

Lighting industry interest in the Light Emitting Diode (LED) has grown dramatically in the last few years. LEDs have grown in popularity because they last many times longer than the older incandescent and fluorescent lamps they are replacing. In addition, LEDs are much more energy efficient than incandescent or fluorescent lamps and LEDs do not contain toxic gasses like fluorescent lamps. LEDs are truly green!

LEDs are solid state low voltage lamps that require a constant DC voltage or current to operate. The device that supplies this regulated voltage or current is called a LED driver. The LED driver is the equivalent of the old fluorescent ballast. For the white LEDs that will replace most existing lamps over the next generation, constant current led drivers are preferred over constant voltage LED drivers. Constant current LED drivers will not allow the white LED to exceed it's maximum current rating and constant current LED drivers produce uniform brightness from each white LED.

Constant current white LED drivers come in a wide range of ratings and the driver will have a wattage rating from 10W-60W, a voltage rating from 9Vdc-48Vdc and a maximum current rating of up to 1 amp or more. Some LED drivers are made to operate specific LED arrays while other drivers are generic. LED drivers are very compact compared to fluorescent ballasts and operate at very high efficiencies (up to 98%).

White LED dimming vs incandescent lamps and fluorescent lamps

We at Luella Enterprises are dimming specialists, so we grew up with the nice even dimming of incandescent lamps and the warm color shift that dimmed incandescent lamps produced at low levels. Ahhh, the good old days! Unfortunately the incandescent bulb had it's Achilles heel(s): poor energy efficiency and short lifespan.

Next came the fluorescent dimmers, and the associated flickering, shortened lifespan, awful color rendition and limited dimming range. These flaws of fluorescent lamps have been improved by recent refinements but were never completely overcome. Fluorescent dimming is widely used today mostly because it is energy efficient compared to incandescent dimming.

Then the LED arrived. The LED can be dimmed from 0-100%, LED color rendition is excellent, the life of the LED is very long, LED energy efficiency is the highest of all luminaires and there is no flicker produced by LED dimming. Eureka! ...the biggest drawback of LED lamps is their high cost. As LED popularity increases, the cost of LEDs will come down.

****NEW** The DT5 LED dimmer interface by Luella Enterprises**

Our DT5 interface was an early DALI interface developed when DALI first began to appear in N. America. DALI is gaining market share in N. America and DALI is predicted to be the control protocol of choice for architectural dimming applications including white LED dimming. We have refined our DT5 interface recently to include a "universal" white LED dimmer on board. This interface is designed to add dimming capability to standard (non-dimmable) white LED drivers. The interface is inserted in series with the LED driver low voltage output.

The features of the DT5 led dimmer are summarized below:

- fully compliant DALI interface and LED dimmer all on compact DT5 pcb.
- dimmer output is rated at 2A max using economy constant current white LED drivers rated from 9V-48Vdc.
- the DT5 interface is powered by the low voltage output of the LED driver itself.
- adding the dimmer causes no loss in efficiency since the circuit only uses 0.2V and almost zero current.
- offers full 0%-100% dimming range.
- causes negligible color temperature shift throughout the dimming range.
- causes no visible LED flicker because of the high frequency and high resolution dimming used.
- our DT5 lengthens the life of the LEDs because of the lower operating temperature when dimmed.

For more information contact us at:

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