

Datasheet: OptiFiber® Pro OTDR

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 and OLTS 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.



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:

- SmartLoop OTDR enables automated testing and analysis of two fibers in a single test, eliminating 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.
- Compatible with Linkware™ Live. Linkware Live enables to easily track job progress, get real-time access to test results to quickly fix problems in the field, and easily transfer and consolidate test results from the tester to LinkWare™ PC Cable Test Management Software.

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
- Pass/Fail certification of fiber optic connector endfaces
- ProjX management system increases return on investment by enabling OTDR
- Reduce network downtime by quickly and precisely identifying faults on all fiber types
- Built-in Visual Fault Locator (VFL) easily identifies damaged fibers

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.

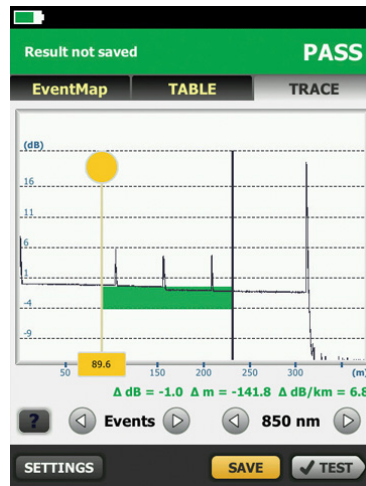
Advantages:

- 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
- Integrated Wi-Fi allows you to easily upload results to LinkWare™ Live

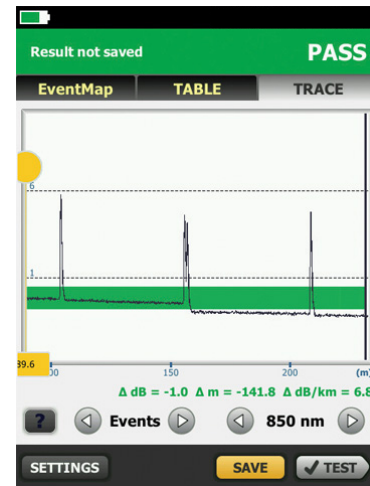


Taptive User Interface

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.



View traces



Pinch and zoom in for trace detail

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

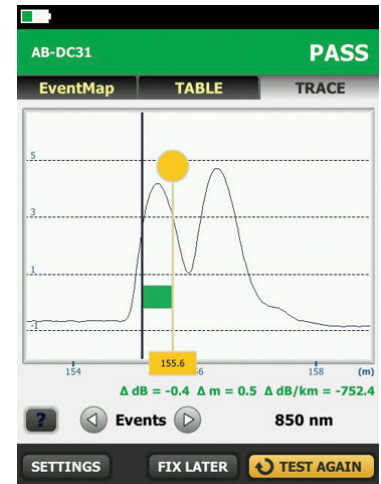
The OptiFiber Pro leverages the most sophisticated optical technology to provide the shortest event dead zone (0.5 m typical for MM) and attenuation dead zone (2.5 m typical for MM and 3.6 m typical for SM) of any OTDR. This technological advancement allows OptiFiber Pro to detect and measure closely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

Two second trace per wavelength

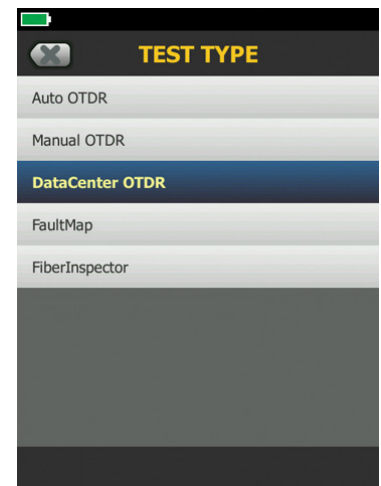
Another breakthrough with OptiFiber Pro is the data acquisition speed. While in Quick Test mode, a complete set of data is acquired in as little as two seconds per wavelength. OptiFiber Pro then analyzes the data and displays it as an EventMap event, Table or Trace. The end result is less time spent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



