

Datasheet: OptiFiber® Pro OTDR

Accelerates enterprise fiber troubleshooting and certification.

The OptiFiber Pro OTDR is the Tier 2 (extended) fiber certification solution and part of the Versiv™ Cabling Certification product family. The Versiv line also includes copper certification, OLTS and Wi-Fi analysis modules. Versiv is designed around the revolutionary ProjX™ management system and Taptive™ user interface. ProjX tracks jobs to ensure they're done correctly the first time, thus reducing rework. With the intuitive Taptive user interface, instrument set-up and operation are so simple, even operators with limited cabling skills can successfully test and troubleshoot a system. Analysis of measurement data and professional test reports are easy with the familiar LinkWare™ management software.

Get ready to overachieve.



Designed for Enterprise Fiber

As enterprise networks and datacenter architectures evolve, IT infrastructure administrators demand better OTDR technology to maintain fiber network performance. Many OTDRs (Optical Time Domain Reflectometers) used for fiber troubleshooting are designed for carriers and contain cumbersome and complicated features that enterprise users don't need. Few OTDRs are built with features and usability for enterprise network engineers, SAN designers and cable installers.

As enterprises consume more storage resources and adopt higher bandwidth (40G, 100G) datacenter architectures, the resilience of the cabling infrastructure becomes highly dependent upon maintenance tools to ensure fiber reliability. OptiFiber Pro is the industry's first purpose-built OTDR that meets the unique challenges of an enterprise fiber infrastructure. With its simple Taptive user interface and powerful feature set, the OptiFiber Pro turns anyone into an efficient and expert premise fiber troubleshooter or installer.

Unique features:

- Versiv enables users to accomplish more than ever with a cable tester, accelerating every step of the testing process
- SmartLoop OTDR enables automated testing and analysis of two fibers in a single test. Not only does this halve network-testing time, but it also eliminates the need to travel to the far end of the connection to perform tests.
- Taptive user interface puts advanced data analysis and easy set-up and operation at the fingertips of technicians of all skill levels.
- LinkWare management software provides unmatched analysis of test results and professional test reports

Performance:

- Test times as short as two seconds in Quick Test mode
- Quickly test datacenter fiber with pre-programmed settings
- Troubleshoot datacenter fiber links with short patch cables and many connectors because of ultra short dead zones
- Easily characterize all connectors, splices and areas of high loss with graphical EventMap™ view
- ProjX management system increases return on investment by enabling OTDR

Standards:

- Full OTDR capability that certifies fiber performance based on industry standards or customer specifications
- Complaint with ISO and TIA standards

Unique Certification with Flexibility and Efficiency

An important aspect in maximizing an OTDR's value is to properly plan its day-to-day usage. With ProjX management system, OptiFiber Pro allows a project manager to define each user's role, settings and the associated tasks to be performed – transforming the OTDR into an all-in-one fiber testing tool complete with planning, inspection, certification and reporting.

