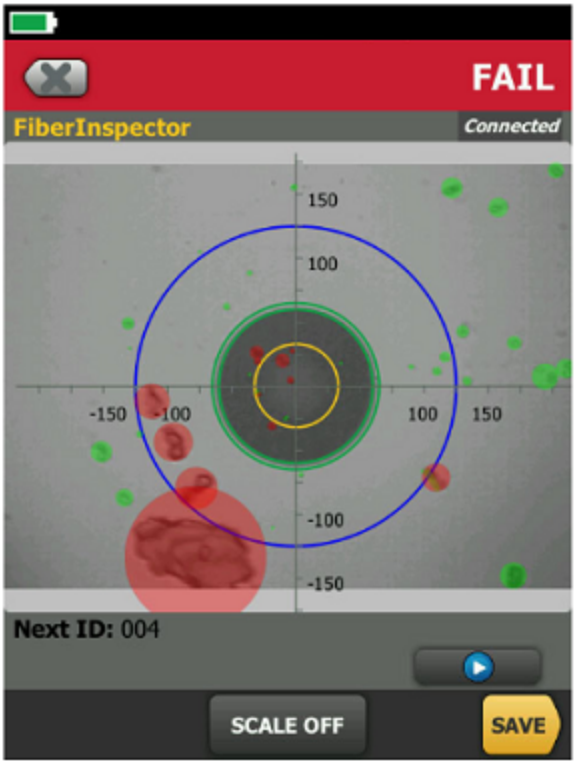
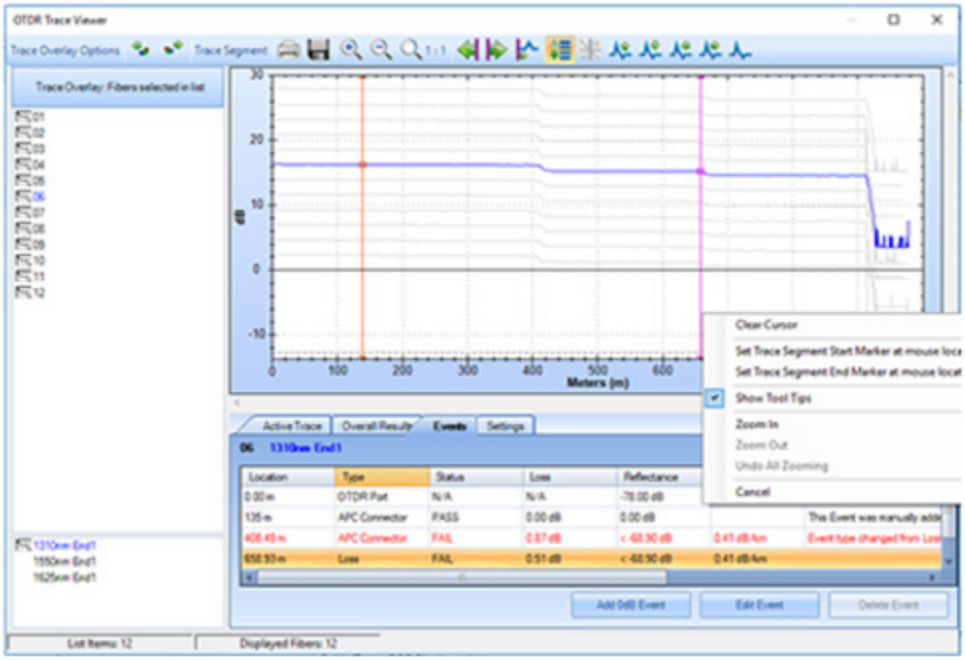
APPLICATION NOTE

