PHOTONIC EXPERT

WORLD FIRST

Quantum Light Source

The Optilab quantum communication entangled photon source is an all fiber-based C band quantum light source producing entangled photon pairs at 1550 nm. It is based on PPLN Ti-diffusion optical waveguide and features type-II QPM. The quantum entangled photon pairs are generated through the process of Spontaneous Parametric Down Conversion (SPDC) at degenerate condition and then separated into the two telecommunication channels with temporal walk-off compensation between them.
The system integrates multiple phase / intensity modulators, facilitating users to modulate optical signals.

GENERAL

Central Wavelength	1550 nm
Photon Pair Generation Rate	>10^3 Hz/mW
Heralding Efficiency	≥ 0.2
Two Photon Interference Visibility	> 80%
Two Photon Delay	<5 ps
Output Fiber	PM1550
Operating Temperature	+10°C to +40°C
Storage Temperature	-10°C to+70°C

MODULATOR

Modulator Type	Phase / Intensity Modulator
Central Wavelength	775 nm / 1550nm
RF Input Power	≤ +27 dBm
Optical Input Power	≤ 10 mW

MECHANICAL

Dimension	297 x 390 x 65 mm
Optical Connectors	FC/APC
RF Connectors	SMA
Power Supply	12 V / 5 A
Power Consumption	<30 W

FEATURES

- Photon Pairs Generation at 1550 nm
- Collinear Type-II QPM SPDC
- Heralding Efficiency ≥ 0.2
- PPLN Ti-diffusion Optical Waveguide
- Bi-photon Bandwidth ≤ 2 nm
- LCD Monitoring and Touchscreen Setting

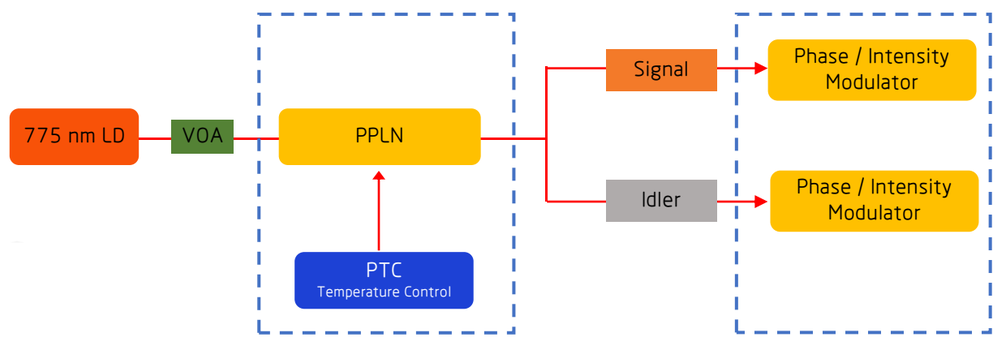
USE IN

- Long Distance Quantum Links
- Quantum Key Distribution
- Quantum Communication
- Quantum Tomography

BIAS CONTROL MODE

Mode	Operation Conditions	Modulation Format
Q+	Set to quadrature point of positive slope	Analog, NRZ
Q-	Set to quadrature point of negative slope	Analog, NRZ
Min.	Set to min. point of modulator curve	Pulse, RZ, BPSK
Max.	Set to max. point of modulator curve	Pulse, RZ

FUNCTIONAL DIAGRAM



ORDERING OPTIONS

Wavelength (nm): 1550, 1570

Address: 600 East Camelback Road, Phoenix, AZ, 85012, USA +1 602-343-1496 www.optilab.com