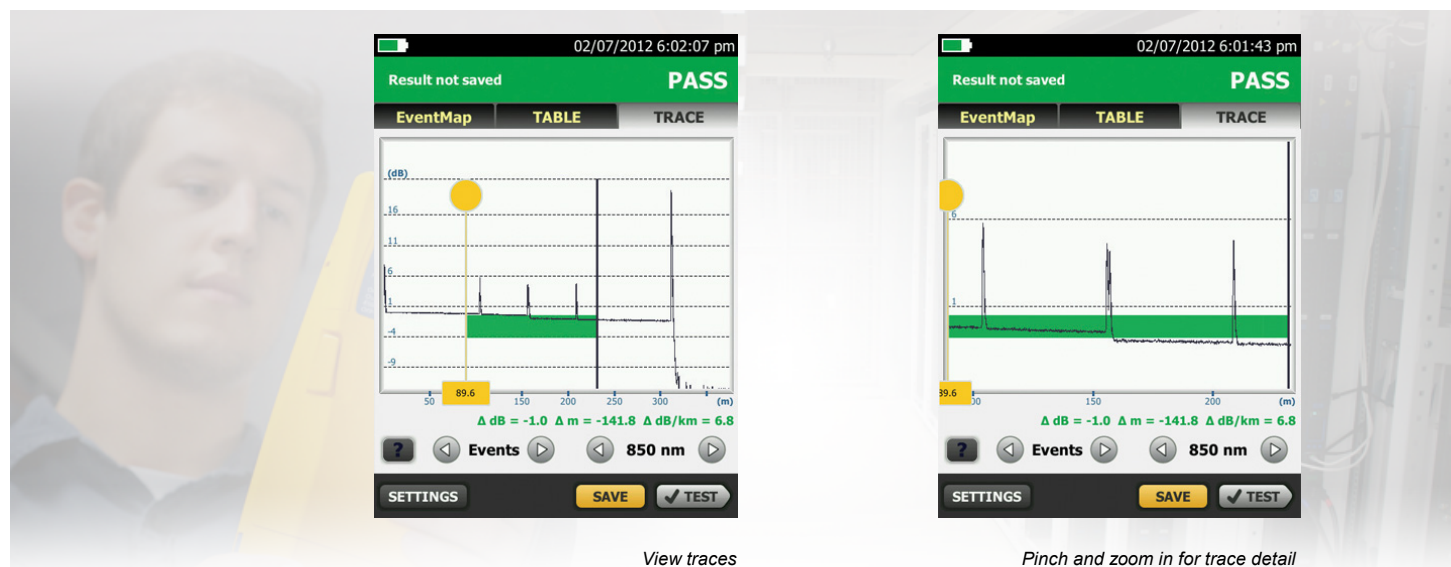
Advantages:

- Powerful ProjX management system facilitates OTDR sharing with clear job assignment for each operator
- Easy monitoring of job progress with pass/fail results
- Built-in Visual Fault Locator (VFL) to facilitate troubleshooting
- On-screen report generation and upload to LinkWare™ application



Taptive User Interface

Most OTDRs are designed for a myriad of applications, causing the user interface to be difficult to navigate and interpret. OptiFiber Pro has the Taptive user interface which combines the latest “gesture-based” interface technology with a capacitive touchscreen to deliver the most innovative and user-friendly OTDR.



Optimized for the Datacenter

Driven by server virtualization and multi-gigabit links between servers, networks and storage, the datacenter architecture employs more patch cords and dense topology connectors, rendering carrier-class OTDRs with long dead-zones ineffective. OptiFiber Pro not only makes fiber deployment in datacenters possible, but provides the highest level of accuracy for quick problem resolution.

Advantages:

- Ultra-short event and attenuation dead-zones precisely locates events and faults on fiber links
- Datacenter OTDR™ mode automatically sets the configuration to quickly test datacenter fiber
- The EventMap feature depicts fiber events in a way that requires no trace analysis expertise

Extremely short event and attenuation dead zone

The OptiFiber Pro leverages the most sophisticated optical technology to provide the shortest event dead zone (0.5 m typical for MM) and attenuation dead zone (2.5 m typical for MM and 3.6 m typical for SM) of any OTDR. This technological advancement allows OptiFiber Pro to detect and measure closely spaced faults where no other OTDR can in today's connector-rich datacenter and storage area network environments.

Two second trace per wavelength

Another breakthrough with OptiFiber Pro is the data acquisition speed. While in Quick Test mode, a complete set of data is acquired in as little as two seconds per wavelength. OptiFiber Pro then analyzes the data and displays it as an EventMap event, Table or Trace. The end result is less time spent testing and more time performing other tasks.

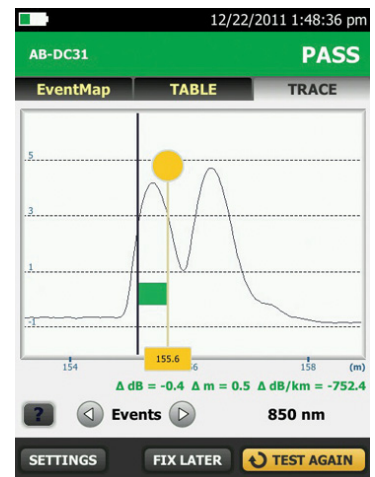
DataCenter OTDR™ Mode

With a simple one-touch selection, users enter DataCenter OTDR mode – without setup time for fine tuning as needed in legacy OTDRs. DataCenter OTDR mode automatically detects OTDR parameters – end-detection algorithms, pulse widths – without getting confused by the short links or number of connectors.

