NEW! Simplify Troubleshooting with LinkMap™!

OFL280-10x FlexTester OTDR

Hand-held Multifunction OTDR and Loss Test Set

Features

- Patented in- or out-of-service OTDR testing from a single port
- Icon-based LinkMap™ display with pass/fail for easy network analysis
- ServiceSafe® live PON detection and OTDR test without service disruption
- Wave ID reduces insertion loss test time and eliminates setup errors
- 34/32 dB dynamic range at 1310/1550 nm
- Best-in-class 0.8/3.5 m event/attenuation dead zones
- Rugged, hand-held, lightweight (<1 kg)
- High-contrast, backlit display: Easily viewed, even in direct sunlight
- Industry-leading battery life: >12 hours continuous operation
- Instant On: Ready to test in <5 seconds

Applications

- Cost-effective point-to-point and FTTH PON testing
- Troubleshoot in-service FTTH networks, including live PON power measurements plus PON OTDR testing at 1625 nm.
- Complete multi-wavelength insertion loss tests faster and eliminate setup errors using Wave ID source and power meter.
- Generate fiber-identifying tones and stable CW signals using integrated optical source.
- Trace fibers or locate faults using the Visual Fault Locator (VFL).

The AFL OFL280-10x FlexTester family offers an unmatched combination of optical fiber test functions, ease-of-use, portability, and value. All OFL280 FlexTester models include an integrated single-mode 1310/1550 nm OTDR with PON-optimized and standard test modes, optical power meter, 1310/1550 nm laser source, and visual fault locator.

With new LinkMap, pass/fail analysis, macro-bend and splitter detection, launch quality check, plus AFL's unique ServiceSafe and Wave ID features, OFL280 FlexTesters enable even novice users to troubleshoot like pros.

The OFL280 FlexTester family offers four models to best suit your application needs:

- **OFL280-103:** Verify both in-service and out-of-service FTTx networks from a single port. Includes 1310/1550/1625 nm live PON OTDR with integrated PON Power Meter.
- **OFL280-102:** Most complete out-of-service FTTx PON testing at all PON wavelengths (1310/1490/1550 nm).
- **OFL280-100:** Cost-effective 1310/1550 nm OTDR for out-of-service installation testing or troubleshooting both FTTx PON and point-to-point fiber optic networks.

Over 1000 OTDR test results (Telcordia SR-4731 .SOR file format) may be saved in the OFL280's internal memory. Stored OTDR and OPM results may be transferred to PC via wireless Bluetooth® or USB cable. Windows® compatible TRM 2.0® Test Results Manager software is included for OTDR and OPM results viewing, analysis, and professional report generation.

OFL280-10x FlexTester OTDR

New LinkMap™ Simplifies Network Troubleshooting

Using the OFL280's new LinkMap capability, even novice users can troubleshoot optical networks like a pro! LinkMap interprets the tested network and presents an icon-based view of network elements clearly identifying fiber start, end, connectors, splices, splitters, and macro-bends. Loss and reflectance of network elements is compared to user-settable pass/fail thresholds and displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace view at the press of a button.

With launch quality check, integrated macro-bend and splitter event detection, OFL280 OTDRs offer even greater ease-of-use. OFL280s also provide a Link Summary showing end-to-end link length, loss, loss/distance and ORL.

ServiceSafe® Testing on Live PONs

In FTTx PONs, troubleshooting a faulty fiber connection from one out-of-service subscriber's location using a 1310/1550 nm OTDR could disrupt service to active subscribers. AFL's ServiceSafe feature alerts the OTDR user to the presence of live traffic and prevents the initiation of service-disrupting 1310/1550 nm OTDR tests. The OFL280-103 additionally measures downstream power levels at 1490 and/or 1550 nm, and allows the user to initiate an OTDR test using the non-disruptive 1625 nm OTDR wavelength. To eliminate unnecessary connector wear, 1625 nm live PON OTDR testing and PON power measurements are performed through the same optical port used for 1310/1550 OTDR testing (US patent 8,411,259).

