



# Conventional Detection Devices

## Linear Beam Smoke Detector

### PBA-1191

#### ARCHITECT AND ENGINEER SPECIFICATIONS

- **Compatible with:**
  - MXL → (Models CZM-4 and CZM-1B6)
  - FireFinder™ XLS → (Models HZM and CDC-4)
  - System 3™ → (Model ZB-35)
- (2) Two-wire Installation
- Easy alignment and installation
- High immunity to extraneous light
- Suitable for ranges from 17 ft. – 280 ft.
  - 5M – 100M, Canada
- Automatic and comprehensive self-test
- Automatic digital compensation of ambient influences
- Transmitter and receiver installed in the same housing
- Response behavior selectable in three (3) sensitivity settings
- Operates according to the principle of light-attenuation-by-smoke
- Integrated multi-coincidence circuit suppresses electric and optical noise signals
- UL Listed, ULC Listed



### Product Overview

Linear Beam Detectors (Model PBA-1191) from Siemens Industry – Fire Safety provide reliable monitoring over long distances that range from 17 to 280 feet (5M – 100M for Canada.) Model PBA-1191 works in conjunction with various types of reflectors, according to each reflector's installation requirements.

### Application

Model PBA-1191 was developed to cover a wide range of applications. Hence, Model PBA-1191 can be used to supplement or replace point-type smoke detectors, when required. Some examples of the aforementioned applications include:

- large or high ceiling rooms (atriums and warehouses)
- rooms with complex ceiling structures (beam construction)

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- structures subject to frequent tremors
- buildings whose walls flex as a result of temperature change or wind conditions
- aircraft hangars
- churches
- computer rooms
- museums
- malls
- corridors
- historical buildings

Model PBA-1191 should not be used in applications where the beam is interrupted on a repeatable basis.

### Operation

Model PBA-1191 consists of a transmitter (IRLED) that emits an invisible infrared (IR) pulse through the transmitter lens. The IR pulse traverses the protected area to reach the reflector located opposite the detector and is then reflected back to the detector.

Linear Beam Smoke Detector **6171**



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## Operation — (continued)

The receiver lens of the detector directs the reflected IR pulse to a silicon photodiode. The resulting electrical signal is evaluated by the detector electronics. The attenuation of the IR pulse by smoke particles, via scattering and absorption, results in an *alarm* condition.

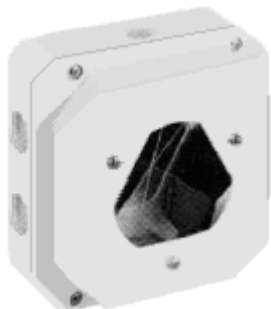
Model PBA-1191 has three (3) sensitivity settings:

- Reduced
- Standard
- Increased

The response threshold is set with DIP switches: S1 and S2. The Transmitter intensity (strong, weak) shall be set with DIP switch, S3.

## Reflectors

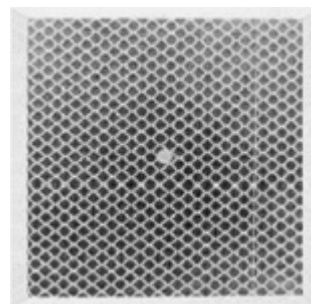
The retroreflecting prism of Model PBA-1191 has the shape of a pyramid whose lateral faces are formed by isosceles orthogonal triangles. Light entering through the base is completely reflected twice on the lateral faces and reflected back through the base. The base is equipped with a reflector heater. If condensation is possible, the heater should be connected to a 24V supply.



**Prism Reflector**  
(Model PBR-1191)

Retroreflectors reflect the received light beam back along the path of incidence. The design of all the reflectors minimizes the effect of vibration and structural movement.

Models PBR-1192 and PBR-1193 are flat-reflector foils that consist of microprismatic elements that are formed by transparent, synthetic resin sealed to a plastic substrate.



**Flat Reflector**  
(Models PBR-1192 and PBR-1193)

## Detector Adjustment Kit

The detector adjustment kit (Model PBL-1191) is required for proper electrical adjustment and mechanical alignment of Model PBA-1191.



**Detector Adjustment Kit**  
(Model PBL-1191)

## Details for Ordering

| Model Number | Part Number | Description                       | Shipping Weight |      |
|--------------|-------------|-----------------------------------|-----------------|------|
|              |             |                                   | Lbs.            | Kgs. |
| PBA-1191     | 500-095076  | Linear Beam Detector              | 1.5             | 0.68 |
| PBB-1191     | 500-095077  | Linear Beam Detector Base         | 1.0             | 0.45 |
| PBF-1191A    | 500-695082  | Short-Distance Filter {16 -26ft.} | 0.5             | 0.23 |
| PBF-1191B    | 500-695083  | Short-Distance Filter {23 -33ft.} | 0.5             | 0.23 |
| PBH-1191     | 500-695081  | Detector Heater                   | 0.5             | 0.23 |
| PBL-1191     | 500-795084  | Detector Adjustment Kit           | 2.0             | 0.91 |
| PBR-1191     | 500-695080  | Prism Reflector                   | 1.5             | 0.68 |
| PBR-1192     | 500-695079  | Flat Reflector Pkg. {7.9" x 7.9"} | 0.5             | 0.23 |
| PBR-1193     | 500-695078  | Flat Reflector Pkg. {3.9" x 3.9"} | 0.5             | 0.23 |

**Notes:** Refer to Installation Manual P/N 315-094912 for detailed data.  
Add a "C" suffix to the Model No.'s for accessories that are used with the Canadian detector, except for Model PBA-1191, which gets a "ULC" suffix for Canada.

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**Notice:** This marketing catalog sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

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