

### NOYES® M200 Hand-held OTDR



M200 OTDR with new User Interface



M200 OTDR with DFS1 Digital FiberScope

The NOYES M200 OTDR from AFL combines ease of use (Touch and Test™) and functionality in a field-rugged, hand-held package. With single-mode dynamic ranges of up to 26 dB and multimode dynamic ranges of 22 dB, the M200 is ideal for testing and troubleshooting enterprise, LAN/WAN, metro, and service provider networks. Testing at 1310 and 1550 nm is normally sufficient to certify single-mode point-to-point fibers and allows the detection of macrobends. The M200 supports Full Auto, Expert (manual) and Real-Time OTDR test modes, precision event analysis, and multi-wavelength testing.

The M200 new User Interface, version 2.0, enables the user to set Pass/Fail thresholds compliant with TIA/ISO/user-defined values to alert test operators of failing or marginal events. Version 2.0 features improved file management and results review via Results Manager and a New Job creation editor with detailed job/file naming. General settings improvements include Date/Time/Number format options and an Auto Off feature. OTDR settings improvements include enhanced event measurements with various manual LSA methods available in Expert mode. The addition of a simple toggle function enables fast and logical storage of trace results from both ends of a fiber/cable. These capabilities simplify the user experience, reduce training time and testing errors enabling even novices to get the job done quickly and accurately.

The M200 with new User Interface supports visual inspection per IEC 61300-3-35 using the DFS1 Digital FiberScope allowing users the ability to view and document connector end-face images with their OTDR traces.

Thousands of OTDR test results may be saved as standard .SOR files, which can be stored internally or on the supplied USB drive. Test results are transferable via a USB cable or USB drive to a computer for viewing, printing, and analyzing with the supplied Windows® compatible software, Test Results Manager (TRM™). Acceptance reports generated using TRM can include OTDR traces with summary and event information with or without pass/fail indication, Event maps, and end-face images. With a full set of testing and troubleshooting tools including OTDR, VFL and end-face inspection capability, the M200 is a complete solution for fiber network owners and installers.

#### Features

- Hand-held, lightweight - 0.9 kg (2 lb)
- 22 dB (MM), 26 dB (SM) dynamic range
- Inspection capable with DFS1
- Integrated VFL (650 nm)
- >8 hours battery life
- Touch and Test™ user interface
- TRM™ reporting software
- Automatic Pass/Fail analysis (TIA/ISO)
- Internal and USB storage (1000s of tests)
- USB host and function ports

#### Applications

Test, troubleshoot, Tier 2 certify:

- Full Auto OTDR - document installation and fault locate
- Expert OTDR - document and fault locate using Auto or Auto Once
- Real-Time OTDR - locate faults and verify splices
- Visibly Fault Locate - locate bends and breaks and verify polarity

# NOYES® M200 Hand-held OTDR

## Specifications <sup>i</sup>

| OTDR                                  | MULTIMODE   | SINGLE-MODE   |
|---------------------------------------|---|---|
| Emitter Type                          | Laser   | Laser   |
| Safety Class                          | Class I FDA 21 CFR 1040.10 and 1040.11; IEC 60825-1:2007-03                                   | Class I FDA 21 CFR 1040.10 and 1040.11; IEC 60825-1:2007-03 |
| Center Wavelengths                    | 850/1300 nm   | 1310/1550 nm  |
| Wavelength Tolerance                  | ±20/±30 nm  | ±20/±30 nm  |
| Dynamic Range (SNR = 1)               | 22 dB   | 26 dB   |
| Event Dead Zone <sup>a</sup>          | 1.5 m   | 1.5 m   |
| Attenuation Dead Zone <sup>b</sup>    | 9 m   | 9 m   |
| Pulse Widths <sup>c</sup>             | 10, 30, 100, 300 ns, 1, 3 μs  | 10, 30, 100, 300 ns, 1, 3, 10 μs                            |
| Range Settings                        | 250 m to 32 km  | 250 m to 208 km   |
| Sampling Points                       | Up to 16,000  | Up to 16,000  |
| Minimum Data Point Spacing            | 0.25 m  | 0.25 m  |
| Group Index of Refraction (GIR)       | 1.4000 to 1.6000  | 1.4000 to 1.6000  |
| Distance Uncertainty (m) <sup>d</sup> | ±(1 + 0.005 % x distance + data point spacing)  | ±(1 + 0.005 % x distance + data point spacing)              |
| Linearity <sup>e</sup>                | ±0.05 dB/dB (typical)   | ±0.05 dB/dB (typical)                                       |
| Loss Threshold                        | ±0.05 dB/dB   | ±0.05 dB/dB   |
| Loss Resolution                       | 0.05 dB   | 0.05 dB   |
| Reflectance Accuracy <sup>f</sup>     | 0.01 dB   | 0.01 dB   |
| Trace File Format                     | Bellcore GR-196 Version 1.1   | Bellcore GR-196 Version 1.1                                 |
| Trace File Storage Medium             | Internal non-volatile memory, removable CompactFlash Card (not included), and USB Flash Drive |   |
| Trace File Storage Capacity           | >100 internal; thousands on CompactFlash or USB Flash Drive                                   |   |
| Trace File Transfer to PC             | USB Flash Drive Type 1.1, CompactFlash or Mini USB Cable with ActiveSync                      |   |
| <b>VISUAL FAULT LOCATOR</b>           | <b>MULTIMODE</b>  | <b>SINGLE-MODE</b>  |
| Emitter Type                          | Laser   | Laser   |
| Safety Class                          | Class II FDA 21 CFR 1040.10 and 1040.11; IEC 825-1:1993, 60825-1:2007-03                      |   |
| Wavelength                            | 650 nm ±20 nm   | 650 nm ±20 nm   |
| Output Power (nominal)                | 0.8 mW  | 0.8 mW  |
| <b>GENERAL</b>                        | <b>MULTIMODE</b>  | <b>SINGLE-MODE</b>  |
| Size (in boot)                        | 23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)   | 23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)                         |
| Weight                                | 0.9 kg (2 lb)   | 0.9 kg (2 lb)   |
| Operating Temperature                 | -10 °C to +50 °C  | -10 °C to +50 °C  |
| Storage Temperature                   | -20 °C to +60 °C  | -20 °C to +60 °C  |
| Relative Humidity                     | 0 to 95 % RH (non-condensing)   | 0 to 95 % RH (non-condensing)                               |
| Power                                 | Removable Li-Ion or 110/220 VAC power adapter   | Removable Li-Ion or 110/220 VAC power adapter               |
| Battery Life <sup>g</sup>             | 8 hours   | 8 hours   |
| Recharge Time <sup>h</sup>            | 3 hours   | 3 hours   |

