

# MultiFiber™ Pro

## Overview

### First MPO tester to support both Singlemode and Multimode MPO fiber testing

Data centers are growing, fueled by the proliferation of media, virtualization and the need for more security and storage. This creates a high demand for 40 Gbps+ fiber links. Whether it is using 10 Gbps pre-terminated fiber trunks or planning for next-generation 40/100 Gbps performance, data centers are standardizing on **Multi-fiber Push-on (MPO) connector** solutions.

Pre-terminated fiber cables are manufactured and tested to comply with ANSI/TIA and international standards. When these cables are installed many factors can potentially impact performance. Field testing is the only way to ensure that pre-terminated fiber is installed to meet the application performance requirements. With single and duplex testers this verification testing is a time-consuming, manual and imprecise process. To ensure installation is done to standards, test with the MultiFiber Pro.

**MultiFiber Pro** takes the complexity out of testing MPO trunks for loss and polarity. With an on-board MPO connector, it is the first tester to automate the **MPO fiber-trunk testing** process without using a fan-out cord. The power meter/light source boasts industry-first functions such as automatic scanning of all twelve fibers and display of test results in an easy-to-read bar graph. These innovative features allow **MultiFiber Pro** kits to eliminate the complexity of testing MPO trunks, making it 90 percent faster than the traditional simplex test methods.



## MultiFiber Pro Power Meter and Light Source feature the following:

- Automatic scanning and testing of all fibers in MPO connectors with “Scan All”
- Support for both Multimode and Singlemode MPO trunks
- Eliminates the need for fan-out cords when testing fiber trunks
- Easy to interpret test results with minimal navigation
  - User interface displays all 12 fibers
- Automate 8, 10 and 12 fiber measurements
- Troubleshoot MPO links and drill down to single fiber test results

## MultiFiber Pro Unique Capabilities

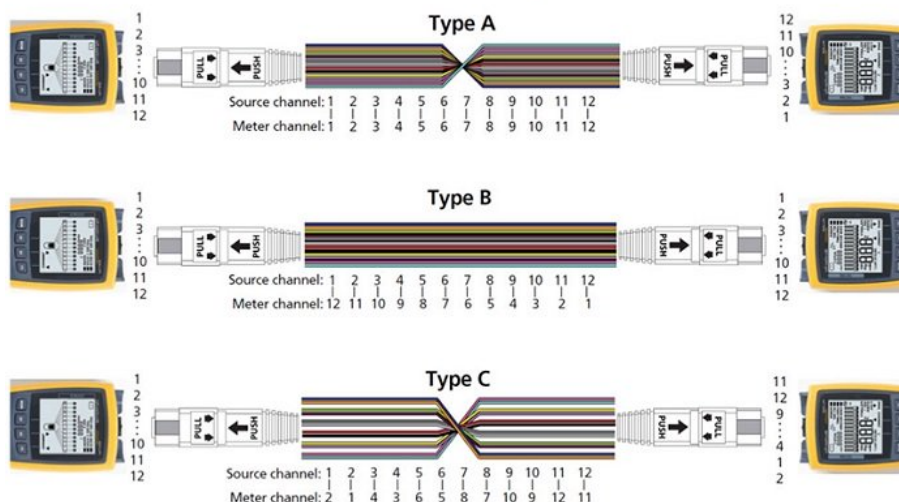
### “SCAN ALL” Function

Scan All function in the MultiFiber Pro Power Meter automatically scans and tests all 12 fibers in MPO connectors – taking just 6 seconds to complete all loss or power measurements. This feature automates the testing of MPO terminated fibers and eliminates the time consuming and manual process of moving the tester from fiber to fiber while using fan-out cords.

### Built-in Polarity Verification

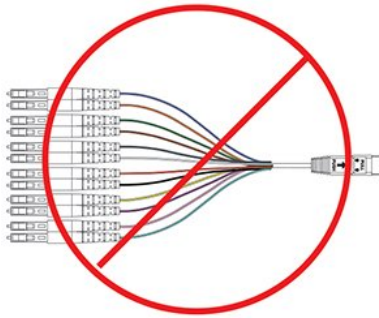
The simple purpose of any polarity scheme is to provide a continuous connection from the link's transmitter to the link's receiver. For array connectors, TIA-568-C.0 defines three methods to accomplish this. Deployment mistakes are common because these methods require a combination of patch cords with different polarity types. The polarity measurement of MultiFiber Pro allows the user to test individual patch cords, permanent links, and channels for correct polarity.

