

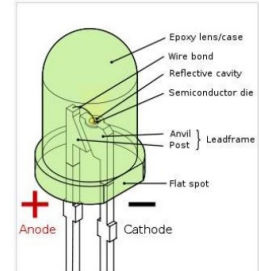
# What are LEDs?

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The LED is an electronic component that, when passing a very low current, emits a free-infrared and free-ultraviolet light, lighting up immediately. Led technology, an acronym for Light-Emitting Diodes, represents the evolution of solid-state lighting, with a light generation coming from the use of semiconductors rather than a filament or gas. LED lighting is more energy efficient, has a longer lifetime and is more sustainable for the environment. It also provides innovative and creative usage solutions.

## What is an LED?

- ◆ LED - Light Emitting Diode
- ◆ A semiconductor component similar to a transistor or an integrated circuit
- ◆ Electrical current through the semiconductor chip produces light
- ◆ Semiconductor materials used define the color of light produced

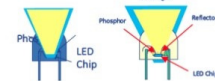


## How the LED works?

The LED technology works smoothly. The output of the luminous flux occurs through the supply of a semiconductor filament, suitably treated, with a very low current (average 350 mA) and a voltage of 2.0-3.5 volts. Unlike other light sources, it does not produce gases or other pollutants. In addition, new generation LEDs, if properly powered, can reach a lifetime of over 100,000 hours.

## Key LED Benefits

- Longer lifetime
- Superior efficiency
- Lower weight
- Lower operating temperature
- Independently replaceable
- Uniform color / temperature
- Improved light control reduces unwanted spill light and improves utilization
- Shock and vibration proof



## Energy Saving:

Thanks to the high intensity of the LED lamps, it is also possible to replace fluorescent lamps (compact or neon), saving on average 50% of the consumption. Also, since the average timeline of a LED lamp is about eight times that of traditional lamps, it is easy to deduce that economical saving is also a convenience factor. Indeed, despite LED technology requiring a higher initial cost, studies have shown that this investment repays in a short time, far below from the product's lifetime.

## Environmental Impact:

Obviously, if a LED lamp has a longer timeline than the other lamps, it won't be replaced as often as them. In addition, unlike other types of lamps (sodium, mercury, fluorescents), LED technology gives rise to a totally recyclable product that does not require special forms of disposal as it is devoid of heavily polluting substances. In this respect, do not forget to mention the RoHS (Restriction of Hazardous Substances) certification, which strictly limits and regulates the use of toxic/harmful substances for humans and environment in electronic devices.