### NOTES:

- Typical distance between the two points 1.5 dB down each side of a reflective spike caused by a -40 dB (multimode) or -45 dB (single-mode) event using 10 ns pulse width.
- Typical distance from event location to point where trace is within 0.5 dB of backscatter.
- 3 μs pulse width not available at 850 nm.
- Does not include GIR uncertainty.
- Typical.
- For a non-saturated event.
- New battery.
- Typical, from fully discharged to fully charged state, unit may be operating.
- All specifications valid at 23 °C ±2 °C (73.4 °F ±3.6 °F) unless otherwise specified.

### NOYES® M200 Hand-held OTDR

#### Ordering Information

The M200 OTDR with new User Interface works with the DFS1 Digital FiberScope.

The M200 hand-held OTDR comes with a soft carry case, USB Flash drive, trace analysis software - TRM™, AC adapter, and UCI switchable test port adapters.

The NOYES M200 OTDR is also available in a tough injection molded ABS carry case (available as an option - HC). The rugged transit case has a full length hinge, padlock loops, secure snap latches and an O-ring seal to protect the contents from dust and water. In addition to the OTDR, the custom case has room for cleaning products, launch and receive rings, documentation and more.



M200 OTDR in a soft case



M200 OTDR in a hard case

#### M200 Models

| BASE MODEL | WAVELENGTHS (nm) |      |      |      | DYNAMIC RANGE (dB) | INCLUDED OTDR PORT ADAPTERS | POWER, INTERNAL CHARGING | TRACE STORAGE |     |
|------------|------------------|------|------|------|--------------------|-----------------------------|--------------------------|---------------|-----|
|            | 850              | 1300 | 1310 | 1550 |                    |                             |                          | CF*           | USB |
| M200-20    |                  |      | ◆    | ◆    | 26/26              | SC, FC                      | Li-ion, AC               | ◆             | ◆   |
| M200-22    | ◆                | ◆    |      |      | 22/22              | SC, ST                      | Li-ion, AC               | ◆             | ◆   |
| M200-25    | ◆                | ◆    | ◆    | ◆    | 22/22/26/26        | (2) SC, FC, ST              | Li-ion, AC               | ◆             | ◆   |

\* CompactFlash memory card.

