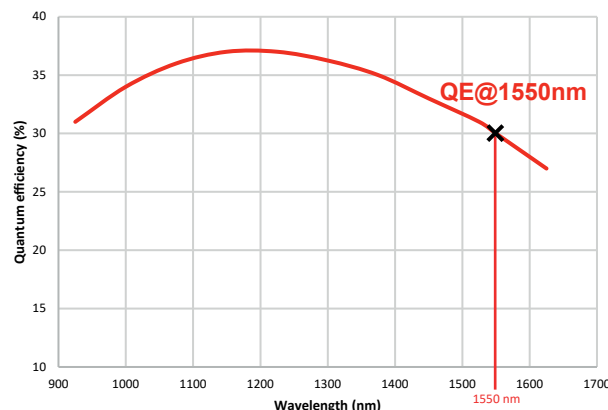
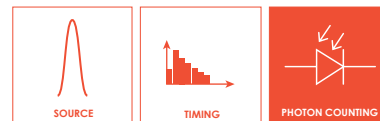


DUOXEA

2-channel NIR Single Photon Counter

Designed for systems integrators

[900 nm - 1700 nm]



Designed for photon correlation, the 2-independent and paired channel NIR single photon counting detector, DUOXEA, brings a breakthrough for the design of Quantum communications systems and analytical instruments.

Built on cooled InGaAs/InP Geiger-mode single photon avalanche photodiode SPAD technology the DUOXEA is the first generation of ultra-low noise and very high timing resolution near-infrared single photon counting detector that performs both synchronous "gated" and asynchronous "free-running" detection modes.

The DUOXEA features ultra-low Dark Count Rate noise below 700 cps, calibrated high Quantum Efficiency up to 30 %, 100 ns deadtime, 100 MHz external trigger, fast timing resolution of 150 ps and very low after-pulsing.

The robust and compact industrial design, the provided Graphical User Interface, the comprehensive DLL libraries, the TTL and NIM compatibility and the USB and UART protocols make the DUOXEA extremely easy to integrate for systems integrators in a standard 19 inches telecom rack.

Features

- Two independent and paired channels
- Gated up to 100 MHz and free-running
- Ultra-low noise DCR < 700 cps
- Calibrated QE up to 30%
- Min Dead-time 100 ns
- USB and UART protocols
- TTL and NIM compatibility
- GUI and DLL for remote control
- 2U telecom rack compatible

Applications

- Quantum Communications
- Quantum Information Networks
- Photon correlation instruments

Pairing products

- Entangled Photon Source :
TPS_1550
- Time Tagging electronics :
CHRONOXA

TECHNICAL SPECIFICATIONS

TYPICAL SPECIFICATIONS@1550nm

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

OPTICAL

Dark Count Rate@10%QE	< 700 cps
Calibrated QE	10% - 30% [10% step]
External trigger	from CW to 100 MHz
Timing Jitter @max QE	150 ps
Deadtime range	from 100 ns to 1 ms ¹
Afterpulsing probability²	< 0.1%

¹ Min deadtime GM : 100 ns | Min deadtime FR mode : 5 μ s

² At 10 μ s deadtime, 10% QE, 10 ns gate

SOFTWARE

Control the DUOXEA_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 DUOXEA_NIR in complex QKD sytems, DLL with examples for Python and C++ are provided. The DUOXEA_NIR software is supported by LINUX, macOS and MS Windows.

INPUT/OUTPUT- MECHANICAL - ENVIRONMENTAL

Optical IN	FC/PC optical fiber connector
Trigger IN	SMA - TTL only
Detection OUT	SMA - User selectable TTL/NIM
Weight	800 g
Cooling time	< 1 min @ 25°C
Power consumption	20W

CONNECTIVITY - SOFTWARE

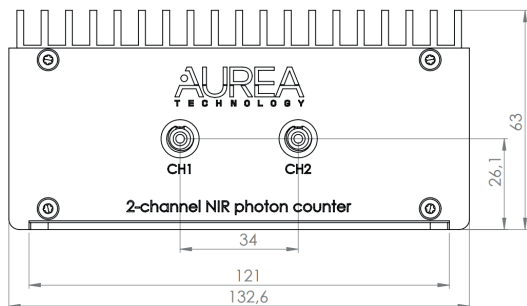
Remote Control	Mini USB 2.0 type B - UART connection
DLL examples	Python, C++
System	LINUX, macOS, Windows

CUSTOMER SUPPORT

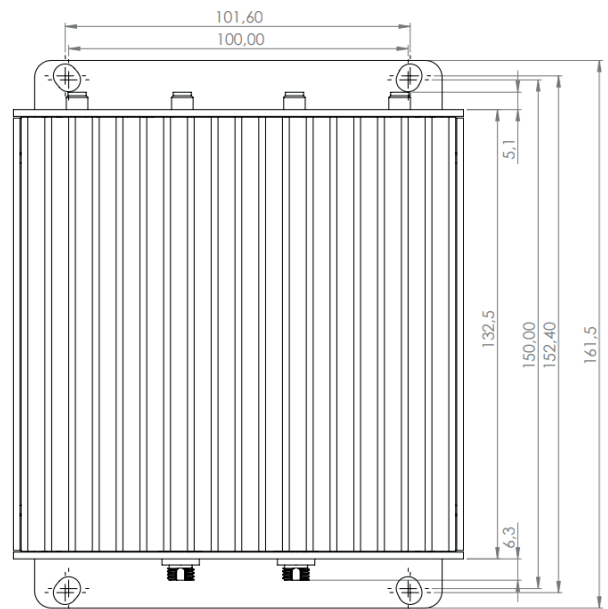
Integration of high-end technologies can be challenging but AUREA Technology is here to help you reach your objectives!

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 aswer within a day at support@aureatechnology.com



Mechanical drawings of the SPD_OEM_NIR
Dimensions are in millimeters (mm)



ORDERING INFORMATION

DUOXEA_NIR

Please contact us at sales@aureatechnology.com for custom solutions and options

ACCESSORIES

- +5V, 25W, AC/DC power adapter, with AC power cord
- USB key with software
- 2 m mini USB to USB cable

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

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