Simplex

Non-Addressable Initiating Peripherals

UL, ULC, CSFM Listed; FM Approved;
*MEA (NYC) Acceptance**

Reflective Beam Smoke Detectors
Fire Fighting Enterprises Auto-Aligning Fireray 5000

Features

Up to two detector heads can report to one ground level controller

Photoelectric transmitter and receiver are combined in a single, compact housing:

- An infrared beam is reflected from a matching prism with the reflected light analyzed by an on-board microprocessor providing area smoke detection
- Operating range covers 26 ft, 3 inches to 330 ft (8 m to 100 m)
- Modular design with *easyfit* mounting system and LASER assisted prism mounting provides convenient mounting and adjustment
- *Auto-Align* beam alignment operation conveniently rotates beam to align to the prism center during installation
- *AutoOptimise* operation automatically maintains alignment for reliable operation
- 5 Year Warranty
- UL listed to Standard 268

Microprocessor controlled operation includes:

- Easy setup and alignment with sensitivity selectable from 10% to 60% (35% default)
- Password protected settings
- Built-in electronic UL/ULC obscuration acceptance test
- Automatic gain control; contamination compensation, and building shift compensation
- Current monitoring for gimbals motor position
- Ground level system controller with LCD provides user feedback of operating parameters, remote status display, programming access, and test
- Operating voltage range of 14 to 36 VDC
- Alarm latching or alarm auto-reset
- Separate alarm and trouble contacts for each detector

Applications:

- Large open areas such as warehouses, hotel atriums, industrial plants, and school gymnasiums
- Public areas where cosmetics are of prime importance and detector heads need to be small and unobtrusive (shopping malls, libraries, theaters, and churches)

Optional Accessories:

- Detector: adjustment bracket, back box, and cover plate
- Controller back box
- Extended prism mounting options

* Listings are by Fire Fighting Enterprises. Refer to CSFM 7260-1508:104.

Fireray 5000 Reflective Beam Detector Head

Fireray 5000 Control Station

Description

Convenient Installation and Alignment. The Fireray 5000 System is an auto-aligning infrared beam smoke detector. Once the detector head is installed using the *easyfit* mounting system, an integral LASER can be activated that is aligned along the optical path of the infrared beam, allowing the reflective prism to be located quickly and with confidence. The *Auto-Align* beam alignment feature then allows the reflective prism to be located quickly and accurately.

AutoOptimise Beam Alignment. The *AutoOptimise* beam alignment system automatically steers and maintains the beam in the optimum position for reliable performance. The signal is generated in the transmitter element and reflected by the prism back to the receiver element, then analyzed for the presence of smoke. The internal microprocessor determines an alarm condition when a predetermined level is reached. The maximum distance of the detector and reflector from the ceiling must be 10% of the distance between floor and ceiling. Lateral detection may be up to 30 ft (9.144 m) on either side of the beam, providing a maximum total coverage area of up to 19,800 square feet (60 ft x 330 ft or 18.29 m x 100 m).

Application Note. Reflective beam smoke detectors may not be suitable for areas with highly reflective surfaces. Separate transmitter/receiver models may be required.

Refer to the installation instructions supplied with the product and to NFPA 72, the *National Fire and Signaling Code* for additional installation guidance.

Engineering Specification

The projected beam type smoke detector is listed to UL 268 and consists of up to two integrated transmitter, receiver detector heads and a single low-level remote-control unit. The detector operates between a range of 26.25 ft to 330 ft (8 m to 100 m). The temperature range of the system is -4° F to 131° F (-20° C to 55° C). The beam detector heads include an integral built-in laser pointer to assist prism mounting. The beam detector features automatic gain control which compensates for gradual signal deterioration from dirt accumulation on the lenses. The beam detector heads include an AutoOptimise Self-Correcting motorized head feature to ensure the unit is always receiving maximum signal available and automatically compensates for building shift.