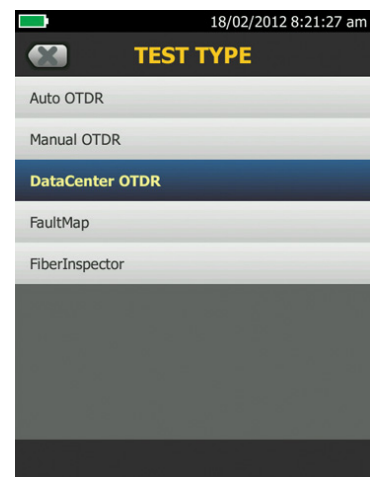
Graphical EventMap™ view

To eliminate the learning curve associated with reading an OTDR trace, OptiFiber Pro's advance logic automatically interprets the information to create a detailed and graphical map of events that includes connectors, splices and anomalies. To accommodate different preferences, users can easily switch between the EventMap, the Event Table and the Trace for test details. Any faulty events will be highlighted with RED icons to facilitate quick troubleshooting.

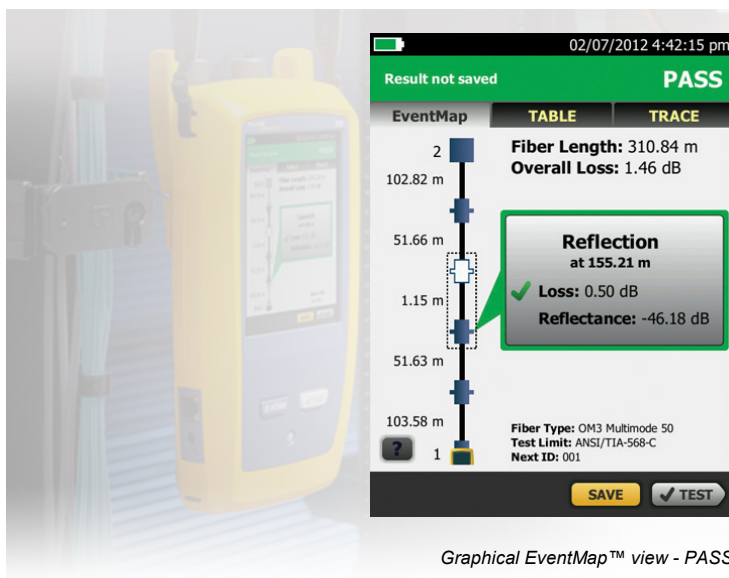
On-screen "help" suggests corrective action(s) for resolving fiber problems during each testing step. The "help" offered is context sensitive which allows users to quickly pinpoint possible resolutions. An easy-to-read, gray icon in the bottom, left-hand corner shows detailed corrective action recommendations.



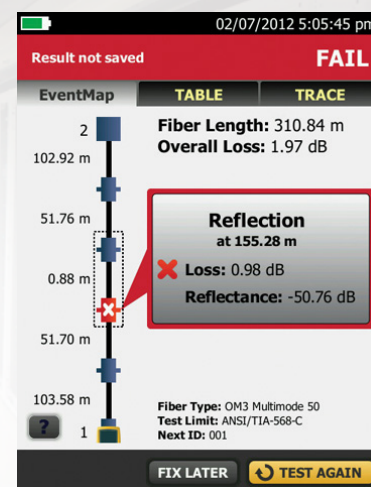
Extremely short event and attenuation dead zone



DataCenter OTDR Mode



Graphical EventMap™ view - PASS



Eventmap™ - FAIL. See Help icon for on screen corrective action.