Fast, error-free Loss Tests using Wave ID

OFL280s integrate an Optical Laser Source (OLS) and Optical Power Meter (OPM) supporting AFL's unique Wave ID capability. With Wave ID, the OPM automatically synchronizes to a single or multi-wavelength Wave ID optical signal sent by another OFL280, FLX380, or AFL hand-held OLS. The OPM automatically measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated OLS and OPM also generate and detect fiber-identifying tones to enable positive fiber identification before disconnecting fibers during maintenance.

Create Professional Test Reports using TRM® 2.0

Stored OTDR and/or OPM results may be uploaded to a PC via USB or Bluetooth®. Uploaded results may be viewed and analyzed using TRM 2.0 Test Results Manager software included with each OFL280 FlexTester. The TRM report generation wizard enables users to easily generate professional, custom acceptance test reports conforming to industry guidelines.

OFL280-10x FlexTester OTDR

OFL280 Features and Applications by Model

FEATURES	-100	-102	-103
	OFL280 MODELS		
Compatible with all AFL optical power meters and laser sources, including tone and Wave ID features	◆	◆	◆
Compatible with AFL optical fiber identifiers (OFI)	◆	◆	◆
Integrated high-power optical power meter	◆	◆	◆
Integrated visual fault locator (red laser)	◆	◆	◆
1310 nm – OTDR, PON OTDR, laser source (CW, wave ID, tone)	◆	◆	◆
1550 nm – OTDR, PON OTDR, laser source (CW, wave ID, tone)	◆	◆	◆
1490 nm – OTDR, PON OTDR, laser source (CW, wave ID, tone)		◆	
1625 nm – FTTx live fiber OTDR with filtered detector for in-service PON testing			◆
1490/1550 nm – FTTx PON Power Meter (Detects and measures downstream PON power levels)			◆

| FIBER TESTING APPLICATIONS	-100	-102	-103
	OFL280 MODELS		
Point-to-point cable construction and troubleshooting. Verify end-to-end length, loss, and ORL. Verify splice and connector loss and reflectance. Locate sources of excess loss and/or reflections, including macro-bends.	◆	◆	◆
FTTx PON construction. Test to or through splitters. Verify end-to-end length, loss and ORL. Verify splitter, splice and connector loss and reflectance. Locate sources of excess loss and/or reflections, including macro-bends.	◆	◆ [a]	◆
FTTx customer fiber troubleshooting - dark fibers (hard faults). Locate cable cuts, open splices, and bad connections.	◆	◆	◆
FTTx in-service (Live PON) troubleshooting. Automatically detect live PONs. Prevent service-disrupting 1310/1550 nm OTDR tests on live PONs. Locate macro-bends, poor splices or high-loss connections without disrupting service to active PON subscribers.			◆
FTTx service turn-up (commissioning). Verify PON power levels at the ONT (subscriber) location. Locate faults in the distribution or drop cables, or between splitters in PONs built using distributed splitter architecture, all without disrupting service to active PON subscribers.			◆

Note:

a. Adds ability to perform OTDR and loss tests at 1490 nm. However, testing at 1310 and 1550 nm is recommended and generally is all that is needed to test or fault-locate inactive (dark) FTTx PONs during construction.

OFL280-100 and -102 models
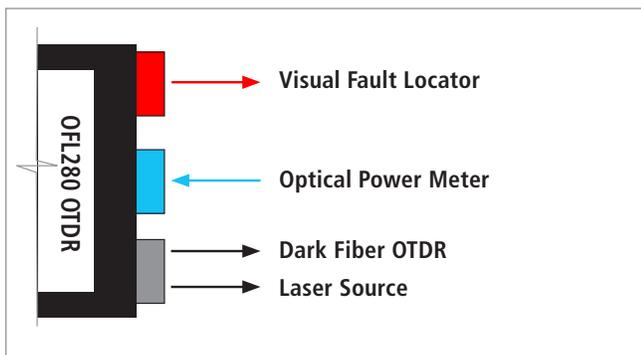
OFL280-103 model
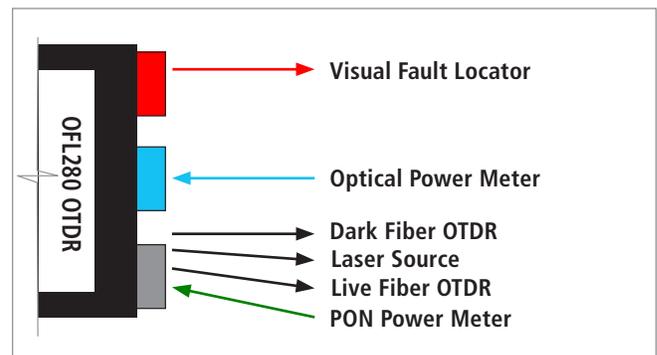
OFL280-10x FlexTester OTDR

