AC-DC LED Driver Modules
(VLED15 series)
Introduction

Purpose
To provide an overview of the VLED15 AC-DC LED power supply and its advantages

Objectives
• Identify the market opportunity for LEDs
• Discuss why TRIAC dimming is important
• Describe the key specifications of the VLED15 series

Content: 11 pages
Learning Time: 7 minutes
LED Market Opportunity

• Increased global government regulations to improve lighting efficiency levels
• US Federal Regulations requiring efficiency levels significantly higher than current incandescent bulbs
• Declining pricing for LED lamps
Applications for LED Lighting

Residential Lighting
- Accent lighting
- Downlights
- Cabinet lighting
- Pendant lighting

Commercial Lighting
- Fluorescent lamp replacement
- Downlights
- Showcase lights
Driving LEDs

- Simple two terminal devices
- Constant current
- Typically driven in series
- Must consider how to dim
Typical Existing Installations

Diagram showing two setups:
1. TRIAC Dimmer connected to a waveform.
2. TRIAC Dimmer connected to a waveform and VLED15.
TRIAC Dimming

• Leading edge, phase cut dimmers
• Reduces the amount of energy delivered to the light source
• Most TRIAC dimmers have a minimum load required to operate properly
Challenges for High Bright LEDs

- LEDs are driven differently than incandescent lamps
- Light output is managed by controlling the forward current going through the LEDs
- LED lamps don’t act as purely resistive loads
- Standard switch mode power supplies have regulated outputs
- Minimum loading must be considered when used with TRIACs
LED Lighting Power Needs

- Dimming capable
- Backward compatible
- Simple to use
- Inexpensive
VLED15 Series – Truly TRIAC Dimmable

- Integrated TRIAC dimming support
- Operates with industry standard dimmers
## VLED15 Models

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Output Voltage (Vdc)</th>
<th>Output Current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLED15-120-350</td>
<td>Min: 24  Max: 48</td>
<td>350</td>
</tr>
<tr>
<td>VLED15-120-480</td>
<td>Min: 10  Max: 13.5</td>
<td>480</td>
</tr>
<tr>
<td>VLED15-120-600</td>
<td>Min: 8    Max: 12</td>
<td>600</td>
</tr>
<tr>
<td>VLED15-120-700</td>
<td>Min: 16   Max: 24</td>
<td>700</td>
</tr>
<tr>
<td>VLED15-120-800</td>
<td>Min: 8    Max: 12</td>
<td>800</td>
</tr>
<tr>
<td>VLED15-120-900</td>
<td>Min: 10   Max: 16</td>
<td>900</td>
</tr>
<tr>
<td>VLED15-120-900L</td>
<td>Min: 8    Max: 12</td>
<td>900</td>
</tr>
<tr>
<td>VLED15-120-1000</td>
<td>Min: 10   Max: 16</td>
<td>1000</td>
</tr>
<tr>
<td>VLED15-120-1200</td>
<td>Min: 10   Max: 14.1</td>
<td>1200</td>
</tr>
<tr>
<td>VLED15-120-1250</td>
<td>Min: 8    Max: 12</td>
<td>1250</td>
</tr>
<tr>
<td>VLED15-120-1400</td>
<td>Min: 8    Max: 11.5</td>
<td>1400</td>
</tr>
<tr>
<td>VLED15-120-1500</td>
<td>Min: 5    Max: 10</td>
<td>1500</td>
</tr>
</tbody>
</table>

- AC-DC operation eliminating the need for DC-DC constant current LED drivers
- Constant current
- Active power factor correction
- Up to 1500 mA
- 120 and 230 Vac inputs supported
Summary

• The potential for LEDs in replacing incandescent lamps is enormous

• Being able to transparently interface with existing TRIAC dimmer installations will accelerate adoption

• CUI’s VLED15 series offers a truly TRIAC-dimmable solution