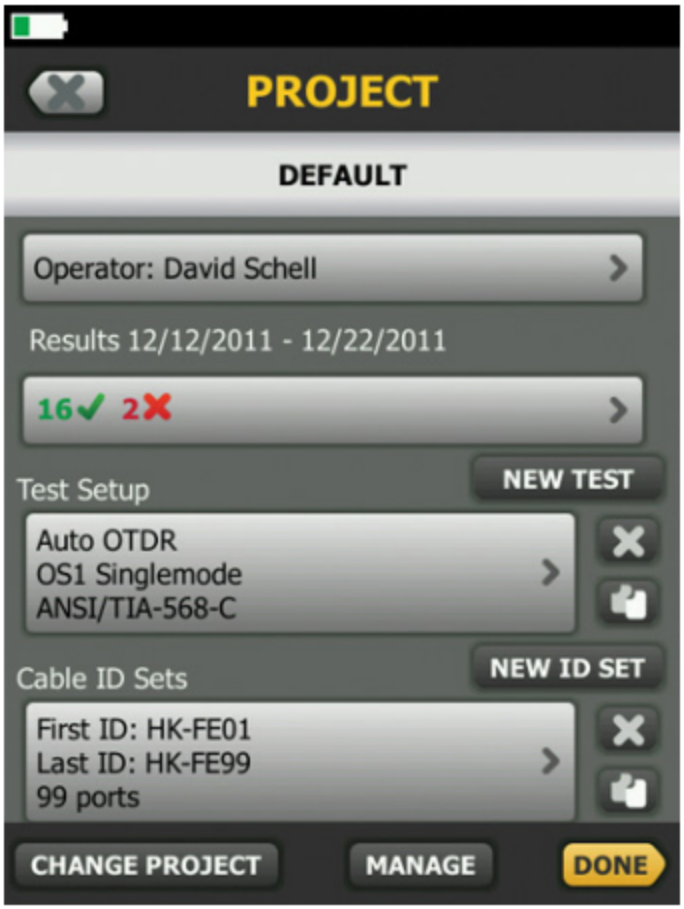
OptiFiber® Pro Series OTDRs



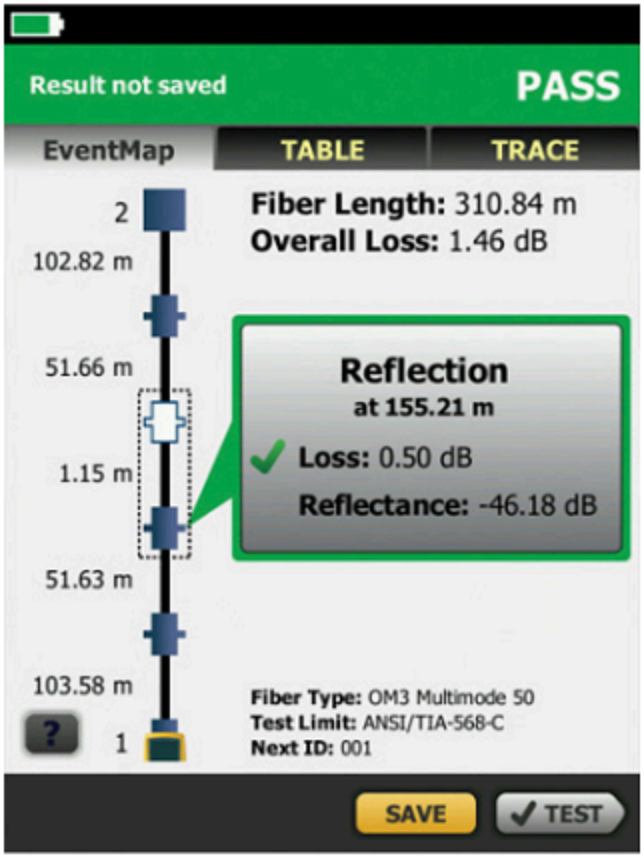
FiberInspector probe



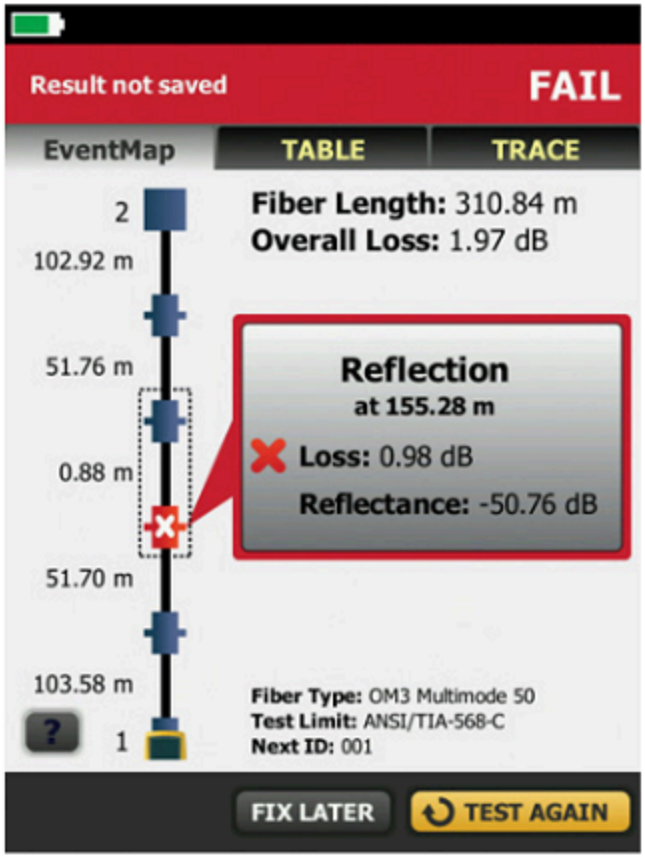
Setting span event parameters using LinkWare PC



ProjX: Dynamic project and user profile management



Graphical EventMap view – PASS



Eventmap – FAIL. See Help icon for on screen corrective action.

Overview

The OptiFiber Pro® Series OTDRs are the Tier 2 (extended) fiber certification solution for Datacenters, Outside Plant (OSP), FTTx and PON environments and are part of the Versiv™ Cabling Certification system. The system includes copper certification and OLTSmodules. Versiv is designed around the revolutionary ProjX™ management system and Taptive™ user interface. ProjX tracks jobs to ensure they're done correctl 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.



Troubleshoot and Document Fiber Faster

Fluke Networks' OptiFiber Pro Series OTDRs are designed to make every level of user more efficient whether working in data centers, outside plant, FTTx or PON applications. Novice users can set up and shoot traces in no time by using the Auto OTDR function which analyzes the fiber under test and then chooses appropriate settings. The EventMap™ feature analyzes traces like an expert, calculating overall los and reflectance, indicating events such as splices, splitters bends and connectors. Experts can use these settings as the starting point for the Expert Manual Mode to experiment with the trace and uncover detail of interest. OptiFiber Pro features an advanced touchscreen interface with pinch and zoom for analysis that's not only deep, but simple to master.

OptiFiber Pro's patented SmartLoop™ capability enables automated testing and analysis of two fibers in a single test in compliance with standards requirements. Not only does this cut the testing time by at least half, but it also allows the tech to immediately see bi-directional averaged test results without moving the OTDR to the far end or using external software.

As a member of the of the Versiv family, OptiFiber Pro offers a single user interface to cover a wide variety of fiber types and wavelengths: 850, 1300, 1310, 1490, 1550 and 1625 nm along with optional modules for copper and Tier 1 (optical loss) certification and fiber inspection. A single report for an entire job can quick be generated for all supported media types using the industry standard LinkWare software.

Unique features:

- Taptive user interface puts advanced data analysis, easy set-up and operation at the fingertips of of technicians of all skill levels.
- 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.

- Multiple wavelengths support a variety of applications: 850, 1300, 1310, 1490, 1550, 1625 nm.
- Splitter detection for automated discovery of splitters. Up to 3 cascaded splitters may be found or manually configured.
- Macrobend detection for automatic identification of bends.
- Expert Manual Mode – simplifies experimentation which allows you to zero in on the part of the trace that interests you.
- Ability to edit or add events – Add 0 dB events, such as perfect splices, not seen by the OTDR or change an event to the correct type: APC connector, a splice or loss event.
- Span a portion of a link – allows you to select a segment of fiber for analysis within a longer segment. Span allows you to test only the portion for which you are responsible.
- Stackable results and batch processing of traces. When testing many identical fibers at a time, batch processing allows users to look at multiple traces and stack them to spot differences and/or batch edit events quickly.
- Compatible with LinkWare™ Live. LinkWare Live enables you 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.
- Auto OTDR modes analyze fiber runs to set key parameters: Range, Pulse Width, and Averaging Time, enabling any user to test like an expert. Expert Manual Mode allows users to easily modify these parameters to zero in on important details.
- Troubleshoot datacenter fiber links with short patch cables and many connectors because of ultra sho dead zones.
- Easily characterize all connectors, splices and areas of high loss with graphical EventMap view.
- Pass/Fail certification of fiber optic connector endfaces.
- Document-only reporting for OSP applications.
- ProjX management system increases return on investment by reducing errors.
- 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 the Proj› 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.

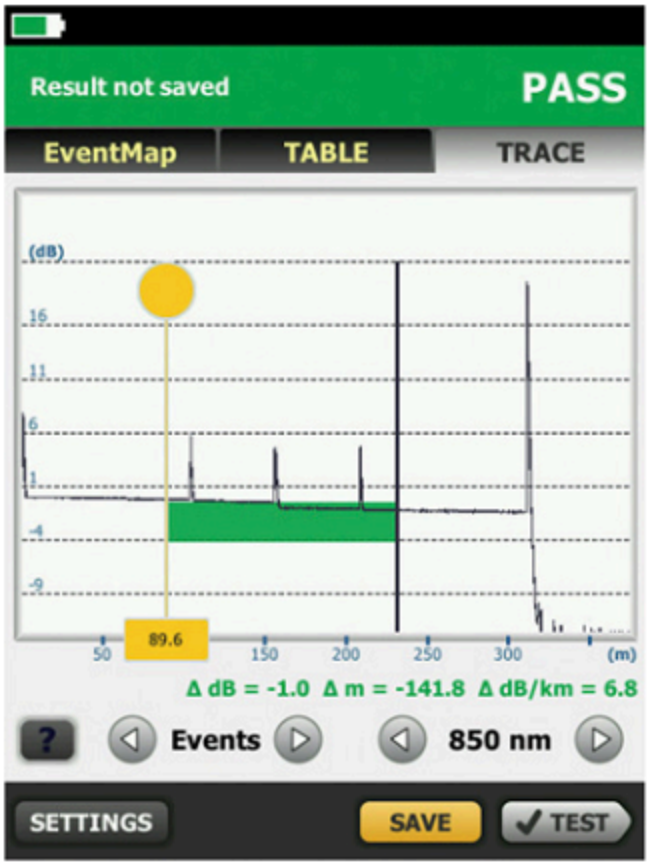
Advantages:

- Powerful ProjX management system facilitates OTDR sharing with clear job assignment for each operator
- Easy monitoring of job progress with pass/fail or document only 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

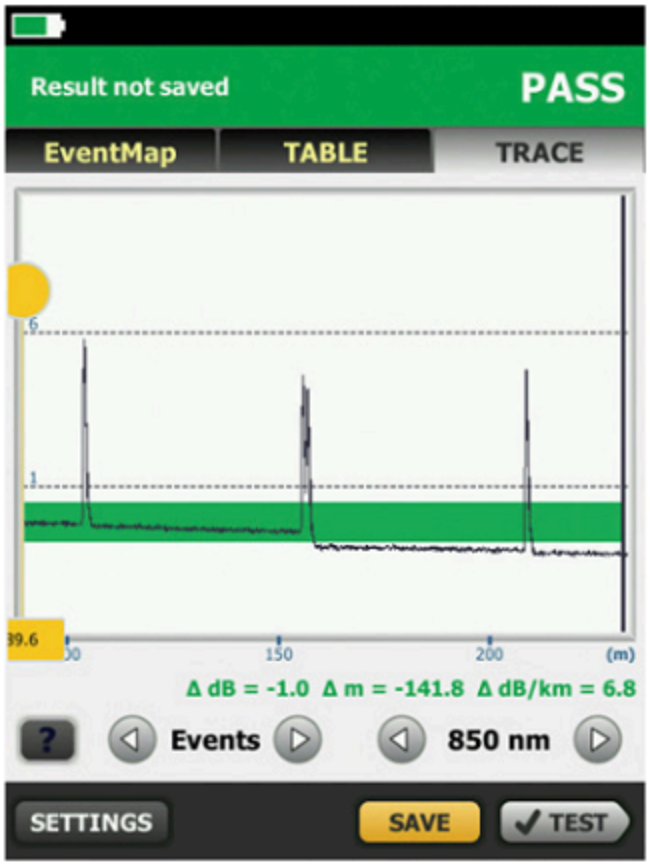
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Taptive User Interface

Most OTDRs are designed for a myriad of applications, causing the user interface to be difficult to navigat 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

At Home in 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 allows precise location of 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 for the Enterprise 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.

