## *NOYES*®
# OFL250 Hand-held, Fault-Locating OTDR

### Features

- Available in 1310/1550 and 1550 only versions
- 26 dB dynamic range
- 1.5 m event dead zone
- Integrated OPM, OLS, VFL with tool-free interchangeable adapters
- Rugged, hand-held and light weight
- High-contrast display: Clear and bright, even in direct sunlight
- Internally stores > 1000 traces in .SOR format; Transfer to PC via USB
- Rechargeable 12-hour Li-Ion battery or AC power with instant On
- Windows® compatible software to view, print and archive test records

### Applications

- **Troubleshoot metro/access optical networks:** Locate cable cuts, open or high-loss splices, fiber bends, and high-loss/high-reflectance connections.
- **Measure optical power:** Verify TX output or RX input power levels.
- **Complete multi-wavelength end-to-end loss tests** faster and eliminate setup errors using AFL's Wave ID loss test feature.
- **Identify fibers** utilizing laser source to generate tones detected by NOYES non-intrusive Optical Fiber Identifiers
- **Generate stable optical source signals** (CW, Wave ID or fiber-identifying tones) using the integrated Optical Laser Source.
- **Visibly trace fibers** or locate fiber bends or breaks using the integrated Visual Fault Locator (VFL) visible red laser.

The NOYES OFL250 is a single-mode OTDR with an integrated optical power meter (OPM), optical laser source (OLS), and visual fault locator (VFL) in a hand-held package weighing only 0.8 kg (1.8 lb). With short dead zone and 26 dB dynamic range performance, the OFL250 is ideal for troubleshooting single-mode fibers in local access and metro area networks.

The OFL250 provides automatic and manual setup, automatic event detection, 12-hour battery life, internal data storage and USB connectivity. OTDR/OLS, OPM and VFL test ports are equipped with tool-free adapters, which can be changed in seconds.

Over 1000 OTDR test results may be saved in industry-standard .SOR file format. Transfer stored OTDR results to PC via USB for viewing and professional report generation using the included Windows® compatible Test Results Manager (TRM®) software.

The integrated OLS and OPM support AFL's unique Wave ID capability. The OPM automatically synchronizes to a single or multi-wavelength optical signal sent by another OFL250 or NOYES OLS, eliminating setup errors and reducing test time by up to 80%.

OFL250 OTDRs are offered in two models to suit your application requirements:

- **OFL250-100:** 1310/1550 nm single-mode OTDR and Laser Source, Optical Power Meter and Visual Fault Locator. Ideal for installation and maintenance testing of access and metro area networks operating at 1310 and/or 1550 nm.
- **OFL250-50:** 1550 nm only single-mode OTDR and Laser Source, Optical Power Meter and Visual Fault Locator. Suitable for fault-locating single-mode networks at 1550 nm only, including detection of high losses due to micro- or macro-bends.

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### Specifications [a]

| OTDR (POINT-TO-POINT, PON, LIVE PON) | |
|---|---|
| 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 | 1310/1550 nm |
| Wavelength Tolerance | ±20/±20 nm |
| Dynamic Range (SNR=1) [b] | 26 / 26 dB |
| Event Dead Zone [c] | 1.5 m |
| Attenuation Dead Zone [d] | 6.5/7 m |
| Pulse Widths | 5, 10, 30, 100, 300 ns, 1, 3, 10 µs |
| Range Settings | 250 m to 256 km |
| Data Points | Up to 16,000 |
| Data Point Spacing | 12.5 cm (range ≤4 km), Range/16,000 (range >4 km) |
| Group Index of Refraction | 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 |
| OTDR Modes | Full Auto, End Locate, Expert, Real Time |

| OPTICAL POWER METER (OPM) | |
|---|---|
| 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] | ± 0.25dB |
| Resolution | 0.01 dB |
| Measurement Units | dB, dBm or Watts (nW, µW, mW) |

| OPTICAL LIGHT SOURCE (OLS) | |
|---|---|
| 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, 1550 nm |
| Wavelength Tolerance | ±20 nm |
| Spectral Width (FWHM) | 5 nm (maximum) |
| Internal Modulation | 1 kHz, 2 kHz, CW |
| Wavelength ID (one, two, or three wavelengths) | Compatible with NOYES Optical Power Meters and Light Sources |
| Output Power Stability [f] | <±0.25 dB |
| Output Power (nominal) | −3 dBm ±1.5 dB |

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

| 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-performance transflective with backlight and AR coating |

**Notes:**

a. All specifications valid at 25°C unless otherwise specified.
b. Measured using 240 km range, 10 µs pulse and 3 min averaging.
c. 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.
d. 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.
e. At calibration wavelengths and power level of approximately -10 dBm.
f. Over 15 minutes after 30 minute warm-up.

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## Ordering Information

Each OFL250 OTDR comes with a soft carry case, (1) SC and (1) FC adapter for the OTDR/OLS port, Universal 2.5 mm adapters for the OPM and VFL ports, One-Click cleaner (2.5 mm), USB cable (connects with Type A USB port on your PC), rechargeable, replaceable Li-Ion battery, quick reference guide, TRM® Test Results Manager software for Windows-compatible PCs and AC power adapter with country-specific power cord.

| MODEL | DESCRIPTION | AFL NO. |
|---|---|---|
| OFL250-100 | 1310, 1550 nm OTDR and OLS with OPM and VFL | OFL2-26-0910PR |
| OFL250-50 | 1550 nm OTDR and OLS with OPM and VFL | OFL250-50U-ENG |

## 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).

| OFL250 MODEL | 2 YR CAL PLAN | 2 YR CAL PLUS PLAN |
|---|---|---|
| OFL250-100 | CAL2-00-OFL250-100 | CAL2-01-OFL250-100 |
| OFL250-50 | CAL2-00-OFL250-50 | CAL2-01-OFL250-50 |

## Available Accessories

### Test Port Adapters

| DESCRIPTION | AFL NO. |
|---|---|
| FC adapter for OTDR / OLS port | 2900-50-0002MR |
| SC adapter for OTDR / OLS port | 2900-50-0003MR |
| ST adapter for OTDR / OLS port | 2900-50-0004MR |
| LC adapter for OTDR / OLS port | 2900-50-0006MR |
| FC adapter for OPM port | 2900-52-0001MR |
| SC adapter for OPM port | 2900-52-0002MR |
| ST adapter for OPM port | 2900-52-0003MR |
| LC adapter for OPM port | 2900-52-0004MR |
| 2.5 mm Universal adapter for OPM port | 2900-52-0005MR |
| 1.25 mm Universal adapter for OPM port | 2900-52-0006MR |
| 2.5 mm Universal adapter for VFL port | 2900-53-0001MR |
| 1.25 mm Universal adapter for VFL port | 2900-53-0002MR |

### Replacement Accessories

| DESCRIPTION | AFL NO. |
|---|---|
| Replacement dust cap for port adapter | 8800-00-0072PR |
| Replacement Soft Carry Case | 1400-01-0045 |
| Replacement cable, USB-Mini B | 6000-00-0024MR |
| Replacement AC Adapter and battery charger | 4050-00-0120PR |
| Li-Ion battery charger, 90-260 VAC | 4050-30-0005MR |
| Replacement Li-Ion battery pack | 3900-05-0003ME |

### Fiber Rings (use as launch or receive/tail fibers)

| DESCRIPTION | AFL NO. |
|---|---|
| Fiber Ring, single-mode, 150 m | FR1-SM-150-y1-y2 |
| Fiber Ring, single-mode, 500 m | FR1-SM-500-y1-y2 |
| Fiber Ring, single-mode, 1000 m | FR1-SM-1000-y1-y2 |

y1, y2 – connectors for single-mode cables, specify type as follows:
ST, SC, ASC (angled SC), FC, AFC (angled FC), LC.
Other connector types, fiber types, and fiber lengths quoted upon request.

**NOYES International Sales and Service Contact Information**

Available at www.AFLglobal.com/NOYES/Contacts

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