AFL

NOYES®

TEST AND INSPECTION EQUIPMENT

OTDRs | Microscopes | Test Sets | Power Meters

Founded in 1984, AFL is a global leader providing fiber optic products, equipment, and engineering services to the telecommunications, electric utility, wireless, energy, private network and OEM markets. AFL also serves a diverse mix of industry segments that include service providers, military and defense, mining, oil and gas, and biomedical.

AFL brings years of experience in developing solutions for customers, fostering a creative culture to drive and deploy innovative technologies that will improve communications for years to come. Our product line consists of fiber optic cable, optical connectivity, fusion splicers and test equipment as well as fiber management systems, closures and accessories.

AFL is dedicated to bringing our customers a quality product as well as delivering superior value.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

Table of Contents

NOYES®

AFL's NOYES Test and Inspection Equipment product line offers a comprehensive set of fiber optic test equipment for measuring, maintaining and documenting the performance of fiber optic networks. In every area of manufacturing, AFL combines the latest equipment, production techniques and test systems to create products with world-class performance.

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

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.

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

© 2008-2011, AFL, all rights reserved. OFL2-28-2000 Revision 1L, 2011-08-17
Specifications are subject to change without notice.

NOYES®
OFL280-10x FlexTester Family

OFL280 Features and Applications by Model

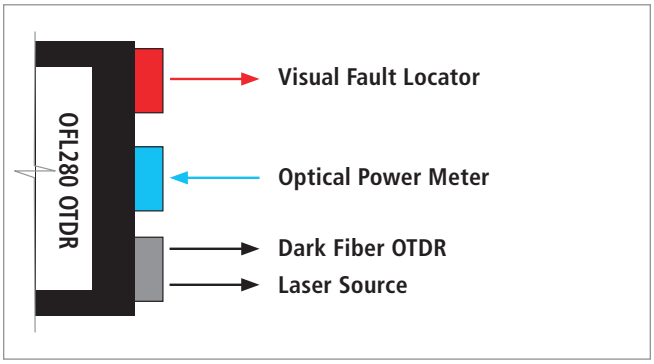
	OFL280 MODELS			
FEATURES	**-100**	**-101**	**-102**	**-103**
Compatible with all NOYES optical power meters and laser sources (OPM/OLS), including tone and Wave ID features	◆	◆	◆	◆
Compatible with NOYES optical fiber identifiers (OFI)	◆	◆	◆	◆
Integrated hi-power optical power meter	◆	◆	◆	◆
Integrated 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)				◆

	OFL280 MODELS			
FIBER TESTING APPLICATIONS	**-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				◆

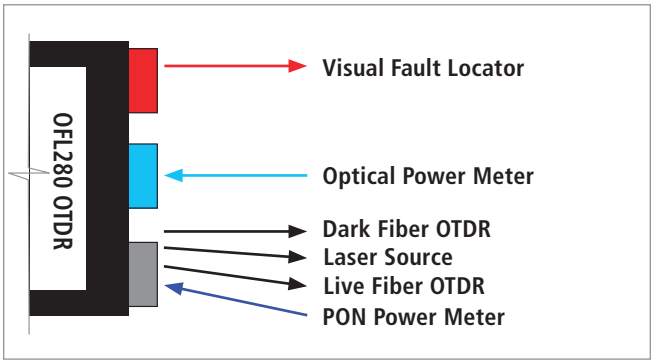
Notes:

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



OFL280-103 model



© 2008-2011, AFL, all rights reserved. OFL2-28-2000 Revision 1L, 2011-08-17
Specifications are subject to change without notice.

NOYES®
OFL280-10x FlexTester Family

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 calibration wavelengths and power level of approximately -10 dBm.

© 2008-2011, AFL, all rights reserved. OFL2-28-2000 Revision 1L, 2011-08-17
Specifications are subject to change without notice.

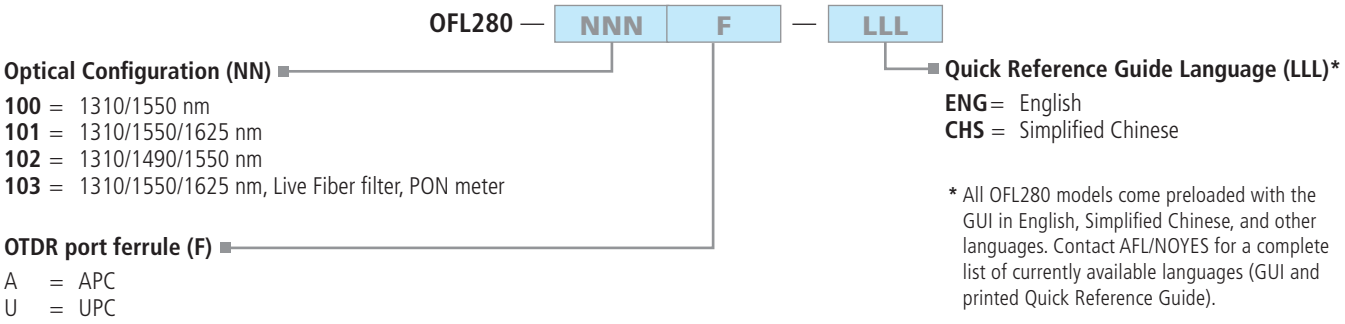
NOYES®
OFL280-10x FlexTester Family

Ordering Information

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

When placing an order, select options as follows:
Optical Configuration (NN), 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.



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

DESCRIPTION	AFL NO.
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
Extended Warranty and pre-paid annual calibration plans available for 1, 2 and 4 years (contact factory)	EWxY-xx-xxxx

a. When ordering Fiber Rings, specify connector types (y1,y2); 500 and 1000 m lengths also available.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2008-2011, AFL, all rights reserved. OFL2-28-2000 Revision 1L, 2011-08-17
Specifications are subject to change without notice.

M200 OTDR with new User Interface

M200 OTDR iwith DFS1 Digital FiberScope

NOYES®
M200 Hand-held OTDR

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

FOLS FIBER OPTICS LAN SECTION · Bicsi CORPORATE MEMBER · TIA MEMBER · FTTH COUNCIL

© 2006-2011, AFL, all rights reserved. M200-00-2000 Revision E, 2011-08-04
Specifications are subject to change without notice.

NOYES®
M200 Hand-held OTDR

Specifications [a]

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 [b]	1.5 m	1.5 m
Attenuation Dead Zone [c]	9 m	9 m
Pulse Widths [d]	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) [e]	±(1 + 0.005 % x distance + data point spacing)	±(1 + 0.005 % x distance + data point spacing)
Linearity [f]	±0.05 dB/dB (typical)	±0.05 dB/dB (typical)
Loss Threshold	0.02 dB	0.02 dB
Loss Resolution	0.01 dB	0.01 dB
Reflectance Resolution	0.01 dB	0.01 dB
Reflectance Accuracy [g]	±2 dB	±2 dB
Trace File Format	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	
VISUAL FAULT LOCATOR		
Emitter Type	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	
Output Power (nominal)	0.8 mW	
GENERAL		
Size (in boot)	23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)	
Weight	0.9 kg (2 lb)	
Operating Temperature	-10°C to +50°C	
Storage Temperature	-20°C to +60°C	
Relative Humidity	0 to 95 % RH (non-condensing)	
Power	Removable Li-Ion or 110/220 VAC power adapter	
Battery Life [h]	8 hours	
Recharge Time [j]	3 hours	

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.

b. 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.

c. Typical distance from event location to point where trace is within 0.5 dB of backscatter.

d. 3 µs pulse width not available at 850 nm.

e. Does not include GIR uncertainty.

f. Typical.

g. For a non-saturated event.

h. New battery.

j. Typical, from fully discharged to fully charged state, unit may be operating.

© 2006-2011, AFL, all rights reserved. M200-00-2000 Revision E, 2011-08-04
Specifications are subject to change without notice.

M200 OTDR in a soft case

M200 OTDR in a hard case

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 Models

WAVELENGTHS (NM)				DYNAMIC RANGE (DB)	INCLUDED OTDR PORT ADAPTERS	POWER, INTERNAL CHARGING	TRACE STORAGE		AFL NO.
850	1300	1310	1550				CF*	USB	
		◆	◆	26/26	SC, FC	Li-ion, AC	◆	◆	M200-20
◆	◆			22/22	SC, ST	Li-ion, AC	◆	◆	M200-22
◆	◆	◆	◆	22/22/26/26	(2) SC, FC, ST	Li-ion, AC	◆	◆	M200-25

* 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 langue option in hard case.

M200 — NN F — LL — HC

Optical Configuration (NN)

20 = 1310/1550 nm SM
22 = 850/1300 nm MM
25 = QUAD: 850/1300 nm MM and 1310/1550 nm SM

OTDR port ferrule (F)

U = UPC

Hard Case option (HC)

(Select 'HC' only if ordering hard case option)

Language (LL)

All (LL) options support English language

01 = English
02 = French
03 = German
04 = Italian
05 = Spanish
11 = Portuguese
14 = Polish

© 2006-2011, AFL, all rights reserved. M200-00-2000 Revision E, 2011-08-04
Specifications are subject to change without notice.

M200 OTDR Hard Case Kit for Mining

NOYES®
M200 Hand-held OTDR

M200 OTDR Hard Case Kit for Mining

For ordering information, refer to the table below.

DESCRIPTION	AFL NO.
850/1300 nm multimode and 1310/1550 nm single-mode M200 OTDR in Hard Case	M200-MNG
Wet Cleaning Kit (shown) for SC/FC/ST/LC connectors. Includes: 8500-10-0016MZ, Cletop-SB 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 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 FCC2-00-0900, optical quality Cleaning Fluid for fiber connector end faces	
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

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

One-Click Cleaner Ultra
2.5 SC, ST, FC

OTDR, Inspection and Cleaning Accessories

DESCRIPTION	AFL NO.
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
M200 Software upgrade from v 1.X to v 2.0.X	M200-001-LL [a]
Fiber Ring, standard, 1 fiber, 50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 [b]
Fiber Ring, standard, 1 fiber, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 [b]
Fiber Ring, standard, 1 fiber, 62.5/125 mm multimode, 150 m	FR1-M6-150-x1-x2 [b]
Fiber Ring, standard, 1 fiber, single-mode, 150 m	FR1-SM-150-y1-y2 [b]
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

Note:

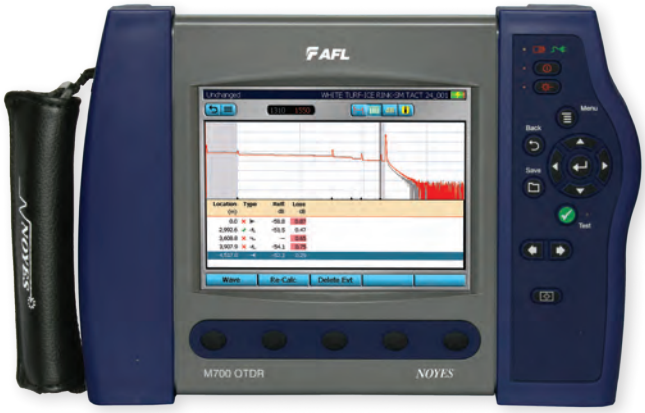
a. See language options (LL) on page 3.

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

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. M200-00-2000 Revision E, 2011-08-04
Specifications are subject to change without notice.



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

NOYES®
M700-Series OTDR

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

© 2010-2011, AFL, all rights reserved. M700-10-2000 Revision 1B, 2011-06-22
Specifications are subject to change without notice.

NOYES®
M700-Series OTDR

Specifications [a]

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 [b]	39/37 dB	22/22 dB [b]	26/26 dB
Event Dead Zone	0.8 m [c]	0.8 m [c]	0.9 m [c]	0.9 m [c]	1.5 m [e]	1.5 m [e]
Attenuation Dead Zone	4.5 m [d]	4.5 m [d]	4.5 m [d]	4.5 m [d]	9 m [f]	9 m [f]
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) [g]	±(1 + 0.0005 % x distance + data point spacing)				±(1 + 0.005 % x distance + data point spacing)	
Linearity [h]	±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 [j]	±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.

© 2010-2011, AFL, all rights reserved. M700-10-2000 Revision 1B, 2011-06-22
Specifications are subject to change without notice.

NOYES®
M700-Series OTDR

Specifications [a]

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 [b]	±0.25		±0.25		±0.25	
Measurement Units	dB, dBm, mW		dB, dBm, mW		dB, dBm, mW	
Wavelength ID [c]	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, transflective (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 [d, f]	>8 hours continuous OTDR testing					
Recharge Time [e, f]	4 hours					

Notes:

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

© 2010-2011, AFL, all rights reserved. M700-10-2000 Revision 1B, 2011-06-22
Specifications are subject to change without notice.

NOYES®
M700-Series OTDR

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).

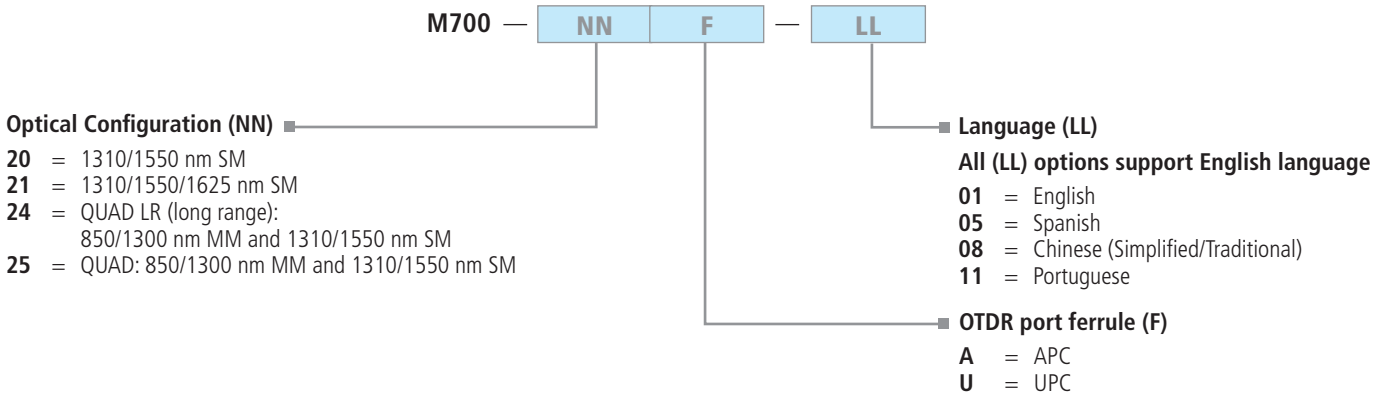
OTDR	CARRY CASE	CLEANING PRODUCTS	OTDR PORT ADAPTERS	OPM PORT ADAPTERS	VFI PORT ADAPTERS
M700-20, M700-21	Soft case	One-Click Cleaner SC/ST/FC, 2.5 mm	SC, FC, LC	SC, 2.5 mm, 1.25 mm	2.5 mm 1.25 mm
M700-24, M700-25	Soft case	One-Click Cleaner SC/ST/FC, 2.5 mm	SC, ST, LC	SC, 2.5 mm, 1.25 mm	2.5 mm 1.25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

© 2010-2011, AFL, all rights reserved. M700-10-2000 Revision 1B, 2011-06-22
Specifications are subject to change without notice.

NOYES®
M700-Series OTDR Accessories

Preconfigured Accessories Kit M700 - H1

The M700 - H1 is a preconfigurated 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 (2.5 mm), One-Click Cleaner LC/MU (1.25 mm), 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 [a]
Fiber Ring, standard, 1 fiber, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 [a]
Fiber Ring, standard, 1 fiber, 62.5/125 µm multimode, 150 m	FR1-M6-150-x1-x2 [a]
Fiber Ring, standard, 1 fiber, single-mode, 150 m	FR1-SM-150-y1-y2 [a]
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).

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2010-2011, AFL, all rights reserved. M700-10-2000 Revision 1B, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C850 Compact QUAD OTDR with QUAD OLS and OPM

C850 Compact QUAD OTDR

C850 OTDR with DFS1 Digital FiberScope

Features

- OTDR dynamic range: 22 dB (MM), 26 dB (SM)
- Inspection capable with the DFS1 Digital FiberScope
- Integrated OPM, OLS, and VFL (650 nm)
- Full Auto, Expert, Real-Time OTDR test modes
- Touch and Test™ user interface
- Automatic Pass/Fail analysis (TIA/ISO/EN)
- Bellcore (GR-196) .SOR file format
- Internal (1000s tests) and USB storage
- Wave ID detect if used with NOYES Wave ID series light sources
- >8 hours battery life or AC power
- USB host and function ports
- TRM™ reporting software

The NOYES C850 Certification OTDR from AFL combines ease of use (Touch and Test™) and multiple functionality in a hand-held test set designed for testing and inspecting multimode and single-mode fibers. The C850 integrates an OTDR with Optical Light Sources (OLS), an Optical Power Meter (OPM), Visible Fault Locator (VFL) and inspection capability for testing and troubleshooting enterprise networks. OTDR Auto modes, OPM Wave ID, and Pass/Fail thresholds simplify the user experience, reduce training time and testing errors enabling even novice users to get the job done quickly and accurately.

The C850 OTDR combines ease-of-use and functionality for performing OTDR and loss testing of optical fibers in enterprise networks (campus and buildings). OTDR and OPM test results for the same fibers are stored in logical job folders by cables allowing for easy review, selection, maintenance, and report generation using supplied Windows® compatible software. The C850 OTDR can be used in pairs or with a C840 to perform Tier 1 dual-wavelength, two fiber bi-directional tests. Loss and length can be measured and compared to ISO/TIA/EN or User standards or applications to provide Pass/Fail feedback regarding the fibers ability to meet the acceptance criteria to be certified.

The C850 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 and loss results.

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 - TRM™ (Test Results Manager). 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.

