

Things to consider when choosing LED bulbs

1. **Bulb type**- make sure you purchase the equivalent bulb size/screw type:
 - a. Common bulb is A19 or A60 (metric) “classic” screw-in bulb with a 26 mm base.
 - b. Chandeliers use a smaller, E12 or candelabra base,
 - c. Track and recessed lighting often use a GU10 post style halogen bulb.
2. **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.
 - a. 60W incandescent ranges between 300 – 900 lumens
 - b. 100W incandescent bulb ranges between 1600 – 1800 lumens.
3. **Colour**- colour temperature is measured in Kelvins (K).
 - a. Soft white bulb falls somewhere around 2,500 – 3,000K. Lamp choices should be 2700-3000K to create a warm, inviting and relaxing atmosphere.
 - b. 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
4. **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