



The Fireray One

The beam detector that aligns itself

With no specialist tools or knowledge needed for installation and operation, the Fireray One is a standalone beam detector that prioritises ease of installation.

Using the Fireray One, it couldn't be easier to bring the benefits of beam detection to your application:

- **One Minute Auto-Alignment™** – just steer the laser onto the Reflector, then at the flick of a switch, it aligns itself. 8 times faster than previous detectors
- **One person installation** – everything can be done by one person
- **One standalone product** – no specialist tools required; minimal prior knowledge and training needed

| Application | Challenge | The Fireray One |
|------------------|---|---|
| Small warehouses | Cost effective protection | A standalone beam detector with all the benefits of Fireray Reflective beam detection |
| | Simple installation | Single point of wiring and commissioning |
| New buildings | Settling of the building can cause other beam detectors to misalign and result in nuisance alarms | Building Movement Tracking™ automatically compensates for natural building movement to continuously maintain alignment* |

Technical specification

| Detection performance | |
|--------------------------------------|---|
| Detection range | 0 to 50m 0 to 120m with Reflective Long Range Kit |
| Alignment method | Laser assisted, Auto-Alignment™. Manual alignment – optional setting |
| Auto-Alignment™ protocol | Background check, Box search, Adjust and Centre |
| Building Movement Tracking™ | Compensates for natural shifts in alignment from building movement* |
| Contamination Compensation | Compensates for gradual build-up of contamination on the optical surfaces |
| Light Cancellation Technology™ | Compensates for high levels of sunlight and artificial lighting |
| Optical wavelength – smoke detection | 850nm near infrared (invisible) |
| Integrated laser – laser alignment | 650nm visible. Class IIIa <5mW |
| Dynamic Beam Phasing | Allows beam detectors to be mounted facing each other with the reflectors in the middle. Eliminates false alarms caused by crosstalk between beams |
| Signal output | Individual Alarm and Fault relays (VFCO) 100mA @ 36 VDC |
| Programmable user settings | |
| Alarm response threshold levels | 25% (1.25dB) – Fastest response to smoke 35% (1.87dB) – Default value 50% (3dB) – High immunity to false alarms, slow response to smoke 60% (3.98dB) – Highest immunity to false alarms, slowest response to smoke Configured via the integrated user interface |
| Delay to Alarm | 10 seconds, for momentary partial obstruction of the beam path |
| Delay to Fault | 10 seconds, for momentary obstruction of the beam path |
| User features | |
| Integrated user interface | Alignment mode switch, alignment directional buttons and configuration switches for alarm response threshold |
| Alignment status indication | 2 Green LEDs and 1 Yellow LED |
| System status indication | Normal operation – Green LED flashing every 10 seconds Alarm condition – Red LED flashing every 10 seconds Fault condition – Yellow LED flashing every 10 seconds |
| Cleaning | Flat front face with enclosed optics. Cleaning the optics does not affect alignment |

Design parameters

| | |
|--|---|
| Separation distance between Detector and Reflector | 5 to 50m 50 to 120m with Reflective Long Range Kit |
| Beam path clearance | 1m in diameter from centre line between Detector and Reflector |
| Detector dimensions | Width 130mm x Height 181mm x Depth 134mm (see diagram) |
| Reflector dimensions | Up to 50m separation distance – Single reflector 100mm x 100mm x 9mm Up to 120m separation distance – Four reflectors arranged in a square pattern 200mm x 200mm x 9mm |
| Product weight | Detector – 0.7kg; Reflector – 0.1kg |
| Multi-detector arrangement | Dynamic Beam Phasing allows for Detectors to face each other with the reflectors in the middle |
| Housing colour | White RAL9016, UV stable |

Electrical specifications

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| Operating voltage | 14 to 36 VDC |
| Operating current (constant) all operational modes | All operational modes – 5mA; Fast alignment mode – 33mA |

Field wiring

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|----------------------|---|
| Cable gauge and type | 2 core, dedicated, 0.5 to 1.6mm (24 to 14 AWG) System compatible with fireproof and non-fireproof cable meeting local installation standards |
| Cable entry | 3 knock-out locations capable of accepting M20, ½" or ¾" glands 4 drill-out locations capable of accepting glands up to 21mm diameter |

Test and maintenance

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|------------|--|
| Alarm test | Optical alarm test using Commissioning and Maintenance Kit accessory |
|------------|--|

Environmental specifications

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| Operating temperature: -20 to +55°C |
| Storage temperature: -40 to +85°C |
| Relative humidity (non-condensing or icing): 0 to 93% |
| IP rating: IP55 |
| Housing flammability rating: |

Optical specifications

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|---|
| Fault level / Rapid obscuration ($\Delta \leq 2$ seconds): $\geq 85\%$ |
| Maximum angular alignment of Reflective Detector: $\pm 4.5^\circ$ ($\pm 70^\circ$ with adjustment bracket accessory) |
| Maximum angular misalignment of Reflective Detector: $\pm 0.5^\circ$ |
| Maximum angular misalignment of Reflector: $\pm 5^\circ$ |
| UL94 V0 polycarbonate |

All figures are quoted for 25°C

Ordering information

| Part number | Description |
|-------------|--|
| 6010-100 | The Fireray One – 50m detection range |
| 1010-000 | Reflective Long Range Kit – 120m detection range |

Accessories

| | |
|----------|--|
| 1150-000 | Commissioning and Maintenance Kit |
| 1170-000 | Reflective Detector adjustment bracket |
| 1100-000 | The Fireray One Protective cage |
| 1040-000 | Single Reflector Adaptor plate |
| 1050-000 | 4 Reflector Adaptor plate |
| 1030-000 | Reflector Wall bracket |
| 1060-000 | The Fireray One Anti-condensation heater |
| 1090-000 | Reflector Anti-condensation heater |
| 1140-000 | Universal ceiling mount |

Approvals pending

CE/UL/Ulc/VdS

Visit www.ffek.com for approvals information.

Patents:

Light Cancellation Technology™ Patent No. GB2513366

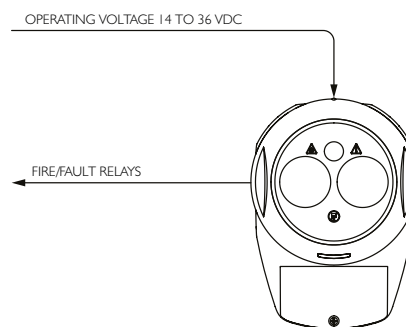
Dynamic Beam Phasing Patent pending

Auto-Alignment™ Patent pending

*When mounted according to manufactures guidelines.

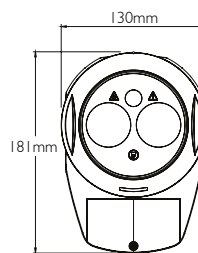
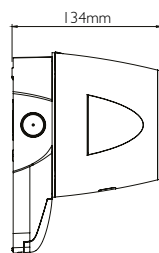


Wiring configurations

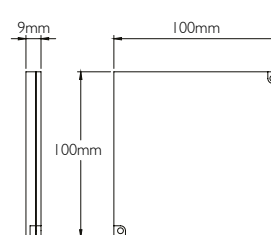


Dimensions

The Fireray One



Reflector



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