

# D297 12 V Projected Beam Smoke Detector

www.boschsecurity.com



- ▶ Operates over distances between 30 ft (9 m) and 350 ft (107 m)
- ▶ Six levels of switch-selectable sensitivity
- ▶ Built-in alignment sights and tamper protection
- ▶ Automatic range adjustment, signal synchronization, and contamination adjustment
- ▶ Remote indicator plate annunciates voltage, trouble, and alarm conditions

The D297 Projected Beam Smoke Detector is used in clear open structures such as arenas, atriums, auditoriums, ballrooms, churches, factories, museums, and warehouses. Each D297 detector consists of a transmitter, a receiver, and a remote annunciation plate. Because the transmitter and receiver typically mount on the ceiling or high on walls or columns, they provide an effective and unobtrusive means of supervising public areas for fire protection.

The D306 Remote Indicator Plate, included with the D297, provides a convenient means of verifying detector status. Install it anywhere within 500 ft (152 m) of the beam receiver (when using 18 AWG [1.2 mm] wire). The D306 has three LEDs to indicate normal, trouble, and alarm conditions, and test points to monitor the detector circuit.

## Functions

### Alarm Operation

The transmitter emits a pulsed infrared beam. The receiver measures the intensity of the beam over a period of time and compares this data with an alarm threshold. Select one of six levels of sensitivity for the alarm threshold through a switch on the receiver. If the receiver senses a signal strength below the preset alarm threshold in excess of the alarm period it signals an alarm.

### Signal Loss Compensation

The receiver automatically compensates for the gradual loss of signal due to dust and dirt build-up on the cover. The receiver measures the intensity of the pulsed infrared beam emitted by the transmitter over a period of time and compares this data with a preset trouble threshold. When 50% of the signal is lost, the receiver sends a trouble signal to the control panel. When the dust and dirt build-up is cleaned or the blockage is removed, the detector automatically resets.

### Tamper Detection

If the covers to the transmitter or receiver are removed, the detector sends a trouble signal to the control panel.

### Trouble Detection

The receiver measures the intensity of the pulsed infrared beam emitted by the transmitter over a period of time and compares this data with a preset trouble threshold. When 90% or more of the signal is lost for more than 20 seconds, as might happen if an object blocked the beam, the receiver sends a trouble signal to the control panel.

## Certifications and Approvals

Region	Certification
Europe	CE 89/336/EEC, EN55022:1998, EN50130-4: 1995, EN61000-4-2: 1995, EN61000-4-3: 1997, EN61000-4-4: 1995, EN61000-4-5: 1995, EN61000-4-6: 1996
	CE 73/23/EEC, 73/23/EEC Annex 1, EN60825, EN60950-1
USA	UL UROX: Smoke - Automatic Fire Detectors (UL268 and A), UROX7: Smoke - Automatic Fire Detectors Certified for Canada (ULC529)
	FM
Hong Kong	HKFSD
USA	CSFM 7260-1615:0132 SMOKE DETECTION SYSTEM-BEAM TYPE

## Installation/Configuration Notes

### Mounting Considerations

The transmitter and receiver mount on standard 3.5-inch square or octagonal back boxes or European Beza boxes. The D306 Remote Indicator mounts on a standard single-gang back box.

The distance between the transmitter and receiver can range from 30 ft (9 m) to 350 ft (107 m).

Mount the detectors directly to the ceiling or to side walls. Do not mount the units so that the beam runs closer than 4 in. (10.2 cm) to the intersection of the wall and the ceiling. For a sloped or peaked ceiling, the beam path should be located within 3 ft (0.9 m) of the ceiling's peak (NFPA 72).



### Notice

The beam path should be clear of moving objects. Avoid areas subject to normal smoke concentrations such as kitchens and garages. Do not install units where normal ambient temperatures are below -22°F (-30°C) or above +130°F (+54°C).

### Lateral Spacing Between Systems

For adequate coverage, the lateral spacing between adjacent detector systems must not exceed 60 ft (18 m).

### Wiring

System wire terminals accept 12 AWG (2.0 mm) to 18 AWG (1.0 mm) solid wires.

## Parts Included

Quant.	Component
1	D297 Transmitter
1	D297 Receiver
1	D306 Remote Indicator Plate

1 Hardware Pack

1 Literature Pack

## Technical Specifications

### Environmental Considerations

Relative Humidity:	0% to 95%, non-condensing
Temperature (ambient):	-22°F to +130°F (-30°C to +54°C) For UL Listed installations, +32°F to +100°F (0°C to +38°C)

### Mechanical Properties

#### Enclosure Design

Dimensions (H x W x D):	7 in. x 5.5 in. x 5.5 in. (17.8 cm x 14 cm x 14 cm)
Transmission Range:	30 ft (9 m) to 350 ft (107 m)

### Power Requirements

#### D297

Current (alarm):	Receiver: 75 mA. Transmitter: 20 mA
Current (standby):	Receiver: 50 mA, Transmitter: 20 mA
Voltage (operating):	10.2 VDC to 15 VDC

#### D306 and D307

Current (alarm):	15 mA at 24 VDC
Current (standby):	5 mA at 24 VDC
Voltage (operating):	10 VDC to 32 VDC

## Ordering Information

### D297 12 V Projected Beam Smoke Detector

Consists of a transmitter, a receiver, and a remote annunciation plate  
Order number **D297**

### Accessories

#### D306 Remote Indicator Plate

Used with the D296/D297 Long-Range Beam Smoke Detectors and the D340 Series Duct Smoke Detector Housings  
Order number **D306**

#### D307 Remote Test and Indicator Plate

Used with the D296 and D297 Long-Range Beam Smoke Detectors and the D340 Series Duct Smoke Detector Housings  
Order number **D307**

#### D308 Field Test Kit

Allows testing the calibration of the D296 and D297 Beam Smoke Detectors  
Order number **D308**

**D309 Alignment Strobe**

A flashing strobe light intended for use with the D296 and D297 Beam Smoke Detectors

Order number **D309**

---

**DRA-12/24 Remote Annunciator (12/24 VDC)**

Designed to provide remote annunciation of alarms when connected to the D7050-B6 Multiplex Detector Base

Order number **DRA-12/24**

---

**Represented by:**

**Americas:**

Bosch Security Systems, Inc.  
130 Perinton Parkway  
Fairport, New York, 14450, USA  
Phone: +1 800 289 0096  
Fax: +1 585 223 9180  
security.sales@us.bosch.com  
www.boschsecurity.us

**Europe, Middle East, Africa:**

Bosch Security Systems B.V.  
P.O. Box 80002  
5600 JB Eindhoven, The Netherlands  
Phone: + 31 40 2577 284  
Fax: +31 40 2577 330  
emea.securitysystems@bosch.com  
www.boschsecurity.com

**Asia-Pacific:**

Robert Bosch (SEA) Pte Ltd, Security Systems  
11 Bishan Street 21  
Singapore 573943  
Phone: +65 6258 5511  
Fax: +65 6571 2698  
apr.securitysystems@bosch.com  
www.boschsecurity.asia