AUREA
TECHNOLOGY

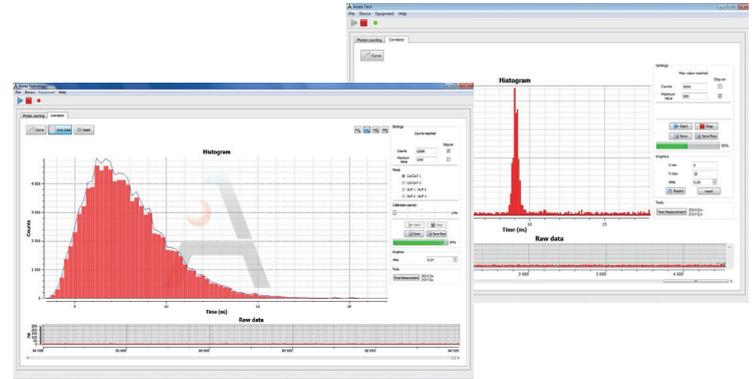# LYNXEA_NIR
Time Resolved Single Photon Counter
All integrated photon counter and timing electronics
[900 nm - 1700 nm]

LASER SOURCE | TIMING | PHOTON COUNTING

The LYNXEA is a new generation of self-contained TCSPC instrument that brings a breakthrough in Quantum Key Distribution, photon sources characterization and any photon coincidence measurements of any low-level-of-light and fast events in the 900 nm - 1700 nm near infrared range. **The LYNXEA is the first generation of time correlated single photon detector that performs both synchronous "gated" and asynchronous "free-running" detection modes.**

Its original architecture integrates in the same box, up to two independent InGaAs Geiger-mode single photon counting channels and a time correlator. Thus, the LYNXEA performs all time-correlated measurements such as lifetime, time tagging or antibunching measurements without any additional module.

Very well-designed, the compactness, the outstanding-performances and the modern interfaces make the LYNXEA an essential analytic tool for any time-correlated measurements!

Features

- 1 or 2 detection channels
- Integrated Counting Electronics
- Integrated Time Correlator
- Calibrated QE up to 30%
- Dark Count Rate < 800 cps
- Free-running & Gated mode
- Time Tagging & Lifetime
- Master/Slave operation
- Software for remote control
- DLL Libraries : LabVIEW, C++, Python

Applications

- Quantum Communications
- Quantum Key Distribution
- Photon sources characterization
- Coincidence measurements
- Geiger-mode LIDAR
- High resolution OTDR
- FLIM microscopy
- Optical fiber sensing

Options

- Analog output

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TECHNICAL SPECIFICATIONS

Single Photon Counting - Typical values measured @1550nm	
Spectral Range	900 nm to 1700 nm
Optical Fiber type	SMF or MMF
Detection mode	Free-running (FR) & Gated mode (GM) - User selectable

Grade	Standard	Champion
Dark Count Rate @10% QE	< 2 500 cps	< 800 cps
Calibrated QE	10% - 25% [5% step]	10% - 30% [10% step]
Timing Jitter @max QE	200 ps	150 ps
Deadtime range @10% QE	from 1 µs to 1 ms [1a]	from 100 ns to 1 ms [1b]
Afterpulsing probability [2]	< 1%	< 0.1%

Synchronization	
External trigger	From CW up to 20 MHz
Internal trigger	From CW up to 20 MHz
Effective gate width	From 1 ns up to 100 ns [0.5 ns step]
Adjustable trigger delay	From 0 up to 128 ns [0.5 ns step]

Time Correlation	
Timing resolution	13 ps from 0 to 1 sec measurement range
Data transfert	1×10^6 correlations/sec
Max event. rate : - *Continuous mode* - *Burst mode*	4 MHz 200 MHz *(burst of 15 successive events)*

Input/Output - Mechanical - Environmental	
Computer Connection	Mini USB 2.0 type B
Optical In	FC/PC optical fiber connector
Detection Out	SMA - LVTTL - 20 ns width
Clock In	SMA - LVTTL
Clock Out	SMA - LVTTL
Dimensions (LxWxH)	70 x 250 x 280 mm³
Weight	4.5 kg
Cooling time	< 1 min @ 25°C
Power consumption	25 W

[1a] Standard : *Min deadtime GM : 1 µs | Min deadtime FR mode : 10 µs*

[1b] Champion : *Min deadtime GM : 100 ns | Min deadtime FR mode : 5 µs*

[2] At 10 µs deadtime, 10% QE, 10 ns gate

QE (%) vs Wavelength (nm)

Time histogram building representation

OTHER PRODUCTS : COMPLETE QUANTUM SYSTEMS

AUREA Technology also provides complete Quantum Optics systems with Entangled Photon Sources, Photon Counters, Timing Electronics and Software. Both 1550 nm and 810 nm versions are available.
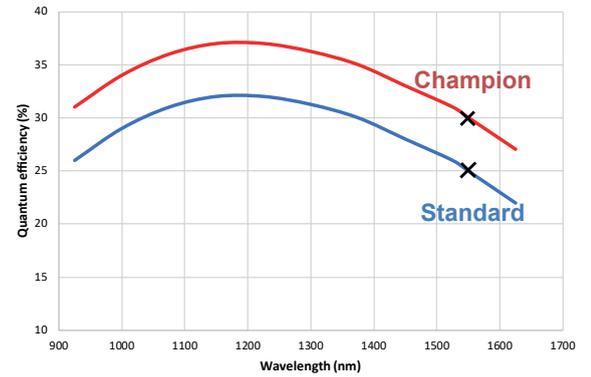

Complete Quantum instruments suite

SOFTWARE INTERFACE

The software interface allows adjusting the QE, deadtime, clock and displaying the temperature and live photon count. DLL libraries compatible to the most well-known programming languages are also provided.

ORDERING INFORMATION

LYNXEA_NIR_X_MX_YY_ZZ

- X — C : Champion grade / S : Standard grade
- MX — M1 : 1 channel / M2 : 2 channels
- ZZ — 01 : FC/PC
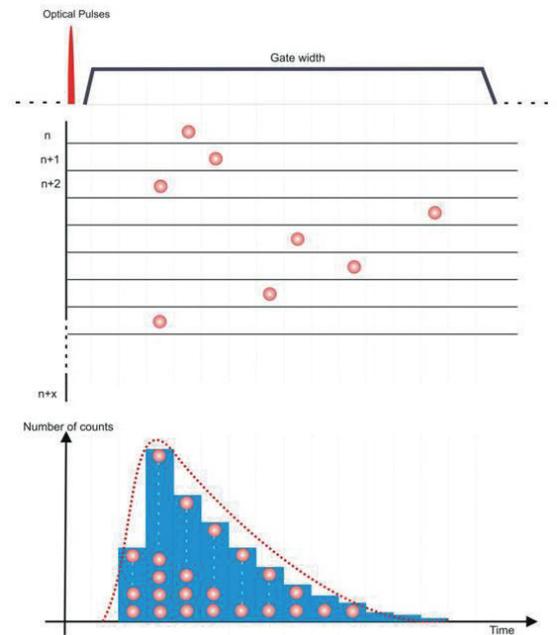- YY — SM: Single Mode Fiber / MM: Multi Mode Fiber

Please contact us for custom solutions and options

NOTE

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