DPbS Series Room-Temperature PbS Detectors, 0.8–3.2 µm, Built-in Preamplifier

Model DPbS Series · waveqvanta.com/products/dpbs-series-room-temperature-pbs-detectors

Room-temperature PbS photoconductive detectors with built-in preamplifier for infrared measurements from 0.8 to 3.2 µm.



DPbS series detectors are room-temperature lead sulfide (PbS) photoconductive detectors for the 0.8–3.2 µm infrared range. The DPbS2900 and DPbS3200 share the same construction with an integrated preamplifier, so the output is a voltage signal. As photoconductive detectors they are operated with chopped light and a lock-in amplifier.

Key features

- Two models: DPbS2900 (0.8–2.9 µm) and DPbS3200 (0.8–3.2 µm)
- Room-temperature operation
- Built-in preamplifier with selectable gain of ×1, ×10 or ×100
- Voltage output; select voltage sampling mode when used with the DCS103 or DCS300PA data acquisition systems
- Frequency response 100–1000 Hz, with 400 Hz recommended chopping frequency
- Designed for use with a lock-in amplifier

Specifications

Detector Type	PbS photoconductive, room temperature
Spectral Range	0.8–2.9 µm (DPbS2900); 0.8–3.2 µm (DPbS3200)
Preamplifier	Built-in, gain ×1, ×10, ×100
Input Offset Voltage	Below ±1 µV
Preamplifier Input Drift	±1 µV
Frequency Response Range	100–1000 Hz (400 Hz recommended)
Signal Output	Voltage
Output Signal Polarity	P (positive)
Recommended Readout	Lock-in amplifier

Model overview

Model	Active Area (mm)	Spectral Range (µm)	Peak Wavelength (µm)	Responsivity Su (V/W)	Dark Resistance Rd (MΩ)
DPbS2900	4 × 5	0.8–2.9	~2.2	~3×10^4	0.2–2
DPbS3200	6 × 6	0.8–3.2	~2.1	~300	0.1–0.3

Typical applications

- Infrared spectroscopy with scanning monochromators
- Lock-in detection of chopped IR signals
- Transmission and absorption measurements from 0.8 to 3.2 µm
- Infrared photoluminescence measurements