

Switch Home Lighting for Energy Savings

Some consumers are stockpiling incandescent bulbs while the phase-out of out energy-inefficient incandescent light bulbs continues. Even though Congress recently eliminated funding for enforcement of minimum efficiency standards for new light bulbs, incandescent bulbs will probably disappear from store shelves eventually. Light bulb manufacturers have already invested millions of dollars retooling their production lines to make more efficient bulbs.

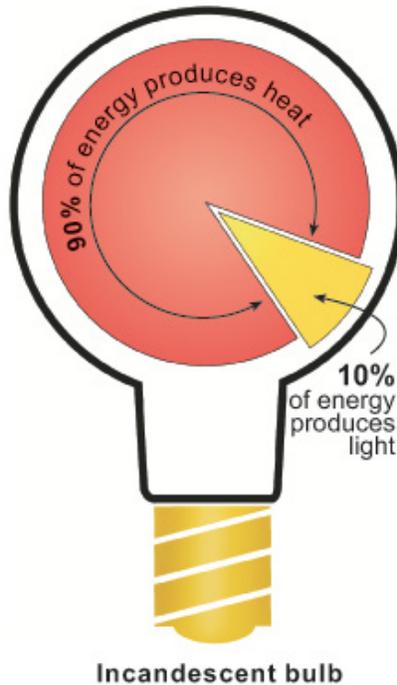
Regardless of the phase-out law, incandescent lights are currently the most energy-wasting bulbs on the market. That inefficiency results in increased energy use and higher utility costs for the consumer.

Fast way to cut home energy costs

Making improvements to your lighting is one of the fastest ways you can cut your home energy costs. According to the U.S. Department of Energy, 11 percent of the average household's energy costs are spent on lighting. In general, incandescent bulbs use only 10 percent of the energy consumed to light the lamp. The other 90 percent of the energy consumed produces heat generated by the incandescent bulb. Generally, the

Marsha G. Alexander

Housing and Environmental Design Specialist,
College of Human Environmental Sciences



most energy-efficient types of home lighting are fluorescent and light emitting diodes (LEDs).

New packaging labels can help you select the best products for specific uses. By reviewing the label information, you can determine the estimated yearly energy costs, watts used, brightness and light appearance. You can also look at the label and easily compare the color temperature, or Kelvin, of the bulbs, and be able to determine if the lamp appearance will be warm or cool. Also look for the Energy Star label on the packaging. Products with the Energy Star label have met increased energy efficiency product requirements.

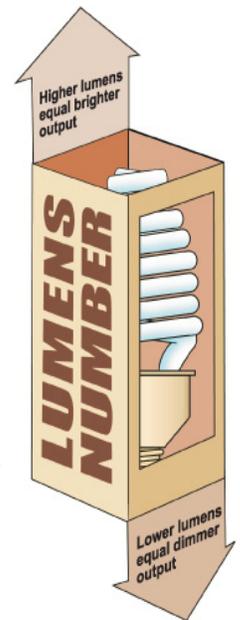
Match the lighting function to each room

Some rooms need different types of lighting. You should match the

intended function of the space with the light source.

How to measure brightness

If brightness is important, compare the lumens of two or more products. The higher the lumens, the brighter the light output. Once you have found bulbs that provide the desired lumens, choose bulbs with the lowest watts, if your goal is to save energy costs. The more lumens produced by a bulb per watt (energy used), the more efficient the light bulb is and the more energy is saved.

