

SAVE WITH LED TECHNOLOGY

An LED is simply a semiconductor (bonding materials with special properties to conduct electricity), which converts the electrons into photons pass through the junction, ie light.

Depending on the semiconductor material, the light may be green, blue, infrared, ultraviolet, etc.

To protect the semiconductor contributing to heat dissipation have a layer of plastic (usually epoxy) which can act as a lens to focus light.

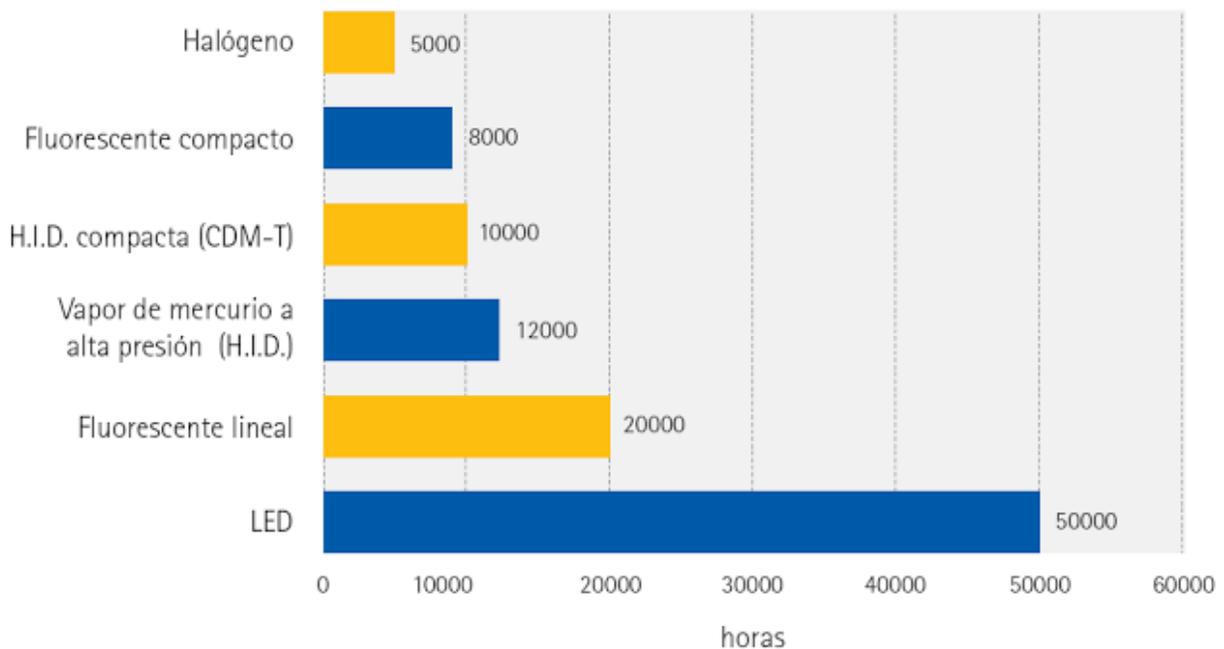


Source: Cree Corp.

LED technology is advancing rapidly, a fact that we have to thank Shuji Nakamura , inventor of the White LED and ultraviolet, with the current record (2012) Brightness 150 lumens per watt(1.7 times optimal for a fluorescent lamp) by Nichia Corp.

(Not to mention the inventor of the first practical LED, Oleg Vladimirovich Losev , who in 1927 developed the first LED and published the first study on this from their observations with the rectifier diodes used in radio, although his works were forgotten until 2007).

Now we can find lamps LED 850 lumens (comparable to a traditional 60W) for 20 €, and if we consider their performance (depending on the quality of the LED, but it is similar to fluorescent in most cases) and its duration (maximum CFL lasts 8,000 hours, less the more you turn off and on), and comfort (is instantaneous), **amortize a led light in about 2 years or less.**



Valores típicos para la vida útil (simplificación)

Source: LED Dossier

A typical LED has a supposed quality of life 50,000 hours, ie 68 years if used 2 hours a day!

