



## **LED (Light Emitting Diodes)**

LED's are the first light source that do not require heat to generate light. This significant factor makes LED's the most efficient light source known to mankind. LED's are in excess of 80 % more energy efficient than standard lighting.

When power is applied to the semiconductors in the LED light fitting, they are stimulated by the movement of electrons which creates photons, the light that is visibly seen by humans.

This process does not generate any heat like incandescent lights which use a filament to produce light.

The color of the LED light is dependent on the different materials used in the diode, which allows producing a wide palette of light colors from a bright white over red to blue.

## **Comparison to CFL's (Compact Fluorescent Light)**

Fluorescent lights are filled with a gas containing low-pressure mercury vapor and argon. The inner surface of the bulb is coated with a fluorescent coating made of varying blends of metallic and rare earth phosphor salts.

The move of replacing incandescent light bulbs with CFL's will surely contribute to an increase in energy savings but it will also increase the difficulties caused by the toxic mercury disposal into landfills.

The incorrect disposal of mercury could significantly contribute to the contamination of water in lakes, ponds, rivers, oceans, etc.

LED's on the other hand are 100 % disposable and therefore the most environmentally friendly lighting product on the market.

## **The Benefits of LED's**

- LED's have an expected life span of up to 100,000 hrs or up to 25 years.
- LED's are 80 % more energy efficient than standard lighting, therefore lower power bills.
- There are no globes to maintain, which reduces maintenance costs significantly.
- Low installation costs due to smaller cables and less transformers.
- LED's are eco-friendly (less carbon emissions).
- LED's do not contain mercury, glass, chemicals or gases.
- LED's produce very little heat, allowing a greater versatility in lighting applications.
- Due to the generation of "cold" light, LED's are safe to use in any environment. No burning of fingers, plants, pets, wildlife.

- No danger of fire caused by combustion heat in ceilings. Lower air-conditioning costs due to no heat generated by lighting.
- LED's can illuminate in any color of the visual spectrum.
- LED's can operate in harsh environments and withstand temperatures ranging from -40 degree Celsius to +85 degree Celsius.
- LED's are a solid lighting fixture with no filaments or glass, which makes them extremely rugged and shock resistant.
- No Ultraviolet light emission, which reduces the attraction of insects and makes them great for illuminating artwork, fabric and other items that are sensitive to UV.
- All LED's that are distributed by Lightscape Concepts & Design are rated IP 68 and are submersible to up to 2 meters under water.
- All Lightscape Concepts & Design products are manufactured in Sydney, NSW.

### **Fields of Application**

- Unlimited use in outdoor lighting, such as patios, gazebos, gardens, parks, walk ways, drive ways, step and trip hazards, pools, ponds, water features, etc.
- Mood lighting, High lighting, Up lighting, Back lighting, Cross lighting, Colored lighting, Architectural lighting
- Down lighting to all covered exterior areas, such as lined patios, gazebos and eaves.
- Down lighting interiors where only ambient lighting is required, such as pantries, laundries, toilets and low traffic areas.
- Low level guide lighting interior and exterior.
- Indoor accent lighting and ambient lighting.
- Traffic lighting. Emergency lighting.
- Shop and retail environments.
- Boating and caravan applications.

### **Products available**

12 – 15 Watt LED Down Lights for exterior and interior applications  
 0.5 Watt Paver lights, 0.5 Watt Half Eyelid lights, 8 – 12 Watt Up-lights, 8 – 12 Watt Spot-lights, 8 – 12 Watt Deck lights, 0.25 Watt Bollard lights, 0.25 Watt Button lights.

### **The Future of LED**

As announced by the Australian Government in 2007, the incandescent light bulbs will be banned and start being taken off the shelves by the end of 2009. Better quality halogen lights will continue to be available but the least efficient group of this lighting will be phased out as well.

Recent technological breakthroughs in LED lighting have signaled that this lighting technology will eventually replace the currently offered option of energy saving CFL's and is therefore the almost PERFECT lighting product.

The development and introduction of high powered LED's such as the ME Lighting 12 Watt Rebel 4 Light offers a real alternative to traditional lighting solutions. This LED light is equivalent to a 50 Watt Halogen light but saves 38 Watt energy.