

PRECISION IR DETECTION FOR CRITICAL ENVIRONMENTS



KEY FEATURES

- Infrared Detection in 1-5 μm Range
- Sensitive to CO_2 , CH_4 , and Industrial Gases
- Available in Cooled & Uncooled Options
- High Signal-to-Noise Ratio (SNR)

APPLICATIONS

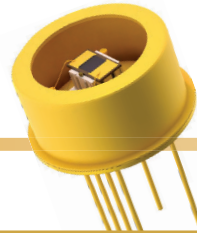
- Fire & Flame Detection
- Greenhouse Gas (GHG) Tracking
- Air Quality & Emissions Control
- Spectroscopy & Process Monitoring

Lead Sulfide (PbS) and Lead Selenide (PbSe) detectors are essential for environmental sensing, offering strong responsivity and spectral performance in the mid-infrared (MIR) range from 1 μm to 5 μm . These detectors are engineered to identify IR radiation emitted or absorbed by various gases and materials, enabling accurate, real-time monitoring.

From flame detection to tracking greenhouse gases like methane (CH_4) and carbon dioxide (CO_2), PbS and PbSe detectors deliver fast, reliable measurements critical for safety and compliance. They are used in oil & gas, chemical production, and air quality systems to detect gases via their unique IR absorption signatures—even in noisy or variable environments with wide temperature swings.

Additionally, these are ideal for spectroscopy, thermal monitoring, and emissions analysis, these detectors offer stable output, low noise, and long life. Rugged packaging and flexible integration make them suitable for mobile and industrial applications. With decades of proven reliability, Opto Diode's custom PbS/PbSe solutions ensure performance, precision, and peace of mind in mission-critical systems. These detectors play a pivotal role in supporting global environmental goals through accurate gas sensing and emissions tracking.

Featured Products



* Single and two-stage cooling options enable precise measurements, even in environments with varying temperatures.

Standard and Custom Offerings

Model Number	Detector Size	Description	D* Min.	D* Typ.	Package Type
AP-58E	5mm x 5mm	Uncooled Packaged PbS IR Detector	7×10^{10}	-	TO-5
BXT2-17T	1mm x 1mm	Two-Stage Cooled Packaged PbSe Infrared Detector	1.6×10^{10}	-	TO-37
BXP-35F	3mm x 3mm	Uncooled Packaged PbSe Infrared Detector	2.65×10^9	1.5×10^{10}	TO-5
BXT1-28TE	2mm x 2mm	One-Stage Cooled Packaged PbSe Infrared Detector	1.4×10^{10}	2.8×10^{10}	TO-8

- Specifications apply at voltage (VBias) of 25V/mm for cooled and 35V/mm for uncooled detectors with either a 1M Ω or 0.5M Ω load resistor in series.
- D* measurements @ Δp , 1000 Hz, 1 Hz



Built for Environmental Use

- Proven stability in harsh industrial settings
- Rugged Packaging supports field deployment
- Tailored solutions for OEMs and systems integrators

