

Incandescent Lighting

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Incandescent lighting is the most common, and least energy efficient, type of lighting used in homes. | Photo courtesy of ©iStockphoto/TokenPhoto.

Incandescent lamps are often considered the least energy efficient type of electric lighting commonly found in residential buildings. Although inefficient, incandescent lamps possess a number of key advantages--they are inexpensive to buy, turn on instantly, are available in a huge array of sizes and shapes and provide a pleasant, warm light with excellent color rendition.

However, because of their relative inefficiency and short life spans, they are more expensive to operate than newer lighting types such as [compact fluorescent lamps \(CFLs\)](#) and [light-emitting diodes \(LEDs\)](#).

Learn more about [how energy-efficient lamps compare with traditional incandescents](#) and [replacing incandescent lamps](#).

TYPES OF INCANDESCENT LAMPS

There are three common types of incandescent lamps (called A-line lamps) used in residential applications:

- Standard incandescent or pear-shaped A-19 lamps
- Energy-saving or halogen A-19 lamps
- Reflector or parabolic reflector (PAR) lamps, sometimes called "flood" or "spot" lamps

STANDARD INCANDESCENT A-LINE LAMPS

Commonly known as the screw-in "A"-type lamp that use a medium Edison (E-26) base, standard incandescent bulbs are the least efficient light source commonly found in homes. These lamps produce visible light by heating a tiny coil or filament of tungsten wire that glows when it is heated by an electrical current.

"Long-life" lamps are an example of lamps with thicker, stronger filaments that can last much longer than a standard service lamp, but they are less energy efficient.

New efficiency standards for lighting require lamps to use about 25% less energy. These standards began taking effect starting in January 2012 and the phase-in will be complete as of January 1, 2014, after which time traditional incandescent general service lamps such as the common A-19 will not be available in most stores. Learn more about the [new lighting standards](#).

ENERGY-SAVING INCANDESCENT (OR HALOGEN) LIGHTBULBS

A halogen lamp is a type of incandescent lamp with a capsule that holds a special halogen gas composition around the heated filament to increase the efficacy of the incandescence. They are more energy efficient than standard incandescent bulbs but somewhat more costly. Halogen lamps may also have a special inner coating that reflects heat back into the capsule to further improve efficacy by "recycling" the otherwise wasted heat. Together, the filling and coating recycle heat to keep the filament hot with less electricity. They also provide excellent [color rendition](#).

Halogens are a little more expensive than standard incandescent lamps, but are less expensive to operate because of their higher [efficacy](#) and longer life expectancy. They are commonly used in reflector lamps such as indoor and outdoor flood or spot lighting, indoor recessed and track fixtures, and floor and desk lamps.

Some halogen bulbs are dimmable, as indicated on the package, and are compatible with timers and other [lighting controls](#).

REFLECTOR LAMPS

Reflector bulbs (Type R) spread and direct light over specific areas. They are used mainly for floodlighting, spotlighting, and down lighting applications both indoor and outdoor.

There are two types of reflector lamps:

- **Parabolic aluminized** reflector lamps (Type PAR) are used for a number of applications, including outdoor floodlighting.
- **Ellipsoidal** reflector lamps (Type ER) focus light beams about 2 inches in front of its enclosure, projecting light down from recessed fixtures. Ellipsoidal reflectors are twice as energy efficient as parabolic reflectors for recessed fixtures.

Visit Energy Basics for a technical [comparison of different types of lighting](#).

EXTERNAL RESOURCES

[National Lighting Product Information Program - Lighting Research Center - Rensselaer Polytechnic Institute](#)



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