(In/Out) | PF/AC<br>Volts |
|------|---------|--------|--------|--------|------------------|------------|--------------------|----------------------|-------------------|----------------|
| 20W  | 1.228A  | 0.494A | 0.499A | 0.198A | 19.999           | 63.701%    | 0                  | <6.0                 | 40.47°C           | 0.699          |
|      | 12.100V | 5.062V | 3.307V | 5.061V | 31.53            |            |                    |                      | 37.37°C           | 115.16V        |
| 40W  | 2.702A  | 0.692A | 0.699A | 0.297A | 39.997           | 75.441%    | 0                  | <6.0                 | 40.75°C           | 0.744          |
|      | 12.097V | 5.056V | 3.305V | 5.054V | 53.146           |            |                    |                      | 37.44°C           | 115.15V        |
| 60W  | 4.177A  | 0.892A | 0.9A   | 0.397A | 59.996           | 80.769%    | 0                  | <6.0                 | 42.27°C           | 0.759          |
|      | 12.096V | 5.048V | 3.301V | 5.045V | 74.24            |            |                    |                      | 38.48°C           | 115.15V        |
| 80W  | 5.650A  | 1.09A  | 1.1A   | 0.496A | 79.965           | 83.429%    | 0                  | <6.0                 | 43.73°C           | 0.776          |
|      | 12.095V | 5.047V | 3.3V   | 5.042V | 95.482           |            |                    |                      | 39.76°C           | 115.16V        |

### RIPPLE MEASUREMENTS 115V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 12.56mV | 6.19mV  | 6.30mV  | 6.27mV  | Pass      |
| 20% Load   | 11.85mV | 8.08mV  | 5.58mV  | 8.92mV  | Pass      |
| 30% Load   | 12.62mV | 5.98mV  | 5.22mV  | 6.88mV  | Pass      |
| 40% Load   | 14.66mV | 6.19mV  | 6.19mV  | 7.29mV  | Pass      |
| 50% Load   | 16.91mV | 6.44mV  | 7.22mV  | 7.60mV  | Pass      |
| 60% Load   | 16.34mV | 7.16mV  | 8.70mV  | 7.75mV  | Pass      |
| 70% Load   | 17.21mV | 7.77mV  | 7.11mV  | 8.46mV  | Pass      |
| 80% Load   | 20.43mV | 8.59mV  | 12.23mV | 9.58mV  | Pass      |
| 90% Load   | 20.63mV | 9.46mV  | 12.74mV | 10.71mV | Pass      |
| 100% Load  | 24.16mV | 9.69mV  | 12.93mV | 10.45mV | Pass      |
| 110% Load  | 26.54mV | 11.47mV | 15.60mV | 12.24mV | Pass      |
| Crossload1 | 13.35mV | 7.89mV  | 12.61mV | 7.84mV  | Pass      |
| Crossload2 | 12.41mV | 9.67mV  | 6.91mV  | 8.16mV  | Pass      |
| Crossload3 | 12.67mV | 7.06mV  | 15.51mV | 7.60mV  | Pass      |
| Crossload4 | 24.24mV | 7.88mV  | 8.39mV  | 8.20mV  | Pass      |

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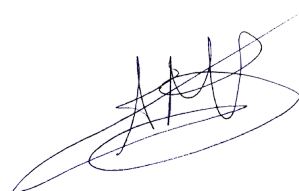


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Power specifications label

## CERTIFICATIONS 115V

**Aristeidis Bitziopoulos**  
Lab Director

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