*Nu*Crypt

Polarization Analyzer
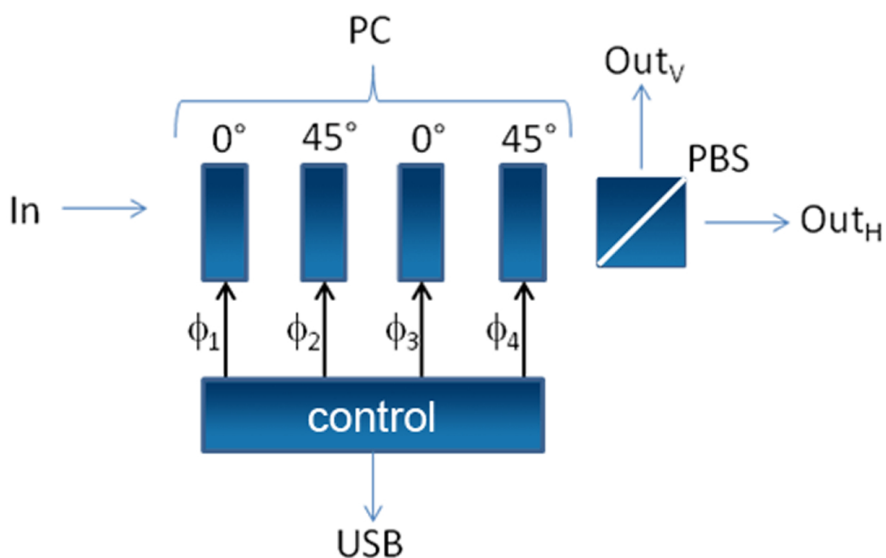
PA-1000 is a computer-controlled polarization analyzer, consisting of a calibrated polarization controller followed by either a linear polarizer (standard configuration) or a polarizing beam splitter (-P option for two optical outputs). Four variable waveplates with their optical axes oriented at 45° angles with respect to neighboring waveplates perform the polarization control. The PA-1000 is typically used to select the desired basis state when measuring quantum entangled states of light. In conjunction with an entangled photon source (such as the EPS-1000) and a suitable single photon detection system (such as the CPDS-1000) the PA-1000 will measure two-photon interference (TPI) fringes. The PA-1000 is designed to operate in an integrated fashion with the NuCrypt Correlated Photon Detection System (CPDS-1000). When ordered with the optional system control software, the PA-1000 and CPDS-1000 coordinate their actions to allow for automated measurements, including TPI fringe measurements, in any prescribed measurement basis.

PA-1000 shown with the -P option

- *Select basis states when measuring polarization entangled photons*
- *Fiber coupled with 1dB insertion loss*
- *Computer controlled for automated operation*
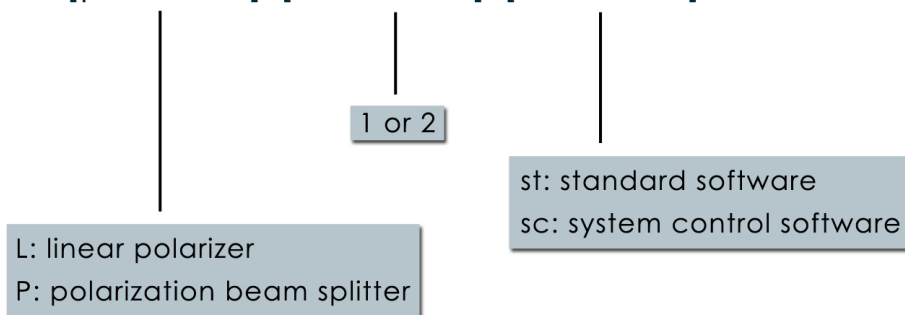
*Product Specifications   PA-1000

- Repeatability: ±2° on Poincaré sphere
- Maximum basis reconfiguration speed: 10 ms (±2° of final value)
- Polarization Extinction Ratio: >20 dB
- Insertion Loss: 1 dB (1.5 dB with -P option)
- Package: 19" 2U rack mountable
- Wavelength Range: User specified (C or O band)
- Phase control range on each variable waveplate: (0-180°)

Typical Applications for the Polarization Analyzer (PA-1000)

- Measuring polarization correlations in entangled photon-pairs of light
- Polarization state generation and analysis

Options For Polarization Analyzer Model: PA-1000

PA-1000-[polarizer]-[channels]-[software]

1 or 2

st: standard software
sc: system control software

L: linear polarizer
P: polarization beam splitter

Option Description:

Polarizer: linear polarizer (one output port) or polarization beam splitter (two output ports)

Channels: number of independent polarization analyzers in one chassis

Software: standard (PA control software) or system control (PA, CPDS, and EPS) for fully automated measurements

(* Specifications listed above are estimates subject to change without notice)