Dynamic project and user profile management with ProjX management system

OptiFiber Pro enhances job efficiency by allowing the project manager to create and manage operator and job profiles per project. Defined jobs or sets of cable IDs can be assigned to specific operators. The progress and status of each project can also be easily monitored.

SmartLoop OTDR

SmartLoop OTDR enables automated testing and analysis of two fibers in a single test. This patent pending process automatically separates the two fibers for individual pass/fail analysis, display, and reporting. Not only does this cut the testing time by at least half, it also enables bi-directional testing without moving the OTDR to the far end. In addition to getting the job done quicker, SmartLoop OTDR further enhances the ease and speed of testing in environments where the far end is difficult or even dangerous to reach because the OTDR never has to be moved to the far end.

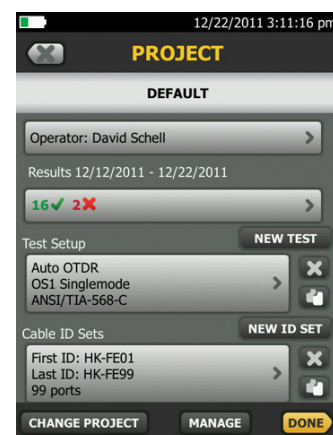
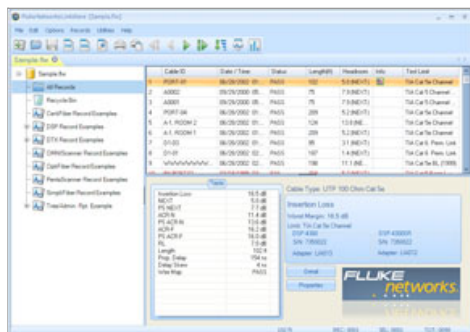
FiberInspector™ Pro

OptiFiber Pro incorporates the FiberInspector Pro video inspection system which enables you to quickly inspect and certify fiber end-faces inside ports or patch cords. It's 2-second automated PASS/FAIL grading eliminates human subjectivity and enables anyone to become a fiber inspection expert. Results can be saved in the certification report along side OptiFiber Pro's OTDR results.

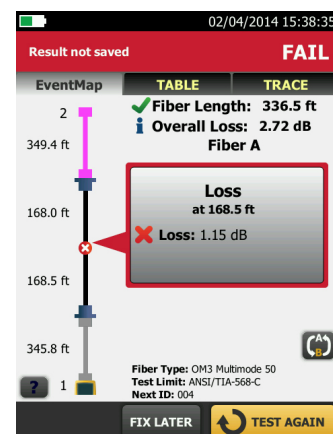
LinkWare™ Management Software

With LinkWare management software, OptiFiber Pro users can easily access the ProjX management system data, generate reports and upgrade the software in their testers. Project managers have full capabilities to monitor workflow and consolidate test results. LinkWare stats, provides automated statistical reports. This application moves you above and beyond the page-per-link report to see your entire cabling infrastructure in one summary. It analyzes and transforms LinkWare test results into charts to reveal your cabling plant performance. The report even summarizes your entire cabling infrastructure in a compact, graphical format so it's easy to verify margins and spot anomalies. Previous versions of LinkWare are backwards compatible with new versions, so you can stay current and integrate tests from different testers into one-test report. Combine OLTs Tier 1 (basic) and OTDR Tier 2 (extended) fiber certification results in a single report while allowing management of multiple jobs simultaneously. Users can provide the finishing touch by adding their company logo to the report and before offering to their customers for system acceptance. Keep your business tools simple. No matter which Fluke Networks cabling certification tester you use, LinkWare reports it all.

