

Fiber Optic Test Equipment

OZ Optics Limited

September 2024



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- **OZ Optics Canada**
- **OZ Optics Türkiye**
- **OZ Optics China**



Company Background



- **Founded in 1985**
- **Corporate Headquarter Located in Ottawa, Canada**
- **Manufacturing Facility in Ottawa / Canada, Izmir / Türkiye and Jiaxing / China**
- **Ten Product Groups:**
 - Laser-to-Fiber Delivery Systems
 - High Power Fiber Optic Components
 - Polarization Maintaining Products
 - Attenuators
 - Opto-Electronic Packaging
 - Fiber Optic Test Equipment
 - Fiber Optic Sensor Systems
 - Fiber Optics Components for Gyroscope
 - OCT
 - BioPhotonics
 - Quantum
- **Sales Offices in Canada, USA, Europe, Türkiye and China**

➤ Ottawa, Canada



➤ Izmir, Türkiye



➤ Jiaxing, China



Corporate Statements and Quality Policy



Our Vision

- ✓ Capture and expand market share
- ✓ Be the preferred supplier of choice
- ✓ Maximize shareholder value

Our Mission

To become the leading provider of innovative optical products to telecom and non-telecom sectors

Our Core Values

- ✓ Leadership
- ✓ Teamwork
- ✓ Boldness
- ✓ Commitments
- ✓ Innovation
- ✓ Rewards

Our Quality Policy

Provide our Customers with a competitive advantage, leveraging performance, price and delivery, through a continuous process of Quality advancement in all areas of our Company.

Communicate effectively to our Customers, Suppliers and Shareholders our commitment to Quality, continuous improvement and to abide by any applicable requirements.

Promote opportunities of professional development for all members of our company through education, training and personal challenge.



Company Profile

Over 467 employees worldwide

OZ Canada



243+
Employees

OZ China



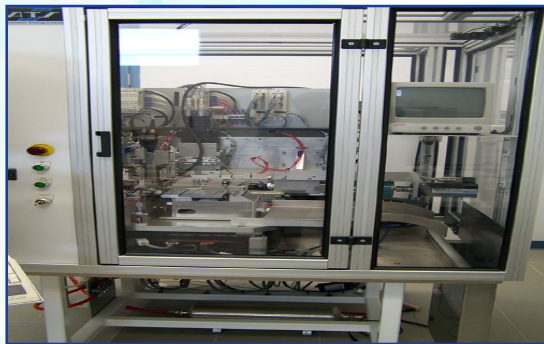
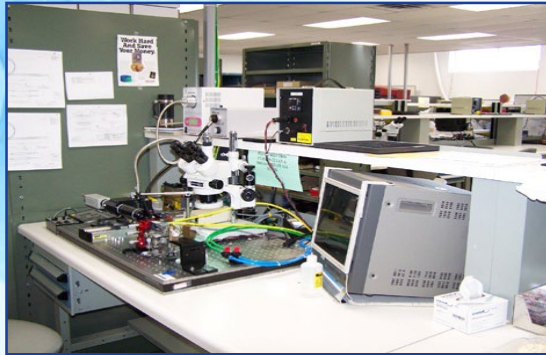
87+
Employees

OZ Türkiye



137+
Employees

Company Profile



Advanced Proprietary Processing Technology



**Canada
Certificate: FM 63463**



**China
Certificate: FM 577647**



**Turkey
Certificate: FM 601414**

ISO9001:2015 Certified



Broad Patent Portfolio



Company Profile

OZ Optics is Lead by an Experienced Team:

- **Ömür Sezerman, Chairman, President & CEO**
 - Founder and CEO since inception (40 years)
- **Zahide Sezerman, VP of Human Resources**
 - With OZ Optics since inception (40 years)
- **Garland Best, VP of Components Division**
 - 33 years at OZ Optics
- **Gordon Youle, VP of Test Equipment Division**
 - 26 years at OZ Optics
- **Saeed Pilevar, Senior VP of Business Development**
 - 3 months at OZ Optics
- **Onur Koca, General Manager of OZ Türkiye**
 - 3 year at OZ Optics
- **Bing Li, General Manager of OZ Optics China**
 - 21 years at OZ Optics



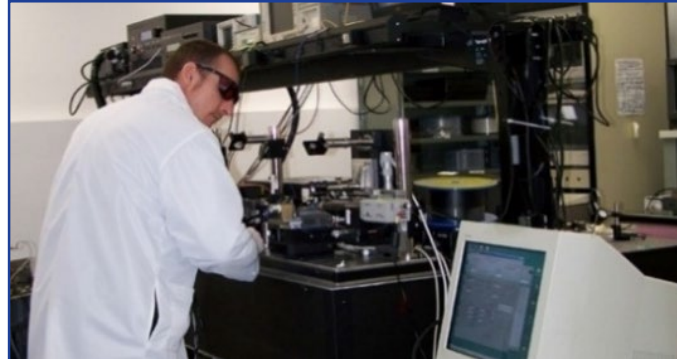
Company Profile

**Experienced and Well-Trained Staff in Following Fields:
Optical, Mechanical, Electronics & Software**

➤ CNC Machine Shop



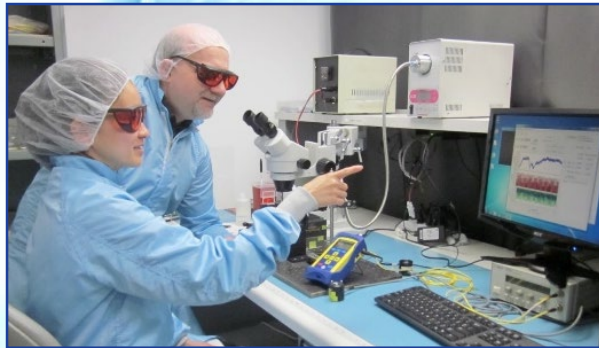
➤ Femto-Second Laser Lab



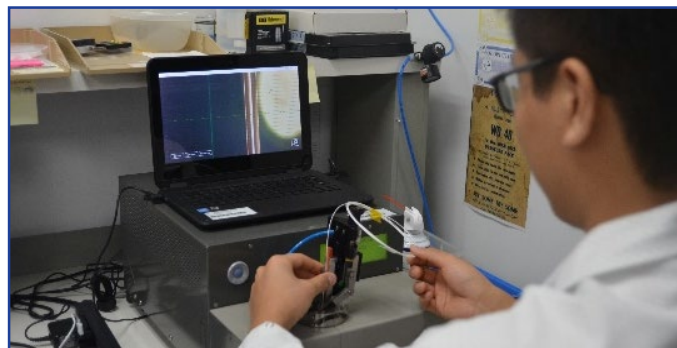
➤ AR Coating



➤ Clean Room



➤ Laser Conditioning / Cleaving





Core Competencies



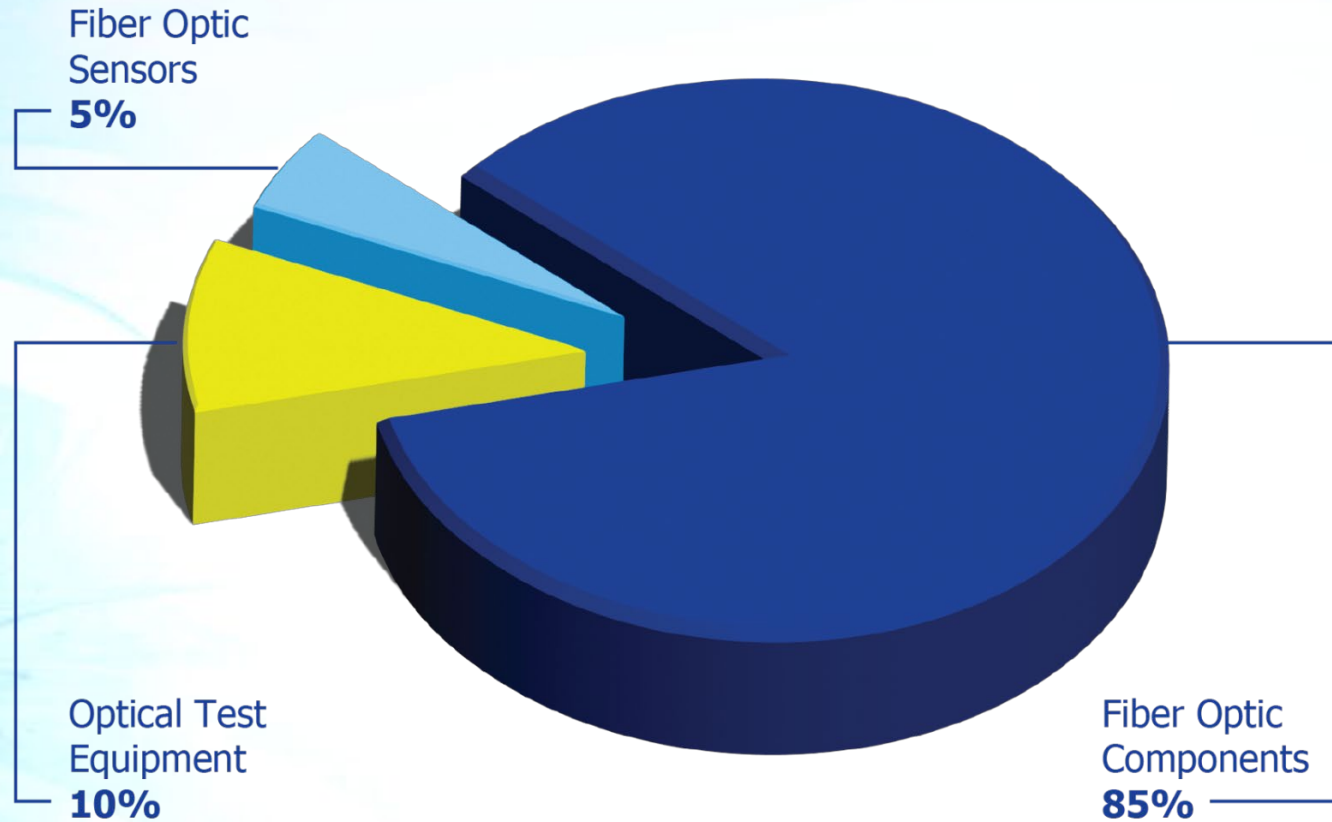
- **Pioneer in Polarization Maintaining (PM) Components & Custom Test Equipment, Including Polarization Test Equipment and FTTH Equipment**
- **Leader in Wavelength Flattened, High Power & Low PDL Components**
- **Leader in High Power Fiber Optic Delivery Systems**
- **Widest Range in Attenuator Product Offering**
- **Fiber Optic Distributed Strain and Temperature Sensors**
- **Complete product line for OCT, Gyroscope & BioPhotonics applications & 2 Micron**
- **Now available: Spectrometers and Quantum Light Sources**



Leading Technology



➤ **Three Product Groups** ➤ **Over 1,000 Products** ➤ **Leading Edge R&D**





Leading Technology

Featured Products

World's Largest Online Fiber Optic Catalog

Most Products are in Stock



Quantum Light Sources



Fiber Optic Products for Biophotonics Applications



Fiber Optic Products for Gyroscopes



Polarization Maintaining Components



Delivery Systems



High Power Components



Test Equipment




High and Low Power Patchcords

Polarization Maintaining Fiber Optic Components

Patent Numbers: USA 7058275, 7095931, 7295731, China 1672073



Polarization Maintaining Connectors and Patchcords



Polarization Maintaining and Polarizing Splitters / Combiners / Fused Couplers / Switches



All Fiber Manual and Electrically Driven Polarization Controllers / Seramblers



Polarization Dependent Loss Emulators



Fiber Pigtailed Polarizers



PM Fiber Directional Taps and PLC Splitters



Isolators



PM Fiber Pigtailed Circulators

Laser and Laser Diode to Fiber Delivery Systems



Laser to Fiber Couplers



Pigtail, Receptacle Style Collimators and Focusers



Bulkhead Receptacles



Bare Fiber Adaptors with Magnetic Clips



Wavelength Division Multiplexers(WDMs) and R&B Combiners



OCT Modules and 2 micron Components



Evanesence Based Variable Split Ratio Fiber Splitter/Coupler



OEM Laser Diode to Fiber Couplers

High Power Fiber Optic Components

Patent Numbers: Canada 2494133, USA 7058275, 7095931, 7295731, China 1672073



High Power, High Temperature Connectors and Patchcords



OZPEN™ CO-2 Fiber Optics Cleaning Unit for High Power Components



High Power Laser to Fiber Couplers, Collimators and Focusers



High Power Mode Field Adapters



High Power Optical Taps and Power Monitors



High Power Isolators



High Power Splitters and Wavelength Division Multiplexers (WDMs)



Shutters, Receptacles and Sleeve Thru Adapters with Sensors



Leading Technology

Featured Products

Fiber Optic Attenuators

Polarization Maintaining, Single Mode and Multi-Mode Fibers



Benchtop Digital

Variable Attenuators



Digital Variable Attenuators

Electrically Controlled Variable Attenuators

MEMS Variable Attenuators



PM, SM and MM Fiber Pigtailed Inline Variable Attenuators

Single and Multi Channel Miniature Variable Attenuators

Reflective Style Variable Attenuators



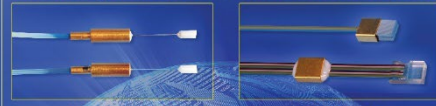
Air Gap Variable Attenuators

Plug Type Fixed Attenuators

Attenuating Fiber Patchcords

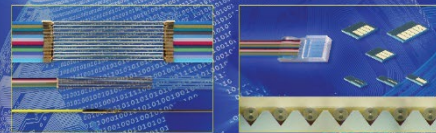
Fiber Optic Components for Optoelectronic Packaging

Hermetically Sealable Patchcords with Glass or Metal Solder



Single Channel

Multi Channel



Metalized Fibers

PM, SM and MM Fiber Pigtailed V-Groove Arrays



Polarization Measurement System for V-Grooves

Tapered, Lensed Fiber, Polished and Laser Shaped



Precision Collimator and Focuser Array

Fused Fiber Collimator

Fiber Optic Test Equipment



Quantum Entangled Photons Sources

High-Resolution Optical Spectrometers



Optical Fiber Length Meters

Back Reflection Meters

High-Speed Polarization Controller-Scrambler



Handheld and Benchtop Extinction Ratio Measurement Systems

Multichannel, Benchtop and Handheld Digital Variable Attenuators

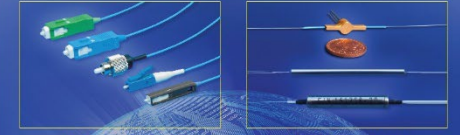


High Power Visual Fault Locators

Powermeters with Smart Detector Heads

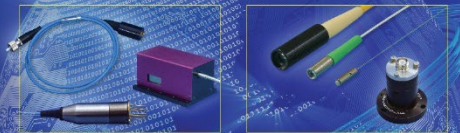
Laser Diode Stable Sources

Fiber Optic Components for 2 Micron Wavelengths



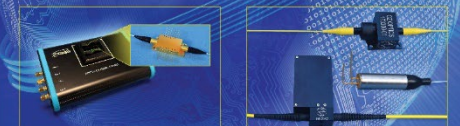
Fiber Optic Patchcords

Fused Couplers, Taps, Beam Splitters and Combiners



Fiber Pigtailed Laser Diode Sources

Pigtailed, Rectangular Style Collimators and Focusers



High Speed Electro-Optic Polarization Controllers and Scramblers

Manual and Electrically Controlled Variable Attenuators



Polarizers

Isolators



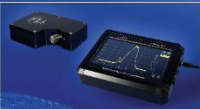
Leading Technology

Featured Products

New Fiber Optic Products



Polarization Entangled Photon Sources



High-Resolution Optical Spectrometers



High Speed Electro-Optic Polarization Controllers and Scramblers



Polarization Entanglement Tomography Analyzers



Fiber Optic Coils For Gyroscopes



Universal Optical DNA Band Detection Systems for Pathogens



Motor Driven Polarization Dependent Loss Emulators



Detector Heads and Optical Power Monitors



Fiber Optic Products for Gyroscopes



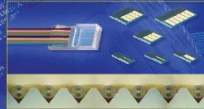
Fiber Optic Coils for Gyroscopes



ASE Sources



Wavelength Division Multiplexers



PM, SM and MM Fiber Pigtailed V-Groove Arrays



Fused Couplers, Taps, Beam Splitters and Combiners



Fiber Optic Polarizers



Fiber Optic Patchcords



SM and PM Fiber Pigtailed Circulators



Isolators

Quantum Entangled Photons Sources



Hyper-Entangled Photon Source Broadband Telecom



Polarization-Entangled Photon Source Broadband Telecom



Bright Polarization-Entangled Photon Source Broadband Telecom



Bright Polarization-Entangled Photon Source Narrowband Telecom



Correlated Photon Pair Sources



Polarization-Entangled Photon Source Narrowband at 610 nm



Polarization Entanglement Tomography Analyzer

Fiber Optic Products for OCT Applications



OCT Modules



Manual and Electrically Controlled Broadband Variable Attenuators



Manual and Electrically Controlled Fiber Optic Delay Lines



Manual and Electrically Controlled Polarization Controllers / Scramblers



Fiber Pigtailed Broadband SLED Sources



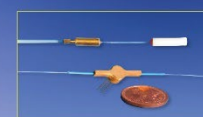
Fiber Collimators / Focusers



Broadband Fused Couplers



SM and PM Fiber Pigtailed Circulators





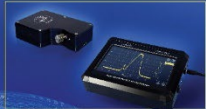
Leading Technology

Featured Products

Fiber Optic Products for Biophotonics Applications



Universal Optical DNA Rapid Detection Systems for Pathogens



High-Resolution Optical Spectrometers



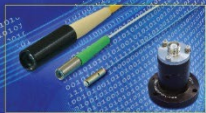
Fiber to Photodiode Couplers with Removable Filters



High and Low Power Patchcords



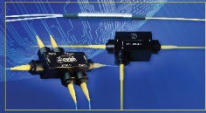
High Power Laser to Fiber Couplers



Pigtails, Rectenable Style Collimators and Focusers



Fiber Optic U-Bracket Assemblies



Wavelength Division Multiplexers and Beam Splitters



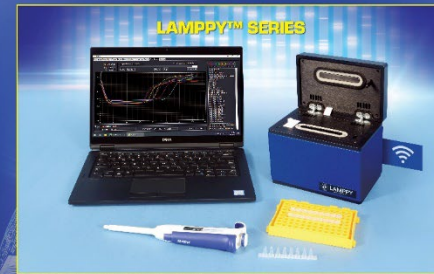
Turnkey, Ultra Stable Laser Modules



Pocket Optical Power Meter and Detectors

Universal Optical DNA Rapid Detection System

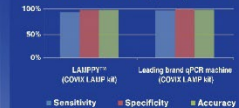
For Pathogens Including:
COVID-19, SARS, EBOLA, CHOLERA, SALMONELLA, ETC.