Applications

- Tier 1 and Tier 2 testing of premise networks
- Bi-directionally measure loss and length of fiber links
- Perform Pass/Fail Event and Link measurements
- Certify fibers using Pass/Fail criteria of industry standards, applications and user-defined limits
- Create professional certification reports

© 2009-2011, AFL, all rights reserved. C850-00-2000 Revision 1E, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C850 Compact QUAD OTDR with QUAD OLS and OPM

Specifications [a]

OTDR	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	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 [b]	1.5 m	
Attenuation Dead Zone [c]	9 m	
Pulse Widths	10, 30, 100, 300 ns; 1, 3, 10 µs	
Range Settings	250 m to 64 km	250 m to 208 km
Sampling Points	Up to 16,000	
Minimum Data Point Spacing	0.25 m	
Group Index of Refraction (GIR)	1.4000 to 1.6000	
Distance Uncertainty (m) [d]	±(1 + 0.005 % x distance + data point spacing)	
Linearity [e]	±0.05 dB/dB	
Loss Threshold	0.05 dB	
Loss Resolution	0.01 dB	
Reflectance Accuracy [f]	±2 dB	

VISUAL FAULT LOCATOR		
Emitter Type	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	
LIGHT SOURCE	**MULTIMODE PORT**	**SINGLE-MODE PORT**
Available Wavelengths (nominal)	850/1300 nm	1310/1550 nm
Emitter Type	LED	Laser
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Output Power	>-20 dBm, 62.5 µm MM [g]	0 dBm, 9 µm SM
Stability (after 15-minute warm-up)	±0.1 dB over 1 hour	±0.07 dB over 1 hour ±0.15 dB over 8 hours
Wave ID Transmit	Yes	
Tone Generation	270 Hz, 330 Hz, 1 kHz, 2 kHz	

POWER METER	
Calibrated Wavelengths	850, 1300 1310, 1490, 1550, 1625 nm
Detector Type	InGaAs 2 mm
Measurement Range	+6 to -60 dBm
Accuracy [h]	±0.25
Measurement Units	dB, dBm, mW
Wavelength ID [j]	Yes (to -47 dBm)
Set Reference	Yes
Data Storage	Yes
Tone Detection	Yes (to -47 dBm)
GENERAL	
Test Modes	OTDR (Full Auto, Expert, Real-Time), Auto Test, OPM, OLS, VFL, DFS
Trace File Format	SR-4731 (GR-196-CORE Appendix A, B; SR-4731)
Length Measurement Range	5 km (MM); 200 km (SM)
Data Storage	Internal flash memory
	USB flash drive (2.0)
	Downloadable from unit directly to PC
Data Storage Capacity	Internal >1000 fibers
Data Transfer to PC	USB
Tool Free Adapters	Modular cleanable SC/ST/LC
Size	27.4 x 19.3 x 7.1 cm (10.8 x 7.6 x 2.8 in)
Weight	2.3 kg (5 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 [k, m]	>8 hours continuous testing
Recharge Time [l, m]	4 hours
Display	16.51 cm (6.5 in), color, transflective

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 10 ns pulse width.

c. Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by a -45 dB event using 10 ns pulse width.

d. Does not include GIR uncertainty.

e. Typical.

f. For a non-saturated event.

g. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

h. Accuracy measured at -10 dBm per N.I.S.T. standards.

j. Automatic wavelength identification and switching when used with NOYES Wave ID Series Light Sources.

k. Typical, depending on display brightness.

l. Typical, from fully discharged to fully charged state, unit may be operating.

m. External battery charger available.

© 2009-2011, AFL, all rights reserved. C850-00-2000 Revision 1E, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C850 Compact QUAD OTDR with QUAD OLS and OPM

The C850 OTDR kits and options allow users to buy the test equipment functionality needed today and grow to meet the demands of certification testing.

The C850 combined with an OLS optical light source will allow users to test and generate detailed reports with both OTDR and Loss results shown for each fiber and in charts by cable.

Users can add a C840 or another C850 to perform Certification testing. Two C850s or a C840 Tester and C850 can be used together to perform Tier 1 dual wavelength MM (850/1300 nm) and SM (1310/1550 nm) auto tests of one or two fibers in one or both directions as well as measure both loss and length of the fibers and compare to industry standards (TIA/ISO/EN), applications and user-defined threshold values to certify the fibers.

The C850 OTDR and C840 Certification Tester work with the DFS1 Digital FiberScope.

Ordering Information

When placing an order, select options as follows: Model, Optical Configuration, Language, and Case.

Example: C850 — 100 — LP1 — H2

C850 — NNN — LLL — CC

Model
C850

Optical Configuration (NNN)
100 = QUAD 850/1300 nm MM and 1310/1550 nm SM

Language (LLL)
LP1 = Language: English

Case (CC)
S1 = Soft case
H1 = Hard case and soft case with cleaning accessories

© 2009-2011, AFL, all rights reserved. C850-00-2000 Revision 1E, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C850 Compact QUAD OTDR with QUAD OLS and OPM

Ordering Information (continued)

Each C850 kit includes the C850 QUAD OTDR with integrated OLS, OPM, VFI, USB Flash drive, PC software for OTDR trace analysis and certification or OPM loss reporting, AC adapter, switchable test ports adapters and accessories (see table below). The C850 hard carry case kit has room for up to 6 Fiber Rings, jumpers in a jumper carry case, and the DFS1 Digital FiberScope kit (accessory items must be ordered separately).

CARRY CASE AND ACCESSORIES	CLEANING PRODUCTS	ADAPTERS			AFL NO.
		OTDR/OLS	OPM	VFI	
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	C850-100-LP1-S1
Soft and hard cases	One-Click Cleaner SC/ST/FC, 2.5 mm One-Click Cleaner LC, 1.25 mm Cletop - SB white tape	SC, ST, LC	SC, 2.5 mm, 1.25 mm	2.5 mm 1.25 mm	C850-100-LP1-H1

C850—100—LP1—H1 Kit Contents

ITEM	DESCRIPTION
C850	QUAD OTDR/Auto Test Certification Tester
Adapters	OTDR and OLS ports — SC, ST, LC OPM port — SC, 1.25 and 2.5 mm Universal VFI port — 1.25 and 2.5 mm Universal
Miscellaneous Accessories	Mandrel — 62.5 µm, 3 mm jacket and 50 µm, 3 mm jacket
	Stylus pen for touch screen
	USB thumb drive, 1G; USB to mini-USB cable
	Small plastic parts box (2) to store adapter caps and mandrels
	AC adapter (1), specify country of use
Cleaning Accessories	One-Click Cleaner SC/ST/FC, 2.5 mm
	One-Click Cleaner LC/MU, 1.25 mm
	Cletop SB white tape
Cases	Hard transit case — holds C850, and above accessories
	Soft case for C850
Report Software	PC software

OTDR, Inspection, and Cleaning Accessories

DESCRIPTION	AFL NO.
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
Fiber Ring, 1 fiber, 50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 [a]
Fiber Ring, 1 fiber, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 [a]
Fiber Ring, 1 fiber, 62.5/125 mm multimode, 150 m	FR1-M6-150-x1-x2 [a]
Fiber Ring, 1 fiber, single-mode, 150 m	FR1-SM-150-y1-y2 [a]
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).

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2009-2011, AFL, all rights reserved. C850-00-2000 Revision 1E, 2011-06-22
Specifications are subject to change without notice.

NOYES®
OFL250-50 Hand-held, Fault-Locating OTDR

The NOYES OFL250-50 is a 1550 nm single-mode OTDR with an integrated optical power meter (OPM), 1550 nm 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 mid-range dynamic range performance, the OFL250-50 is ideal for troubleshooting dark single-mode fibers in local access, metro area and FTTx networks.

The OFL250-50 provides automatic and manual setup, precision event analysis, 12-hour battery life, internal data storage and USB connectivity. OTDR and OPM test ports are equipped with tool-free adapters, which can be changed in seconds.

OTDR test results are saved as industry standard .SOR files, which can be transferred to a PC for viewing, printing, and analyzing with the supplied Windows® compatible software.

Applications

- Locate cable cuts, open or high-loss splices, fiber bends and high-loss/high-reflectance connections
- Measure optical power and loss (OPM port)
- Short-range fault-location (VFL port)
- Trace fibers and measure end-to-end loss at 1550 nm (working with a NOYES optical power meter or light source)
- Identify fibers (working with a NOYES optical fiber identifier)

Features

- Rugged, hand-held and light weight
- 1.5 m event dead zone
- 26 dB dynamic range
- Integrated OPM, OLS, VFL
- Tool-free, interchangeable adapters for OTDR and OPM ports
- Internal storage (>1000 OTDR traces in standard .SOR format)
- High-contrast display is clear and bright in any lighting condition, including direct sunlight
- Transfer test results to a PC via USB
- Rechargeable 12-hour Li-Ion battery or AC power
- Windows® compatible software to view, print and archive test records

© 2010-2011, AFL, all rights reserved. OFL2-50-2000 Revision 1B, 2011-07-14
Specifications are subject to change without notice.

NOYES®
OFL250-50 Hand-held, Fault-Locating 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
Center Wavelength	1550 nm
Wavelength Tolerance	±20 nm
Dynamic Range (SNR=1)	26 dB
Event Dead Zone [b]	1.5 m
Attenuation Dead Zone [c]	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 (GIR)	1.4000 to 1.6000
Distance Uncertainty (m)	±(1 + 0.005 % x distance + data point spacing)
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, Live

OPTICAL POWER METER	
Calibrated Wavelengths	1310, 1490, 1550, 1625 nm
Detector Type	Filtered InGaAs
Measurement Range	+23 to - 45 dBm
Tone Detect Range	+3 to -35 dBm
Wavelength ID range	+3 to -35 dBm
Accuracy	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, nW, µW, mW

OPTICAL LIGHT SOURCE	
Emitter Type	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Fiber Type	Single-mode
Center Wavelength	1550 nm
Wavelength Tolerance	±20 nm
Spectral Width (FWHM)	5 nm (max)
Internal Modulation	1 kHz, 2 kHz
Output Power Stability	<±0.25 dB after 15 min
Output Power (nominal)	–3 dBm

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 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. 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 event location to point where trace is within 0.5 dB of backscatter at 5 ns pulse width.

© 2010-2011, AFL, all rights reserved. OFL2-50-2000 Revision 1B, 2011-07-14
Specifications are subject to change without notice.

NOYES®
OFL250-50 Hand-held, Fault-Locating OTDR

Ordering Information

The OFL250-50 OTDR comes with a carry case, (1) SC and (1) FC adapter for the OTDR/OLS port, 2.5 mm adapter for the OPM and VFL ports, One-Click Cleaner SC/FC/ST (2.5 mm), USB cable (connects with Type A USB port on your PC), and AC power adapter with country-specific power cord.

DESCRIPTION	AFL NO.
1550 nm, single-mode OTDR	OFL250-50U-ENG

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
Extended Warranty and pre-paid annual calibration plans available for 1, 2, and 4 years (contact factory).	EWxY-xx-xxxx

a. When ordering Fiber Rings, specify connector types (y1,y2); 500 and 1000 m lengths also available.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2010-2011, AFL, all rights reserved. OFL2-50-2000 Revision 1B, 2011-07-14
Specifications are subject to change without notice.

Fiber Ring, MM - 150 m

Fiber Ring, SM - 1000 m

Fiber Ring, Laser Optimized

NOYES®

OTDR Fiber Rings

Measuring an insertion loss of the near-end and/or far-end connection of a fiber optic link with an OTDR requires a launch and/or receive test cable. A launch cable, which connects the OTDR to the link under test, reveals the insertion loss and reflectance of the near-end connection. A receive cable, which connects to the far-end of the link, reveals the insertion loss and reflectance of the far-end connection. Launch and receive test cables can range from 150 m to 1 km (or longer) in length. Because very long test cables are impractical to transport and use, Noyes offers coiled lengths of 50 mm multimode, 62.5 mm multimode, or single-mode fiber packaged in compact rings.

Fiber Rings of 150 m of fiber are ideal for premises fiber network test applications. Fiber Rings of 500 m and 1 km of single-mode fiber are designed for broadband, long-haul fiber network test applications.

Fiber Ring Models

CONFIGURATION	FIBER TYPE	FIBER LENGTH	AFL NO.
Standard, one fiber	Multimode, 50 mm	150 m (492 ft)	FR1-M5-150- x1- x2
Standard, one fiber, Laser Optimized	Multimode, 50 mm	150 m (492 ft)	FR1-L5-150-x1-x2
Standard, one fiber	Multimode, 62.5 mm	150 m (492 ft)	FR1-M6-150- x1- x2
Standard, one fiber	Single-mode	150 m (492 ft)	FR1-SM-150- y1- y2
Standard, one fiber	Single-mode	500 m (1640 ft)	FR1-SM-500- y1- y2
Standard, one fiber	Single-mode	1000 m (3280 ft)	FR1-SM-1000- y1- y2
MT-RJ near-end, A and B fibers	Multimode, 50 mm	150 m (492 ft)	FR3-M5-x1-MTRJ
MT-RJ near-end, A and B fibers	Multimode, 62.5 mm	150 m (492 ft)	FR3-M6-x1-MTRJ
MT-RJ near-end, A and B fibers	Single-mode	150 m (492 ft)	FR3-SM-x1-MTRJ
E2000 to ST, SC, FC, etc., one fiber	Multimode, 50 mm	150 m (492 ft)	FR1-M5-x1-E2000
E2000 to ST, SC, FC, etc., one fiber	Multimode, 62.5 mm	150 m (492 ft)	FR1-M6-x1-E2000
E2000 to ST, SC, FC, etc., one fiber	Single-mode	150 m (492 ft)	FR1-SM-y1-E2000
E2000 to E2000, one fiber	Multimode, 50 mm	150 m (492 ft)	FR1-M5-E2000-E2000
E2000 to E2000, one fiber	Multimode, 62.5 mm	150 m (492 ft)	FR1-M6-E2000-E2000
E2000 to E2000, one fiber	Single-mode	150 m (492 ft)	FR1-SM-E2000-E2000

x1, x2 — connectors for multimode cables, specify type [ST, SC, ASC (angled SC), FC, AFC (angled FC), LC]
y1, y2 — connectors for single-mode cables, specify type [ST, SC, ASC (angled SC), FC, AFC (angled FC), LC]
Other connector types, fiber types, and fiber lengths will be quoted upon request.

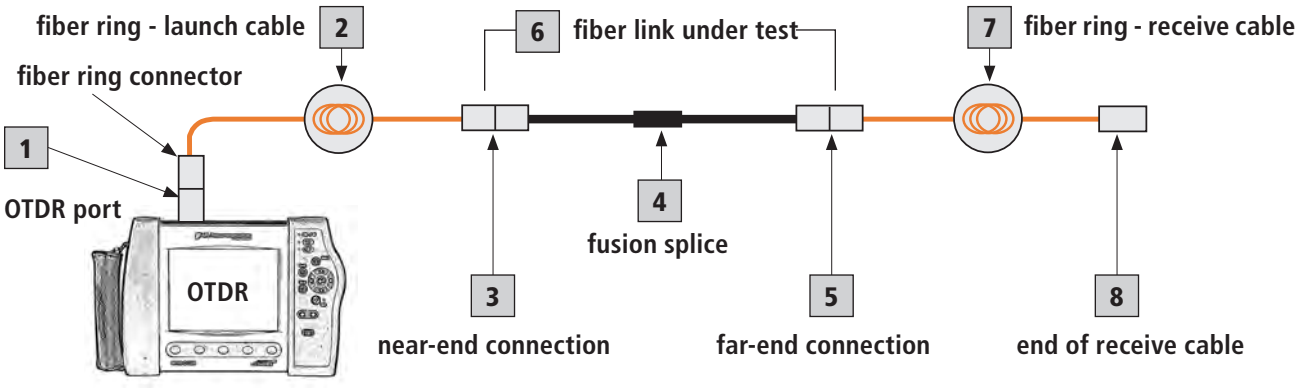
© 2008-2011, AFL, all rights reserved. FR00-00-2000 Revision B, 2011-06-15
Specifications are subject to change without notice.

NOYES®

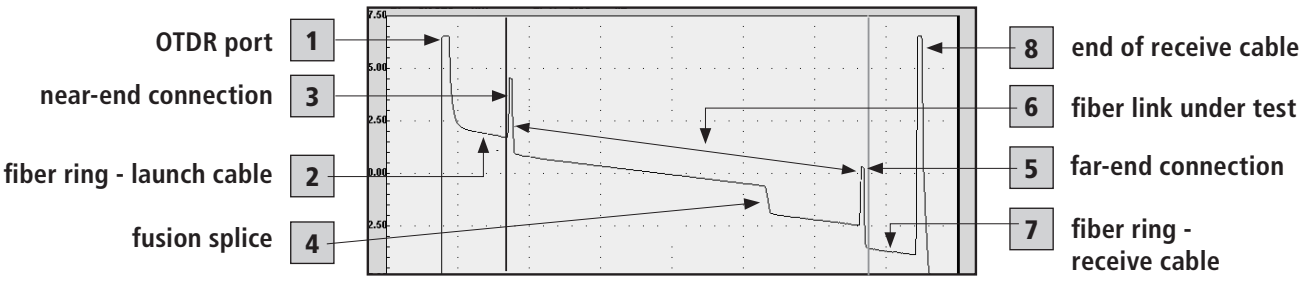
OTDR Fiber Rings

How to Generate a Baseline Trace Using Fiber Rings

- Use the Fiber Ring as a launch cable.
  Connect the Fiber Ring between your OTDR and the fiber link under test. This will allow you to measure the loss of the near-end connection.
- Use the Fiber Ring as a receive cable.
  Connect the Fiber Ring to the far-end connector of your fiber link under test. This will allow you measure the loss of the far-end connection.
- By using Fiber Rings as both launch and receive cables, as shown in the diagram below, you can measure total insertion loss of the fiber link under test.



Example OTDR Test Configuration with Launch and Receive Cables



OTDR Trace Made using Launch and Receive Cables

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2008-2011, AFL, all rights reserved. FR00-00-2000 Revision B, 2011-06-15
Specifications are subject to change without notice.

Features

- Clean, inspect, and test fiber optic networks
- Multimode and single-mode fiber ready
- Verify integrity of installed fiber networks
- Software to present network owners with written proof of a quality installation
- Convenient rugged hard carry case

Applications

- Tier 1 and Tier 2 testing of premise networks
- FTTx PON certification and troubleshooting
- Fast fault location
- Splice verification
- Network documentation

Ordering Information

DESCRIPTION	AFL NO.
See Kit Contents Table	FTK1-01-0900PR

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

NOYES®
FTK Pro Installer Kit

The NOYES FTK Pro Installer Kit from AFL provides a wide selection of fiber optic testing, cleaning and inspection equipment to enable technicians to install and maintain fiber optic networks. Available with multimode and single-mode test equipment, the kit also includes a broad array of cleaning and inspection equipment in a convenient tough injection-molded ABS carrying case. The Pro Installer Kit is ideal for TIA Tier 1 and Tier 2 testing of premises (building and campus) networks or certification and troubleshooting of FTTx PON networks.

Kit Contents

ITEM	DESCRIPTION
M200	QUAD OTDR, 850/1300 nm MM, 1310/1550 nm SM
OPM5-2D	Optical Power Meter (Wave ID, Set Reference, Data Storage)
OLS4	Optical Light Source (LED and Laser)
OFS300-200	Optical Fiber Scope (200x)
Fiber Rings (1 each)	FR1-L5-150-SC-ST (50/125 Laser Optimized) FR1-L5-150-SC-LC (50/125 Laser Optimized) FR1-L5-150-ST-LC (50/125 Laser Optimized) FR1-M6-150-SC-ST (62.5/125) FR1-M6-150-SC-LC (62.5/125) FR1-M6-150-ST-LC (62.5/125) FR1-SM-150-SC-ST (SM) FR1-SM-150-SC-LC (SM) FR1-SM-150-ST-LC (SM)
Adapters	SC, ST, LC for the OTDR/OLS ports (2 each)
	SC, ST, LC for the OPM Unit
	2.5 mm and 1.25 mm Universal for OFS and for VFL on OTDR
Jumpers, 2 meters in length (2 each)	SC-ST (50/125 Laser Optimized) SC-LC (50/125 Laser Optimized) SC-ST (62.5/125) SC-LC (62.5/125) SC-ST (SM) SC-LC (SM)
Bulkheads (mating adapters)	SC/SC, ST/ST, LC/LC
Cleaning Supplies	FiberWipes™ Mini-tub
	Cletop -SB with white tape
	Cletop replacement tape (white)
	FCC2 Fiber Connector Cleaner
	Connector Cleaning Tips (for cleaning in sockets): 2.5 mm and 1.25 mm
	One-Click Cleaner SC/ST/FC
	One-Click Cleaner LC/MU
Miscellaneous Accessories	(2) Mandrels: 62.5 µm, 3 mm jacket and 50 µm, 3 mm jacket
	Stylus pen for the M200 touch screen
	USB flash drive, 1G
	Plastic parts boxes to hold adapters (Qty 3)
	Case to hold up to 12 jumpers (2 - 5 meters in length)
Report Software	Windows® compatible software and user guide

© 2009-2011, AFL, all rights reserved. FTK1-01-2000 Revision 1E, 2011-08-01
Specifications are subject to change without notice.

