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Test and Inspection

NOYES®
OFL280-10x FlexTester Family

Multifunction OTDR and Loss Test Set

The NOYES OFL280 FlexTester family offers an unmatched combination of fiber optic 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.

For many users the two-wavelength OFL280-100 will provide the best balance of functionality and value. Testing at 1310 and 1550 nm is normally sufficient to certify point-to-point or FTTx PON fibers and allows the detection of macro bends. The three-wavelength OFL280-101 and OFL280-102 models add 1625 nm or 1490 nm respectively. Testing at 1625 nm allows testing of the L band. Testing at 1490 nm is required by some network operators to certify FTTx PONs. The filtered, three-wavelength OFL280-103 can certify dark fibers at 1310/1550 nm, fault-locate live FTTx PON fibers at 1625 nm, and measure FTTx power levels at 1490 and 1550 nm, all from a single test port.

The OFL280 FlexTester user interface provides operating modes suitable for a wide range of users and features a top-down menu structure that is both easy to learn and a pleasure to use.

OTDR test results may be saved as industry standard SOR files, which can be transferred to a PC for viewing, printing, and analysis using supplied Windows® compatible software.

Applications

- **PON OTDR** - FTTx PON construction certification
- **Live Fiber OTDR** - FTTx service turn-up and troubleshooting
- **Full Auto OTDR** - Normal (point-to point) fiber cable construction testing and fault location
- **Expert OTDR** - Full function OTDR for experienced users
- **Real-Time OTDR** - Fault location, splice verification, first connector checker
- **End Locator** - Quickly locate breaks or measure fiber length
- **Optical Power Meter** - Measure optical power or fiber loss
- **Laser Source** - Measure end-to-end loss or trace fibers using the tone feature and a NOYES OFI
- **Visual Fault Locator** - Visible red laser for fiber bend/break location and tracing

Features

- Rugged, hand-held and light weight (0.8 kg / 1.8 lb)
- Standard OTDR, PON OTDR, live fiber OTDR, and FTTx PON meter all from the same test port
- 0.8 m event dead zone, 3.5 m attenuation dead zone
- 34 dB dynamic range
- Fast Real Time OTDR mode
- Internal storage (>1000 OTDR traces in .SOR format)
- High-contrast display is clear and bright in any lighting condition, including direct sunlight
- Transfer test results to a PC via USB
- 10-hour operation, fast charge, Li-Ion battery
- Short power-on time (<5 sec)
- Easy to learn and use

FOLS FIBER OPTICS LAN SECTION   Bicsi CORPORATE MEMBER   PROUD TO BE A TIA MEMBER   FTTH COUNCIL

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OFL280 Features and Applications by Model
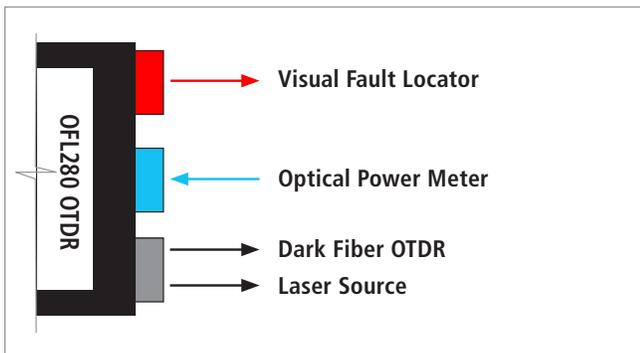
FEATURES	OFL280 MODELS			
	-100	-101	-102	-103
Compatible with all NOYES optical power meters and laser sources (OPM/OLS), including tone and Wave ID features	◆	◆	◆	◆
Compatible with NOYES optical fiber identifiers (OFI)	◆	◆	◆	◆
Integrated hi-power optical power meter	◆	◆	◆	◆
Integrated visual fault 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 – OTDR, PON OTDR		◆		◆
1625 nm – FTTx live fiber OTDR with filtered detector for in-service PON testing				◆
1490/1550 nm – FTTx PON Meter (Detects and measures downstream PON power levels)				◆