Features:

- Use to detect viral, fungal, and bacterial DNA/RNA
- Rapid DNA/RNA detection (as little as 20 minutes)
- Highly sensitive and specific detection of low viral levels
- Intuitive software displays real time data during testing
- Melt analysis available with the included software
- Lid heater prevents evaporation and condensation
- Compact modular design allows for easy cleaning and maintenance
- Pair with an external battery for a portable and field-deployable system
- Test up to 8 samples simultaneously (higher throughput systems with up to 96 samples available upon request)
- Wireless communication with dual-band Wi-Fi and Bluetooth connectivity
- A fraction of the cost of qPCR based systems
- OZ Optics also offers private labelling for volume OEM applications

Clinical trial: LAMPYY™ vs. Leading brand qPCR machine

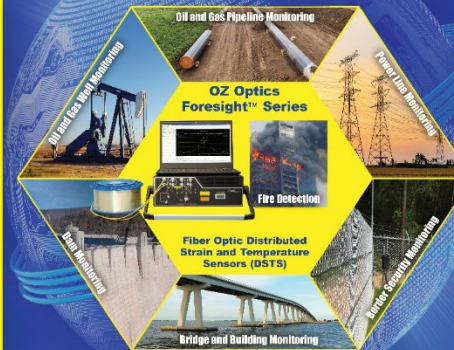


In a lab study done at Acibadem University using saliva samples taken from patients at the Acibadem Hospitals, LAMPYY was compared to a well-known conventional qPCR machine in performance and speed. The comparison study was carried out with a sample size of 262 using the COVID LAMP-based kit on both instruments and then verified with the KrosQuant SARS-COV-2 (2019 nCoV) Real Time PCR Diagnostic Kit on a leading brand conventional qPCR machine.

Fiber Optic Distributed Strain and Temperature Sensors

USA Patent Numbers: 7499151, 7599047, and 9568307

- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 200 km sensing range
- Uses standard telecommunications fibers to minimize costs



Fiber Optic Sensors for Pipeline Monitoring

USA Patent Numbers: 7499151, 7599047, and 9568307

- Pipeline leakage detection
- Sensitive detection of corrosion / erosion, cracks and buckling
- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 200 km sensing range
- Uses standard telecommunication fiber to minimize costs



Fire Detection



Leading Technology Featured Products



Fiber Optic Sensors for Fire Detection

USA Patent Numbers: 7499151, 7599047, and 9568307

- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 200 km sensing range
- Uses standard telecommunications fiber to minimize costs



Fiber Optic Sensors for Bridges, Dams and Buildings

USA Patent Numbers: 7499151, 7599047, and 9568307

- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 200 km sensing range
- Uses standard telecommunications fibers to minimize costs



Bridge Monitoring



Dam Monitoring



Building Fire Detection

Fiber Optic Sensors for Power Line and Smart Power Generator Monitoring

USA Patent Numbers: 7499151, 7599047, and 9568307

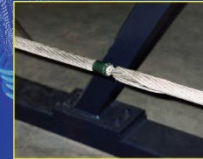
- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 200 km sensing range
- Uses standard telecommunication fiber to minimize costs



Underground Power Line Monitoring



Power Line Monitoring



Optical Ground Wire (OPGW)



Construction of OPSW



Gas Generator Monitoring

Fiber Optic Sensors for Security Monitoring

USA Patent Numbers: 7499151, 7599047, and 9568307

- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 200 km sensing range
- Uses standard telecommunication fiber to minimize costs



Border Security Monitoring



Highway Health Monitoring



Industry Standards

All Products Manufactured are in Strict Accordance with International Industry Standards:

- **ISO 9001:2015 Certified (Canada, China and Türkiye)**
- **REACH Compliance**
- **RoHS Compliance**
- **CE Compliance**
- **Telecordia Compliance**
- **Controlled Goods Directorate Registered**
- **Critical Supplier for F35 and F18 Project**
- **TSCA (Toxic Substance Control Act) Compliance**
- **CHEMSHERPA Compliance**
- **IEC 61010 Compliance**



Marketing Strategy

Application Market



Using our strong direct sales and distributors, we address the following markets:

- **Energy – Oil and Gas**
- **Military and Homeland Security**
- **Educational**
- **Industrial**
- **Telecom / Datacom**
- **Medical & Pharmaceutical**





Marketing Strategy

Application Market

By leveraging the technology and expertise gained since its inception, OZ Optics has attracted a broad range of customers in the telecom / datacom, medical, military, security, industrial, construction, aerospace, power utilities, petrochemical and educational sectors.





Marketing Strategy

Global Sales Network

OZ Optics has resellers and distributors in over 30 Countries and Regions with over 10,000 customers worldwide:



Austria



Germany



Luxembourg



Sweden



Belgium



Greece



Netherlands



Switzerland



Brazil



Hong Kong



Norway



Taiwan



Canada



India



Poland



Thailand



China



Ireland



Portugal



Türkiye



Denmark



Italy



Singapore



United Kingdom



France



Japan



South Korea

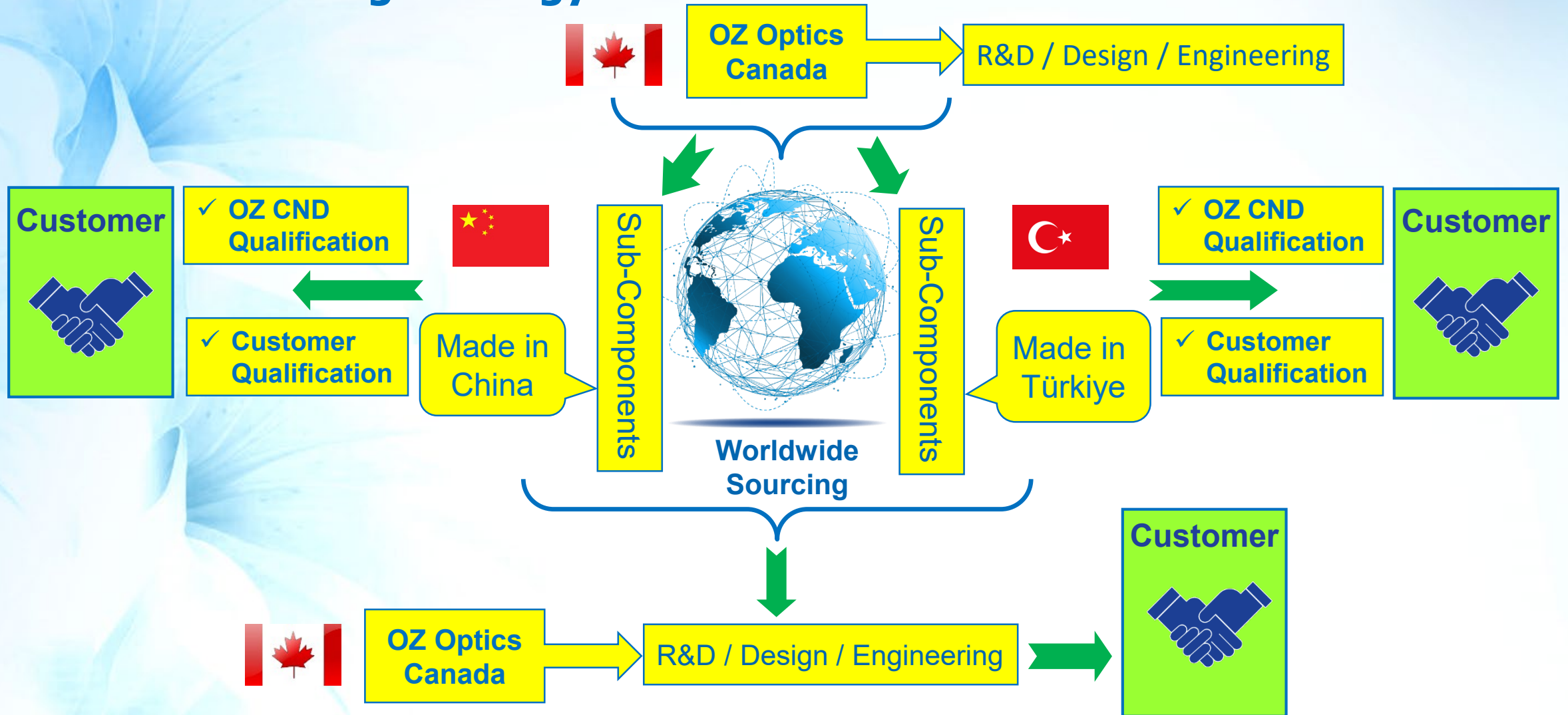


United States



Operation Strategy

Manufacturing Strategy





Marketing & Operation Strategy

Competitive Advantage

- Superior Technology
Innovative Engineering
- Competitive Pricing
- Global Presence
- Extensive Experience
In Fiber Optics Manufacturing
- Exceptional Quality and Service



Branch Network



OZ OPTICS CANADA (Headquarters)



OZ OPTICS TÜRKIYE (Türkiye Factory)



OZ OPTICS CHINA (Jiaxing Factory)



Branch Network

Facility - Ottawa Headquarters

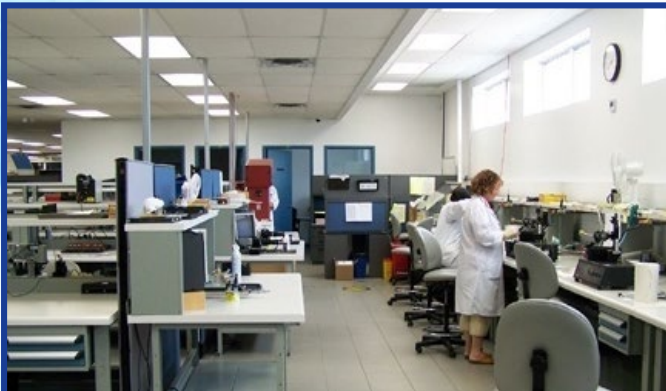
- 60,000 sq ft. - Manufacturing and R&D Facilities
- 15,000 sq ft. - Admin, Sales and Marketing
- 15,000 sq ft. - Training and Fitness Facilities





Branch Network

Facility - Ottawa Headquarters



Production Area



Training Centre Building



Meeting Room



Swimming Pool



Branch Network

Facility - Türkiye Factory (Izmir, Türkiye)

- Operational Since 2000
- 33,000 sq ft. Manufacturing Facility
- Located in Free Trade Zone
- Low Tax Rates
- Sub Component Parts Manufacturing
- High Quality Labor
- AR Coating Machine & Clean Room onsite





Branch Network

Facility - China Factory (Jiaxing, China)

- Operational Since June 2010
- Wholly Foreign Owned Enterprise
- Cost Effective Manufacturing
- High Quality Labor
- Supply Chain Integration





Branch Network

Facility - China Factory (Jiaxing, China)

- Located in Economic Development Zone
- 4000+ sq meters - Total Area
 - 500 sq meters – Administration, Sales and Marketing
 - 3500 sq meters – Manufacturing Area
 - ✓ 500 sq meter – Class 10,000 Clean Room
 - ✓ 300 sq meter – ESD Working Area





OZ Optics China

Zhejiang OZ Optics Technologies Co., Ltd

- Operational since June 2010
- Wholly Foreign Owned Enterprise
- NPI & Production Line Setup
- On-site Training by OZ CND
- Began Mass Production in September 2010
- Completed Main Facility Expansion in 2019





Fiber Optic Test Equipment

OZ Optics offers a wide range of standard test equipment, as well as a range of specialized equipment for polarization related measurements.

Features:

- **Many Types of Optical Sources Are Offered**
- **Fixed and Tunable Filters Are Available**
- **A Variety of Types of Optical Power Meters Are Available**
- **Instruments for Measuring Polarization Are Offered**
- **Fixed or Variable Delay Lines for Polarization Compensation Are Offered**



Fiber Optic Test Equipment

Recent additions to the OZ line of Test and Measurement Equipment Includes:

- **Entangled Polarization Photon Sources**
- **High Resolution Spectrometer**
- **Optical Signal-to-Noise ratio Generator**
- **High-Speed Polarization Controller-Scrambler**
- **Motorized Polarization Dependent Loss Emulators**
- **Benchtop Multichannel Motorized Attenuators**
- **Modulator Bias Controller**
- **ASE Sources**
- **Lamppy**



Fiber Optic Test Equipment

Many types of interfaces to OZ Optics instruments are offered, including:

- **USB- Standard (For Speed and Ease of Use)**
- **RS-232- Standard on Legacy Products**
- **SPI- For Embedded Systems**
- **Wireless- For Remote Access**

Custom interfaces are also available.

Polarization Extinction Ratio Meters

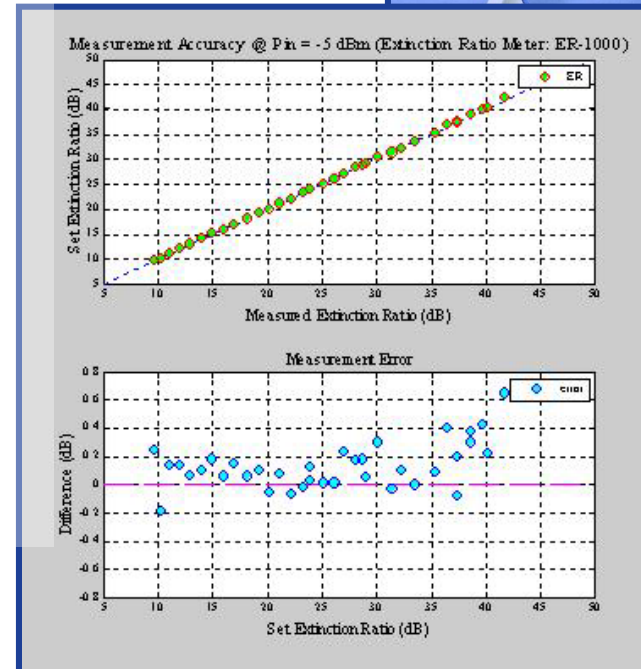
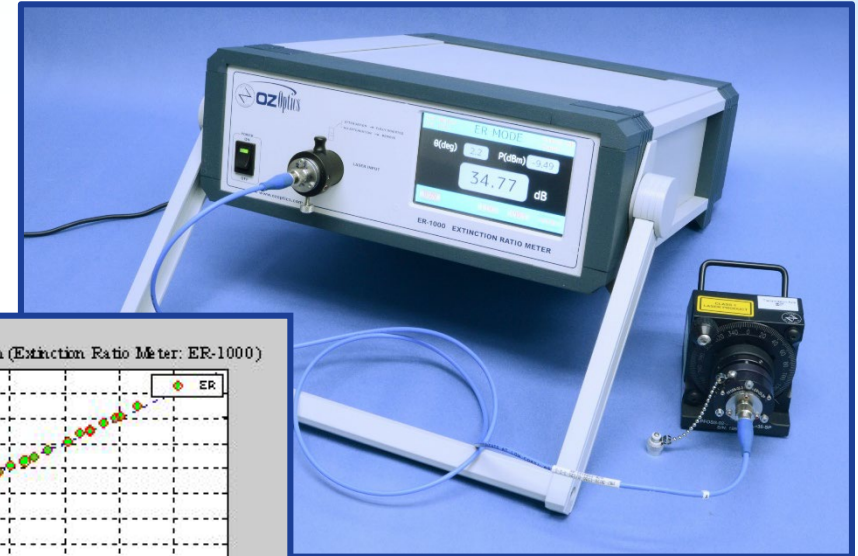
- **Measure up to 40 dB Extinction Ratio**
- **0.3 Degree Angle Resolution**
- **Up to 2 Watts with Removable Fix No Filters**
- **Broadband Wavelength: 400 – 2050 nm**
- **USB or RS-232 Interfaces Available**