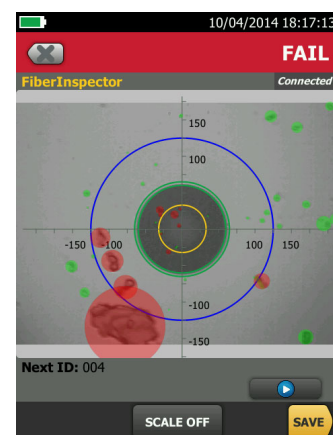
LinkWare Report



ProJX: Dynamic project and user profile management



ProJX: Dynamic project and user profile management



FiberInspector probe

Key OTDR Specifications

	Multimode module	Singlemode module	Quad module
Wavelengths	850 nm +/- 10 nm 1300 nm +35/-15 nm	1310 nm +/- 25 nm 1550 nm +/- 30 nm	850 nm +/- 10 nm, 1300 nm +35/-15 nm, 1310 nm +/- 25 nm, 1550 nm +/- 30 nm
Compatible fiber types	50/125 µm 62.5/125 µm	Singlemode	50/125 µm, 62.5/125 µm, Singlemode
Event dead zone ¹	850 nm: 0.5 m (typical) 1300 nm: 0.7 m (typical)	1310 nm: 0.6 m (typical) 1550 nm: 0.6 m (typical)	850 nm: 0.5 m (typical), 1300 nm: 0.7 m (typical), 1310 nm: 0.6 m (typical), 1550 nm: 0.6 m (typical)
Attenuation dead zone ²	850 nm: 2.5 m (typical) 1300 nm: 4.5 m (typical)	1310 nm: 3.6 m (typical) 1550 nm: 3.7 m (typical)	850 nm: 2.5 m (typical), 1300 nm: 4.5 m (typical), 1310 nm: 3.6 m (typical), 1550 nm: 3.7 m (typical)
Dynamic range ^{3, 5, 6}	850 nm: 28 dB (typical) 1300 nm: 30 dB (typical)	1310 nm: 32 dB (typical) 1550 nm: 30 dB (typical)	850 nm: 28 dB (typical), 1300 nm: 30 dB (typical), 1310 nm: 32 dB (typical), 1550 nm: 30 dB (typical)
Max distance range setting	40 km	130 km;	MM: 40 km, SM: 130 km
Distance measurement range ^{4, 5, 7, 8, 9, 10}	850 nm: 9 km 1300 nm: 35 km	1310 nm: 80 km 1550 nm: 130 km	850 nm: 9 km, 1300 nm: 35 km, 1310 nm: 80 km, 1550 nm: 130 km
Reflectance range ^{4, 5}	850 nm: -14 dB to -57 dB (typical) 1300 nm: -14 dB to -62 dB (typical)	1310 nm: -14 dB to -65 dB (typical) 1550 nm: -14 dB to -65 dB (typical)	850 nm: -14 dB to -57 dB (typical), 1300 nm: -14 dB to -62 dB (typical), 1310 nm: -14 dB to -65 dB (typical), 1550 nm: -14 dB to -65 dB (typical)
Sample resolution	3 cm to 400 cm	3 cm to 400 cm	3 cm to 400 cm
Pulse widths (nominal)	850 nm: 3, 5, 20, 40, 200 ns 1300 nm: 3, 5, 20, 40, 200, 1000 ns	3, 10, 30, 100, 300, 1000, 3000, 10000, 20000 ns	850 nm: 3, 5, 20, 40, 200 ns, 1300 nm: 3, 5, 20, 40, 200, 1000 ns, 1310/1550 nm: 3, 10, 30, 100, 300, 1000, 3000, 10000, 20000 ns
Test time (per wavelength)	Auto setting: 5 sec (typical)	Auto setting: 10 sec (typical)	Auto setting: MM - 5 sec (typical) SM - 10 sec (typical)
	Quick test setting: 2 sec (typical)	Quick test setting: 5 sec (typical)	Quick test setting: MM - 2 sec (typical) SM - 5 sec (typical)
	Best resolution setting: 2 to 180 sec	Best resolution setting: 5 to 180 sec	Best resolution setting: MM - 2 to 180 sec SM - 5 to 180 sec
	FaultMap setting: 2 sec (typical), 180 sec (max)	FaultMap setting: 10 sec (typical), 180 sec (max)	FaultMap setting: MM - 2 sec (typical) MM - 180 sec (max) SM - 10 sec (typical) SM - 180 sec (max)
	DataCenter OTDR setting: 1 sec (typical at 850 nm), 7 sec (max)	DataCenter OTDR setting: 20 sec (typical), 40 sec (max)	DataCenter OTDR setting: MM - 1 sec (typical at 850 nm) MM - 7 sec (max) SM - 20 sec (typical) SM - 40 sec (max)
	Manual setting: 3, 5, 10, 20, 40, 60, 90, 120, 180 sec	Manual setting: 3, 5, 10, 20, 40, 60, 90, 120, 180 sec	Manual setting: MM - 3, 5, 10, 20, 40, 60, 90, 120, 180 sec SM - 3, 5, 10, 20, 40, 60, 90, 120, 180 sec