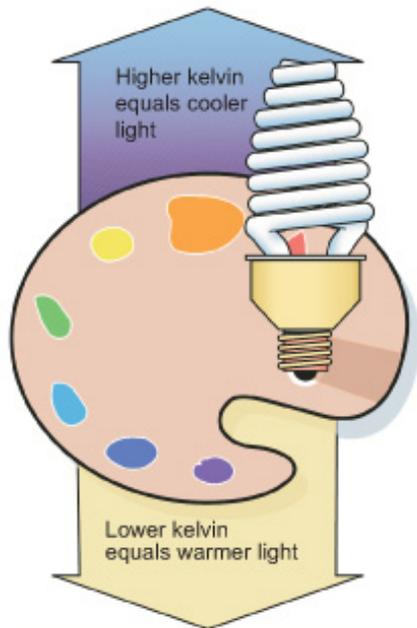


How to measure color of light

The color of the light is measured by a temperature scale called the Kelvin (K) scale. The scale typically ranges from 1,500K to 9,000K. The lower the Kelvin number, the warmer the light will appear. The higher the Kelvin, the cooler, or more blue, the light will appear. For example, if you are comparing two bulbs and one is listed at 2,700K and the other one is 4,000K, and you desire a warmer light, select the one with 2,700K.

The color rendering index (CRI) measures how true a light source reveals the appearance of colored objects. The index range is from 0 to 100. The higher the CRI, the better the color-rendering ability of the bulb.

When color accuracy is important, use a bulb with an 80 CRI or higher. Not all consumer packages will include the CRI. However, the information is available through manufacturers.



Replacing incandescent bulbs with the more energy-efficient lamps can be expensive. A good suggestion is to identify your four or five most used lamps or those that are on for several hours each day. Replace them with Energy Star-qualified bulbs. As your budget allows, replace more bulbs with energy-efficient alternatives.

For more information on home lighting, contact your local University of Missouri Extension center or visit the website: <http://extension.missouri.edu/>.

Safe disposal of fluorescent lamps

Fluorescent tubes and compact fluorescent lamps/lightbulbs (CFLs) contain a small amount of mercury sealed within the glass tubing. Mercury is a basic element of a CFL; it allows the bulb to be energy efficient. Manufacturers have reduced, and continue to reduce, the amount of mercury in fluorescent lamps. The amount of mercury found in a typical CFL would cover the tip of a ballpoint pen. No mercury is released when the bulb is not broken. However, if the bulb breaks, proper cleanup is essential.

Intact fluorescent lamps/lightbulbs

Follow local and state recommendations for safe disposal or recycling of fluorescent lamps if they are not broken. Many home stores and places that sell fluorescent lamps may have recycling options or suggestions for disposal. If no recommendations exist and they cannot be recycled, place them in two sealed, plastic bags, put them in the household trash, and alert the waste haulers.

Breakage of fluorescent lamps

If a fluorescent bulb accidentally breaks, have people and pets leave the room immediately. Avoid walking through the breakage area on the way out of the area. Open windows to allow for outside ventilation, and stay out of the affected area for at least 30 minutes or longer. Shut off the central forced heating and air conditioning system if it is in use.

For hard surfaces such as wood or tile, carefully scoop up the glass fragments and powder using stiff paper or cardboard, and place them in a sealed plastic bag or a glass jar that has a metal lid. Go back and use duct tape or some other sticky tape to pick up the remaining glass and powder. Wipe the area clean with damp paper towels, and dispose of towels in a sealed bag or glass jar. Wash your hands immediately. **Do not use a broom or vacuum to clean up the broken bulb on hard surfaces.**

To clean up a broken bulb on carpeting, wear gloves and carefully pick up the glass fragments and place them in a sealed bag or glass jar with metal lid. Use duct or sticky tape to pick up any remaining glass and powder and place them in a sealed bag or glass jar. If vacuuming is needed after all visible materials are removed, use a HEPA or micro-filtration vacuum on the area where the bulb was broken. Remove the vacuum bag (or empty and wipe the canister container), and put the bag or vacuum debris in a sealed plastic bag. Wash your hands immediately.

Keep windows open and your forced air system off during and for about 15 minutes after vacuuming. Do this the next few times you vacuum the area.

For more help, see the Environmental Protection Agency (EPA) guidelines for dealing with mercury spills: <http://www.epa.gov/hg/spills/#fluorescent/>.

ALSO FROM MU EXTENSION PUBLICATIONS

G1770 *Replacing Wall Switches and Receptacles*
GH5984 *Home Repair Inspection and Specifications*

extension.missouri.edu | 1.800.292.0969