NOYES®
C860 QUAD OTDR and Certification Test Kit

C860 with DFS1 Digital FiberScope

Features

- OTDR dynamic range: 22 dB (MM); 26 dB (SM)
- Inspection capable with the DFS1 Digital FiberScope
- Integrated OPM, OLS, and VFL (650 nm)
- OLS sources: LED - 850/1300 nm; Laser - 1310/1550 nm
- Full Auto, Expert, Real-Time OTDR test modes
- >8 hours battery life or AC power
- Touch and Test™ user interface
- TRM™ reporting software
- Automatic Pass/Fail analysis (TIA/ISO/EN)
- Bellcore (GR-196) .SOR file format
- Internal (1000s tests) and USB storage
- Wave ID detect if used with NOYES Wave ID series light sources
- USB host and function ports

The NOYES C860 QUAD Certification and OTDR Test Kit from AFL includes one hand-held C840 QUAD OLTS Tester and one C850 QUAD OTDR/OLTS with built-in auto test functionality. With this kit, technicians can troubleshoot and perform both Tier 1 and Tier 2 certification tests of MM and SM fiber networks, store results and create professional test reports.

The C850 is both a QUAD Certification Tester and full-featured QUAD OTDR in a compact case with a large transflective touch screen display suitable for both indoor and outdoor operation. The C850 features single-mode and multimode OTDR, Optical Light Sources (OLS), Visual Fault Locator (VFL, 650 nm), and an Optical Power Meter (OPM). As an OTDR, the C850 supports Full Auto, Expert (manual) and Real-Time test modes, simultaneous dual and single wavelength testing, and Event and Pass/Fail analysis based on default or user-defined thresholds. The C840 QUAD Certification Tester includes VFL, OPM, and both single-mode (1310/1550 nm) and multimode (850/1300 nm) OLS. The C840 may be used alone as a traditional power meter or light source to measure fiber loss or as a visual fault locator to find fiber breaks.

The C860 kit combines ease of use (Touch and Test™) with multiple functionality and 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 and loss results.

Thousands of test results may 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 - TRM™ (Test Results Manager). 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.

Applications

- Tier 1 and Tier 2 testing of premise networks
- Bi-directionally measure loss and length of fiber links
- Perform Pass/Fail Event and Link measurements using OTDR
- Measure loss and length of fiber links
- Certify SM and MM fibers using Pass/Fail criteria of industry standards, applications and user-defined thresholds
- Create professional certification reports

© 2008-2011, AFL, all rights reserved. C860-00-2000 Revision 1G, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C860 QUAD OTDR and Certification Test Kit

Specifications [a]

OTDR	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	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 [b]	1.5 m	
Attenuation Dead Zone [c]	9 m	
Pulse Widths	10, 30, 100, 300 ns; 1, 3, 10 µs	
Range Settings	250 m to 64 km	250 m to 208 km
Sampling Points	Up to 16,000	
Minimum Data Point Spacing	0.25 m	
Group Index of Refraction (GIR)	1.4000 to 1.6000	
Distance Uncertainty (m) [d]	±(1 + 0.005 % x distance + data point spacing)	
Linearity [e]	±0.05 dB/dB	
Loss Threshold	0.05 dB	
Loss Resolution	0.01 dB	
Reflectance Accuracy [f]	±2 dB	

VISUAL FAULT LOCATOR	
Emitter Type	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

LIGHT SOURCE	MULTIMODE PORT	SINGLE-MODE PORT
Available Wavelengths (nom.)	850/1300 nm	1310/1550 nm
Emitter Type	LED	Laser
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Output Power	>-20 dBm, 62.5 µm MM [g]	0 dBm, 9 µm SM
Stability (after 15-minute warm-up)	±0.1 dB over 1 hour	±0.07 dB over 1 hour ±0.15 dB over 8 hours
Wave ID Transmit	Yes	
Tone Generation	270 Hz, 330 Hz, 1 KHz, 2 kHz	

POWER METER	
Calibrated Wavelengths	850, 1300 1310, 1490, 1550, 1625 nm
Detector Type	InGaAs 2 mm
Measurement Range	+6 to -60 dBm
Accuracy [h]	±0.25
Measurement Units	dB, dBm, mW
Wavelength ID [j]	Yes (to -47 dBm)
Set Reference	Yes
Data Storage	Yes
Tone Detection	Yes (to -47 dBm)

GENERAL	C850 OTDR	C840 TESTER
Test Modes	OTDR (Full Auto, Expert, Real-Time), Auto Test, OPM, OLS, VFL, DFS	Auto Test, OPM, OLS, VFL, DFS
Trace File Format	SR-4731 (GR-196-CORE Appendix A, B; SR-4731)	N/A
Length Measurement Range	5 km (MM); 200 km (SM)	
Data Storage	Internal flash memory	
	USB flash drive (2.0)	
	Downloadable from unit directly to PC	
Data Storage Capacity	Internal >1000 fibers	
Data Transfer to PC	USB	
Tool Free Adapters	Modular cleanable SC/ST/LC	
Size	27.4 x 19.3 x 7.1 cm (10.8 x 7.6 x 2.8 in)	23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)
Weight	2.3 kg (5 lb)	0.9 kg (2 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 [k, m]	>8 hours continuous testing	
Recharge Time [l, m]	4 hours	
Display	16.51 cm (6.5 in), color, transflective	9.65 cm (3.8 in), color, transflective

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 10 ns pulse width.

c. Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by a -45 dB event using 10 ns pulse width.

d. Does not include GIR uncertainty.

e. Typical.

f. For a non-saturated event.

g. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

h. Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.

j. Automatic wavelength identification and switching when used with NOYES Wave ID Series Light Sources.

k. Typical, depending on display brightness.

l. Typical, from fully discharged to fully charged state, unit may be operating.

m. External battery charger available.

© 2008-2011, AFL, all rights reserved. C860-00-2000 Revision 1G, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C860 QUAD OTDR and Certification Test Kit

The C840 and C850 can be used together to perform Tier 1 dual wavelength MM (850/1300 nm) and SM (1310/1550 nm) auto loss tests of one or two fibers in one or both directions as well as measure both loss and length of the fibers and compare to industry standards (TIA/ISO/EN), applications and user-defined thresholds values to certify the fibers. Either unit can be identified as the Main or Remote.

The user can test two fibers at two wavelengths bi-directionally and store the results into the main unit. Featuring rich file naming, the Job setup wizard allows the user to define both the cable and fiber end locations, creating easily identifiable trace files, which are managed into Job and Cable folders.

The C850 OTDR and C840 Certification tester work with the DFS1 Digital FiberScope.

Ordering Information

When placing an order, select options as follows: Model, Optical Configuration, Language and Case.

Example: C860 — 100 — LP1 — H1

C860 — NNN — LLL — CC

Model
C860

Optical Configuration (NNN)
100 = QUAD 850/1300 nm MM and 1310/1550 nm SM

Case (CC)
H1 = Hard and soft case with SC-LC cleaning accessories

Language (LLL)
LP1 = Language: English

© 2008-2011, AFL, all rights reserved. C860-00-2000 Revision 1G, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C860 QUAD OTDR and Certification Test Kit

Ordering Information (cont.)

Each kit includes one compact C850 QUAD OTDR/OLTS, one hand-held C840 QUAD Certification Tester, USB flash drive, PC software for OTDR trace analysis and certification or OPM loss reporting, (2) AC adapters, switchable test ports adapters, and accessories (see below). The C860 hard carry case kit has room for up to six Fiber Rings, jumpers in a jumper carry case, and the DFS1 Digital FiberScope kit (accessory items must be ordered separately).

CARRY CASE	ADAPTERS			CLEANING PRODUCTS	AFL NO.
	OTDR/OLS	OPM	VFI		
Soft and hard cases	SC, ST, LC	SC, 2.5, 1.25 mm	2.5, 1.25 mm	One-Click Cleaner SC/ST/FC, 2.5 mm One-Click Cleaner LC, 1.25 mm Cletop - SB white tape	C860-100-LP1-H1

C860—100—LP1—H1

ITEM	DESCRIPTION
C850	QUAD OTDR/Auto Test Certification Tester
C840	QUAD Auto Test Certification Tester
Adapters	OTDR and OLS ports — SC, ST, LC OPM ports — SC, 1.25 and 2.5 mm Universal VFI ports — 1.25 and 2.5 mm Universal
Miscellaneous Accessories	Mandrels (2) 62.5 µm, 3 mm jacket and (2) 50 µm, 3 mm jacket
	Stylus pens for touch screen. USB thumb drive, 1G.
	USB to mini-USB cable
	Small plastic parts box (2) to store adapter caps and mandrels
	AC adapter (2), specify country of use
Cleaning Accessories	(2) One-Click Cleaner SC/ST/FC, 2.5 mm; One-Click Cleaner LC/MU, 1.25 mm (H2 kit only); Cletop SB white tape
Cases	Hard transit case — holds C850, C840, and above accessories Soft case for C850
Report Software	PC software and user guide

OTDR, Inspection and Cleaning Accessories

DESCRIPTION	AFL NO.
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
Fiber Ring, 1 fiber, 50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 [a]
Fiber Ring, 1 fiber, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 [a]
Fiber Ring, 1 fiber, 62.5/125 mm multimode, 150 m	FR1-M6-150-x1-x2 [a]
Fiber Ring, 1 fiber, single-mode, 150 m	FR1-SM-150-y1-y2 [a]
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).

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2008-2011, AFL, all rights reserved. C860-00-2000 Revision 1G, 2011-06-22
Specifications are subject to change without notice.

C860 with DFS1 Digital FiberScope

Features

- Hand-held, 0.9 kg (2 lb)
- Inspection capable with the DFS1 Digital FiberScope
- Integrated OPM, OLS, and VFL (650 nm)
- OLS sources: LED - 850/1300 nm; Laser - 1310/1550 nm
- Dual-wavelength certification Pass/Fail
- Two fibers bi-directional and single fiber testing
- >8 hours battery life or AC power
- Touch and Test™ user interface
- TRM™ reporting software
- Internal (1000s tests) and USB storage
- USB host and function ports

NOYES®
C880 QUAD Certification Test Kit

Combining two C840 Certification Testers, the NOYES C880 QUAD Certification Test Kit from AFL is designed for testing and troubleshooting both multimode and single-mode fiber links. Each tester includes an integrated Visual Fault Locator (VFL, 650 nm), both single-mode (Laser 1310/1550 nm) and multimode (LED 850/1300 nm) Optical Light Sources (OLS), and an Optical Power Meter (OPM). Each tester may be used alone as a traditional power meter, light source, or visual fault locator.

In Auto Test mode, the user may perform certification tests to one of the industry cabling standards (TIA, ISO, EN), one or more application standards, or a user-defined loss/length limit. Certification reports may be generated based on the selected standards and rules using PC reporting software. The transflective touch-screen display of the C840 tester is suitable for both indoor and outdoor operation.

The C840 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.

Thousands of test results may be stored internally for transfer to a computer via a USB cable or a standard USB drive for viewing, printing, and analyzing with the supplied Windows® compatible software - TRM™ (Test Results Manager). Acceptance reports generated using TRM™ can include certification reports and end-face images.

Applications

- Tier 1 testing of premise networks
- Bi-directionally measure loss and length of fiber links
- Save time simultaneously testing two fibers at two wavelengths
- Verify polarity
- Certify SM and MM networks to industry standards (ISO/TIA/EN) and applications
- Find faults using integrated Visual Fault Locator
- Create and test to user defined rules
- Review Pass/Fail feedback after each test
- Review fibers by cable and retest fiber pairs if needed
- Create professional certification reports

© 2008-2011, AFL, all rights reserved. C880-00-2000 Revision 1F, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C880 QUAD Certification Test Kit

Ordering Information

Each C880 kit or C840 kit includes two (2) C840s or one (1) C840 Tester respectively, USB flash drive, PC software for OTDR trace analysis and certification or OPM loss reporting, AC adapters (two (2) with C880 kit, one (1) with C840 kit), switchable test ports adapters, and accessories (see table below).

CARRY CASE	TEST CORDS [a]	ADAPTERS			CLEANING PRODUCTS	AFL NO.
		OLS	OPM	VFI		
Soft case	SC/LC	SC, ST, LC	SC, 2.5, 1.25 mm	2.5, 1.25 mm	One-Click Cleaner SC/ST/FC, 2.5 mm One-Click Cleaner LC, 1.25 mm	C880-100-LP1-S1
Soft case	SC/ST	SC, ST, LC	SC, 2.5, 1.25 mm	2.5, 1.25 mm	One-Click Cleaner SC/ST/FC, 2.5 mm	C880-100-LP1-S2
Soft case	—	SC, ST, LC	SC, 2.5, 1.25 mm	2.5, 1.25 mm	One-Click Cleaner SC/ST/FC, 2.5 mm	C840-100-LP1-S1

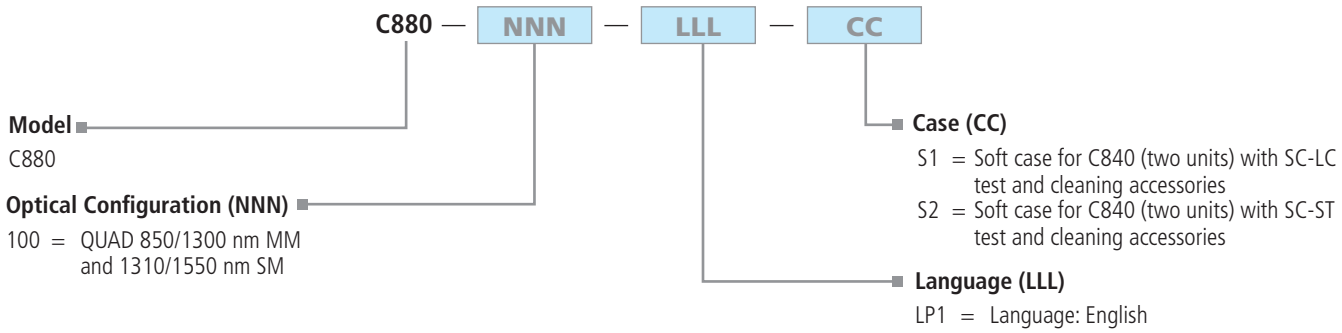
Notes:

a. (4) each - 2 m (62.5µm, 50 µm, SM).

The C840 Certification Tester works with the DFS1 Digital FiberScope.

When placing an order, select options as follows: Model, Optical Configuration, Language, and Case.

Example: C880 — 100 — LP1 — S1



C880—100—LP1—S1 (or S2) C880 Kit Contents

ITEM	DESCRIPTION
C840	QUAD Auto Test Certification Tester (2 ea)
Adapters	OLS Ports — SC, ST, LC OPM port — SC, 1.25 and 2.5 mm Universal VFI port — 1.25 and 2.5 mm Universal
Jumpers (12)	2 m (62.5 µm, 50 µm, SM)
Miscellaneous Accessories	Mandrels (2) — 62.5 µm, 3 mm jacket
	Mandrels (2) — 50 µm, 3 mm jacket
	Stylus pens for touch screen
	USB flash drive -1G, USB to mini-USB cable
	AC adapters (2), specify country of use
Cleaning Accessories	(2) One-Click Cleaner SC/ST/FC, 2.5 mm (S1 and S2 kit)
	One-Click Cleaner LC/MU, 1.25 mm (S1 kit only)
Cases	Soft case (2)
Report Software	PC software and user guide

Inspection and Cleaning Accessories

DESCRIPTION	AFL NO.
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
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

© 2008-2011, AFL, all rights reserved. C880-00-2000 Revision 1F, 2011-06-22
Specifications are subject to change without notice.

NOYES®
C880 QUAD Certification Test Kit

Specifications [a]

POWER METER	
Auto Test Wavelengths	850/1300 nm (MM), 1310/1550 nm (SM)
Detector Type	InGaAs 2 mm
Measurement Range	+6 to -60 dBm
Accuracy [b]	±0.25
Measurement Units	dB, dBm, mW
Wavelength ID [c]	Yes (to -47 dBm)
Set Reference	Yes
Data Storage	Yes
Tone Detection	Yes (to -47 dBm)

LIGHT SOURCE	MULTIMODE PORT	SINGLE-MODE PORT
Available Wavelengths	850/1300 nm (nominal)	1310/1550 nm (nominal)
Emitter Type	LED	Laser
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03	
Output Power	>-20 dBm, 62.5 µm MM [d]	0 dBm, 9 µm SM
Stability (after 15-minute warm-up)	±0.1 dB over 1 hour	±0.07 dB over 1 hour ±0.15 dB over 8 hours
Wave ID Transmit	Yes	
Tone Generation	270 Hz, 330 Hz, 1 KHz, 2 kHz	

VISUAL FAULT LOCATOR	
Emitter Type	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

GENERAL	
Test Modes	Auto Test, OPM, OLS, VFL, DFS
Length Measurement Range	5 km (MM); 200 km (SM)
Data Storage	Internal flash memory
	USB flash drive (2.0)
	Downloadable from unit directly to PC
Data Storage Capacity	Internal >1000 fibers
Data Transfer to PC	USB
Tool Free Adapters	Modular cleanable SC/ST/LC
Size	23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)
Weight	0.9 kg (2 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 [e, g]	>8 hours continuous testing
Recharge Time [f, g]	4 hours
Display	9.65 cm (3.8 in), color, transflective

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Accuracy measured at -10 dBm per N.I.S.T. standards.
c. Automatic wavelength identification and switching when used with NOYES Wave ID Series Light Sources.
d. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
e. Typical, depending on display brightness.
f. Typical, from fully discharged to fully charged state, unit may be operating.
g. External battery charger available.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2008-2011, AFL, all rights reserved. C880-00-2000 Revision 1F, 2011-06-22
Specifications are subject to change without notice.

NOYES®
OLTS 5 Optical Loss Test Set

The OLTS 5 Optical Loss Test Set series offers end-to-end single-mode testing at either 1310/1550 nm or 1550/1625 nm. The OLTS 5 may be operated in automatic or manual test modes. In its "two-unit" automatic test mode, a pair of OLTS 5 test sets may be used to measure the end-to-end, bi-directional insertion loss of a pair of single-mode fibers at 1310/1550 nm or 1550/1625 nm. Tests are started and controlled by the user from the OLTS 5 configured as the Main unit. Test progress messages and results are displayed on the Remote unit. Full test results can be reviewed and saved in the Main unit. Thresholds may be set to provide Pass/Fail results. In its "single-unit" automatic test mode the OLTS 5 can measure bi-directional, dual-wavelength insertion loss of patch cords, or fiber optic cables while they are still on the reel. In the manual operating mode individual OLTS 5 test sets can operate either as an optical power meter (OPM) or dual-wavelength laser source.

