

# Model BEAM1224(S)

## Single-ended Reflected Type Beam Smoke Detector

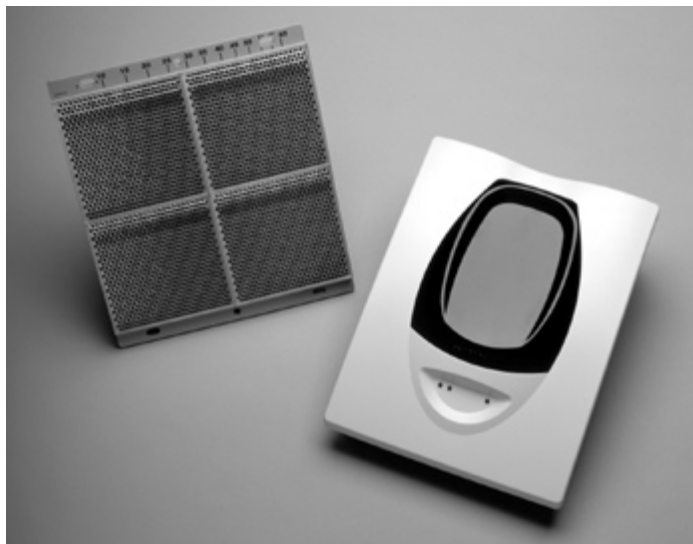


### Models Available

BEAM1224	4 wire conventional beam smoke detector with 8" reflector
BEAM1224S	4 wire conventional beam smoke detector with 8" reflector and integral sensitivity test

### Accessories

BEAMLRK	Long range accessory kit (3) additional reflectors (Required for applications in excess of 230 ft. [70m])
BEAMMMK	Multi-mount kit (Provides ceiling or wall mount capability with increased angular adjustment for either the beam or the reflector. <b>When installed with the transmitter/receiver unit, BEAMSMK must be used as well</b> )
BEAMSMK	Surface mount kit
RTS451	Remote test station used to initiate the NFPA sensitivity test function
RTS451KEY	Remote test station with key lock
BEAMHK	Heater kit for transmitter/receiver unit (See electrical requirements on back)
BEAMHKKR	Heater kit for reflector (See electrical requirements on back)



### Product Overview

**16 to 328 foot protection range**

**Single-ended, reflective design**

**User friendly alignment procedure**

**6 user selectable sensitivity levels**

**Optional integral NFPA 72 sensitivity test feature**

**Removable plug-in terminal blocks**

**Digital display for easy alignment**

**Built-in automatic gain control compensates for signal deterioration from dust build-up**

**Remote test station optional**

**Paintable cover**

**Easiest alignment in the industry**

System Sensor Model BEAM1224 is a 4-wire conventional projected beam smoke detector. It is uniquely suited for protecting open areas with high ceilings where other methods of smoke detection are difficult to install and maintain. It is to be used with UL Listed compatible control panels only. Installation of the single-ended reflective design is much easier than the dual-ended projected beam detectors. Alignment is quickly accomplished via an optical sight and a 2-digit signal strength meter incorporated into the product. Listed for operation from -22°F to 131°F, BEAM1224 can be used in open area applications to provide early warning in environments where temperature extremes exceed the capability of other types of smoke detection.

BEAM1224 consists of a transmitter/receiver unit and a reflector. When smoke enters the area between the unit and the reflector it causes a reduction in the signal and, when the smoke level reaches the predetermined threshold, an alarm is activated.

BEAM1224 has four standard sensitivity selections along with two Acclimate settings. When either of the two Acclimate settings are selected the detector will automatically adjust its sensitivity using advanced software algorithms to select the optimum sensitivity for the specific environment.

BEAM1224S is equipped with an integral sensitivity test feature that consists of a test filter attached to a servo motor inside the detector optics. Using the remote test station RTS451, the motor is activated and moves the filter in the pathway of the light beam, thereby testing detector sensitivity. This integral sensitivity test feature allows the user to quickly and easily meet the annual maintenance and test requirements of NFPA 72.



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## Operational Specifications

### Protection Range

16 ft. to 328 ft.  
(5m to 100m)

### Adjustment Angle

+/- 10 Degrees horizontal & vertical  
(The optics move independent of the unit)

### Sensitivity Levels

Level 1 – 25%  
Level 2 – 30%  
Level 3 – 40%  
Level 4 – 50%  
Acclimate Level 1 – 30–50%  
Acclimate Level 2 – 40–50%

### Fault Condition (Trouble)

96% or more obscuration blockage  
In alignment mode  
Improper initial alignment  
Self-compensation limit reached

### Alignment Aid

Optical gunsight  
Integral signal strength indication  
2-digit display

### Alarm Indicator

Local red LED and remote alarm

### Trouble Indicator

Local yellow LED and remote trouble

### Normal Indicator

Local flashing green LED

### Test/Reset Features

Integral Sensitivity Test Filter  
(BEAM1224S only)  
Sensitivity filter  
(Incremental scale on reflector)  
Local alarm test switch  
Local alarm reset switch  
Remote test and reset switch  
(Compatible with RTS451 and  
RTS451KEY test station)

### Smoke Detector Spacing

On smooth ceilings, 30–60 feet  
between projected beams and not  
more than one-half that spacing  
between a projected beam and  
a sidewall. Other spacing may be  
used depending on ceiling height,

airflow characteristics, and response  
requirements. See NFPA 72.

