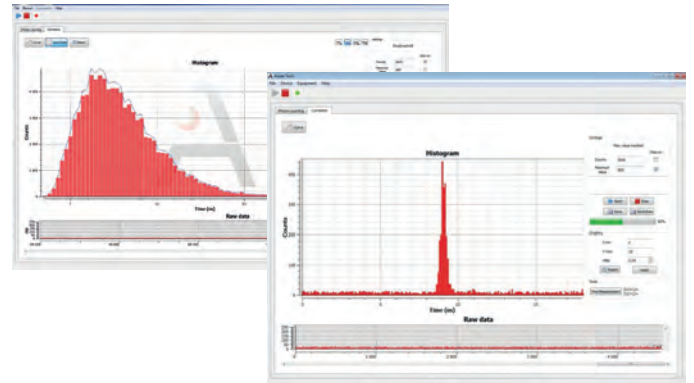


## SPD\_OEM\_NIR

# Compact NIR Single Photon Detector

Dual-mode photon counting solution - OEM design  
[900 nm - 1700 nm]



The compact SPD\_OEM\_NIR brings a major breakthrough for single photon detection in the 900 nm to 1700 nm near infrared range. Built on cooled InGaAs/InP Geiger-mode single photon avalanche photodiode technology the SPD\_OEM\_NIR is the first generation of NIR single photon detector that performs both synchronous "gated" and asynchronous "free-running" detection modes. Based on an industrial design, this self-contained detector does not require any additional bulky cooling systems and control units.

Two grades are available : the "Standard" and the "Champion" grade.

The champion grade features ultra-low-noise down to 1 000 cps, high Quantum Efficiency up to 30 %, 100 MHz external trigger rate, fast timing resolution of 180 ps and low afterpulsing rates < 0.1 %.

Very well-designed, the compactness and its modern interfaces make the SPD\_OEM\_NIR very easy to integrate in the most demanding analytical instruments and industrial control process.

### Features

- Free-Running & Gated mode
- Quantum Efficiency up to 30%
- 1 000 cps Dark Count Rate
- External Trigger up to 100 MHz
- Damage control of the APD
- Remote control
- Cooling plate compatible EU/US
- DLL Libraries : LabVIEW, C++
- Read out in TTL
- 24/7 operation

### Applications

- Quantum Key Distribution
- Geiger-mode LIDAR
- Material characterization
- High resolution OTDR
- Time Correlated Single Photon Counting (TCSPC)
- FLIM microscopy
- Fiber sensor

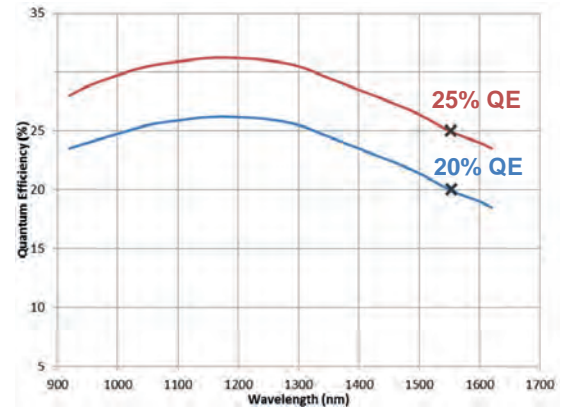
### Options

- Analog output
- NIM output

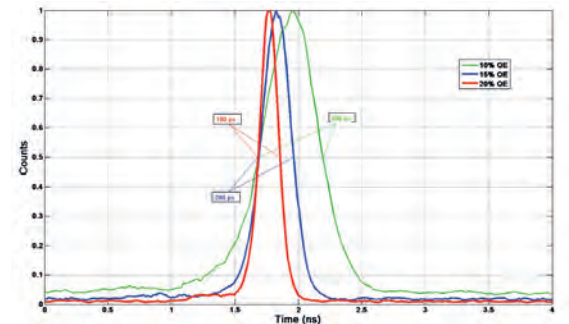
## TECHNICAL SPECIFICATIONS

Single photon counting - Typical values measured @1550nm		
Spectral Range	900 nm to 1700 nm	
Optical Fiber type	SMF or MMF	
Grade	Standard	Champion
Dark Count Rate@10%QE	< 5 000 cps	< 1 000 cps
Quantum Efficiency	10% - 25% [5% step]	10% - 30% [10% step]
External trigger	from CW to 20 MHz	from CW to 100 MHz
Timing Jitter @max QE	200 ps	180 ps
Deadtime range@10%QE	from 1 $\mu$ s to 1 ms	from 100 ns to 1 ms
Afterpulsing probability <sup>1</sup>	< 1%	< 0.1%
Input/Output - Mechanical - Environmental		
Computer Connection	Mini USB 2.0 type B	
Optical IN	FC/PC optical fiber connector	
Detection OUT	SMA female type connector (TTL)	
Trigger IN	SMA female type connector (TTL)	
Power Supply	5V DC / 5W	
Dimension (DxHxW)	147 x 68 x 52 mm <sup>3</sup> (without plate) 147 x 120 x 60 mm <sup>3</sup> (with plate)	
Weight	800 g	
Operating temperature	+ 10°C to + 30°C	
Cooling time	< 1 min @ 25°C	

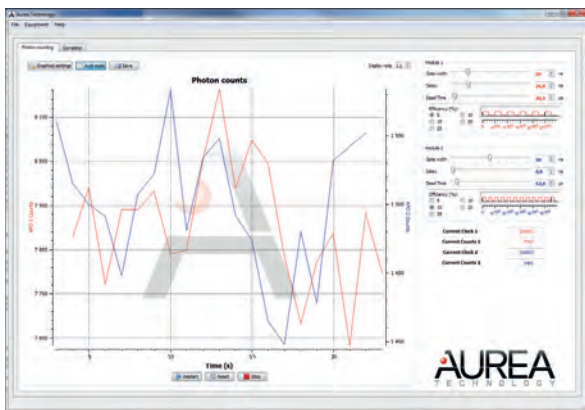
<sup>1</sup>At 10  $\mu$ s deadtime, 10% QE, 10 ns gate



QE (%) vs Wavelength (nm)



Timing jitter (ps) vs QE (%)



A user-friendly Graphical User Interface is provided. It allows the set-up of the QE, deadtime and also the display of the live photon count, the clock, the temperature and the alarm to protect against accidental overload. The DLL libraries compatible to the most well-known programming languages are also provided.

## RELATED PRODUCTS

AUREA Technology also provides high performance TCSPC and picosecond laser sources from 375 nm to 1990 nm



PIXEA picosecond laser

## ORDERING INFORMATION

SPD\_OEM\_X\_YY\_ZZ

- X C : Champion grade  
S : Standard grade
- ZZ 01 : FC/PC
- YY SM: Single Mode Optical Fiber  
MM: Multimode Optical Fiber

Please contact us for custom solutions and options

## NOTE