Benchtop Polarization Extinction Ratio Meter

- Automatically Positions Fiber for Optimum Power
- Measures Angles to within 1°
- Measures up to 50 dB ER and up to 2 W
- Color Touch Screen Display
- Removable Receptacle





Highly Stable Polarized Sources

- As Good as 40 dB Extinction Ratio
- Pigtail & Receptacle Versions
- 375 to 2050 nm Wavelengths
- Motorized Polarization Rotator Available as an Option





Fiber Optic Polarized Sources

- As Good as 40 dB Extinction Ratio
- Pigtail & Receptacle Versions
- 635 to 2050 nm Wavelengths
- Motorized Polarization Rotator Available as an Option



Polarization Measurement System for V-Groove PM Fiber Assemblies



- Automatically Positions Fiber for Optimum Power
- Measures Angles to within 1°
- Measures up to 40 dB ER



Polarization Measurement System for V-Groove PM Fiber Assemblies



- Automatically Positions Fiber for Optimum Power
- Measures Angles to within 1°
- Measures up to 40 dB ER





Electrically Driven Polarization Controllers

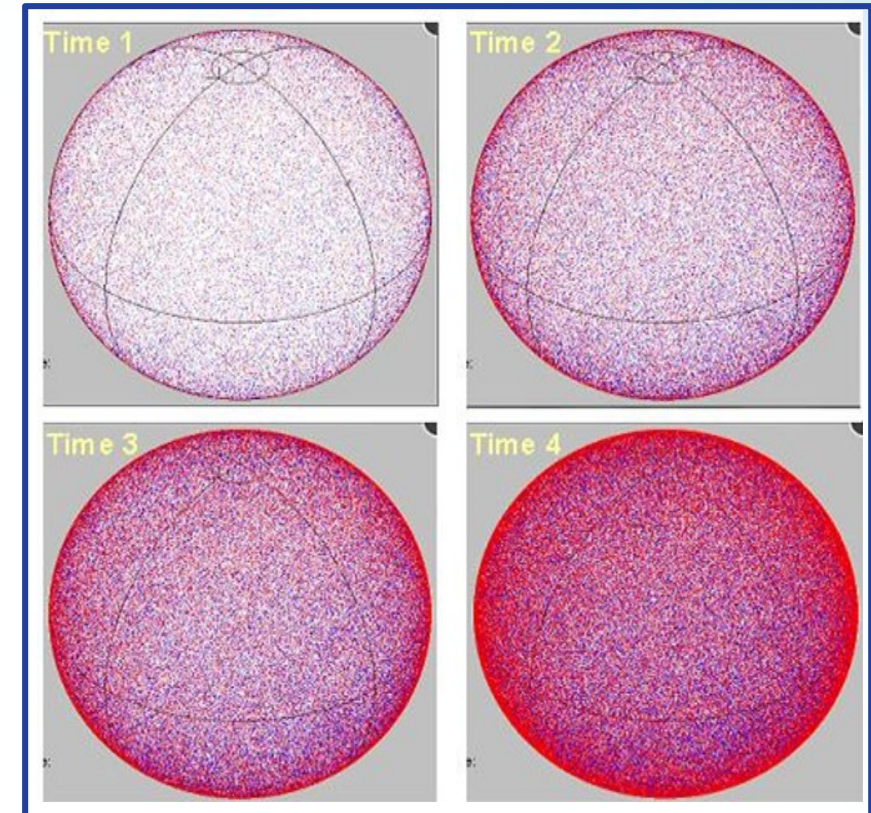
- **Continuous Control of Polarization**
- **No Insertion Losses or Return Losses**
- **> 100 Hz Response Speed**
- **Low Activation Loss**



High-Speed Polarization Controller-Scrambler Optical Module



- Continuous Control of Polarization
- Negligible Insertion Losses, Return Losses or PDL
- Up to 30 kHz Response Speed
- Inline and Low Activation Loss
- Compact and PCB Mountable





High-Speed Electro-Optics Polarization Controller-Scrambler



- Rapid Response Time (< 10 Us) and Linear Response
- Based on Solid State Crystals Design
- Long Operating Lifetime
- Low Activation Loss
- Compact and PCB Mountable

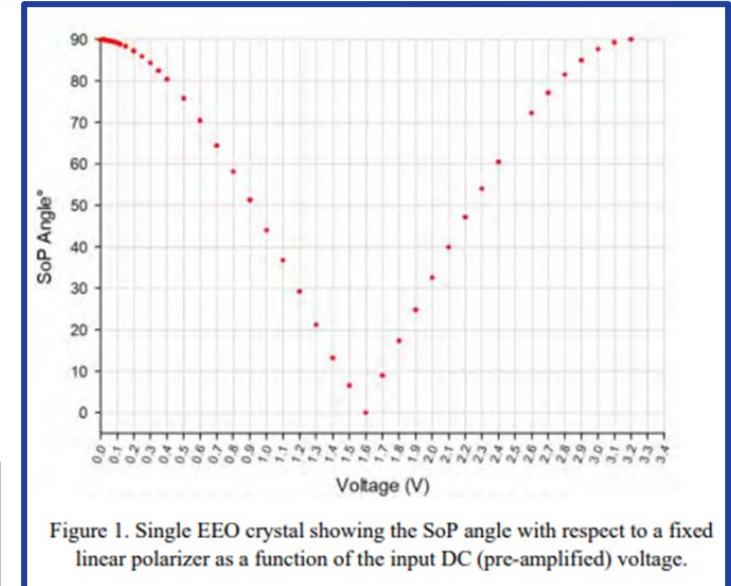
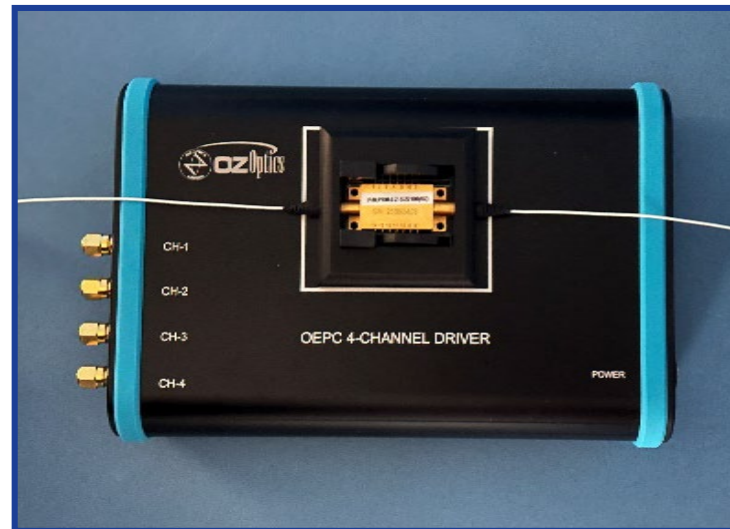
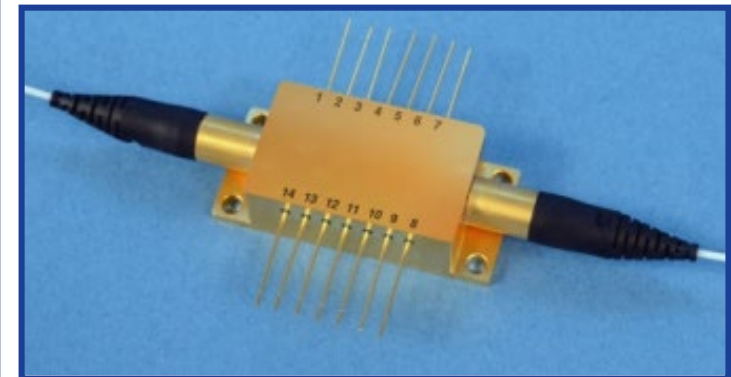


Figure 1. Single EEO crystal showing the SoP angle with respect to a fixed linear polarizer as a function of the input DC (pre-amplified) voltage.



Polarization Dependent Loss Emulator



- 0.05 dB To 10 dB Polarization Dependent Loss
- Fixed or Manually Variable PDL
- Broad Wavelength Range, Compact, and Low Cost
- PMD Free Optional (<0.1 ps)
- Very Low Wavelength Dependence

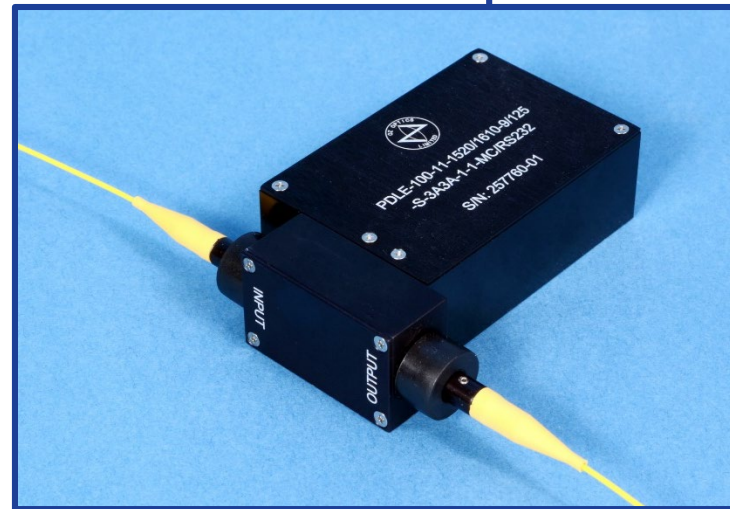
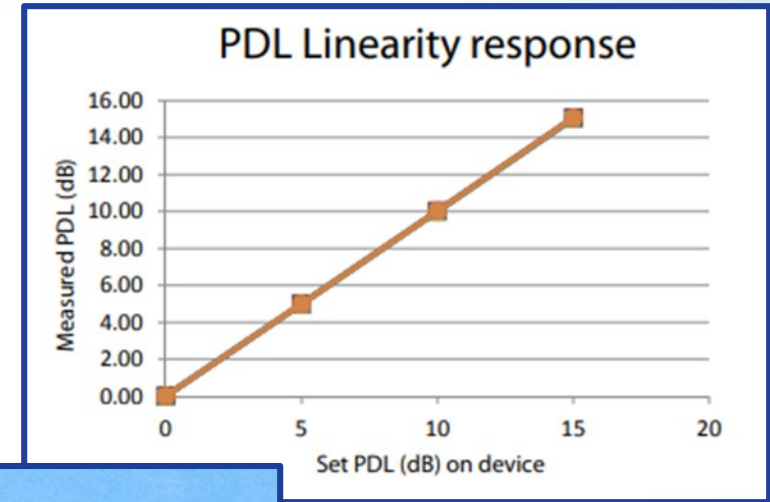




Motor Driven Polarization Dependent Loss Emulator - OEM



- 0.05 to 20 dB Polarization Dependent Loss
- High Resolution Electrically Controlled PDL
- Broad Wavelength and Low Wavelength Dependence
- PMD Free Optional (< 0.1 ps)
- Computer Interface: RS232, I2C or SPI

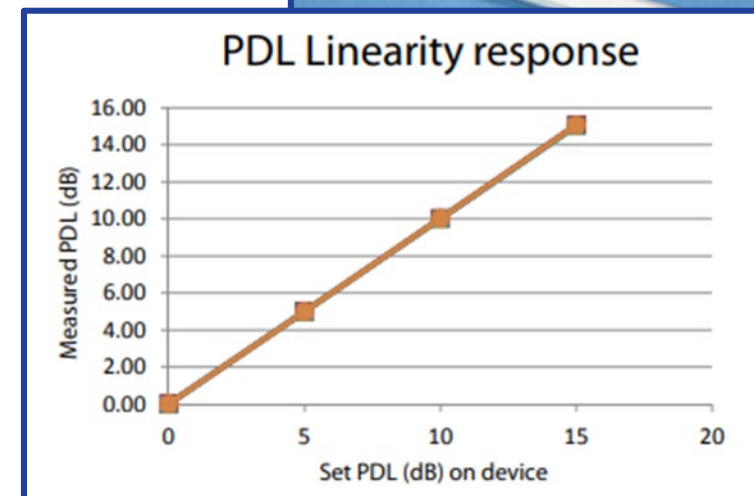




Motor Driven Polarization Dependent Loss Emulator - OEM



- 1 to 16 Channels Independent PDLE
- High Resolution Electrically Controlled PDL
- Broad Wavelength and Low Wavelength Dependence
- PMD Free Optional (< 0.1 ps)
- Computer Interface: USB as Standard



▶ Highly Stable Laser Diode Source



- Stable to ± 0.001 dB @ 1550 nm with FC/APC
- 375 to 2050 nm Wavelengths
- Built-in TE Cooler and Isolator



Light Sources



- Stable to ± 0.01 dB, LED, LD Source @ 1550 nm with FC/APC
- 635 to 2050 nm Wavelengths
- TE Cooled Versions Available with OZ-X000 and HIFOSS Styles



Laser Diode/LED Source

- 1, 2 Wavelengths in One Unit
- Selectable Power Levels
- Continuous or Modulated Output
- MM, SM, or PM Versions Available
- Long Battery Life (More than 40 Hours)





Laser Diode/LED Source

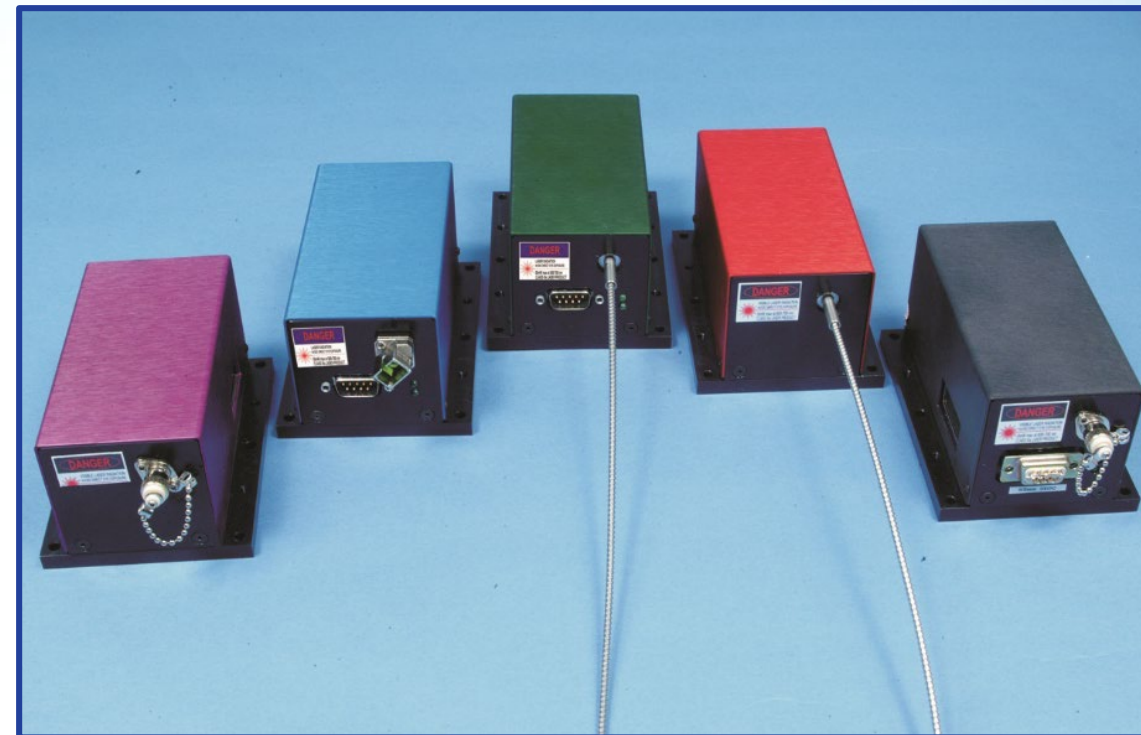
- Insertion Loss Measurement
- Fiber Identification Using Internal Modulation
- Splicing and Connection Testing
- FTTX/PON
- Quality Assurance



Ultra Stable OEM Laser Diode Source



- Output Powers to > 100 mW
- Power Stability to Better than 0.025 dB Depending on the Wavelength
- Wavelength Stability to < 0.1 nm
- Wavelengths from 375 to 2100 nm Available
- External Modulation to 50 MHz Available