The unit includes a low-level remote display and control unit with LCD readout for set-up, reporting and testing of up to two separate detector heads. The system is capable of programming obscuration thresholds for 10% to 60% in 1% increments. The system is capable of programming delay to fault and delay to alarm from 2 seconds to 30 seconds in 1 second increments.

Test and acceptance of the system is carried out by using the UL approved internal electronic obscuration fire test. The projected beam type smoke detector is a 4-wire 24 VDC device to be used with a nationally recognized testing laboratory's listed separately supplied 4-wire control panel. The Reflective beam type smoke detector is a Fire Fighting Enterprises Fireray 5000.

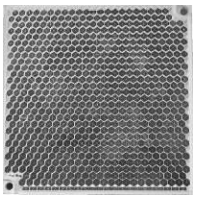
Ordering Information

Ordering Number	Description		Dimensions
5000-103	Fireray 5000 Reflective Auto Align Beam Smoke Detector System; includes one detector head, one controller, and one prism; for control of up to two detector heads	Head	5 9/32 in. x 5 5/16 in. x 5 9/32 in. (H x W x D) (135 mm x 134 mm x 132 mm)
		Controller	9 1/4 in. x 7 1/8 in. x 2 13/16 in. (H x W x D) (235 mm x 200 mm x 71 mm)
		Prism	4 1/8 in. x 3 15/16 in. x 3/8 in. D (105 mm x 100 mm x 9.5 mm)
5000-031	Additional Detector Head and Prism, select up to one additional head per 5000-103 System		5 9/32 in. x5 5/16 in. x5 9/32 in. (H x W x D) (135 mm x 134 mm x 132 mm)
5000-011	5000 Series Detector Uni-Box back box includes: hinged cover plate, conduit knockouts on all sides, captive screw lock on cover plate, universal back plate mounting holes, and cover plate mounting holes for optional 1000-018 wire cage; box may be surface or flush mounted		7 1/8 in. square x 2 1/16 in. D (181 mm x 52 mm) (including cover plate)
5000-012	Detector Cover Plate for mounting 5000 Series Detector to a double gang electrical box, surface, or flush mount		6 7/16 in. square (164 mm) with 3/16 in. lip (5 mm)
5000-201	Alignment Bracket for detector or prism, surface mount; provides 360° rotation plus 130° adjustment for accurate alignment, order detector and prism parts separately		3 27/32 in. x 3 29/32 in. (H x W) (98 mm x 99.5 mm)
5000-009	Controller Back Box, surface or flush mount; mounts to single gang, double gang, or 4" square box for surface mounting		8 7/16 in. x 7 7/16 in. x 1 3/4 in. (H x W x D) (214 mm x 189 mm x 45 mm)
5000-010	Controller Back Box Semi-Flush Mount Trim Plate (for 5000-009 box)		10 5/16 in. x 8 3/4 in. (H x W) (263 mm x 222 mm)
5000-008	Single Prism Alignment Adapter, mounts on 5000-005 Alignment Bracket; order Prism and Alignment Bracket separately		4 in. square (102 mm)
5000-007	Four Prism Alignment Adapter, mounts on 5000-005 Alignment Bracket; order Prisms and 5000-005 Alignment Bracket separately		8 in. square (204 mm)
23901.01	Replacement Prism		
1000-018	Protective Wire Cage for 5000 Series Detector Heads		
1000-019	Protective Wire Cage for 5000 Serie4s Controllers		

Internal Ordering Note: These products can be found in Job Design under Fire Fighting Enterprises, OP category OPFFE.

