Redefining Measurement

ID230 Infrared Single-Photon Detector

Free-Running InGaAs/InP Photon Counter with Extremely Low Dark Count

The ID230 is a major breakthrough for single-photon detection in free-running mode at telecom wavelengths. Based on the existing ID220, this new series offers a significantly decreased dark count rate thanks to an improved cooling system and adapted electronics. The avalanche photodiode working in Geiger mode is cooled down to -90°C. This series has been especially designed for applications in which asynchronous photon detection is essential.

The module can operate at detection probability levels of up to 25%, with a deadtime that can be set between 2 µs and 100 µs. The photon arrival time is reflected by a 100 ns LVTTL pulse, with a timing resolution of below 150 ps at 25% efficiency. A simple USB interface allows the user to set all parameters.

Key Features

- 900-1700 nm
- Best-in-class dark count rate
  - < 50 Hz at 10% quantum efficiency
  - < 200 Hz at 20% quantum efficiency
- Adjustable quantum efficiency up to 25%
- 150 ps timing resolution
- Adjustable deadtime from 2 µs to 100 µs
- Adjustable temperature from -50°C to -90°C
- Singlemode or multimode fibre optical input

Applications

- Quantum cryptography
- Fibre optics characterization
- Single-photon source characterization
- Failure analysis of electronic circuits
- Eye-safe laser ranging (LIDAR)
- Spectroscopy, Raman spectroscopy
- Singlet oxygen measurement
- Photoluminescence
- Fluorescence lifetime measurement

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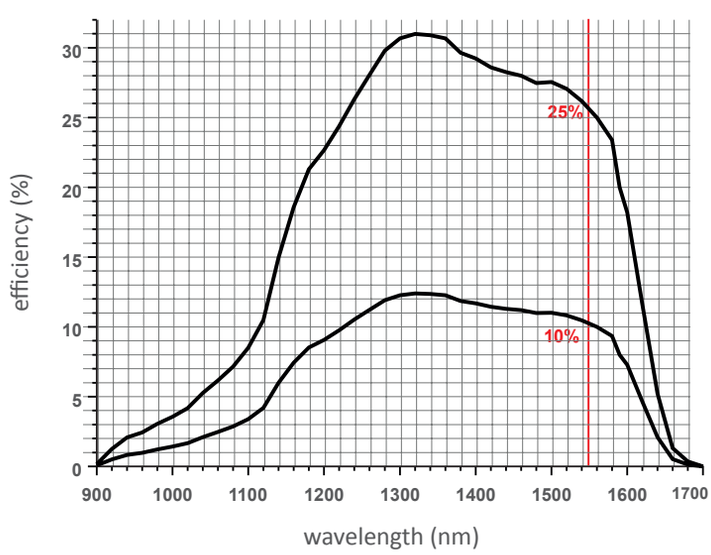
INFRARED SINGLE-PHOTON DETECTOR

Specifications

Parameter	Min	Typical	Max	Units
Dark count rate @ -90°C				
10%	50		80	Hz
20%	100		200	Hz
Wavelength range	900		1700	nm
Optical fibre type		SMF or MMF62.5		
Efficiency range at 1550 nm	0		25	%
Timing resolution at 25% quantum efficiency		150	200	ps
Deadtime range	2		100	µs
Deadtime step		1		µs
Detection output pulse		LVTTL / 100 ns width		
Output connector		SMA		

Quantum efficiency vs wavelength (tendency)



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