Ultra Stable OEM Laser Diode Source



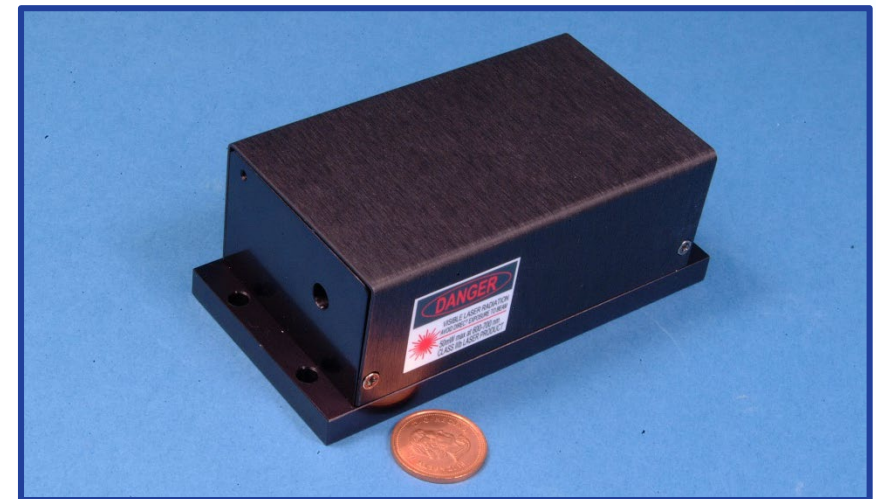
- Multimode, Singlemode, or PM Fiber Versions
- Free Space, Pigtail or Receptacle Styles
- Guaranteed Lifetime 18 Months or 5000 Hours
- Power Control via External Analog Voltage
- Custom Versions Available



Ultra Stable OEM Laser Diode Source



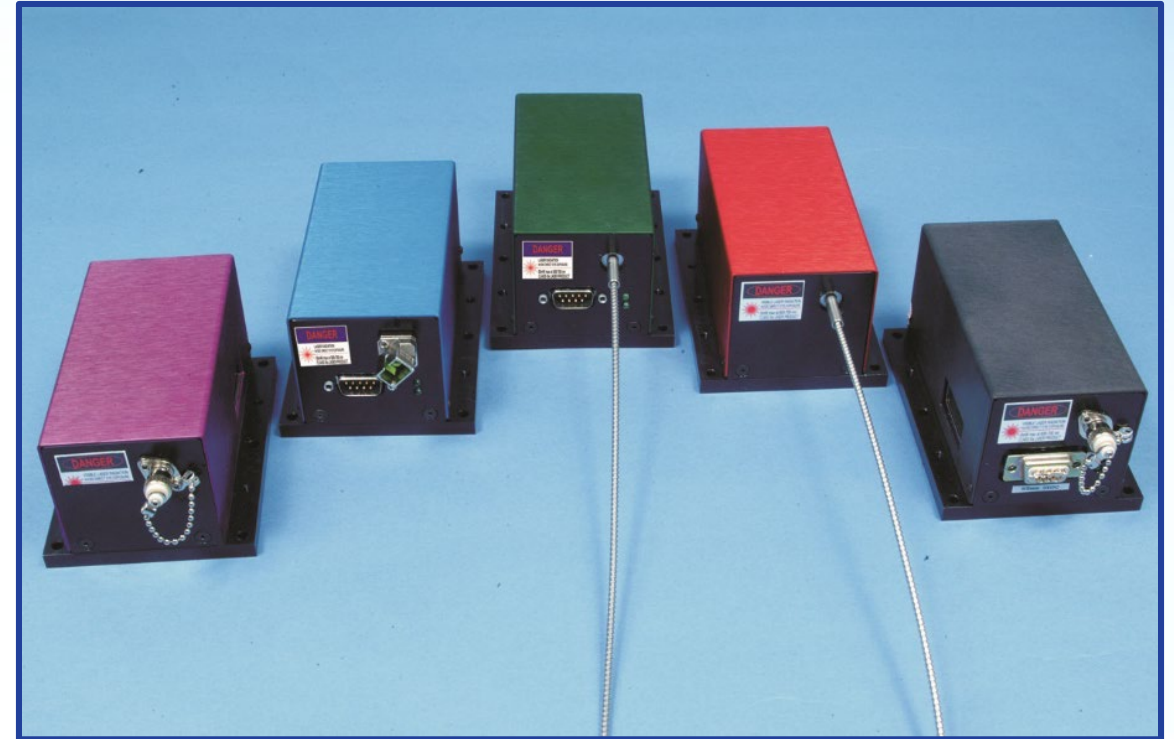
- Multimode, Singlemode, or PM Fiber Versions
- Free Space, Pigtail or Receptacle Styles
- Guaranteed Lifetime 18 Months or 5000 Hours
- Power Control via External Analog Voltage
- Custom Versions Available



Ultra Stable OEM Laser Diode Source



- Insertion Loss or Attenuation Measurement
- High Power or Remote Fiber Delivery System
- Materials Evaluation and Testing
- Life Science Illumination
- Laser Scanning Microscopy
- Red/Green/Blue Illumination Systems



Laser Diode Analyzer



- Integrated Temperature Controller
- Compact Plug-and-Play Laser Diode Analyzer
- Fast and Accurate LIV Curve Generation with 0.1 mA Resolution
- 15-bit Power Resolution
- Laser Diode Drive Current up to 500 mA
- 3 W Output Temperature Controller
-





Laser Diode Analyzer



- Password Protection, Hardware
- Interlock and Overcurrent
- Shut-off Circuitry for Safety
- Built-in Smart Driver for Diode Pinout Auto Detection and Temperature Control
- Touchscreen Control and Accompanying Windows Software



Ultra Stable Narrow Linewidth Source

- 1550 nm Narrow and Single Longitudinal Single Mode, or PM Fiber Versions
- Selectable Peak Wavelength on C-band: ITU-T, DWDM
- Pigtailed or receptacle styles
- Low RIN and High SMSR
- Wavelength Tunable and Power Modulation Options are Available





Broadband Polarization Entangled Photon Source



- High-quality Polarization and Frequency Entanglement
- Broad Bandwidth Covering C- and L- Bands
- High Fidelity and Excellent Stability
- Turn-key and Room-temperature Operation
- Low Power Consumption
- Compact and Light Weight Platform
- Rugged, Alignment Free, All Fiber Design



Telecom-Broadband Hyperentangled Photon Sources



- High-quality Hyper-entanglement in Polarization and Frequency
- Hyperentangled Biphotons Routed Deterministically in Two Output Ports
- Compatible with Fixed or Programmable Filters for High-dimensional Entanglement in Frequency Domain
- Broad Bandwidth Covering C- and L- Bands
- High Fidelity and Excellent Stability
- Turn-Key and Room-Temperature Operation
- Low Power Consumption
- Rugged, Alignment Free, All Fiber Design



Bright Entangled Photon Sources

- Highest Counts/Coincidences Rate Available in The Market
- Highly-Stable Benchtop Device with Excellent Fidelity
- Rugged, Alignment Free, All-in-Fiber Proprietary Design
- Controllable Accidental Photons Rate
- Built-in Noise-Suppression Filters
- High Heralding Efficiency (45%-70%)
- Hyperentangled Pairs Routed Deterministically Into Two Output Ports





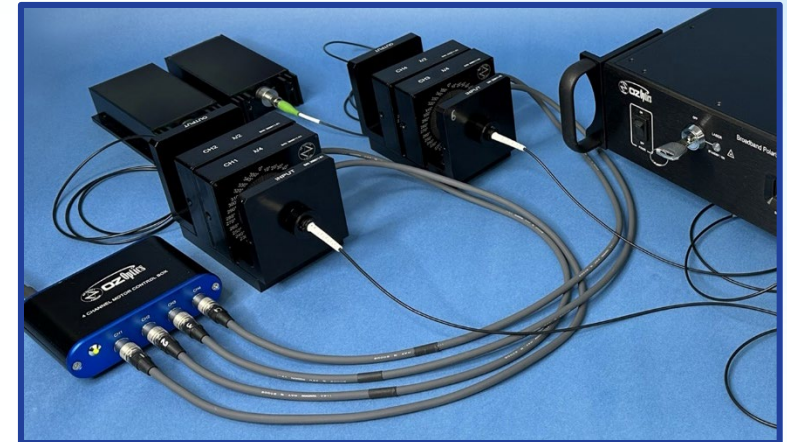
Polarization Entanglement Tomography Analyzer



- Plug-and-play Analyzer with a Controller Unit
- Customized Software and Intuitive GUI
- Quick and Precise Polarization State Rotators
- Compact Size and Small Footprint

Applications:

- Polarization State Tomography
- Automation of Multi-polarization State Analysis





Benchtop Polarization Entangled Photon Source



- High-Quality Turn-Key Polarization Entanglement
- Custom Wavelength Offerings
- Turn-Key and Room-Temperature Operation
- Rugged, Room Temperature Operation
- Two (Signal / Idler) Outputs or Single Output





Benchtop Correlated Photon pair Sources



- High-Quality Turn-Key Polarization Entanglement
- Custom Wavelength Selection
- Turn-Key and Room-Temperature Operation
- Rugged Aluminum Housing
- Two (Signal / Idler) Outputs or Single Output





High-speed Benchtop Polarization Controller-Scrambler



- LCD Touch Screen Operation
- Fixed or Random Polarization State Generation Covering 1260 to 1650 Nm
- High Speed up to 1 KHz in Scrambling Mode
- User Selectable Frequencies
- User Control of Polarization State
- Compact and Light Weight Platform
- Rugged Casing





Benchtop Optical Signal-to-noise Ratio Generator



- Automatically Set User Designated Optical Signal-to-Noise Ratio
- Automatically Set User Designated Optical Output Power Level
- Stand-Alone with Touch-Screen
- GPIB and Ethernet Interfaces for Computer Control
- Optical Port for Connecting an External OSA
- Built-in Tunable Filter
- Provision for External Filter



Optical Power Regulators

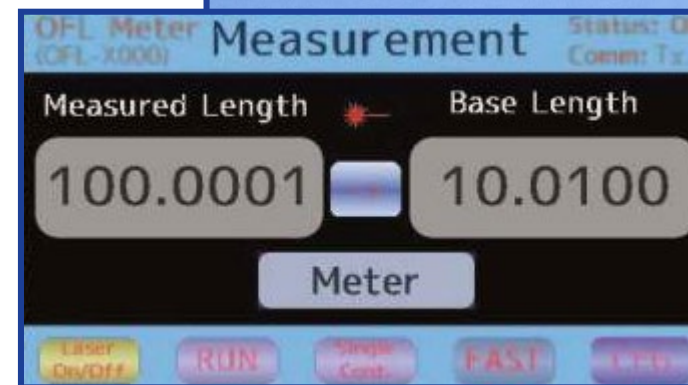
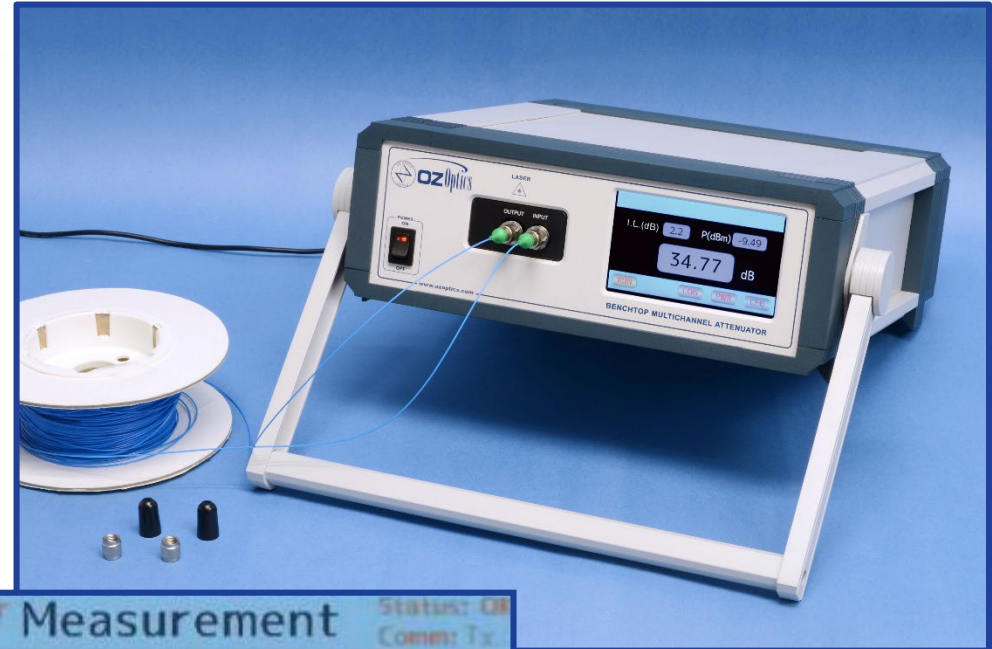


- Controls Output Power to ± 0.1 dB
- 50 dB Dynamic Range
- Millisecond Response Speed
- Single and Multi-Channel Versions
- Singlemode and PM Fiber Versions
- Color Touch Screen Display



Benchtop Fiber Length Meter

- Measures Lengths from a Few mm up to 500 m
- No dead Zone. Can Measure Fibers Less than 1 cm Long
- Better than 2 mm Resolution and <math><0.1\%</math> Measurement Error
- Works with Singlemode, Multimode, Polarization Maintaining and Specialty Fibers
- Color Touch Screen Display





Backreflection Meter



- Sensitive to -70 dB
- 1300/1550 nm Dual Wavelength Source
- Also Measures Insertion Losses
- RS-232 or USB Interfaces Available



Benchtop Backreflection Meter for Visible & Near Infrared Wavelengths

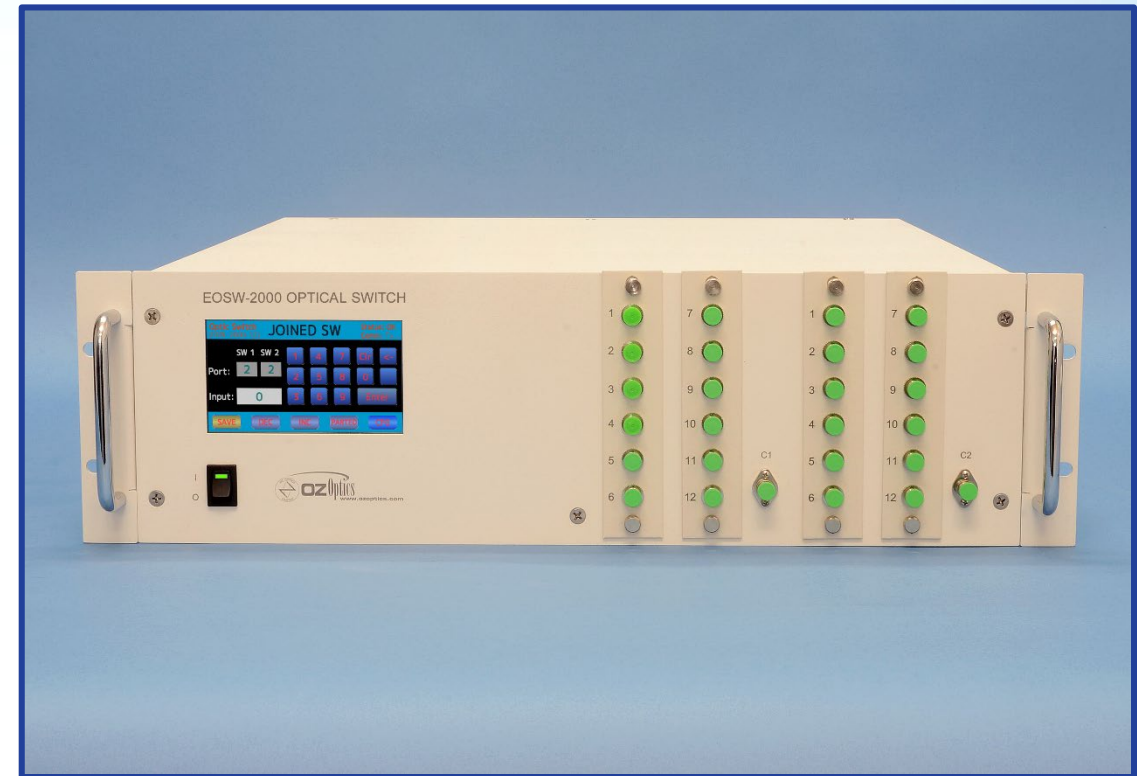


- Sensitive to -70 dB
- Wide Wavelength Offering For Special Applications: 635-1625 nm
- Built-in Broadband SLED For Improved Stability
- Optional Insertion Loss Measurement Capability
- Color Touch Screen and USB Interface Available



Benchtop Optical Switch

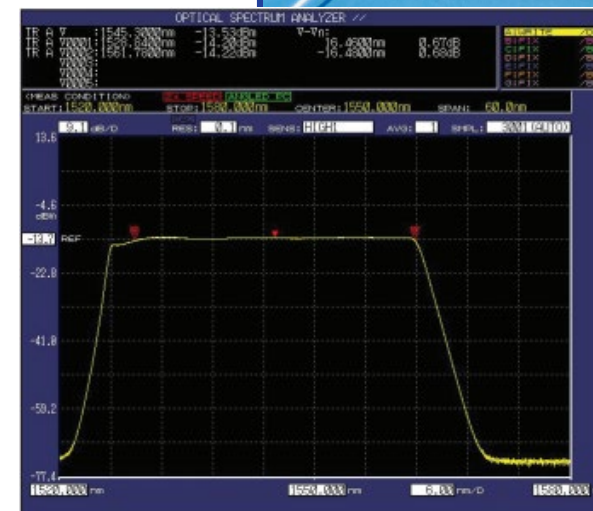
- Multiple Ports 1x4 to 1x32
- Standard Wavelength Option Is at 1310 and 1550 nm, Other Options Are Also Available Upon Request
- High Adjacent Channels Isolation
- Touch Screen Display with High Resolution
- Fast Switching Time
- High Repeatability



