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## Ionization and Photoelectric Smoke Alarms - What Both Contribute to Full Fire Protection

There have been many news articles and conversations throughout the fire industry about smoke alarm technology and the differences between photoelectric and ionization alarms. As a professional engaged with campus fire safety, people will naturally look to you for answers on many fire related topics, including smoke alarms. Are you prepared to answer questions about this topic?

- Have you had time to delve into the research surrounding smoke alarm technology?
- Do you have the materials needed to educate your fellow firefighters as well as members of your community?
- Have you been approached to comment about smoke alarm technology? Did you have the background knowledge to answer comfortably?

[FireFYI.org](#) has dedicated a section of its website to helping you understand the research surrounding smoke alarm technology. We have compiled data from various independent research agencies in order to develop documents to educate yourself, fellow firefighters and community including a free brochure explaining the differences and a factsheet containing answers to frequently asked questions including:

Q: How do the technologies differ?

A: Because of the different detection technology, ionization sensors are more likely to detect smaller, less visible fire particles, like those produced by flaming fires, sooner than photoelectric sensors. However, photoelectric sensors are more likely to detect larger, more visible fire particles, such as those produced by smoldering fires, sooner than ionization sensors.<sup>[1]</sup>

Q: What kind of smoke alarm is best?

A: Consumers should only install smoke alarms that are listed and tested to approved third-party standards such as Underwriters Laboratories (UL) 217. Most states require smoke alarms to be listed by a third party.

In 2004, the National Institute of Standards and Technology (NIST) completed a study on photoelectric and ionization smoke alarms and found both types responded to all fires. While the ionization alarms may respond quicker to flaming fires, and the photoelectric alarms may respond quicker to smoldering fires under specific test conditions, both technologies are effective in providing adequate escape time to occupants in "real-life" home fire conditions. Both also must pass identical performance standards to obtain third-party approval from organizations such as UL.

The site also contains links to recent industry data, reports, and public statements about smoke alarm technology.

The National Fire Protection Association, the U.S. Fire Administration, the Consumer Product Safety Commission, International Association of Fire Chiefs and UL recommend installing both photoelectric and ionization smoke alarms in order to maximize protection from both types of fires.

The director of NIST's building and fire research laboratory posted a letter in response to a recent article about photoelectric and ionization alarms: <http://firehero.00b.org/ajtk/servlet/JJ?H=13ar27&R=657217740>

Visit <http://firehero.00b.org/ajtk/servlet/JJ?H=13ar28&R=657217740> for more information!

[1] National Institute of Standards and Technology (NIST), Home Smoke Alarm Study, 2004

Additional information: [www.everyonegoeshome.com](http://www.everyonegoeshome.com)

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We hope to see you in Providence in the Fall at the 10th Anniversary of our Campus Fire Forum.

Yours truly,

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