



Energy Efficiency: LED Bulb Shopping Guide

(General)

LED bulbs (light-emitting diode) are very durable, energy efficient and safe when compared to standard incandescent bulbs. Best of all, they come in all colors, shapes and sizes, all while lasting a lot longer! This is both fantastic and overwhelming when looking at a full aisle of choices at your local store.

LED's are available in any major home improvement store such as Canadian Tire, Home Depot, Lowes or Home Hardware, as well as your local hardware store. Purchasing online is always an option as well. Once you know the type of bulb you need to buy, there are a few considerations when looking for your new LED light bulb.

Size/Type

The first thing you need to do when buying a new light bulb is determine the size/type needed. A bulb is described in three ways: shape, size, and base. The letters at the beginning usually describe the shape. Take a look at the chart at the left.



This shows code GU10 - standard track lighting

Bulb Shape - examples

- A - Arbitrary
- G - Globe (shaped like a ball)
- BR - Bulging Reflector (often in recessed can light fixtures)
- PAR - Parabolic Aluminized Reflector (found in outdoor flood light fixtures)

BULB SIZE / TYPES

A SERIES



B SERIES



C SERIES



GU SERIES



BR SERIES



R SERIES



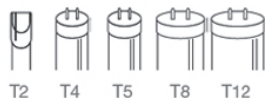
MR SERIES



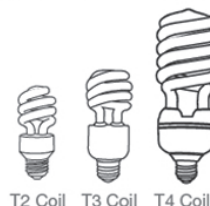
PAR SERIES



LINEAR FLUORESCENTS



COMPACT FLUORESCENT COILS



What the Numbers Mean

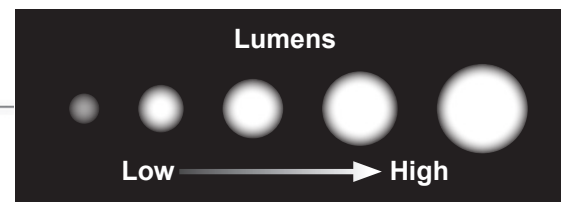
The numbers can be confusing. Basically, the number corresponds to the bulb's diameter at its widest point. The way it's measured, however, is different for the bulb's size and its base.

A majority of light fixtures take an A19 and uses a E26 base. If not, check if the code is printed on the side of an old bulb.

If you don't know the code to a bulb that you need to replace, it's not a big problem. You can always take the old bulb to the store and compare it to other bulbs to find a match. Light bulb sizing standards are different enough that it's easy to spot the right size just by looking at them.

Lumens

A lumen measures brightness. The higher the number of lumens, the more light is produced. For example, an average LED bulb that replaces a regular incandescent 60 watt bulb will produce around 800 lumens.



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Watts

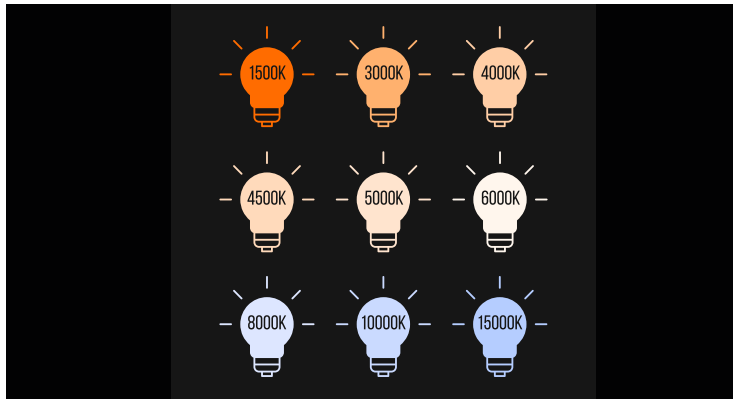
Let's start with that 60-watt lightbulb. Power is a measure of the rate at which energy flows, and in electrical systems it is measured in watts (W). Watts are basically

Modified from - <https://www.bulbs.com/learning/shapesandsizes.aspx>

the miles-per-hour measurement of the electrical world-- they tell you how fast the electrons are speeding down the highway. (If you are interested, one watt is equivalent to electricity flowing at a rate of one joule per second in the metric system.)

A 60-watt lightbulb will consume electricity at a rate of 60 watts. For comparison, a toaster uses about 1200 watts and a small gasoline generator puts out 2,000 watts.

LED's require far fewer Watts than incandescent bulbs while producing more light. Look at the chart at the bottom of the page. Compare the old incandescent bulb in red to the LED at the far right.



Color

stock.adobe.com/ca/free

LED's come in a range of colors that imitate different kinds of natural light. The color is described as a measurement on a spectrum of the Kelvin Scale. The scale spans between a "warm" or yellowish light similar to an incandescent bulb to a "cool" white light more similar to sunlight under a blue sky.

Choose the color you prefer by selecting the K number when you make your purchase.

Dimmable vs Non-Dimmable

If you have a light fixture with a dimmer switch on it, be sure to buy only LED's that are dimmable. They will say this on the package. If you put a non-dimmable LED bulb in your fixture, it can cause damage to the bulb and possibly the circuit. You can use a dimmable bulb in a regular fixture with no worry.

A dimmable LED equipped light fixture can save even more money by reducing the energy it needs and providing more comfortable lighting levels.

Price

The higher sticker price may startle you initially, but remember, that upfront cost will result in more money in your pocket over time.

- LED's have a rated lifespan of 50,000 hours, that is as much as 50x as long as incandescent light bulbs.
- Incandescent bulbs convert 90% of energy it consumes into heat energy, with the remaining 10% converted to light energy. LED's efficiency is the complete opposite as it converts 90% of its energy into light.

Useful Links

What Do Those Confusing Codes Mean - How to Geek

<https://www.howtogeek.com/363566/what-do-those-confusing-light-bulb-codes-mean/>

Learn About LED Lighting - Energy Star

https://www.energystar.gov/products/lighting_fans/light_bulbs/learn_about_led_bulbs

Learning about LED - Government of Canada

<https://www.nrcan.gc.ca/energy/products/reference/15476>

	COMPARE			
EFFICIENCY	← LEAST			MOST →
BULB TYPE				
LUMENS (How bright) ↓	STANDARD INCANDESCENT	HALOGEN	CFL (Compact Fluorescent Lamp)	LED (Light Emitting Diode)
450	40 W	29 W	9 W	8 W
800	60 W	43 W	14 W	13 W
1100	75 W	53 W	19 W	17 W
1600	100 W	72 W	23 W	20 W
RATED LIFE	1 year	1 - 3 years	6 - 10 years	15 - 25 years
SAVINGS	X	up to 30%	up to 75%	up to 80%

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