ASE Flat Spectrum C-Band Module - OEM



- High Output Power up to 13 dBm on C-band
- Flat Spectral Bandwidth Ripple < +/-0.5 dB
- High Stability
- PUMP TEC and Current Driver Included
- Optional Built-in Attenuator
- High Performance to Cost Ratio

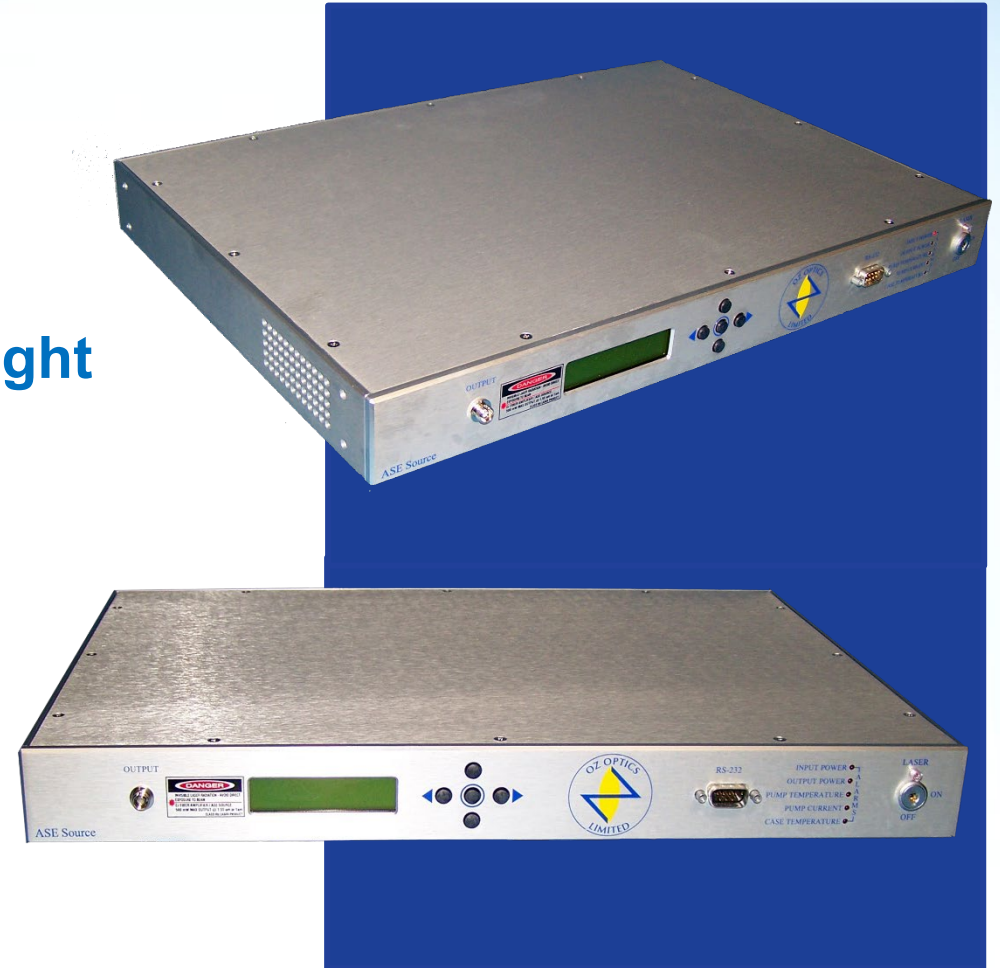




ASE Broadband Light Source



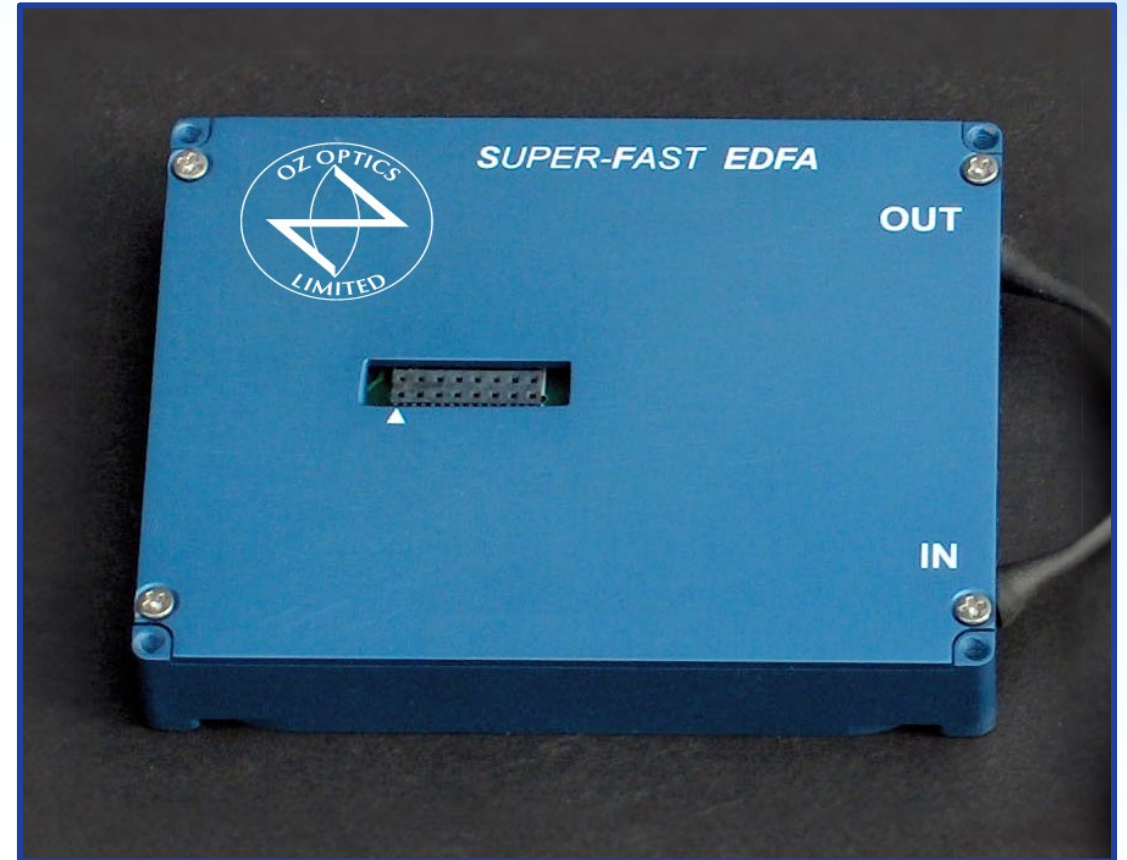
- High Output Power from 13 to 27 dBm
- Wide Spectral Bandwidth: C-Band, L-Band or Both
- High Stability and Unpolarized Output Light
- USB and RS-232 Interface
- Optional Built-in Attenuator and Optical Power Monitor
- High Performance to Cost Ratio



Super Fast EDFA



- Gain Controlled
- Suppress the Transient Effects
- For DWDM Systems





Digital Variable Reflectors



- **Test Sensitivity to Backreflection**
- **-1.5 dB to -60 dB Backreflection**
- **RS-232 or USB Interfaces Available**



Digital Variable Attenuators

- 0.01 dB Resolution, Fast Response Time
- 0.6 to 60 dB Attenuation Range
- Low PDL and High Power Capability
- RS-232 or USB Interface
- Wavelength Flatness in L, C, S Band



Digital Tunable Filters

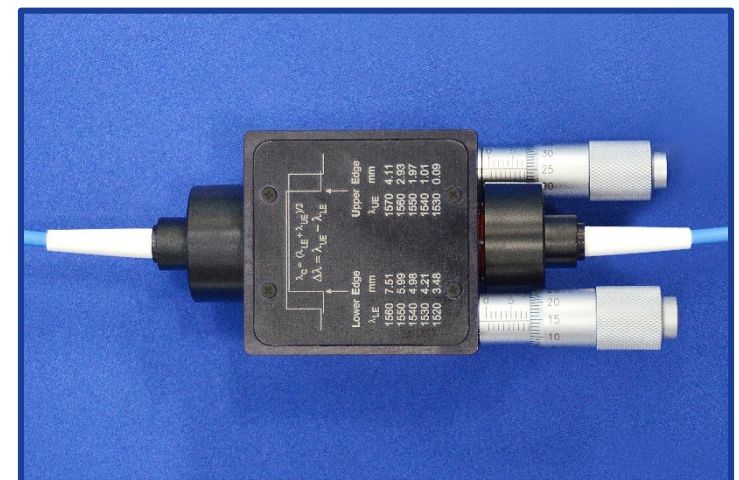
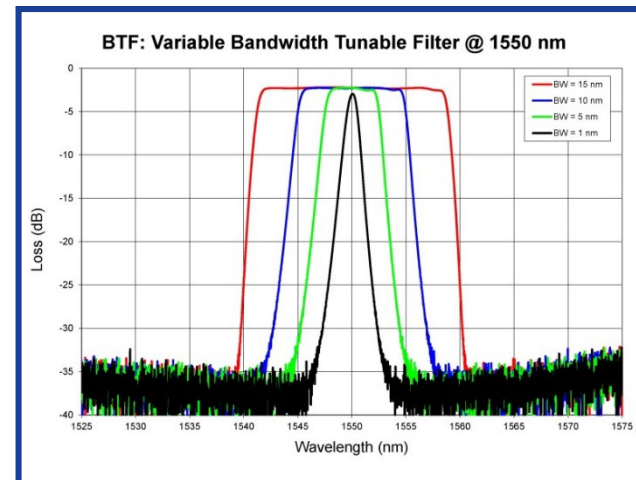
- **< 1.2 nm Line Width, 0.1 nm Resolution**
- **50 nm Tuning Range, Fast Response Time**
- **RS-232 or USB Interfaces Available**



Manually Adjustable Polarization Insensitive Variable Bandwidth Tunable Filters Module



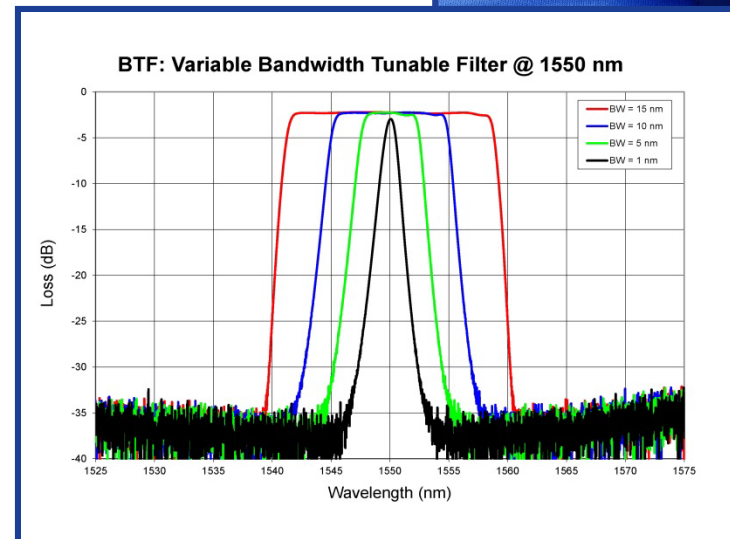
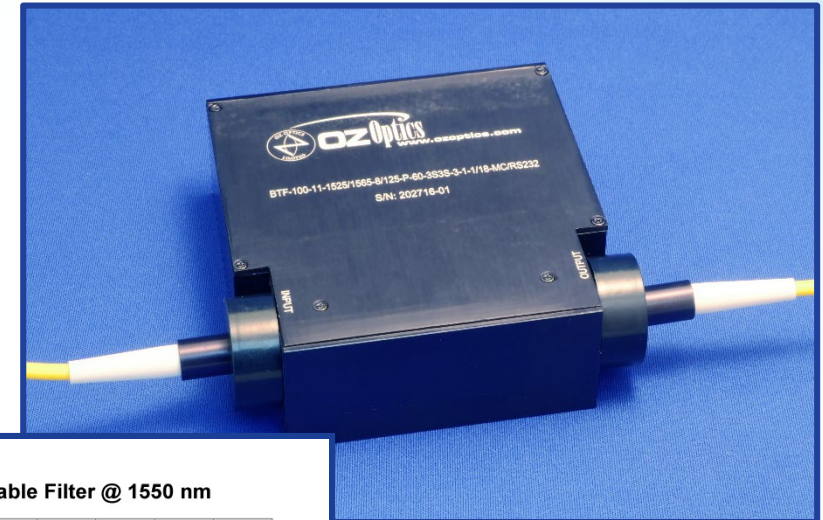
- 45 nm Tuning Range with 1 to 18 nm Continuously Adjustable Bandwidth
- Independently Tunable Both Wavelength and Bandwidth (Flat-Top), Polarization Insensitive
- High Out-of-Band Suppression
- SM, PM and Multimode Version



Motor Driven Adjustable Polarization Insensitive Variable Bandwidth Tunable Filters Module



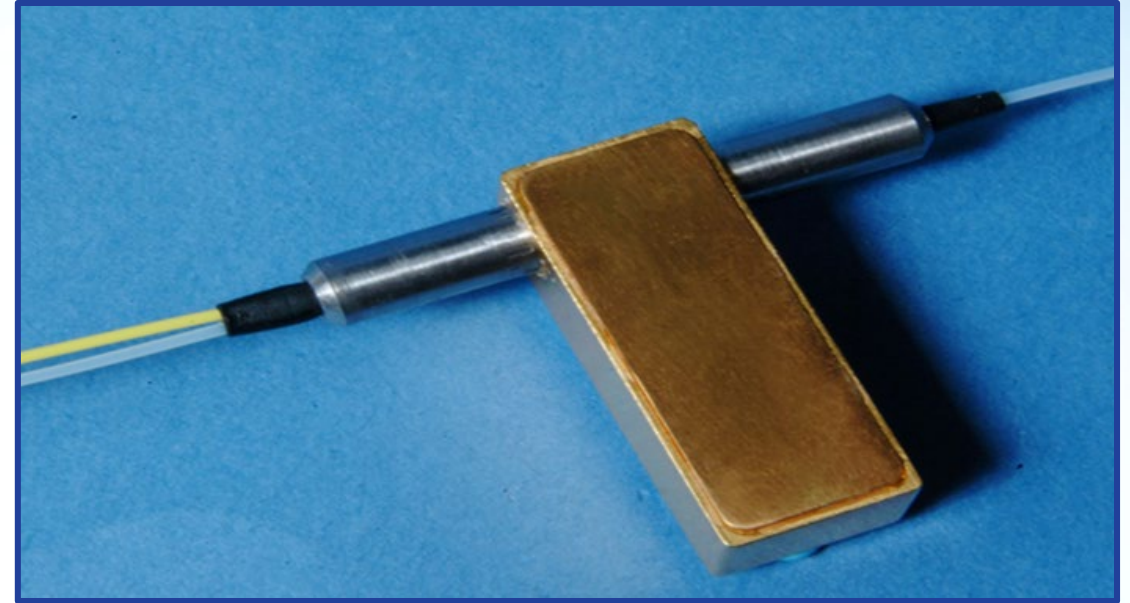
- 45 nm Tuning Range with 1 to 18 nm Continuously Adjustable Bandwidth
- Independently Tunable Both Wavelength and Bandwidth (Flat-Top), Polarization Insensitive
- Built-in Microcontroller with RS-232, IIC, or SPI Interface
- High Out-of-Band Suppression
- SM and PM Version



Polarization Maintaining Fiber Switch



- **> 20 dB Polarization ER**
- **Latching and Non-Latching Versions**
- **< 0.6 dB Loss**
- **Now Offering MEMS Based 1 x N Optical Switches (Non-Latching)**





Universal Optical DNA Rapid Detection System

for Pathogens Including Covid-19, Sars, Ebola,
Cholera, Salmonella, Etc.