The OLTS 5 can store dual-wavelength, bi-directional insertion loss results for up to 1,000 fibers. Test results can be organized in up to 20 user-named files. Windows® compatible software is provided to view, edit, and print test results. OLTS 5 units are sold individually but normally used in pairs.

Features

- Tier 1 certification to industry standards
- ISO/TIA/EN/User setable Pass/Fail thresholds
- Touch and Test™ user interface
- TRM™ reporting software
- Inspection capable

Applications

- Certification of multimode and single-mode fiber networks
- Testing and Troubleshooting
- Document Tier 1 results in a professional report

© 2002-2011, AFL, all rights reserved. OLT5-00-2000 Revision G, 2011-07-29
Specifications are subject to change without notice.

NOYES®
OLTS 5 Optical Loss Test Set

Specifications [a]

MODEL	OLTS 5-3	OLTS 5-5	OLTS 5-6
TRANSMIT PORT (LASER SOURCE) SPECIFICATIONS			
Center Wavelengths	1310/1550 ±20 nm	1550/1625 ±20 nm	1310/1550 ±20 nm
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03		
Output Power into 9/125 SM fiber	-5 dBm (nominal)	-5 dBm (nominal)	-5 dBm (nominal)
Stability	±0.1 dB, up to 8 hours	±0.1 dB, up to 8 hours	±0.1 dB, up to 8 hours
Insertion Loss and Power Measurement Resolution	0.01 dB	0.01 dB	0.01 dB
Available Connector Types	SC, FC, ST	SC, FC, ST	SC, FC, ST
RECEIVE PORT (OPTICAL POWER MEASUREMENT) SPECIFICATIONS			
Detector Type	InGaAs	InGaAs	Filtered InGaAs
Calibrated Wavelengths	850, 980, 1300, 1310, 1480, 1550, 1625 nm		
OPM (manual) Mode Optical Power Display Range	+ 0 to –70 dBm	+10 to –70 dBm	+16 to –60 dBm
OLTS (automatic) Mode Insertion Loss Measurement Range	45 dB	45 dB	39 dB
Accuracy at –10 dBm, 25°C	±0.25 dB	±0.25 dB	±0.25 dB
GENERAL SPECIFICATIONS			
Display	128 X 64 dot matrix liquid crystal display		
Dimensions (H x W x D)	18.5 X 11.1 X 4.6 cm (7.3 X 4.4 X 1.8 in)		
Weight	0.55 kg (1.2 lb)		
Operating Temperature and Humidity	0°C to +50°C, 90 % RH (non-condensing)		
Storage Temperature and Humidity	-20°C to +60°C, 95 % RH		
Power	2 AA (2-cell NiMH or AC optional)		
Battery Life (typical)	2 AA - 17 hours; NiMH battery pack - 11 hours		
Connector Types	Thread-on adapter cap mount		

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

Ordering Information

INCLUDES	AFL NO.
(1) OLTS 5, (2) AA alkaline batteries, protective rubber boot, PC software, adapter cap of the same connector type as the transmit port, and carry case.	All OLTS 5 models

When ordering, connector type after the model number, for example OLTS 5-3 SC.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. OLT5-00-2000 Revision G, 2011-07-29
Specifications are subject to change without notice.

NOYES®
OPM4-FTTx PON Power Meter

The NOYES OPM4-FTTx from AFL is designed to measure optical power in FTTH and other passive optical networks (PONs) that use 1490 nm for downstream data and 1550 nm for downstream video traffic. In addition, the OPM4-FTTx provides an integrated Visual Fault Locator (VFL) - 650 nm (red) laser for short-range fault location and connectivity testing.

Equipped with wavelength filters and a dual photo detector, the OPM4-FTTx can separately and simultaneously measure 1490 and 1550 nm power at the ONT or other points in an FTTx PON. A large, dual-wavelength LCD display with backlight shows power at both wavelengths in units of dBm or µW. The "set reference" feature may be used to measure the difference between two power (dBm) levels, in units of dB measured at different parts of the network.

The power meter and VFL ports accept NOYES thread-on style adapter caps and are compatible with angled or non-angled connectors. The OPM4-FTTx offers an automatic power shut-off feature, long battery life from standard AA alkaline batteries, and is fully N.I.S.T. traceable.

Features

- BPON, GPON, and EPON compatible
- Simultaneous power measurement at 1490 and 1550 nm
- Power shown in units of dBm or µW
- Comparison of power levels in dB
- Integrated VFL
- Auto power shut-off feature
- Dual-wavelength, sunlight readable LCD display
- Compatible with APC or UPC connectors
- Standard alkaline AA batteries
- Handheld, rugged, lightweight
- N.I.S.T traceable

Applications

- ONT splitter installation testing
- Fault-locating drop cables and F2 fibers from FDH to ONT

© 2008-2011, AFL, all rights reserved. OPM4-14-2000 Revision 1D, 2011-07-29
Specifications are subject to change without notice.

NOYES®
OPM4-FTTx PON Power Meter

Specifications [a]

POWER METER	
Calibrated Wavelengths	1490 nm, 1550 nm
Signal Format	CW or downstream BPON, GPON, or EPON
Detector Type	Filtered InGaAs
Measurement Range	+10 to -50 dBm @ 1490 nm; +20 to -50 dBm @ 1550 nm
Accuracy [b]	±0.5 dB (±0.35 dB typical)
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
VFL LASER	
Output Power (typical)	0.8 mW
Wavelength (nominal)	650 nm
Safety	Class II, FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2007-3
GENERAL	
Power	2 AA batteries
Battery Life (typical)	Power meter - 100 hours; Power meter (backlight on) - 16 hours; Power meter and VFL - 6 hours; Power meter (backlight on) and VFL - 5 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

Notes:

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

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

Ordering Information

INCLUDES	AFL NO.
OPM4-FTTx PON power meter, 2 AA batteries, protective rubber boot, SC adapter for power meter port, 2.5 mm universal adapter for VFL port, user's guide, and carry case.	OPM4-FTTx

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2008-2011, AFL, all rights reserved. OPM4-14-2000 Revision 1D, 2011-07-29
Specifications are subject to change without notice.

NOYES®
OPM4 Optical Power Meter

The NOYES OPM4 is a hand-held optical power meter designed for measuring optical power in premise, Telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links.

When used with NOYES OLS series light sources, the OPM4 offers automatic wavelength identification and switching-Wave ID feature that automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM4 stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification.

The OPM4 optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. The OPM4 offers a five-minute auto-off feature and long battery life from common AA alkaline batteries. The OPM4 is fully N.I.S.T. traceable.

Features

- Multimode or single-mode applications
- Wave ID (auto identification and switching)
- Multiple-wavelength testing
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone detection
- Large LCD with backlight
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Automatic power-off function
- Battery gauge
- Long battery life with 2 AA alkaline
- Hand-held, rugged, lightweight

Applications

- Premises (Ge), Telco (InGaAs), and Broadband (+26 dBm) models
- Passive Optical Networks (PON) testing

© 2004-2011, AFL, all rights reserved. OPM4-30-2000 Revision E, 2010-12-23
Specifications are subject to change without notice.

NOYES®

OPM4 Optical Power Meter

Specifications [a]

OPTICAL	OPM4-1D	OPM4-2D	OPM4-3D	OPM4-4D
Calibrated Wavelengths	660, 780, 850 nm	850, 1300, 1310, 1490, 1550 nm	850, 1300, 1310, 1490, 1550, 1625 nm	850, 980, 1300, 1310, 1490, 1550, 1625 nm
Detector Type	Silicon (Si)	Germanium (Ge)	InGaAs	Filtered InGaAs
Measurement Range	+6 to -70 dBm	+6 to -60 dBm	+10 to -75 dBm	+26 to -50 dBm
Tone Detect Range	+6 to -45 dBm	+6 to -50 dBm +6 to -45 for 850 nm	+10 to -50 dBm +10 to -45 for 850 nm	+6 to -30 dBm +6 to -25 for 850 nm
Wavelength ID Range	—	+6 to -50 dBm +6 to -45 dBm for 850 nm		+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	±0.25 dB			
Resolution	0.01 dB			
Measurement Units	dB, dBm, µW			
GENERAL				
Power	2 x AA batteries			
Battery Life	300 hours			
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)			
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.26 kg (0.58 lb)			

Notes:

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

b. Accuracy measured at 25ºC and -10 dBm per N.I.S.T. standards.

Ordering Information

INCLUDES	AFL NO.
OPM4 optical power meter, 2 AA batteries, protective rubber boot, and carry case.	All OPM4 models

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2004-2011, AFL, all rights reserved. OPM4-30-2000 Revision E, 2010-12-23
Specifications are subject to change without notice.

Features

- Multimode or single-mode applications
- Wave ID (auto identification/switching)
- Multiple-wavelength testing
- 270 Hz, 330 Hz, 1 kHz, 2 kHz tone detection
- Large LCD with backlight
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- File management system organizes stored test data
- Storage capability > 500 fibers
- USB port and Windows® compatible software for download of stored data
- Automatic power-off function
- Battery gauge
- Long battery life with 2 AA alkaline, optional AC adapter
- Hand-held, rugged, lightweight

NOYES®
OPM5 Optical Power Meter

With Innovative File Management System

The NOYES OPM5 is a full-featured, hand-held optical power meter designed for measuring optical power in premise, Telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. The standard Wave ID feature (when used with NOYES OLS series light sources) automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM5 stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification. The OPM5 is fully N.I.S.T. traceable.

Data Storage of Test Results

The OPM5 File Management system allows technicians to organize test results into multiple files and transfer stored results via USB to a PC for analyzing, generating reports, and printing. The supplied powerful PC Analysis and Reporting Tool (TRM™ - Test Results Management software) allows users to apply industry-standards-based rules to test results and create comprehensive certification reports. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. TRM is a Windows® compatible software.

Applications

- Passive Optical Networks (PON) testing
- Save test data for Report Generation with NOYES TRM Software
- OPM5-2D (Ge) for Premises LAN/WAN multimode or single-mode networks
- OPM5-3D (InGaAs) for Telecommunications networks
- OPM5-4D (Filtered-InGaAs) for high power (+26 dBm) CATV Broadband networks or DWDM system applications

© 2010, AFL, all rights reserved. OPM5-40-2000 Revision 1B, 2010-12-28
Specifications are subject to change without notice.

NOYES®
OPM5 Optical Power Meter with PC Reporting Tool – TRM™

Powerful Pair

The OPM5 Optical Power Meter and TRM Test Results Management software are a powerful pair.

- Increases efficiency
- Reduces technician errors
- Simple to operate with minimal training required
- Provides customized professional reports

Target Markets

Anyone testing fiber links who requires report generation applications include:

- Data networks
- Telecommunications providers
- CATV
- Industrial

WaveID Increases Efficiency and Reduces Errors

- Enables users to test two wavelengths simultaneously
  - Significantly reduces test time by eliminating the need to test each wavelength individually
- Automatically detects and sets received wavelengths
  - Eliminates loss measurement errors by automatically matching OPM to transmitted wavelength

Straightforward Results Storage and Easy File Management in the Field

- Simple-to-use interface allows for easy separation of results into files
- Keep cable/job results separated for fast customer report generation
- Access to files and results allows for quick and easy retest of fibers

© 2010, AFL, all rights reserved. OPM5-40-2000 Revision 1B, 2010-12-28
Specifications are subject to change without notice.

NOYES®

Upload test data files to PC via USB to utilize powerful data management and reporting tool – TRM™

File Naming and Data Management Editor

- Manage job information (Ends, Cable ID, Comments, and Operators) to meet documentation specifications in reports
- Create bi-directional results
- Combine results from multiple OPMs to create a complete job report
- Automatic backup of data

Create Certification Results to Industry Standards (TIA/ISO/EN and applications)

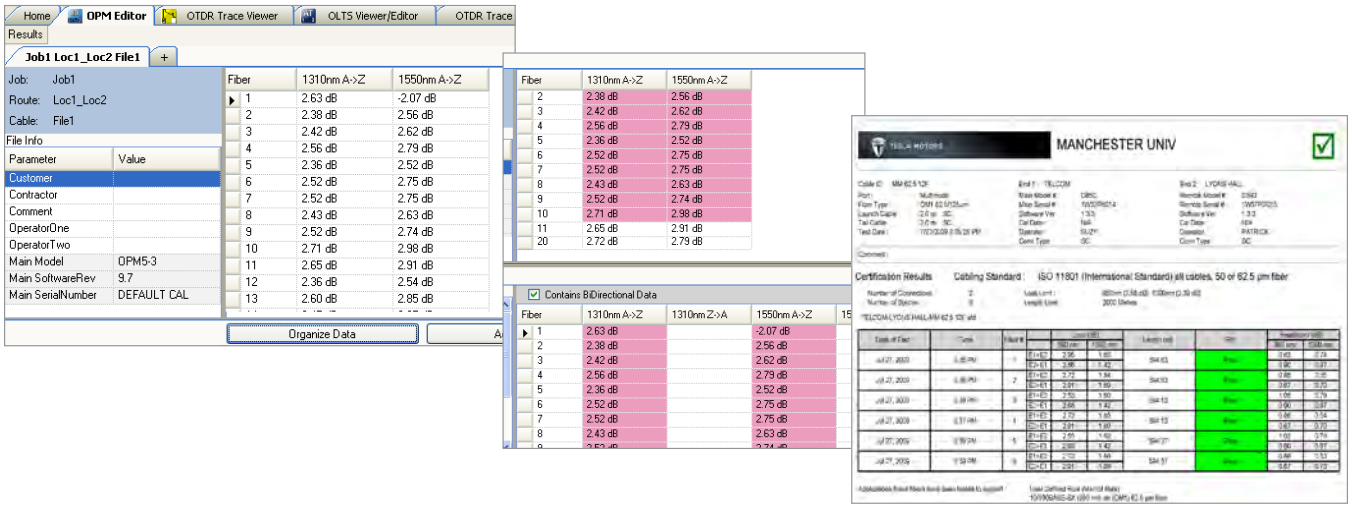
- Apply standards-based rules to loss results
- Generate Pass/Fail information for each fiber
- Demonstrate compliance to industry standards

Customized Reports

- Create professional personalized reports with company logos
- Reports meet accepted industry documentation standards
- Save common report options for quick generation of future reports
- Recall previously stored settings to save time generating reports for repeat customers
- Create certification reports showing fiber Pass/Fail results based on customer/consultant specifications, Industry Standard, and Industry Applications
- Show headroom values for the primary rule (typically the industry standard)
- Use PC analysis to verify if previously measured fibers (tested with NOYES loss test equipment) meet loss requirements of Standards and Rules

Superior Customer Support

- Dedicated customer service, technical support and field sales available to support customers
- Knowledgeable timely technical support and customer service



© 2010, AFL, all rights reserved. OPM5-40-2000 Revision 1B, 2010-12-28
Specifications are subject to change without notice.

NOYES®
OPM5 Optical Power Meter

Specifications [a]

OPTICAL	OPM5-2D	OPM5-3D	OPM5-4D
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550 nm	850, 1300, 1310, 1550, 1490, 1625 nm	850, 980, 1300, 1310, 1490, 1550, 1625 nm
Detector Type	Germanium (Ge)	InGaAs	Filtered InGaAs
Measurement Range	+6 to -60 dBm	+10 to -75 dBm	+26 to -50 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 dBm for 850 nm	+10 to -50 dBm +10 to -45 dBm for 850 nm	+6 to -30 dBm +6 to -25 dBm for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm	+10 to -50 dBm +10 to -45 dBm for 850 nm	+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	±0.25 dB		
Resolution	0.01 dB		
Measurement Units	dB, dBm, µW		
GENERAL			
Power	2 x AA batteries, optional AC adapter		
Battery Life	300 hours		
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)		
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)		
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)		
Weight	0.26 kg (0.58 lb)		

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.

Ordering Information

INCLUDES	AFL NO.
OPM5 optical power meter, 2 x AA batteries, protective rubber boot, USB cable, Windows® compatible software, and carry case.	All OPM5 models

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2010, AFL, all rights reserved. OPM5-40-2000 Revision 1B, 2010-12-28
Specifications are subject to change without notice.

Features

- 850, 1300, 1310, 1550 nm
- Premises (Ge) and broadband (InGaAs) models
- Displays optical power (dBm)
- Our simplest to use optical power meter
- N.I.S.T. traceable

NOYES®
OPM1 Optical Power Meter

This portable optical power meter may be used to measure optical power in premises, telco, or broadband fiber optic networks. When used with an LED or laser light source, the OPM1 can also measure the attenuation (insertion loss) of multimode or single-mode cables. With only two controls–ON/OFF and wavelength–the OPM1 is our simplest to use optical power meter. Optical power in dBm and the calibration wavelength setting are displayed on an easy-to-read LCD display. The optical input port accepts NOYES thread-on style connector adapter caps. Adapter caps are required and must be ordered separately. The OPM1 is fully N.I.S.T. traceable and runs on a standard 9-volt alkaline battery.

Applications

- The OPM1-2C is calibrated at 850, 1300, 1310, and 1550 nm for testing LAN, Ethernet, FDDI, Token Ring, and single-mode fiber systems such as telco, WAN, and CATV.
- The OPM1-3C also operates at 850, 1300, 1310, and 1550 nm but offers greater temperature stability needed for outside plant 1550 nm testing as with WAN, CATV, and Telco systems.

Specifications [a]

OPTICAL SPECIFICATIONS	OPM1-2C	OPM1-3C
Calibration Wavelengths	850, 1300, 1310, 1550 nm	850, 1300, 1310, 1550, 1625 nm
Detector Type	Germanium (Ge)	InGaAs
Measurement Range	+6 to -60 dBm	+6 to -70 dBm
Accuracy (@25°C, -10.0 dBm)	±0.25 dB	
Measurement Units	dBm	
GENERAL SPECIFICATIONS		
Power	Typical 60 hours with 9V battery	
Adapter Caps	Order separately (ST, SC, FC, and others available)	
Operating Temperature	-10°C to 50°C	
Relative Humidity	0 to 95 % (non-condensing)	
Storage Temperature	-30°C to 60°C	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.26 kg (0.58 lb)	

Note:

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

Ordering Information

INCLUDES	AFL NO.
Protective rubber boot, 9V battery, manual, and carrying case.	All OPM1 models

Optical power meters and optical light sources can be packaged together as a kit.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. OPM1-00-2001 Revision P, 2011-07-29
Specifications are subject to change without notice.

NOYES®
CSM1 Contractor Series Optical Power Meter

The NOYES CSM1 from AFL is a palm-sized, cost-effective optical power meter designed for measuring optical power in premises, telco, or broadband fiber optic networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. Weighing only 0.4 lbs, this power meter is ideal for field use.

The CSM1 stores optical references for each calibrated wavelength and features multiple test Tone detection for fiber identification. A large LCD display with backlight shows measured power [dBm or µW] or insertion loss [dB], calibrated wavelengths [nm], tone frequency [Hz], and indicates a low battery condition.

The CSM1 optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. One adapter cap, 2.5 mm Universal, is included.

Being powered by two AA alkaline, the CSM1 offers a five-minute auto-off feature and over 300 hours of operation with backlight off.

