Smoke Detectors

Fire protection experts recommend smoke detectors as the best device to give warning of fires, and greatly increase the chance of survival in a fire situation. Typically people only have about two minutes to safely get outside in the event of a house fire. However, types of smoke vary, and so do the kinds of smoke detectors you can buy.

An **ionization detector** is the most common smoke alarm. It responds rapidly to the fine particles of wispy smoke generated by a fast, flaming fire from material such as paper or wood. Ionization detectors use a minute amount of radioactive material to make the air between two interior electrodes conduct a small electric current. Smoke particles entering the detector reduce the flow of current and electronic circuitry that sets off the alarm.

The **photoelectric detector** is somewhat more difficult to find and is typically more expensive, but it responds faster to the most common type of house fire - the slow, smoldering fire that begins in upholstery or bedding. This kind of fire creates a smoke composed of large particles. The photoelectric detector operates by beaming light into a chamber that contains a light-sensitive photocell. When smoke enters the detector, it scatters the light beam and the alarm goes off. The average photoelectric smoke detector responds almost twice as fast to this kind of fire as the ionization detector.

The U.S. Fire Administration recommends that both types of alarms be installed or use dual sensor smoke alarms. Specially designed smoke detectors are available for individuals with disabilities.

**LOCATION**

Fire protection experts recommend a dual-sensor smoke detector for each floor of a residence (or both an ionization and photoelectric detector).

Smoke alarms should also be placed inside and outside sleeping areas.

Ideally smoke detectors should be placed in the middle of a ceiling. However, they can operate effectively from any ceiling location if more than six inches from a corner. Wall-mounted units should be located between six and twelve inches from a ceiling.

To avoid nuisance alarms don't install a detector in a kitchen or near a fireplace. Garages and furnace rooms are not good locations, either.

**FEATURES AND MAINTENANCE**

Both battery- or electric-powered (hard-wired) smoke detectors are available. Hard-wired units must connect to household current, have a rechargeable battery backup, and should be installed by a qualified electrician. Smoke detectors should have the Underwriters Laboratory seal of approval.

Test smoke detectors at least once a month with a smoking match.

Replace batteries at least every six months, or if the “low-battery” alarm begins to chirp.

Clean dust, cobwebs, and insects from inside and outside the detector unit when changing the batteries every six months.

Smoke alarms should be replaced no less than every ten years.

*Source: https://web.extension.illinois.edu/healthyair/smokedetectors.cfm*