

Anex

MSI MAG A1250GL PCIE5

Lab ID#: MS12502449  
Receipt Date: May 8, 2024  
Test Date: May 20, 2024

Report: 24PS2449A  
Report Date: May 21, 2024

| DUT INFORMATION    |                   |
|--------------------|-------------------|
| Brand              | MSI               |
| Manufacturer (OEM) | CWT               |
| Series             | MAG A-GL PCIE5    |
| Model Number       | MAG A1250GL PCIE5 |
| Serial Number      | C23014262141      |
| DUT Notes          |                   |

| DUT SPECIFICATIONS     |                                                  |
|------------------------|--------------------------------------------------|
| Rated Voltage (Vrms)   | 100-240                                          |
| Rated Current (Arms)   | 15                                               |
| Rated Frequency (Hz)   | 50-60                                            |
| Rated Power (W)        | 1250                                             |
| Type                   | ATX12V                                           |
| Cooling                | 135mm Fluid Dynamic Bearing Fan (HA13525H12SF-Z) |
| Semi-Passive Operation | X                                                |
| 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 v3.1 PSU Power Excursion                 | ✓               |

### 115V

|                                           |             |
|-------------------------------------------|-------------|
| Average Efficiency                        | 88.032%     |
| Efficiency With 10W (≤500W) or 2% (>500W) | 77.932      |
| Average Efficiency 5VSB                   | 78.570%     |
| Standby Power Consumption (W)             | 0.0167000   |
| Average PF                                | 0.985       |
| Avg Noise Output                          | 38.89 dB(A) |
| Efficiency Rating (ETA)                   | GOLD        |
| Noise Rating (LAMBDA)                     | Standard+   |

### 230V

|                               |             |
|-------------------------------|-------------|
| Average Efficiency            | 90.340%     |
| Average Efficiency 5VSB       | 77.573%     |
| Standby Power Consumption (W) | 0.0761000   |
| Average PF                    | 0.963       |
| Avg Noise Output              | 38.56 dB(A) |
| Efficiency Rating (ETA)       | GOLD        |
| Noise Rating (LAMBDA)         | Standard+   |

## POWER SPECIFICATIONS

| Rail                 |       | 3.3V | 5V | 12V   | 5VSB | -12V |
|----------------------|-------|------|----|-------|------|------|
| Max. Power           | Amps  | 22   | 22 | 104.1 | 3    | 0.3  |
|                      | Watts | 120  |    | 1249  | 15   | 3.6  |
| Total Max. Power (W) |       | 1250 |    |       |      |      |

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

|                                       |      |
|---------------------------------------|------|
| Hold-Up Time (ms)                     | 14.9 |
| AC Loss to PWR_OK Hold Up Time (ms)   | 12.4 |
| PWR_OK Inactive to DC Loss Delay (ms) | 2.5  |

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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 (750mm)                               | 2           | 2                       | 18AWG    | No                  |
| 6+2 pin PCIe (600mm+150mm)                           | 2           | 4                       | 16-18AWG | No                  |
| 12+4 pin PCIe (600mm) (450W)                         | 1           | 1                       | 16-26AWG | No                  |
| SATA (500mm+150mm+150mm+150mm)                       | 4           | 16                      | 18AWG    | No                  |
| 4-pin Molex (500mm+150mm+150mm+150mm) / FDD (+150mm) | 1           | 4 / 1                   | 18-20AWG | No                  |
| AC Power Cord (1395mm) - C13 coupler                 | 1           | 1                       | 18AWG    | -                   |