1. Measured at 1.5 dB below non-saturating reflection peak with the shortest pulse width. Reflection peak < -40 dB for multimode and < -50 dB for singlemode.
2. Measured at +/- 0.5 dB deviation from backscatter with the shortest pulse width. Reflection peak < -40 dB for multimode and < -50 dB for singlemode.
3. For typical backscatter coefficient for OM1 fiber: 850: -65 dB, 1300: -72 dB.
4. Typical backscatter and attenuation coefficients for OM2-OM4 fiber: 850 nm: -68 dB; 2.3 dB/km; 1300 nm: -76 dB; 0.6 dB/km.
5. Typical backscatter and attenuation coefficients for OS1-OS2 fiber: 1310nm : -79 dB; 0.32 dB/km; 1550 nm: -82 dB; 0.19 dB/km.
6. SNR=1 method, 3 minute averaging, widest pulse width. 7. 850 = 9 km typical to find the end or 7 km typical to find a 0.1 dB event (with a maximum of 18 dB attenuation prior to the event).
8. 1300 = 35 km typical to find the end or 30 km typical to find a 0.1 dB event (with a maximum of 18 dB attenuation prior to the event).
9. 1310 = 80 km typical to find the end or 60km typical to find a 0.1 dB event (with a maximum of 20 dB attenuation prior to the event).
10. 1550 = 130 km typical to find the end or 90 km typical to find a 0.1 dB event (with a maximum of 18 dB attenuation prior to the event).
11. Does not include index of refraction error and does not include automatic event location error.
12. dB variation per 1 dB step.
13. Applies along the trace backscatter within the distance range in which the OTDR can find a 0.1 dB event.

Additional Key Specifications

FiberInspector probe specifications	
Magnification	~ 200X with OptiFiber Pro Display
Light source	Blue LED
Power source	TFS mainframe
Field of View (FOV)	Horizontal: 425 µm, Vertical: 320 µm
Minimum detectable particle size	0.5 µm
Dimensions	Approximately 6.75 in x 1.5 in (1175 mm x 35 mm) without adapter tip
Weight	200 g
Temperature range	Operating: 32°F to 122°F (0 °C to +50 °C), Storage: -4°F to +158°F (-20°C to +70°C)

VFL specifications	
On/Off control	Mechanical switch and a button on the touch screen
Output power	316 µW (-5 dBm) ≤ peak power ≤ 1.0 mW (0 dBm)
Operating wavelength	650 nm nominal
Spectral width (RMS)	±3 nm
Output modes	Continuous wave Pulsed mode (2 Hz to 3 Hz blink frequency)
Connector adapter	2.5 mm universal
Laser safety (classification)	Class II CDRH Complies to EN 60825-2
For complete kit configurations, please visit www.flukenetworks.com/orderopro	

Technical Specifications

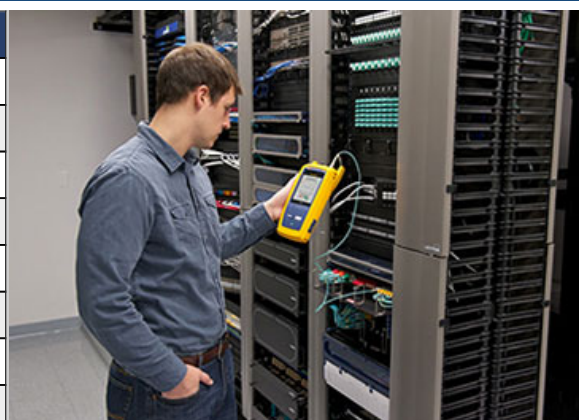
General specifications	
Weight	Mainframe with module and battery: 3 lbs, 5 oz (1.28 kg)
Dimensions	Mainframe with module and battery: 2.625 in x 5.25 in x 11.0 in (6.67 cm x 13.33 cm x 27.94 cm)
Battery	Lithium ion battery pack, 7.2 volts
Battery life	8 hr Auto OTDR operation, dual wavelength no video probe connected, 150 m of fiber