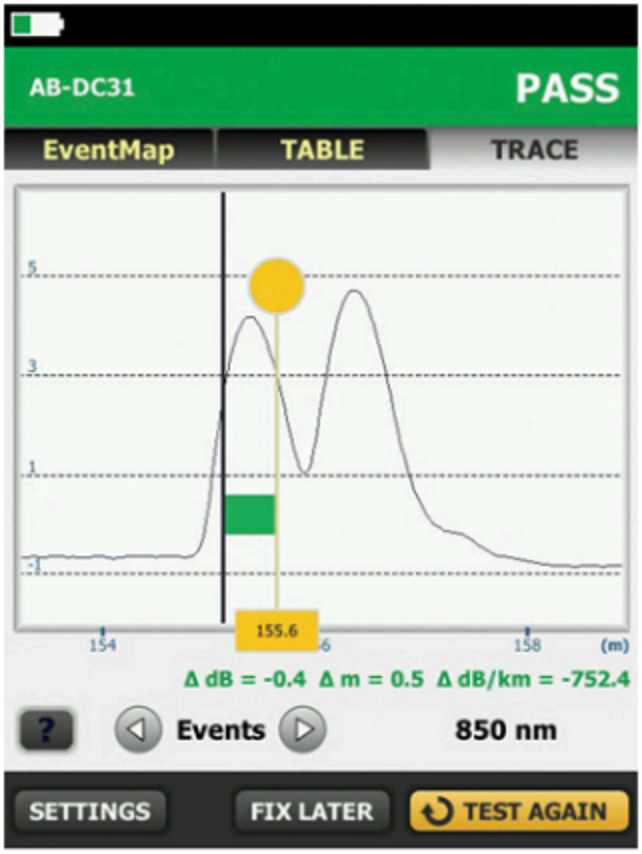
Two second trace per wavelength Another breakthrough with OptiFiber Pro is the data acquisition speed. While in Quick Test mode, a complete set of data are acquired in as little as two seconds per wavelength. OptiFiber Pro then analyzes the data and displays it as an EventMap event, Table or Trace. The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

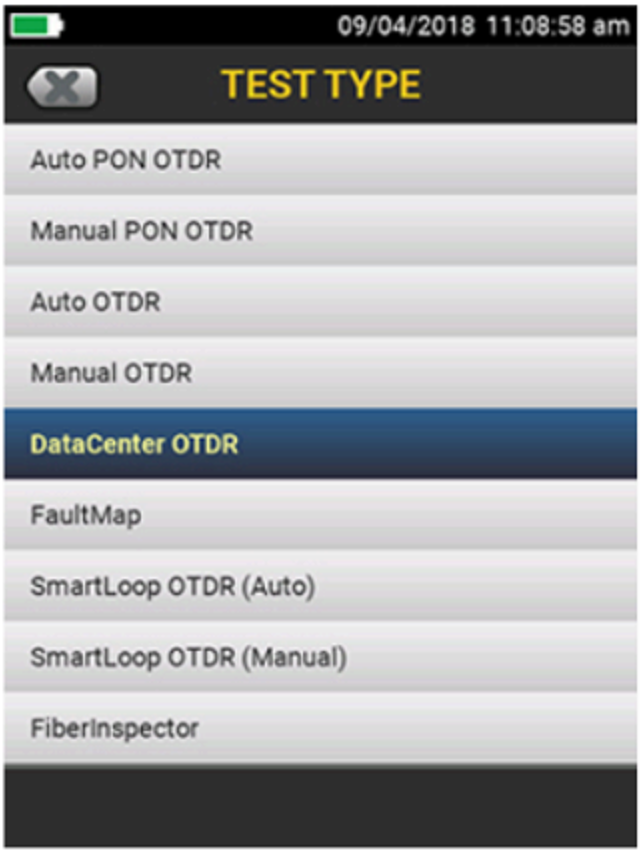
Graphical EventMap view To eliminate the learning curve associated with reading an OTDR trace, OptiFiber Pro's advanced logic automatically interprets the information to create a detailed and graphical map of events that includes connectors, splices and anomalies. To accommodate different preferences, 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.

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 statu of each project can also be easily monitored.



Extremely short event and attenuation dead zone for the Enterprise

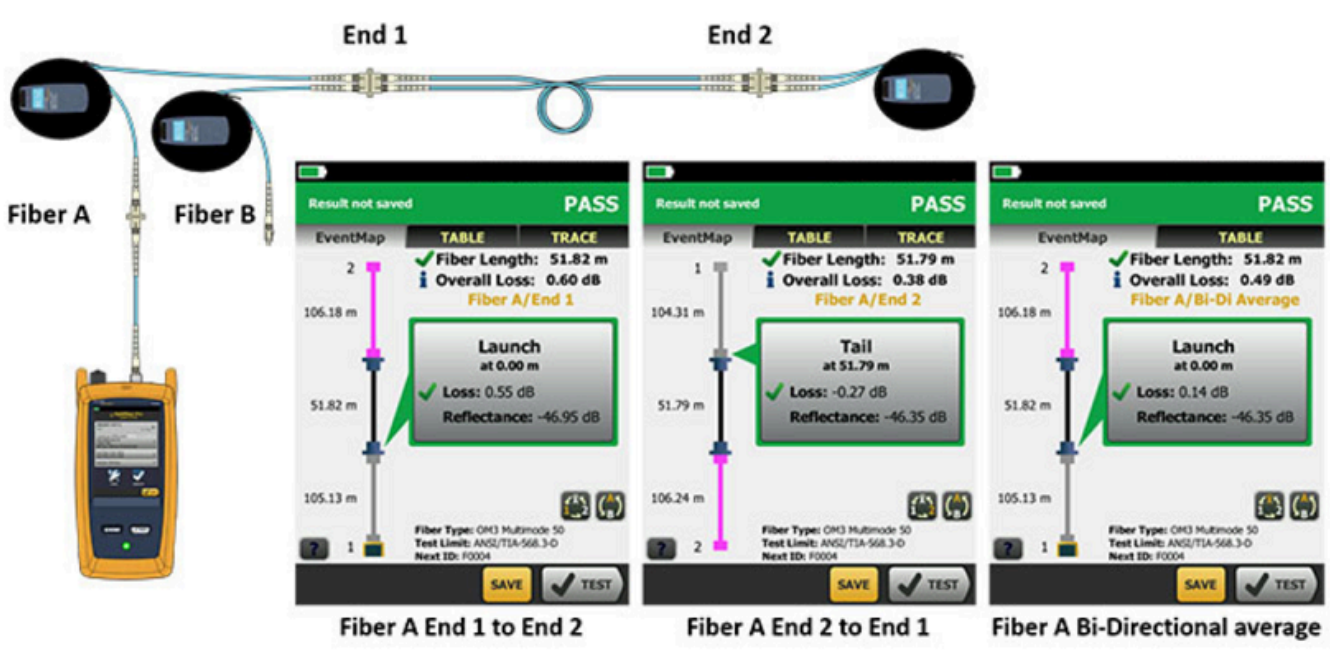


DataCenter OTDR Mode

SmartLoop OTDR

The award-winning SmartLoop OTDR enables automated testing and analysis of two fibers in a single test while meeting standards requirements. This patented 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, also enables instant bi-directional averaged test results without moving the OTDR to the far end. In additi to getting the job done quicker, SmartLoop meets the standards requirements of leaving the launch and t 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 of even dangerous to reach because th OTDR never has to be moved to the far end.

