Xtralis OSID Smoke Detection

Open-area Smoke Imaging Detection (OSID) by Xtralis is a new innovation in projected beam smoke detection technology. By using advanced dual wavelength projected beams and optical imaging technology for early warning smoke detection, OSID provides a low-cost, reliable and easy-to-install solution that overcomes typical beam detection issues such as false alarm incidents and alignment difficulties.

The OSID system measures the level of smoke entering beams of light projected over an area of protection. A single OSID Imager can detect up to seven emitters to provide a wide coverage area. Two innovations in smoke detection technology have been developed for the revolutionary OSID smoke detector:

Dual Wavelength Particle Detection The beam projected from each emitter contains a unique sequence of ultraviolet (UV) and infrared (IR) pulses that are synchronized with the imager and enable the rejection of any unwanted light sources.

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 only by larger particles. Dual wavelength path loss measurements therefore enable the detector to provide repeatable smoke obscuration measurements, while rejecting the presence of dust particles or solid intruding objects.

Optical Imaging with a CMOS Imaging Chip. An optical imaging array in the OSID Imager provides the detector with a wide viewing angle to locate and track multiple emitters. Consequently, the system can tolerate a much less precise installation and can compensate for the drift caused by natural shifts in building structures. Optical filtering, high-speed image acquisition and intelligent software algorithms also enable the OSID system to provide new levels of stability and sensitivity with greater immunity to high level lighting variability

Operation Status information (Fire Alarm, Trouble and Power) is communicated through the Imager via Status LEDs, dedicated Trouble and Alarm relays, and the Remote Indicator interface. Specific Trouble (Fault) conditions are identified through coded flashes of the Trouble LED. An internal heating option is also provided on the Imager to prevent condensation on the optical surface, and a reset input enables an external signal to reset the device.

Simple Installation and Maintenance The OSID system consists of up to seven Emitters, for the 45° and 90° Imager units, located along the perimeter of the protected area, and an Imager mounted opposite. Each component can be mounted directly to the surface or can be secured with the supplied mounting brackets. Battery powered Emitters with up to five years battery life are also available to reduce installation time and cost. On the Imager, a termination card provides all field wiring terminals, and DIP switches enable the user to configure the detector for particular applications.

Features

- Maximum Detection Range of 492 ft. (150 m) [OSI-10]
- Fire, Trouble and Power Status LEDs
- High False Alarm Immunity
- Dust & Intrusive Solid Object Rejection
- Three Selectable Alarm Thresholds
- Easy Alignment with Large Adjustment & Viewing Angles
- No Need for Precise Alignment
- Tolerant of Alignment Drift
- Automatic Commissioning in Under 10 minutes
- Simple DIP Switch Configuration
- Dual Wavelength LED-Based Smoke Detection
- Simple and Easy Maintenance Requirements
- Conventional Alarm Interface for Straightfoward Fire System Integration

Listings and Approvals

- UL Listed
- ULC Listed

Alignment of the Emitter is simply achieved using a laser alignment tool to rotate the optical spheres until the laser beam projected from the alignment tool is close to the Imager. The Imager is aligned in a similar way so that its Field of View (FOV) encompasses all Emitters. A Trouble or Fault will be indicated if an Emitter is missing or outside the Imager field of view. The OSID system is highly tolerant to dust and dirt and requires little maintenance in practice. Preventative maintenance is limited to occasionally cleaning the optical faces of the detector components.

Configuration Options OSID systems may be configured to suit a range of detection spaces by selecting the number of Emitters and type of Imager. Each type of Imager differs by the lens used in the unit, which determines the field of view and range of the system.

Imager	Field of View		Detection Range				Max. Number of Emitters
	Horizontal	Vertical	Standard Power		High Power		
			Min	Max	Min	Max	
10°	7°	4°	98 ft (30 m)	492 ft (150 m)	--	--	1
45°	38°	19°	49 ft (15 m)	197 ft (60 m)	98 ft (30 m)	393 ft (120 m)	7
90°	60°	46°	20 ft (6 m)	** 111 ft (34 m)	39 ft (12 m)	** 223 ft (68 m)	7

** Maximum Distances measured for the Center Field of View of the Imager. For more details on distances for the Imager, see the OSID Product Guide.

Specification

Supply Voltage:	20 to 30 VDC (24 VDC nominal)
Imager Current Consumption: Nominal @ 24 VDC Peak @ 24 VDC	 8mA (1 emitter) 10mA (7 emitters) 31mA
Emitter Current Consumption: Wired Version @ 24 VDC Battery Version	 350Ω standard power, 800Ω high power Built-in 5 year battery
Field Wiring, Cable Gauge:	26 - 12 AWG (0.2 - 4mm)
Alarm Threshold: Low - Highest Sensitivity / Earliest Alarm Medium - Medium Sensitivity High - Lowest Sensitivity / Maximum Immunity to Nuisance Smoke Conditions	 20% (0.97 dB) 35% (1.87 dB) 50% (3.01 dB)
Adjustment Angle:	60º (Horizontal) 15º (Vertical)
Maximum Misalignment Angle:	2º
Dimensions (WHD), Emitter / Imager:	7.80 in x 5.12 in x 3.78 in (198 mm x 130 mm x 96 mm)
Operating Conditions*: Temperature Humidity	 14ºF to 131ºF (-10ºC to 55ºC)* 10 to 95% RH (Non-condensing)
* Product UL Listed for use from 32ºF to 103ºF (0ºC to 39ºC)	
IP Rating: Electronics Optics Enclosure	 IP 44 IP 66
Status LEDs: Fire Alarm Trouble / Power	 Red Bi-color yellow/green

Order Codes and Options

OSI-10	Imager - 7º Coverage
OSI-45	Imager - 38º Coverage
OSI-90	Imager - 80º Coverage
OSE-SP	Emitter - Standard Power
OSE-SPW	Emitter - Standard Power, wired
OSE-HPW	Emitter - High Power, wired
OSID-INST	OSID Installation Kit
OSP-001	FTDI Cable 1.5m
OSP-002	Laser Alignment Tool

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.