The CSM1 is fully N.I.S.T. traceable.

Features

- Palm-sized, rugged, lightweight
- Multimode or single-mode applications
- 270, 330, 1000, 2000 Hz Tone detection
- Large LCD with backlight
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Automatic power-off function
- Battery gauge
- Long battery life with 2 AA alkaline
- Cost-effective, easy to use
- N.I.S.T traceable

Application

- Premises (Ge), telco (InGaAs), and broadband (+26 dBm) models
- Passive Optical Networks (PON) testing

© 2006-2011, AFL, all rights reserved. CSM1-00-2000 Revision D, 2011-08-01
Specifications are subject to change without notice.

NOYES®
CSM1 Contractor Series Optical Power Meter

Specifications [a]

OPTICAL	CSM1-1	CSM1-2	CSM1-3	CSM1-4
Calibrated Wavelengths	660, 780, 850 nm	850, 1300, 1310, 1550 nm	850, 1300, 1310, 1490, 1550, 1625 nm	850, 980,1310, 1490, 1550, 1625 nm
Detector Type	Silicon (Si)	Germanium (Ge)	InGaAs	Filtered InGaAs
Measurement Range	+6 to -70 dBm	+6 to -60 dBm	+6 to -70 dBm	+26 to -50 dBm
Tone detect Range	+6 to -45 dBm	+6 to -50 dBm +6 to -45 dBm for 850 nm		+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	±0.3 dB			
Resolution	0.01 dB			
Measurement Units	dB, dBm, µW			
GENERAL				
Power	2 AA batteries			
Battery Life	>300 hours			
Operating Temperature	-10°C to 5°C, 90 % RH (non-condensing)			
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)			
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)			
Weight	0.18 kg (0.4 lb)			

Notes:

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

b. Accuracy measured at 25ºC and -10 dBm per N.I.S.T. standards.

Ordering Information

INCLUDES	AFL NO.
2.5 mm Universal adapter cap, 2 AA batteries, user's guide, and carry case.	All CSM1 models

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. CSM1-00-2000 Revision D, 2011-08-01
Specifications are subject to change without notice.

Features

- Triple wavelengths from a single port
- Triple, dual, or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Low battery LED indicator
- Long battery life with 2 AA alkaline, optional AC adapter
- Cost-effective, easy-to-use
- Hand-held, rugged, lightweight

Applications

- Passive Optical Networks (PON) testing
- Certify SM links per TIA/EIA standards
- Fiber identification prior to splicing

NOYES®

OLS7-FTTH and OLS7-3 Triple Wavelength Laser Sources

The OLS7-FTTH and OLS7-3 are hand-held, rugged laser sources designed for performing insertion loss measurements on single-mode fiber optic links when used with an optical power meter. When paired with an optical fiber identifier, both models may be used for fiber identification. The LASER output is stabilized to ensure accurate test results per current TIA/EIA requirements.

The OLS7-FTTH and OLS7-3 feature a triple wavelength LASER output from a single port and are easy to operate. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. Also, each wavelength may be transmitted with Wave ID. When transmitting with Wave ID, the OLS7 will also support transmitting pairs of wavelengths in an alternating pattern and triple wavelengths in a sequential pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength wavelength(s) along with battery charge status and external power presence.

The OLS7-FTTH model is designed specifically for today's FTTH network architectures featuring a triple wavelength LASER output from a single port: 1310 nm output for testing in the upstream direction and 1490 or 1550 nm, for testing in the downstream direction. The OLS7-3 model features 1310/1550/1625 nm triple wavelength LASER output that is used for single-mode applications, such as telecom or CATV.

The OLS7-FTTH and OLS7-3 output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned. Both models offer long battery life from common AA alkaline batteries with external AC adapter available as an option. The OLS7 is fully N.I.S.T. traceable.

© 2006-2010, AFL, all rights reserved. OLS7-00-2000 Revision D, 2010-12-29
Specifications are subject to change without notice.

NOYES®
OLS7-FTTH and OLS7-3
Triple Wavelength Laser Sources

Specifications [a]

OPTICAL	MODEL OLS7-FTTH			MODEL OLS7-3		
Wavelength (±20 nm)	1310 nm	1490 nm	1550 nm	1310 nm	1550 nm	1625 nm
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Spectral Width	5 nm	3 nm	5 nm	5 nm	5 nm	2 nm
Output Power	-5 dBm (typical) into 9/125 fiber					
Output Stability	±0.05 dB over 1 hour (after 15 min warm-up, after 30 sec typical) ±0.1 dB over 8 hours (after 15 min warm-up, after 30 sec typical)					
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz					
General	Models OLS7-FTTH and OLS7-3					
Available Adapters	SC FC, ST, LC					
Power	2 AA batteries, optional AC adapter					
Battery Life	Typical 72 hours (with one laser active), minimum 40 hours					
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)					
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)					
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)					
Weight	0.3 kg (0.66 lb)					

Note:

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

Ordering Information

INCLUDES	AFL NO.
OLS7-FTTH optical light source, protective rubber boot, 2 AA batteries, and carry case.	OLS7-FTTH
OLS7-3 optical light source, protective rubber boot, 2 AA batteries, and carry case.	OLS7-3

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2010, AFL, all rights reserved. OLS7-00-2000 Revision D, 2010-12-29
Specifications are subject to change without notice.

NOYES®
OLS4 Laser and LED Source

The OLS4 is a hand-held, rugged, integrated two-port LED and laser light source designed for performing insertion loss measurements on multimode or single-mode fiber optic links when used with an optical power meter. When paired with an optical fiber identifier, the OLS4 may be used for fiber identification. The LED and laser outputs are stabilized to ensure accurate test results per current TIA/EIA requirements.

The OLS4 features 850/1300 nm LED output from a multimode output port and 1310/1550 nm laser output from a single-mode output port. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone (SM output). Also, each wavelength may be transmitted with Wave ID. When transmitting with Wave ID, the OLS4 supports transmitting pairs of wavelengths in an alternating pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength(s) along with battery charge status and external power presence.

Both output ports are equipped with UCI-based removable adapters to allow the output connectors to be inspected and cleaned. The OLS4 coffers long battery life from common AA alkaline batteries with external AC adapter available as an option. The OLS4 is fully N.I.S.T. traceable.

Features

- Hand-held, rugged, lightweight
- Integrated LED and Laser light source
- Dual wavelengths from a single port
- Dual or single Wave ID, CW, Tone (SM output)
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Low battery LED indicator
- Long battery life with 2 AA alkaline, optional AC adapter
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy-to-use
- N.I.S.T. Traceable

Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Fiber identification prior to splicing

© 2004-2010, AFL, all rights reserved. OLS4-11-2000 Revision E, 2011-12-23
Specifications are subject to change without notice.

NOYES®
OLS4 Laser and LED Source

Specifications [a]

OPTICAL	MM OPTICAL PORT		SM OPTICAL PORT	
Wavelength	850 ±30 nm	1300 -10/+50 nm	1310 ±20 nm	1550 ±20 nm
Emitter Type	LED		Laser	
	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Spectral Width	40 nm (typ)	120 nm (typ)	5 nm (max)	5 nm (max)
Output Power	>-20 dBm, 62.5 µm multimode [b]		0 dBm, 9 µm single-mode	
Output Stability	±0.1 dB over 8 hours (after 5-minute warm-up)		±0.05 dB over 1 hour (after 15-minute warm-up) ±0.1 dB over 8 hours (after 15-minute warm-up)	
GENERAL				
Power	2 AA batteries, optional AC adapter			
Battery Life	Typical 30 hours, minimum 20 hours		Typical 72 hours, minimum 40 hours	
Available Adapters	SC FC, ST, LC			
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)			
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.29 kg (0.65 lb)			

Notes:

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

b. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

Ordering Information

INCLUDES	AFL NO.
OLS source, protective rubber boot, 2 AA batteries, mandrels, and carry case.	OLS4

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2004-2010, AFL, all rights reserved. OLS4-11-2000 Revision E, 2011-12-23
Specifications are subject to change without notice.

NOYES®
OLS2-Dual Laser Light Source

The OLS2-Dual is a hand-held, rugged laser source designed for performing insertion loss measurements on single-mode fiber optic links when used with an optical power meter. When paired with an optical fiber identifier, the OLS2-Dual may be used for fiber identification. The laser output is stabilized to ensure accurate test results per current TIA/EIA requirements.

The OLS2-Dual features 1310 nm and 1550 nm laser output from a single output port and offers several modes of operation. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. Also, each wavelength may be transmitted with Wave ID. When transmitting with Wave ID, the OLS2-Dual supports transmitting pairs of wavelengths in an alternating pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength(s) along with battery charge status and external power presence.

The OLS2-Dual output port is equipped with a UCI-based removable adapter to allow the output connector to be inspected and cleaned. The OLS2-Dual offers long battery life from common AA alkaline batteries with external AC adapter available as an option. The OLS2-Dual is fully N.I.S.T. traceable.

Features

- Dual wavelengths from a single port
- Dual or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Adjustable output
- Low battery LED indicator
- Long battery life with 2 AA alkaline, optional AC adapter
- Cost-effective, easy-to-use
- Hand-held, rugged, lightweight

Applications

- Certify SM links per TIA/EIA standards
- Fiber identification prior to splicing

© 2004-2010, AFL, all rights reserved. LS2D-20-2000 Revision E, 2010-12-23
Specifications are subject to change without notice.

NOYES®
OLS2-Dual Laser Light Source

Specifications [a]

OPTICAL	OLS2-DUAL (SINGLE PORT)	
Wavelength	1310 ±20 nm	1550 ±20 nm
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Spectral Width (FWHM)	5 nm (max)	
Output Power	0 dBm [b]	
Output Stability	±0.05 dB over 1 hour (after 15-minute warm-up) ±0.1 dB over 8 hours (after 15-minute warm-up)	
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz	
GENERAL		
Power	2 AA batteries, optional AC adapter	
Battery Life	Typical 120 hours, minimum 75 hours	
Available Adapters	SC FC, ST, LC	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.29 kg (0.65 lb)	

Notes:

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

b. Adjustable 2 dB.

Ordering Information

INCLUDES	AFL NO.
OLS2-Dual optical light source, protective rubber boot, 2 AA batteries, and carry case.	OLS2-Dual

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2004-2010, AFL, all rights reserved. LS2D-20-2000 Revision E, 2010-12-23
Specifications are subject to change without notice.

NOYES®
OLS1-Dual LED Light Source

The OLS1-Dual is a hand-held, rugged LED light source designed for performing insertion loss measurements on multimode fiber optic links when used with an optical power meter. The LED output is stabilized to ensure accurate test results per current TIA/EIA requirements.

The OLS1-Dual features 850 nm and 1300 nm LED output from a single-output port and is easy to operate with only a power button and a wavelength select button. Each wavelength may be transmitted individually at CW or with Wave ID. When transmitting with Wave ID, the OLS1-Dual supports transmitting pairs of wavelengths in an alternating pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently-enabled operating mode and emitted wavelength(s) along with battery charge status and external power presence.

The output port is equipped with UCI-based removable adapters to allow the output connectors to be inspected and cleaned. The OLS1-Dual offers long battery life from common AA alkaline batteries with external AC adapter available as an option. The OLS1-Dual is fully N.I.S.T. traceable.

Features

- Dual wavelengths from a single port
- Dual or single Wave ID, CW
- Low battery LED indicator
- Compliant with the IEC 61280-4-1 standard when used with an external conditioner
- Long battery life with 2 AA alkaline, optional AC adapter
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy-to-use
- Hand-held, rugged, lightweight

Applications

- Certify 50 or 62.5 µm multimode fiber links for any 850 or 1300 nm application, including Gigabit Ethernet (GBE) per TIA/EIA standards
- The 1300 nm output can also be used to test short distance (up to 10 km) single-mode fiber links

© 2006-2010, AFL, all rights reserved. LS1D-30-2000 Revision D, 2010-12-23
Specifications are subject to change without notice.

NOYES®
OLS1-Dual LED Light Source

Specifications [a]

OPTICAL	OLS1-DUAL (SINGLE PORT)	
Wavelength	850 ±30 nm	1300 +50/-10 nm
Emitter Type	LED,Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Spectral Width	40 nm (typ)	120 nm (typ)
Output Power	>-20 dBm [b]	
Output Stability	±0.1 dB over 8 hours (after 5-minute warm-up)	
Fiber Size	62.5 µm [c]	
GENERAL		
Power	2 AA batteries, optional AC adapter	
Battery Life	Typical 30 hours, minimum 20 hours	
Available Adapters	SC, FC, ST	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.29 kg (0.65 lb)	

Notes:

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

b. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

c. May be used to test 50 or 62.5 µm fiber with supplied mandrels. All specifications at 25°C.

Ordering Information

INCLUDES	AFL NO.
OLS1-Dual, protective rubber boot, 2 AA batteries, mandrels, and carry case.	OLS1-Dual

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2010, AFL, all rights reserved. LS1D-30-2000 Revision D, 2010-12-23
Specifications are subject to change without notice.

NOYES®
OLS1 LED Light Source

The OLS1 LED light source is a cost-effective, rugged, handheld instrument designed for performing insertion loss measurements on fiber optic links when used with an optical power meter. The LED output is stabilized to ensure accurate test results per current TIA/EIA requirements.

The OLS1 is easy to operate with only a [Wavelength/ Power] switch, which selects optical wavelengths or disables unit (ⓘ position). [Active Output], [Battery], and [External Power] indicators identify the currently enabled output port, battery charge status, and external power presence. Weighing only 0.65 lb, the OLS1 is compact and convenient for field use. The OLS1 operates over 60 hours from a typical 9V alkaline battery. An AC adapter is optional for extended use.

The OLS1 light source is fully N.I.S.T. traceable.

Features

- Rugged, handheld, lightweight
- 850 and 1300 nm LED (multimode) light sources (660 nm available)
- Certify 50 µm or 62.5µ multimode fiber links for any 850 or 1300 nm application, including Gigabit Ethernet (GBE) per TIA/EIA standards
- Free 50 µm and 62.5 µm mandrels
- Long battery life
- Cost-effective, easy to use
- N.I.S.T. traceable

Applications

- Operating at 850 nm, the OLS1-1C can be used for testing Ethernet, Gigabit Ethernet, Token Ring, and other multimode LAN systems.
- Operating at 660 nm, the OLS1-1C can test 1000 µ fiber and trace fibers with the visible 660 nm output.
- The OLS1-2C operates at 850 and 1300 nm for use on Ethernet, Token Ring, and FDDI. The 1300 nm output can also be used to test short distance (up to 10 km) single-mode fiber links.

© 2002-2011, AFL, all rights reserved. OLS1-00-2001 Revision R, 2011-07-29
Specifications are subject to change without notice.

NOYES®
OLS1 LED Light Source

Specifications [a]

OPTICAL SPECIFICATIONS	OLS1-1C		OLS1-2C	
Output Ports	2		2	
Output Wavelength	660 nm - red	850 + 35/-40 nm	850 + 35/-40 nm	1300 +50/-10 nm
Spectral Width (typ) (FWHM)	30 nm	40 nm	40 nm	120 nm
Output Power	-10 dBm [b]	>-20 dBm	>-20 dBm	>-20 dBm
Fiber Size	1000 µm, 62.5 µm [c]		62.5 µm [c]	
Output Connector	ST		ST	
Emitter Type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Stability	±0.1 dB over 8 hours (after 5-minute warm-up)			
GENERAL SPECIFICATIONS				
Power	Typical 60 hours with 9V battery, optional AC adapter			
Operating Temperature	-10°C to 50°C			
Storage Temperature	-30°C to 60°C			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.29 kg (0.65 lb)			

Notes:

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

b -10 dBm output is into 1000 micron fiber.

c. May be used to test 50 or 62.5 µm fiber with supplied mandrels.

Ordering Information

INCLUDES	AFL NO.
Protective rubber boot, 9V battery, 50 µm and 62.5 µm mandrels, and carrying case.	All OLS1 Models

Optical light sources and optical power meters can be packaged together as a kit.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. OLS1-00-2001 Revision R, 2011-07-29
Specifications are subject to change without notice.

NOYES®

CSS1-MM Contractor Series Dual LED Light Source

The NOYES CSS1-MM from AFL is a palm-sized, cost-effective dual LED light source designed for performing insertion loss measurements on multimode fiber optic links when used with an optical power meter. When paired with an optical fiber identifier, the CSS1-MM may be used for fiber identification. The LED output is stabilized to ensure accurate test results per current TIA/EIA requirements. Weighing only 0.4 lb, this light source is ideal for field use.

The CSS1-MM features 850 nm and 1300 nm LED output from a single output port and is easy to operate. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. The optical output port is equipped with a fixed SC connector. A large LCD display with backlight shows emitted wavelengths (nm), tone frequency (Hz), and indicates a low battery condition. The CSS1-MM offers a five-minute auto-off feature and long battery life from common AA alkaline batteries.

The CSS1-MM is fully N.I.S.T. traceable.

Features

- Palm-sized, rugged, lightweight
- Dual wavelengths from a single port
- CW and modulated Tone
- 270, 330, 1000, 2000 Hz Tone
- Large LCD with backlight
- Automatic power-off function
- Battery gauge
- Long battery life with AA alkaline
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy to use
- N.I.S.T traceable

Applications

- Certify 50 or 62.5 µm multimode fiber links for any 850 or 1300 nm application, including Gigabit Ethernet (GBE), per TIA/EIA standards
- Fiber identification prior to splicing

© 2006-2011, AFL, all rights reserved. CSS1-01-2000 Revision D, 2011-08-01
Specifications are subject to change without notice.

NOYES®
CSS1-MM Contractor Series Dual LED Light Source

Specifications [a]

OPTICAL	CSS1-MM (SINGLE PORT)	
Output Wavelength	850 nm ±20 nm	1300 nm +40/-60 nm
Spectral Width (max)	35 nm	170 nm
Output Power	⩾ -20.0 dBm into 62.5/125 fiber	
Emitter Type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Output Stability	± 0.1 dB over 1 hour (after 30 seconds typically) ± 0.15 dB over 8 hours (after 30 seconds typically)	
Tone Output	270, 330, 1000, 2000 Hz	
GENERAL		
Output Connector	SC	
Power	2 AA batteries	
Battery Life	30 hours typical	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)	
Weight	0.18 kg (0.4 lb)	

Note:

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

Ordering Information

INCLUDES	AFL NO.
2 AA batteries, user's guide, and carry case.	CSS1-MM

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. CSS1-01-2000 Revision D, 2011-08-01
Specifications are subject to change without notice.

NOYES®

CSS1-SM Contractor Series Dual Laser Light Source

The NOYES CSS1-SM from AFL is a palm-sized, cost-effective dual laser source designed for performing insertion loss measurements on single-mode fiber optic links when used with an optical power meter. When paired with an optical fiber identifier, the CSS1-SM may be used for fiber identification. The laser output is stabilized to ensure accurate test results per current TIA/EIA requirements. Weighing only 0.4 lb, this light source is ideal for field use.

The CSS1-SM features 1310 nm and 1550 nm laser output from a single output port and is easy to operate. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. The output port is equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned. A large LCD display with backlight shows emitted wavelengths (nm), tone frequency (Hz), and indicates a low battery condition. The CSS1-SM offers long battery life from common AA alkaline batteries. The CSS1-SM is fully N.I.S.T. traceable.