OFL280 FlexTester PRO Test kit

FlexTester PRO2 & Complete2 include FOCIS Flex Inspection

OFL280 FlexTester Soft Case Kit

OFL280 FlexTester Kit Configurations

OFL280 FlexTesters are available in the following kit configurations:

- OFL280 FlexTester Soft Carry Case Kits
- OFL280 FlexTester PRO/PRO2 Kits
- OFL280 FlexTester Complete/Complete2 Kits

All FlexTester kits include a rechargeable, replaceable Li-Ion battery pack, AC charger with country-specific power cord, tool-free interchangeable connector adapters with dust caps, TRM® 2.0 Test Results Manager software, USB cable, and a quick reference guide.

OFL280 FlexTester PRO/PRO2 Test and Inspection Kit

FlexTester PRO & PRO2 Kits combine a user-selected OFL280 with either the FOCIS PRO or FOCIS Flex Fiber Optic Connector Inspection System, UPC or APC connector inspection adapter tips, cleaning supplies, and a rugged, waterproof hard carry case with room for additional fiber rings and cleaning supplies. FOCIS PRO and FOCIS Flex enable inspection of ferrule ends of patch cord connectors and end-faces of connectors mounted inside bulkhead adapters. PRO/PRO2 Kits include LinkMap™ plus TRM 2.0 Advanced.

PRO Kits include FOCIS PRO comprising the DFS1 Digital FiberScope and hand-held DFD1 Touchscreen Tablet. FOCIS PRO includes image capture, save, AFL's unique image-pairing capability, plus IEC and user-adjustable pass/fail analysis. With FOCIS PRO's dedicated Touchscreen Tablet, the OFL280 is available for OTDR and optical loss testing.

PRO2 Kits include a 150 m fiber ring plus FOCIS Flex, a hand-held and auto-focusing inspection probe with integrated display, rechargeable battery, internal storage and pass/fail analysis. Its Bluetooth communications enable FOCIS Flex to instantly transfer captured images and pass/fail results to a paired FlexTester for display and/or storage.

OFL280 Complete/Complete2 Installation & Maintenance Kit

Select a FlexTester Complete or Complete2 Kit to add an Optical Fiber Identifier for an even more complete network installation and maintenance test solution. FlexTester CMP/CMP2 Kits include LinkMap with Pass/Fail plus TRM 2.0 Advanced.

Complete Kits combine an OFI-200D Optical Fiber Identifier with a user-selected OFL280, 150 m single-mode fiber ring (launch cable), FOCIS PRO with UPC or APC adapter tips, two One-Click Cleaners, standard FlexTester accessories, hard carry case.

Complete2 Kits combine a user-selected OFL280 and choice of Optical Fiber Identifier with 150 m fiber ring, FOCIS Flex, UPC or APC adapter tips, cleaning supplies, standard FlexTester accessories, and rugged, waterproof, hard carry case.

OFL280 FlexTester Soft Carry Case Kit

OFL280 FlexTester Soft Carry Case kits include the user-selected OFL280, standard accessories plus a One-Click Cleaner, packaged in a convenient soft carry case.

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www.AFLglobal.com or (800) 321-5298, (603) 528-7780

OFL280-10x FlexTester OTDR

Specifications [a]

