



Differences between Photoelectric and Ionization Smoke Alarms



Types of Detectors

The three types of smoke detectors available today are **photoelectric**, **ionization** and those that have both sensors.

A **photoelectric** alarm is triggered when smoke enters the detector and light from a pulsating source is reflected off the smoke particles onto a light sensor.

In an **ion** alarm, ionized air molecules attach to the smoke particles that enter the chamber, reducing the ionizing current and triggering the alarm.

Pros and Cons



The **ion** detector reacts faster than the photoelectric in responding to flaming fires, and the **photoelectric** detector is more responsive to smoldering fires.



Because an **ion** detector tests the air for small combustible particles, it can be fooled by chemical or paint particles in the atmosphere. The **photoelectric** detector, which needs to "see" the fire, can be fooled by dust, steam or even spider webs.

Though both offer protection against undetected fires, ion detectors experience a higher incidence of nuisance alarms.

How Many To Have

Underwriters Laboratories recommends installing at least one smoke alarm on each floor of your home and one outside all sleeping areas. Some fire safety professionals further recommend installing smoke detectors inside each sleeping area if the occupant sleeps with the door closed.

Regular Maintenance

Smoke detectors should be tested once a month or in accordance with the manufacturer's recommendation. Batteries should be replaced at least once a year. We recommend changing batteries twice a year when we change the clocks. Use a vacuum twice a year to remove debris.

Fire Escape Planning

Installing and maintaining smoke detectors will help keep your family safe, but developing a fire escape plan and practicing it several times a year with everyone in your household is equally important.