

## Things to consider when choosing LED bulbs

- Bulb type**- make sure you purchase the equivalent bulb size/screw type:
  - Common bulb is A19 or A60 (metric) “classic” screw-in bulb with a 26 mm base.
  - Chandeliers use a smaller, E12 or candelabra base,
  - Track and recessed lighting often use a GU10 post style halogen bulb.
- Brightness**- While Watts (W) indicate the amount of power used by the bulb, Lumens indicate the amount of light provided. The more lumens, the brighter the bulb. Measuring the performance of a bulb in lumens allows comparisons of light quantity.
  - 60W incandescent ranges between 300 – 900 lumens
  - 100W incandescent bulb ranges between 1600 – 1800 lumens.
- Colour**- colour temperature is measured in Kelvins (K).
  - Soft white bulb falls somewhere around 2,500 – 3,000K. Lamp choices should be 2700-3000K to create a warm, inviting and relaxing atmosphere.
  - Bright white bulb ranges from 4,500 – 5,000K. Some people find them to be too bright and “clinical”, but they may be good for certain
- Other things**: Do you need one that’s dimmable? Are you planning to put it outside?

### Calculating the annual cost savings of replacing lighting:

1. Determine the power of bulb, in kilowatts (kW). Divide Watts (W) by 1000 to get kW

**Example:** 60W bulb = 0.06 kW

2. Estimate the length of time the light is on during the day, in hours (h).

3. Determine utility rate (price/kWh on bill). Use 10¢ per kWh as a good average (\$0.10)

Annual cost = kW × hrs × utility rate × 365

**Example:** If you have a 60W bulb that is on for an average of 8 hours/day.

Annual cost = 0.06kW × 8 hours × \$0.10 × 365 = \$17.52

By changing that bulb to an 9.5 W LED

Annual cost = 0.0095kW × 8 hours × \$0.10 × 365 = \$2.77

4. Take the annual cost for the bulb you are currently using and subtract the annual cost of the LED bulb from it to determine your annual cost savings per bulb.

**Example:** \$17.52 - \$2.77 = annual cost savings of \$14.75 per bulb

4. Multiply your annual cost saving per bulb by the number of bulbs you are applying to replace to determine your total energy savings.

**Example:** \$14.75 × 20 bulbs = total annual cost savings of \$295!

The same calculation can be used for appliances.

**Other sources of information:**

<http://www.nrcan.gc.ca/energy/products/categories/lighting/13730>

<http://www.philips.ca/c-m-li/led-light-bulbs>

<https://www.sylvania.com/en-us/sustainability/regulations-legislation/Pages/light-bulb-laws.aspx>

<http://globalnews.ca/news/539681/what-you-need-to-know-about-led-bulbs/>

[http://www.superiorlighting.com/BULB\\_REFERENCE\\_GUIDE\\_s/218.htm](http://www.superiorlighting.com/BULB_REFERENCE_GUIDE_s/218.htm)