DInGaAs-TE Series TE-Cooled InGaAs Detectors, 800–2600 nm, -40 °C

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Two-stage TE-cooled InGaAs detectors for low-noise near-infrared measurements from 0.8 to 2.6 µm.

DInGaAs-TE series detectors use two-stage thermoelectrically cooled InGaAs photodiodes for the 0.8–2.6 µm range. The DInGaAs1700-TE and DInGaAs2600-TE share the same construction with a 3 mm diameter active area; the sensor is held at -40 °C with ±0.5 °C stability by the ZTC temperature controller.





Key features

- Two models covering 800–1700 nm and 800–2600 nm
- Two-stage TE cooling to -40 °C, temperature stability ±0.5 °C
- Ø3 mm active area on both models
- Typical NEP of 3.2×10^{-15} (DInGaAs1700-TE) and 5.5×10^{-13} (DInGaAs2600-TE)
- Current output; the ZAMP I-V transimpedance amplifier is recommended before an oscilloscope, lock-in amplifier or the DCS103
- Can be read directly by the DCS300PA data acquisition system, which has built-in amplification
- In cooled mode, operation requires the ZTC temperature controller

Specifications

Detector Type	Two-stage TE-cooled InGaAs photodiode
Active Area Diameter	3 mm
Spectral Range	800–1700 nm or 800–2600 nm, depending on model
Detector Operating Temperature	-40 °C
Temperature Stability	±0.5 °C
Ambient Temperature	+10 to +40 °C
Signal Output	Current
Output Signal Polarity	P (positive)
Temperature Controller	ZTC (required in cooled mode)
Recommended Preamplifier	ZAMP I-V transimpedance amplifier

Model overview

Model	Spectral Range (nm)	Peak Responsivity (A/W)	D* (typ.)	NEP (typ.)
DInGaAs1700-TE	800–1700	0.9	8.4×10^{13}	3.2×10^{-15}
DInGaAs2600-TE	800–2600	1.2	4.9×10^{11}	5.5×10^{-13}

Typical applications

- Low-light near-infrared spectroscopy
- NIR photoluminescence measurements
- Transmission and absorption measurements from 0.8 to 2.6 µm
- Lock-in detection with scanning monochromators