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## MSI MAG A1250GL PCIE5

### General Data

|                        |                                                                                                                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer (OEM)     | CWT                                                                                                                                                                                                                             |
| Platform               | CSZ                                                                                                                                                                                                                             |
| PCB Type               | Double-Sided                                                                                                                                                                                                                    |
| Primary Side           |                                                                                                                                                                                                                                 |
| Transient Filter       | 4x Y caps, 1x X caps, 2x CM chokes, 1x MOV                                                                                                                                                                                      |
| Inrush Protection      | 1x NTC Thermistor <a href="#">SCK207R0</a> (7 Ohm @25°C) & Relay                                                                                                                                                                |
| Bridge Rectifier(s)    | 2x Yangjie <a href="#">GBJL2506</a> (420V, 3.5A @ 25°C)                                                                                                                                                                         |
| APFC MOSFETs           | 3x Infineon <a href="#">IPB50R140CP</a> (550V, 15A @ 100°C, Rds(on): 0.14Ohm)                                                                                                                                                   |
| APFC Boost Diode       | 1x Vishay <a href="#">3C16ET07T</a> (650V, 16A @ 142°C)                                                                                                                                                                         |
| Bulk Cap(s)            | 1x Teapo (420V, 820uF, 2000h @ 105°C, <a href="#">S</a> )                                                                                                                                                                       |
| Main Switchers         | 2x Infineon <a href="#">IPP60R099C6</a> (650V, 37.9A @ 25°C, Rds(on): 0.099Ohm)                                                                                                                                                 |
| APFC Controller        | Champion CM6500UNX                                                                                                                                                                                                              |
| Resonant Controller    | Champion <a href="#">CM6901X</a>                                                                                                                                                                                                |
| Topology               | Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters                                                                                                                    |
| Secondary Side         |                                                                                                                                                                                                                                 |
| +12V MOSFETs           | 10x Vishay <a href="#">R626</a> (60V, 100A @ 25°C, Rds(on): 1.7mOhm)                                                                                                                                                            |
| 5V & 3.3V              | DC-DC Converters: 2x Excelliance Mos <a href="#">B04N03</a> (30V, 75A @ 25°C, Rds(on): 4mOhm) 2x On Semiconductor <a href="#">ON3107335</a> (20V, 8.3A @ 25°C, Rds(on): 12.2mOhm) PWM Controller(s): 1x <a href="#">uP3861P</a> |
| Filtering Capacitors   | Electrolytic: 7x Chengx (2-3000 @ 105°C, <a href="#">GR</a> ), Polymer: 7x Nippon Chemi-Con, 5x CapXon ,15x AP-Con                                                                                                              |
| Supervisor IC          | Weltrend WT7502                                                                                                                                                                                                                 |
| Fan Model              | Hong Hua HA13525H12SF-Z (135mm, 12V, 0.5A, Fluid Dynamic Bearing Fan)                                                                                                                                                           |
| 5VSB                   |                                                                                                                                                                                                                                 |
| Low Side Rectifier     | <a href="#">P6SMB6</a>                                                                                                                                                                                                          |
| Standby PWM Controller | B2365T                                                                                                                                                                                                                          |

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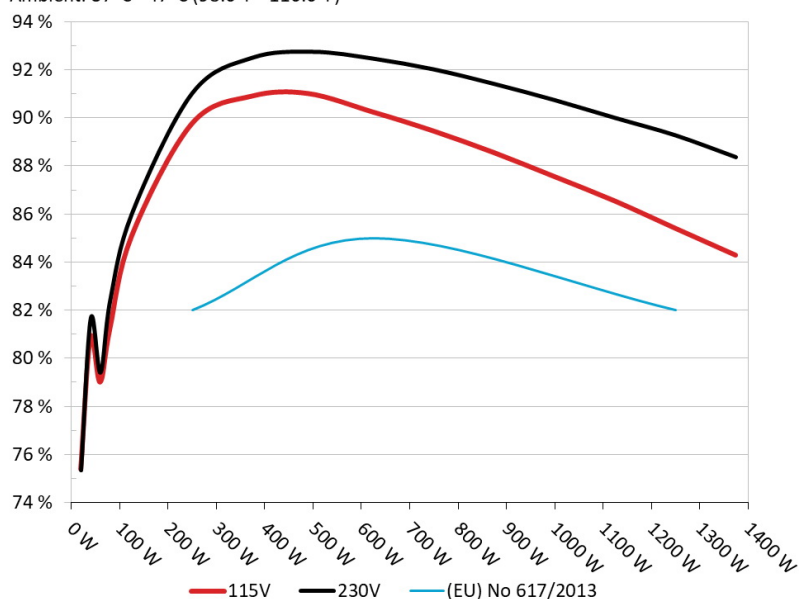
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### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: MSI MAG A1250GL PCIE5

