



FIBER LENGTH METER AND STRAIN SENSOR

Features and Benefits

- Measures lengths from a few mm up to 500 m
- Better than 2 mm resolution
- Less than 0.1% measurement error
- No dead zone. Can measure fibers less than 1 cm long
- Takes absolute and relative measurements
- Works with singlemode, multimode, polarization maintaining, and specialty fibers
- Rapid, continuous (1 Hz) measurement of optical fiber lengths
- Saves time spent manually measuring fiber lengths
- Improves quality control
- Rack mount and bench top units

Preliminary

Applications

- Optical fiber cable assembly
- Production testing
- Optical network field installations
- Quality control and acceptance testing
- Fiber optic sensor assembly and testing
- Low-cost dynamic strain sensor
- Construction of fiber interferometers
- Ring laser manufacturing
- Cable management



Single-Port Option



Dual-Port Option

Product Description

The OZ Optics Optical Fiber Length Meter (OFLM-100) delivers fast, accurate and reliable measurements of optical fiber lengths. This powerful tool saves time and money while preventing measurement errors and improving quality control. With resolution and repeatability of less than 2 mm, the OFLM-100 delivers highly accurate optical path length measurements for distances up to 500 m. The system reports and records its measurements to any Windows based personal computer, allowing easy data logging and report writing. For any application requiring precise and well-controlled optical fiber lengths, the OFLM-100 saves time and money while improving quality and performance. You will find the OFLM-100 to be an innovative and essential tool.

The OFLM-100 can also be used as a fiber optic strain sensor. Unlike many other strain systems, the OFLM-100 is easy to use and has excellent long-term stability. With a selectable sampling rate as rapid as 1 Hz, and 2 mm resolution over lengths up to 500 m, the OFLM-100 delivers fiber optic strain monitoring at the lowest cost and highest ease-of-use on the market.

The OFLM-100 is an essential tool for constructing and testing fiber optic cables, fiber optic sensors, and other optical fiber systems where length must be controlled. Take your optical fiber systems to the next level of quality and cost control with the OFLM-100 today.

Please **Contact OZ** with your optical fiber length and strain monitoring requirements.

Standard Product Specifications:

Optical Specifications (Single-Port Option)

Parameter	Value	Comments
Fiber types that could be measured	Singlemode fiber with 3.5 micron and larger cores, PM fiber with 3.5 micron and larger cores, Multi-mode fibers	Separate models required for multimode fibers larger than 62.5/125.
Resolution	<2 mm	
Repeatability	<3 mm	
Accuracy	±(0.1% + 1.5 mm)	Accuracy is affected by variations in the fiber index of refraction which are set by the user.
Optical connector	Super FC/PC standard	Other connectors available on request.
Minimum distance	<1 cm	
Maximum distance	300 m	

Optical Specifications (Dual-Port Option)

Parameter	Value	Comments
Fiber types that could be measured	Singlemode fiber with 3.5 micron and larger cores, PM fiber with 3.5 micron and larger cores, Multi-mode fibers	Separate models required for multimode fibers larger than 62.5/125.
Resolution	<4 mm	
Repeatability	<3 mm	
Accuracy	±(0.1% + 1.5 mm)	Accuracy is affected by variations in the fiber index of refraction which are set by the user.
Optical connector	Super FC/PC standard	Other connectors available on request.
Minimum distance	<1 cm	
Maximum distance	500 m	

Electrical Specifications

Parameter	Value	Comments
Power requirements	120 V or 240 V AC, 50/60Hz	
Operating current	1 Amp	
Data Interface	USB	RS232 Communication is available as an option.

Environmental Specifications

Parameter	Value	Comments
Operating Temperature	0 to 40 °C	
Storage Temperature	-20 to 60 °C	

Software Specifications

Parameter	Value	Comments
Platform Requirements	Windows 2000 or above	

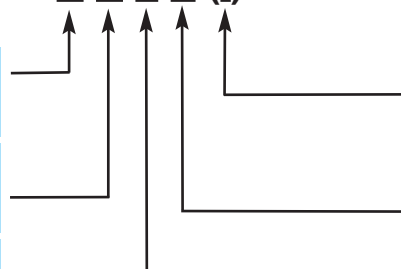
Ordering Information For Standard Parts

Bar Code	Part Number	Description
32694	OFLM-100-1-S-3-U	Single port, bench top, Optical Fiber Length Meter for singlemode or polarization maintaining fibers, or multimode fibers up to 62.5/125 microns with an FC connector receptacle, USB interface.
32284	OFLM-100-2-S/M-3-U	Dual port, bench top, Optical Fiber Length Meter for singlemode, polarization maintaining, or large core multimode fibers, with an FC connector receptacle, USB interface.

Ordering Information for Custom Parts:

Optical Fiber Length Measurement System: OFLM-**A-B-F-X-(I)**

A = Configuration: 100 for bench top unit 200 for rack mount unit
B = # of ports: 1 (1 port) 2 (2 ports)
F = Fiber Type: S for singlemode or polarization maintaining fibers, and multimode fiber up to 62.5/125 M for large core multimode fibers S/M for both (for the case of Dual-Port System)



I = Computer Interface R: RS232 interface U: USB interface
X = Receptacle Code 3 = FC (Compatible with super PC and ultra PC finishes) SC = SC receptacle LC = LC receptacle

Frequently Asked Questions (FAQs):

Q: How does the fiber length meter work?

A: For the single port option, it calculates the fiber length by measuring the phase difference between the launch pulse and the reflected signal from the end of the fiber.

For the dual port option, it calculates the fiber length by measuring the phase difference between the launched pulse and the detected pulse.

Q: What is the operating wavelength of the device?

A: The wavelength of operation is 633nm. This is the standard.

Q: Can the optical fiber length meter be implemented to operate at a different wavelength?

A: No. 633nm is the only option. However, it will work with fibers designed for any wavelength.

Q: Can the length of patchcords with connectors other than the standard super FC/PC be measured?

A: Yes. The device could be implemented with the connector type the customer orders.

Q: Can the user measure the length of any assembled patchcord?

A: It depends on which of the two options the user orders.

For the single port option, the end of the fiber under test must be flat cleaved or polished in order for the reflected light to be sufficient for detection. If not, the device will not function

For the dual port option, both ends of the fiber under test must be accessible. In this case, the end finish or cleave is not an issue.

Q: Can we measure optical fibers longer than 500m?

A: The unit will work with fibers designed for and wavelength, however the light transmitted by the instrument is always 633 nm.