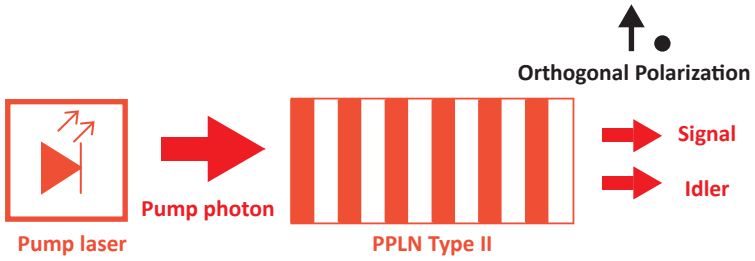
AUREA TECHNOLOGY

TPS_1550_TYPE_II

Quantum photon source

Self-contained entangled photon source [Telecom wavelength - 1550 nm]



The TPS_1550_TYPE_II is a new generation of self-contained quantum photon source that brings a major break-through for twin photons generation and orthogonally-polarized frequency-entangled photons generation in the C-band. Pairs of pho-tons are generated using Spontaneous Parametric Down Conversion (SPDC) in Periodically Poled Lithium Niobate PPLN waveguide (Quasi Phase Matching-QPM).

Based on a table-top design, the TPS_1550_TYPE_II integrates in the same box a Thermo-Electricaly-Controlled (TEC) PPLN waveguide crystal and a high-performance pump laser source. The laser pump power and the internal temperature of the crystal can be manually controlled to adjust the wavelength (phase matching) via the USB interface and the proprietary software interface.

Very well-designed, the compactness and the modern interfaces of the TPS_1550_TYPE_II makes it your essential analytical tool for the most demanding academic and industrial quantum research !

Features

- Photon pairs generation at 1550 nm
- Narrow bi-photon bandwidth
- High spectral brightness
- Integrated laser pump
- Adjustable laser pump power
- PPLN waveguide crystal type
- Room temperature operation
- Remote control
- DLL libraries : LabVIEW, C++

Applications

- Photon pairs generation
- Quantum communications
- Quantum Key Distribution
- Quantum tomography
- Quantum teleportation
- Atomic interferometry

Options

- Type 0
  Collinear Polarization
- 810 nm

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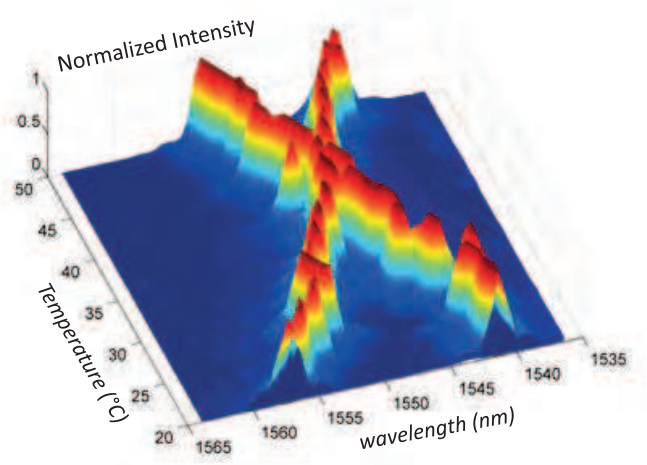
TECHNICAL SPECIFICATIONS

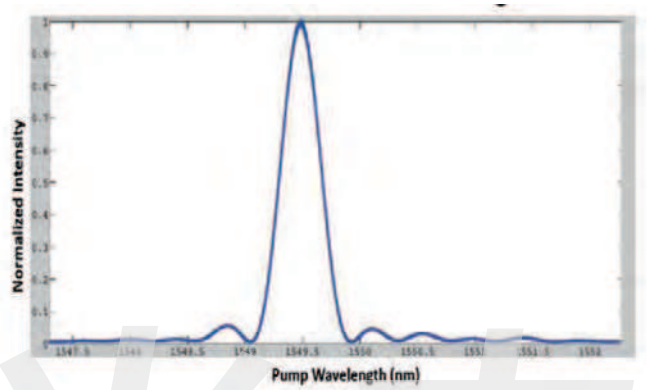
Photon pair generation - type II - 1550 nm	
Central wavelength	1550 nm +/- 10 nm
Spectral emission bandwidth	< 2 nm
Crystal type	WG-PPLN-Type II
Effective pair-generation rate[1]	100 000 pairs/s
Coincidence to Accidental ratio[2]	300
Central wavelength tunability	+/- 2 nm
Wavelength stability	20 pm
Photon pair interference visibility	> 95%
Input/Output - Mechanical - Environmental	
1550 nm Out	FC/APC for PM 1550 fiber
Optical Pump Out	FC/APC for PM HI780 fiber
Optical Pump In	FC/APC for PM HI780 fiber
Computer Connection	Mini USB 2.0 type B
Power Supply	5V DC / 5W
Dimension (LxWxH)	70 x 250 x 280 mm³
Weight	4.5 kg
Operating temperature	+ 10°C to + 30°C
Cooling time	< 2 min @ 25°C

[1] Typical specifications given for a 1550 nm type II source.

[2] at 1 mW pump power



Spontaneous Parametric Down-Conversion Spectrum (SPDC) versus Temperature (775nm laser pump)

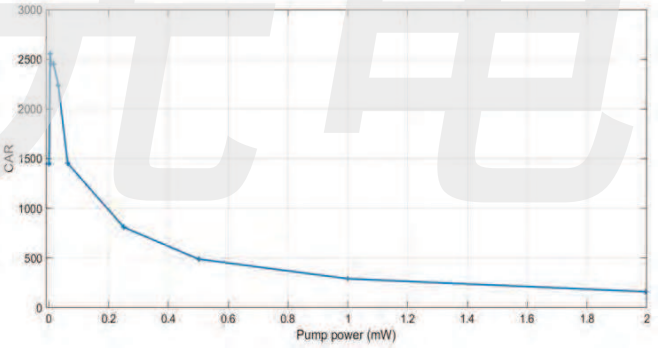


Second Harmonic Generation versus Wavelength

RELATED PRODUCT

Complete QKD (Quantum Key Distribution) and photon source characterization set at telecom wavelenghts are also available. For more information please contact our sales team.

LYNXEA series



Coincidence to accidental-ratio vs pump power

ORDERING INFORMATION

TPS_1550_X —— II : type II
*0 : type 0**

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