

# LED LIGHTING, PRESENT AND FUTURE OF LIGHTING



LED Bulb E27 6W to 220VAC

The lighting technology LED is already **present and future of lighting**, with prices a few years ago was prohibitive but are becoming more affordable and superior performance compared to other light sources, making them rapidly depreciable.

They are currently recommended especially where they can not be placed compact low-power, as in bathrooms and hallways (CFL does not hold up well off and frequent or cold locations such as garages on):

- LED technology **is low power consumption**, with savings of 80-90% compared to incandescent and improving every year.
- **Ecological; no Mercury or polluting materials, emits no UV** or infrared.

- **Lifetime:** Duration between 20,000 and 50,000 hours, depending on the quality of the lamp and the LED.
- **Instant light**, as fast as incandescent or halogen.
- **Can be switched on and off as many times as you want** without reducing useful life.
- Because of its semiconductor format **optimally support vibration and shock**; it will work even if the casing is broken, contrary to the other technologies.
- With more lumens per cm<sup>2</sup> than halogen and CFL, and more efficient, **have great ability to be miniaturized** (flashlights, televisions, etc).
- **Uniform light without shadows into the light**, available in warm white or pure, or all colors to consumer tastes.
- **Design only limited by the imagination** thanks to its compact size and low temperature of LED; the possibility of sharing the light sources as we want by the lamp allows innovative designs integrated into the environment ; are valid for any type of use.
- As in the CFL, **some models can be adjusted easily** by varying the electric current applied to a regulator.

Very useful for environments that wish adaptive dynamic light environment (eg., We could program Arduino ambient lighting that adapts to the light coming through the windows, or human presence, illuminating more where people are ).

However, **its disadvantages, but salvageable, are:**

- **The angle of the light from an LED is directed** at an angle of limited brightness; There are lamps with angles between 30 and 240; laterally to illuminate **manufacturers seek designs where multiple LEDS pointing to different parts or modern reflectors**, which can be a problem of space, and rising from the lamp, but gradually being solved with lenses that scatter light or formats led targeted less.
- **Are still relatively expensive when it comes to high power systems where other lamps are almost as efficient and cheaper**, such as sodium vapor (80 lm / W, but also more polluting and less durable), since the ledes require heat sinks (this will change as improve its luminous efficiency).
- **The LED works better the white light is emitted** (temp. Color approx. 6000K), for more warm yellow light to be mixed with another color decreases performance slightly.
- Require temperatures below 70 ° C to maintain their life, so they **need efficient heat sinks, which increases their cost.**

- **They are very long lasting, but its intensity decreases with time;** for an LED with an expected life of 25,000 hours, you will after that time a light intensity of 70% the original, but it will illuminate; not "merge" normally, but they fade away.
- **The high power LEDs must wear a suitable light fader so that** if viewed directly by accident, **do not harm the view** (some are more intense to look at the sun directly).

**This entry will discuss technology LED and its many advantages,** the influence of operating temperature on the duration (disarm a lamp) and uses more current recommended (for those who want to minimize investment while taking advantage of technology); go for the LED is a very good investment, ecological and profitable.

Source: <http://crecimiento-sostenible.blogspot.in/2014/10/report-led-lighting-present-and-future.html>