Open-area Smoke Imaging Detection (OSID)

Large, open spaces – airports, train stations, stadiums and shopping malls – pose unique challenges to reliable fire detection due to their environmental nature and limitations.

Open-area Smoke Detection Reinvented

OSID by Xtralis is a new technology designed specifically for these environments, enabling early detection and response to save lives and prevent service disruptions.
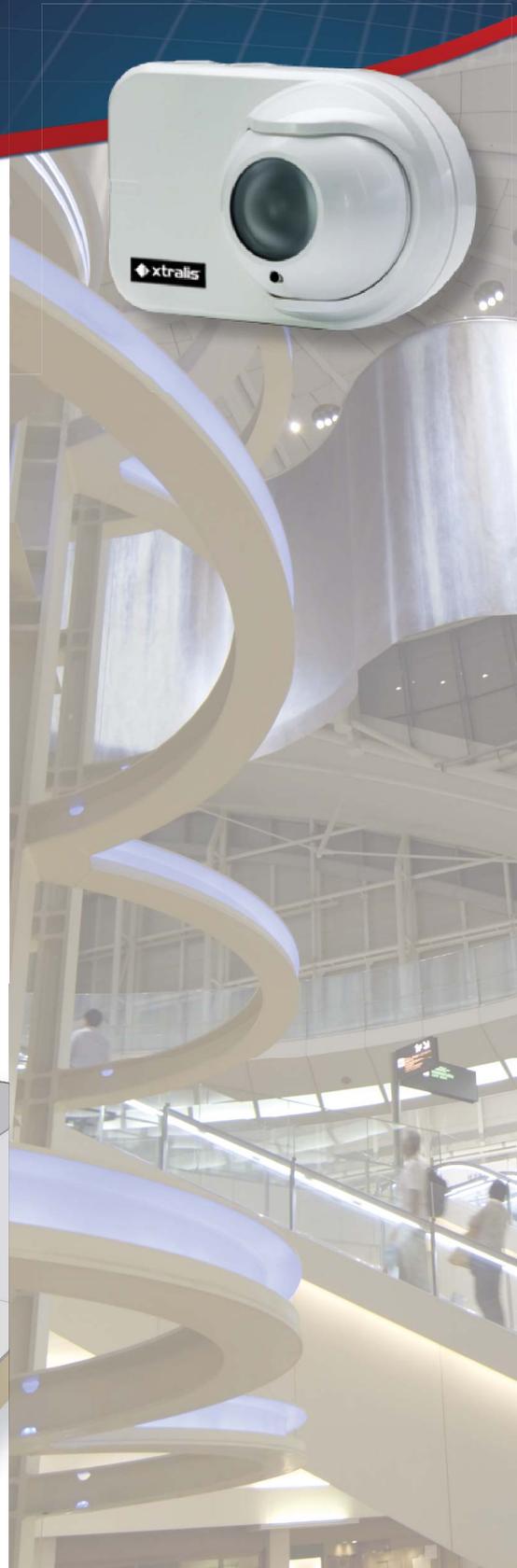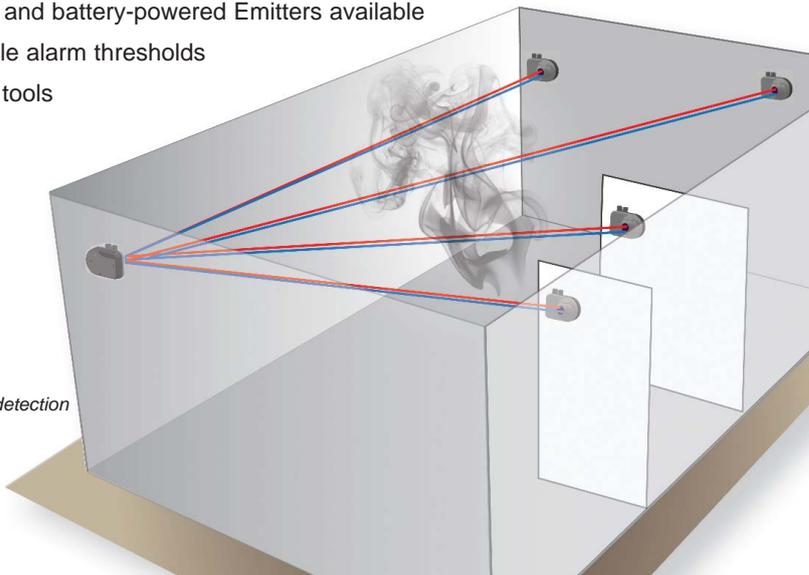
OSID uses a sophisticated algorithm to map and compare the strength of infrared (IR) and ultraviolet (UV) light signals from detectors configured in the space.
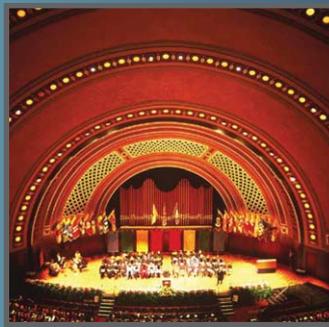
OSID also reduces the costs of installation and maintenance as the Emitter batteries have more than a five-year life.

