

Kidde Commercial EXCELLENCE Smoke Detectors

– what makes them different

13 March 2025

Kidde Commercial is pleased provide more information regarding the new EXCELLENCE series smoke detectors with their patented optical sensing technology that was launched in January 2024.

Not only do these detectors take heed from the lessons learned on nuisance alarms during the past half century, but they also incorporate a clean-sheet approach to nuisance alarm root causes. The result is a unique set of solutions that offer significant performance and quantifiable detection improvements.

The multi-wave, multi-angle smoke detectors demonstrate Kidde Commercial's dedication to innovation. With **patented** optical sensing technology and MIE light scattering theory they accurately differentiate between nuisance particles and serious threats. With this technology false alarms are greatly reduced. This is especially important for areas that hold flammable materials, or where early detection is vital. Think of areas such as hotels, universities, kitchens and leisure complexes.

As well as being able to detect harmless nuisance particles such as dust, steam and cooking particles, EXCELLENCE smoke detectors can also identify particulate associated with specific fires and elevate these in process consideration, making detection faster and more accurate.

Detection modes

Another feature which sets the EXCELLENCE Series optical detectors apart is their dual detection mode. In normal operating mode the detector uses only the forward scattering signal of the IR LED, in a similar way to most legacy detectors. Every time this LED is pulsed, it checks the difference in signal from clean air. As soon as the difference increases above a set trigger level, the detector switches to analysis mode.

In analysis mode all three detection LEDs are used. Within milliseconds the detector calculates the forward and back scatter ratios and uses its clever alarm equation to evaluate these ratios to make the alarm decision. An alarm is only raised when a set ratio level in the detector is reached in relation to the detected particles.

Drift compensation

Even though the EXCELLENCE series optical chamber is designed to be pretty much immune to dust ingress due to its conductive chamber plastics and chamber smoke path design, clean air values are constantly checked and updated if necessary. The detector uses the clean air value using all three detection LEDs to calculate contamination.

Under standard conditions the clean air values are calculated:

- During power up
- After a reset command from the CIE
- Every 2 hours

If any of the clean air readings is out of the compensation range, a maintenance fault will be reported to the CIE.

The benefits

The greatly reduced false alarm rate due to smoke discrimination, together with the reduced fault-finding time due to the built-in local event log, means that the user can enjoy a multitude of operational savings. Add to this the super easy installation with multiple installation and cabling options, cost can even be saved on the installation!

EXCELLENCE series devices can coexistent happily alongside legacy 2000 series devices. This makes legacy systems scalable. Systems can be expanded as schedules allow, without compromising performance.

Image captions:



Image 1: The Kidde Commercial Excellence Series Detectors

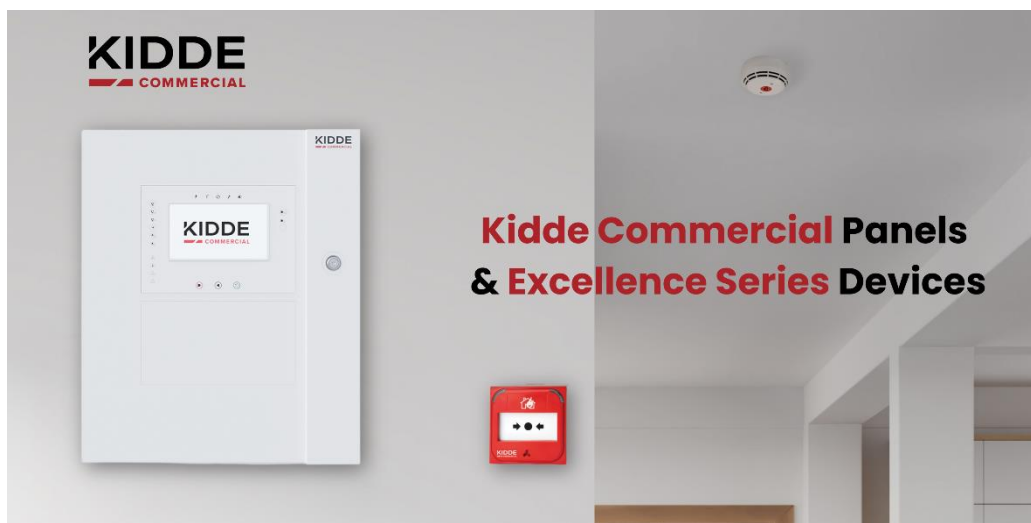


Image 2: Kidde Commercial panels and Excellence Series devices



Image 1: The Kidde Commercial Excellence Series Detectors

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About Kidde Commercial

Kidde Commercial was formed in 2022 upon a rich heritage within the fire safety industry, now part of the Carrier brand. The brand was originally recognised as Aritech and has since acquired various other known companies, such as Ziton and Kilsen.

With over 100 years of heritage in the industry, Kidde Commercial is now the world's largest manufacturer of fire safety products. The business works tirelessly to develop innovative solutions that protect people and property from fire related hazards. Kidde Commercial has a clear vision of its future, working with interconnected teams to delivery new and safer products to market for its customers.

Globally, Kidde Commercial is comprised of over 4,100 team members, operating over 4 global engineering centres, 2 global design centres and 5 manufacturing sites. Kidde Commercial fire safety products are used in a multitude of industries and premises, such as Hospitality, Hospitals, Commercial Buildings, Education, Data Centres, Transportation, High-Rise Residential, Financial Centres and Historical Sites.

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