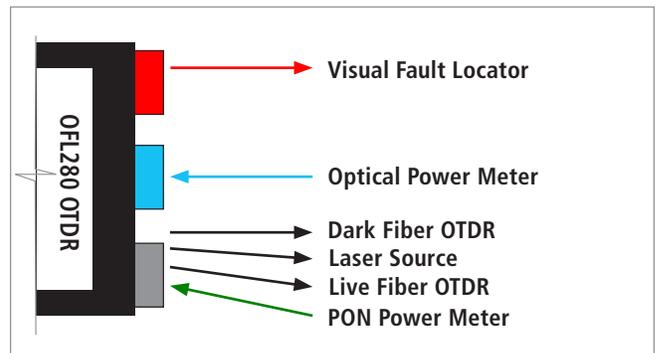| FIBER TESTING APPLICATIONS	OFL280 MODELS			
	-100	-101	-102	-103
Point-to-point cable construction and troubleshooting Fiber length, loss and ORL; splice or connection location, loss and reflectance; fault location	◆	◆	◆	◆
FTTx PON construction Fiber length, loss, and ORL; splitter, splice or connection location, loss and reflectance; fault-location	◆	◆	◆ [a]	◆
FTTx customer fiber troubleshooting - dark fibers (hard faults) Locate cable cuts, open splices, and bad connections	◆	◆	◆	◆
FTTx customer fiber troubleshooting - live fibers (marginal faults) Locate marginal faults such as macro bends, poor splices, high-loss connections, high loss fiber sections due to water intrusion (requires live fiber OTDR)				◆
FTTx service turn-up (commissioning) At the ONT (customer) location, verify network power levels, and if needed, locate faults on the drop cable or customer fiber				◆

Notes:

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, -101, and -102 models

OFL280 OTDR

- Visual Fault Locator
- Optical Power Meter
- Dark Fiber OTDR
- Laser Source

OFL280-103 model

OFL280 OTDR

- Visual Fault Locator
- Optical Power Meter
- Dark Fiber OTDR
- Laser Source
- Live Fiber OTDR
- PON Power Meter

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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 1.6000
Distance Uncertainty (m)	±(1 + 0.005 % x distance + data point spacing)
Linearity	±0.05 dB/dB
Trace File Format	Bellcore GR-196 V.1.1
Trace File Storage Medium	Internal memory (>1000 traces)
Data Transfer to PC	USB cable
PON OTDR Modes	FTTx - PON Construction, FTTx - In Service
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 NOYES 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	10 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.

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OFL280 FlexTester PRO Fiber Optic Test and Inspection Kits

OFL280 FlexTester PRO kits combine a user-specified OFL280 FlexTester with a FOCIS Fiber Optic Connector Inspection System and selected cleaning supplies conveniently packaged in a rugged, waterproof, hard carry case. FOCIS includes a DFS1 Digital FiberScope with a DFD1 Hand-held Touchscreen Tablet for viewing connector end-faces. Each kit includes two One-Click Mini-500 Cleaners (1.25 and 2.5 mm), FCC2 cleaning fluid, 20-pack tube of ferrule cleaning sticks and 40 pack tubes of 1.25 and 2.5 mm bulkhead adapter cleaning sticks.

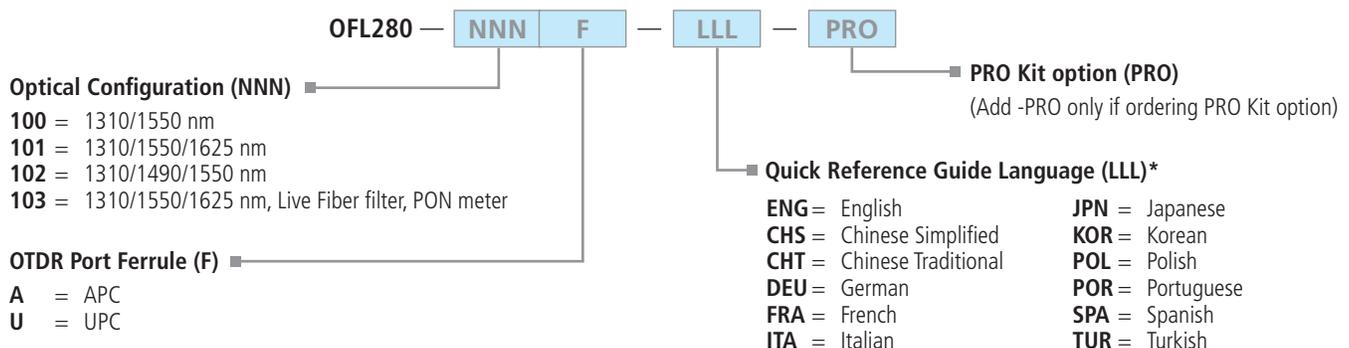| DESCRIPTION	AFL NO.
OFL280-100 FlexTester PRO Kit, 1310/1550	OFL280-100-PRO
OFL280-102 FlexTester PRO Kit, 1310/1490/1550	OFL280-102-PRO
OFL280-103 FlexTester PRO Kit, 1310/1550/1625	OFL280-103-PRO
FlexTester PRO Kit without OFL280 (for customers who already own OFL280)	OFL280-000-PRO