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



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

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High Dynamic Range (HDR) Modules for Outside Plant Applications

OptiFiber Pro HDR has a dynamic range up to 42 dB and adds new wavelengths for outside plant/FTTx/PO testing requirements. Three wavelength combinations are available depending upon your requirements:

- 1310 / 1550 nm
- 1310 / 1490 / 1550 nm
- 1310 / 1550 / 1625 nm



OFP-200-S (1310/1550 nm)



OFP-200-S1490 (1310/1490/1550 nm)



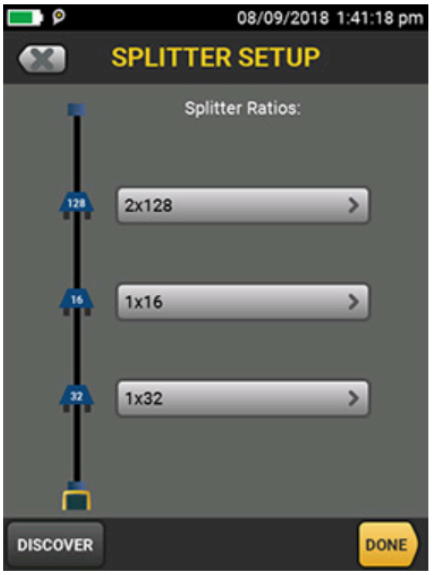
OFP-200-S1625 (1310/1550/1625 nm

Splitter detection

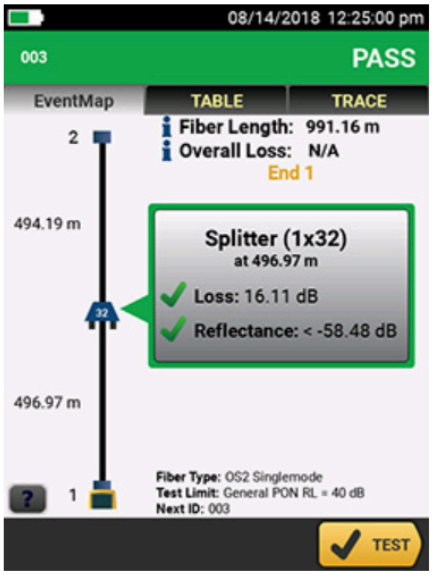
OptiFiber Pro HDR is optimized for FTTx/PON testing through splitters. 1x16 and 1x32 are most commonly found today but OptiFiber Pro HDR is future proofed for testing even nx128 splitters. With its Discover function, you can automatically locate splitters and their ratios. Up to 3 cascaded splitters can be configured in the setup.

OptiFiber Pro HDR provides two PON test suites: Auto PON OTDR and Manual PON OTDR:

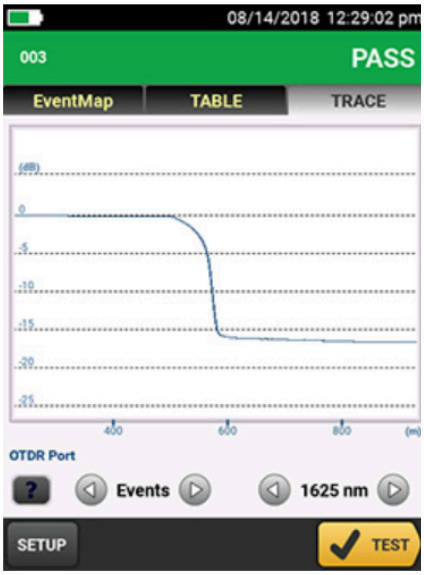
- **Auto PON OTDR –** The tester automatically selects settings that give you the best view of the events or OSP (outside plant) cabling. The tester automatically uses the DISCOVER function to identify splitters. This mode is the easiest to use and is the best choice for most applications.
- **Manual PON OTDR –** This mode lets you select settings to control the parameters of the trace. You can also enter the ratios of splitters that you know are on the link or use the DISCOVER function to locate splitters and identify their ratios.



Splitter setup



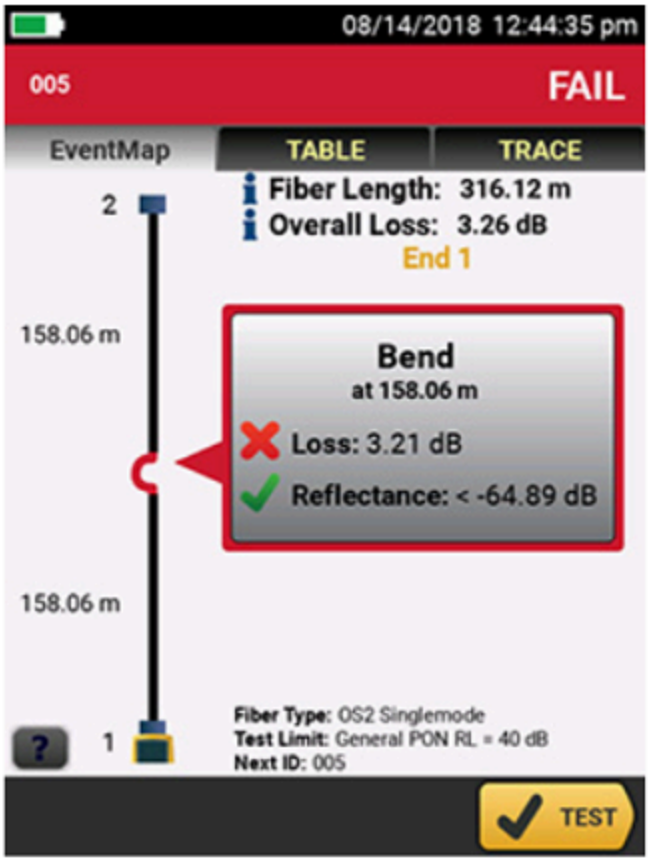
Splitter as seen on an EventMap



Splitter as seen on an OTDR trace

Macrobend detection

A bend in a fiber cable, if pulled around a sharp corner for instance, allows light to escape from the fiber's core. The resulting macrobend may be a risk for mechanical or optical failure. OptiFiber Pro automatically identifies bends and their location by comparing the loss of an event at multiple wavelengths.



Bend as seen on a EventMap



Bend as seen on an OTDR trace

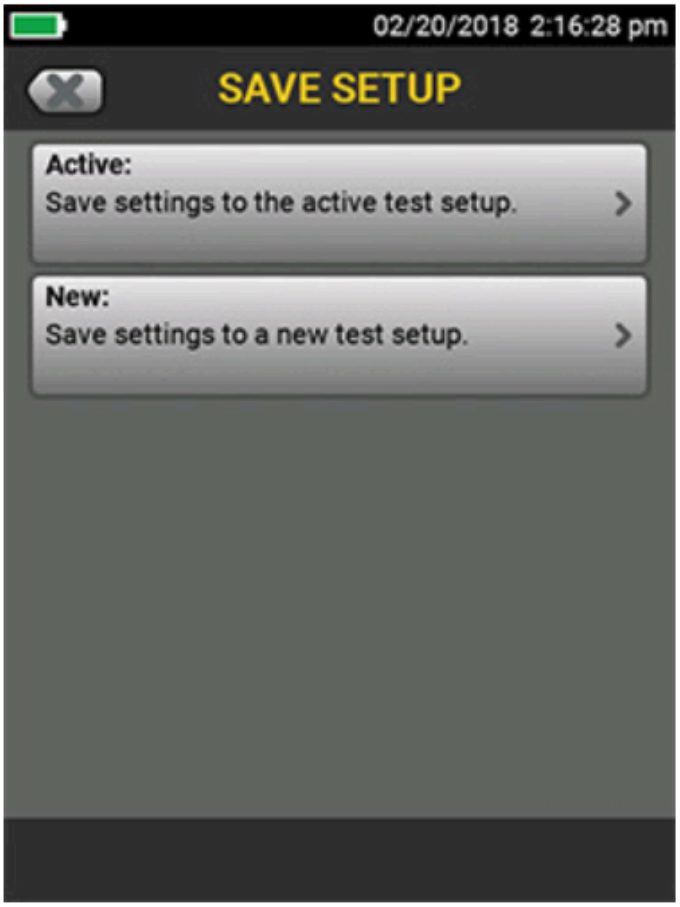
Expert Manual Mode

Starting with settings from Auto OTDR mode, Expert Manual Mode allows the user to quickly experiment with settings to uncover details of interest:

- Easy to use manual settings – simplifies experimentation via on the trace screen
- Change the range, pulse width, averaging time, and wavelength
- Try the setting out before saving



Quickly experiment with settings in Expert Manual Mode



Save your Expert Manual Mode settings

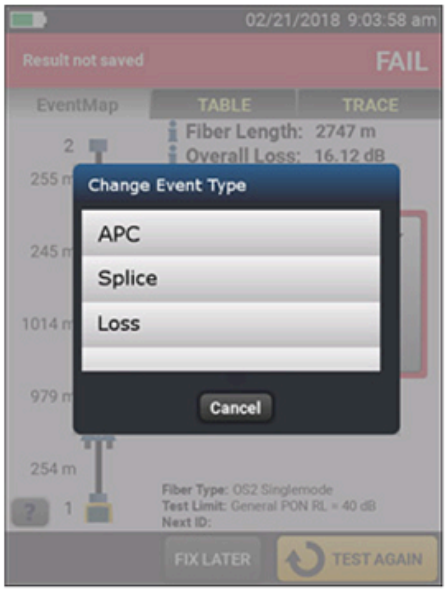
Edit events

When testing or certifying fiber runs, you want the test results to reflect the links as-built. Sometimes an OTDR can misidentify or not find all the actual events within a link. The Edit Event function provides users with the ability to edit, add or remove events including:

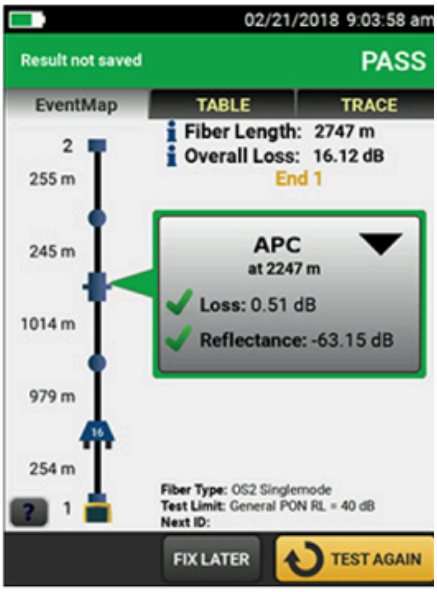
- Changing an event to: an APC connector, a splice or a loss event
- Allows the insertion of a splice, as a 0dB event, at a given location when the splice is hidden due to noi or the splice loss is lower than the minimum detection threshold
- Once the event is modified, the PASS/FAIL status of the link will be updated to reflect the modification
- APC connectors may be identified as a splice instead of as an APC connector because they are non-reflective like a splice. This can cause problems since the loss budget for a splice is less than that of an APC connector. Allowing you to edit the splice and change it to an APC connector allows the loss budge to be calculated correctly for the link.
- Edited events are marked in reports so they can easily be identified as having been edited



Link with an APC connector shown as a loss event



Ability to change Event type



Event modified to be an APC connector

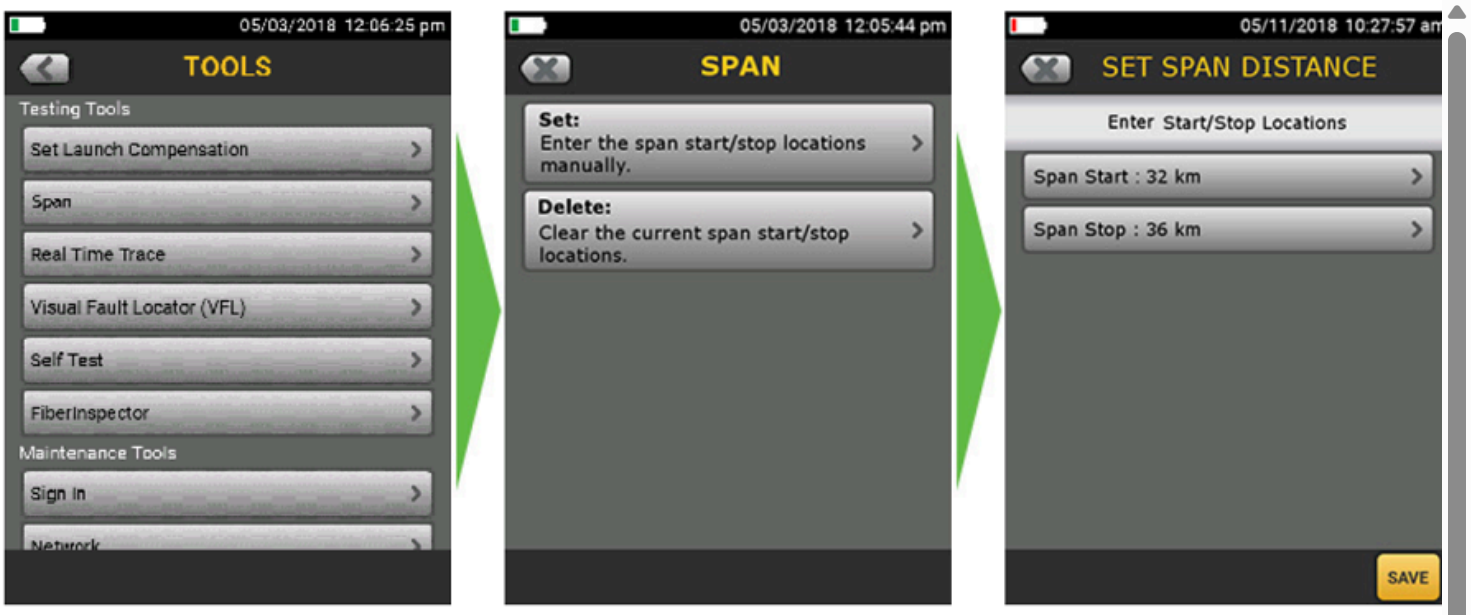
Span a portion of a link

When testing a fiber run (particularly in outside plant applications) you may only be interested in a small section of the cabling. For example, if you are repairing a short section of a longer trunk, span allows you t define the start and end of your short section so that the OTDR analyzes only the section that you repaire

- Provides the ability to perform PASS/FAIL analysis on a section of fiber under test
- PASS/FAIL analysis is only generated for events located with the span distance
- Events outside the span range are evaluated as info only

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. Its 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.



Process to set Span on an OptiFiber Pro OTDR

Rugged Metal LC Connectors

Fluke Networks Test Reference Cords and Launch Fibers with LC connectors feature our unique metal latch design. Traditional LC connectors use a single-piece plastic design that flexes the latching mechanism each time the connector is inserted and removed and eventually breaks, making them unsuitable for repeated use in testing. The Fluke Networks Metal LC latching system uses a multi-piece metal design with a spring located between the latch and connector body. Since this latch is not part of the body and does not flex, the life of the latching mechanism is greatly improved, thereby extending the life of the LC connector and therefore the TRC's and launch cords.

The Metal LC connector is compliant with IEC 61754-20 and TIA-604-10B intermateability standards. That latch has also been tested for up to 10,000 insertions with no degradation in performance and passes all Telecordia GR-326-CORE durability tests including thermal, humidity, vibration, flex, impact, and salt spray. While the connector itself is the most rugged available, the glass fiber endface is still susceptible to damage, so it's important to inspect the endface to make sure it's contaminant-free and to properly clean if necessary.