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



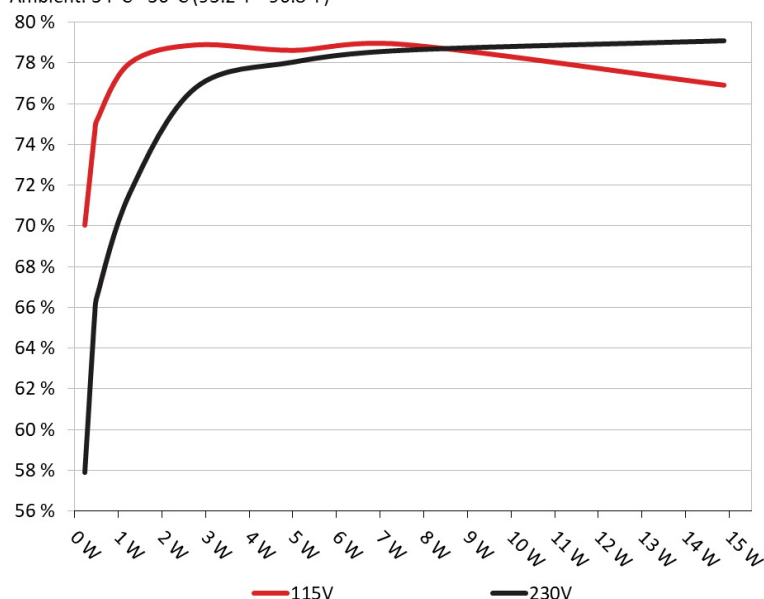
#### INFO

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: MSI MAG A1250GL PCIE5

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 (ERP LOT 3/6 & CEC)

| Test # | 5VSB   | DC/AC (Watts) | Efficiency | PF/AC Volts |
|--------|--------|---------------|------------|-------------|
| 1      | 0.045A | 0.227W        | 70.047%    | 0.032       |
|        | 5.037V | 0.324W        |            | 114.93V     |
| 2      | 0.09A  | 0.453W        | 74.576%    | 0.059       |
|        | 5.035V | 0.607W        |            | 114.93V     |
| 3      | 0.55A  | 2.763W        | 78.871%    | 0.271       |
|        | 5.023V | 3.503W        |            | 114.92V     |
| 4      | 1A     | 5.012W        | 78.606%    | 0.377       |
|        | 5.012V | 6.376W        |            | 114.91V     |
| 5      | 1.5A   | 7.499W        | 78.902%    | 0.429       |
|        | 4.999V | 9.504W        |            | 114.92V     |
| 6      | 3A     | 14.878W       | 76.904%    | 0.505       |
|        | 4.959V | 19.347W       |            | 114.91V     |

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

| Test # | 5VSB   | DC/AC (Watts) | Efficiency | PF/AC Volts |
|--------|--------|---------------|------------|-------------|
| 1      | 0.045A | 0.227W        | 57.916%    | 0.012       |
|        | 5.035V | 0.393W        |            | 229.88V     |
| 2      | 0.09A  | 0.453W        | 65.671%    | 0.02        |
|        | 5.034V | 0.691W        |            | 229.88V     |
| 3      | 0.55A  | 2.762W        | 76.777%    | 0.101       |
|        | 5.022V | 3.599W        |            | 229.88V     |
| 4      | 1A     | 5.011W        | 78.042%    | 0.169       |
|        | 5.011V | 6.42W         |            | 229.88V     |
| 5      | 1.5A   | 7.497W        | 78.613%    | 0.229       |
|        | 4.997V | 9.536W        |            | 229.88V     |
| 6      | 3A     | 14.875W       | 79.084%    | 0.331       |
|        | 4.959V | 18.808W       |            | 229.88V     |

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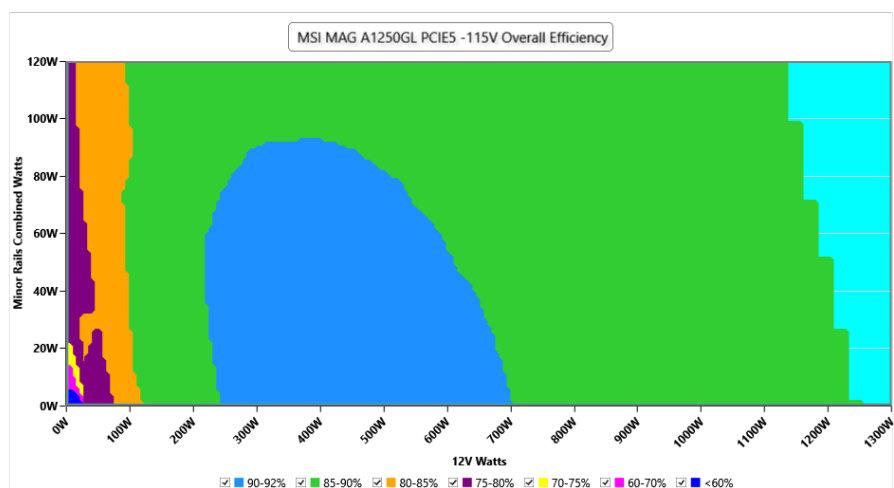
# 115V