## Trunk/Patch Cord Polarity



## Polarity Agnostic Referencing

MPO deployments have many possible polarities: A, B, C, and Universal. MultiFiber Pro utilizes the concept of polarity agnostic referencing to simplify the referencing step. This powerful feature allows the user to reference with any polarity of patch cord. Then, using those same patch cords, the user can test any polarity link. Prior knowledge of the link's polarity is not required.



## On-board MPO connector

The MPO connector on both the **Optical Power Meter** and Light Source eliminates the use of costly and complicated fan-out cords to test MPO fiber trunks.

## Simple User Interface

The MultiFiber Pro simplifies the task of simultaneously presenting polarity, power, and loss results for 12 fibers. The power meter enables the users to easily comprehend the measurement results of 12 fibers simultaneously. The light source identifies each fiber within the MPO connector being tested. Any individual measurements that fail the test limit is identified to allow root-cause analysis. This powerful yet straightforward test set enables everyone to become a fiber testing expert increasing efficiency in testing data center projects.



## Select an Individual Fiber

Drilling down to a single fiber during testing and troubleshooting is always a challenge in data centers. MultiFiber Pro can troubleshoot a single fiber within an MPO trunk to provide a single fiber test result. This increases MPO connector verification and troubleshooting flexibility with more precise, per-fiber data and reporting.

## Easy Reporting

The MultiFiber Pro Power Meter stores up to 3,000 test results internally which can be uploaded to a PC using the **LinkWare™ Cable Test Management Software**. LinkWare allows you to manage test results, edit cable ID's, print professional reports and even export the data into spreadsheet formats.

## Kits for Every Need

MultiFiber Pro is available in several convenient **kit configurations** to meet all your cleaning, inspection and verification testing needs. Some kits include:

FI-7000 FiberInspector Pro with MPO tip and cleaning supplies

The FI-7000 is the ultimate inspection tool. It enables you to quickly inspect and certify fiber end-faces inside ports or patch cords. It's 2-second automated PASS/FAIL eliminates human subjectivity and enables anyone to become a fiber inspection expert.

- Automated Pass/Fail acceptance testing of fiber end-faces
- Large touchscreen for pinch and zoom
- Graphical indication of problem areas due to contamination, pits, chips, and scratches
- Certify to industry standards – IEC 61300-3-35
- Eliminate human subjectivity from end-face measurements
- Includes MPO tip for inspection probe and MPO cleaner



Fiber Cleaning – Quick Clean™ Cleaners

Cleaning is critical. [Fluke Networks' Quick Clean Cleaners](#) instantly clean fiber optic bulkhead connectors and end-faces. Just push the tool tip to engage cleaning action and pull back on the wheel – it's that simple. The MPO Quick Clean Cleaner is bundled with the MultiFiber Pro kits to ensure that you have the best cleaning tool from the beginning.



General Specifications

| Environmental         |                                      |
|-----------------------|--------------------------------------|
| Operating temperature | -10° C to +50° C                     |
| Storage temperature   | -20° C to +50° C                     |
| Operating humidity    | 95% (10° C to +35° C) non-condensing |
|                       | 75% (35° C to +45° C) non-condensing |
|                       | Uncontrolled < 10° C                 |
| Operating altitude    | 12,000 m                             |
| Storage altitude      | 12,000 m                             |
| Vibration             | Random 2 G, 5 Hz to 500 Hz           |

