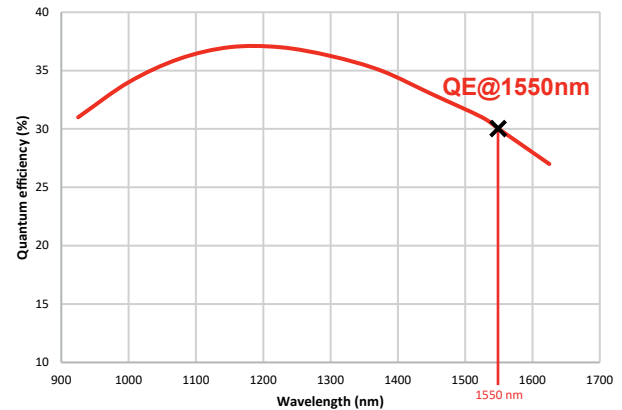


## SPD\_OEM\_NIR

# NIR Single Photon Counter

Compact NIR photon counting solution

[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 ultra-low level of light NIR single photon detector that performs both synchronous "gated" (GM) and asynchronous "free-running" (FR) detection modes. The user selects the detection mode via the provided software interface.

The SPD\_OEM\_NIR features ultra-low-noise down to 700 cps, high calibrated Quantum Efficiency up to 30 %, 100 ns deadtime, 100 MHz external trigger, fast timing resolution of 150 ps and very low afterpulsing.

Based on a robust industrial design, the SPD\_OEM\_NIR detector does not require any additional bulky cooling systems and control units. Very well-designed, the compactness and its modern interfaces make the SPD\_OEM\_NIR very easy to integrate in the most demanding Quantum systems and analytical instruments.

### Features

- Free-Running & Gated mode
- Calibrated QE up to 30%
- Best Dark Count Rate < 700 cps
- Min Deadtime 100 ns
- External Trigger up to 100 MHz
- Rack 2U compatibility
- TTL and NIM compatibility
- Software for remote control
- Library : Python, C++, LabVIEW

### Applications

- Quantum Key Distribution
- Quantum Communications
- Geiger-mode LIDAR
- High resolution OTDR
- Time Correlated Single Photon Counting (TCSPC)
- Low level of light detection
- Fluorescence Microscopy FLIM

### Pairing products

- Entangled Photon Source : TPS\_1550\_TYPE\_II
- Time Tagging electronics : CHRONOXEA

## TECHNICAL SPECIFICATIONS

### TYPICAL SPECIFICATIONS@1550nm

<b>Spectral Range</b>	900 nm to 1700 nm
<b>Optical Fiber type</b>	SMF and MMF
<b>Detection mode</b>	Free-running & Gated mode

### OPTICAL

<b>Dark Count Rate@10%QE</b>	< 700 cps
<b>Calibrated QE</b>	10% - 30% [10% step]
<b>External trigger</b>	from CW to 100 MHz
<b>Timing Jitter @max QE</b>	150 ps
<b>Deadtime range</b>	from 100 ns to 1 ms <sup>1</sup>
<b>Afterpulsing probability<sup>2</sup></b>	< 0.1%

<sup>1</sup> Min deadtime GM : 100 ns | Min deadtime FR mode : 5 μs

<sup>2</sup> At 10 μs deadtime, 10% QE, 10 ns gate

### INPUT/OUTPUT- MECHANICAL - ENVIRONMENTAL

<b>Optical IN</b>	FC/PC optical fiber connector
<b>Trigger IN</b>	SMA - TTL only
<b>Detection OUT</b>	SMA - User selectable TTL/NIM
<b>Weight</b>	500 g
<b>Cooling time</b>	< 1 min @ 25°C
<b>Power consumption</b>	10 W

### CONNECTIVITY - SOFTWARE

<b>Remote Control</b>	Mini USB 2.0 type B - UART connection
<b>DLL examples</b>	Python, C++
<b>System</b>	LINUX, macOS, Windows

## SOFTWARE

Control the SPD\_OEM\_NIR easily thanks to its user-friendly software interface ! Tune the QE, deadtime and display the photon count, clock rate, temperature and alarm to monitor your photon counter live.

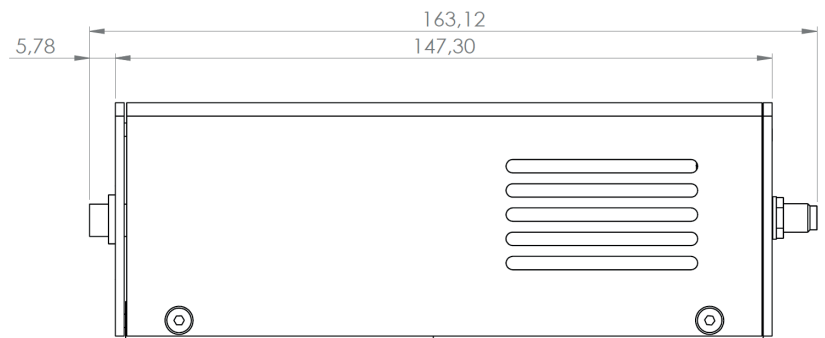
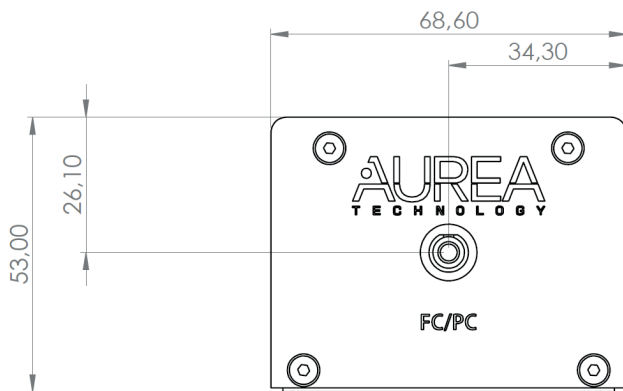
For an easy integration and monitoring of the SPD\_OEM\_NIR in complex QKD systems, DLL with examples for Python and C++ are provided. The SPD\_OEM\_NIR software is supported by LINUX, macOS and MS Windows.

## CUSTOMER SUPPORT

Integration of high-end technologies can be challenging but AUREA Technology is here to help you reach your objectives!

Work with AUREA Technology and benefit from the help of our dedicated technical support team. Our team made of the best experts in single photon detection technology and QKD systems can be reached any time !

Contact our technical support team and receive an answer within a day at [support@areatechnology.com](mailto:support@areatechnology.com)



Mechanical drawings of the SPD\_OEM\_NIR

## ORDERING INFORMATION

### SPD\_OEM\_NIR\_C

Please contact us at [sales@areatechnology.com](mailto:sales@areatechnology.com) for custom solutions and options

#### WARRANTY

Any warranty is void if the Product has been damaged, disassembled, modified, misused, used in applications which exceed the Product specifications or rating, neglected, improperly installed or otherwise abused or is used in hazardous activities

#### DISCLAIMER

The manufacture reserves the right to change this document at any time without notice and disclaims liability for editorial, pictorial and typological errors. © 2011-22 AUREA Technology SAS. All rights reserved.

## ACCESSORIES

- +12V, 60 W, AC/DC power adapter, with AC power cord
- USB key with software
- 2 m mini USB to USB cable
- Mechanical plate compatible EU/US