

# MagiQ Research Labs (MRL)

## Fiber Optics Interferometers

### Applications

- Metrology
- Sensing
- Quantum Information
- Remote Sensing

### Key Features

- Active optical path stabilization
- LabVIEW® interface
- Multiple loops available

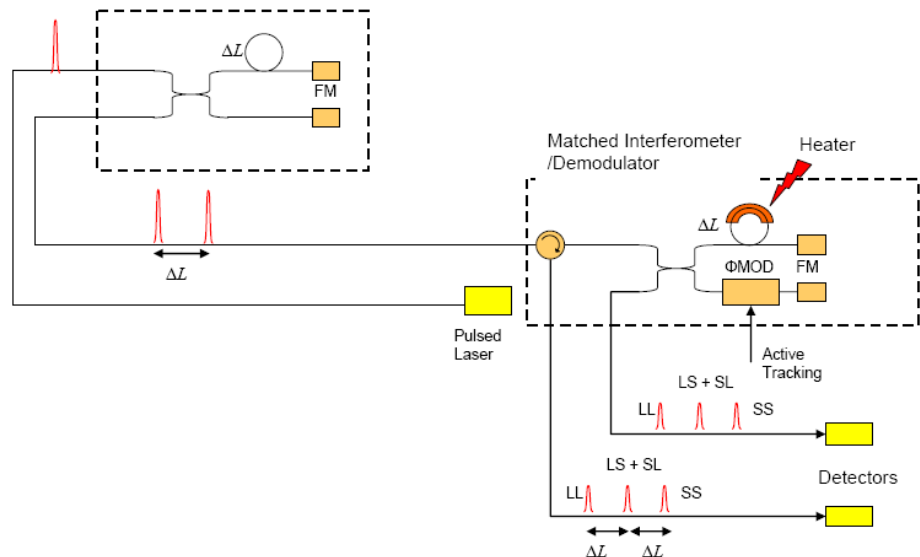
### Specifications

- Physical/Environmental  
Power – 100/120/220/240VAC  
Dimensions – 19" rack mountable
- Control Interface  
 LabVIEW®
- Path Delay – up to 500 ns (longer delays available on request)
- Interferometer mismatch <20 nm
- Visibility 17 dB (at 100 – km separation)
- Excess optical loss 5dB (low loss option available)
- Tracking bandwidth - 2 kHz
- Maximum loop separation – 150 km

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- **Mach-Zender**
- **Michelson**
- **Full Electronic Control Option Available**
- **Exactly Matched Path Differences**

MagiQ Technologies, Inc. has recently developed QPN8505 – a new generation Quantum Key Distribution System. One of the key innovations in this system is a pair of stabilized perfectly length-matched fiber interferometers. The interferometer at one side of a fiber link is able to actively track and reject mechanical vibrations to keep the phase match between the link endpoints extremely precise. Our propriety approach guarantees length match to within 20 nm for up to 150 km interferometer separation (30 dB loss). This approach is easily extendable to fabricating low-cost stabilized length-matched interferometer arrays.



#### About MagiQ Research Labs (MRL)

MagiQ Research Labs provides custom products, design engineering, and contract research and development services for optics, quantum information, fiber sensing, aerospace and defense applications. MRL also contracts directly with private firms and government agencies such as the Army, DARPA, and NASA.

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