The Advent of LED Dimming

LED has brought vast improvements in lighting efficiencies. However, traditional dimmers didn’t always work well with LED lights. To overcome these challenges, Lumex created the LoadSmart digital dimmer to provide sophisticated dimming control of LED lights. Now, the improved LoadSmart Generation2 offers state-of-the-art dimming control.

**Smaller** Even with a host of extra features, new technology has allowed LoadSmart to be smaller. This ensures easy multi-ganging in any application.

**Smarter** The new LoadSmart design builds in greater flexibility to not only work perfectly with Lumex LED lights but to provide excellent results with an even broader range of other driver designs.

**Selectable** LoadSmart Gen2 is the first modular dimmer to provide a complete range of installer selectable options to fine tune the dimmer’s performance to a particular customer’s preferences.
LED technology has brought huge improvements in lighting efficiency and longevity but the transition of dimming and control has not always gone smoothly. Lumex’s LoadSmart Gen1 dimmer was specifically designed to overcome the technical challenges to provide consistent dimming. LoadSmart Gen2 dimmer adds a range of features never before offered.

**LoadSmart Generation 2**

**Gen2 – Smaller, Smarter and Selectable**

LoadSmart Gen2 is an innovative design from Lumex. Not only is it smaller for easy multi-ganging, it is packed with a range of features never before offered in a dimmer. It now has four selectable settings to fine-tune its characteristics to individual customer requirements.

**Selectable Dimming Mode – Auto Select or Trailing Edge**

LoadSmart is the only dimmer offering auto-select control mode. LoadSmart’s electronics automatically senses the type of load (inductive or resistive) and adjusts its control mechanism accordingly. For some very unusual loads, such as a fan connected into the lighting circuit, this can cause inconsistencies with the dimming function as the load changes. For these rare cases, LoadSmart Gen2 can be manually set to trailing edge phase dimming mode.

**Selectable Restrike On/Off**

Many LED lights will not restart from a low dimmer setting. As a dimmer designed for LED lights, a Restrike function is included. When turned on, the Restrike function momentarily takes the initial power to around 70% before returning to the previously set dimming level.

However, in some situations this not desired: such as in children’s bedrooms when you are trying to get the kids to sleep. In that situation, when you turn on the light/s to check on the kids, the last thing you want is for the lights to turn on brightly, before dimming back down again. For these situations, set Restrike to off.

All Lumex phase dimmable LED lights (AR111, Classico, Hi-Light up to 22W, NovaLED, NovaLED Architectural, NovaLED Maxi up to 22W and Silica), do start from a low dimmer setting and can be used with the Restrike function set to off.

**LED Indicator On/Off**

LoadSmart Gen2 has an LED indicator. It has two functions; to indicate that the dimmer is working and the lights are on, and to give active feedback on the status of the dimmer (i.e. start-up, overload or overheating shutdown). Not everyone prefers to see the LED indicator light so there is the choice of LED indicator On or LED indicator Off. Note: when the LED indicator is turned Off it will still light up for the purposes of active feedback, such as start-up, overload and overheating shutdown.

**Minimum Dimming Setting**

With traditional lamps, the factory set minimum was an easy compromise. With the broad range of LED designs and wattages, the variables are too broad to have one satisfactory setting. With LoadSmart Gen2 this minimum can be set at any point on the dimming range.

Note: There may still be LED lights that do not dim successfully with LoadSmart. There is a wide range of LED products in the market with varying designs and degrees of technical sophistication. Lumex guarantees performance of LoadSmart with all Lumex LED products. However, Lumex cannot control the suitability of other manufacturer’s products regardless of their claims. Dimming difficulties with other manufacturer’s LED products should be taken up with the manufacturer of that particular LED product. Lumex will not accept any warranty claims in these cases where the dimmer proves to work correctly with Lumex products.

**LoadSmart Gen2 Selectable Controls**

- **LoadSmart auto select**
- **Restrike**
- **LED indicator**
- **Press to set minimum**

- **Trailing edge only**
- **Restrike**
- **LED indicator**
- **Press and hold at restart to clear preset**

Great Performance, Great Warranty, Great Value
DIMMING AND CONTROL

LoadSmart Specifications
- Power requirements: 220-270V – 50Hz, 450W
- Minimum load: 1W
- Dimming operation: Auto select load suitability or manual trailing edge
- Environmental: 0-45°C, 95% humidity
- Derating: Two dimmers housed in one switch plate, 300W each
- Over-temperature protection: Manual reset
- Network compatibility: Immune to ripple frequency interference
- Compatible loads: Phase dimmable LED, Incandescent, Dimmable electronic transformer, Iron core transformers
- Non-compatible loads: Non-dimmable LED, Small motor loads
- Fully recyclable
- Fully Australian approved
- Seven year warranty

Other Modular Dimmers
Lumex phase dimmable LED products can be used safely on other common universal or trailing edge dimmers, however the performance and dimming range is often considered less than ideal. In these cases the best recommendation is to change to a LoadSmart dimmer.

