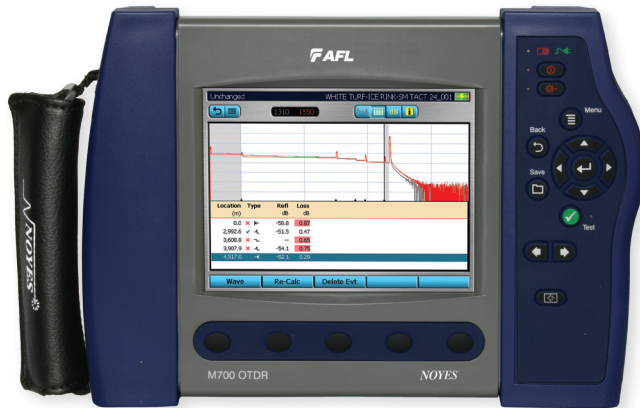


### NOYES® M700-Series OTDRs



M700 Compact QUAD OTDR



M700 OTDR with DFS1 Digital FiberScope

#### Features

- Integrated OPM and VFL (650 nm)
- Inspection capable with the DFS1 FiberScope
- Full Auto, Expert, and Real-Time OTDR test modes
- Automatic Pass/Fail analysis (TIA/ISO)
- Touch and Test™ user interface
- Tool-free, switchable test port adapters
- Bellcore (GR-196) .SOR file format
- Internal (1000s test results) and USB storage
- > 8 hours battery life or AC power
- USB host and function ports
- TRM™ reporting software

The NOYES M700 OTDR from AFL combines ease of use (Touch and Test™) and functionality in a field-rugged, hand-held package. With single-mode dynamic ranges up to 40 dB and multimode dynamic ranges of 26 dB, the M700 OTDR is ideal for testing and troubleshooting LAN/WAN, metro, FTTx and long haul networks. Industry leading dead zones of less than 1.0 m enhance users' ability to locate and measure events. Testing at 1310 and 1550 nm is normally sufficient to certify point-to-point or FTTx PON fibers and allows the detection of macrobends.

The M700 supports Full Auto, Expert (manual) and Real-Time OTDR test modes, precision event analysis, multi-wavelength testing, and 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 and loss results. Pass/Fail acceptance to TIA/ISO values or user-defined values can be set to alert the test operator of failing or marginal events. These capabilities simplify the user experience, reduce training time and testing errors enabling even novices to get the job done quickly and accurately.

Thousands of OTDR test results may be saved as standard .SOR files and 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™). Saved OPM loss values for a cable in one or two directions can be displayed in a table on the M700 for evaluation and comparison. Acceptance reports generated using TRM can include Loss tables, OTDR traces with summary and event information with or without pass/fail indication and Channel Maps. With a full set of testing tools including OTDR, OPM, VFL and end-face inspection capability the M700 is a complete solution for fiber network owners and installers.

#### Applications

- Tier 1 and 2 testing of premise networks
- Metro, FTTx, and Service Provider networks testing
- Interoffice networks
- Loss or power measurement storage
- Fault location with integrated VFL
- Splice verification
- Network documentation including Pass/Fail event analysis