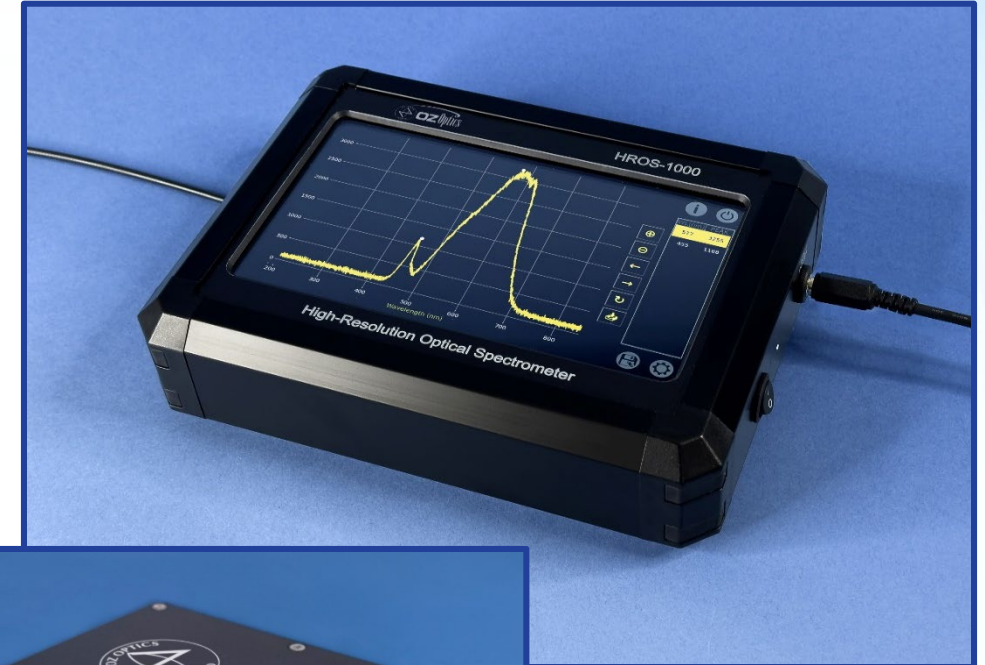
- Rapid DNA/RNA Detection of Virus, Fungus and Bacteria
- Intuitive Software Displays Real Time Data During Testing
- Highly Sensitive and Specific Detection of Low Viral Level
- A Fraction of the Cost of qPCR Based Systems
- Test up to 8 Samples Simultaneously



High-Resolution Optical Spectrometer



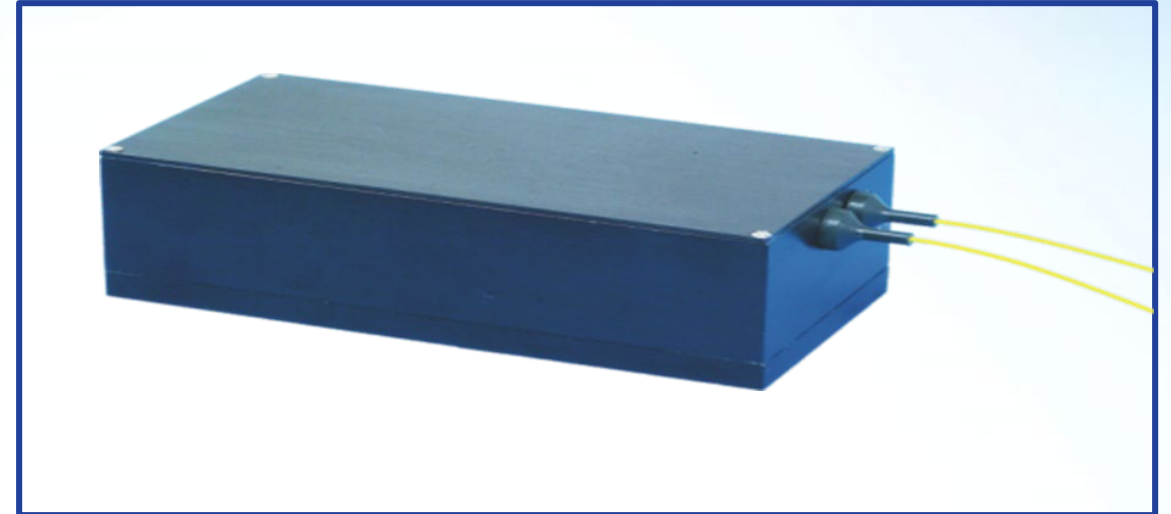
- Transmission Grating to Realize Unprecedented High Sensitivity
- Optimized Optics with High Pixel Density Enabling Outstanding Resolution
- Optics Allow Fast Sampling Rates and High Signal-to-Noise Ratios
- Band-Pass Filters Suppress Higher Order Noise on the Detection Side
- Applications: Ranging from Smart Farming to Pharmaceutical Analysis



Differential Polarization Delay Lines

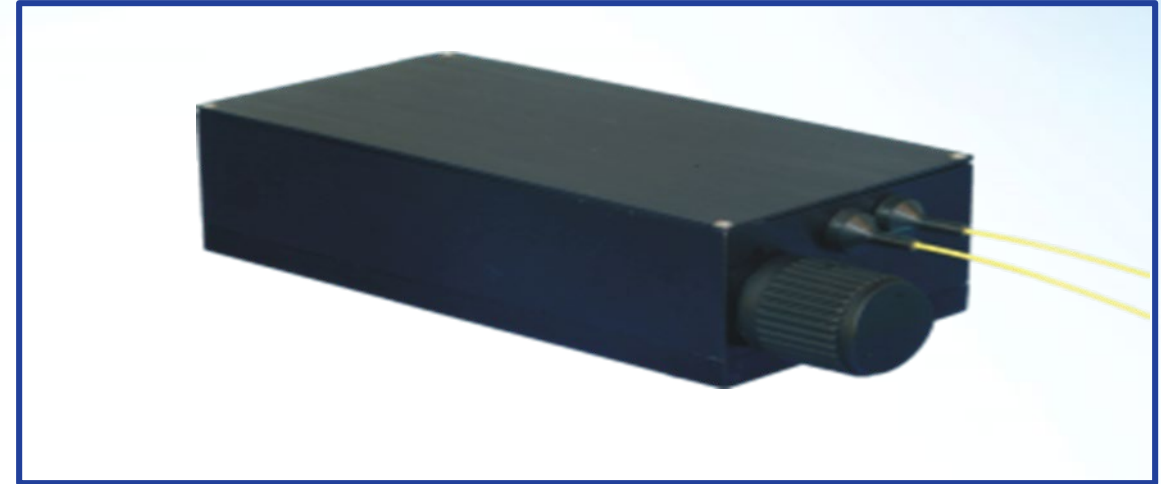


- **Varies the Delay Between Two Polarizations**
- **± 50 psec Delay, 0.1 psec Resolution**
- **< 1.2 dB Losses over the Delay Range**



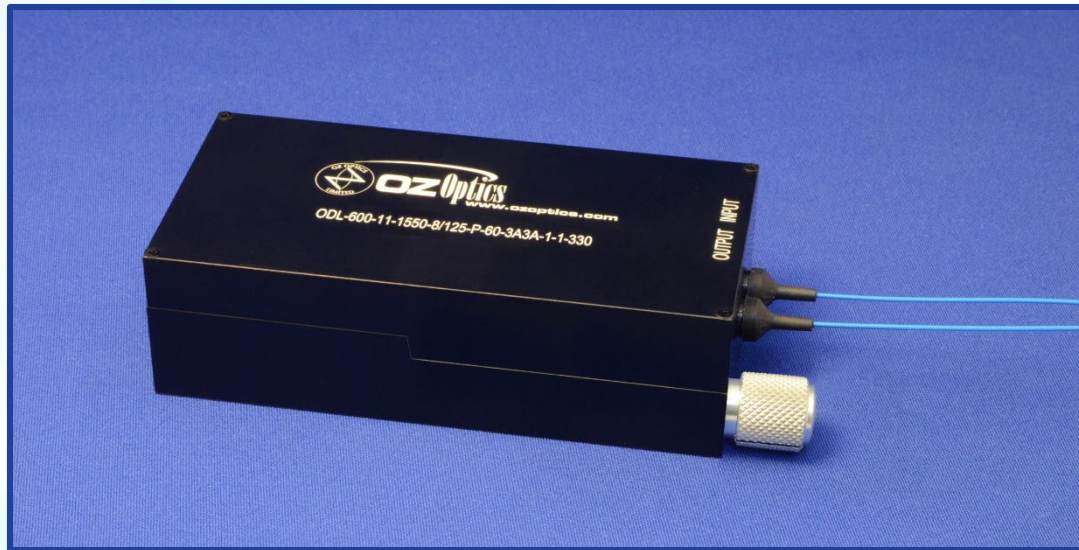
Variable Optical Delay Lines

- **Motor Driven Version Is Available**
- **Over 600 ps Delay Range, < 1.5dB IL**
- **As Fine as 0.003 ps Resolution**



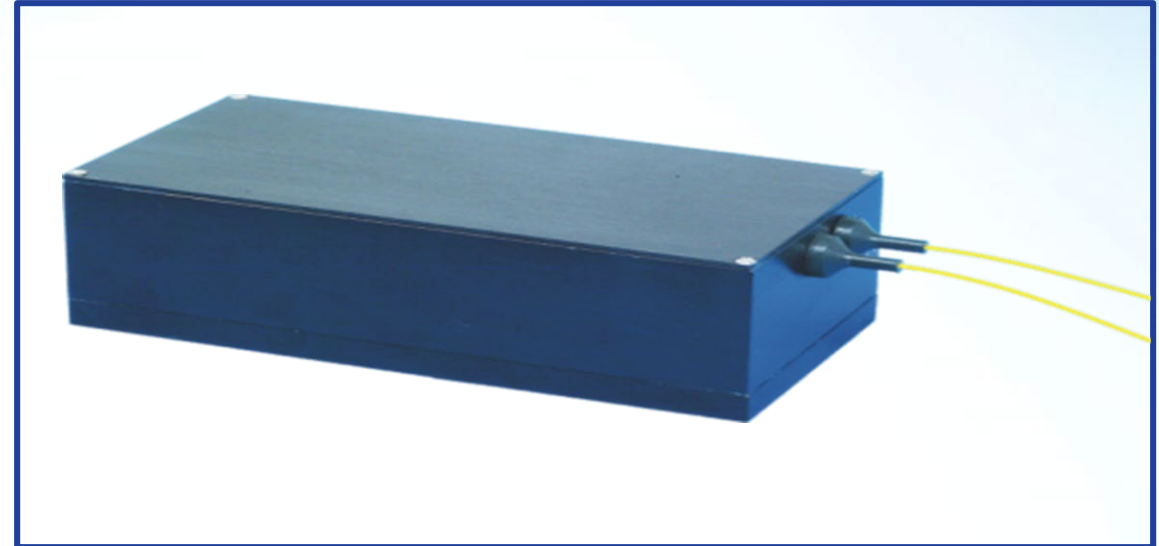
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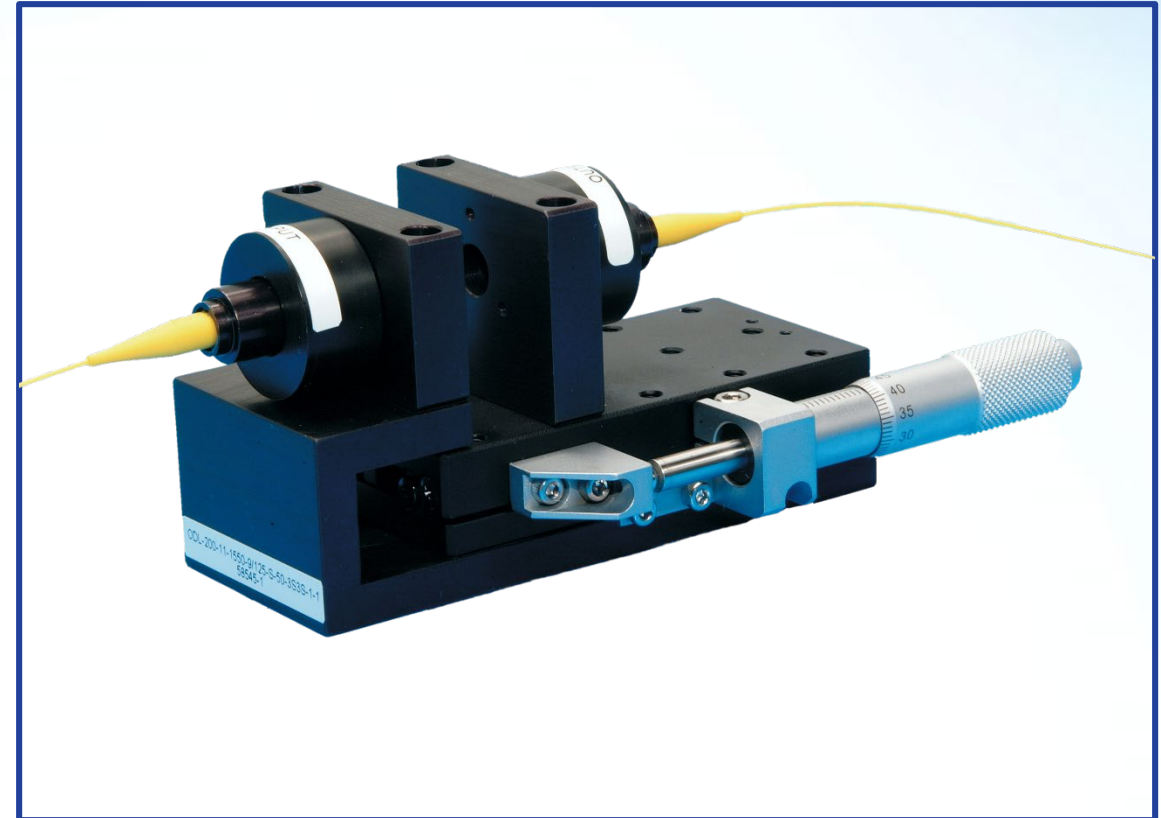
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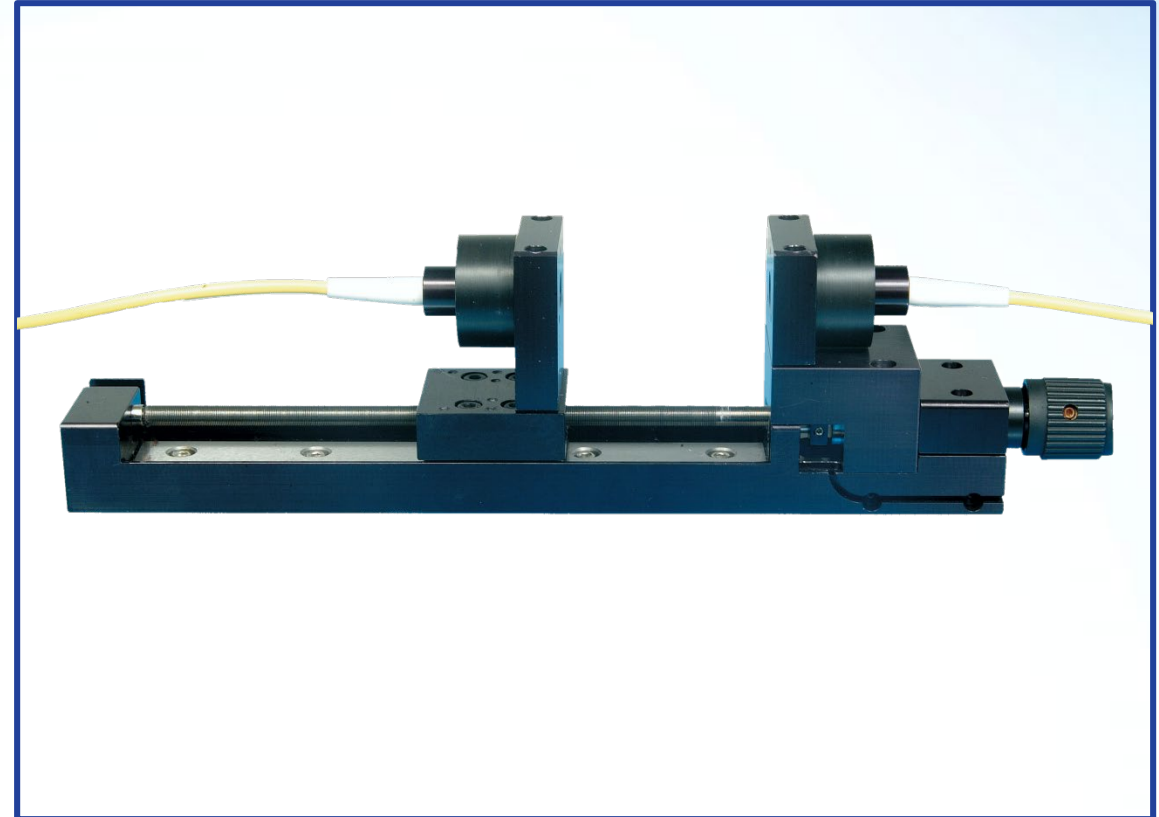
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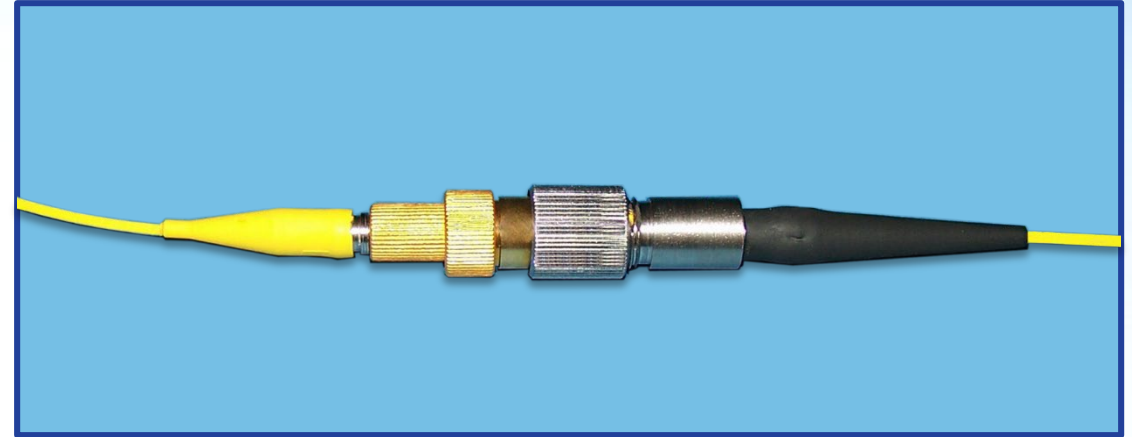
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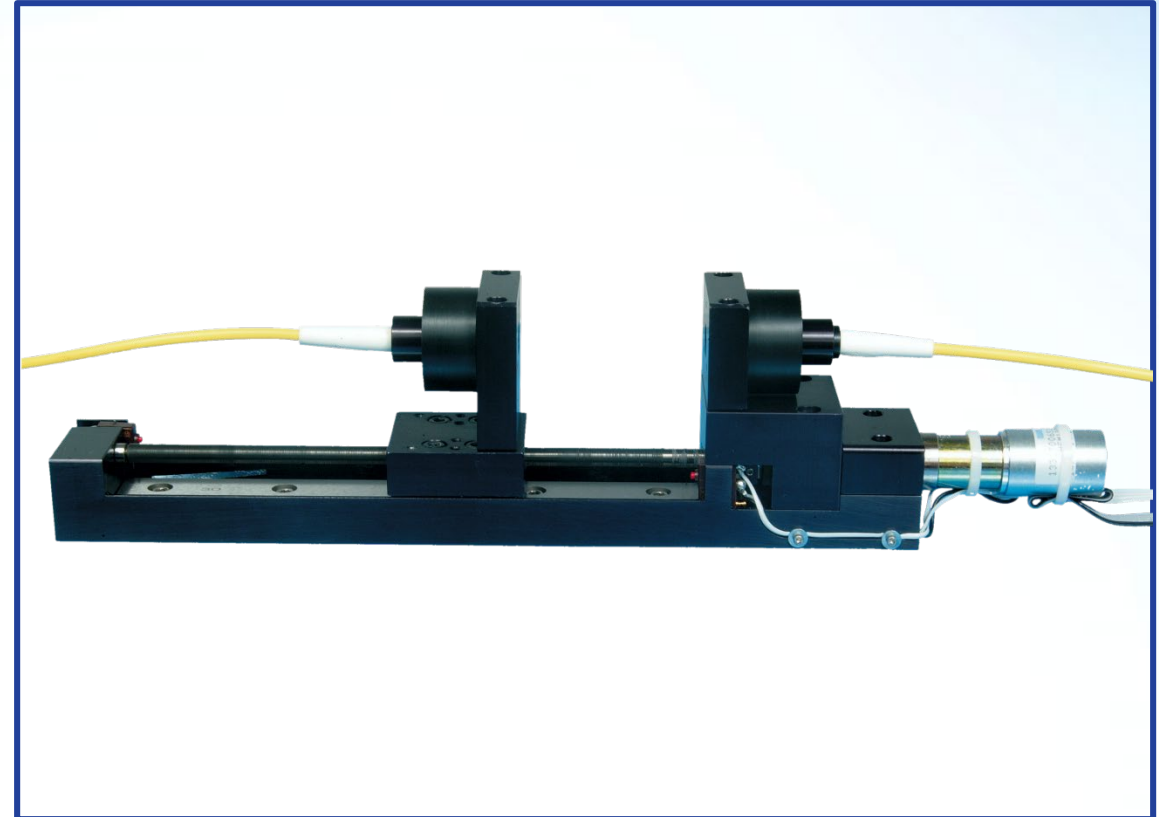
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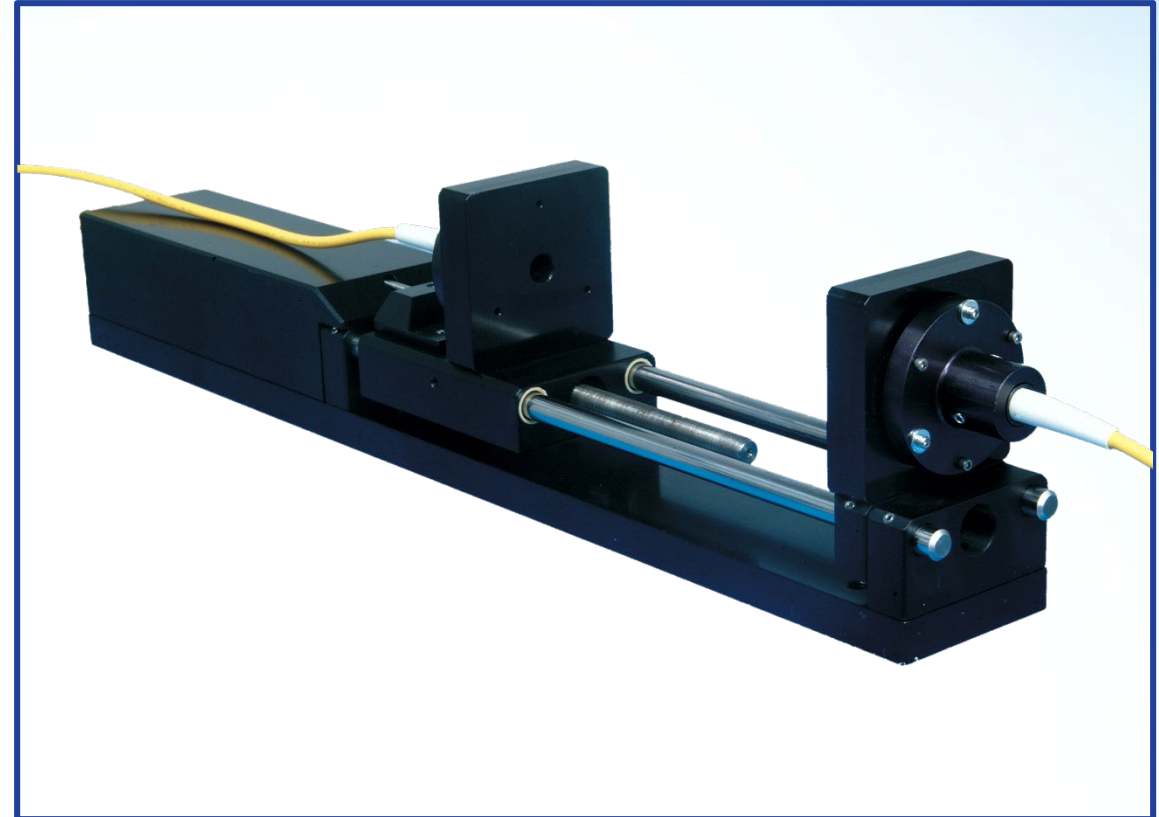
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- **As Fine as 0.003 ps Resolution**



