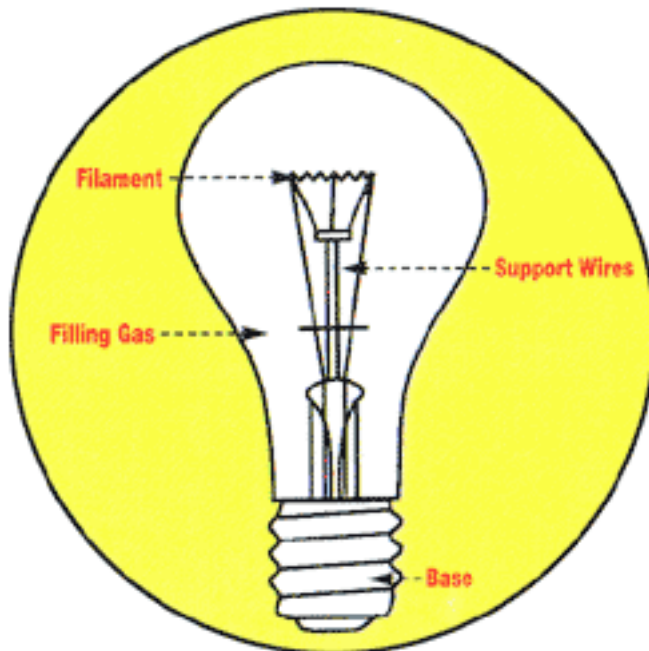


# Types of Light Bulbs

## Read About

There are three main kinds of light bulbs-incandescent, fluorescent, and high-intensity discharge. They are categorized by how they work. Other important differences among light bulbs are shape, size, wattage (the measure of how much electricity they use), color, and voltage (the pressure of electricity).

### Incandescent

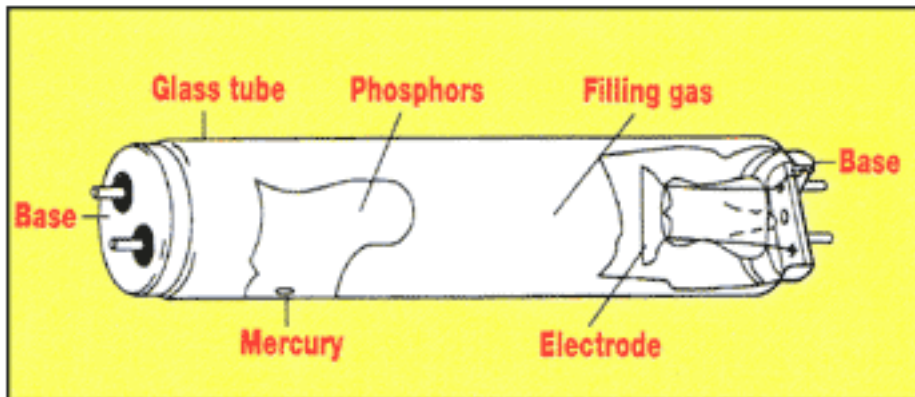


Incandescent light bulbs come in many shapes and sizes and are used in a variety of household devices. Any sealed glass bulb with fine wire inside could be called incandescent. The wire is called a filament. Electricity heats the filament to generate light. Finding just the right thing to use for the filament was the hardest part of developing the light bulb. Thomas Edison tried hundreds of materials including bamboo, silver, and thread. (Lewis Latimer developed a carbon filament, which Edison used.) When the light is switched on, an electric current heats up the filament, which glows when hot. Incandescent lights come in many different coatings and colors. The most common shape for an incandescent light is the one shown here.

Incandescent lights include globe, tubular, and reflector bulbs. Globe-shaped bulbs are often used in a row around a bathroom mirror. Tubular bulbs are seen in terrariums, piano lights, and green-shaded banker's desk lamps. Reflector bulbs, used indoors for floodlighting, direct their light into a wide beam instead of glowing evenly in all directions as most bulbs do. Parabolic aluminized reflector

(PAR) bulbs direct their light in a more narrow beam for spot lighting and floodlighting objects or areas both indoors and outdoors. They are similar to automotive headlights and are made with a special hard glass that resists breakage when they come in contact with water. Halogen lights are advanced incandescent bulbs containing a tiny filament in a tube. Halogen lights are advanced incandescent bulbs containing a tiny filament in a tube. Halogen bulbs are extremely energy-efficient and either produce more light or last longer than regular incandescent lamps do. Their most common shape is the PAR shape, and they are very popular in the retail stores you would find at a mall.

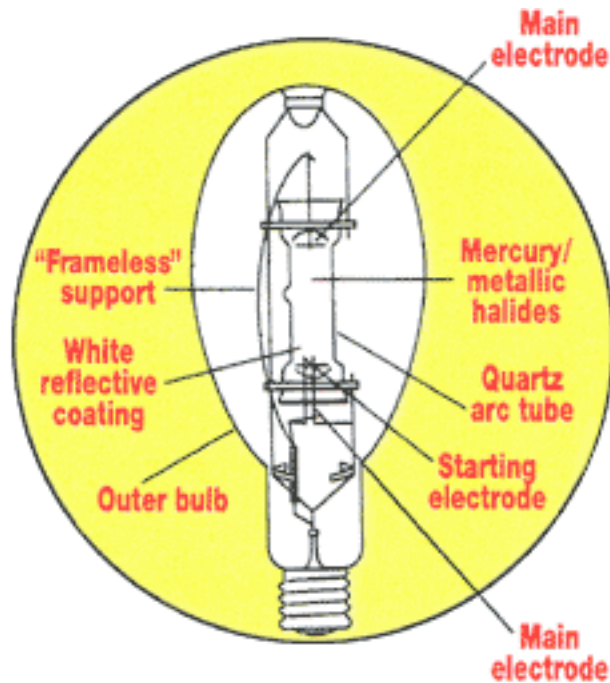
## Fluorescent



Fluorescent light bulbs are long, thin glass tubes that are coated on the inside with a white powder called "phosphor." In order to turn them on, you must connect them to a device called a ballast. Most ballasts are about the size of a brick and they're hidden inside the lighting fixture, usually behind a piece of sheet metal. When you flip a switch to turn on the lights, what you are actually doing is turning on the ballast. The ballast "turns on" the fluorescent lamp by passing electricity through the tube. The electrical current causes the gas inside the lamp to give off ultraviolet energy. The ultraviolet energy hits the phosphor and gets converted to light. Fluorescent lamps use less electricity than incandescent lamps and they are less expensive to operate. You can find them in the ceilings of many schools, offices, stores, and large buildings.

You can now find small compact fluorescent light bulbs (CFLs) that can be used in place of incandescent bulbs in table lamps at home. They have a very small ballast built into the bulb and screw into the socket of the table lamp. A CFL uses less electricity than an incandescent bulb that provides the same amount of light, so they cost less to operate and last up to 13 times longer.

## HID



The powerful high-intensity discharge (HID) bulbs are used outdoors as street and security lights and in large buildings, such as warehouses and sporting arenas. These bulbs contain a small cylinder called an arc tube that is filled with gases. Like the fluorescent lights, a ballast makes electricity flow through the cylinder. This electric arc makes gases in the cylinder glow brightly. The HID bulb is the most energy-efficient, and brightest bulb of the three types.