

The Flicker Checker

Incandescent bulbs produce light by passing electricity through a wire inside the bulb. This wire is called a filament. When electricity flows through the wire, it gets very hot and glows, producing light. Incandescent bulbs use 90 percent of the electricity to produce heat and only ten percent to produce light. They are very inefficient in their use of energy.

Fluorescent bulbs produce light by passing electricity through a gas inside the bulb. The electrons in the gas molecules become more energetic and some escape. They bounce around and crash into the walls of the tube. The walls are painted with a special material that gives off light when the electrons hit it.

Fluorescent lights have ballasts that help move the electricity through the gas inside the bulb. A ballast is an electromagnet that produces a large voltage between the two ends of the bulb, so the electricity will flow between them.

There are two types of ballasts, magnetic and electronic. Magnetic ballasts produce a frequency of 60 Hertz (Hz), which means the light is flickering on and off 60 times a second. Electronic ballasts produce a frequency of 10,000-20,000 Hz. Fluorescent lights with electronic ballasts are more energy efficient than those with magnetic ballasts.

To determine which type of ballast a fluorescent light contains, spin the flicker checker under it. If you see smooth circles, as shown in the picture below, the fluorescent light contains an electronic ballast. If you see a checkered pattern that moves from ring to ring, the light contains a magnetic ballast.

Use the Flicker Checker to determine if the fluorescent lights in your school have magnetic or electronic ballasts. Check several rooms, since there may be different types of fluorescents in rooms used for different purposes. If magnetic ballasts are used in any of the rooms, write a recommendation to the principal explaining the advantages of converting to lights with electronic ballasts.



Fluorescent lights with electronic ballasts will produce a pattern like this.