Charge Time	
Tester off	4 hours to charge from 10% to 90% capacity
Tester on	6 hours to charge from 10% to 90% capacity with the tester on

OptiFiber Pro Ordering Information

Environmental specifications	
Operating temperature*	-18°C to 45°C
Non-operating temperature	-30°C to 60°C
Operating altitude	4,000 m (13,123 ft), 3,200 m (10,500 ft) with AC adapter
Storage altitude	12,000 m
EMC	EN 61326-1
<ul style="list-style-type: none"> Using battery power. With AC power: 0°C to 45°C. Real Time Trace function used for no more than 5 minutes in a 15-minute period. Maximum ambient temperature is 35°C for continuous use of the Real Time Trace function. 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. 	
Model	Description
OFP-100-M	OptiFiber Pro Multimode OTDR kit
OFP-100-MI	OptiFiber Pro Multimode OTDR with inspection kit
OFP-100-S	OptiFiber Pro Singlemode OTDR kit
OFP-100-SI	OptiFiber Pro Singlemode OTDR with inspection kit
OFP-100-Q	OptiFiber Pro QUAD OTDR kit
OFP-100-QI	OptiFiber Pro QUAD OTDR with inspection kit
OFP-MM	OptiFiber Pro Multimode OTDR module
OFP-SM	OptiFiber Pro Singlemode OTDR module
FI-1000-KIT	FI-1000 Fiber Inspector LC, FC/SC BULKHEAD, 1.25 AND 2.5MM UNIVERSAL TIPS in a box
OFPQI-MFP	Data Center Fiber (MM/SM) Troubleshooting Kit
OFPMI-MFP	Data Center Fiber (MM) Troubleshooting Kit

Accessories	Description
MMC-50-SCSC	Multimode launch cable 50µm SC/SC
MMC-50-SCLC	Multimode launch cable 50µm SC/LC
MMC-50-SCST	Multimode launch cable 50µm SC/ST
MMC-50-SCFC	Multimode launch cable 50µm SC/FC
MMC-50-LCLC	Multimode launch cable 50µm LC/LC
MMC-50-FCFC	Multimode launch cable 50µm FC/FC
MMC-50-STST	Multimode launch cable 50µm ST/ST
MMC-50-SCE2K	Multimode launch cable 50µm SC/E2K
MMC-62-SCSC	Multimode launch cable 62.5µm SC/SC
MMC-62-SCLC	Multimode launch cable 62.5µm SC/LC
MMC-62-SCST	Multimode launch cable 62.5µm SC/ST
MMC-62-SCFC	Multimode launch cable 62.5µm SC/FC
MMC-62-LCLC	Multimode launch cable 62.5µm LC/LC
MMC-62-FCFC	Multimode launch cable 62.5µm FC/FC
MMC-62-STST	Multimode launch cable 62.5µm ST/ST
SMC-9-SCSC	Singlemode launch cable 9µm SC/SC
SMC-9-SCLC	Singlemode launch cable 9µm SC/LC
SMC-9-SCST	Singlemode launch cable 9µm SC/ST
SMC-9-SCFC	Singlemode launch cable 9µm SC/FC
SMC-9-LCLC	Singlemode launch cable 50µm LC/LC
SMC-9-FCFC	Singlemode launch cable 50µm FC/FC
SMC-9-STST	Singlemode launch cable 50µm ST/ST
SMC-9-SCE2KAPC	Singlemode launch cable 9µm SC/E200 APC
MRC-50-SCSC	0.3m MM 50µm TRC 0.3m for OTDR port (SC/SC)
MRC-62.5-SCSC	0.3m MM 62.5µm TRC 0.3m for OTDR port (SC/SC)
SRC-9-SCSC	0.3m SM 9µm TRC 0.3M for OTDR port (SC/SC)
MRC-50-LCLC	0.3m MM 50µm TRC 0.3m for OTDR port (LC/LC)
MRC-62.5-LCLC	0.3m MM 62.5µm TRC 0.3m for OTDR port (LC/LC)
SRC-9-LCLC	0.3m SM 9µm TRC 0.3M for OTDR port (LC/LC)
PA-SC	OTDR source port interchangeable SC adapter
PA-LC	OTDR source port interchangeable LC adapter
PA-FC	OTDR source port interchangeable FC adapter
VERSIV-TSET	VERSIV Headphones
VERSIV-BATTERY	VERSIV Battery
VERSIV-ACUN	VERSIV Charge
VERSIV-STRP	VERSIV Strap kit
VERSIV-STND	VERSIV Demo Stand