Features

- Palm-sized, rugged, lightweight
- Dual wavelengths from a single port
- CW and modulated Tone
- 270, 330, 1000, 2000 Hz Tone
- Large LCD with backlight
- Automatic power-off function
- Battery gauge
- Long battery life with AA alkaline
- Cost-effective, easy to use
- N.I.S.T traceable

Applications

- Certify SM links per TIA/EIA standards
- Fiber identification prior to splicing

© 2006-2011, AFL, all rights reserved. CSS1-00-2000 Revision D, 2011-08-01
Specifications are subject to change without notice.

NOYES®
CSS1-SM Contractor Series Dual Laser Light Source

Specifications [a]

OPTICAL	CSS1-SM (SINGLE PORT)
Output Wavelength	1310 nm ±20 nm, 1550 nm ±20 nm
Spectral Width (max)	5 nm
Output Power	⩾0.0 dBm into 9/125 fiber
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Output Stability	±0.05 dB typical over 1 hour (after 30 seconds typically) ±0.15 dB over 8 hours (after 30 seconds typically)
Tone Output	270, 330, 1000, 2000 Hz
GENERAL	
Output Connector	SC, FC, ST, LC
Power	2 AA batteries
Battery Life	75 hours typical
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)
Weight	0.18 kg (0.4 lb)

Note:

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

Ordering Information

INCLUDES	AFL NO.
2 AA batteries, user's guide, and carry case.	CSS1-SM

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. CSS1-00-2000 Revision D, 2011-08-01
Specifications are subject to change without notice.

Features (SMLP5-5 Test Kit)

- Wave ID reduces test time
- Hand-held, rugged, lightweight
- Cost-effective, easy-to-use
- N.I.S.T traceable
- OLS4 Quad Light Source
- Dual or single Wave ID, CW, Tone
- Industry standard 2 kHz test Tone
- 50 µm and 62.5 µm mandrels
- OPM5-2D Optical Power Meter
- File management system organizes stored test data
- Storage capability >500 fibers
- USB port for download of stored data
- TRM™ PC Reporting Tool (Windows® compatible)
- Apply certification rules to test results
- Create professional test reports
- Archive test results

Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Fiber identification prior to splicing
- Passive Optical Networks (PON) testing
- Save test data for report generation with NOYES TRM Software

NOYES®

SMLP5-5 Test Kit with Wave ID, Set Reference, and Data Storage

The SMLP5-5 test kit combines the OPM5-2D optical power meter and OLS4 integrated LED and laser light source and is ideally suited for testing fiber optic networks with hybrid (single-mode and multimode) cables.

The OLS4 features 850/1300 nm LED output from a multimode output port and 1310/1550 nm laser output from a single-mode output port. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone(SM output). Also, each wavelength may be transmitted with Wave ID. Both output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

The OPM5-2D is a full-featured, hand-held optical power meter designed for measuring optical power in premise, telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. The standard Wave ID feature (when used with NOYES OLS series light sources) automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM5-2D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification.

Data Storage of Test Results

The OPM5-2D File Management system allows technicians to organize test results into multiple files and transfer stored results via USB to a PC for analyzing, generating reports, and printing. The supplied powerful PC Analysis and Reporting Tool (TRM - Test Results Management software) allows users to apply industry standards based rules to test results and create comprehensive certification reports. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. TRM is a Windows® compatible software. The SMLP5-5 test kit is fully N.I.S.T. traceable.

© 2002-2011, AFL, all rights reserved. SMLP-55-2001 Revision E, 2011-01-10
Specifications are subject to change without notice.

NOYES®

SMLP5-5 Test Loss Test Kit with PC Reporting Tool – TRM™

Powerful Pair

The SMLP loss test kit and TRM Test Results Management software are a powerful pair.

- Increases efficiency
- Reduces technician errors
- Simple to operate with minimal training required
- Provides customized professional reports

Target Markets

Anyone testing fiber links who requires report generation applications include:

- Data networks
- Telecommunications providers
- CATV
- Industrial

WaveID Increases Efficiency and Reduces Errors

- Enables users to test two wavelengths simultaneously
  - Significantly reduces test time by eliminating the need to test each wavelength individually
- Automatically detects and sets received wavelengths
  - Eliminates loss measurement errors by automatically matching OPM to transmitted wavelength

Straightforward Results Storage and Easy File Management in the Field

- Simple to use interface allows for easy separation of results into files
- Keep cable/job results separated for fast customer report generation
- Access to files and results allows for quick and easy retest of fibers

© 2002-2011, AFL, all rights reserved. SMLP-55-2001 Revision E, 2011-01-10
Specifications are subject to change without notice.

NOYES®
SMLP5-5 Test Kit with Wave ID, Set Reference, and Data Storage

File Naming and Data Management Editor

- Manage job information (Ends, Cable ID, Comments, and Operators) to meet documentation specifications in reports
- Create bi-directional results
- Combine results from multiple OPMs to create a complete job report
- Automatic backup of data

Create Certification Results to Industry Standards (TIA/ISO/EN and applications)

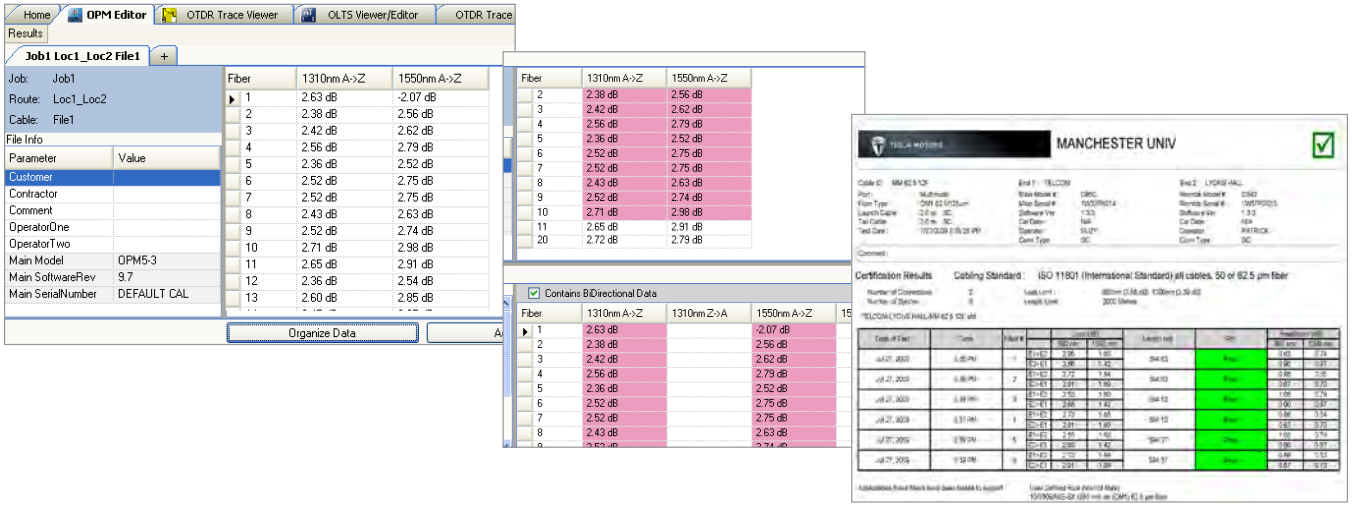
- Apply standards-based rules to loss results
- Generate Pass/Fail information for each fiber
- Demonstrate compliance to industry standards

Customized Reports

- Create professional personalized reports with company logos
- Reports meet accepted industry documentation standards
- Save common report options for quick generation of future reports
- Recall previously stored settings to save time generating reports for repeat customers
- Create certification reports showing fiber Pass/Fail results based on customer/consultant specifications, Industry Standard, and Industry Applications
- Show headroom values for the primary rule (typically the industry standard)
- Use PC analysis to verify if previously measured fibers (tested with NOYES loss test equipment) meet loss requirements of Standards and Rules

Superior Customer Support

- Dedicated customer service, technical support and field sales available to support customers
- Knowledgeable timely technical support and customer service



© 2002-2011, AFL, all rights reserved. SMLP-55-2001 Revision E, 2011-01-10
Specifications are subject to change without notice.

NOYES®
SMLP5-5 Test Kit with Wave ID, Set Reference, and Data Storage

OLS4 Light Source Specifications [a]

OPTICAL	MM OPTICAL PORT		SM OPTICAL PORT	
Wavelength	850 ±30 nm	1300 -10/+50 nm	1310 ±20 nm	1550 ±20 nm
Emitter Type	LED		Laser	
	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Spectral Width	40 nm (typ)	120 nm (typ)	5 nm (max)	5 nm (max)
Output Power	>-20 dBm, 62.5 µm multimode [b]		0 dBm, 9 µm single-mode	
Output Stability	±0.1 dB over 8 hours (after 5-minute warm-up)		±0.05 dB over 1 hour (after 15-minute warm-up) ±0.1 dB over 8 hours (after 15-minute warm-up)	
GENERAL				
Power	2 AA batteries, optional AC adapter			
Battery Life	Typical 30 hours, minimum 20 hours		Typical 72 hours, minimum 40 hours	
Available Adapters	SC FC, ST, LC			
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)			
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.29 kg (0.65 lb)			

OPM5-2D Specifications [a]

OPTICAL	OPM5-2D
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy [c]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries, optional AC adapter
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

Notes:

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

b. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

c. Accuracy measured at 25ºC and -10 dBm per N.I.S.T. standards.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS4 optical light source, OPM5-2D optical power meter, AA batteries, protective rubber boots, adapter cap, USB cable, PC reporting tool - TRM™ (Windows® compatible), 50 and 62.5 µm mandrels, and carry case	SMLP5-5

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. SMLP-55-2001 Revision E, 2011-01-10
Specifications are subject to change without notice.

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Dual or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Large LCD with backlight (OPM4-2D)
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Low battery indicator
- Long battery life with 2 AA alkaline
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy-to-use
- N.I.S.T traceable

Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Fiber identification prior to splicing

NOYES®

SMLP4-4 SM/MM Test Kit with Wave ID and Set Reference

The SMLP4-4 test kit combines the OPM4-2D optical power meter and OLS4 integrated LED and laser light source and is ideally suited for testing fiber optic networks with hybrid (single-mode and multimode) cables.

The OLS4 features 850/1300 nm LED output from a multimode output port and 1310/1550 nm laser output from a single-mode output port. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone (SM output). Also, each wavelength may be transmitted with Wave ID. When transmitting with Wave ID, the OLS4 supports transmitting pairs of wavelengths in an alternating pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength(s) along with battery charge status and external power presence. Both output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

When used with the OLS4, the OPM4-2D offers automatic wavelength identification and switching-Wave ID feature that automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM4-2D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification. The OPM4-2D optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements.

The SMLP4-4 test kit is fully N.I.S.T. traceable.

© 2002-2010, AFL, all rights reserved. SMLP-44-2000 Revision E, 2009-12-28
Specifications are subject to change without notice.

NOYES®
SMLP4-4 SM/MM Test Kit with Wave ID and Set Reference

OLS4 Specifications [a]

OPTICAL	MM OPTICAL PORT		SM OPTICAL PORT	
Wavelength	850 ±30 nm	1300 -10/+50 nm	1310 ±20 nm	1550 ±20 nm
Emitter Type	LED		Laser	
	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Spectral Width	40 nm (typ)	120 nm (typ)	5 nm (max)	5 nm (max)
Output Power	>-20 dBm, 62.5 µm multimode [b]		0 dBm, 9 µm single-mode	
Output Stability	±0.1 dB over 8 hours (after 5 min. warm-up)		±0.05 dB over 1 hour (after 15 min. warm-up) ±0.1 dB over 8 hours (after 15 min. warm-up)	
GENERAL				
Power	2 AA batteries, optional AC adapter			
Battery Life	Typical 30 hours, minimum 20 hours		Typical 72 hours, minimum 40 hours	
Available Adapters	SC FC, ST, LC			
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)			
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.29 kg (0.65 lb)			

OPM4-2D Specifications [a]

OPTICAL	OPM4-2D
Calibrated Wavelengths	850, 1300,1310, 1490, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy [c]	± 0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

Notes:

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

b. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

c. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS4 optical light source, OPM4-2D optical power meter, AA batteries, protective rubber boots, adapter cap, 50 and 62.5 µm mandrels and carry case.	SMLP4-4

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2010, AFL, all rights reserved. SMLP-44-2000 Revision E, 2009-12-28
Specifications are subject to change without notice.

NOYES®

SLP5 Triple Wave Test Kits with Wave ID, Set Reference, Data Storage

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Triple, dual, or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Power measurements in dBm or μW; insertion loss in dB
- Reference power level storage
- Large LCD with backlight (OPM5-4D)
- File management system organizes stored test data (OPM5-4D)
- Storage capability > 500 fibers (OPM5-4D)
- USB port and Windows® compatible software for download of stored data (OPM5-4D)
- Low battery indicator
- Long battery life with 2 AA alkaline, optional AC adapter
- Cost-effective, easy-to-use
- N.I.S.T traceable

Applications

- Passive Optical Networks (PON) testing
- Certify SM links per TIA/EIA standards
- Fiber identification prior to splicing

The SLP5 triple wavelength single-mode test kits are available in two models, SLP5-FTTH and SLP5-7. The SLP5-FTTH and SLP5-7 model combine the OPM5-4D optical power meter and either OLS7-FTTH (1310/1490/1550 nm) or OLS7-3 (1310/1550/1625 nm) laser source respectively.

The OLS7-FTTH and OLS7-3 feature a triple wavelength laser output from a single port and are easy to operate. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. Also, each wavelength may be transmitted with Wave ID. The OLS7-FTTH and OLS7-3 output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

The OPM5-4D is a full-featured, hand-held optical power meter designed for measuring optical power in premise, telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. The standard Wave ID feature (when used with NOYES OLS series light sources) automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM5-4D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification.

Data Storage of Test Results

The OPM5-4D File Management system allows technicians to organize test results into multiple files and transfer stored results via USB to a PC for analyzing, generating reports, and printing. The supplied powerful PC Analysis and Reporting Tool (TRM™ - Test Results Management software) allows users to apply industry standards based rules to test results and create comprehensive certification reports. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. TRM is a Windows® compatible software. The SLP5 test kits are fully N.I.S.T. traceable.

© 2006-2011, AFL, all rights reserved. SLP5-07-2000 Revision C, 2011-01-06
Specifications are subject to change without notice.

NOYES®
SLP5 Test Loss Test Kit with PC Reporting Tool – TRM™

Powerful Pair

The SLP5 loss test kit and TRM Test Results Management software are a powerful pair.

- Increases efficiency
- Reduces technician errors
- Simple to operate with minimal training required
- Provides customized professional reports

Target Markets

Anyone testing fiber links who requires report generation applications include:

- Data networks
- Telecommunications providers
- CATV
- Industrial

WaveID Increases Efficiency and Reduces Errors

- Enables users to test two wavelengths simultaneously
  - Significantly reduces test time by eliminating the need to test each wavelength individually
- Automatically detects and sets received wavelengths
  - Eliminates loss measurement errors by automatically matching OPM to transmitted wavelength

Straightforward Results Storage and Easy File Management in the Field

- Simple-to-use interface allows for easy separation of results into files
- Keep cable/job results separated for fast customer report generation
- Access to files and results allows for quick and easy retest of fibers

© 2006-2011, AFL, all rights reserved. SLP5-07-2000 Revision C, 2011-01-06
Specifications are subject to change without notice.

NOYES®

Upload test data files to PC via USB to utilize powerful data management and reporting tool – TRM™

File Naming and Data Management Editor

- Manage job information (Ends, Cable ID, Comments, and Operators) to meet documentation specifications in reports
- Create bi-directional results
- Combine results from multiple OPMs to create a complete job report
- Automatic backup of data

Create Certification Results to Industry Standards (TIA/ISO/EN and applications)

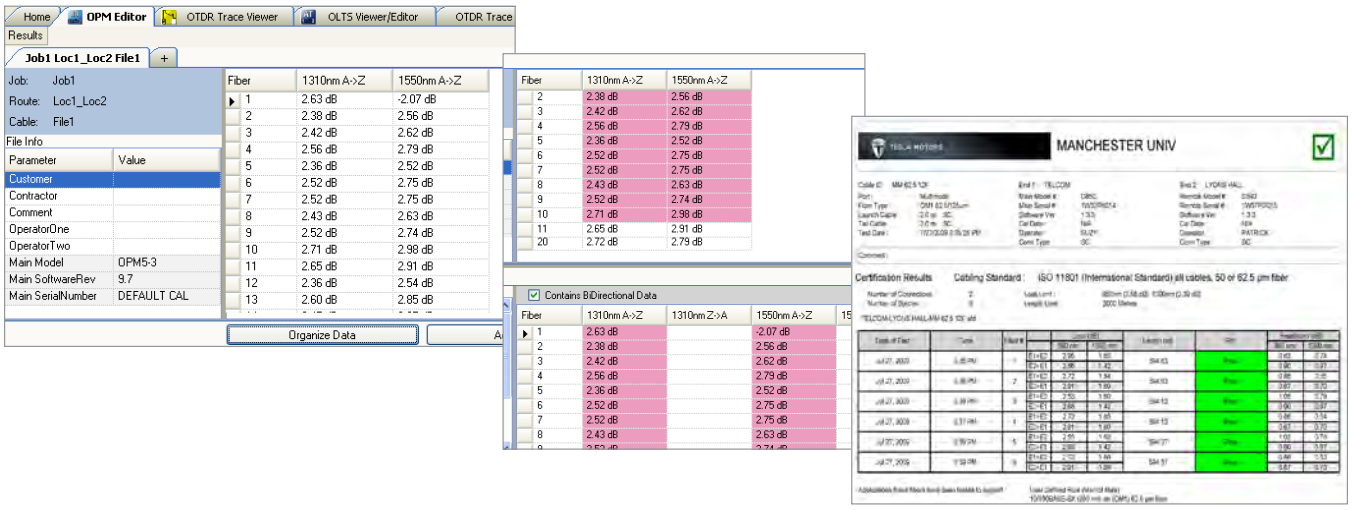
- Apply standards-based rules to loss results
- Generate Pass/Fail information for each fiber
- Demonstrate compliance to industry standards

Customized Reports

- Create professional personalized reports with company logos
- Reports meet accepted industry documentation standards
- Save common report options for quick generation of future reports
- Recall previously stored settings to save time generating reports for repeat customers
- Create certification reports showing fiber Pass/Fail results based on customer/consultant specifications, Industry Standard, and Industry Applications
- Show headroom values for the primary rule (typically the industry standard)
- Use PC analysis to verify if previously measured fibers (tested with NOYES loss test equipment) meet loss requirements of Standards and Rules

Superior Customer Support

- Dedicated customer service, technical support and field sales available to support customers
- Knowledgeable timely technical support and customer service



© 2006-2011, AFL, all rights reserved. SLP5-07-2000 Revision C, 2011-01-06
Specifications are subject to change without notice.