Leading edge dimmers and dimmers with electronic switching action such as touch dimmers are not recommended for Lumex LED lighting products.

1-10V (current control) Dimming
1-10V dimming is a more precise and predictable method of dimming LED lights, but it does add cost and calls for a more complex installation. With 1-10V dimmers, the light output can be varied from 10% to 100%.

Most Lumex LED products are suitable for 1-10V dimming, either as standard or as an option; please see the chart on page 108.

Lighting Management Systems
Lumex SmartSense
The most revolutionary new lighting management system is Lumex SmartSense. SmartSense is a system that involves no additional installation other than the LED NovaBlade/SmartSense panel and is easily programmed by a hand held remote control. Its inbuilt sensors sense occupancy and the available ambient light to adjust the light output of each luminaire to provide the correct amount of light where you need it and dims, or turns off, luminaires where you don’t. The energy savings from combining LED panels with SmartSense can be as high as 90% over traditional lighting. Please see the section on Lumex SmartSense on page 81.

Other Lighting Management Systems
There are a number of lighting management systems in common use and building management systems that manage the lighting load. There are a number of different control methodologies and Lumex LED lighting compatibility varies with these methodologies. Sometimes compatibility depends on the control devices and this may require some system adjustments.

Control devices
On/Off relay control: All Lumex products are compatible. For higher wattage loads the relay capacity needs to be suited for the higher inrush currents.

On/Off Control – electronic (soft start): Compatibility with solid state devices usually comes back to the minimum load requirements. Additionally, programming previously set up for conventional loads may need to be adjusted to ensure smooth start up and shut down.

Dimming using phase control devices: Theoretically all Lumex products up to 30W are compatible with trailing edge phase controllers, however, just as with modular dimmers, phase dimmers designed for conventional loads may not be compatible with the LED driver. This incompatibility may manifest in various ways but most common issues relate to insufficient minimum load, particularly when starting from low level, and unfavourable dimming range. Refer to the system supplier to assist with these issues.

Dimming using 0-10V or 1-10V: All Lumex products with 1-10V drivers are compatible.

Dimming using DALI: At time of printing Lumex only offers a DALI option for NovaBlade panels. There is no occurrence of incompatibility. The DALI functionality only extends to lighting control and does not include communication elements. However, 1-10V suitable products can be integrated to DALI.

Other Lighting Control Devices
Devices such as occupancy and light level sensors often have minimum load requirements in excess of that provided by LED lights. Refer to the manufacturers of the sensors for advice.

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# Lumex Lighting Products Dimming Suitability Guide

<table>
<thead>
<tr>
<th>Lighting Product</th>
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<th>DALI Dimming</th>
<th>Non-dimmable</th>
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<tbody>
<tr>
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<td>Optional</td>
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<tr>
<td>Classico</td>
<td>Standard</td>
<td></td>
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<tr>
<td>Hi-Light Rectangular 22W</td>
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<tr>
<td>Hi-Light Rectangular 45W</td>
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<tr>
<td>Hi-Light Round 12W, 22W &amp; 32W</td>
<td>Standard</td>
<td>Optional</td>
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<tr>
<td>Hi-Light Round 45W</td>
<td>Standard</td>
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<tr>
<td>Light Pack</td>
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<tr>
<td>Light Pack GP</td>
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<tr>
<td>Linear LED Batten Fixtures</td>
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<td>Linear-Q LED Battens</td>
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<td>Linear Weatherproof</td>
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<td>Non-dimmable</td>
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<tr>
<td>NovaBlade</td>
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<td>Non-dimmable</td>
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<tr>
<td>NovaBlade SmartSense</td>
<td>SmartSense is a self-managing lighting management system. SmartSense senses occupancy and ambient light to automatically dim luminaires as required.</td>
<td>Non-dimmable</td>
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<tr>
<td>NovaBlade Special Fixtures</td>
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<tr>
<td>NovaLED Architectural</td>
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<tr>
<td>NovaLED Maxi M3, M4, M6, M7 &amp; M7H (9-32W)</td>
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<td>NovaLED Maxi M8 &amp; M8H (45-55W)</td>
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<td>NovaRay</td>
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<td>Non-dimmable</td>
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<td>Silica</td>
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<td>SkyBay2</td>
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