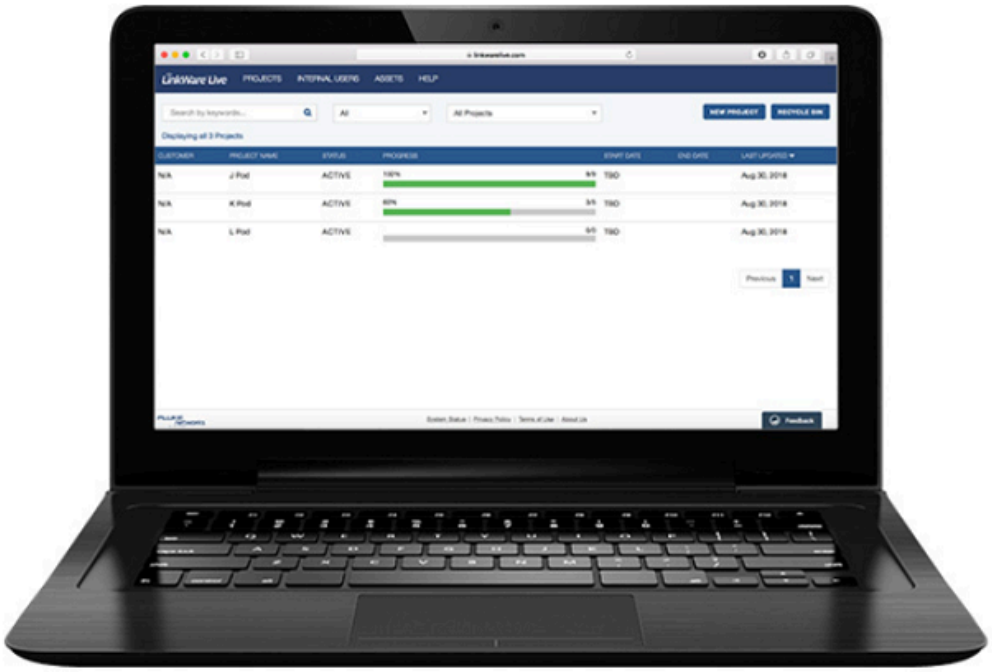


LinkWare Live

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 project or test results. LinkWare™ Cable Test Management Software also connects to the LinkWare Live service enabling you to download test results into the LinkWare PC 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.



Set up and track the status of projects with LinkWare Live.



Project status my be tracked by smartphones and other devices

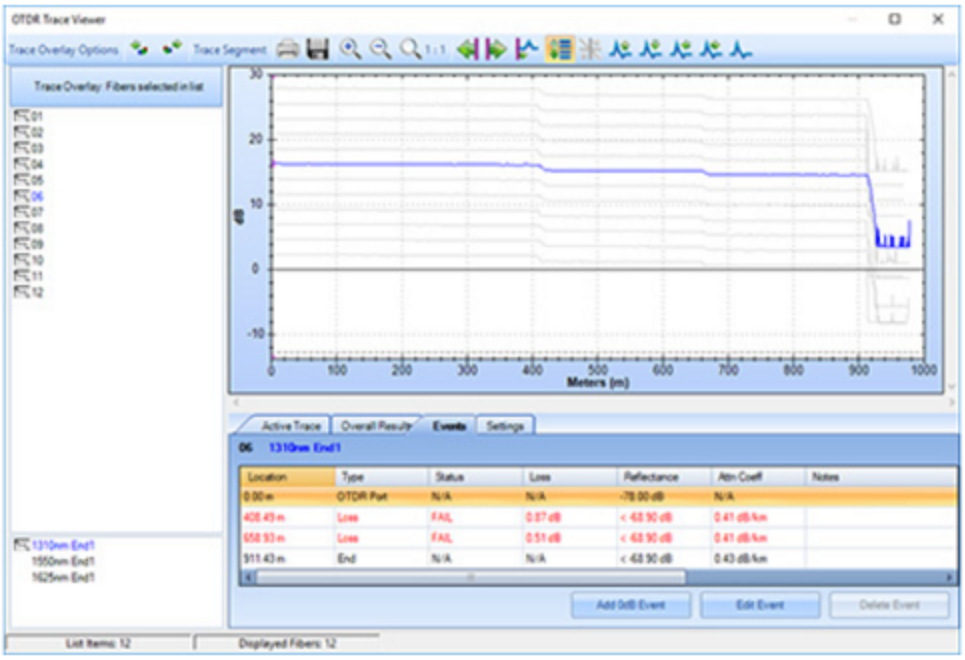
LinkWare™ Management Software

With LinkWare management software, OptiFiber Pro users can easily access the ProjX management syster data, generate reports and upgrade the software in their testers. Project managers have full capabilities t 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 form 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.

Stackable results & batch process of traces via LinkWare PC

LinkWare PC allows for the batch processing of traces so you can quickly and easily make edits to many traces at one time. Stacking traces allows you to visually identify differences between identical fibers, such as strands within a trunk. LinkWare PC does this by allowing multiple traces to be overlaid and stacked wit separation so that differences in the graph can easily be spotted.



Batch Processing and stack traces in LinkWare PC

Gold Support

You've made an investment in the best equipment in the industry. Protect your investment and limit unplanned downtime and costs with the best custom-built maintenance program.

Membership in Fluke Networks' Gold program provides expanded product coverage and support to ensur you get the most out of your investment.

Benefits of Gold Include:	1 year GOLD MEMBERSHIP	Standard Warranty on New Products	After Standard Warranty Ends
90 Day Limited Repair or Replacement on Manufacturing Defects (Accessories)	✓	✓	
FREE Repairs	✓	Only on Mainframe and Module Mfg. Defects	

Benefits of Gold Include:	1 year GOLD MEMBERSHIP	Standard Warranty on New Products	After Standard Warranty Ends
FREE Annual Calibration	✓		
FREE 2-Way Shipping	✓		
Zero Downtime During Repair/Calibration with FREE Loaner**	✓		
FREE Accessory Replacements*	✓		
<2 Hour Technical Support Response Time	✓	< 24 Hours	< 24 Hours
24x7x365 Customer Support – Phone and Email	✓	5:00AM to 5:00PM (PST)	5:00AM to 5:00PM (PST)
Technical Support Engineer as Primary Case Handler	✓		
Exclusive Promotions	✓		

**Applies to accessories included in the original product bundle **Available in certain geographies (please schedule 4-6 weeks in advance)*

OptiFiber Pro Series OTDRs		
	OptiFiber Pro	OptiFiber Pro HDR
Models in Series	OFP2-100-M (850, 1300 nm) OFP2-100-S (1310, 1550 nm) OFP2-100-Q (850, 1300, 1310, 1550 nm)	OFP2-200-S (1310, 1550 nm) OFP2-200-S1490 (1310, 1490, 1550 nm) OFP2-200-S1625 (1310, 1550, 1625 nm)
Application	Enterprise, Datacenter, Campus	FTTx, Outside Plant, PON, POLAN, Access
Wavelengths	850 nm 1300 nm 1310 nm 1550 nm	1310 nm 1490 nm 1550 nm 1625 nm
Compatible fiber types	50/125 µm, 62.5 µm, Singlemode	Singlemode
OTDR Port Connector	Cleanable UPC ferrule with removable SC adapter	Cleanable APC ferrule with removable SC adapter
Supplied Test Cords	Launch Fibers for testing LC systems	2m TRC for testing SCAPC systems
OTDR types	Auto, Datacenter, Manual	Auto, Auto PON, Manual, Manual PON

OptiFiber Pro Series OTDRs		
Event Dead Zone	850 nm: 0.5 m (typical), 1300 nm: 0.7 m (typical), 1310 nm: 0.6 m (typical), 1550 nm: 0.6 m (typical)	1310 nm: 0.7 m (typical), 1490 nm: 0.7 m (typical), 1550 nm: 0.7 m (typical), 1625 nm: 0.7 m (typical)
Attenuation Dead Zone	850 nm: 2.5 m (typical), 1300 nm: 4.5 m (typical), 1310 nm: 3.6 m (typical), 1550 nm: 3.7 m (typical)	1310 nm: 4 m (typical), 1490 nm: 4 m (typical), 1550 nm: 4 m (typical), 1625 nm: 4 m (typical)
PON Dead Zone	N/A	30 m (typical)
Dynamic Range	850 nm: 28 dB (typical) 1300 nm: 30 dB (typical) 1310 nm: 32 dB (typical) 1550 nm: 30 dB (typical)	1310 nm: 42 dB (typical) 1490 nm: 41 dB (typical) 1550 nm: 41 dB (typical) 1625 nm: 40 dB (typical)
Reflectance range	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)	1310 nm: -14 to -70 dB (typical), 1490 nm: -14 dB to 70 dB (typical), 1550 nm: -14 dB to -70 dB (typical), 1625 nm: -14 dB to -70 dB (typical)
Sampling Resolution	3 cm to 400 cm	3 cm to 2 m
Sampling Points	Up to 64,000	Up to 129,000
Expert Manual Mode	Yes	Yes
SmartLoop with on-board Bi-directional averaging	Yes	Yes
Macrobend detection	Yes	Yes
Span Support	Coming early 2019	
Event editing and additions	Coming early 2019	
VFL	Yes	Yes