| Optical Power Meter (Specifications apply at 23° C (73° F), unless otherwise noted.)                                                                                                                                                                                                                                                         |                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Detector type                                                                                                                                                                                                                                                                                                                                | InGaAs                                                                                                                                             |
| Calibrated wavelengths                                                                                                                                                                                                                                                                                                                       | 850 nm, 1300 nm, 1310 nm, 1550 nm                                                                                                                  |
| Measurement range                                                                                                                                                                                                                                                                                                                            | 0 dBm to -50 dBm                                                                                                                                   |
| Test time                                                                                                                                                                                                                                                                                                                                    | 6 seconds                                                                                                                                          |
| Power measurement linearity                                                                                                                                                                                                                                                                                                                  | ±0.1 dB2                                                                                                                                           |
| Power measurement uncertainty                                                                                                                                                                                                                                                                                                                | ±0.35 dB2                                                                                                                                          |
| Power measurement repeatability                                                                                                                                                                                                                                                                                                              | < 0.10 dB2                                                                                                                                         |
| Display resolution, dB or dBm                                                                                                                                                                                                                                                                                                                | 0.01                                                                                                                                               |
| Power display units                                                                                                                                                                                                                                                                                                                          | dBm, mW, µW                                                                                                                                        |
| User-selectable limit for loss                                                                                                                                                                                                                                                                                                               | 0.05 dB to 50.0 dB, in increments of 0.05 dB up to 10.0 dB and 0.1 dB up to 50.0dB                                                                 |
| Auto wavelength detection                                                                                                                                                                                                                                                                                                                    | Yes                                                                                                                                                |
| Polarity detection                                                                                                                                                                                                                                                                                                                           | Detects A, B, C, and Corning Plug & Play™ Universal Systems polarities                                                                             |
| 2 kHz detection                                                                                                                                                                                                                                                                                                                              | Yes                                                                                                                                                |
| Record storage                                                                                                                                                                                                                                                                                                                               | 3000 records, one fiber per record (250 12-fiber cables)                                                                                           |
| External interface                                                                                                                                                                                                                                                                                                                           | USB 2.0, full speed                                                                                                                                |
| Optical connector                                                                                                                                                                                                                                                                                                                            | MPO interface for 12-fiber, unpinned plugs. Compatible with 62.5 µm, 50 µm, and singlemode fibers. Connector has a self-closing, protective cover. |
| Power requirement                                                                                                                                                                                                                                                                                                                            | 2 AA alkaline batteries                                                                                                                            |
| Battery life3                                                                                                                                                                                                                                                                                                                                | 30 hours (typical)                                                                                                                                 |
| Automatic power-off                                                                                                                                                                                                                                                                                                                          | 10, 20, 30, or 60 minutes (can be disabled by the user)                                                                                            |
| Low battery warning                                                                                                                                                                                                                                                                                                                          | Low battery icon blinks                                                                                                                            |
| Size                                                                                                                                                                                                                                                                                                                                         | 5.8 in x 3.2 in x 1.6 in (14.7 cm x 8.0 cm x 4.0 cm)                                                                                               |
| Weight                                                                                                                                                                                                                                                                                                                                       | 10.9 oz (309 g)                                                                                                                                    |
| <ol style="list-style-type: none"> <li>1. For 850 nm, 0 dBm to -50 dBm. For 1300, 1310, 1550 nm, -5 dBm to -50 dBm</li> <li>2. For a continuous-wave optical signal.</li> <li>3. Measured power levels £0 dBm. Backlight on. Battery life depends on the condition and type of batteries used. Fluke Networks recommends alkaline</li> </ol> |                                                                                                                                                    |

batteries.

4. 23° C, after 10 minutes of warm-up time.

5. 23° C, after 15 minutes of warm-up time.

6. Auto wavelength, SCAN ALL, and backlight on. Battery life depends on the condition and type of batteries used. Fluke Networks recommends alkaline batteries.