Extremely short event and attenuation dead zone

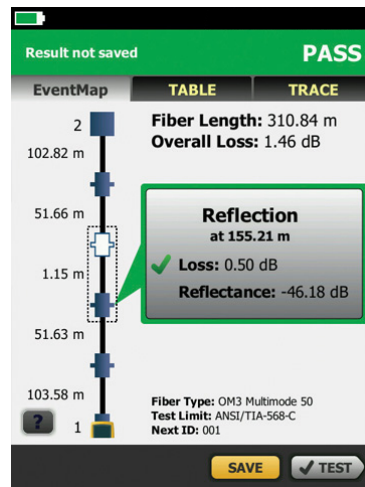


DataCenter OTDR Mode

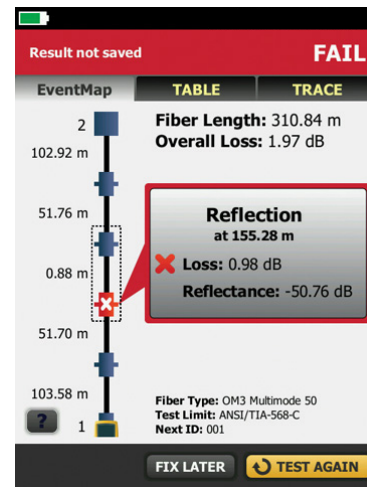
Graphical EventMap™ view

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.



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.

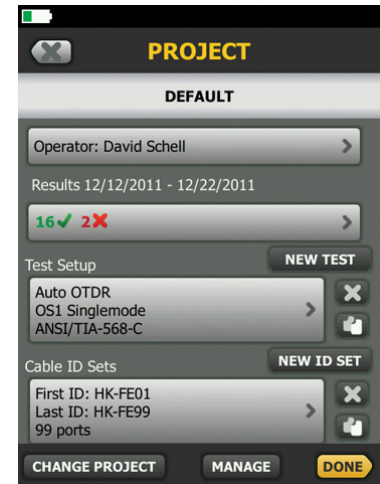
SmartLoop OTDR



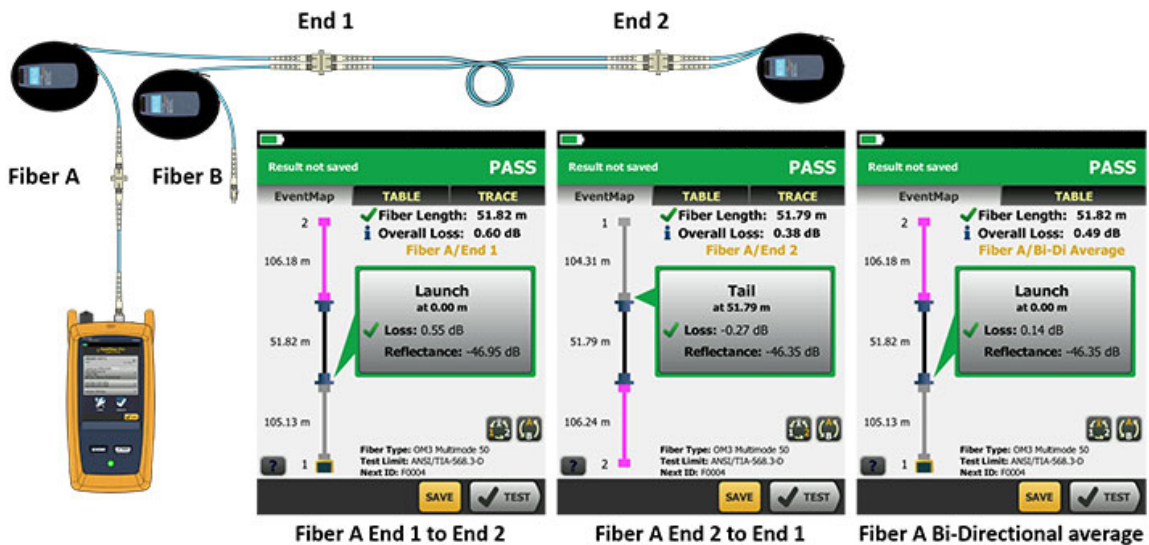
SmartLoop OTDR enables automated testing and analysis of two fibers in a single test while meeting standard's requirements. This patent pending process automatically separates the two fibers for individual pass/fail analysis, display, and reporting. Not only does this cut the testing time by at least half, it also enables instant bi-directional averaged test results without moving the OTDR to the far end.

SmartLoop meets the standard's requirements of leaving the launch and tail fibers in their initial locations during both bi-directional tests. 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. In addition to getting the job done quicker, SmartLoop meets the standard's requirements of leaving the launch and tail fibers in their initial locations during both bi-directional tests.

Test it right and test it fast with SmartLoop – included for free in all OptiFiber Pro modules.



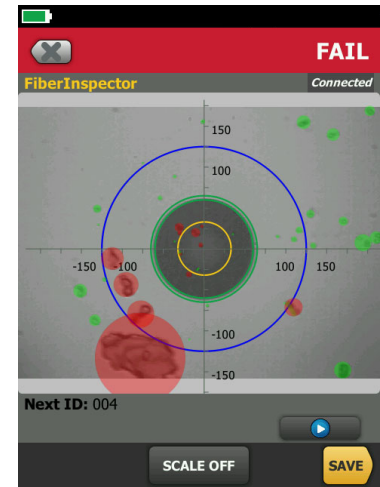
ProjX: Dynamic project and user profile management



OptiFiber Pro's SmartLoop technology test two fiber in one tests while providing individual pass, fail and bi-directionally averaged results for each fiber link.