OFL280 FlexTester in Soft Carry Case

All OFL280 FlexTester models come with a carry case, (1) SC and (1) FC adapter for the OTDR/OLS port, (1) 2.5 mm Universal adapter for the OPM port, (1) 2.5 mm Universal adapter for the VFL port, One-Click Cleaner SC/ST/FC (2.5 mm), USB cable (connects with Type A USB port on your PC), and AC power adapter with a country-specific power cord.

WAVELENGTHS AND ADDED FEATURES	NOTES	AFL NO.
1310, 1550 nm	Dual-wavelength OTDR/Loss test set for both point-to-point and PON applications	OFL280-100
1310, 1550, 1625 nm	Adds ability to test at 1625 nm (L band)	OFL280-101
1310, 1490, 1550 nm	Adds ability to test at 1490 nm (FTTx downstream data)	OFL280-102
1310, 1550, 1625 nm, Live Fiber filter, PON meter	Adds ability to test (dark fibers) at 1625 nm (L band), filter to test FTTx live fibers at 1625 nm, and PON meter to measure FTTx downstream power at 1490 and 1550 nm	OFL280-103

Ordering Information

When placing an order, select options as follows: Optical Configuration (NNN), OTDR Port Ferrule type (F) and Language of the provided Quick Reference Guide (LLL). Example: OFL280-102U-ENG indicates a three-wavelength (1310/1490/1550 nm) OFL280 with UPC OTDR port ferrule and Quick Reference Guide printed in English.

OFL280 — NNN F — LLL — PRO

Optical Configuration (NNN)
100 = 1310/1550 nm
101 = 1310/1550/1625 nm
102 = 1310/1490/1550 nm
103 = 1310/1550/1625 nm, Live Fiber filter, PON meter

OTDR Port Ferrule (F)
A = APC
U = UPC
When ordering, select power cord option

PRO Kit option (PRO)
(Add -PRO only if ordering PRO Kit option)

Quick Reference Guide Language (LLL)*
ENG = English   **JPN** = Japanese
CHS = Chinese Simplified   **KOR** = Korean
CHT = Chinese Traditional **POL** = Polish
DEU = German   **POR** = Portuguese
FRA = French   **SPA** = Spanish
ITA = Italian   **TUR** = Turkish

***** All OFL280 models come preloaded with the User Interface in English and other languages.

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Available Accessories

DESCRIPTION	AFL NO.
FC adapter, OTDR/OLS port	2900-50-0002MR
SC adapter, OTDR/OLS port	2900-50-0003MR
ST adapter, OTDR/OLS port	2900-50-0004MR
LC adapter, OTDR/OLS port	2900-50-0006MR
FC adapter, OPM port	2900-52-0001MR
SC adapter, OPM port	2900-52-0002MR
ST adapter, OPM port	2900-52-0003MR
LC adapter, OPM port	2900-52-0004MR
2.5 mm adapter, OPM port	2900-52-0005MR
1.25 mm adapter, OPM port	2900-52-0006MR
2.5 mm adapter, VFL port	2900-53-0001MR
1.25 mm adapter, VFL port	2900-53-0002MR
Dust cap for UCI outputs	8800-00-0072PR
Fiber Ring, SM, 150 m	FR1-SM-150-y1-y2 [a]
Soft carry case	1400-01-0045

a. Specify connector types (y1,y2); 500 and 1000 m lengths also available.

Calibration Plans

AFL recommends annual calibrations on NOYES Test and Inspection products. Prepaid Cal plans offer two annual calibrations at a discounted price, a convenient calibration expiration email service, express calibration services and access to the NOYES product knowledge base. Cal Plus plans offer the same services as the Cal plans with the addition of a two year extended warranty (three years total coverage).

M210 OTDR AND/OR KIT MODEL	2 YR CAL PLAN	2 YR CAL PLUS PLAN
	AFL NO.	AFL NO.
OFL 280-100	CAL2-00-OFL2-100	CAL2-01-OFL2-100
OFL 280-101	CAL2-00-OFL2-101	CAL2-01-OFL2-101
OFL 280-102	CAL2-00-OFL2-102	CAL2-01-OFL2-102
OFL 280-103	CAL2-00-OFL2-103	CAL2-01-OFL2-103

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts