

**POWER SUPPLY DESIGN LEADER**

N2Power continues to lead the power density race with its new small, high efficiency XL160 Series AC-DC power supplies. Our patented technology yields a very small footprint, reduces wasted power, and offers the highest power density in the market in the 160 watt range. This unique design means reduced energy costs, a greater return on your investment, higher reliability and longer product life.



**HIGHLIGHTS**

- 160 W AC-DC
- Up to 90% Efficiency
- High Power Density: 8.5 W / in<sup>3</sup>
- Universal AC input
- Active PFC (90-264 VAC)
- Built in OR-ing Diodes for N+1 (Optional)
- 3" X 5" Small Footprint
- <1U High: 1.25"
- No Load Operation
- RoHS Compliant

**PFC READY, SAVE ENERGY**

All XL160 products incorporate active PFC technology with universal input to provide superior efficiency in each supply.

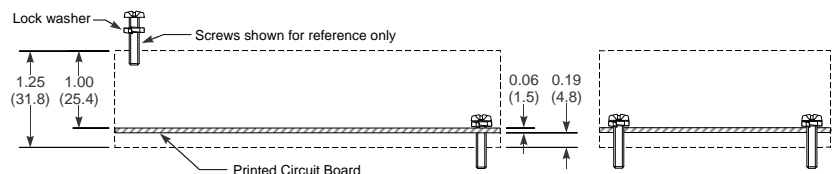
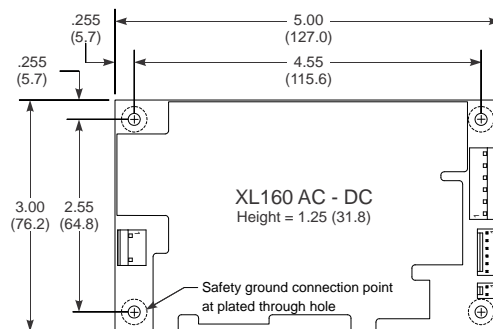
Comparisons of power loading show that our supplies can reduce consumption up to 50%.

**UNMATCHED POWER DENSITY**

With an overall height of 1.25" and a 3" x 5" footprint, the XL160 Series boasts a power density of 8.5 watts per cubic inch. It is ideally suited for OEMs using industry standard 1U chassis.

**Typical Mechanical Drawing:**

Inches (millimeters), connectors and pinouts may vary with model. Refer to XL160 Product Specification for complete information.



**HIGH EFFICIENCY IN A SMALL PACKAGE**

The XL160 Series provides up to 90% efficiency in an AC-DC power supply. Our unique design reduces energy consumption and generates less wasted heat. It requires little forced air cooling, decreases AC loads, increases reliability and economy of operation

Contact us regarding custom and modified standard supplies for unique applications.



| MODEL       | PART NUMBER | OUTPUT | VOLTAGE | REGULATION (%) | MAXIMUM CURRENT(A) | RIPPLE & NOISE (P-P) |
|-------------|-------------|--------|---------|----------------|--------------------|----------------------|
| XL160-05    | 400012-12-6 | V1     | 5       | ±3             | 32.0               | 50 mV                |
| XL160-05 CS | 400012-01-9 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-07 CS | 400012-05-0 | V1     | 7       | ±3             | 22.9               | 70 mV                |
|             |             | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-08 CS | 400012-10-0 | V1     | 8       | ±3             | 20.0               | 80 mV                |
|             |             | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-12    | 400013-12-4 | V1     | 12      | ±3             | 13.3               | 120 mV               |
| XL160-12 CS | 400013-01-7 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-15    | 400014-13-1 | V1     | 15      | ±3             | 10.7               | 150 mV               |
| XL160-15 CS | 400014-01-5 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-19 CS | 400015-04-6 | V1     | 19      | ±3             | 8.4                | 190 mV               |
|             |             | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-24    | 400015-07-9 | V1     | 24      | ±3             | 6.7                | 240 mV               |
| XL160-24 CS | 400015-01-2 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-28    | 400015-13-7 | V1     | 28      | ±3             | 5.7                | 280 mV               |
| XL160-28 CS | 400015-12-9 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-30 CS | 400015-08-7 | V1     | 30      | ±3             | 5.3                | 300 mV               |
|             |             | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-48    | 400016-07-7 | V1     | 48      | ±3             | 3.3                | 480 mV               |
| XL160-48 CS | 400016-01-0 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-51    | 400016-08-5 | V1     | 51      | ±3             | 3.1                | 510 mV               |
| XL160-51 CS | 400016-03-6 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-54    | 400033-02-3 | V1     | 54      | ±3             | 2.9                | 540 mV               |
| XL160-54 CS | 400033-01-5 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-56    | 400032-02-1 | V1     | 56      | ±3             | 2.8                | 560 mV               |
| XL160-56 CS | 400034-01-3 | V2     | 12      | ±5             | 1.0                | 120 mV               |
| XL160-1     | 400011-01-1 | V1     | 3.3     | ±3             | 15.0               | 50 mV                |
|             |             | V2     | 5       | ±5             | 20.0               | 50 mV                |
|             |             | V3     | 12      | ±5             | 6.0                | 120 mV               |
|             |             | V4     | -12     | ±5             | 1.0                | 120 mV               |
| XL160-7     | 400017-01-8 | V1     | 2.5     | ±3             | 15.0               | 50 mV                |
|             |             | V2     | 5       | ±4             | 20.0               | 50 mV                |
|             |             | V3     | 12      | ±5             | 6.0                | 120 mV               |
|             |             | V4     | -12     | ±5             | 1.0                | 120 mV               |
| XL160-8     | 400018-01-6 | V1     | 5       | ±4             | 20.0               | 50 mV                |
|             |             | V2     | 12      | ±5             | 6.0                | 120 mV               |
|             |             | V3     | -12     | ±5             | 1.0                | 120 mV               |
| XL160-10    | 400028-01-5 | V1     | 5.6     | ±3             | 24.0               | 56 mV                |
|             |             | V2     | -5.8    | ±5             | 1.5                | 58 mV                |
| XL160-11*   | 400060-01-8 | V1     | 5       | ±4             | 20.0               | 50 mV                |
|             |             | V2     | 12      | ±5             | 6.0                | 120 mV               |
|             |             | V3     | -12     | ±5             | 1.0                | 120 mV               |

