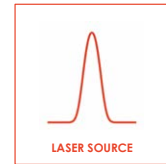


SPD_OEM_NIR

NIR Single Photon Counter

Compact NIR Photon Counting Solution

[900 nm - 1700 nm]



The **SPD_OEM_NIR** is a compact, 2U-rack compatible, non-cryogenic **Single-Photon Counter** covering the **900 to 1700 nm range** for QKD, LiDAR, TCSPC, and time-resolved photonics applications.

Powered by a thermoelectrically-cooled **InGaAs/InP Geiger-mode SPAD** with active stabilization and fast quenching, it supports **asynchronous free-running** and **synchronous gated modes** (up to 100 MHz) with **timing jitter down to 150 ps** at 30% QE. Optimized for the standard 1550 nm telecom wavelength, it delivers industry-leading noise suppression, combining **10% to 30% calibrated QE** with **dark count rates below 700 cps** (at 10% QE, 20 μ s dead time).

For streamlined integration, it includes **UART** for FPGA/microcontroller control, **USB connectivity**, and full **Python and C++ APIs**, offering a comprehensive plug-and-play operation. The SPD_OEM_NIR delivers a premier NIR detection solution purpose-built for quantum networking, trace gas sensing, TCSPC, and advanced photon source characterization.

Features

- Free-running and Gated modes
- Calibrated QE up to 30%
- Dark Count Rate < 700 cps
- Timing Jitter down to 150 ps
- External Trigger up to 100 MHz
- Minimum Dead time 100 ns
- UART and USB control
- TTL and NIM outputs
- Programming APIs: Python, C++
- 2U rack compatible

Applications

- Quantum Key Distribution (QKD)
- Quantum Networking
- Single-Photon LiDAR and ToF
- Methane and trace gas-sensing
- High-resolution OTDR
- TCSPC and FLIM microscopy
- Photon Source characterization
- Ultra-low-light instrumentation

Related Products

- TPS_1550_TYPE_S
Entangled Photon Source
- CHRONOXEA Time Tagger
- PIXEA Picosecond Laser

TECHNICAL SPECIFICATIONS

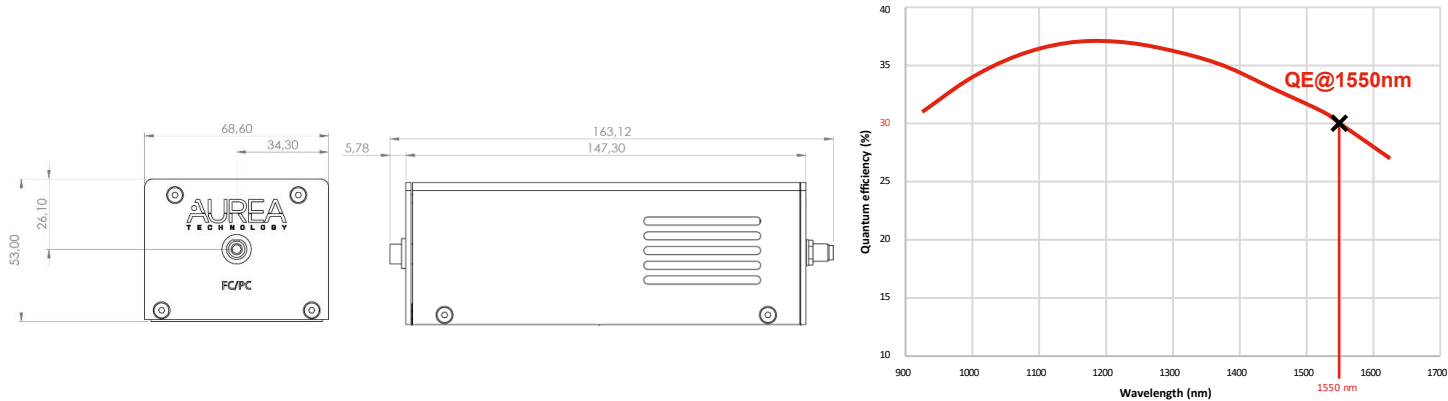
DETECTION PERFORMANCE ¹	
Spectral Range	900 nm to 1700 nm
Optical Fiber Type	MMF and SMF
Operating Modes	Free-running & Gated mode
Dark Count Rate ²	< 700 cps [20 µs dead time]
Calibrated QE	10% - 30% [5% step]
External Gate Frequency	Up to 100 MHz
Timing Jitter ³	150 ps
Dead Time Range	FR: 5 µs to 1 ms ; GM: 100 ns to 1 ms
Afterpulsing Probability	1 % typ.

¹ Detection performance measured at 1550 nm and 25 °C.
² DCR measured at 10% QE. Shorter dead time makes the measure more stringent. 20 µs is a stricter test condition than 50 µs.
³ Timing Jitter measured at 30% QE.

MECHANICAL - POWER - ENVIRONMENTAL	
Form Factor	2U rack compatible
Dimensions	163 x 68 x 52 mm ³
Weight	0.5 kg
Power Consumption	10 W
Cooling Time	< 1 min @ 25 °C ambient
Operating Temperature	+10°C to +35 °C; 60% RH max
Storage Temperature	-20°C to +50 °C; 60% RH max

DIGITAL INTERFACES - INPUT/OUTPUT - SOFTWARE	
Optical Input	FC/PC
Trigger Input	SMA - TTL only
Detection Output	SMA - User selectable TTL/NIM
Embedded Interface	Dedicated UART port
Host Interface	USB 2.0 Mini-B port
Programming APIs	Python, C++
Supported OS	Windows, Linux

MECHANICAL DRAWING & QUANTUM EFFICIENCY



Compact OEM form factor with high quantum efficiency optimized at 1550 nm

SOFTWARE

Control the SPD OEM NIR through its user friendly software interface. Select the calibrated detection efficiency and dead time, and monitor the photon count rate, trigger frequency, detector temperature, and alarm status in real time.

For easy integration and remote monitoring in complex QKD and photon counting systems, Python and C++ APIs with programming examples are provided. The control software supports Microsoft Windows, Linux, and macOS.

CUSTOMER SUPPORT

Integrating advanced technologies can be challenging, but AUREA Technology is here to help you achieve your objectives.

Work with AUREA Technology and benefit from our dedicated technical support team. Our experts in single-photon detection, low-light detection, and QKD systems are available to support you throughout your integration.

Contact our technical support team and receive an answer within a day at sales@aureatechnology.com.

ORDERING INFORMATION

SPD_OEM_NIR

Factory-calibrated ULN option. Available on request.

WARRANTY
Any warranty shall be void if the Product has been damaged, disassembled, modified, misused, neglected, improperly installed, used beyond its specified ratings or operating conditions, otherwise abused, or used in hazardous activities.

DISCLAIMER
The manufacturer reserves the right to modify this document at any time without prior notice and disclaims liability for editorial, pictorial, or typographical errors.

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ACCESSORIES ON REQUEST

- +5V, 12W, AC/DC power adapter, with AC power cord
- Mechanical plate (compatible EU/US)
- Mini USB to USB A cable