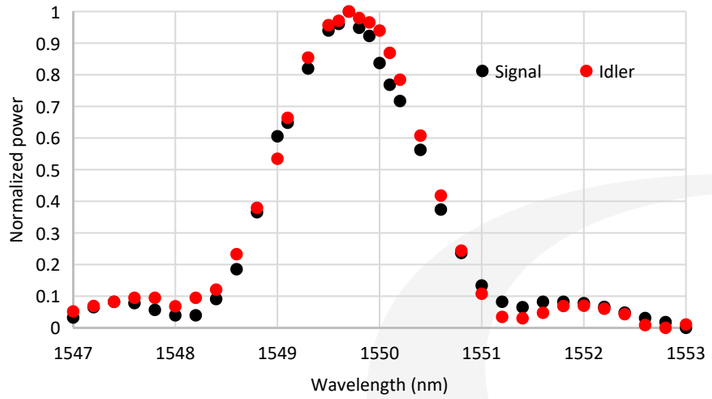
OPTILAB

MADE IN USA

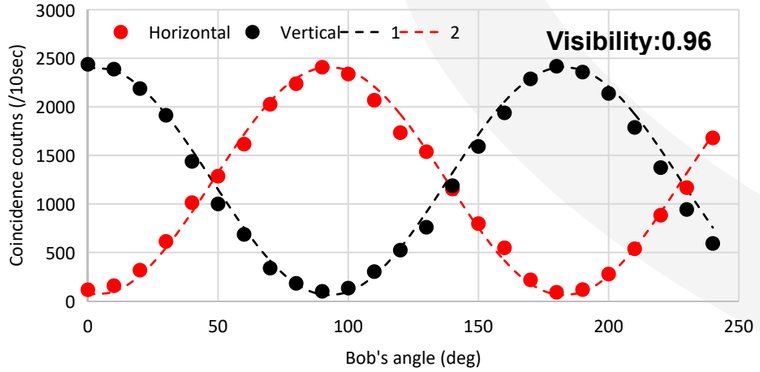
WORLD FIRST

Quantum Light Source

SIGNAL & IDLER SPECTRUM EXAMPLE

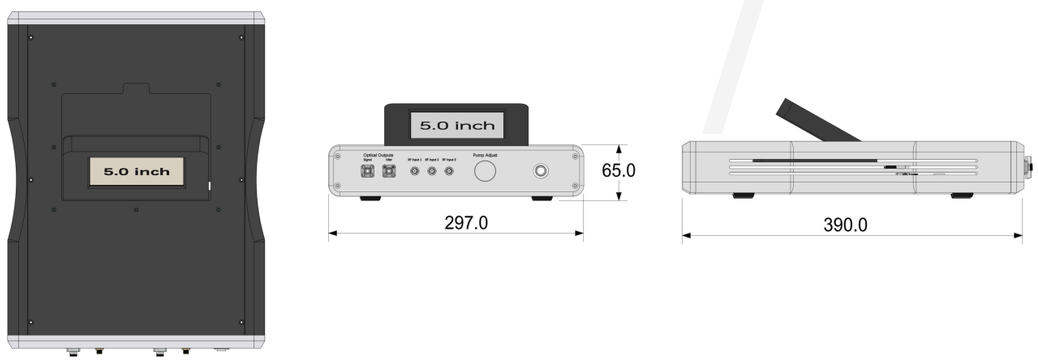


VISIBILITY INTERFERNECE TEST EXAMPLE

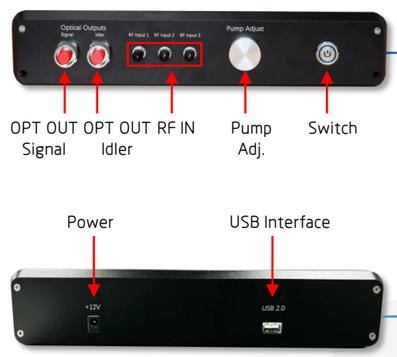


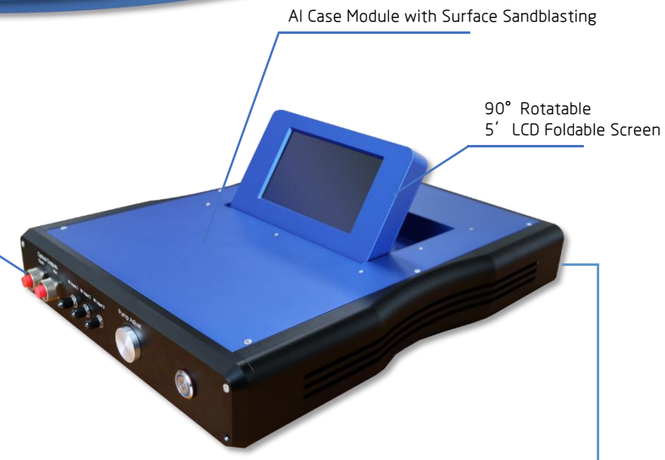
MECHANICAL DRAWING

UNIT: mm



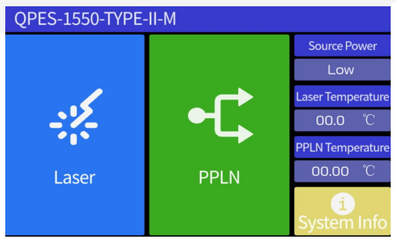
Package Introduction





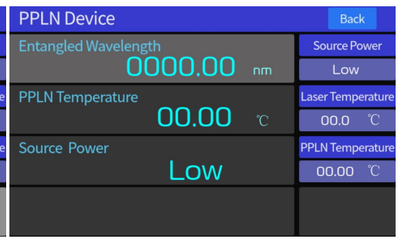
Screen Design

- Main Page

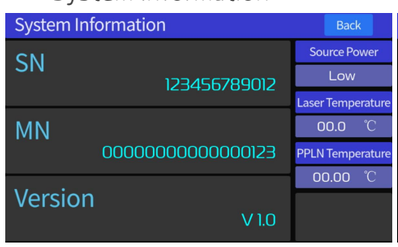


- LD Characteristic

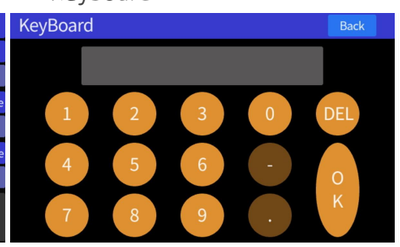
- PPLN Characteristic



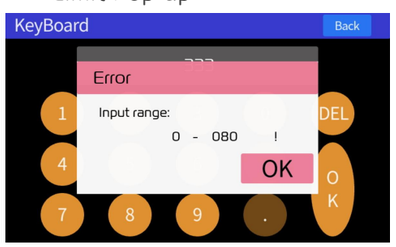
- System Information



- Keyboard



- Limit Pop-up



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