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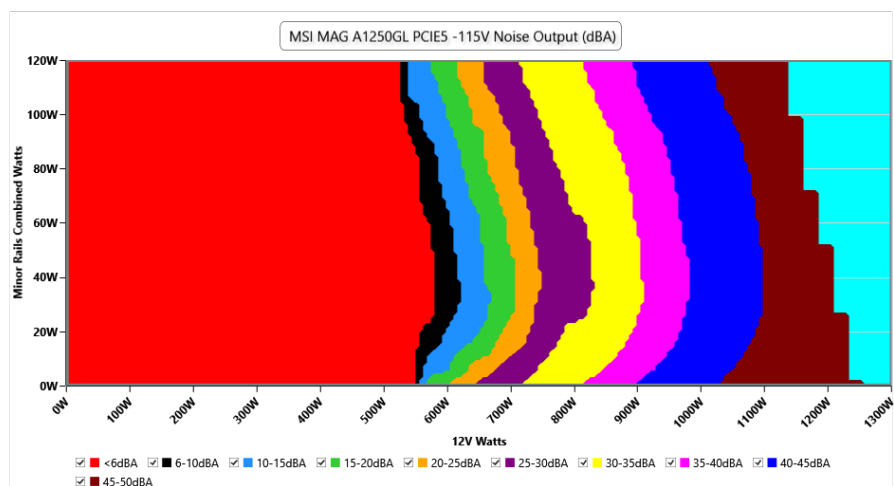
### EFFICIENCY GRAPH 115V



#### 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: | 115.07 V | 115.03 V | 113.85 V  | 115.11 V | 116.15 V  | PASS   |
| Mains Frequency:   | 60.00 Hz | 59.93 Hz | 59.40 Hz  | 60.02 Hz | 60.60 Hz  | PASS   |
| Mains Voltage CF:  | 1.416    | 1.415    | 1.340     | 1.418    | 1.490     | PASS   |
| Mains Voltage THD: | 0.13 %   | 0.09 %   | N/A       | 0.17 %   | 2.00 %    | PASS   |
| Real Power:        | 0.017 W  | 0.012 W  | N/A       | 0.021 W  | N/A       | N/A    |
| Apparent Power:    | 10.263 W | 10.156 W | N/A       | 10.364 W | N/A       | N/A    |
| Power Factor:      | 0.001    | 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%  | 8.522A   | 1.981A  | 1.972A  | 1.001A | 124.967          | 85.068%    | 400                   | <6.0                 | 40.18°C           | 0.971          |
|      | 12.130V  | 5.047V  | 3.347V  | 4.995V | 146.902          |            |                       |                      | 44.47°C           | 114.87V        |
| 20%  | 18.077A  | 2.975A  | 2.961A  | 1.205A | 249.974          | 89.756%    | 401                   | <6.0                 | 40.7°C            | 0.981          |
|      | 12.119V  | 5.042V  | 3.344V  | 4.979V | 278.511          |            |                       |                      | 45.29°C           | 114.83V        |
| 30%  | 28.008A  | 3.473A  | 3.457A  | 1.402A | 374.46           | 90.902%    | 401                   | <6.0                 | 41.25°C           | 0.981          |
|      | 12.082V  | 5.039V  | 3.342V  | 4.993V | 411.934          |            |                       |                      | 46.25°C           | 114.78V        |
| 40%  | 20.784A  | 0.391A  | 0.282A  | 0.129A | 490.414          | 91.006%    | 402                   | <6.0                 | 41.64°C           | 0.27           |
|      | 12.122V  | 5.049V  | 3.352V  | 5.025V | 538.882          |            |                       |                      | 47.19°C           | 114.87V        |
| 50%  | 47.754A  | 4.971A  | 4.946A  | 1.813A | 624.917          | 90.235%    | 446                   | 7.2                  | 42.45°C           | 0.987          |
|      | 12.028V  | 5.029V  | 3.336V  | 4.964V | 692.542          |            |                       |                      | 48.46°C           | 114.69V        |
| 60%  | 57.460A  | 5.971A  | 5.942A  | 2A     | 749.329          | 89.45%     | 931                   | 28.6                 | 42.65°C           | 0.989          |
|      | 12.002V  | 5.025V  | 3.333V  | 4.95V  | 837.71           |            |                       |                      | 49.15°C           | 114.65V        |
| 70%  | 67.284A  | 6.973A  | 6.941A  | 2.229A | 874.73           | 88.549%    | 1348                  | 39.4                 | 43.35°C           | 0.991          |
