

## Environmental Initiative—LED lighting

As we are firmly in summer, I find that I'm switching on lights less often, but when I do I'm more mindful of that action. Typically, I only think about light bulbs is when I have to drag to step stool out to change them—and then the ladder because I'm still too short with the step ladder to reach the fixture.

Wouldn't it be neat if light bulbs lasted for a decade instead of a year? Wouldn't it be neat if we didn't have to toss out bulbs so often or figure out how to dispose of those weird curly CLF bulbs that contain mercury?

So in the curious mode, I wandered the house and counted. The main level of my house has 12 "traditional" bulbs, one three way bulb, 7 globe bulbs, and 2 tube fluorescent bulbs. Then my search moved to the internet. Here are the questions I looked up and the answers I found.

### What is LED lighting?

LED stands for light emitting diode, so essentially, instead of a traditional incandescent bulb, an LED bulb is really a tiny microchip that illuminates. The LED is a tiny light source that creates directional light and has an included "heat sink" to offset any heat created to alleviate burn out. So these teeny, tiny lights have the ability to create very reliable light without the need to change bulbs often.

### Why should I change to LED bulbs?

	<b>Incandescent</b>	<b>Halogen</b>	<b>CFL</b>	<b>LED</b>
Instant full Brightness	Yes	Yes	No	Yes
Dimmable	Yes	Yes	No	Yes
Rated Life	.9 years	.9 years	11 years	13.1 years
Energy Usage	60 watts	43 watts	13 watts	9 watts
Warranty	n/a	n/a	5 years	5 years
Contains Mercury	No	No	Yes	No
Cost Per bulb	\$1	\$2	\$2	\$6
Average Lifespan	.9 years	.9 years	11 years	13.1 years
Bulbs needed for 13 years	14.4	14.4	1.2	1
Energy cost per year	n/a	\$5.18	\$1.57	\$1.20
<b>Total cost over 13 years</b>	<b>n/a</b>	<b>\$67.34</b>	<b>\$20.41</b>	<b>\$15.60</b>

<https://www.gelighting.com/led-lights>

### Have you seen the light bulb aisle; how do I pick which LED is right for me?

There are several areas to consider when making your choice.

- Energy Star certified bulbs
  - Random yearly testing to ensure they meet the certification requirements
  - Test color quality over time
  - Light output
    - Minimums
    - Distribution
    - Equivalency
  - Verify performance and labeling
  - Life time claims
  - Stress products in similar environment to home use
  - 3 year minimum warranty
  - [https://www.energystar.gov/products/lighting\\_fans/light\\_bulbs/learn\\_about\\_led\\_bulbs](https://www.energystar.gov/products/lighting_fans/light_bulbs/learn_about_led_bulbs)
- What bulb type/style do you need?

- Almost all bulbs are available as LED due to the small size of the LED technology
- What color light do you want?
  - There are multiple color temperatures available
  - There are full color options and decorative options
- Technological investment
  - LED bulbs can contain many different types of additional technology
    - Bluetooth speakers
    - Voice control
    - Timer
    - Battery back up
    - Motion sensing
    - Light sensing
    - <https://www.gelighting.com/led-plus-bulbs>

So, all my research done, let's loop back to my house. The main level of my house has 12 "traditional" bulbs, one three way bulb, 7 globe bulbs. Energy Star has a savings calculator, so my number loving heart couldn't wait to dive in! (If you're curious too, the link is here: [https://www.energystar.gov/sites/default/files/asset/document/FINAL%20DRAFT%20light\\_bulb\\_calculator\\_11112019.xlsx](https://www.energystar.gov/sites/default/files/asset/document/FINAL%20DRAFT%20light_bulb_calculator_11112019.xlsx)) Our handy-dandy calculator lets us input the number and style of each bulb with the wattage and assumes 3 hours of daily use. So, for the 20 bulbs used in the main level of my home, the initial cost of the bulbs will be recouped in just 4 months when accounting for the annual savings in electric cost of \$126 in the first year and \$1,304 over the approximate 13 year (15,000 hours) life of the bulbs.

Imagine the difference that could be made in the world if we all switched to LED bulbs and therefore used less energy and contributed less to landfills. The Mission and Buildings and Grounds committees have collaborated to provide the opportunity for our church family to purchase LED bulbs for the church by sponsoring a space in the building.