CS = Current Sharing \*OR-ing diode on V1 / V2 output

**Compliance:<sup>1</sup>**  
**USA/ Canada:**

**Safety:** Underwriters Laboratories: UL 60950-1:2007 (2nd Edition) / C22.2 No. 60950-1-07 Safety of Information Technology Equipment (ITE)

**EMC:** FCC part 15, subpart B

<sup>1</sup> See Product Specification for additional information

**Europe:**

2006/95/EC - "Low Voltage (Safety) Directive"  
Demko: EN 60950-1:2006 (2nd Edition) +A1:2010  
+A11:2009 +A12:2011 +A2:2013

2004/108/EC "Electromagnetic Compatibility (EMC) Directive"  
EN 61204-3 Class B

| INPUT SPECIFICATIONS      |   |
|---------------------------|---|
| Nominal Input Voltage:    | 100 – 240 VAC   |
| Maximum AC Input:         | 90 – 264 VAC  |
| Input Frequency Range:    | 47 – 63 Hz  |
| Input Current:            | 2.2 A @ 100 VAC                                       |
| Input Protection:         | 3.15 A fuse   |
| Safety Isolation:         | 3000 VAC input to output<br>1500 VAC input to ground  |
| Inrush Current:           | 33 A @ 115 VAC  |
| Leakage Current:          | < 0.75 mA   |
| Power Factor Correction:  | Active PFC circuitry, meets or exceeds EN61000-3-2    |
| OUTPUT SPECIFICATIONS     |   |
| Total Power:              | 160 W   |
| Hold-up Time:             | Minimum 22 mS at all input voltages                   |
| Efficiency:               | Up to 90%†  |
| Minimum Load:             | No load†  |
| Over / Under Shoot:       | Maximum 10% at turn-on                                |
| PROTECTION                |   |
| Overvoltage Protection:   | On all main outputs                                   |
| Overpower Protection:     | Protected / Auto-recovery                             |
| Short Circuit Protection: | All outputs protected against short circuit           |
| Thermal Shutdown:         | Protected against overtemperature conditions          |
| OPERATING SPECIFICATIONS  |   |
| Operating Temperature:    | -25 to +50°C  |
| Temperature Derating:     | 2.5% / degree C to 70°C                               |
| Storage Temperature:      | -40 to +85°C  |
| Forced Air Cooling:       | 10CFM   |
| Convection Cooling:       | See Product Specification                             |
| MTBF:                     | 675,333 hours @ 25°C*                                 |
| SIGNALS                   |   |
| Remote Sense:             | On main output†A                                      |
| Current Sharing:          | Active current sharing with OR-ing diode or MOSFETs†A |
| Power Good:               | Provided†   |
| PS_OK:                    | Output†   |
| LED:                      | Some models†  |

† See Product Specification      Δ Some Models

\* See MTBF Report for additional temperature values

**International:**

IEC 60950-1:2005 (2nd Edition)+ Am1:2009 + Am2:2013  
Safety of Information Technology Equipment

IEC 61204-3 Class B

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