SMART CHOICES for SMOKE ALARM PLACEMENT

Understanding Smoke Alarm Technologies

Fires can have different characteristics. Some can flame and spread quickly while other fires may take more time to spread but produce more smoke. While types of fires may be different, any type of fire will pose a danger.

Smoke alarm technology has advanced over the years and consumers today have choices on what technology to use in their homes. While understanding what types of alarms are available is important, it is critical to remember that installing working UL-listed alarms and testing them regularly is the key to providing you additional notice and increased time to escape a fire.

Experts divide home fires into two categories:

- Flaming fires result from the ignition of items such as flammable liquids, wood or paper, or from open flames, such as candles that ignite other items. These fires produce large quantities of flames and lesser amounts of smoke.
- Smoldering fires most often occur when smoking materials, such as cigarettes, are left unattended. These fires produce minimal amounts of flames, but larger quantities of smoke.

National Fire Incident Reporting System (NFIRS) data shows that 93 percent of all residential fires are flaming and that flaming fires account for 75 percent of residential fire deaths. Together, both types of residential fires claim about 2,650 lives annually (NFPA).

Smoke Alarm Technologies

There are two types of smoke alarm technologies currently available to home-owners: ionization and photoelectric. Smoke alarms may be purchased with either ionization or photoelectric technology, or in a dual-sensor smoke alarm that combines both technologies into one unit.

- Ionization smoke alarms may detect flaming fires sooner as these fires generally release millions of smaller and less visible charged (“ionized”) fire particles. These particles interfere with the electrical current that flows through the detection chamber which then triggers the alarm to sound.
- Photoelectric smoke alarms may detect smoldering fires sooner as these fires generally produce larger, more visible fire particles. These particles interfere with and reflect the alarm’s light beam, which then triggers the alarm to sound.

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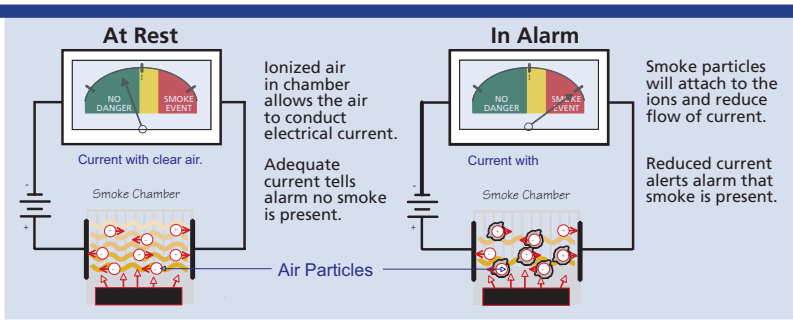
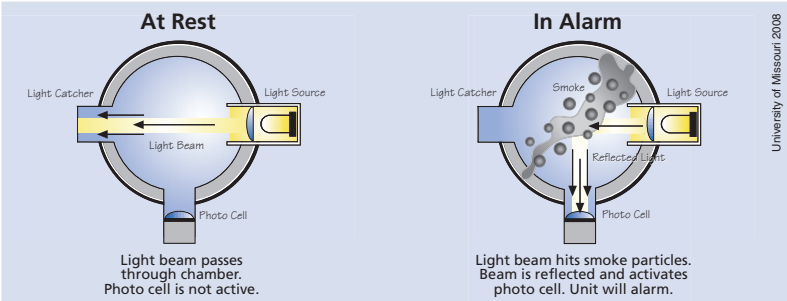


Photoelectric smoke alarms may detect smoldering fires sooner as these fires generally produce larger, more visible fire particles. These particles interfere with and reflect the alarm's light beam, which then triggers the alarm to sound.



Experts Recommend Having Both Technologies

The International Association of Fire Chiefs (IAFC), along with virtually every other recognized fire authority – including the National Fire Protection Association (NFPA), the U.S. Fire Administration (USFA), the National Institute of Standards and Technology (NIST), Consumer Products Safety Commission (CPSC), the National Association of State Fire Marshals (NASFM) and Underwriters Laboratories (UL) – recommends the installation of both ionization and photoelectric technology to maximize protection from either flaming or smoldering fires.

Since it can't be predicted what type of fire will start in a home, it is important that both smoldering flaming fires are detected as quickly as possible. Therefore, it is vital that the correct type (technology) of smoke alarm and their placement (location) within the home be utilized correctly. Additionally, you can leverage the strengths of each technology by considering the location and environment they are placed in.

For example, some studies have shown that ionization smoke alarms may be more prone to nuisance alarms, such as those that occur due to cooking.
Consumers may reduce that potential by placing ionization smoke alarms at least 20 feet from appliances, or by installing a photoelectric alarm near a cooking area.
Most smoking-material fires, which tend to smolder, begin in a den, family room, living room or bedroom. Families with members who smoke may consider installing photoelectric alarms or dual-sensor alarms in those areas.

The most important thing is to ensure that you have working smoke alarms on every floor of your home, inside each bedroom and outside sleeping areas.

For more information on smoke alarms, visit www.SmartAlarmChoices.org.