|      | 11.975V  | 5.02V   | 3.329V  | 4.935V | 987.85           |            |                       |                      | 50.41°C           | 114.59V        |
| 80%  | 77.135A  | 7.973A  | 7.94A   | 2.336A | 999.515          | 87.556%    | 1799                  | 46.1                 | 43.91°C           | 0.992          |
|      | 11.949V  | 5.016V  | 3.325V  | 4.922V | 1141.58          |            |                       |                      | 52.02°C           | 114.54V        |
| 90%  | 87.373A  | 8.478A  | 8.43A   | 2.444A | 1124.929         | 86.537%    | 2187                  | 50.2                 | 44.69°C           | 0.993          |
|      | 11.931V  | 5.012V  | 3.322V  | 4.909V | 1299.946         |            |                       |                      | 53.83°C           | 114.5V         |
| 100% | 97.312A  | 8.984A  | 8.95A   | 3.072A | 1249.771         | 85.405%    | 2186                  | 50.2                 | 45.47°C           | 0.994          |
|      | 11.921V  | 5.008V  | 3.319V  | 4.882V | 1463.341         |            |                       |                      | 55.47°C           | 114.43V        |
| 110% | 107.009A | 9.99A   | 10.036A | 3.079A | 1374.37          | 84.289%    | 2188                  | 50.3                 | 46.34°C           | 0.995          |
|      | 11.925V  | 5.005V  | 3.318V  | 4.872V | 1630.544         |            |                       |                      | 57.21°C           | 114.38V        |
| CL1  | 0.114A   | 14.382A | 14.31A  | 0A     | 121.275          | 79.997%    | 402                   | <6.0                 | 40.76°C           | 0.972          |
|      | 12.131V  | 5.019V  | 3.333V  | 5.013V | 151.602          |            |                       |                      | 48.89°C           | 114.87V        |
| CL2  | 0.114A   | 21.963A | 0A      | 0A     | 111.294          | 77.247%    | 403                   | <6.0                 | 41.38°C           | 0.972          |
|      | 12.144V  | 5.005V  | 3.345V  | 5.017V | 144.075          |            |                       |                      | 48.17°C           | 114.88V        |
| CL3  | 0.114A   | 0A      | 21.762A | 0A     | 73.992           | 72.183%    | 403                   | <6.0                 | 41.59°C           | 0.961          |
|      | 12.147V  | 5.02V   | 3.336V  | 5.017V | 102.509          |            |                       |                      | 48.27°C           | 114.89V        |
| CL4  | 104.773A | 0A      | 0A      | 0A     | 1249.551         | 86.095%    | 2192                  | 50.3                 | 45.4°C            | 0.994          |
|      | 11.926V  | 5.028V  | 3.336V  | 4.969V | 1451.368         |            |                       |                      | 53.12°C           | 114.45V        |