When placing an order, select options as follows:

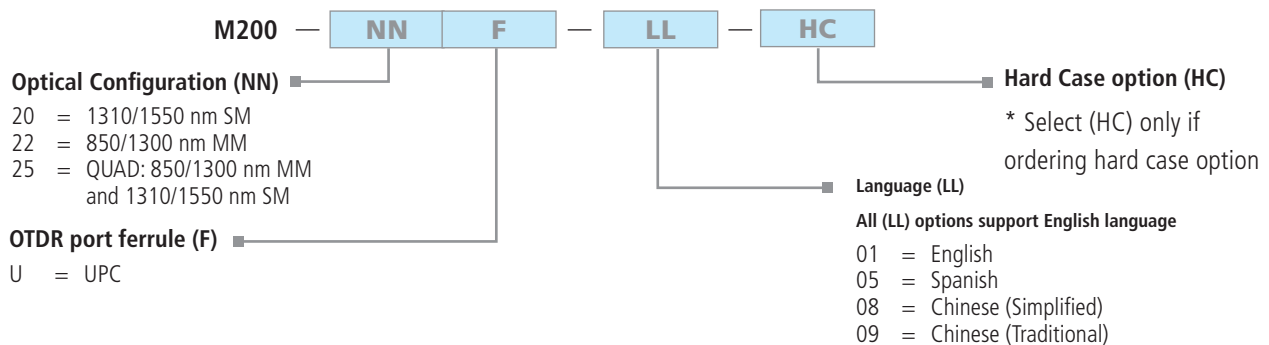
Optical Configuration (NN), OTDR port ferrule (F), and Language (LL).

Select (HC) only if ordering the hard case option.

Example:

M200-25U-01 -> this model number indicates M200 QUAD with UPC OTDR port ferrule and English language option in soft case.

M200-25U-01-HC -> this model number indicates M200 QUAD with UPC OTDR port ferrule and English language option in hard case.



### NOYES® M200 Hand-held OTDR



M200 OTDR Hard Case Kit for Mining

M200 OTDR Hard Case Kit for Mining

For ordering information, refer to the table below.

| MODEL NUMBER | DESCRIPTION  |
|--------------|--|
| M200-MNG     | 850/1300 nm multimode and 1310/1550 nm single-mode M200 OTDR in Hard Case  |
|              | Wet Cleaning Kit (shown) for SC/FC/ST/LC connectors. Includes: <ul style="list-style-type: none"> <li>• 8500-10-0016MZ, Cletop-SB</li> <li>• CCTS-25-0900MZ, Connector Cleaning Tips for 2.5 mm ferrule in adapters or sockets (SC, FC, ST in adapters). Blue (40 sticks per tube). Qty = 1 tube</li> <li>• CCTS-12-0900MZ, Connector Cleaning Tips for 1.25 mm ferrule in adapters or sockets (LC, MU in adapters). Green (40 sticks per tube). Qty = 1 tube</li> <li>• FCC2-00-0900, optical quality Cleaning Fluid for fiber connector end faces</li> </ul> |
|              | One-Click Cleaner SC   |
|              | One-Click Cleaner LC/MU  |
|              | SC-ST 150 m SM Fiber Ring  |
|              | SC-ST 150 m 62.5 μm Fiber Ring   |
|              | ST/SC mating adapter   |



DFS1-00-04XU

One-Click Mini-100  
SC, ST, FC and LC/MU

### OTDR, Inspection, and Cleaning Accessories

| MODEL            | DESCRIPTION  |
|------------------|--|
| DFS1-00-04XU     | DFS1 Digital FiberScope PC/UPC Inspection Kit                          |
| DFS1-00-04XA     | DFS1 Digital FiberScope APC Inspection Kit                             |
| DFS1-00-04XN     | DFS1 USB Digital Fiber Inspection Kit without Adapters                 |
| M200-001-01      | M200 Software upgrade from v 1.X to v 2.0                              |
| FR1-M5-150-x1-x2 | Fiber Ring, standard, 1 fiber, 50/125 μm multimode, 150 m              |
| FR1-L5-150-x1-x2 | Fiber Ring, standard, 1 fiber, Laser Optimized, 50 μm multimode, 150 m |
| FR1-M6-150-x1-x2 | Fiber Ring, standard, 1 fiber, 62.5/125 μm multimode, 150 m            |
| FR1-SM-150-y1-y2 | Fiber Ring, standard, 1 fiber, single-mode, 150 m                      |
| 8500-20-0900     | Wet Cleaning Kit (shown) for SC/FC/ST/LC connectors                    |
| 8500-20-0901     | Dry Cleaning Kit   |
| 8500-05-0001MZ   | One-Click Cleaner SC, ST, FC (500+ cleans)                             |
| 8500-05-0002MZ   | One-Click Cleaner LC/MU (500+ cleans)                                  |
| 8500-05-0005MZ   | One-Click Mini-100 SC, ST, FC (100+ cleans)                            |
| 8500-05-0006MZ   | One-Click Mini-100 LC/MU (100+ cleans)                                 |
| 8500-05-0007MZ   | One-Click Cleaner Ultra 2.5 SC, ST, FC (enlarged cleaning)             |

NOTE: When ordering Fiber Rings, specify connector types (x1, x2, y1, y2)



One-Click Cleaner  
SC, ST, FC and LC/MU

One-Click Cleaner Ultra  
2.5 SC, ST, FC

### Authorized Channel Partner



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