Fiber Optic Components for Optoelectronic Packaging

OZ Optics Limited

August 2023
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Company Background

- Founded in 1985
- Corporate headquarters located in Ottawa, Canada
- Manufacturing facility in Ottawa / Canada, Izmir / Turkey 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
- Sales offices in Canada, USA, Europe, Turkey and 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 525 employees worldwide

OZ Canada
263+
Employees

OZ China
97+
Employees

OZ Turkey
165+
Employees
Company Profile

ISO 9001:2015 Certified

Advanced Proprietary Processing Technology

Broad Patent Portfolio
Company Profile

OZ Optics is Lead by an Experienced Team:

- Ömür Sezerman, Chairman, President & CEO
  - Founder and CEO since inception (39 years)
- Zahide Sezerman, VP of Human Resources
  - With OZ Optics since inception (39 years)
- Garland Best, VP of Components Division
  - 32 years at OZ Optics
- Gordon Youle, VP of Test Equipment Division
  - 25 years at OZ Optics
- Onur Koca, General Manager of OZ Turkey
  - 2 year at OZ Optics
- Bing Li, General Manager of OZ Optics China
  - 20 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
• Leader in Wavelength Flattened, High Power & Low PDL Components
• Leader in High Power Fiber Optic Delivery Systems
• Custom Test Equipment, Including Polarization Test Equipment and FTTH Equipment
• 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

- Fiber Optic Sensors: 5%
- Optical Test Equipment: 10%
- Fiber Optic Components: 85%
Leading Technology

Featured Products

World’s Largest Online Fiber Optic Catalog
Most Products are in Stock

Polarization Maintaining Fiber Optic Components

Laser & Laser Diode to Fiber Delivery Systems

High Power Fiber Optic Components

Leading Technology

Featured Products
Leading Technology

Featured Products

Fiber Optic Attenuators for SM, PM, and MM Fibers

- Directional Variable Attenuators
- Multichannel Variable Attenuators
- Digital Variable Attenuators
- SM/PM/OM Fiber Variable Attenuators
- Single-Mode Channel-Maintained Variable Attenuators
- Reflective Slab Variable Attenuators
- PIN-PIN Variable Attenuators
- Fixed Fiber Attenuators
- Insulatorless Attenuators

Fiber Optic Components for Optoelectronic Packaging

- Hermetically Sealed Patchcords with Glass or Metal Solder
- Single-Channel
- Multi-Channel
- Metalized Fibers
- PM/SM/OM Fiber Patched & Sorted Arrays

Fiber Optic Test Equipment

- Handheld Temperature Meter
- Handheld Photodiode
- Handheld Light Source
- Handheld OTDR
- Fiber Optic分布式 Strain and Temperature Sensors

USA Patent Numbers: 7,359,010, 7,906,841, and 9,062,397

Fiber Optic Distributed Strain and Temperature Sensors

- Optoelectronic strain sensing
- Distributed temperature sensing
- Strain and temperature monitoring
- High reliability and accuracy
- Easy installation and maintenance

OZ Optics Foremost™ Series

- Fiber Optic Distributed Strain and Temperature Sensors (ODSTAR)
- Real-time monitoring of strain and temperature

OZ Optics eShop

- www.ozoptics.com
- shop.ozoptics.com
Leading Technology

Featured Products

Universal Optical DNA Rapid Detection System for Pathogens Including COVID-19, SARS, EBOLA, CHOLERA, SALMONELLA, ETC. LAMPPY™ SERIES

Features:
- High sensitivity and specificity
- Rapid turnaround time (1 hour)
- Highly scalable and adaptable
- Scalable architecture for easy expansion
- Cost-effective, low maintenance costs
- Fully integrated with the required software
- LT ready for rapid response and deployment
- Compact modular design allows for easy cleaning and maintenance
- Fast and reliable analysis on a variety of input fluidic systems
- Can be used to analyze samples simultaneously in high-throughput systems
- Sample-to-answer times substantially higher throughout systems
- Supports parallel analysis of PCR or other tests
- Wireless communication to computers and smartphones for remote scoring
- A fraction of the cost of other solutions
- OX Optics offers private labeling for volume OEM applications

In a lab study done at Aker BioMarine, LAMPPY™ was shown to outperform competitor products in terms of sensitivity and specificity. This is due to the unique design and architecture of the system, which allows for faster and more accurate results.

