

## SPC-24 PROJECTED BEAM SMOKE DETECTOR



### STANDARD FEATURES

- Microprocessor based for reliability
- Simple setup and alignment with signal strength LEDs
- Provides 60 feet on center linear protection at a range of 32.8 feet to 328 feet
- Automatic compensation for signal drift or dirty lens
- Three field adjustable sensitivity settings
- Form A alarm and Form B trouble contacts
- Calibrated filters available to verify sensitivity (purchased separately)
- Color-coded emitter (red) and receiver (green) labels for easy recognition
- Adjustable to one of the three obscuration settings of 25%, 50% or 70% per span
- Voltage and RF transient protection
- External red LED when alarm condition is indicated

### SPECIFICATIONS

Rated Voltage	24VDC
Supply Voltage	19VDC - 33 VDC
Supervisory Current	Emitter 50µA @ 24VDC Receiver 200µA @ 24VDC
Alarm Current (Receiver)	20mA @ 24DC
Trouble Current (Receiver)	20mA @ 24VDC
Operating Temperature Range	14° F - 122° F
UL Installation Temperature Range	32° F - 100° F
Sensitivity Test Failure	Hochiki test filters (sold separately)
Allowable misalignment angle (MAX)	Emitter +/- 0.5° Receiver +/- 1.0°
Dimensions	3.2"W x 5.5"H x 4.0"D
Mounting	Wall mount or Single gang box
Maximum Humidity	95% R.H. non-condensing

### APPLICATION

The Hochiki SPC-24 Projected Beam Smoke Detector consists of an emitter and receiver. The SPC-24 detector should be placed so that smoke generated by a fire will likely rise into the path of the beam. The receiver is constantly monitoring and measuring the intensity of the beam transmitted by the emitter. Should the smoke from a fire cause a decrease in the signal strength of a magnitude that exceeds the programmed obscuration setting, an alarm signal is generated.

The SPC-24 detector can provide vital fire detection in applications where other types of detectors may not be able to respond quickly, or at all, to a fire condition. Examples of some applications where projected beam smoke detectors have been successfully used include:

Atriums      gymnasiums      theaters  
 museums      factories      tunnels  
 churches      stables      warehouses  
 anechoic chambers high air velocity areas

The SPC-24 detector may also be used in conjunction with more traditional spot type smoke detection devices to provide an even more comprehensive detection system.

### OPERATION

The near infrared pulsed beam generated by the emitter is sensed by the photodiode of the receiver, where it is converted into an electrical signal. This signal is then amplified and applied, via an analog to digital converter, to a microprocessor. The normal state signal (the initial beam data), once stored in the microprocessor, is used as reference for comparison with subsequent beam signals.

**PRODUCT LISTINGS**

		
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Specifications subject to change without notice.

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### OPERATION, *continued*

When there is a difference between actual beam strength and stored reference data that exceeds the programmed alarm obscuration reference level, a fire signal is produced. A trouble signal is generated if the beam is more than 90% obstructed (as opposed to partially obscured by smoke) for more than 9 seconds and automatically resets to normal when the blockage is removed.

The microprocessor also provides compensation for a change in received signal value, with time, caused by contamination of the optics. Since such a change with time appears as a slow change in the beam signal, the microprocessor compensates in such a manner that the signal moves closer to the reference data at a rate approximately +1% per hour. When this compensating capability reaches a limit (light received has changed by more than 50%), the SPC-24 automatically generates a trouble signal.

A calibrated test filter is available upon request to test and verify the sensitivity setting of the SPC-24 detector.

### INSTALLATION

The Hochiki SPC-24 detector shall be installed in accordance with the installation instruction guide provided with every unit. Please refer to the applicable NFPA Standards for additional guidance on spacing, irregular ceiling surfaces and other design considerations.

#### FOUR WIRE CONNECTION TO THE CONTROL PANEL