FiberInspector probe models and accessories

Model	Description
FI-1000	FI-1000 FiberInspector USB video probe
FI-1000-KIT	FI-1000 FiberInspector USB video probe with LC, FC/SC Bulkhead, 1.25 and 2.5 mm universal tips in a box
FI1000-SCFC-TIP	SC and FC bulkhead video probe tip
FI1000-TIP-KIT	LC, FC/SC Bulkhead, 1.25 and 2.5 mm universal tips in a box
FI1000-LC-TIP	LC bulkhead video probe tip
FI1000-ST-TIP	ST bulkhead video probe tip
FI1000-MU-TIP	MU bulkhead video probe tip
FI1000-E2KAPC-TIP	E2000/APC bulkhead video probe tip
FI1000-SCAPC-TIP	SC/APC bulkhead video probe tip
FI1000-E2K-TIP	E2000 bulkhead video probe tip
FI1000-LCAPC-TIP	LC/APC bulkhead video probe tip
FI1000-2.5-UTIP	2.5mm universal video probe tip for patch cords
FI1000-1.25-UTIP	1.25mm universal video probe tip for patch cords
FI1000-2.5APC-UTIP	2.5mm APC universal video probe tip for patch cords
FI1000-MPO-UTIP	MPO probe tip and translator knob for patch cords and bulkheads
FI1000-MPOAPC-UTIP	MPO/APC probe tip and translator knob for patch cords and bulkheads
FI1000-1.25APC-UTIP	1.25mm APC universal video probe tip for patch cords

Gold Support

Model	Description
GLD-OFP-100-Q	1 year of Gold support coverage for OptiFiber Pro OTDR - Model: OFP-100-Q
GLD3-OFP-100-Q	3 year of Gold support coverage for OptiFiber Pro OTDR - Model: OFP-100-Q
GLD-OFP-100-QI	1 year of Gold support coverage for OptiFiber Pro Quad OTDR kit
GLD3-OFP-100-QI	3 year of Gold support coverage for OptiFiber Pro Quad OTDR kit - Model: OFP-100-QI
GLD-OFP-100-MS	1 year of Gold support coverage for OptiFiber Pro Multimode or Singlemode OTDR kit - Models: OFP-100-M OR OFP-100-S
GLD3-OFP-100-MS	3 year of Gold support coverage for OptiFiber Pro Multimode or Singlemode OTDR kit - Models: OFP-100-M OR OFP-100-S
GLD-OFP-100-MS/SI	1 year of Gold support coverage for OptiFiber Pro Multimode or Singlemode OTDR with inspection kit - Models: OFP-100-MI OR OFP-100-SI
GLD3-OFP-100-MS/SI	1 year of Gold support coverage for OptiFiber Pro Multimode or Singlemode OTDR with inspection kit - Models: OFP-100-MI OR OFP-100-SI
GLD-OFPQI-MFP	1 year of Gold support coverage for OptiFiber Pro OTDR and MultiFiber Pro

For a complete listing of OptiFiber Pro models and accessories, visit www.flukenetworks.com/OPRO.