OTDR	
Emitter Type	Laser
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Fiber Type	Single-mode
Available Wavelengths	1310/1490/1550/1625 nm
Wavelength Tolerance	±20/±20/±20/±10 nm
Dynamic Range (SNR=1)	34/32/32/30 dB
Event Dead Zone [b]	0.8 m
Attenuation Dead Zone [c]	3.5 m
Pulse Widths	5, 10, 30, 100, 300 ns, 1, 3, 10 μs
Range Settings	250 m to 240 km
Data Points	Up to 30,000
Data Point Spacing	5.0 cm (range <1.5 km), Range/30,000 (range >1.5 km)
Group Index of Refraction (GIR)	1.4000 to 1.7000
Distance Uncertainty (m)	±(1 + 0.005 % x distance + data point spacing)
Linearity	±0.05 dB/dB
Trace File Format	.SOR per Telcordia SR-4731 Issue 2
Trace File Storage Medium	4GB internal memory (>1000 traces)
Data Transfer to PC	USB cable
PON OTDR Modes	Test to splitter or through splitter
Standard OTDR Modes	Full Auto, Expert, Real Time

LASER SOURCE	
Emitter Type	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Fiber Type	Single-mode
Available Wavelengths	1310, 1490, 1550 nm
Wavelength Tolerance	±20 nm
Spectral Width (FWHM)	5 nm (maximum)
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW
Wavelength ID (one, two, or three wavelengths)	Compatible with AFL Optical Power Meters and Light Sources
Output Power Stability	0.25 dB
Output Power	-1 dBm (1310, 1550 nm) ±1.5 dB; +3 dBm (1490 nm) ±1.5 dB

PON POWER METER FOR SINGLE-MODE ONLY	
Calibrated Wavelengths	1490, 1550 nm
Detector Type	Filtered InGaAs
Isolation	> 40 dB
Measurement Range	+23 to − 50 dBm
Accuracy [d]	±0.5 dB
Resolution	0.01 dB
Measurement Units	dBm or Watts (nW, μW, mW)

OPTICAL POWER METER	
Calibrated Wavelengths	1310, 1490, 1550, 1625, 1650 nm
Detector Type	InGaAs
Measurement Range	+23 to -50 dBm
Tone Detect Range	+3 to -35 dBm
Wavelength ID Range	+3 to -35 dBm
Accuracy [e]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm or Watts (nW, μW, mW)

VISUAL FAULT LOCATOR	
Emitter Type	Visible red laser
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Wavelength	650 ±20 nm
Output Power (nominal)	0.8 mW into single-mode fiber
Modes	CW, 2 Hz flashing

GENERAL	
Size (in boot)	20.1 x 13.0 x 5.3. cm (7.9 x 5.1 x 2.1 in)
Weight	0.8 kg (1.8 lb)
Operational Temperature	-10 °C to +50 °C, 0 to 95 % RH (non-condensing)
Storage Temperature	-20 °C to +60 °C, 0 to 95 % RH (non-condensing)
Power	Rechargeable Li-Ion or AC adapter
Battery Life	12 hours, backlight ON, continuous operation
Display	LCD, 320 x 240, 3.5 inch (89 mm), color, high-contrast transflective with backlight and AR coating

Notes:

a. All specifications valid at 25 °C unless otherwise specified.

b. Typical distance between the two points 1.5 dB down each side of a reflective spike caused by a -45 dB event using 5 ns pulse width.

c. Typical distance from the location of a -45 dB reflective event to the point where the trace falls and stays within 0.5 dB of backscatter, using a 5 ns pulse width.

d. At calibration wavelengths and power levels of approximately -5 dBm for 1550 nm and -10 dBm for 1490 nm.

e. At 1310/1550 nm wavelengths with CW power level of approximately -10 dBm.

OFL280-10x FlexTester OTDR

Ordering Information

ORDER ENTRY FORMAT INCLUDING OPTIONS	KIT CONFIGURATION
OFL280-1xx[C]-[LNG]-[AC]	OFL280-1xx Basic Kit
OFL280-1xx[C]-LM-[LNG]-[AC]	OFL280-1xx Basic Kit with LinkMap™ Upgrade with Pass/Fail plus TRM® 2.0 Advanced
OFL280-1XX-LM-[LNG]	LinkMap Upgrade with Pass/Fail plus TRM 2.0 Advanced (for previously shipped OFL280)
OFL280-1xx[C]-PRO-[LNG]-[AC]	OFL280-1xx PRO Kit (with FOCIS PRO and cleaning supplies)
OFL280-1xx[C]-PRO2-[LNG]-[AC]-[TIP]-[FR]	OFL280-1xx PRO2 Kit (with FOCIS Flex, fiber ring, cleaning supplies)
OFL280-1xx[C]-CMP-[LNG]-[AC]-[FR]	OFL280-1xx Complete Kit (with FOCIS PRO, OFI-200D, fiber ring, cleaning supplies)
OFL280-1xx[C]-CMP2-[LNG]-[AC]-[TIP]-[FR]-[OFI]	OFL280-1xx Complete2 Kit (with FOCIS Flex, OFI choice, fiber ring, cleaning supplies)

