



## Office of the Ohio Consumers' Counsel

Your Residential Utility Consumer Advocate

# CONSUMER FACT SHEET

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# HOW TO SHOP FOR LIGHTBULBS



Consumers have many new choices in energy-efficient lighting. The most popular light bulbs now available are:

- ▶ LED bulbs (light-emitting diodes),
- ▶ CFL bulbs (compact fluorescent lamps), and
- ▶ Halogen incandescents.

These bulbs initially cost more than traditional incandescent bulbs. During their lifetime, especially LED and CFL bulbs, you can save a surprising amount of money because they use less energy.

With all these choices, it can be difficult to select the right bulb. Fortunately, lightbulb manufacturers are required to label brightness, appearance, and efficiency specifications on their packaging. This fact sheet can help you choose the right lightbulb and understand the features you may want or need.

### Lighting Facts

#### Energy Costs

- ▶ *LED bulbs (light-emitting diodes)*  
Energy Star-qualified LEDs use only 20%–25% of the energy and last 15 to 25 times longer than traditional incandescent bulbs.

- ▶ *CFL bulbs (compact fluorescent lamps)*

An Energy Star-qualified CFL uses about one-fourth the energy and lasts ten times longer than a comparable traditional incandescent bulb.

- ▶ *Halogen incandescents*

Halogen incandescent bulbs meet the federal minimum energy efficiency standard, but LED and CFL Bulbs are better choices for saving money in the long run.

It's hard to beat the value offered by LED lightbulbs. Not only have they become more affordable, but they may last several years longer than CFL and incandescent lightbulbs.

**Replacing just five frequently used traditional light bulbs in your home with LED bulbs can save you up to \$45 every year.**

#### Brightness

A good first step when shopping for lightbulbs is looking for lumens (lm). While consumers used to purchase their bulbs based on wattage, the best measure is lumens. Watts measure the energy a lightbulb uses while lumens measure brightness. The fewer watts you use, the

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The Office of the Ohio Consumers' Counsel (OCC), the residential utility consumer advocate, represents the interests of 4.5 million households in proceedings before state and federal regulators and in the courts.

The state agency also educates consumers about electric, natural gas, telephone and water issues.

For more information, please visit the OCC website at [www.occ.ohio.gov](http://www.occ.ohio.gov).



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lower your electric bill will be. More lumens translate to a brighter light. Use the chart below to convert incandescent wattage to lumens.

Incandescent watts (energy used)	Lumens (brightness)
40 w	450 lm
60 w	800 lm
75 w	1,100 lm
100 w	1,600 lm
150 w	2,600 lm

### Light appearance

You may also wish to consider the light appearance, which is measured in Kelvins (K) and based on two shades, warm and cool. The Lighting Facts label indicates light appearance on a spectrum between warm and cool. Lower Kelvin numbers mean more yellow light while higher Kelvin numbers mean whiter or bluer light.

A good rule of thumb if you want a light to closely resemble the traditional incandescent bulb is to look for bulbs around 3,000K. A soft white light is typically 2,700-3,000 K. This lighting is great for bedrooms, living rooms, and dens. It also highlights dark woods in your home. Warm white lights are between 3,000K-4,000K and work well in kitchens, workspaces, and bathrooms. A bright white light between the white and blue ranges will be 4,000K-5,000K. This shade accentuates chrome and white fixtures in bathrooms or kitchens. The shade most similar to daylight is a cool, white light between 5,000-6,500 K. These bulbs are recommended for reading spaces.

### Know your Bulb

#### LEDs: Light-Emitting Diodes

LED lightbulbs can last for decades; a typical incandescent lightbulb only lasts 1,000 hours, but a typical LED lightbulb can last 20,000 hours or more. LED lightbulbs use more than 75 percent less power than traditional incandescent lightbulbs. LED lightbulbs do not get hot, unlike incandescent lightbulbs that

generate unnecessary heat, which can help save on air conditioning. LED lightbulbs do not burn out, but after thousands of hours their brightness dims and their color may change. LED lightbulbs reach full brightness as soon as you flip the switch unlike CFLs that may require a few seconds to reach full brightness.

### Smart LED bulbs

Smart bulbs allow you to control the lighting remotely or program the bulb to turn on or off at a determined time. In addition, smart bulbs have self-dimming programmable options that slowly dim or brighten. Smart bulbs are typically more expensive than standard LED bulbs. However, programmable bulbs can lower energy costs, off-setting some of those additional costs.

### Other Lighting Options

As LED lightbulbs become less expensive and offer more consumer-friendly features, incandescent and compact fluorescent bulbs have become less popular and may be harder to find on the shelves. However, you do not need to be in a hurry to discard your energy-efficient CFL bulbs. They are up to 75 percent more efficient than incandescent bulbs and may have years of life still in them. CFLs, like all fluorescent lightbulbs, contain a small amount of mercury, which can be harmful to your health and the environment if the CFL breaks and the mercury is no longer safely contained. For this reason, it is inadvisable to dispose of CFL lightbulbs in regular trash receptacles. Learn more about proper disposal of CFLs from the Ohio Environmental Protection Agency at [https://epa.ohio.gov/pic/cfl\\_info](https://epa.ohio.gov/pic/cfl_info).

Much of the information from this fact sheet came from the US Department of Energy. Learn more at [www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money](http://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money).