Accessory Reference (not shown to scale)

Beam Detector on 5000-011 Uni-Box



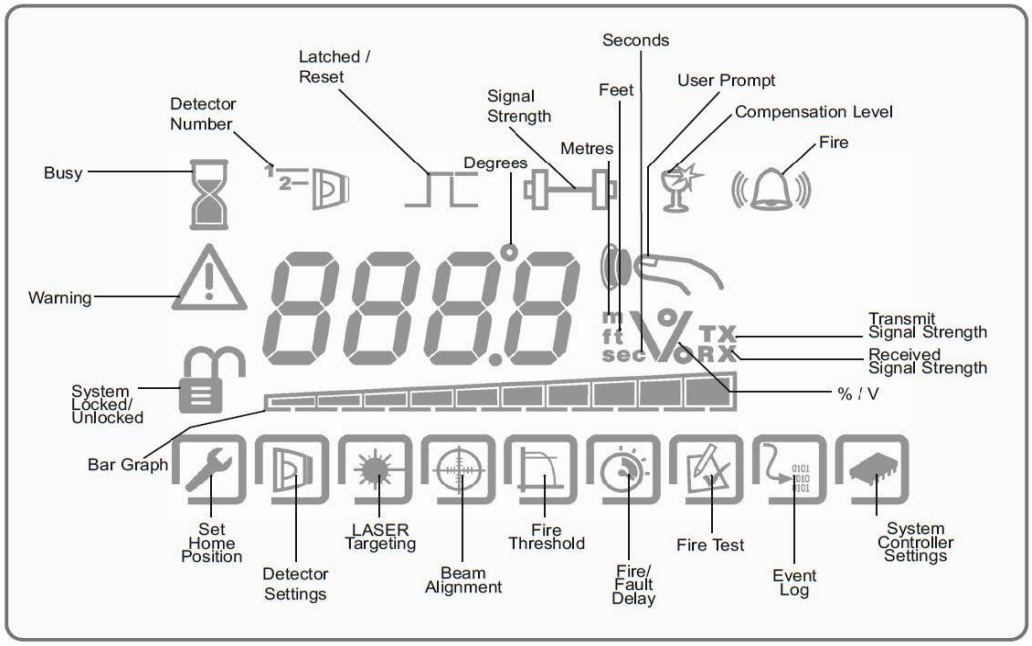
23901 Prism Reflector

5000-008 Single Prism Adapter
on a 5000-005 Alignment Bracket

5000-201 Adjustment Bracket

5000-007 Four Prism Adapter
on 5000-005 Alignment Bracket

Controller Display Detail Reference



Specifications

Refer to Installation Instructions shipped with the product for additional information.

Mechanical and General Reference		
Housing	Flame Retardant ABS; IP rating = IP54	
Finish	Light Grey/Black	
Manufacturer	Fire Fighting Enterprises (A Halma Group Company); website: www.ffeuk.com/	
Electrical		
Input Voltage	14 to 36 VDC	
Standby and Alarm Currents, @ 24 VDC	Low power mode	5 mA for one detector head 8.5 mA for two detector heads
	High power mode	50 mA (mode is selected to enable faster beam movement during Auto-Align, Hand Align, and Laser Targeting)
Alarm and Trouble Relays	Dedicated, separate Form C relays, rated 1 A @ 30 VDC resistive	
Wiring to Controller	Terminal block connections; 18 to 14 AWG (0.82 mm^2 to 2.08 mm^2)	
Wiring, Controller to Head	328 ft (100 m) maximum distance; use shielded wire pair; 18 to 16 AWG (1 mm^2 to 1.5 mm^2)	
Optical Wavelength	850 nm	
Operating		
Startup Time	45 seconds	
Reset Time	5 seconds maximum	
Sensitivity	10% to 60%; 35% default setting	
Operating Distance	26 ft, 3 inches to 330 ft (8 m to 100 m)	
Status Indicators; Head and Controller	Normal = Green LED; Alarm = Red LED; Fault (Trouble) = Yellow LED; LEDs flash every 10 seconds to indicate status	
Alarm Types	Select latching or non-latching operation	
Trouble Conditions	Improper setup alignment; 87% or more obscuration	
UL Listed Temperature Range	32° F to 100° F (0° C to 38° C)	
Operating Temperature Range	-4° F to 131° F (-20° C to 55° C)	
Relative Humidity	0 to 93% RH, non-condensing	