## Sources

|                                                                                      | 850 nm Source                                                                                                                                           | 1310 nm Source                                                                                                                         | 1550 nm Source |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Emitter type                                                                         | LED                                                                                                                                                     | Laser                                                                                                                                  |                |
| Wavelength                                                                           | 850 nm ±30 nm                                                                                                                                           | 1310 nm ±20 nm                                                                                                                         | 1550 nm ±20 nm |
| Spectral width (FWHM)                                                                | 50 nm (typical)                                                                                                                                         | 2 nm typical, 5 nm maximum                                                                                                             |                |
| Minimum output power                                                                 | ≥ -24 dBm                                                                                                                                               | ≥ -1 dBm                                                                                                                               |                |
| Power output stability                                                               | ≤±0.1 dB over 8 hours 4                                                                                                                                 | ±0.25 dB over 8 hours 5                                                                                                                |                |
| Laser safety                                                                         | IEC 60825-1:Class 1                                                                                                                                     |                                                                                                                                        |                |
| Encircled flux                                                                       | Meets TIA 455-526-14B, ISO/IEC 14763-3, and IEC 61280-4-1 for 50/125 μm at the source’s optical connector.                                              | NA                                                                                                                                     |                |
| Optical connector                                                                    | MTP/MPO interface for 12-fiber, unpinned plugs. Compatible with 62.5 μm and 50 μm fibers, non-APC only. Connector has a self-closing, protective cover. | MTP/MPO interface for 12-fiber, unpinned plugs. Compatible with 9 μm fibers, APC only. Connector has a self-closing, protective cover. |                |
| 4. 23°C, after 10 minutes of warm-up time. 5. 23°C, after 15 minutes of warm-up time |                                                                                                                                                         |                                                                                                                                        |                |
| Modes                                                                                | 2 kHz modulated, auto wavelength/td>                                                                                                                    |                                                                                                                                        |                |
| Power requirement                                                                    | 2 AA alkaline batteries                                                                                                                                 |                                                                                                                                        |                |
| Battery life6                                                                        | >30 hours (typical)                                                                                                                                     |                                                                                                                                        |                |
| Automatic power-off                                                                  | 10, 20, 30, or 60 minutes (can be disabled by the user)                                                                                                 |                                                                                                                                        |                |
| Low battery warning                                                                  | Low battery icon blinks                                                                                                                                 |                                                                                                                                        |                |
| Size                                                                                 | 5.8 in x 3.2 in x 1.6 in (14.7 cm x 8.0 cm x 4.0 cm)                                                                                                    |                                                                                                                                        |                |

|        |                 |
|--------|-----------------|
| Weight | 11.4 oz (323 g) |
|--------|-----------------|



*\* Do not keep battery at temperatures below -20°C (-4°F) or above 50°C (122°F) for periods longer than one week to maintain battery capacity.*

MultiFiber Pro Ordering Information

| Model       | Description                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MFTK1200    | MultiFiber Pro 850 nm Multimode Kit includes MultiFiber Pro Power Meter, 850 nm Light Source, Test Reference Cords, MPO adapters, Magnetic strap attachments, and carrying case.   |
| MFTK-SM1310 | MultiFiber Pro 1550 nm Singlemode Kit includes MultiFiber Pro Power Meter, 1550 nm Light Source, Test Reference Cords, MPO adapters, Magnetic strap attachments, and carrying case |
| MFTK-SM1550 | MultiFiber Pro 1550 nm Singlemode Kit includes MultiFiber Pro Power Meter, 1550 nm Light Source, Test Reference Cords, MPO adapters, Magnetic strap attachments and carrying case  |

| Model             | Description                                                                                                                                                                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MFTK-MM850-SM1310 | MultiFiber Pro Multimode & 1310 nm Singlemode Kit includes MultiFiber Pro Power Meter, 850 nm Light Source, 1310 nm Light Source, Test Reference Cords, MPO adapters, Magnetic strap attachments, and carrying case                                                                      |
| MFTK-MM850-SM1550 | MultiFiber Pro Multimode & 1550 nm Singlemode Kit includes MultiFiber Pro Power Meter, 850 nm Light Source, 1550 nm Light Source, Test Reference Cords, MPO adapters, Magnetic strap attachments, and carrying case                                                                      |
| OPFQI-            | The complete kit for the Network Technician who needs to test ultra-short fiber links, verify polarity with MPO fiber trunks and inspect data center connection types. This kit includes everything you need—the OptiFiber® Pro OTDR, the MultiFiber™ Pro Loss Length tester and the MPO |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MFP       | inspection tip—for troubleshooting multimode and singlemode fiber, field testing multimode MPO components and inspecting MPO ports and end faces on fiber optic connectors.                                                                                                                                                                                                                                                                |
| OFPMI-MFP | The complete kit for the Network Technician who needs to test ultra-short fiber links, verify polarity with MPO fiber trunks and inspect data center connection types. This kit includes everything you need—the OptiFiber® Pro OTDR, the MultiFiber™ Pro Loss Length tester and the MPO inspection tip—for troubleshooting multimode fiber, field testing MPO components and inspecting MPO ports and end-faces on fiber optic connectors |

