BOSCH
Invented for life

D296 Series Projected Beam Smoke Detectors

- 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
- Switch-selectable alarm signal delay
- Auxiliary Form C alarm relay

The D296 Projected Beam Smoke Detector is used in clear open structures such as arenas, atriums, auditoriums, ballrooms, churches, factories, museums, and warehouses. Each D296 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 D296, provides a convenient means of verifying detector status. Install it anywhere within 100 ft (30 m) of the beam receiver. The D306 has 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 or the signal gains 20%, 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

D296

Listings and Approvals:	UL UROX: Smoke – Automatic Fire Detectors (UL268)
	CSFM 7260-1615: 132
	Factory Mutual Research
	Hong Kong Fire Services Department (HKFSD)

D296-CAN

Listings and Approvals:	ULC
	Factory Mutual Research

Installation/Configuration Notes

Mounting Considerations

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

Note The beam path should be clear of moving objects. Avoid areas subject to normal smoke concentrations such a 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	D296 or D296-CAN Transmitter
1	D296 or D296-CAN Receiver
1	D306 Remote Indicator Plate
1	Hardware Pack
1	Literature Pack

Technical Specifications

Environmental Considerations

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

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

Current (alarm):	Receiver: 60 mA, Transmitter: 20 mA
Current (standby):	Receiver: 45 mA, Transmitter: 20 mA
Voltage (operating):	18 VDC to 32 VDC

Ordering Information

D296 24 V Projected Beam Smoke Detector	D296
D296-CAN 24 V Projected Beam Smoke Detector for Canada	D296-CAN
Hardware Accessories	
D308 Field Test Kit	D308
D309 Alignment Strobe	D309

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