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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  | 1.226A  | 0.495A | 0.493A | 0.199A | 20.002           | 75.393%    | 395                | <6.0                 | 36.73°C           | 0.861          |
|      | 12.120V | 5.054V | 3.348V | 5.026V | 26.529           |            |                    |                      | 39.81°C           | 114.91V        |
| 40W  | 2.698A  | 0.693A | 0.69A  | 0.299A | 40.001           | 80.848%    | 396                | <6.0                 | 37.51°C           | 0.926          |
|      | 12.115V | 5.053V | 3.348V | 5.021V | 49.48            |            |                    |                      | 40.83°C           | 114.9V         |
| 60W  | 4.164A  | 0.891A | 0.887A | 0.399A | 60.001           | 79.012%    | 397                | <6.0                 | 38.4°C            | 0.962          |
|      | 12.134V | 5.052V | 3.349V | 5.017V | 75.941           |            |                    |                      | 42.03°C           | 114.9V         |
| 80W  | 5.630A  | 1.089A | 1.084A | 0.499A | 79.952           | 81.204%    | 399                | <6.0                 | 39.43°C           | 0.961          |
|      | 12.134V | 5.05V  | 3.349V | 5.012V | 98.458           |            |                    |                      | 43.39°C           | 114.89V        |

### RIPPLE MEASUREMENTS 115V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 13.56mV | 13.49mV | 11.97mV | 16.42mV | Pass      |
| 20% Load   | 14.48mV | 13.18mV | 11.97mV | 15.19mV | Pass      |
| 30% Load   | 18.97mV | 13.90mV | 12.23mV | 16.37mV | Pass      |
| 40% Load   | 22.36mV | 12.98mV | 10.49mV | 17.44mV | Pass      |
| 50% Load   | 17.96mV | 14.51mV | 13.15mV | 17.34mV | Pass      |
| 60% Load   | 19.34mV | 23.60mV | 14.27mV | 18.62mV | Pass      |
| 70% Load   | 19.80mV | 26.87mV | 17.65mV | 20.41mV | Pass      |
| 80% Load   | 21.13mV | 18.14mV | 14.78mV | 20.00mV | Pass      |
| 90% Load   | 21.13mV | 18.39mV | 15.35mV | 21.28mV | Pass      |
| 100% Load  | 16.35mV | 20.25mV | 16.35mV | 29.86mV | Pass      |
| 110% Load  | 32.86mV | 21.17mV | 18.44mV | 32.02mV | Pass      |
| Crossload1 | 15.79mV | 15.54mV | 13.96mV | 16.95mV | Pass      |
| Crossload2 | 17.55mV | 22.89mV | 12.79mV | 15.55mV | Pass      |
| Crossload3 | 18.37mV | 14.51mV | 18.47mV | 16.11mV | Pass      |
| Crossload4 | 28.64mV | 18.43mV | 16.26mV | 30.67mV | Pass      |

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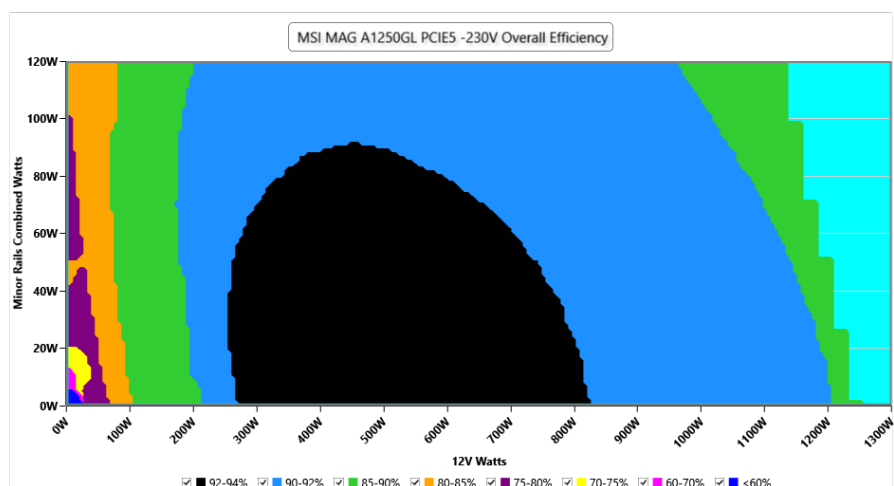
# 230V

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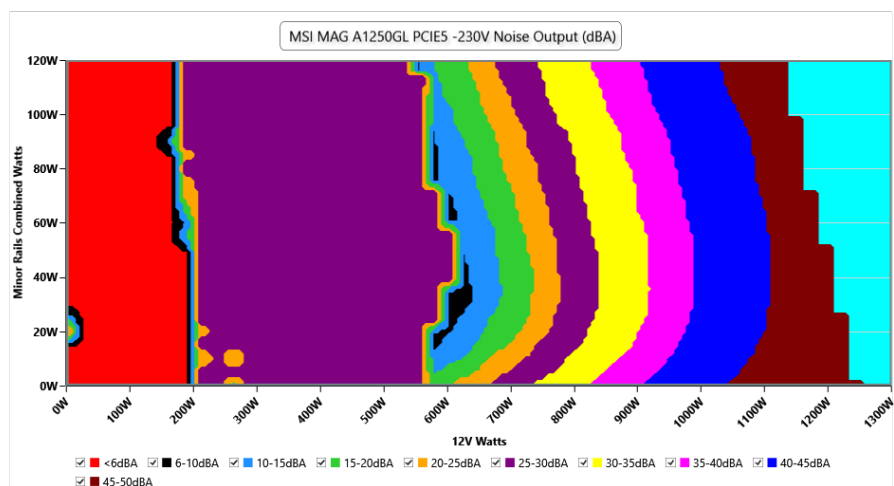
### EFFICIENCY GRAPH 230V