Select OFL280 Options:

[C]	OTDR/Source Connector Type
U	UPC
A	APC

[LNG]	Language Option
ENG	English
CHS	Simplified Chinese
CHT	Traditional Chinese
DEU	German
FRA	French
ITA	Italian

[LNG]	Language Option
JPN	Japanese
KOR	Korean
POL	Polish
POR	Portuguese
SPA	Spanish
TUR	Turkish

[AC]	Destination Country	AC Plugs		
		FlexTester	FOCIS PRO	FOCIS Flex
US	USA	3-wire, 115V, Type K	US, EU, UK, SAA	2-pin, US
EU	European Union	3-wire, 250V, Type B	US, EU, UK, SAA	2-pin, EU
UK	United Kingdom	3-wire, 250V, Type D	US, EU, UK, SAA	3-pin, UK
CN	China, Australia	3-wire, 250V, Type C	US, EU, UK, SAA	2-pin, SAA
DK	Denmark	3-wire, 250V, Type E	US, EU, UK, SAA	2-pin, EU
JP	Japan	3-wire, 125V, Type M	US, EU, UK, SAA	2-pin, US
CH	Switzerland	3-wire, 250V, Type L	US, EU, UK, SAA	2-pin, EU
IT	Italy	3-wire, 250V, Type I	US, EU, UK, SAA	2-pin, EU
IL	Israel	3-wire, 250V, Type H	US, EU, UK, SAA	Select (US, EU, UK, SAA)
IN	India	3-wire, 250V, Type G	US, EU, UK, SAA	Select (US, EU, UK, SAA)

Select OFL280 PRO, PRO2, CMP, CMP2 Kit Options:

[FR]	150 m SMF Fiber Ring
Blank	N/A in PRO & CMP kits
SC/SC	FR1-SM-150-SC-SC
SC/FC	FR1-SM-150-SC-FC
SC/LC	FR1-SM-150-SC-LC
SC/ST	FR1-SM-150-SC-ST
SC/ASC	FR1-SM-150-SC-ASC
SC/AFC	FR1-SM-150-SC-AFC
SC/ALC	FR1-SM-150-SC-ALC
LC/LC	FR1-SM-150-LC-LC
LC/ASC	FR1-SM-150-LC-ASC
LC/ALC	FR1-SM-150-LC-ALC

[FR]	150 m SMF Fiber Ring
ASC/FC	FR1-SM-150-ASC-FC
ASC/ST	FR1-SM-150-ASC-ST
ASC/ASC	FR1-SM-150-ASC-ASC
ASC/AFC	FR1-SM-150-ASC-AFC
ASC/ALC	FR1-SM-150-ASC-ALC
ALC/ALC	FR1-SM-150-ALC-ALC
FC/FC	FR1-SM-150-FC-FC
FC/ST	FR1-SM-150-SC-ST
FC/LC	FR1-SM-150-FC-LC
FC/AFC	FR1-SM-150-FC-AFC
AFC/AFC	FR1-SM-150-AFC-AFC

[TIP]	FOCIS Flex Tips & Cleaning (PRO2 and CMP2 kits only)
Blank	Option not available in standard soft case, PRO and CMP kits
SC	SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
FC	FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
LC	LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm cleaning
ASC	SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
AFC	FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
ALC	LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm cleaning

[OFI]	Optical Fiber Identifier Option Description (CMP2 kit only)
Blank	Option only available in CMP2 kit
200D	OFI-200D - Jacketed & buffered fiber; 2 kHz only
400	OFI-400 - Jacketed & buffered fiber; power & tone display
400C	OFI-400C - Jacketed fiber only OFI-400
400HP	OFI-400HP - High-power OFI-400
FTTx	OFI-FTTx - Active ONT Detector (FTTx PON systems)

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts