The Fireray One

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

Technical specification

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

**Detection performance**

- Detection range: 0 to 164ft (0 to 50m)
  0 to 394ft (0 to 120m) with Reflective Long Range Kit
- Auto-Alignment™ protocol: Background check, Box search, Adjust and Center
- 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) 2A @ 30 VDC

**Programmable user settings**

- Alarm response threshold levels:
  - 25% (1.25dB) – Fastest response to smoke
  - 35% (1.87dB) – Default value
  - 55% (3.46dB) – High immunity to false alarms, slow response to smoke
  - 85% (8.23dB) – 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 for obscuration or every 5 seconds for contamination
- Cleaning: Flat front face with enclosed optics. Cleaning the optics does not affect alignment
**Design parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation distance between Detector and Reflector</td>
<td>16 to 164 ft (5 to 50 m) with Reflective Long Range Kit</td>
</tr>
<tr>
<td>Beam path clearance</td>
<td>3.3 ft (1 m) in diameter from center line between Detector and Reflector</td>
</tr>
<tr>
<td>Lateral spacing between detectors</td>
<td>60 ft (18.3 m) maximum as per NFPA 72</td>
</tr>
<tr>
<td>Detector location</td>
<td>Within the ceiling jet flow (top 10% of the floor to ceiling height) unless otherwise stipulated</td>
</tr>
<tr>
<td>Detector dimensions</td>
<td>Width 5.12&quot; x Height 7.13&quot; x Depth 5.28&quot; (W 130 mm x H 181 mm x D 134 mm) (see diagram)</td>
</tr>
<tr>
<td>Reflective dimensions</td>
<td>Up to 164 ft (50 m) separation distance – 3.94&quot; x 3.94&quot; x 0.36&quot; (100 mm x 100 mm x 9 mm)</td>
</tr>
<tr>
<td></td>
<td>Up to 393.6 ft (120 m) separation distance - Four reflectors 7.88&quot; x 7.88&quot; x 0.36&quot; (200 mm x 200 mm x 9 mm) in square pattern</td>
</tr>
<tr>
<td>Product weight</td>
<td>Detector – 1.55 lbs (0.7 kg); Reflector – 0.22 lbs (0.1 kg)</td>
</tr>
<tr>
<td>Multi-detector arrangement</td>
<td>Dynamic Beam Phasing allows for Detectors to face each other with the reflectors in the middle</td>
</tr>
<tr>
<td>Housing color</td>
<td>White RAL9016, UV stable</td>
</tr>
</tbody>
</table>

**Electrical specifications**

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

**Field wiring**

- **Cable gauge and type**: 2 core, dedicated, 24 to 14 AWG (0.5 to 1.6 mm)
- **Cable entry**: System compatible with fireproof and non-fireproof cable meeting local installation standards
- **3 knock-out locations capable of accepting M20, 1/4" or 5/8" glands**
- **4 drill-out locations capable of accepting glands up to 0.82" (21 mm) diameter**

**Test and maintenance**

- **Alarm test**: Optical alarm test using Commissioning and Maintenance Kit accessory
- **Environmental specifications**
  - **Operating temperature**: -4 to 131°F (-20 to +55°C)
  - **Storage temperature**: -40 to 185°F (-40 to +85°C)
  - **Relative humidity (non-condensing or icing)**: 0 to 93%
  - **IP rating**: IP55
  - **Housing flammability rating**: UL94 V0 polycarbonate
- **Fault level / Rapid obscuration (Δ ≥ 2 seconds): ≥85%**
- **Maximum angular alignment of Reflective Detector: ±4.5° (±70° with adjustment bracket accessory)**
- **Maximum angular misalignment of Reflective Detector: ±0.5°**
- **Maximum angular misalignment of Reflector: ±5°**

**Ordering information**

- **Part number**: Description
  - 6010-300: The Fireray One – 164 ft (50 m) detection range
  - 1010-000: Reflective Long Range Kit – 394 ft (120 m) 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 Adjustment Bracket
- **1050-000**: 4 Reflector Adjustment Bracket
- **1030-000**: Reflector wall bracket - white
- **1031-000**: Reflector wall bracket - black
- **1060-000**: The Fireray One Anti-condensation heater
- **1090-000**: Reflector Anti-condensation heater
- **1260-000**: The Fireray One Back Box

**Approvals**

- 0832-CPR-F2237 / UL 7th Edition/ ULC /CSFM
- Visit www.ffeuk.com for approvals information.

**Patents:**
- Light Cancellation Technology™ Patent No. GB2513366
- Dynamic Beam Phasing Patent pending
- Auto-Alignment™ Patent pending

*When mounted according to manufacturers guidelines.*