

VOLTAGE, POWER, LUMINOSITY AND ENERGY SAVING

1. Power, Luminosity and Voltage

For fluorescent light, mercury light and high pressure sodium light with conventional magnetic ballast, the power consumption (KW) and luminosity (LUX) are proportional to the voltage.

The higher the voltage, the more on the power consumption

The higher the voltage, the higher on the luminosity

2. Lighting System Design

Based on the working environments and conditions, the requirements on the luminosity are different. For example, the luminosity for office is about LUX 300~750, and that for classroom is about LUX 150~300. Since luminosity is different for different voltage and the actual voltage can be higher or lower than the rated voltage, the lighting system design should be in such a way that the luminosity still meets the requirement when the voltage is below the rated voltage but within the allowed range. In general the voltage can be 10% higher or lower than the rated voltage, therefore a lighting system should have enough luminosity as required even the voltage is 10% below the rated voltage.

3. Ideal Energy Saver for Lighting System

- a. Because of the possible fluctuation on the voltage, a lighting system should provide enough luminosity even the voltage is 10% below the rated voltage.
- b. If a device can maintain the voltage 5% below the rated voltage, it can save a lot of energy with luminosity still much higher than the minimum requirement.

4. DIGITEK Energy Saver for Lightings

- a. The default setting for the output voltage is about 5% below the rated voltage. By doing so, the required luminosity is maintained and the energy is saved noticeably.

In compare to the energy consumption at rated voltage, DIGITEK energy

saver can save:

Fluorescent Light: More than 15%.

Mercury light: More than 17%.

High pressure sodium light: More than 20%.

When the voltage is higher than the rated voltage, more energy can be saved.

b. Because of lowering of the voltage, the lifespan of the bulbs (tubes) and ballasts are prolonged, the maintenance cost is therefore largely reduced.

Conclusions:

DIGITEK energy saver for lightings can

Effectively save energy.

Prolong lifespan of bulbs (tubes) and ballasts, and reduce maintenance cost.

Maintain luminosity as required.