Fiber Optic Products for OCT Applications

- OCT Modules
- Manual/Prism-Based Beam Splitting Units
- Manual/Prism-Based Beam Splitting Units

- Fiber Couplers / Connectors
- Polarization Maintaining Connectors / Connectors
- Fiber Polished laser blade Sources
- High-Speed THZ Light Sources

- Broadband Fused Splitters
- Broadband Fused Splitters
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- High-Speed THZ Light Sources
- Broadband Fused Splitters
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2 micron Fiber Optic Components for PM and SM Fibers

- Fiber & Optical Connectors
- Fiber & Optical Connectors
- Fiber & Optical Connectors
- Fiber & Optical Connectors
- Fiber & Optical Connectors

- Polishing Equipment
- Polishing Equipment
- Polishing Equipment
- Polishing Equipment
- Polishing Equipment

New Fiber Optic Products

- Broadband Polarization Maintained Fiber Sources
- Optical Signal to Audio Signal Generator

- Fiber & Optical Connectors
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- Fiber & Optical Connectors
- Fiber & Optical Connectors

- Modulation Bias Controllers
- Modulation Bias Controllers
- Modulation Bias Controllers
- Modulation Bias Controllers
- Modulation Bias Controllers

- Super Fast EMS
- Super Fast EMS
- Super Fast EMS
- Super Fast EMS
- Super Fast EMS

- High-Power Selectable Fiber Sources
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Industry Standards

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

- ISO 9001:2015 Certified (Canada, China and Turkey)
- 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
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.

Revenue Allocation:

- **Telecom/Datacom**: 40%
- **Military & Homeland Security**: 30%
- **Industrial**: 10%
- **Medical & Pharmaceutical**: 10%
- **Educational**: 5%
- **Energy**: 5%
## Marketing Strategy

### Global Sales Network

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

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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 TURKEY (Turkey 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 - Turkey Factory (Izmir, Turkey)

- Operational since 2000
- 33,000 sq ft. Manufacturing Facility
- Located in Free Trade Zone
- Low Tax Rates
- Sub Component Parts Manufacturing
- High Quality Labor
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 – Admin, 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 Components for Optoelectronic Packaging

- Silicon V-Groove Substrates
- V-Groove Assemblies
- Metalized Fiber
- Hermetically Sealable Patchcords with Metal Solder
- Glass Solder Preforms
- Hermetically Sealable Patchcords with Glass Solder
- Inline Optical Taps and Monitors
- Soldering Stations and Polarization Test Equipment
- Tapered / Lensed Fibers
- Pigtails Style Fiber Collimators / Focusers
- Polarization Maintaining Patchcords and Connectors
V-Groove Substrates

• Up to 96 Fiber Substrates
• Better than 0.5 Micron Accuracy
• Use with Either UV or Thermal Epoxies
Fiber Pigtailed V-Groove Arrays

- Up to 96 Fibers in a Single Array
- 127, 250, 500 Micron & Custom Spacings
- SMF, MMF & PMF
Fiber Pigtailed V-Groove Arrays

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Metalized Fibers

- SMF, MMF & PMF Versions
- Ideal for Hermetic Component Packaging
- Cleaved Fiber Endfaces, Masked Regions
- Midspan Metalization
Metalized Fibers

- Metalized Ribbon Fibers
- Midspan and Endpoint Metalization
- Cleaved Fiber Endfaces, Masked Regions
Hermetically Sealable Patchcords with Metal Solder

- Meets Telcordia Specifications
- SMF, MMF & PMF Versions
- Fibers can be finished with ferrules, laser cleaved ends or tapered fiber tips.
- Customer Specific OEM Designs
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Glass Solder Preforms

- Solders Glass Directly to Metal
- Ideal for Hermetic Sealing, Device Packaging
- Circular & Oval Preform Shapes
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Inline Optical Taps and Monitors

- No Interruptions to the Optical Path
- Can be Integrated into Assemblies and Packages
- Low Insertion Losses, Return Losses and PDL
Inline Optical Taps and Monitors

- No Interruptions to the Optical Path
- Can be Integrated into Assemblies and Packages
- Low Insertion Losses, Return Losses and PDL

![Diagram of Inline Optical Taps and Monitors]

- Capillary
- Optical Tap
- Hermetic Seal (Glass Solder)
- Stripped Fiber Region
- Emerging Light For Monitoring
- Seal Tube
- Jacketing
Tapered/Lensed Fibers

- As Small As 2.5 Micron Spot Sizes
- Circular And Oval Spot Profiles
- Custom OEM Designs, Metalized Versions
Pigtail Style Fiber Collimators/Focusers

- > 2 Micron Spot Sizes, Up to 5W Power
- Up to -60 dB Backreflection
- SMF, PMF & MMF
- 1.6 mm, 2.5 mm, 4 mm & 8 mm OD Housing
Precision Fiber Collimator/Focuser Arrays

• Generate a Precise Array of Collimated Beams or Focused Spots
• High Density, Small Footprint
• Single Mode and PM Fiber Versions Available
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