Fiber Endface Inspection and Certification

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 1-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.



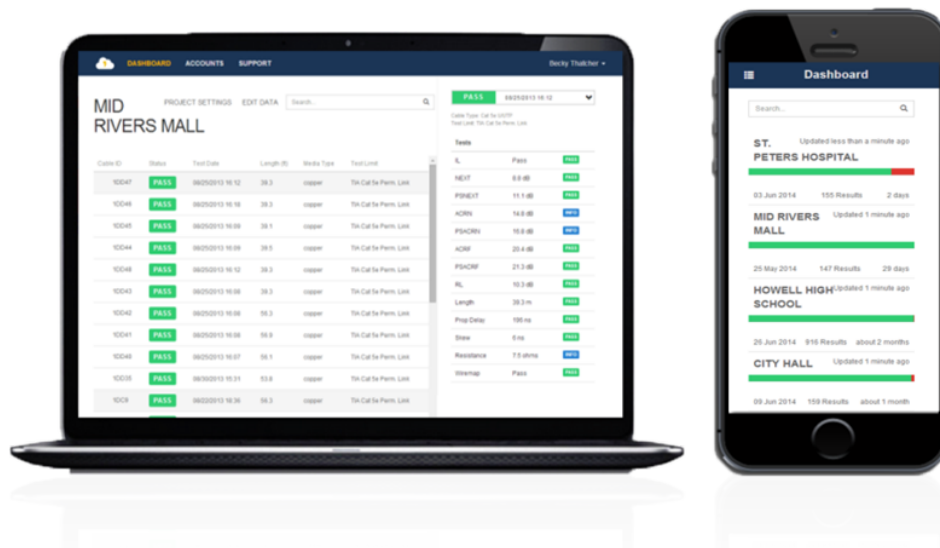
FiberInspector probe

LinkWare Live

LinkWare Live is a Software as a Service from Fluke Networks for cabling professionals managing multiple projects that quickly, easily and affordably provides unmatched job visibility and superior project control from anywhere at anytime.

LinkWare Live provides an easy to read dashboard that shows an overview of the project status and a project activity to ensure projects are completed on time. It removes the hurdles in data management by giving the ability to directly upload and consolidate test results from multiple testers. You can quickly validate projects and test results in real-time with browser based ease to avoid any future rework due to incorrect testing or missing test results. Use any smart device with a browser to validate and check projects or test results. LinkWare™ Cable Test Management Software also connects to the LinkWare Live service enabling you to download test results into the LinkWare Cable Test Management Software to generate professional reports in a common format.

The OptiFiber Pro OTDR connects to the LinkWare Live Service to directly upload results from the tester which provide access to test-results in real-time from anywhere.



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

	Multimode module	Singlemode module	Quad module
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 μ m, Vertical: 320 μ m
Minimum detectable particle size	0.5 μ m
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 μ W (-5 dBm) $\leq$ peak power $\leq$ 1.0 mW (0 dBm)
Operating wavelength	650 nm nominal
Spectral width (RMS)	$\pm$ 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
Integrated Wi-Fi	Meets IEEE 802.11 a/b/g/n; dual band (2.4 GHz and 5 GHz)

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

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
• 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.	

OptiFiber Pro Ordering Information

OptiFiber Pro Wireless models	
Model	Description
OFP2-100-QI	OptiFiber Pro Quad OTDR V2 with inspection kit and Wi-Fi
OFP2-100-QI/GLD	OptiFiber Pro Quad OTDR V2 with inspection kit, Wi-Fi and 1 YR Gold Support
OFP2-CFP-QI	OptiFiber Pro, Certifiber Pro Quad V2 with inspection and Wi-Fi
OFP2-100-Q	OptiFiber Pro Quad OTDR V2 kit with Wi-Fi
OFP2-100-Q/GLD	OptiFiber Pro Quad OTDR V2 kit with Wi-Fi and 1 YR Gold Support
OFP2-100-MI	OptiFiber Pro Multimode OTDR V2 with inspection kit and Wi-Fi
OFP2-100-M	OptiFiber Pro Multimode OTDR V2 with Wi-Fi
OFP2-100-SI	OptiFiber Pro Singlemode OTDR V2 with inspection kit and Wi-Fi
OFP2-100-S	OptiFiber Pro Singlemode OTDR V2 with Wi-Fi
OptiFiber Pro Non-wireless models	
Model	Description
OFP2-100-Q-NW	OptiFiber Pro Quad OTDR V2 kit
OFP2-100-M-NW	OptiFiber Pro Multimode OTDR V2 kit
OFP2-100-S-NW	OptiFiber Pro Singlemode OTDR V2 kit