## Accessories

| Model              | Description                                                     |
|--------------------|-----------------------------------------------------------------|
| MFPOWERMETER       | MultiFiber Pro Optical Power Meter                              |
| MFMULTIMODESOURCE  | MultiFiber Pro Multimode 850 nm LED light source                |
| MF1310SOURCE       | MultiFiber Pro SM 1310 nm laser light source                    |
| MF1550SOURCE       | MultiFiber Pro SM 1550 nm laser light source                    |
| TRC-MPO-PP-B       | 1 m MM TRC, MPO/MPO, Pinned/ Pinned, Type B polarity            |
| TRC-MPO-UP-B       | 1 m MM TRC, MPO/MPO, Unpinned/ Pinned, Type B polarity          |
| TRC-MPO-UU-B       | 0.3 m MM TRC, MPO/MPO, Unpinned/ Unpinned, Type B polarity      |
| TRC-SM-MPOAPC-PP-A | 1 m SM TRC, MPOAPC/MPOAPC, Pinned/Pinned, Type A polarity       |
| TRC-SM-MPOAPC-UP-A | 1 m SM TRC, MPOAPC/MPOAPC, Unpinned/Pinned, Type A polarity     |
| TRC-SM-MPOAPC-UU-A | 0.3 m SM TRC, MPOAPC/MPOAPC, Unpinned/Unpinned, Type A polarity |
| BKC-MPO-ULC        | 1 m breakout cord for MM MPO Unpinned LC connector              |
| BKC-MPO-USC        | 1 m breakout cord for MM MPO Unpinned SC connector              |
| SBKC-MPOAPCU-LCAPC | 1 m Breakout Cord for SM MPOAPC Unpinned LCAPC Connector        |
| SBKC-MPOAPCU-SCAPC | 1 m Breakout Cord for SM MPOAPC Unpinned SCAPC Connector        |
| ADP-MPO-A          | Type A polarity MPO adapter for SM APC                          |
| ADP-MPO-B          | Type B polarity MPO adapter                                     |
| QuickClean-1.25-5P | Quick Clean Cleaner 1.25 mm Fiber, LC and MU, 5 pack            |
| QuickClean-1.25-1P | Quick Clean Cleaner 1.25 mm Fiber, LC and MU, Single            |
| QuickClean-2.5-5P  | Quick Clean Cleaner 2.5 mm Fiber – SC, ST, FC, E2000, 5 pack    |
| QuickClean-2.5-1P  | Quick Clean Cleaner 2.5 mm Fiber – SC, ST, FC, E2000, Single    |

|                   |                                                                                                                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QuickClean-MPO-5P | Quick Clean Cleaner MPO Fiber, 5 pack                                                                                                                                                                                                  |
| QuickClean-MPO-1P | Quick Clean Cleaner MPO Fiber, Single                                                                                                                                                                                                  |
| NFC-KIT-CASE-E    | Enhanced Fiber Optic Cleaning Kit – includes (1) Quick Clean Cleaner for 1.25 mm connector, (1) Quick Clean Cleaner for 2.5 mm connector, (1) Quick Clean Cleaner for MPO/MPO® cleaner, a solvent pen, a cleaning cube and a soft case |
| MS2-MAG-KIT       | Magnetic Strap Attachment and spare holster                                                                                                                                                                                            |

## About Fluke Networks

Fluke Networks is the worldwide leader in certification, troubleshooting, and installation tools for professionals who install and maintain critical network cabling infrastructure. From installing the most advanced data centers to restoring service in the worst weather, our combination of legendary reliability and unmatched performance ensure jobs are done efficiently. The company's flagship products include the innovative LinkWare™ Live, the world's leading cloud-connected cable certification solution with over fourteen million results uploaded to date.

1

Descriptions, information, and viability of the information contained in this document are subject to change without notice.

Revised: September 11, 2020 9:16 AM

Literature ID: 4213085D

© Fluke Networks 2018