NOYES®
SLP5 Triple Wave Test Kits with Wave ID, Set Reference, Data Storage

OPM5-4D Specifications [a]

OPTICAL	OPM5-4D
Calibrated Wavelengths	850, 980, 1310, 1490, 1550, 1625 nm
Detector Type	Filtered InGaAs
Measurement Range	+26 to -50 dBm
Tone Detect Range	+6 to -30 dBm +6 to -25 dBm for 850 nm
Wavelength ID Range	+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
General	
Power	2 AA batteries, optional AC adapter
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

OLS7 Specifications [a]

OPTICAL	MODEL OLS7-FTTH			MODEL OLS7-3		
Wavelength (±20 nm)	1310	1490	1550	1310	1550	1625
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Spectral Width	5 nm	3 nm	5 nm	5 nm	5 nm	2 nm
Output Power	-5 dBm (typical) into 9/125 fiber					
Output Stability [c]	±0.05 dB over 1 hour ±0.1 dB over 8 hours					
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz					
GENERAL	**MODELS OLS7-FTTH AND OLS7-3**					
Available Adapters	SC, FC, ST, LC					
Power	2 AA batteries, optional AC adapter					
Battery Life	Typical 72 hours (with one laser active), minimum 40 hours					
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)					
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)					
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)					
Weight	0.3 kg (0.66 lb)					

Notes:

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

b. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

c. After 15-minute warm-up, after 30-second typical.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS7-3 optical light source, OPM5-4D optical power meter, AA batteries, protective rubber boots, adapter cap, USB cable, Windows® compatible software, and carry case.	SLP5-7
OLS7-FTTH optical light source, OPM5-4D optical power meter, AA batteries, protective rubber boots, adapter cap, USB cable, Windows® compatible software, and carry case.	SLP5-FTTH

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. SLP5-07-2000 Revision C, 2011-01-06
Specifications are subject to change without notice.

NOYES®

SLP5-6D SM Test Kit with Wave ID, Set Reference and Data Storage

The SLP5-6D test kit combines the OPM5-4D optical power meter and OLS2-Dual laser light source and is ideally suited for testing single-mode fiber optic networks.

The OLS2-Dual features 1310 nm and 1550 nm laser output from a single output port and offers several modes of operation. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. Also, each wavelength may be transmitted with Wave ID. The OLS2-Dual output port is equipped with a UCI based removable adapter to allow the output connector to be inspected and cleaned.

The OPM5-4D is a full-featured, hand-held optical power meter designed for measuring optical power in premise, telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. The standard Wave ID feature (when used with NOYES OLS series light sources) automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM5-4D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification.

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Dual or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Adjustable output
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Large LCD with backlight (OPM5-4D)
- File management system organizes stored test data (OPM5-4D)
- Storage capability > 500 fibers (OPM5-4D)
- USB port and Windows® compatible software for download of stored data (OPM5-4D)
- Low battery indicator
- Long battery life with 2 AA alkaline, optional AC adapter
- Cost-effective, easy-to-use
- N.I.S.T traceable

Applications

- Certify single-mode links per TIA/EIA standards
- Fiber identification prior to splicing

Data Storage of Test Results

The OPM5-4D File Management system allows technicians to organize test results into multiple files and transfer stored results via USB to a PC for analyzing, generating reports, and printing. The supplied powerful PC Analysis and Reporting Tool (TRM™ - Test Results Management software) allows users to apply industry standards based rules to test results and create comprehensive certification reports. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. TRM is a Windows® compatible software.

The SLP5-6D test kit is fully N.I.S.T. traceable.

© 2002-2010, AFL, all rights reserved. SLP5-30-2000 Revision E, 2010-12-28
Specifications are subject to change without notice.

NOYES®
SLP5-6D Test Loss Test Kit with PC Reporting Tool – TRM™

Powerful Pair

The SLP5-6D loss test kit and TRM Test Results Management software are a powerful pair.

- Increases efficiency
- Reduces technician errors
- Simple to operate with minimal training required
- Provides customized professional reports

Target Markets

Anyone testing fiber links who requires report generation applications include:

- Data networks
- Telecommunications providers
- CATV
- Industrial

WaveID Increases Efficiency and Reduces Errors

- Enables users to test two wavelengths simultaneously
  - Significantly reduces test time by eliminating the need to test each wavelength individually
- Automatically detects and sets received wavelengths
  - Eliminates loss measurement errors by automatically matching OPM to transmitted wavelength

Straightforward Results Storage and Easy File Management in the Field

- Simple to use interface allows for easy separation of results into files
- Keep cable/job results separated for fast customer report generation
- Access to files and results allows for quick and easy retest of fibers

© 2002-2010, AFL, all rights reserved. SLP5-30-2000 Revision E, 2010-12-28
Specifications are subject to change without notice.

NOYES®

Upload test data files to PC via USB to utilize powerful data management and reporting tool – TRM™

File Naming and Data Management Editor

- Manage job information (Ends, Cable ID, Comments, and Operators) to meet documentation specifications in reports
- Create bi-directional results
- Combine results from multiple OPMs to create a complete job report
- Automatic backup of data

Create Certification Results to Industry Standards (TIA/ISO/EN and applications)

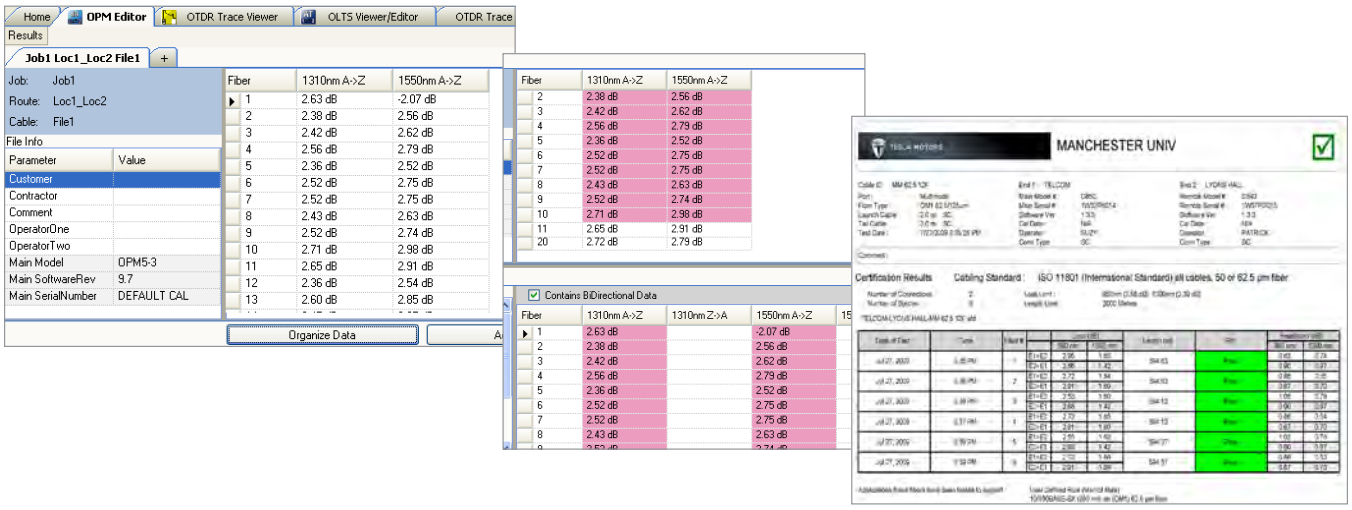
- Apply standards-based rules to loss results
- Generate Pass/Fail information for each fiber
- Demonstrate compliance to industry standards

Customized Reports

- Create professional personalized reports with company logos
- Reports meet accepted industry documentation standards
- Save common report options for quick generation of future reports
- Recall previously stored settings to save time generating reports for repeat customers
- Create certification reports showing fiber Pass/Fail results based on customer/consultant specifications, Industry Standard, and Industry Applications
- Show headroom values for the primary rule (typically the industry standard)
- Use PC analysis to verify if previously measured fibers (tested with NOYES loss test equipment) meet loss requirements of Standards and Rules

Superior Customer Support

- Dedicated customer service, technical support and field sales available to support customers
- Knowledgeable timely technical support and customer service



© 2002-2010, AFL, all rights reserved. SLP5-30-2000 Revision E, 2010-12-28
Specifications are subject to change without notice.

NOYES®

SLP5-6D SM Test Kit with Wave ID, Set Reference, and Data Storage

OPM5-4D Specifications [a]

OPTICAL	OPM5-4D
Calibrated Wavelengths	850, 980, 1310, 1490, 1550, 1625 nm
Detector Type	Filtered InGaAs
Measurement Range	+26 to -50 dBm
Tone Detect Range	+6 to -30 dBm +6 to -25 dBm for 850 nm
Wavelength ID Range	+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	± 0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries, optional AC adapter
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

OLS2-Dual Specifications [a]

OPTICAL	OLS2-DUAL (SINGLE PORT)	
Wavelength	1310 ±20 nm	1550 ±20 nm
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Spectral Width (FWHM)	5 nm (max)	
Output Power	0 dBm [c]	
Output Stability	±0.05 dB over 1 hour (after 15 min. warm-up) ±0.1 dB over 8 hours (after 15 min. warm-up)	
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz	
GENERAL		
Power	2 AA batteries, optional AC adapter	
Battery Life	Typical 120 hours, minimum 75 hours	
Available Adapters	SC FC, ST, LC	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.29 kg (0.65 lb)	

Notes:

a. All specifications at 25°C.

b. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

c. Adjustable 2 dB.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS2-Dual optical light source, OPM5-4D optical power meter, AA batteries, protective rubber boots, adapter cap, USB cable, Windows® compatible software, and carry case.	SLP5 -6D

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2010, AFL, all rights reserved. SLP5-30-2000 Revision E, 2010-12-28
Specifications are subject to change without notice.

NOYES®

SLP4 Triple Wave Test Kits with Wave ID and Set Reference

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Triple, dual, or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Large LCD with backlight (OPM4-4D)
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Low battery indicator
- Long battery life with 2 AA alkaline
- Cost-effective, easy to use
- N.I.S.T traceable

The SLP4 triple wavelength single-mode test kits are available in two models, SLP4-FTTH and SLP4-7. The SLP4-FTTH and SLP4-7 model combine the OPM4-4D optical power meter and either OLS7-FTTH (1310/1490/1550 nm) or OLS7-3 (1310/1550/1625 nm) laser source respectively.

The OLS7-FTTH and OLS7-3 feature a triple wavelength laser output from a single port and are easy to operate. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. Also, each wavelength may be transmitted with Wave ID. When transmitting with Wave ID, the OLS7 will also support transmitting pairs of wavelengths in an alternating pattern and triple wavelengths in a sequential pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength wavelength(s) along with battery charge status and external power presence. The OLS7-FTTH and OLS7-3 output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

When used with OLS7 series light sources, the OPM4-4D offers automatic wavelength identification and switching-Wave ID feature that automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM4-4D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification. The OPM4-4D optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. The SLP4-7 and SLP4-FTTH kits are fully N.I.S.T. traceable.

Applications

- Passive Optical Networks (PON) testing
- Certify single-mode links per TIA/EIA standards
- Fiber identification prior to splicing

© 2006-2011, AFL, all rights reserved. SLP4-07-2000 Revision C, 2011-01-06
Specifications are subject to change without notice.

NOYES®
SLP4 Triple Wave Test Kits with Wave ID and Set Reference

OPM4-4D Specifications [a]

OPTICAL	OPM4-4D
Calibrated Wavelengths	850, 980, 1300, 1310, 1490, 1550, 1625 nm
Detector Type	Filtered InGaAs
Measurement Range	+26 to -50 dBm
Tone Detect Range	+6 to -30 dBm +6 to -25 for 850 nm
Wavelength ID Range	+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

OLS7 Specifications [a]

OPTICAL	MODEL OLS7-FTTH			MODEL OLS7-3		
Wavelength (±20 nm)	1310	1490	1550	1310	1550	1625
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Spectral Width	5 nm	3 nm	5 nm	5 nm	5 nm	2 nm
Output Power	-5 dBm (typical) into 9/125 fiber					
Output Stability [c]	±0.05 dB over 1 hour ±0.1 dB over 8 hours					
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz					
GENERAL	**MODELS OLS7-FTTH AND OLS7-3**					
Available Adapters	SC, FC, ST, LC					
Power	2 AA batteries, optional AC adapter					
Battery Life	Typical 72 hours (with one laser active), minimum 40 hours					
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)					
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)					
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)					
Weight	0.3 kg (0.66 lb)					

Notes:

a. All specifications at 25°C.

b. Accuracy measured at 25ºC and -10 dBm per N.I.S.T. standards.

c. After 15-minute warm-up, after 30-second typical.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS7-3 optical light source, OPM4-4D optical power meter, AA batteries, protective rubber boots, adapter cap, and carry case.	SLP4-7
OLS7-FTTH optical light source, OPM4-4D optical power meter, AA batteries, protective rubber boots, adapter cap, and carry case.	SLP4-FTTH

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. SLP4-07-2000 Revision C, 2011-01-06
Specifications are subject to change without notice.

NOYES®

SLP4-6D Single-mode Test Kit with Wave ID and Set Reference

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Dual or single Wave ID, CW, Tone
- 270 Hz, 330 Hz, 1 kHz, 2 kHz Tone
- Adjustable output
- Large LCD with backlight (OPM4-4D)
- Power measurements in dBm or μW; insertion loss in dB
- Reference power level storage
- Low battery indicator
- Long battery life with 2 AA alkaline
- Cost-effective, easy to use
- N.I.S.T traceable

The SLP4-6D test kit combines the OPM4-4D optical power meter and OLS2-Dual laser light source and is ideally suited for testing single-mode fiber optic networks.

The OLS2-Dual features 1310 nm and 1550 nm laser output from a single output port and offers several modes of operation. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone. Also, each wavelength may be transmitted with Wave ID. When transmitting with Wave ID, the OLS2-Dual supports transmitting pairs of wavelengths in an alternating pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength(s) along with battery charge status and external power presence. The OLS2-Dual output port is equipped with a UCI based removable adapter to allow the output connector to be inspected and cleaned.

When used with the OLS2-Dual, the OPM4-4D offers automatic wavelength identification and switching-Wave ID feature that automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM4-4D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification. The OPM4-4D optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. The SLP4-6D test kit is fully N.I.S.T. traceable.

Applications

- Certify single-mode links per TIA/EIA standards
- Fiber identification prior to splicing

© 2002-2010, AFL, all rights reserved. SLP4-30-2000 Revision E, 2010-12-29
Specifications are subject to change without notice.

NOYES®
SLP4-6D Single-mode Test Kit with Wave ID and Set Reference

OPM4-4D Specifications [a]

OPTICAL	OPM4-4D
Calibrated Wavelengths	850, 980, 1300, 1310, 1490, 1550, 1625 nm
Detector Type	Filtered InGaAs
Measurement Range	+26 to -50 dBm
Tone Detect Range	+6 to -30 dBm +6 to -25 for 850 nm
Wavelength ID Range	+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy [b]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

OLS2-Dual Specifications [a]

OPTICAL	OLS2-DUAL (SINGLE PORT)	
Wavelength	1310 ±20 nm	1550 ±20 nm
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Spectral Width (FWHM)	5 nm (max)	
Output Power	0 dBm [c]	
Output Stability	±0.05 dB over 1 hour (after 15-minute warm-up) ±0.1 dB over 8 hours (after 15-minute warm-up)	
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz	
GENERAL		
Power	2 AA batteries, optional AC adapter	
Battery Life	Typical 120 hours, minimum 75 hours	
Available Adapters	SC FC, ST, LC	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.29 kg (0.65 lb)	

Notes:

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

b. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

c. Adjustable 2 dB.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS2-Dual optical light source, OPM4-4D optical power meter, AA batteries, protective rubber boots, adapter cap, and carry case.	SLP4-6D

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2010, AFL, all rights reserved. SLP4-30-2000 Revision E, 2010-12-29
Specifications are subject to change without notice.

NOYES®

MLP5-2 MM Test Kit with Wave ID, Set Reference and Data Storage

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Dual or single Wave ID, CW
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Large LCD with backlight (OPM5-2D)
- File management system organizes stored test data (OPM5-2D)
- Storage capability > 500 fibers (OPM5-2D)
- USB port and Windows® compatible software for download of stored data (OPM5-2D)
- Low battery indicator
- Long battery life with 2 AA alkaline
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy to use
- N.I.S.T traceable

Applications

- Certify multimode fiber links per TIA/EIA standards
- The 1300 nm output can also be used to test short distance (up to 10 km) single-mode fiber links

The MLP5-2 test kit combines the OPM5-2D optical power meter and OLS1-Dual LED light source and is ideally suited for testing multimode fiber optic networks.

The OLS1-Dual features 850 and 1300 nm LED output from a single output port and is easy to operate with only a power button and a wavelength select button. Each wavelength may be transmitted individually at CW or with Wave ID. The OLS1-Dual output port is equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

The OPM5-2D is a full-featured, hand-held optical power meter designed for measuring optical power in premise, telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. The standard Wave ID feature (when used with NOYES OLS series light sources) automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM5-2D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification.

Data Storage of Test Results

The OPM5-2D File Management system allows technicians to organize test results into multiple files and transfer stored results via USB to a PC for analyzing, generating reports, and printing. The supplied powerful PC Analysis and Reporting Tool (TRM™ - Test Results Management software) allows users to apply industry standards based rules to test results and create comprehensive certification reports. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. TRM is a Windows® compatible software. The MLP5-2 test kit is fully N.I.S.T. traceable.

© 2002-2011, AFL, all rights reserved. MLP5-30-2000 Revision D, 2011-01-05
Specifications are subject to change without notice.

NOYES®

MLP5-2 MM Test Kit with Wave ID, Set Reference and Data Storage

Powerful Pair

The MLP5-2 loss test kit and TRM Test Results Management software are a powerful pair.

- Increases efficiency
- Reduces technician errors
- Simple to operate with minimal training required
- Provides customized professional reports

Target Markets

Anyone testing fiber links who requires report generation applications include:

- Data networks
- Telecommunications providers
- CATV
- Industrial

Wave ID Increases Efficiency and Reduces Errors

- Enables users to test two wavelengths simultaneously
  - Significantly reduces test time by eliminating the need to test each wavelength individually
- Automatically detects and sets received wavelengths
  - Eliminates loss measurement errors by automatically matching OPM to transmitted wavelength

Straightforward Results Storage and Easy File Management in the Field

- Simple to use interface allows for easy separation of results into files
- Keep cable/job results separated for fast customer report generation
- Access to files and results allows for quick and easy retest of fibers

© 2002-2011, AFL, all rights reserved. MLP5-30-2000 Revision D, 2011-01-05
Specifications are subject to change without notice.