OptiFiber Pro Specifications

	Multimode Module (OFP2-100-M)	Singlemode Module (OFP2-100-S)	Quad Module (OFP2-100-Q)
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

	Multimode Module (OFP2-100-M)	Singlemode Module (OFP2-100-S)	Quad Module (OFP2-100-Q)
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)	

	Multimode Module (OFP2-100-M)	Singlemode Module (OFP2-100-S)	Quad Module (OFP2-100-Q)
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	

	Multimode Module (OFP2-100-M)	Singlemode Module (OFP2-100-S)	Quad Module (OFP2-100-Q)
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).			

OptiFiber Pro HDR Specifications

	Singlemode module (OFP2-200-S)	Singlemode + 1490 nm module (OFP2-200-S1490)	Singlemode + 1625 nm module (OFP2-200-S1625)
Wavelengths	1310 nm +/- 25 nm 1550 nm +/- 20 nm	1310 nm +/- 25 nm 1490 nm +/- 20 nm 1550 nm +/- 20 nm	1310 nm +/- 25 nm 1550 nm +/- 20 nm 1625 nm +/- 20 nm
Compatible fiber types	Singlemode		
OTDR Port Connector	Cleanable APC ferrule with removable SC adapter		

	Singlemode module (OFP2-200-S)	Singlemode + 1490 nm module (OFP2-200-S1490)	Singlemode + 1625 nm module (OFP2-200-S1625)
Event dead zone1	0.7 m (typical)		
Attenuation dead zone2	4 m (typical)		
PON dead zone3	30 m (typical)		
Dynamic range 4, 5	1310 nm: 42 dB (typical) 1550 nm: 41 dB (typical)	1310 nm: 42 dB (typical) 1490 nm: 41 dB (typical) 1550 nm: 41 dB (typical)	1310 nm: 42 dB (typical) 1550 nm: 41 dB (typical) 1625 nm: 40 dB (typical)
Reflectance range 4	-14 to -70 dB (typical)		
Sampling resolution	3 cm to 2 m		
Sampling points	Up to 129000		
Pulse widths (nominal)	5, 10, 30, 50, 100, 300, 500, 1000, 3000, 5000, 10000, 20000 ns		
Distance uncertainty	+/-(1 + 0.0005*distance + 0.5*resolution)		
Linearity	± 0.03 dB/dB		
Reflectance uncertainty	± 2 dB		
Test Time (per wavelength)	Auto setting: 5 seconds/wavelength (typical)		
Auto PON setting: 10 seconds/wavelength (typical)			
Manual setting: 3, 5, 10, 20, 40, 60, 90, 120, 180 seconds/wavelength			
Manual PON setting: 3, 5, 10, 20, 40, 60, 90, 120, 180 seconds/wavelength			
Quick test setting: 3 seconds/wavelength (typical)			

	Singlemode module (OFP2-200-S)	Singlemode + 1490 nm module (OFP2-200-S1490)	Singlemode + 1625 nm module (OFP2-200-S1625)
Best resolution setting: 5 to 180 seconds/wavelength			
Laser Classification	Class 1 CDRH Complies to EN 60825-2, 3rd Edition		
Calibration Period	1 year		
1. Measured at 1.5 dB below non-saturating reflection peak with the shortest pulse width. Reflection peak at - 50 dB. 2. Measured at +/- 0.5 dB deviation from backscatter with the shortest pulse width. Reflection peak‹ - 50 dB. 3. Measured at +/- 0.5 dB deviation from backscatter after 1:16 non-reflective splitter using 50 ns pulse width and 3 cm sampling resolution. 4. Typical backscatter coefficients for OS1-OS2 fiber: 1310 nm: -79 dB; 1490 nm: -81 dB; 1550 nm: -82 dB; 1625 nm: -84 dB. 5. 3 minute averaging, widest pulse width, 100 km fiber length, SNR = 1.			

OptiFiber Pro Series Specifications

FiberInspector probe specifications	
Magnification	~ 200X with OptiFiber Pro Display
Light source	Blue LED
Power source	Versiv 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

FiberInspector probe specifications	
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/versivconfig**	

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.	

Accessories

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

OptiFiber Pro Wireless models	
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

OptiFiber Pro HDR Wireless models	
Model	Description
OFP2-200-S	OptiFiber Pro HDR OTDR V2 kit with Wi-Fi (1310, 1550 nm)
OFP2-200-S1490	OptiFiber Pro HDR OTDR V2 kit with Wi-Fi (1310, 1490, 1550 nm)
OFP2-200-S1625	OptiFiber Pro HDR OTDR V2 kit with Wi-Fi (1310, 1550, 1625 nm)
OFP2-200-Si	OptiFiber Pro HDR OTDR V2 with inspection kit with Wi-Fi (1310, 1550 nm)
OFP2-200-Si1490	OptiFiber Pro HDR OTDR V2 with inspection kit with Wi-Fi (1310, 1490, 1550 nm)
OFP2-200-Si1625	OptiFiber Pro HDR OTDR V2 with inspection kit with Wi-Fi (1310, 1550, 1625 nm)
OFP2-200-Si/GLD	OptiFiber Pro HDR OTDR V2 with inspection kit with Wi-Fi and 1 YR Gold Support (1310, 1550 nm)
OFP2-200-Si14/GLD	OptiFiber Pro HDR OTDR V2 with inspection kit with Wi-Fi and 1 YR Gold Support (1310, 1490, 1550 nm)
OFP2-200-Si16/GLD	OptiFiber Pro HDR OTDR V2 with inspection kit with Wi-Fi and 1 YR Gold Support (1310, 1550, 1625 nm)

OptiFiber Pro HDR Non-wireless models	
Model	Description
OFP2-200-S-NW	OptiFiber Pro HDR OTDR V2 kit (1310, 1550 nm)
OFP2-200-S1490-NW	OptiFiber Pro HDR OTDR V2 kit (1310, 1490, 1550 nm)
OFP2-200-S1625-NW	OptiFiber Pro HDR OTDR V2 kit (1310, 1550, 1625 nm)

UPC/UPC Launch Cords	
Model	Description
MMC-50-SCSC	Multimode 50 µm launch cord (105 m) for SC/SC
MMC-50-SCLC-M	Multimode 50 µm launch cord (105 m) for SC/LC - Metal
MMC-50-LCLC-M	Multimode 50 µm launch cord (105 m) for LC/LC - Metal
MMC-50-SCST	Multimode 50 µm launch cord (105 m) for SC/ST
MMC-50-STST	Multimode 50 µm launch cord (105 m) for ST/ST
MMC-50-SCFC	Multimode 50 µm launch cord (105 m) for SC/FC
MMC-50-FCFC	Multimode 50 µm launch cord (105 m) for FC/FC
MMC-50-SCE2K	Multimode 50 µm launch cord (105 m) for SC/E2K
MMC-62-SCSC	Multimode 62.5 µm launch cord (105 m) for SC/SC
MMC-62-SCLC-M	Multimode 62.5 µm launch cord (105 m) for SC/LC - Metal
MMC-62.5-LCLC-M	Multimode 62.5 µm launch cord (105 m) for LC/LC - Metal
MMC-62-SCST	Multimode 62.5 µm launch cord (105 m) for SC/ST
MMC-62.5-STST	Multimode 62.5 µm launch cord (105 m) for ST/ST
MMC-62-SCFC	Multimode 62.5 µm launch cord (105 m) for SC/FC
MMC-62.5-FCFC	Multimode 62.5 µm launch cord (105 m) for FC/FC
SMC-9-SCSC	Singlemode 9 µm launch cord (160 m) for SC/SC
SMC-9-SCLC-M	Singlemode 9 µm launch cord (160 m) for SC/LC - Metal
SMC-9-LCLC-M	Singlemode 9 µm launch cord (160 m) for LC/LC - Metal