Accessories	Description
MMC-50-SCSC	Multimode launch cable 50 μ m SC/SC
MMC-50-SCLC	Multimode launch cable 50 μ m SC/LC
MMC-50-SCST	Multimode launch cable 50 μ m SC/ST
MMC-50-SCFC	Multimode launch cable 50 μ m SC/FC
MMC-50-LCLC	Multimode launch cable 50 μ LC/LC
MMC-50-FCFC	Multimode launch cable 50 μ FC/FC
MMC-50-STST	Multimode launch cable 50 μ m ST/ST
MMC-50-SCE2K	Multimode launch cable 50 μ m SC/E2K
MMC-62-SCSC	Multimode launch cable 62.5 μ m SC/SC
MMC-62-SCLC	Multimode launch cable 62.5 μ m SC/LC
MMC-62-SCST	Multimode launch cable 62.5 μ m SC/ST
MMC-62-SCFC	Multimode launch cable 62.5 μ m SC/FC
MMC-62-LCLC	Multimode launch cable 62.5 μ LC/LC
MMC-62-FCFC	Multimode launch cable 62.5 μ m FC/FC
MMC-62-STST	Multimode launch cable 62.5 μ m ST/ST
SMC-9-SCSC	Singlemode launch cable 9 μ m SC/SC
SMC-9-SCLC	Singlemode launch cable 9 μ m SC/LC
SMC-9-SCST	Singlemode launch cable 9 μ m SC/ST
SMC-9-SCFC	Singlemode launch cable 9 μ m SC/FC
SMC-9-LCLC	Singlemode launch cable 50 μ m LC/LC
SMC-9-FCFC	Singlemode launch cable 50 μ m FC/FC
SMC-9-STST	Singlemode launch cable 50 μ m ST/ST
SMC-9-SCE2KAPC	Singlemode launch cable 9 μ m SC/E200 APC



Accessories	Description
MRC-50-SCSC	0.3 m MM 50 μ m TRC 0.3 m for OTDR port (SC/SC)
MRC-62.5-SCSC	0.3 m MM 62.5 μ m TRC 0.3 m for OTDR port (SC/SC)
SRC-9-SCSC	0.3m SM 9 μ m TRC 0.3M for OTDR port (SC/SC)
MRC-50-LCLC	0.3 m MM 50 μ m TRC 0.3 m for OTDR port (LC/LC)
MRC-62.5-LCLC	0.3 m MM 62.5 μ m TRC 0.3 m for OTDR port (LC/LC)
SRC-9-LCLC	0.3 m SM 9 μ m 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-ADP-WI-FI	Wi-Fi Adapter for Versiv Mainframe. (Available in the following countries.)
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	2.5 mm universal video probe tip for patch cords
FI1000-1.25-UTIP	1.25 mm universal video probe tip for patch cords
FI1000-2.5APC-UTIP	2.5 mm 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	1.25 mm APC universal video probe tip for patch cords

OptiFiber Pro Gold Support models

Model	Description
GLD-OFP-100-QI	1 year Gold Support, OFP2-100-QI or OFP-100-QI
GLD3-OFP-100-QI	3 year Gold Support, OFP2-100-QI or OFP-100-QI
GLD-OFP-CFP-QI	1 year Gold Support, OFP2-CFP-QI or OFP-CFP-QI
GLD3-OFP-CFP-QI	3 year Gold Support, OFP2-CFP-QI or OFP-CFP-QI
GLD-OFP-100-Q	1 year Gold Support, OFP2-100-Q or OFP-100-Q
GLD3-OFP-100-Q	3 year Gold Support, OFP2-100-Q or OFP-100-Q
GLD-OFP-100-MI	1 year Gold Support, OFP2-100-MI or OFP-100-MI
GLD3-OFP-100-MI	3 year Gold Support, OFP2-100-MI or OFP-100-MI
GLD-OFP-100-M	1 year Gold Support, OFP2-100-M or OFP-100-M
GLD3-OFP-100-M	3 year Gold Support, OFP2-100-M or OFP-100-M
GLD-OFP-100-SI	1 year Gold Support, OFP2-100-SI or OFP-100-SI
GLD3-OFP-100-SI	3 year Gold Support, OFP2-100-SI or OFP-100-SI
GLD-OFP-100-S	1 year Gold Support, OFP2-100-S or OFP-100-S
GLD3-OFP-100-S	3 year Gold Support, OFP2-100-S or OFP-100-S

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