## NOYES® M700-Series OTDRs

### Specifications <sup>a</sup>

OTDR	SINGLE-MODE OTDR		LONG RANGE QUAD OTDR		QUAD OTDR	
	DUAL-WAVE	TRIPLE-WAVE	MULTIMODE	SINGLE-MODE	MULTIMODE	SINGLE-MODE
Emitter Type	Laser					
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Center Wavelengths	1310/1550 nm	1310/1550/1625 nm	850/1300 nm	1310/1550 nm	850/1300 nm	1310/1550 nm
Wavelength Tolerance	±25/25 nm	±25/25/10 nm	±25/25 nm	±25/25 nm	±20/30 nm	±20/30 nm
Dynamic Range (SNR = 1)	40/38 dB	40/38/38 dB	24/24 dB <sup>b</sup>	39/37 dB	22/22 dB <sup>b</sup>	26/26 dB
Event Dead Zone	0.8 m <sup>c</sup>	0.8 m <sup>c</sup>	0.9 m <sup>c</sup>	0.9 m <sup>c</sup>	1.5 m <sup>e</sup>	1.5 m <sup>e</sup>
Attenuation Dead Zone	4.5 m <sup>d</sup>	4.5 m <sup>d</sup>	4.5 m <sup>d</sup>	4.5 m <sup>d</sup>	9 m <sup>f</sup>	9 m <sup>f</sup>
Pulse Widths	5, 10, 30, 100, 300 ns; 1, 3, 10, 20 µs		5, 10, 30, 100, 300 ns; 1 µs	5, 10, 30, 100, 300 ns; 1, 3, 10, 20 µs	10, 30, 100, 300 ns; 1 µs	10, 30, 100, 300 ns; 1, 3, 10 µs
Range Settings	250 m to 256 km		250 m to 64 km	250 m to 256 km	250 m to 64 km	250 m to 208 km
Sampling Points	Max. 64,000 points		Max. 64,000 points		Max. 16,000 points	
Minimum Data Point Spacing	0.125 m		0.125 m		0.25 m	
Group Index of Refraction (GIR)	1.4000 to 1.6000		1.4000 to 1.6000		1.4000 to 1.6000	
Distance Uncertainty (m) <sup>g</sup>	±(1 + 0.0005 % x distance + data point spacing)				±(1 + 0.005 % x distance + data point spacing)	
Linearity <sup>h</sup>	±0.05 dB/dB		±0.05 dB/dB		±0.05 dB/dB	
Loss Threshold	0.05 dB		0.05 dB		0.05 dB	
Loss Resolution	0.01 dB		0.01 dB		0.01 dB	
Reflectance Accuracy <sup>j</sup>	±2 dB		±2 dB		±2 dB	
Trace File Format	SR-4731 (GR-196-CORE Appendix A & B and SR-4731)					
Trace File Storage Media	Internal flash memory					
	USB flash drive (2 USB host ports)					
	Downloadable from OTDR directly to PC					
Trace File Storage Capacity	Internal 1000 fibers					
Data Transfer to PC	USB					
OTDR Modes	Full Auto, Real Time, Expert					
Tool Free Adapters	SC/ST/FC/LC					

#### Notes:

- a. All specifications valid at 25 °C unless otherwise specified.
- b. 62.5 µm fiber.
- c. Typical distance between the two points 1.5 dB down each side of an event with reflection <-45 dB for SM and <-40 dB (unsaturated) for MM using a 5 ns pulse width.
- d. Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by an event with reflection <-45 dB for SM and <-40 dB (unsaturated) for MM using a 5 ns pulse width.
- e. Typical distance between the two points 1.5 dB down each side of an event with reflection <-45 dB for SM and <-40 dB (unsaturated) for MM using a 10 ns pulse width.
- f. Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by an event with reflection <-45 dB for SM and <-40 dB (unsaturated) for MM using a 10 ns pulse width.
- g. Does not include GIR uncertainty.
- h. Typical.
- j. For a non-saturated event.

continued on next page →

# NOYES® M700-Series OTDRs

## Specifications <sup>a</sup>

POWER METER	SINGLE-MODE OTDR		LONG RANGE QUAD OTDR		QUAD OTDR	
	DUAL-WAVE	TRIPLE-WAVE	MULTIMODE	SINGLE-MODE	MULTIMODE	SINGLE-MODE
Calibrated Wavelengths	850, 980, 1300, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)		850, 980, 1300, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)		850, 980, 1300, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)	
Detector Type	Filtered InGaAs detector		InGaAs 2 mm		InGaAs 2 mm	
Measurement Range (dBm)	+26 to -50 dBm		+6 to -70 dBm		+6 to -70 dBm	
Accuracy <sup>b</sup>	±0.25		±0.25		±0.25	
Measurement Units	dB, dBm, mW		dB, dBm, mW		dB, dBm, mW	
Wavelength ID <sup>c</sup>	Yes		Yes		Yes	
Set Reference	Yes		Yes		Yes	
Data Storage	Yes		Yes		Yes	
Tone Detection	270 Hz, 330 Hz, 1 kHz, 2 kHz		270 Hz, 330 Hz, 1 kHz, 2 kHz		270 Hz, 330 Hz, 1 kHz, 2 kHz	

