

FEATURES & BENEFITS

One or a combination of the following factors prompt the need to use our all fiber technologies and solutions.

- Non-contact sensing
- Power-free safe sensing
- On-line or real-time, dynamic sensing
- Precision measurements
- Cost-effective solutions

We offer:

- Innovative, low-cost designs
- Commercialization
- Low-cost manufacturing

Founded in 1990 as a privately held corporation, Optiphase, Inc. is a leading provider of interferometric fiber optic sensor solutions. Our products include sophisticated fiber optic and electronic instruments and assemblies serving the scientific and technical community seeking precision optical test and measurement devices. We also partner [OEM] with system integrators providing semi-custom assemblies and components for a wide variety of commercial market / industry applications. In addition to our product solutions, we offer a wide range of design services and consultation to application specific markets such as Biomedical, Industrial, Security and Geophysical.

Our technology focus is

concentrated in two key areas:

[White Light Interferometry](#)

Involve Optical Coherence Domain Reflectometry (OCDR) and Optical Coherence Tomography (OCT) techniques involving unique all-fiber broadwave designs for industrial process control and biomedical applications.

[Sensor Interrogation Techniques](#)

Phase demodulation for fiber interferometers involves methods for interrogating dynamic fiber optic sensors and converting the optical phase information to electronic data or signals that accurately represent the measurements of a wide variety of physical parameters in various environments.

INDUSTRIES / APPLICATIONS / USES

OCT / OCDR

Biomedical	Catheter guidance; tissue imaging; dental caries and gum disease
Instrumentation	Low-coherence reflectometry / tomography
Film, Coatings and Adhesives	Industrial process, coatings and adhesive thickness measurements
Pharmaceutical & Chemical	Particle size and scattering measurements

SENSOR INTERROGATION

Security	Perimeter intrusion / detection systems
Smart Structures	Large structure strain and stress monitoring
Oil & Gas Services	Dynamic seismic sensing of geophysical properties
Photonics	Laser characterization; interferometric instrumentation
Metrology	Displacement sensing

Our customers include:



PRODUCT LINES

INSTRUMENTS



HSR-3000 High Speed Reflectometer

The revolutionary all-fiber optical topology delivers precise non-contact measurements of multi-layer materials and scattering media. Sweep speeds of up to 5 m/sec, precision to 1 mm, sweep range of 7 mm. Easy-to-use LightView™ software puts the user in control. Available in single or dual wavelength models.



OPD-4000 Optical Phase Demodulator

World's leading instrument for measuring wide angle interferometric phase change. Features high resolution, large dynamic range, adjustable modulation frequency, high pass filter with digital and analog output, selectable data averaging, servos and PhaseView™ software control. Single channel and multi-channel configurations available in two chassis sizes.



V-600 Tunable Optical Converter

General purpose photonics instrument, converts optical to electrical signals. The 1 MHz frequency response, large dynamic range, low noise operation, independent controls for gain, high and low pass filters assure exceptionally high performance. Battery or wall mount power and rugged construction make it ideal for mobile and fixed operation.

ASSEMBLIES



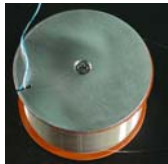
AIF-01 OCT / OCDR Optical Sweep Engine

An all-fiber autocorrelator-based Optical Sweep Engine designed for low cost and ease of use for integration into OCT / OCDR systems. Features include high-speed sweeping, high resolution, arbitrary probe lengths, no polarization adjustments, low optical loss and standard interfaces. Ideal for medical device integration.



PZ1-STD Low-profile Fiber Stretcher

Fiber-wound piezoelectric element for use in open-loop demodulation, sensor simulation and general purpose modulation of interferometric phase. Unique multi-layer winding enhances modulation while maintaining high modulation frequency.



PZ2-HE High-efficiency Fiber Stretcher

High-efficiency piezoelectric element for use in open and closed-loop demodulation, sensor simulation, white-light scanning interferometers, and large-angle modulation of interferometric phase. Custom configurations available for OEM integration. Ideal for OCT / OCDR applications.



PDR-01 Polarization Diversity Receiver

For interferometers with polarization fading, a small form factor Polarization Diversity Receiver [PDR] is available. Featuring Optiphase's "Tri-state" design, the units are configured with optics only or with receiver electronics.

UNDER DEVELOPMENT

TDM

Optiphase is developing low cost solutions for Time Division Multiplexed (TDM) fiber-optic interferometric interrogation of multi-channel sensor arrays. This development extends to the interrogation optics, the demodulation electronics and the digital data interface. More details for this technology can be found at http://www.optiphase.com/low_cost_tdm.htm. Demonstration technology will be available Q3, 2005.