Frequently Asked Questions

Dimming of Lamps

What is meant by "dimming" lamps?

When dealing with lamp dimming, be sure to ascertain the definition of dimming. Typically, dimming is defined by a percentage, e.g., 10% dimming, 50% dimming, etc., but this percentage can be applied to several different lamp parameters:

* Lamp Voltage
* Lamp Power
* Measured Lumen Output
* Perceived Lumen Output

Usually, dimming refers to the reduction in measured lumen output. The percentage can also be confusing. For example, "10%" can mean 10% below full lumen output or 10% of full lumen output. By and large, the latter method is used. Therefore, we say a certain system can "dim to 10%" meaning, for example, a 2000 lumen source is reduced to 200 lumens.

To eliminate some of this confusion, another method can be used called **dimming ratio**. This takes the guesswork out of it. Dimming ratio is the ratio of rated lumens to actual or minimum lumens. In the above example, the dimming ratio is 2000:200 or 10:1 (10 to 1).

Incandescent & Halogen Lamps

How is dimming accomplished? How does one reduce the lumens? By controlling the voltage to the lamp. If the voltage is reduced, the lamp current and resulting lamp power are reduced. The voltage is reduced by decreasing the amplitude of the 60-cycle waveform or by turning off the applied voltage for part of the cycle (called phase control). The former method typically uses an adjustable transformer (variac or autotransformer); the latter is typical of solid state controls (wall dimmers and the like).

Fluorescent Lamps

The ballast is designed to reduce power delivered to the lamps by one of several techniques.

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