#### 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 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

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### VAMPIRE POWER -230V

#### Detailed Results

|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
|--------------------|----------|----------|-----------|----------|-----------|--------|
| Mains Voltage RMS: | 231.00 V | 230.89 V | 227.70 V  | 231.06 V | 232.30 V  | PASS   |
| Mains Frequency:   | 50.00 Hz | 49.99 Hz | 49.50 Hz  | 50.01 Hz | 50.50 Hz  | PASS   |
| Mains Voltage CF:  | 1.417    | 1.416    | 1.340     | 1.419    | 1.490     | PASS   |
| Mains Voltage THD: | 0.17 %   | 0.14 %   | N/A       | 0.25 %   | 2.00 %    | PASS   |
| Real Power:        | 0.076 W  | 0.066 W  | N/A       | 0.095 W  | N/A       | N/A    |
| Apparent Power:    | 34.219 W | 33.915 W | N/A       | 34.542 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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## Anex

MSI MAG A1250GL PCIE5

### 10-110% LOAD TESTS 230V

| 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%  | 8.520A   | 1.982A  | 1.972A  | 1.001A | 124.972          | 85.996%    | 399                   | <6.0                 | 40.43°C           | 0.907          |
|      | 12.133V  | 5.046V  | 3.347V  | 4.994V | 145.329          |            |                       |                      | 44.65°C           | 229.86V        |
| 20%  | 18.074A  | 2.976A  | 2.961A  | 1.206A | 249.987          | 91.009%    | 400                   | <6.0                 | 40.56°C           | 0.95           |
|      | 12.122V  | 5.041V  | 3.344V  | 4.978V | 274.684          |            |                       |                      | 45.2°C            | 229.84V        |
| 30%  | 28.003A  | 3.474A  | 3.457A  | 1.403A | 374.502          | 92.483%    | 401                   | <6.0                 | 41.38°C           | 0.965          |
|      | 12.087V  | 5.038V  | 3.341V  | 4.991V | 404.941          |            |                       |                      | 46.39°C           | 229.82V        |
| 40%  | 38.019A  | 3.974A  | 3.954A  | 1.608A | 499.658          | 92.728%    | 401                   | <6.0                 | 41.77°C           | 0.971          |
|      | 12.058V  | 5.034V  | 3.339V  | 4.977V | 538.838          |            |                       |                      | 47.32°C           | 229.8V         |
| 50%  | 47.747A  | 4.973A  | 4.948A  | 1.815A | 625.008          | 92.442%    | 598                   | 14.1                 | 42°C              | 0.976          |
|      | 12.032V  | 5.028V  | 3.336V  | 4.961V | 676.108          |            |                       |                      | 48.09°C           | 229.78V        |
| 60%  | 57.467A  | 5.974A  | 5.945A  | 2.001A | 749.402          | 91.998%    | 954                   | 29.3                 | 42.97°C           | 0.978          |
|      | 12.002V  | 5.023V  | 3.331V  | 4.946V | 814.579          |            |                       |                      | 49.55°C           | 229.75V        |
| 70%  | 67.298A  | 6.975A  | 6.945A  | 2.232A | 874.823          | 91.391%    | 1319                  | 38.8                 | 43.03°C           | 0.98           |
|      | 11.973V  | 5.019V  | 3.327V  | 4.93V  | 957.217          |            |                       |                      | 50.21°C           | 229.74V        |
| 80%  | 77.163A  | 7.975A  | 7.945A  | 2.339A | 999.585          | 90.72%     | 1739                  | 45.3                 | 43.69°C           | 0.982          |
|      | 11.946V  | 5.015V  | 3.323V  | 4.916V | 1101.835         |            |                       |                      | 51.85°C           | 229.71V        |
| 90%  | 87.415A  | 8.48A   | 8.435A  | 2.447A | 1124.993         | 89.979%    | 2195                  | 50.3                 | 44.1°C            | 0.984          |
|      | 11.926V  | 5.011V  | 3.32V   | 4.903V | 1250.279         |            |                       |                      | 53.18°C           | 229.68V        |
| 100% | 97.380A  | 8.986A  | 8.956A  | 3.077A | 1249.798         | 89.255%    | 2197                  | 50.4                 | 45.54°C           | 0.985          |
|      | 11.914V  | 5.007V  | 3.317V  | 4.876V | 1400.248         |            |                       |                      | 55.56°C           | 229.66V        |
| 110% | 107.202A | 9.998A  | 10.053A | 3.085A | 1374.411         | 88.35%     | 2199                  | 50.4                 | 46.72°C           | 0.986          |
|      | 11.904V  | 5V      | 3.313V  | 4.863V | 1555.647         |            |                       |                      | 57.64°C           | 229.63V        |
| CL1  | 0.116A   | 14.41A  | 14.325A | 0A     | 121.304          | 80.502%    | 406                   | <6.0                 | 40.92°C           | 0.913          |
|      | 12.144V  | 5.01V   | 3.33V   | 5.01V  | 150.689          |            |                       |                      | 46.72°C           | 229.86V        |
| CL2  | 0.115A   | 22.002A | 0A      | 0A     | 111.305          | 77.889%    | 405                   | <6.0                 | 42.17°C           | 0.908          |
|      | 12.153V  | 4.996V  | 3.341V  | 5.015V | 142.904          |            |                       |                      | 49.45°C           | 229.86V        |
| CL3  | 0.114A   | 0A      | 21.793A | 0A     | 73.998           | 73.486%    | 404                   | <6.0                 | 42.25°C           | 0.873          |
|      | 12.154V  | 5.012V  | 3.332V  | 5.015V | 100.694          |            |                       |                      | 48.78°C           | 229.87V        |
| CL4  | 104.854A | 0A      | 0A      | 0A     | 1249.582         | 89.744%    | 2198                  | 50.4                 | 44.83°C           | 0.985          |
|      | 11.918V  | 5.025V  | 3.331V  | 4.967V | 1392.382         |            |                       |                      | 49.82°C           | 229.66V        |