VISUAL FAULT LOCATOR	SINGLE-MODE OTDR	LONG RANGE QUAD OTDR	QUAD OTDR
Emitter Type	Laser		
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03		
Wavelength	650 nm		
Output Power (nominal)	0.8 mW		

GENERAL	SINGLE-MODE OTDR		LONG RANGE QUAD OTDR		QUAD OTDR	
Display	16.51 cm (6.5 in), color, transfective (indoor/outdoor) touch screen display					
Anti-Reflective (AR) Coating	Yes	Yes	Yes	Yes	—	—
Size	190.5 x 269.2 x 69.8 mm (7.5 x 10.6 x 2.75 in)					
Weight	2.36 kg ( 5.22 lb)					
Operating Temperature	-10 °C to+50 °C, 0 to 90 % RH (non-condensing)					
Storage Temperature	-20 °C to+60 °C, 0 to 90 % RH (non-condensing)					
Power	Rechargeable Li-Ion or AC power adapter					
Battery Life <sup>d,f</sup>	>8 hours continuous OTDR testing					
Recharge Time <sup>e,f</sup>	4 hours					

### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.
- Automatic wavelength identification and switching when used with NOYES Wave ID Series Light Sources.
- Typical, depending on display brightness.
- Typical, from fully discharged to fully charged state, unit may be operating.
- External battery charger available.

## NOYES® M700-Series OTDRs

### Ordering Information

Each M700 model includes the M700 OTDR, USB Flash drive, PC software for OTDR trace analysis and OPM loss reporting, AC adapter, switchable test ports adapters, and cleaning accessories in a soft carry case (see table below).

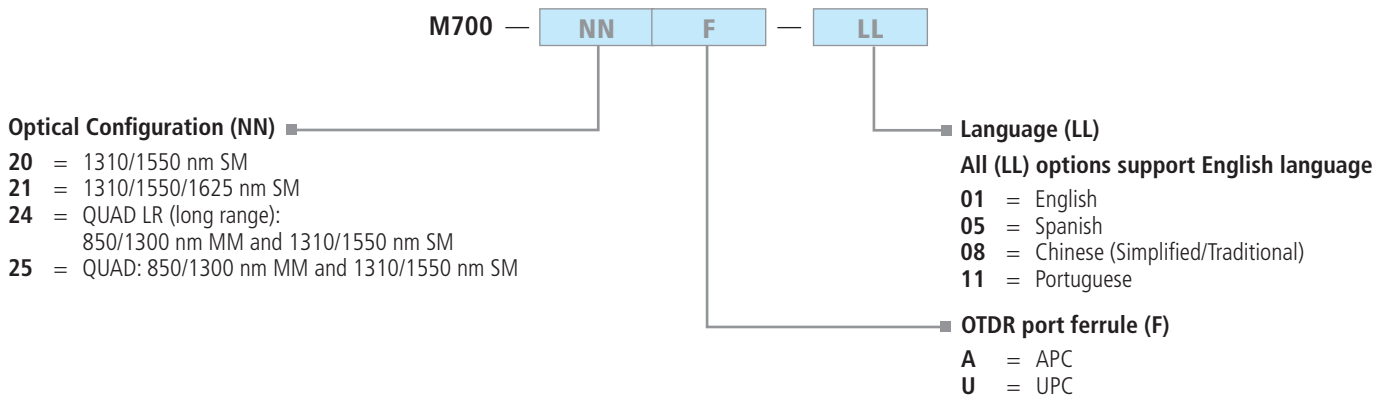
OTDR	CARRY CASE	CLEANING PRODUCTS	OTDR PORT ADAPTERS	OPM PORT ADAPTERS	VFI PORT ADAPTERS
M700-20, M700-21	Soft case	One-Click Cleaner SC/ST/FC, 2.5 mm	SC, FC, LC	SC, 2.5 mm, 1.25 mm	2.5 mm 1.25 mm
M700-24, M700-25	Soft case	One-Click Cleaner SC/ST/FC, 2.5 mm	SC, ST, LC	SC, 2.5 mm, 1.25 mm	2.5 mm 1.25 mm

The M700 OTDR works with the DFS1 Digital FiberScope.