The color temperature

Unless we change an incandescent or halogen light the other LEDs with the same color temperature, we can notice a big difference in color from light yellow if we almost pure white.

At first we can cost to get used to the difference in the color temperature of the lamp, but we can actually choose the warmth of the light from an LED, or Warm (3500°K) or white light day (6000 ° K) (the pure sunlight has a temperature of 5770K), yet due to its light nature, normally reproduces colors worse than sunlight.

The CRI (Color Rendering Index) value indicates the quality of color reproduction from the lamp; The closer to 100, the better.

In the picture below, comparing with other traditional halogen LED warm white or cool.



Photo: Bartholomew Genovard

There are LED lamps and LED lamps ...

Not all are equal. **Normally, and as discussed below, should be done with lamps brand recognized for its quality as Philips.** Chinese LED, but they are cheaper, will last less and less light per watt than brand because their lamps usually in the cheaper market semiconductor LED mounted.

The CREE and its clones are quite economical and efficient 80 to 100 lumens per watt in 2011.

To check worth while Chinese, I gained 6 cap format E27 € 10 per bulb and 420 lumens (similar to a 40W traditional) **by Ebay to check them and start using them in places where the light goes out / too frequently** and CFL (compact fluorescent lamps) is not convenient to use, like the bathroom:



NOTE: It is important to look at the lumens (amount of light) that gives the lamp, or we may fall short: If we replace a traditional bulb, we know as **a traditional filament 40W gives 495 lumens, a 60W -> 840 lm, one of 75W-> 1050 lm and a 100W-> 1400 lm.**

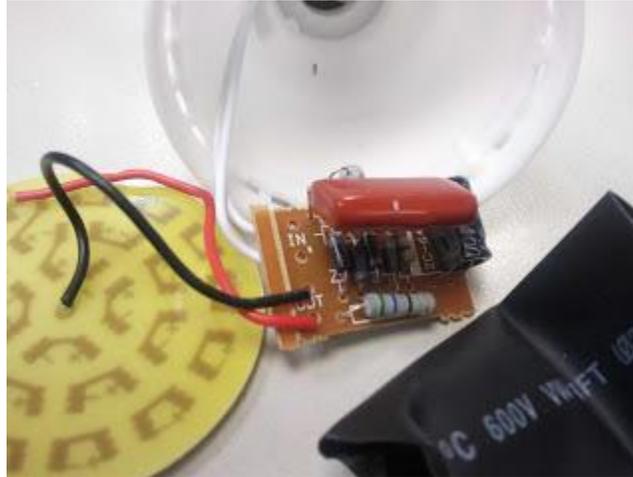
According to the seller, have the following technical characteristics:

- LEDES quantity: 25 SMD 5050
- Base type E27
- Consumption 6W
- Color range 4500 - 6000 K / Pure White
- Lumens 420 lumens (70 lm / W).
- Input voltage 220V.
- Duration 50,000 hours (Depending on the manufacturer)
- LED temperature <65 span="">
- Bulb temperature <60 span="">
- Dimensions Height: 78 mm. Diameter: 45 mm.

Willing to check whether the information was accurate and actual ad, I disarmed the lamp, which has a front (emits light at an angle of 240 degrees, enough) clear polycarbonate that is released easily by pressing the sides:



I could see its simplicity; SMD 5050 has 25 series, with an intermediate electronic transformer (wrapped in insulating plastic) that converts 220V AC to 70V DC, so each LED working at 2.8V ($70/25 = 2.8$).



The light emitted is very white, so the color is correct, and the lumens, compared to an incandescent 35W in the same bath, lights similarly:



If we do not get 420 lumens enough light, you can always buy these "thieves" for E27, very handy if you want to use lights, or in this case, expand and better distribute the light from these lamps:



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