UPC/UPC Launch Cords	
SMC-9-SCST	Singlemode 9 µm launch cord (160 m) for SC/ST
SMC-9-STST	Singlemode 9 µm launch cord (160 m) for ST/ST
SMC-9-SCFC	Singlemode 9 µm launch cord (160 m) for SC/FC
SMC-9-FCFC	Singlemode 9 µm launch cord (160 m) for FC/FC

UPC/APC Launch Cords	
Model	Description
SMC-9-SCE2KAPC	Singlemode 9 µm launch cord (160 m) for SC/E2000 APC
SMC-9-SCSCAPC	Singlemode 9 µm launch cord (160 m) for SC/SCAPC
SMC-9-SCFCAPC	Singlemode 9 µm launch cord (160 m) for SC/FCAPC
SMC-9-SCLCAPC-M	Singlemode 9 µmlaunch cord (160 m) for SC/LCAPC - Metal
SMC-9-SCAPC/LC-M	Singlemode 9 µm launch cord (160 m) for SCAPC/LCUPC - Metal
SMC-9-SCAPC/FC	Singlemode 9 µm launch cord (160 m) for SCAPC/FCUPC
SMC-9-SCAPC/ST	Singlemode 9 µm launch cord (160 m) for SCAPC/STUPC

APC/APC Launch Cords	
Model	Description
SMC-9-SCAPC/SCAPC	Singlemode 9 µm launch cord (160 m) for SCAPC/SCAPC
SMC-9-SCAPC/LCAPCM	Singlemode 9 µm launch cord (160 m) for SCAPC/LCAPC - Metal
SMC-9-SCAPC/FCAPC	Singlemode 9 µm launch cord (16 0m) for SCAPC/FCAPC
SMC-9-SCAPC/E2KAPC	Singlemode 9 µm launch cord (160 m) for SCAPC/E2KAPC
SMC-9-LCAPC/LCAPCM	Singlemode 9 µm launch cord (160 m) for LCAPC/LCAPC - Metal
SMC-9-FCAPC/FCAPC	Singlemode 9 µm launch cord (160 m) for FCAPC/FCAPC
SMC9-E2KAPC/E2KAPC	Singlemode 9 µm launch cord (160 m) for E2KAPC/E2KAPC

Port Protectors	
Model	Description
MRC-50-SCSC-0.3m	Multimode 50 µm TRC 0.3 m for OTDR port (SC/SC)
MRC-50-LCLC-0.3m-M	Multimode 50 µm TRC 0.3 m for OTDR port (LC/LC) - Metal
MRC-62.5-SCSC-0.3m	Singlemode 9 µm TRC 0.3 m for OTDR port (SC/SC)
SRC-9-SCSC-0.3m	Singlemode 9 µm TRC 0.3 m for OTDR port (SC/SC)
SRC-9-SCLC-0.3m-M	Singlemode 9 µm TRC 0.3 m for OTDR port (SC/LC) - Metal
MRC-62.5-LCLC-0.3m-M	Multimode 62.5 µm TRC 0.3 m for OTDR port (LC/LC) - Metal
SRC-9-LCLC-0.3m-M	Singlemode 9 µm TRC 0.3 m for OTDR port (LC/LC) - Metal
SRC9SCAPCSCAPC0.3m	Singlemode 9 µm TRC 0.3 m for OTDR port (SCAPC/SCAPC)
SRC9SCAPCLCAPC0.3mM	Singlemode 9 µm TRC 0.3 m for OTDR port (SCAPC/LCAPC) - Metal
SRC9SCAPCSCUPC0.3m	Singlemode 9 µm TRC 0.3 m for OTDR port (SCAPC/SCUPC)

Test Reference Cords	
Model	Description
SRC-9-SCAPC/SCAPC	Singlemode 9 µm TRC (2 m) for testing SCAPC/SCAPC
SRC-9-SCAPC/LCAPC	Singlemode 9 µm TRC (2 m) for testing SCAPC/LCAPC
SRC-9-SCAPC/FCAPC	Singlemode 9 µm TRC (2 m) for testing SCAPC/FCAPC
SRC-9-SCAPC/E2KAPC	Singlemode 9 µm TRC (2 m) for testing SCAPC/E2KAPC

Accessories	
Model	Description
ADP-DuplexSC	SC-SC duplex adapter
ADP-DuplexLC	LC-LC duplex adapter
ADP-Duplex-SCAPC	SCAPC-SCAPC Duplex Adapter
ADP-Duplex-LCAPC	LCAPC-LCAPC Duplex Adapter

Accessories	
PA-SC	OTDR source port interchangeable SC adapter
PA-LC	OTDR source port interchangeable LC adapter
PA-ST	OTDR source port interchangeable ST adapter
PA-FC	OTDR source port interchangeable FC adapter
VERSIV2 M/RU KIT	VERSIV V2 Main & Remote Upgrade Bundle with Wi-Fi
VERSIV2 M/RU-NW KIT	VERSIV V2 Main & Remote Upgrade Bundle Non-Wi-Fi
VERSIV-TSET	Versiv Headphones
VERSIV-BATTERY	Versiv Battery
PWR-SPLY-30W	30W Power Supply, 15V, 2A with US adapter
PWR-SPLY-30W INTL	30W Power Supply, 15V, 2A with US, EU, AU, and UK adapters
PWR-SPLY-30W SA/IN	30W Power Supply, 15V, 2A with US, South Africa and India adapters
PWR-SPLY-ADP	EU, AU, UK adapters for 30W power supply
PWR-SPLY-ADP-SA	South Africa and India adapters for 30W power supply
VERSIV-STRP	Versiv Strap Kit
VERSIV-STND	Versiv Demo Stand
VERSIV-CASE3	VERSIV Hardsided Case
Versiv-Field-Case	Versiv Splash Resistant Field Case
Versiv-XL-Case	Versiv Extra Large Carry Case
VERSIV-LG-CASE	Versiv Large Carry Case
VERSIV-SM-CASE	Versiv Small Carry Case
VERSIV-BACKPK-STRP	Backpack strap for Versiv Large Case

FiberInspector probe models and accessories	
Model	Description
FI-1000	FI-1000 FiberInspector USB video probe

FiberInspector probe models and accessories	
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

OptiFiber Pro Gold Support models	
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

OptiFiber Pro HDR Gold Support models	
Model	Description
GLD-OFP-200-S	1 year Gold Support, OFP-200-S or OFP-200-S-NW
GLD3-OFP-200-S	3 year Gold Support, OFP-200-S or OFP-200-S-NW
GLD-OFP-200-S14	1 year Gold Support, OFP-200-S1490 or OFP-200-S1490-NW
GLD3-OFP-200-S14	3 year Gold Support, OFP-200-S1490 or OFP-200-S1490-NW
GLD-OFP-200-S16	1 year Gold Support, OFP-200-S1625 or OFP-200-S1625-NW
GLD3-OFP-200-S16	3 year Gold Support, OFP-200-S1625 or OFP-200-S1625-NW
GLD-OFP-200-Si	1 year Gold Support, OFP-200-Si
GLD3-OFP-200-Si	3 year Gold Support, OFP-200-Si
GLD-OFP-200-Si14	1 year Gold Support, OFP-200-Si1490
GLD3-OFP-200-Si14	3 year Gold Support, OFP-200-Si1490
GLD-OFP-200-Si16	1 year Gold Support, OFP-200-Si1625
GLD3-OFP-200-Si16	3 year Gold Support, OFP-200-Si1625

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