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## Anex

MSI MAG A1250GL PCIE5

### 20-80W LOAD TESTS 230V

| 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  | 1.225A  | 0.495A | 0.493A | 0.199A | 19.999           | 75.34%     | 393                | <6.0                 | 36.57°C           | 0.541          |
|      | 12.122V | 5.054V | 3.348V | 5.026V | 26.543           |            |                    |                      | 39.65°C           | 229.89V        |
| 40W  | 2.698A  | 0.693A | 0.69A  | 0.299A | 40               | 81.65%     | 395                | <6.0                 | 37.63°C           | 0.723          |
|      | 12.117V | 5.053V | 3.348V | 5.022V | 48.988           |            |                    |                      | 40.91°C           | 229.88V        |
| 60W  | 4.164A  | 0.891A | 0.887A | 0.399A | 60.001           | 79.401%    | 396                | <6.0                 | 38.64°C           | 0.82           |
|      | 12.136V | 5.052V | 3.349V | 5.017V | 75.568           |            |                    |                      | 42.23°C           | 229.88V        |
| 80W  | 5.630A  | 1.089A | 1.084A | 0.499A | 79.954           | 82.371%    | 397                | <6.0                 | 39.43°C           | 0.862          |
|      | 12.136V | 5.05V  | 3.349V | 5.012V | 97.065           |            |                    |                      | 43.28°C           | 229.87V        |

### RIPPLE MEASUREMENTS 230V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 11.66mV | 10.73mV | 10.03mV | 10.38mV | Pass      |
| 20% Load   | 12.38mV | 11.09mV | 10.33mV | 10.18mV | Pass      |
| 30% Load   | 19.68mV | 10.88mV | 10.03mV | 10.43mV | Pass      |
| 40% Load   | 16.63mV | 12.52mV | 10.28mV | 12.17mV | Pass      |
| 50% Load   | 16.01mV | 12.21mV | 11.41mV | 11.51mV | Pass      |
| 60% Load   | 16.42mV | 24.27mV | 14.17mV | 11.20mV | Pass      |
| 70% Load   | 16.68mV | 24.93mV | 15.24mV | 12.43mV | Pass      |
| 80% Load   | 19.13mV | 16.55mV | 14.22mV | 13.81mV | Pass      |
| 90% Load   | 19.29mV | 17.22mV | 13.97mV | 15.40mV | Pass      |
| 100% Load  | 28.39mV | 18.19mV | 15.85mV | 18.16mV | Pass      |
| 110% Load  | 31.03mV | 19.25mV | 15.89mV | 18.82mV | Pass      |
| Crossload1 | 13.36mV | 14.02mV | 13.19mV | 12.50mV | Pass      |
| Crossload2 | 16.22mV | 22.79mV | 11.00mV | 11.36mV | Pass      |
| Crossload3 | 15.19mV | 11.85mV | 17.60mV | 10.95mV | Pass      |
| Crossload4 | 28.31mV | 16.02mV | 14.09mV | 12.65mV | Pass      |

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## Anex

## MSI MAG A1250GL PCIE5

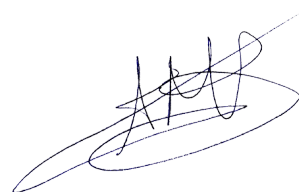


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Power specifications label

## CERTIFICATIONS 115V

**Aristeidis Bitziopoulos**  
Lab Director

## CERTIFICATIONS 230V



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