

WHITE PAPER

Dimming of *enLux* LED Lighting Products

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One of the limitations in utilizing LEDs (Light Emitting Diodes) for general illumination has been the dimming, or controlling the brightness, where LED lighting products need an AC to DC power supply for use with line voltage; 120Vac or 220Vac.

Two types of AC to DC power supplies are available for all enLux LED lighting products; the rectified power supply and the switching power supply.

In order to determine which dimmers are compatible with the above-mentioned enLux products, a clear definition of the various types of dimmers is needed. Common dimming methods are continuous current (or sine wave) control, forward phase control and reverse phase control. The enLux lighting products, R30 Floodlight and Spotlight, 6K LED Area Light, and 1K Light Module equipped with the rectified AC to DC power supply are dimmable when using the reverse phase control dimmer or the continuous current control dimmer. No forward phase control dimmers have yet been found to be compatible with enLux products equipped with the rectified AC to DC power supply. However, with a simple modification on the line circuitry such as parallel connecting enLux products with a resistive load or an incandescent bulb, some of these triac-based, forward-phase controlled dimmers have been able to dim the enLux products without flickering.

Knowing which of these types of dimmers are available from different manufactures can aid us in determining which dimmers may be used with enLux LED products; in brief, dimmers that properly utilize either the sine wave control or the reverse phase control are able to dim the enLux LED products mentioned above without any unwanted flickering. Each manufacturer should be able to describe which method of dimming is employed by each of their products currently available in the market.