Variable Optical Delay Lines

- **Motor Driven Version Is Available**
- **Over 600 ps Delay Range, < 1.5 dB IL**
- **As Fine as 0.003 ps Resolution**





Non Contact High Power Visible Fiber Optic Fault Finder



- **High Visibility**
- **Higher Output up to 30 mw**
- **Available with 520 nm (Green) or 635 nm (Red)**
- **Non-contact Fiber and Suitable with Bare Fiber Adapter**

▶ Pen & Pocket Size Fault Locators



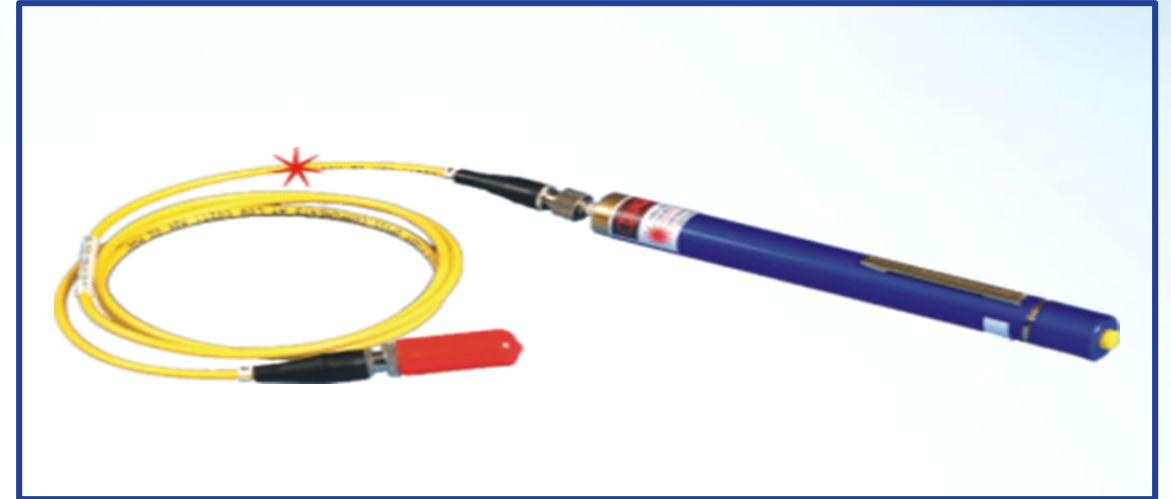
- **Detect Breaks in Fiber Optic Cables**
- **Use as an End-to-End Fiber Identifier, 635 nm**
- **Up to 30 mW (Bench-Top Version)**
- **Up to 40 Hours of Battery Operation**



Pen & Pocket Size Fault Locators



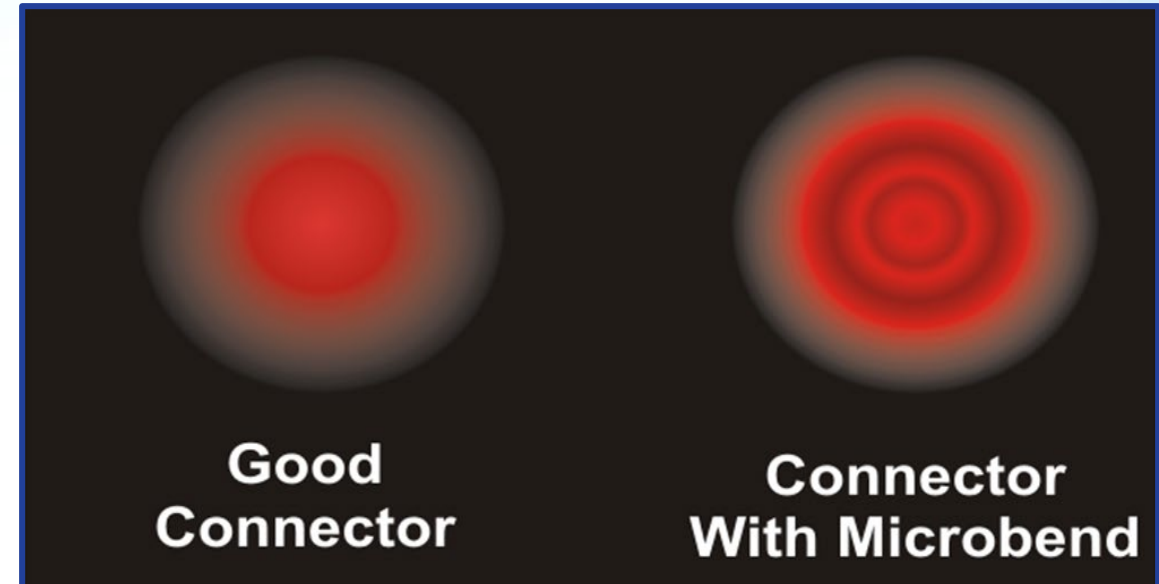
- **Detect Breaks in Fiber Optic Cables**
- **Use as an End-to-End Fiber Identifier, 635 nm**
- **0.5 mW for Pen-Sized Version**



Pen & Pocket Size Fault Locators



- Detect Breaks in Fiber Optic Cables
- Use as an End-to-End Fiber Identifier, 635 nm
- Up to 30 mW, Inexpensive



Power Meter with Smart Detector Heads



- 85 dB Dynamic Range, Fast Response Time
- 400 – 2050 nm Wavelengths (not calibrated for > 1700 nm), Built-in Attenuator
- Dual Detector Head Capability
- RS-232 or USB Interfaces Available



Power Meter with Smart Detector Heads



- 85 dB Dynamic Range, Fast Response Time
- 400 – 2050 nm Wavelengths (not calibrated for > 1700 nm), Built-in Attenuator
- Dual Detector Head Capability, USB or RS-232 Port

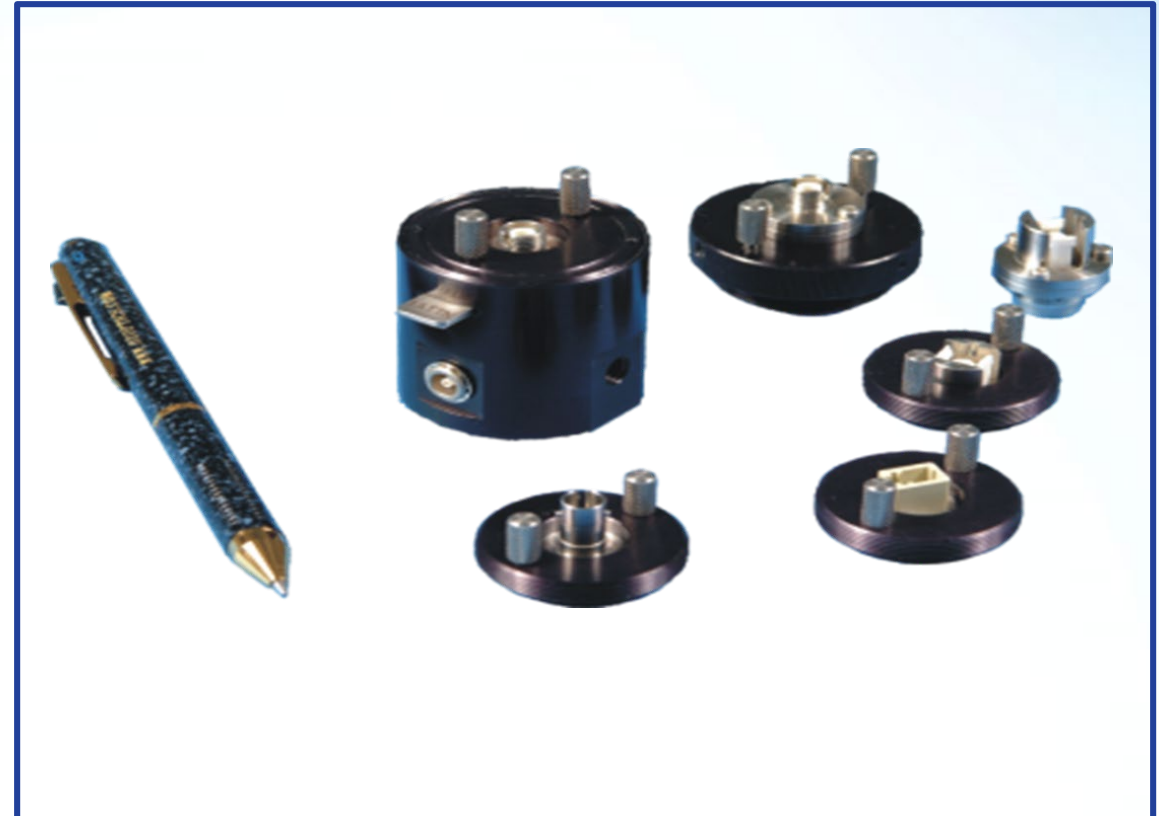




Power Meter with Smart Detector Heads



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Power Meter with Smart Detector Heads



- **85 dB Dynamic Range, Fast Response Time**
- **400 – 2050 nm Wavelengths (not calibrated for > 1700 nm), Built-in Attenuator**
- **Dual Detector Head Capability, USB or RS-232 Port**



Inline Optical Power Meter/Monitor



- **Calibrated Power Meter**
- **Wide Wavelength Range, up to 2 Watts Power**
- **SM and PM Fiber Versions**





Mini Power Meter



- **Calibrated Power Meter**
- **Measures up to 10 mW**
- **Small Size**
- **Low Cost**
- **Good for FTTX Applications**





Pocket Optical Power Meter

- **Slim and Compact**
- **Wide Wavelength Range**
- **Interchangeable Optical Connectors Available**
- **Long Battery Lifetime**
- **Rechargeable Battery or AC Adaptor**
- **USB, RS-232 and Other Interfaces Offered Upon Demand**
- **OEM Version with No Display for Embedded System**

