

**Features****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
- Two models are available:
  - Model 50RU is for 15 ft to 160 ft (5 m to 50 m)
  - Model 100RU is for 160 ft to 330 ft (50 m to 100 m)
- Each model includes the matching prism reflector(s), a wall mounting bracket, and a calibrated test filter
- UL listed to Standard 268

**Microprocessor controlled operation includes:**

- Easy setup and alignment with three selectable alarm thresholds of 25%, 35%, or 50% beam obscuration (can be mounted horizontally or vertically)
- Operation at either 12 VDC or 24 VDC
- Alarm latching or alarm auto-reset
- Automatic gain control
- Separate alarm and trouble contacts

**Applications:**

- Open areas where ceiling height exceed 25ft (7.6 m) (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)

**Benefits:**

- Reduces installation costs where 6 or more spot detectors are required in a single area
- Optional remote test station mounts at ground level and reduces service time by testing without site disruption

**Optional Accessories:**

- Surface mount matching backbox
- Extended alignment bracket
- Remote Test Station

**Description**

**Single Unit Design.** A single unit houses both an infrared transmitter and receiver. The transmitter signal is reflected by a matching prism back to the receiver where the internal microprocessor analyzes it for the presence of smoke. An alarm condition is determined when the selected sensitivity level is reached.

**Mounting.** Detectors are mounted with the beam projecting between 1 ft (305 mm) and 2 ft (610 mm) below, and parallel to the 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 ft<sup>2</sup> (60 ft x 330 ft or 18.288 m x 100 m).



50RU/100RU Reflective Beam Detector (shown without wall mount bracket) and LLC Remote Test Station

**Description (Continued)**

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

**Engineering Specification**

The projected beam type smoke detector shall be a 4-wire 12/24 VDC device to be used with a UL Listed separately supplied 4-wire control panel. Unit shall be listed to UL 268 and shall consist of an integrated transmitter and receiver. The detector shall operate between a range of 15 ft to 330 ft (5 m to 100 m). The temperature range of the beam shall be -4° F to 131° F (-20° C to +55° C) [UL 268 listed temperature range is 32° F to 100° F (0° C to 38° C)]. The beam detector shall feature automatic gain control which will compensate for gradual signal deterioration from dirt accumulation on the lenses. The unit shall include a wall mounting bracket. Testing shall be carried out by using a calibrated obscuration test filter. The Reflective beam type smoke detector shall be a Fire Fighting Enterprises 50RU (160 ft/50 m) or 100RU (330 ft/100 m).

**Beam Detector Spacing**

On smooth ceilings, up to 60 ft (18.288 m) between reflective beams and not more than one-half the spacing between a reflective beam and a sidewall. Other spacing may be used depending on ceiling height, airflow characteristics, and response requirements.

Refer to NFPA 72 and Installation Instructions supplied with unit for further information.

\* Listings are by Fire Fighting Enterprises. Refer to CSFM 7260-1508:102; and MEA 70-02-E. This product was not approved by FM as of document revision date.

## Ordering Information

Ordering Number	Model	Description
0206.02	50RU	Reflective beam smoke detector; 160 ft (50 m) maximum distance
0206.03	100RU	Reflective beam smoke detector; 330 ft (100 m) maximum distance
0400-01	LLC	Remote Test Station/Low Level Controller (0400); single gang mount; provides remote Power-on LED, Alarm LED, and remote Alarm Test
23901.01	23901	Replacement Prism; Note; Model 100RU uses 4 prisms, Model 50 RU uses 1 prism
0608.01	0608	Surface mount matching backbox
0893.01	0893	Extended Alignment Bracket, allows up to +/- 45° adjustment for either detector or prism
1000-020	NA	Optional Protective Wire Cage

Internal Ordering Note: These products can be found in Job Design under the Air Products OP category OPFFE.

## Additional Product Details (not shown to scale)

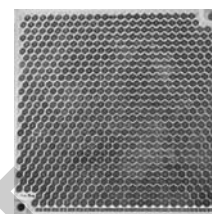
Beam Detector  
on Surface Mount  
Backbox, shown with  
optional 1000-020  
Wire Cage



Extended  
Alignment  
Bracket



Prism  
Reflector



## Specifications

### Construction Specifications

Housing	Flame Retardant ABS; IP rating = IP50
Finish	Grey/Black
Dimensions, housing only	8-1/4" H x 4-3/4" W x 4-1/2" D (210 mm x 121 mm x 114 mm)
Dimensions, with bracket	8-1/4" H x 5" W x 4-3/4" D (210 mm x 126 mm x 121 mm)
Prism Dimensions	3-15/16" square x 3/8" D (100 mm x 9.5 mm) each; one is used by the Model 50RU; four are used by the Model 100RU
Manufacturer	Fire Fighting Enterprises (A Halma Group Company); website: <a href="http://www.ffeuk.com/">www.ffeuk.com/</a>

### Electrical Specifications

Input Voltage	10.2 to 30 VDC
Standby Current	4 mA @ 24 VDC
Alarm Current	15 mA @ 24 VDC
Alarm and Trouble Relays	Dedicated, separate Form C relays, rated 1 A @ 30 VDC resistive
Wiring Method	Pluggable connector with attached wire leads
Optical Wavelength	880 nm

### Operating Specifications

Startup Time	10 seconds
Reset Time	5 seconds maximum
Sensitivity	25%, 35%, or 50% obscuration
Operating Distance	50RU 15 ft to 160 ft (5 m to 50 m) 100RU 160 ft to 330 ft (50 m to 100 m)
Status Indicators	Alarm = Red LED Trouble = Amber LED
Alarm Types	Select latching or non-latching operation
Trouble Conditions	Improper setup alignment; 90% 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	10 to 93% RH, non-condensing

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