### Model Configurator

When placing an order, select options as follows: Optical Configuration (NN), OTDR port ferrule (F), and Language (LL).

Example: M700 — 25U — 01 The model number M700 — 25U — 01 indicates M700 QUAD with UPC OTDR port ferrule and English language option.



Specify power cord type (country) when ordering an M700 OTDR. One power cord is included with each AC adapter at no charge. Additional power cords may be purchased separately.

DESCRIPTION	COUNTRY	AFL NO.
3-conductor, IEC320, 115V, Type K	USA	6000-00-0001MR
3-conductor, IEC320, 250V, Type B	Euro	6000-00-0012MR
3-conductor, IEC320, 250V, Type D	UK	6000-00-0015MR
3-conductor, IEC320, 250V, Type C	Australia, China	6000-00-0016MR
3-conductor, IEC320, 250V, Type E	Denmark	6000-00-0017MR
2-conductor, IEC320, 125V, Type M	Japan	6000-00-0018MR
3-conductor, IEC320, 250V, Type L	Swiss	6000-00-0019MR
3-conductor, IEC320, 250V, Type I	Italy	6000-00-0020MR
3-conductor, IEC320, 250V, Type H	Israel	6000-00-0021MR
3-conductor, IEC320, 250V, Type G	India	6000-00-0022MR

## NOYES® M700-Series OTDRs Accessories

### Ordering Information (continued)

#### Preconfigured Accessories Kit M700 - H1

The M700 - H1 is a preconfigured accessories kit (M700 OTDR is not included).

DESCRIPTION	AFL NO.
Hard case with One-Click Cleaner SC/ST/FC (2.5 mm), One-Click Cleaner LC/MU (1.25 mm), and Cletop-SB white tape	M700 - H1

Custom kits may be created by ordering an M700 OTDR model, the H1 carry case and accessories from the Accessories table (below). The H1 hard carry case has room for up to 6 Fiber Rings, jumpers in a jumper carry case, the DFS1 Digital FiberScope kit, OLS2-Dual or OLS4 optical light source, and cleaning accessories (items must be ordered separately).

#### Accessories

DESCRIPTION	AFL NO.
Hard case with One-Click Cleaner SC/ST/FC (2.5mm), One-Click Cleaner LC/MU (1.25mm), and Cletop-SB white tape	M700-H1
DFS1 Digital FiberScope PC/UPC Inspection Kit	DFS1-00-04XU
DFS1 Digital FiberScope APC Inspection Kit	DFS1-00-04XA
DFS1 USB Digital Fiber Inspection Kit without Adapters	DFS1-00-04XN
OLS2-Dual laser light source with Wave ID, 1310/1550 nm	OLS2-Dual
OLS4 integrated LED and laser light source with Wave ID, 850/1300/1310/1550 nm	OLS4
Fiber Ring, standard, 1 fiber, 50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 <sup>a</sup>
Fiber Ring, standard, 1 fiber, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 <sup>a</sup>
Fiber Ring, standard, 1 fiber, 62.5/125 µm multimode, 150 m	FR1-M6-150-x1-x2 <sup>a</sup>
Fiber Ring, standard, 1 fiber, single-mode, 150 m	FR1-SM-150-y1-y2 <sup>a</sup>
Wet Cleaning Kit (shown) for SC/FC/ST/LC connectors	8500-20-0900
Dry Cleaning Kit	8500-20-0901
One-Click Cleaner SC, ST, FC (500+ cleans)	8500-05-0001MZ
One-Click Cleaner LC/MU (500+ cleans)	8500-05-0002MZ
One-Click Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ
One-Click Mini-100 LC/MU (100+ cleans)	8500-05-0006MZ
One-Click Cleaner Ultra 2.5 SC, ST, FC (enlarged cleaning)	8500-05-0007MZ
Zippered Jumper Carry Case	1400-01-0086PZ

#### Notes:

- a. When ordering Fiber Rings, specify connector types (x1, x2, y1,y2).

### Authorized Channel Partner



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