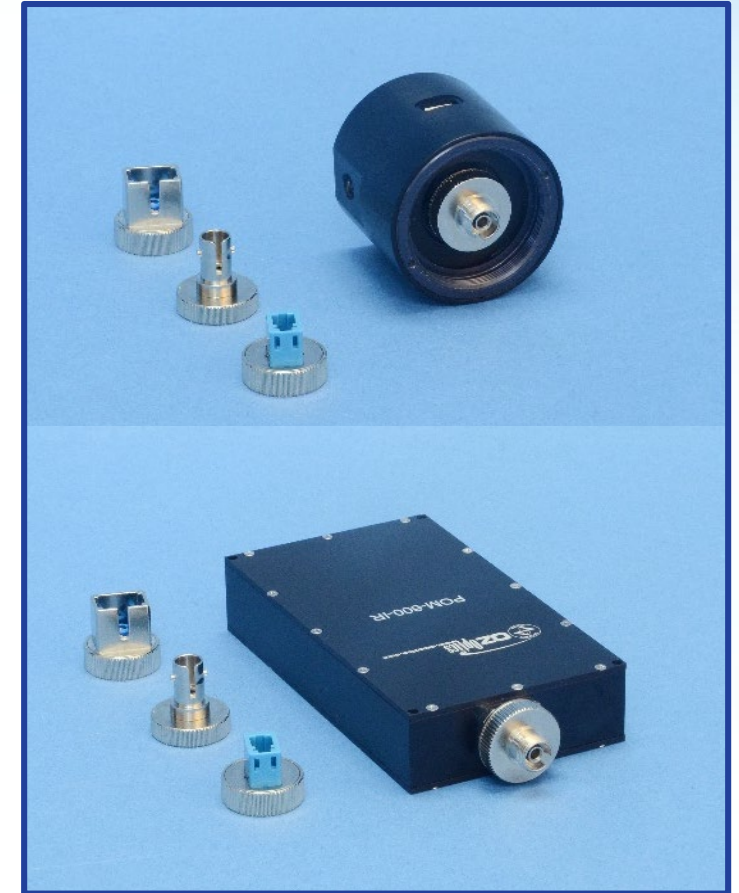




Pocket Optical Power Meter



- Low cost
- Slim and Compact
- Built-in InGaAs Detector for IR Range or Si Detector for Visible
- Interchangeable Optical Connectors Available
- Calibrated and Uncalibrated Versions Available
- Customer May Perform Their Own Calibration
- USB and RS-232 Interfaces





Handheld Optical Power Meter



- **Wide Dynamic Range**
- **Wide Wavelength Range**
- **Long Battery Life**
- **Interchangeable Optical Connectors**
- **RS-232 and USB Interfaces Available**





Handheld Optical Power Meter

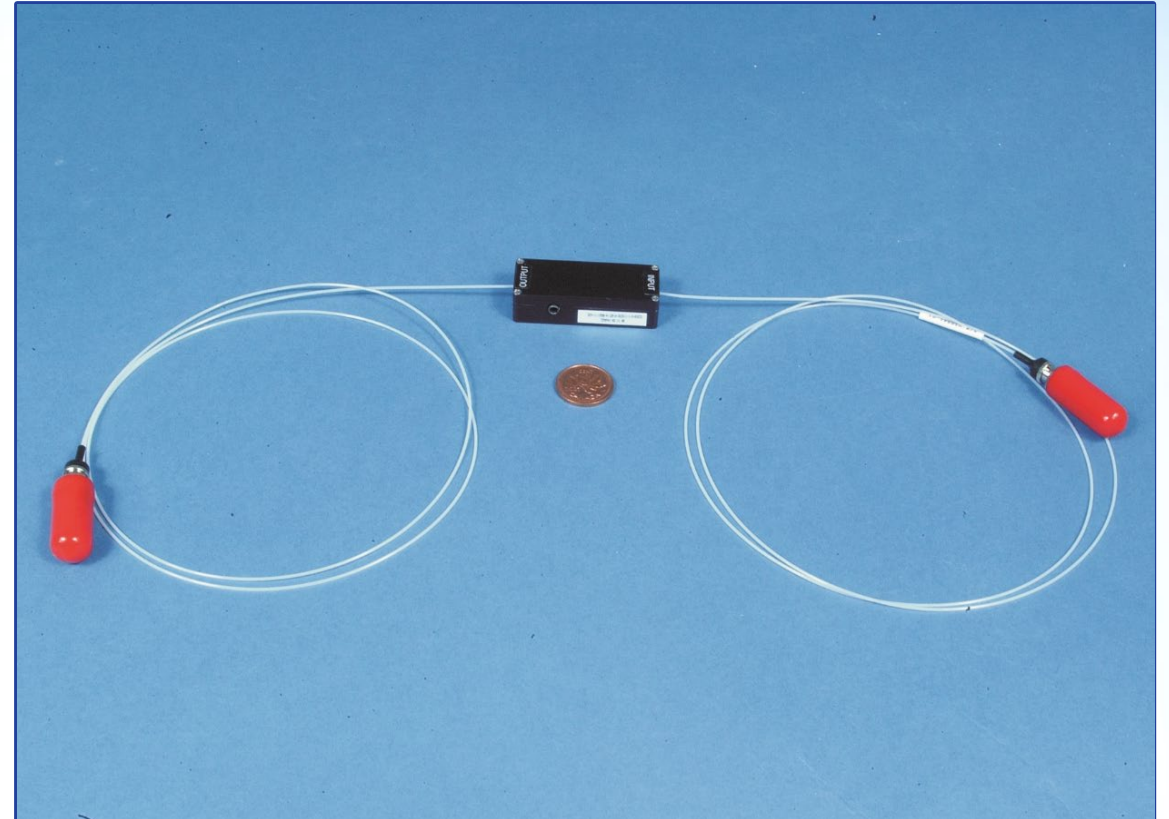
- **Fiber optic assembly and testing**
- **Quality control**
- **Network installation**
- **Component and system troubleshooting**
- **Education**



Smart Patchcord



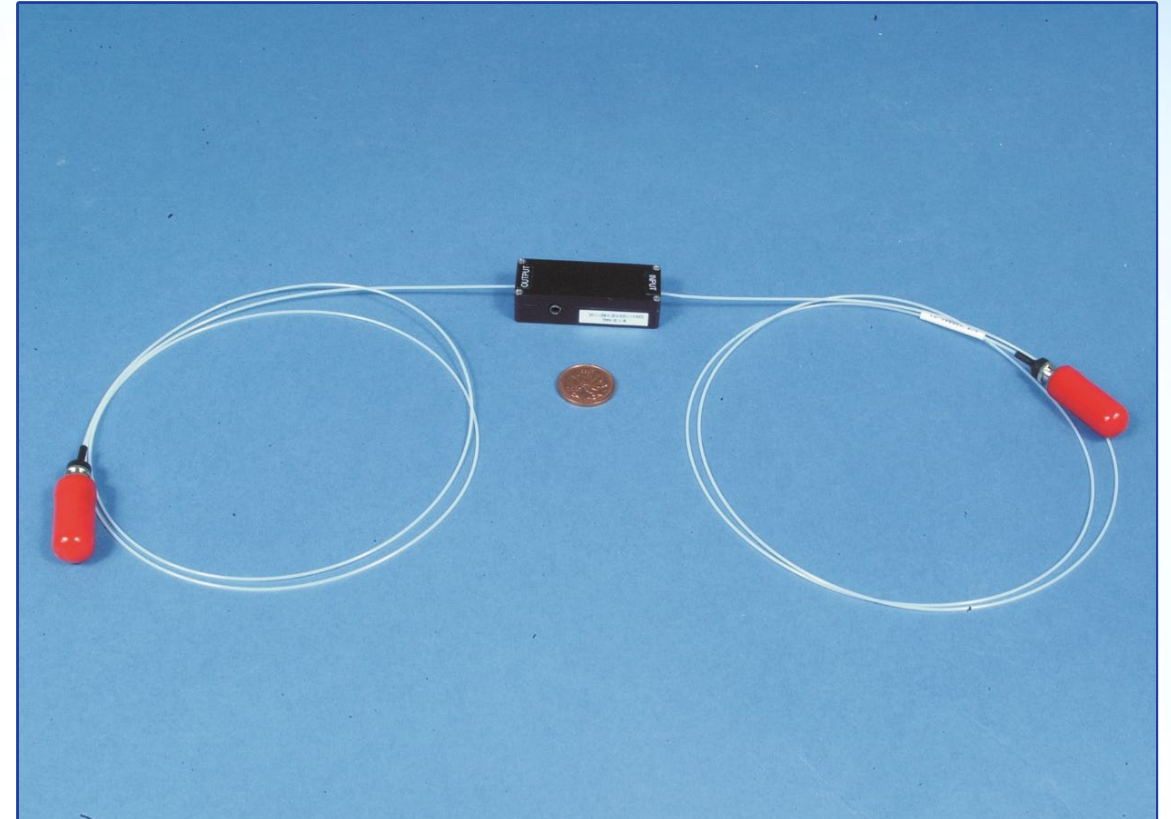
- **Low Cost**
- **Miniature Size**
- **Continuous Fiber – No Interruptions to Optical Path**
- **RS-232, USB, or Wireless Communications**
- **High Power Handling**



Smart Patchcord



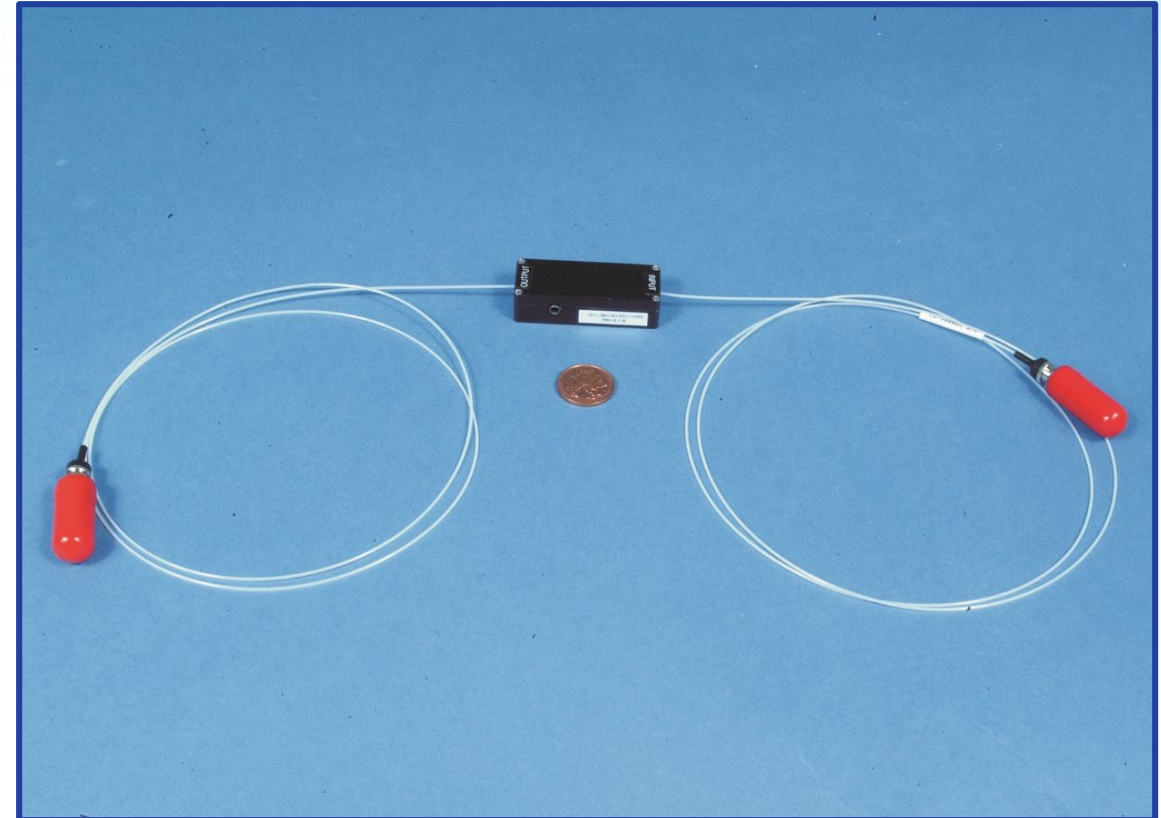
- **Low Insertion Loss and Return Loss**
- **Specialty Fiber and PM Versions Available**
- **High Extinction Ratios for PM Versions**
- **Versions Available for Any Wavelength**



Smart Patchcord



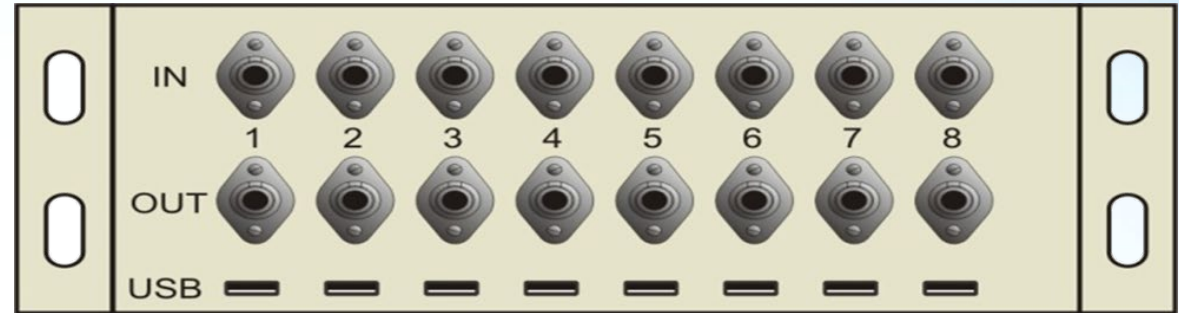
- **Monitoring in FTTX Networks**
- **Channel Balancing in WDM Systems**
- **Dynamic Amplifier Gain Monitoring**
- **Polarization Stabilization**
- **PMD Compensation**
- **Real-Time In-Line Test and Measurement**



Smart Patchcord



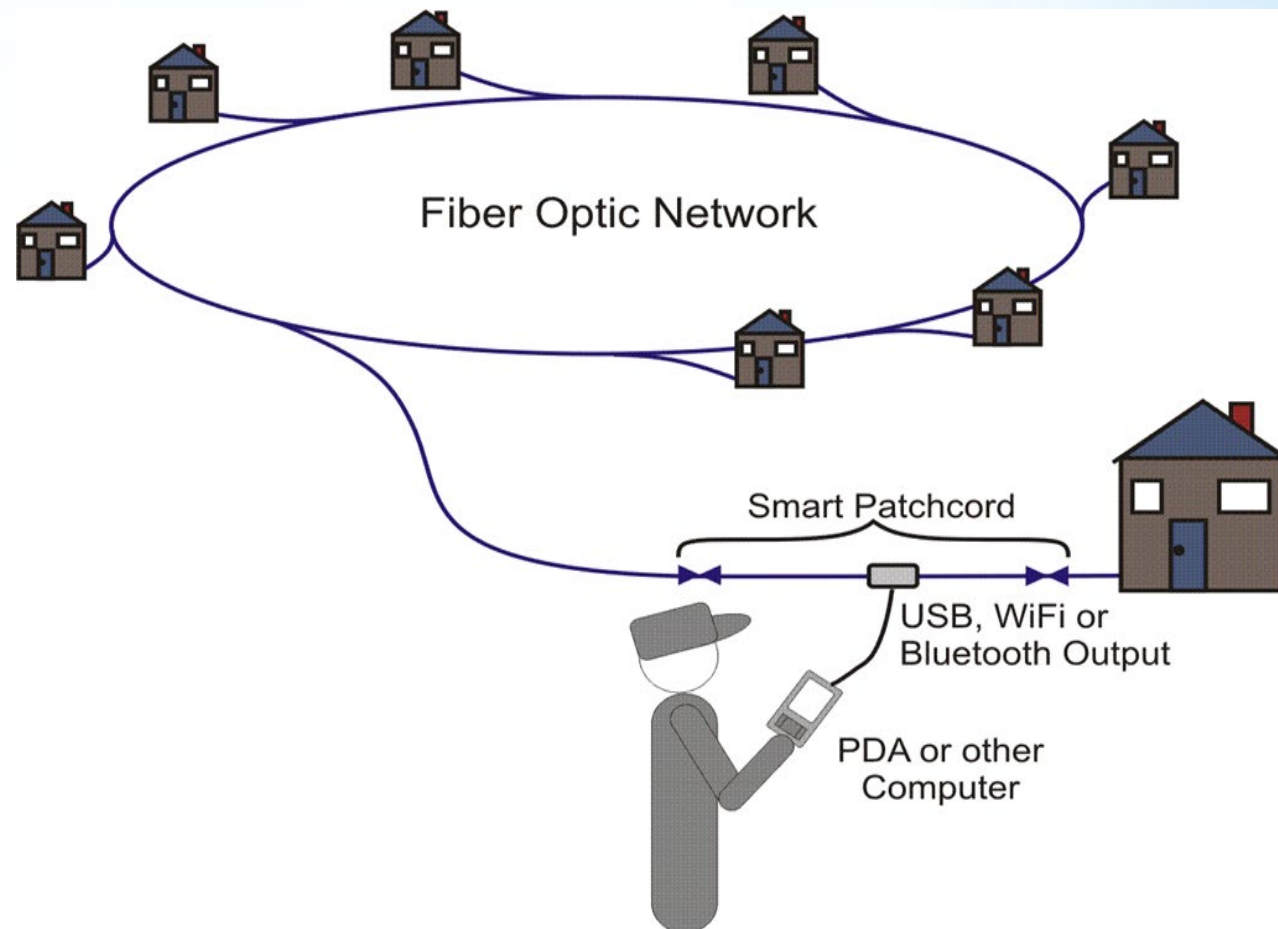
- **Monitoring in FTTX Networks**



Wireless Fiber™ (Smart Patchcord)



- Monitoring in FTTX Networks





Custom Designs



- **OZ Optics welcomes the opportunity to provide custom designs. Our optical and electronics expertise can solve tough test and measurement problems.**
- **Custom software for specialized monitoring and control applications can also be provided.**

Thank You for Choosing OZ Optics

Please Contact Our Sales Department:

Tel: 613-831-0981 ext. 3370

Toll Free: 1-800-361-5415

Email: sales@ozoptics.com

