# LEDs VS Incandescent Bulbs

## 1. Cost of Investment

As a comparison, a 100-W incandescent bulb will produce the same brightness of a 16-Watt LED bulb, more than one-fifth of required energy.

What does that mean? If your household electricity only powers a single light bulb, you will pay 5 times less electricity bill if that bulb is an LED, instead of an incandescent bulb.

To make the proper calculation, however, we will need to first look at the number 2, which is:

## 2.Lifetime Expectancy

The lifetime expectancy of an LED lighting can reach more than 25,000 hours of use. Compare that to the average of only 8,000 hours from CFL bulbs, or the meager 1,200 hours of incandescent bulbs.

Therefore, you will -in average- need to replace the incandescent bulb 20 times before the LED bulb broke off. The cost of the LED bulb, however, is only 6 to 8 times that of the incandescent bulb and will be even cheaper with the each passing year.

| | **LED** | **Incandescent** |
|---|---|---|
| Cost/Bulb (Assumption) | $7 | $1 |
| Lifespan on Average | 25,000 hours | 1,200 hours |
| Wattage | 10W | 60W |
| Total Purchase Price of Bulbs for 25,000 Hours Usage | $7 | $20.83 |
| Total Electricity Cost ($0.15/kWh) for 25,000 hours | $37.5 | $225 |
| **Grand Total** | **$44.5** | **$245.83** |

## 3.Less Attractive to Insect

Who hates bugs? We can say that most of us will definitely hate mosquitoes. If you still have an incandescent bulb, or if you still remember the old days, you might remember how insects tend to fly around the bulb, attracted to the projected UV lights.

The good news is, LEDs emit very little in the UV spectrum, which made it less attractive to insects and bugs. Besides emitting far fewer UV lights, the next point will also help with the fact:

## 4. LED Projects Less Heat

LEDs projects very little to no heat from their light source, which also make them far less attractive to insects. The less heat projection also allows LEDs to be more energy efficient, as only 5% of the total energy is converted to heat.

Incandescent bulbs, in comparison, convert almost 95% of their energy usage to heat, and that is why they use more wattage compared to LEDs.

## 5. Improves Concentration and Attention

As we have discussed in our previous article, incandescent bulbs flicker a lot, even when our eyes cannot catch the rapid light movements. Incandescents also operate using rapid gas movements, which actually made the produced light rapidly moving. Unconsciously, these flickering and movements can disturb our concentration.

LEDs, on the other hand, operate on a very different principle, producing almost static light continuously. Research have proven that using LEDs can definitely increase concentration and productivity in almost all environments.

## 5. Mercury Free

The incandescent bulb does not use toxic mercury in its operation, unlike CFL bulbs. However, the inefficiency of the energy coil manufacturing used on incandescent bulbs allows them to be exposed to intensive coal burning, which is the largest source of mercury pollution.

LEDs, on the other hand, is very efficient to make, which in turn makes it less exposed to mercury.

## 7.LEDs Can be Dimmed

Some of the newer LEDs can be dimmed using a relatively cheap dimmer system, while newer smart dimmers can dim almost all LED bulbs with a very simple wiring.

This feature increases the flexibility of LED applications, while can also improve efficiency, as dimmed lights consume significantly less energy.

## 8. Compatibility to Smart Home Technologies

In the past few years, smart home applications, hub, and technologies are rapidly developed and adopted. However, most of them will only support LED lighting, and not incandescent and CFL bulbs for various reasons.

Nowadays, there are even standalone smart LED bulbs, that can operate through your Wi-Fi network, have its own scheduling, and even change its color palette. LEDs are no doubt, the way to the future, at least until the significant breakthrough in lighting technology.

## 9.Color Choices

Traditional LEDs provide you with flexible color choices from soft white to warm white to cool white, which cannot be found on incandescent bulbs. As mentioned, you will have even more flexibility regarding colors from newer smart LED bulbs, such as this one.

## 10.Directionality

One of the biggest difference of LED when compared to its predecessors, namely the fluorescent and incandescent bulbs, is that LEDs are strictly directional.

While we can argue that the omnidirectional feature of incandescents and CFLs can be more useful for certain applications -which is true-, the directional nature of LEDs is better suited for most household applications.

Besides, with the flexibility of LEDs in size, we can see that LED can operate just as well in an omnidirectional setting, such as a chandelier lamp.

# Bottom Line

With all the benefits of LEDs, it is truly hard to argue that CFLs and incandescent bulbs are alternatives, instead of primitive predecessors. Almost all lighting applications nowadays are better suited with LEDs except very niche applications such as decorative lights and stage uses.

However, with the rapid technological developments of LEDs, we can also expect that those niche applications will be perfected in the near future. With all that being said, if you still have doubts about upgrading to LEDs, there is simply no reason to wait.