Superior Features Offered by OSID

- Maximum detection range up to 150 m (492 ft), outperforming traditional beams by up to 50% in length
- Status LEDs for fire, trouble and power
- Easy alignment with large adjustment and 3D viewing angles
- Simple DIP switch configuration
- Dual-wavelength, LED-based smoke detection
- Limited maintenance requirements
- Conventional alarm interface for straightforward fire system integration
- Both wired and battery-powered Emitters available
- Configurable alarm thresholds
- Diagnostic tools

True spatial detection

OSID Configurations

OSID systems may be configured to protect a range of spaces, regardless of shape. The protection zone or "fire web" is determined by the placement of OSID detectors.

Benefits of OSID

- Simple installation and commissioning - up to 70% time saving compared to traditional beams
- Low maintenance, saving both time and expense
- High tolerance to vibrations, building movement and high airflow
- Dramatically reduces false alarms
- High tolerance to dust, reflections, changing light including sunlight, and object intrusion
- Requires as little as 20 cm (8 in) unobstructed width of view
- 3-D coverage
- On-board event log for fault and alarm diagnostics
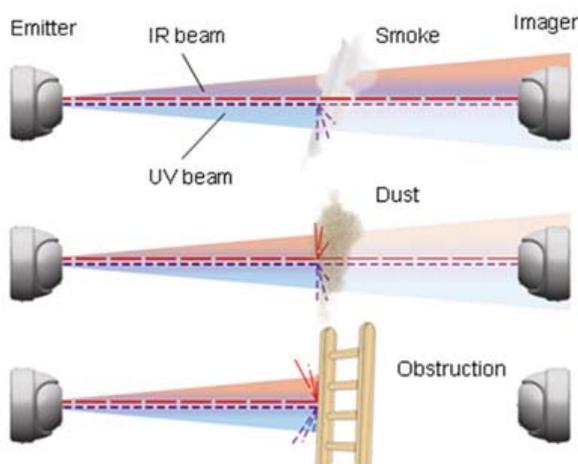
Where Flexible Detection Coverage is Needed

OSID can support up to 7 Emitters with a single Imager making it easy to deploy in unusually shaped areas. Emitters can be placed at different heights to overcome stratification and provide earlier detection. This Multi-Emitter 3D approach also provides a 50% better detection coverage because beams converging to one point are more closely spaced in the area.

Unique Detection Technology

OSID by Xtralis innovatively combines two technologies to reliably detect smoke in large, open spaces.

Dual-wavelength Particle Detection

By using two wavelengths of light to detect particles, the system is able to distinguish between particle sizes. The shorter UV wavelength interacts strongly with both small and large particles, while the longer IR wavelength is affected predominantly by larger particles. Dual-wavelength path loss measurements therefore enable the detector to provide repeatable smoke obscuration values, while rejecting the presence of dust particles or solid intruding objects.

Optical Imaging with CMOS Imager Arrays

An optical imaging array in the OSID detector provides a wider viewing angle to locate and capture images. Consequently, the system is easier to install and align and can compensate for drift caused by natural shifts in building structures.

Optical filtering, high-speed image acquisition, and intelligent software algorithms also enable the OSID detector to process images and provide new levels of stability and sensitivity while providing high tolerance to high-level lighting variability.

Applications

- *Shopping Malls* — 3-D arrangement may be configured to protect many large, open spaces
- *Long Corridors* — Beam length up to 150 m (492 ft)
- *Airport Terminals and Train Stations* — Non-intrusive detection in a wide range of lighting conditions
- *Heritage Buildings* — Discreet and non-intrusive detection
- *Suspended Ceilings* — Discreet and flexible installation
- *Challenging Logistics* — Simple maintenance with no disruption to operations
- *Indoor Stadiums and Arenas* — Multi-layer detection
- *Dirty Environments* — Discriminates against dust, dirt and other intruding objects to reliably detect smoke
- *Hotel and Office-tower Atriums*
- *Churches and Cathedrals*
- *Exhibition and Convention Centers*
- *Industrial and Manufacturing Facilities*

OSID
by ◆ xtralis™