## Environmental Specifications

### Temperature

–22°F to 131°F (–30°C to 55°C)

### Humidity

10–93% RH Noncondensing

## Electrical Specifications

### Voltage

10.2 to 32 VDC (BEAM1224)  
15 to 32 VDC (BEAM1224S)

*BEAM1224S should not be used with  
12V power sources*

### AVG. Standby Current (24VDC)

17mA Max

### AVG. Current During Testing

500mA Max

### AVG. Alarm Current (24VDC)

38.5mA Max

### AVG. Fault Current (24VDC)

8.5mA Max

### AVG. Alignment Mode Current (24VDC)

28mA Max

## Mechanical Specifications

### Detector Dimensions

10"H x 7.5"W x 3.3"D  
(254mmH x 191mmW x 84mmD)

### Reflector Dimensions (16' to 230')

7.9" x 9.1" (200 x 230mm)

### Reflector Dimensions for (beyond 230')

15.7" x 18.1" (400 x 460mm)

## Electrical Specifications (BEAMHKR)

### Voltage

15 to 32V

### Current

450mA Max at 32V (per reflector)

### Power Consumption (Per reflector)

7.7W @ 24V; 15W @ 32V

## Electrical Specifications (BEAMHK)

### Voltage

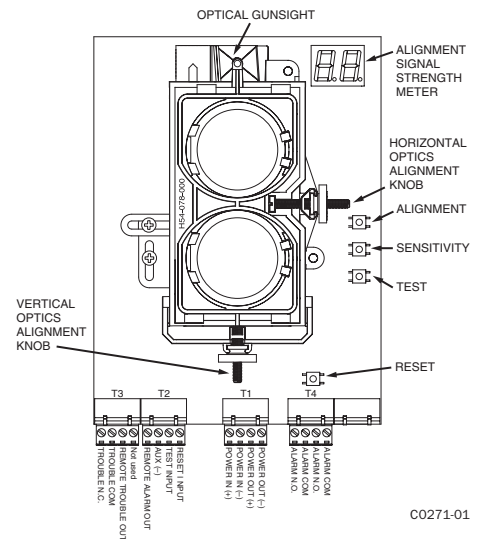
15 to 32V

### Current

92mA at 32V

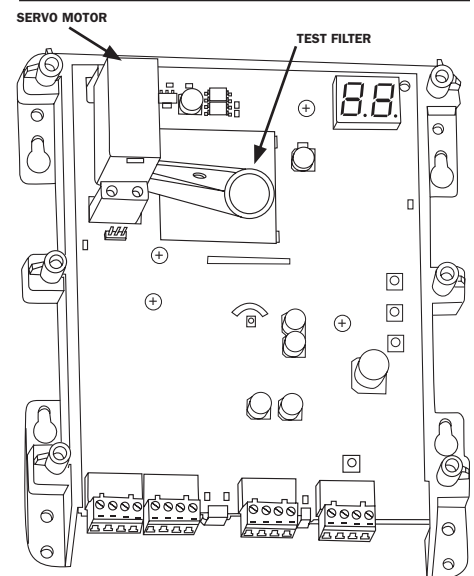
### Power Consumption

1.6W @ 24V; 3W @ 32V



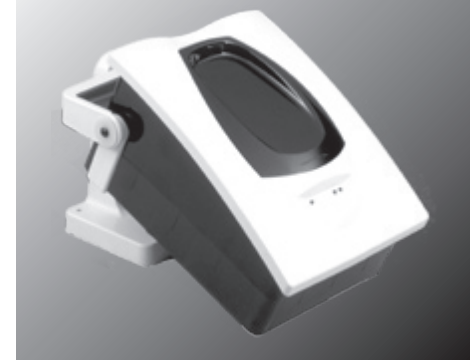
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## Activated Test Feature (BEAM1224S only)



## BEAMMMK

(detector and surface mount kit not included)



## System Sensor Sales and Service

### System Sensor Headquarters

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Fx: 630/377-6495  
www.systemsensor.com

### System Sensor Canada

Ph: 905.812.0767  
Fx: 905.812.0771

### System Sensor Europe

Ph: 44.1403.891920  
Fx: 44.1403.891921

### System Sensor in China

Ph: 86.29.8832.0119  
Fx: 86.29.8832.5119

### System Sensor in Singapore

Ph: 65.6273.2230  
Fx: 65.6273.2610

### System Sensor – Far East

Ph: 85.22.191.9003  
Fx: 85.22.736.6580

### System Sensor – Australia

Ph: 613.54.281.142  
Fx: 613.54.281.172

### System Sensor – India

Ph: 91.124.237.1770 x.2700  
Fx: 91.124.237.3118

### System Sensor – Russia

Ph: 70.95.937.7982  
Fx: 70.95.937.7983