NOYES®

Upload test data files to PC via USB to utilize powerful data management and reporting tool – TRM™

File Naming and Data Management Editor

- Manage job information (Ends, Cable ID, Comments, and Operators) to meet documentation specifications in reports
- Create bi-directional results
- Combine results from multiple OPMs to create a complete job report
- Automatic backup of data

Create Certification Results to Industry Standards (TIA/ISO/EN and applications)

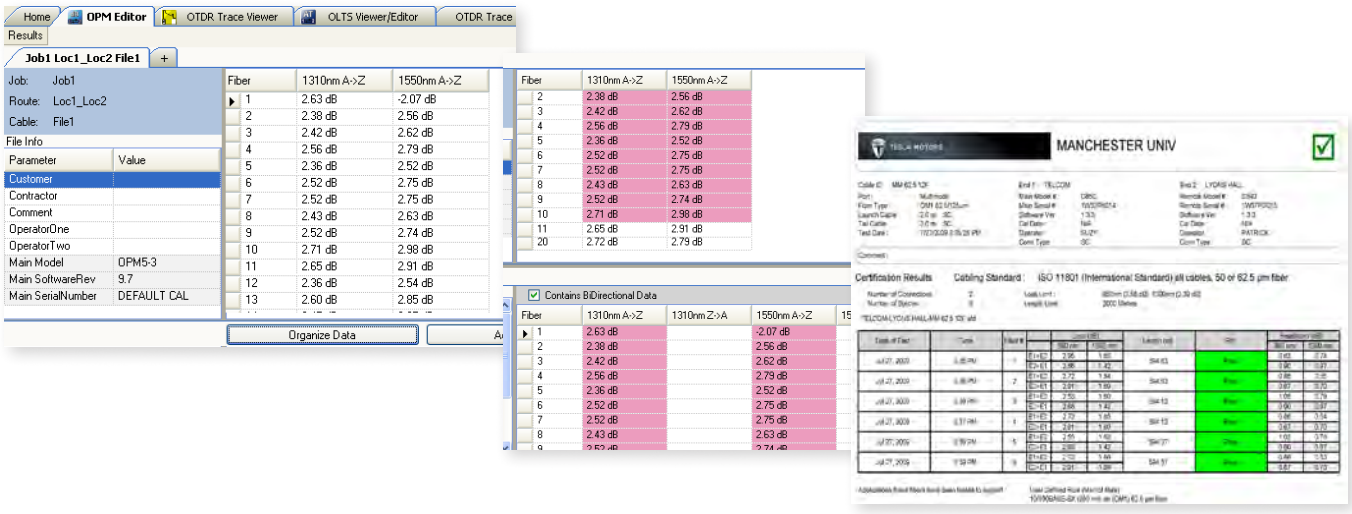
- Apply standards-based rules to loss results
- Generate Pass/Fail information for each fiber
- Demonstrate compliance to industry standards

Customized Reports

- Create professional personalized reports with company logos
- Reports meet accepted industry documentation standards
- Save common report options for quick generation of future reports
- Recall previously stored settings to save time generating reports for repeat customers
- Create certification reports showing fiber Pass/Fail results based on customer/consultant specifications, Industry Standard, and Industry Applications
- Show headroom values for the primary rule (typically the industry standard)
- Use PC analysis to verify if previously measured fibers (tested with NOYES loss test equipment) meet loss requirements of Standards and Rules

Superior Customer Support

- Dedicated customer service, technical support and field sales available to support customers
- Knowledgeable timely technical support and customer service



© 2002-2011, AFL, all rights reserved. MLP5-30-2000 Revision D, 2011-01-05
Specifications are subject to change without notice.

NOYES®
MLP5-2 Multimode Test Kit with Wave ID, Set Reference and Data Storage

OPM5-2D Specifications [a]

OPTICAL	OPM5-2D
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy [b]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries, optional AC adapter
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

OLS1-Dual Specifications [a]

OPTICAL	OLS1-DUAL (SINGLE PORT)	
Wavelength	850 ±30 nm	1300 +50/-10 nm
Emitter Type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Spectral Width	40 nm (typ)	120 nm (typ)
Output Power	>-20 dBm [c]	
Output Stability	±0.1 dB over 8 hours (after 5-minute warm-up)	
Fiber Size	62.5 µm [d]	
GENERAL		
Power	2 AA batteries, optional AC adapter	
Battery Life	Typical 30 hours, minimum 20 hours	
Available Adapters	SC, FC, ST	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.29 kg (0.65 lb)	

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.
c. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
d. May be used to test 50 or 62.5 µm fiber with supplied mandrels.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS1-Dual optical light source, OPM5-2D optical power meter, AA batteries, protective rubber boots, adapter cap, USB cable, Windows® compatible software, 50 and 62.5 µm mandrels and carry case.	MLP5-2

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. MLP5-30-2000 Revision D, 2011-01-05
Specifications are subject to change without notice.

NOYES®

MLP4-2 Multimode Test Kit with Wave ID and Set Reference

Features

- Hand-held, rugged, lightweight
- Wave ID (auto identification and switching)
- Dual or single Wave ID, CW
- Large LCD with backlight (OPM4-2D)
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Low battery indicator
- Long battery life with 2 AA alkaline
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy-to-use
- N.I.S.T traceable

The MLP4-2 test kit combines the OPM4-2D optical power meter and OLS1-Dual LED light source and is ideally suited for testing multimode fiber optic networks.

The OLS1-Dual features 850 and 1300 nm LED output from a single output port and is easy to operate with only a power button and a wavelength select button. Each wavelength may be transmitted individually at CW or with Wave ID. When transmitting with Wave ID, the OLS1-Dual supports transmitting pairs of wavelengths in an alternating pattern. Associated with each operating condition, the designated LED indicator will illuminate to identify the currently enabled operating mode and emitted wavelength(s) along with battery charge status and external power presence. The OLS1-Dual output port is equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

When used with the OLS1-Dual, the OPM4-2D offers automatic wavelength identification and switching-Wave ID feature that automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM4-2D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification. The OPM4-2D optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. The MLP4-2 test kit is fully N.I.S.T. traceable.

Applications

- Certify multimode fiber links per TIA/EIA standards
- The 1300 nm output can also be used to test short distance (up to 10 km) single-mode fiber links

© 2002-2011, AFL, all rights reserved. MLP4-30-2000 Revision D, 2011-01-05
Specifications are subject to change without notice.

NOYES®
MLP4-2 Multimode Test Kit with Wave ID and Set Reference

OPM4-2D Specifications [a]

OPTICAL	OPM4-2D
Calibrated Wavelengths	850, 1300,1310, 1490, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy [d]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
General	
Power	2 AA batteries
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

OLS1-Dual Specifications [a]

OPTICAL	OLS1-DUAL (SINGLE PORT)	
Wavelength	850 ±30 nm	1300 +50/-10 nm
Emitter Type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Spectral Width	40 nm (typ)	120 nm (typ)
Output Power	>-20 dBm [b]	
Output Stability	±0.1 dB over 8 hours (after 5-minute warm-up)	
Fiber Size	62.5 µm [c]	
GENERAL		
Power	2 AA batteries, optional AC adapter	
Battery Life	Typical 30 hours, minimum 20 hours	
Available Adapters	SC, FC, ST	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)	
Weight	0.29 kg (0.65 lb)	

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
c. May be used to test 50 or 62.5 µm fiber with supplied mandrels.
d. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS1-Dual optical light source, OPM4-2D optical power meter, AA batteries, protective rubber boots, adapter cap, 50 and 62.5 µm mandrels, and carry case.	MLP4-2

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. MLP4-30-2000 Revision D, 2011-01-05
Specifications are subject to change without notice.

NOYES®
MLP1 Multimode Loss Test Kit

MLP1 test kits are inexpensive solutions for testing multimode systems. By joining the OPM1 optical power meter and the OLS1 optical light source, the MLP1 is a great kit for beginners or network owners. Two versions of the MLP1 test kit are available for testing Premises networks, LAN, and Gigabit Ethernet.

MLP1-1S test kit includes the OPM1-2C power meter and OLS1-1C (660, 850 nm) light source. Good test kit with visible 660 nm source for Plastic Optical Fiber (POF).

MLP1-2 test kit combines the OPM1-2C optical power meter and OLS1-2C (850, 1300 nm) optical light source. Basic multimode test kit for light use.

Included 50 and 62.5 µm fiber mandrels for certifying both 50 and 62.5 µm fiber links for current and planned high bit rate applications including Gigabit Ethernet and 10 Gigabit Ethernet. Mandrels apply to launch jumpers is seconds without tools and ensure loss measurements comply with TIA/EIA-568-B standard.

Feature

- Hand-held, rugged, lightweight
- Test multimode networks
- Loss measurements at 850 and 1300 nm
- Includes 50 and 62.5 µm mandrels
- Field portable, battery operated
- Certify 50 or 62.5 µm multimode fiber links for any 850 or 1300 nm application, including Gigabit Ethernet (GBE)
- N.I.S.T. traceable

Applications

- Certify 50 and 62.5 µm fiber links for 850/1300 nm
- Certify single-mode links per TIA/EIA standards
- Passive Optical Networks (PON) testing

Ordering Information

INCLUDES	AFL NO.
Optical light source, optical power meter, protective rubber boots, adapter cap, 50 and 62.5 µm mandrels, user's guide, and carrying case.	All MLP1 models

Test jumpers and connector adapters are required for operation (purchased separately).
Test jumpers with a variety of connector styles and fiber types are available.
Adapter caps for most common connectors may be purchased from AFL.

© 2002-2011, AFL, all rights reserved. MLP1-01-2000 Revision R, 2011-06-29
Specifications are subject to change without notice.

NOYES®
MLP1 Multimode Loss Test Kit

Specifications [a]

MODEL	MLP1-1S		MLP1-2	
OPTICAL LIGHT SOURCE	**OLS1-1C**		**OLS1-2C**	
Output Ports	2		2	
Output Wavelength	660 nm - red	850 + 35/-40nm	850 + 35/-40 nm	1300 + 50/-10 nm
Spectral Width (typ) (FWHM)	30 nm	40 nm	40 nm	120 nm
Output Power	-10 dBm [b]	>20 dBm	-20 dBm	>20 dBm
Stability (@25°C, 5-minute warm-up)	0.1 dB over 8 hours		0.1 dB over 8 hours	
Fiber Size	1000 µm, 62.5 µm [c]		62.5 µm [c]	
Emitter Type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Power	Typical 60 hours with 9V battery, optional AC adapter			
Connector	ST			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.65 lb (.29 kg)			
OPTICAL POWER METER	**OPM1-2C**			
Calibration Wavelength	850, 1300, 1310, 1550 nm			
Detector Type	Germanium (Ge)			
Dynamic Range	+6 to -60 dBm			
Accuracy (@ 25°C & -10.0 dBm)	±0.25 dB			
Measurement Units	dBm			
Power	Typical 60 hours with 9V battery			
Adapter Caps	order separately (ST, SC, FC, and others available)			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.58 lb (0.26 kg)			
GENERAL KIT SPECIFICATIONS	**MLP1-1S**		**MLP1-2**	
Dynamic Range: Multimode (62.5/125 µm), Single-mode (9/125 µm)	40 dB @ 850 nm		40 dB @ 850 & 1300 nm 20 dB @ 1300 nm	
Weight	2. 9 lbs (1.3 kg)			
Dimensions (H x W x D)	23.4 x 34 x 10.7 cm (9.2 x 13.4 x 4.2 in)			
Operating Temperature	-10°C to 50°C			
Storage Temperature	-30°C to 60°C			

Notes:

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

b. -10 dBm output is into 1000 micron fiber.

b. May be used to test 50 or 62.5 µm fiber with supplied mandrels.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. MLP1-01-2000 Revision R, 2011-06-29
Specifications are subject to change without notice.

NOYES®

CKSM-2 Contractor Series MM/SM Test Kit with Set Reference

Combining the CSM1-2 optical power meter, CSS1-MM Dual LED light source, and CSS1-SM Dual laser source, the CKSM-2 is a cost-effective test kit designed for performing insertion loss measurements on multimode as well as single-mode fiber optic links. Weighing only 0.4 lb each, units are compact and convenient for field use.

The CSS1-MM and CSS1-SM sources feature Dual output, 850/1300 nm LED or 1310/1550 nm laser respectively, from a single output port. Both CSS1 models offer 2 modes of operation, continuous wave (CW) and user selectable modulated Tone. The CSS1-MM LED and CSS1-SM Laser output ports are stabilized to ensure accurate test results per current TIA/EIA requirements. A large LCD display with backlight shows emitted wavelengths (nm), tone frequency (Hz), and indicates a low battery condition. The CSS1-MM model output port is equipped with a fixed SC connector while the CSS1-SM output port is equipped with Universal Connector Interface (UCI) base and SC adapter.

The CSM1-2 optical power meter operates at 850/1300/1310/1550 nm and features multiple test Tone detection for fiber identification. The CSM1-2 stores optical references for each calibrated wavelength. A large LCD display with backlight shows measured power (dBm or µW) or insertion loss (dB), calibrated wavelengths (nm), tone frequency (Hz), and indicates a low battery condition. The CSM1 optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. One adapter cap, 2.5 mm Universal, is included.

The CSS1-MM, CSS1-SM, and CSM1-2 are fully N.I.S.T. traceable.

Features

- Palm-sized, rugged, lightweight
- CW and modulated Tone
- 270, 330, 1000, and 2000 Hz Tone
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Large LCD with backlight
- Automatic power-off function
- Battery gauge
- Long battery life with AA alkaline
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy to use
- N.I.S.T traceable

Applications

- Certify multimode and single-mode fiber links per TIA/EIA standards
- Fiber identification prior to splicing

Ordering Information

INCLUDES	AFL NO.
CSS1-MM Dual LED Source, CSS1-SM Dual Laser souce, CSM1-2 optical power meter, AA batteries, 2.5 mm universal adapter cap, UCI-SC connector, 50 and 62.5µm mandrels, users guide, and carry case.	CKSM-2

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

The CKSM kits may be packed with one of cleaning kit options (purchased separately) as follows:

DESCRIPTION	INCLUDES	AFL NO.
Wet Cleaning Kit	8500-10-0016, Cletop -SB	8500-20-0900
	CCTS-25-0900 Connector Cleaning Tips for 2.5 mm ferrule in adapters or sockets (SC, FC, ST in adaptors). Blue (40 sticks per tube). Qty = 2 tubes	
	FCC2-00-0900, Optical Quality Cleaning Fluid for fiber connector end-faces.	
Dry Cleaning Kit	8500-10-0016, Cletop -SB 8500-10-0024 ACT-01 2.5 mm adapter cleaning tips – Qty = 200	8500-20-0901

© 2006-2011, AFL, all rights reserved. CKSM-20-2000 Revision D, 2011-07-29
Specifications are subject to change without notice.

NOYES®
CKSM-2 Contractor Series MM/SM Test Kit with Set Reference

CSS1-SM Specifications [a]

OPTICAL	CSS1-SM (SINGLE PORT)
Output Wavelength	1310 nm ±20 nm, 1550 nm ±20 nm
Spectral Width (max)	5 nm
Output Power	⩾0.0 dBm into 9/125 fiber
Emitter Type	Laser, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Output Stability	±0.05 dB typical over 1 hour (after 30-second) ±0.15 dB over 8 hours (after 30-second typically)
Tone Output	270, 330, 1000, 2000 Hz
GENERAL	
Output Connector	SC, FC, ST, LC
Power	2 AA batteries
Battery Life	75 hours typical
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)
Weight	0.18 kg (0.4 lb)

CSS1-MM Specifications [a]

OPTICAL	CSS1-MM (SINGLE PORT)	
Output Wavelength	850 nm ±20 nm	1300 nm +40/-60 nm
Spectral Width (max)	35 nm	170 nm
Output Power	⩾ -20.0 dBm into 62.5/125 fiber	
Emitter Type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Output Stability	±0.1 dB over 1 hour (after 30 sec typically) ±0.15 dB over 8 hours (after 30 sec typically)	
Tone Output	270, 330, 1000, 2000 Hz	
GENERAL		
Output Connector	SC	
Power	2 AA batteries	
Battery Life	30 hours typical	
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)	
Weight	0.18 kg (0.4 lb)	

CSM1-2 Specifications [a]

OPTICAL	CSM1-2
Calibrated Wavelengths	850, 1300, 1310, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm; +6 to -45 dBm for 850 nm
Accuracy [b]	±0.3 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries
Battery Life	>300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)
Weight	0.18 kg (0.4 lb)

Notes:

a. All specifications at 25°C.

b. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. CKSM-20-2000 Revision D, 2011-07-29
Specifications are subject to change without notice.

NOYES®

CKM-2 Contractor Series Multimode Test Kit with Set Reference

Features

- Palm-sized, rugged, lightweight
- CW and modulated Tone
- 270, 330, 1000, 2000 Hz Tone
- Power measurements in dBm or µW; insertion loss in dB
- Reference power level storage
- Large LCD with backlight
- Automatic power-off function
- Battery gauge
- Long battery life with AA alkaline
- Free 50 µm and 62.5 µm mandrels
- Cost-effective, easy to use
- N.I.S.T traceable

Applications

- Certify 50 or 62.5 µm multimode fiber links for any 850 or 1300 nm application, including Gigabit Ethernet (GBE), per TIA/EIA standards
- Fiber identification prior to splicing

Combining the CSM1-2 optical power meter and CSS1-MM Dual LED light source, the CMK-2 is a cost-effective test kit designed for performing insertion loss measurements on multimode fiber optic links. Weighing only 0.4 lb each, both units are compact and convenient for field use.

The CSS1-MM Dual light source features 850 nm and 1300 nm LED output from a single output port and offers 2 modes of operation, continuous wave (CW) and user selectable modulated Tone. The LED output is stabilized to ensure accurate test results per current TIA/EIA requirements and equipped with a fixed SC connector. A large LCD display with backlight shows emitted wavelengths (nm), tone frequency (Hz), and indicates a low battery condition.

The CSM1-2 optical power meter operates at 850/ 1300/ 1310/ 1550 nm and features multiple test Tone detection for fiber identification. The CSM1-2 stores optical references for each calibrated wavelength. A large LCD display with backlight shows measured power (dBm or µW) or insertion loss (dB), calibrated wavelengths (nm), tone frequency (Hz), and indicates a low battery condition. The CSM1 optical input port accepts a variety of NOYES thread-on style adapter caps (ordered separately) to meet a wide range of testing requirements. One adapter cap, 2.5 mm Universal, is included.

Both units offer a five-minute auto-off feature and long battery life from common AA alkaline batteries. The CSM1-2 and CSS1-MM are fully N.I.S.T. traceable.

Ordering Information

INCLUDES	AFL NO.
CSS1-MM dual optical light source, CSM1-2 optical power meter, AA batteries, 2.5 mm universal adapter cap, 50 and 62.5 µm mandrels, users guide, and carry case.	CKM-2

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

The CKM-2 kits may be packed with one of cleaning kit options (purchased separately) as follows:

DESCRIPTION	INCLUDES	AFL NO.
Wet Cleaning Kit	8500-10-0016, Cletop -SB	8500-20-0900
	CCTS-25-0900 Connector Cleaning Tips for 2.5 mm ferrule in adapters or sockets (SC, FC, ST in adaptors). Blue (40 sticks per tube). Qty = 2 tubes	
	FCC2-00-0900, Optical Quality Cleaning Fluid for fiber connector end-faces.	
Dry Cleaning Kit	8500-10-0016, Cletop -SB 8500-10-0024 ACT-01 2.5 mm adapter cleaning tips – Qty = 200	8500-20-0901

© 2006-2011, AFL, all rights reserved. CKM2-00-2000 Revision D, 2011-07-12
Specifications are subject to change without notice.

NOYES®
CKM-2 Contractor Series Multimode Test Kit with Set Reference

CSS1-MM Specifications [a]

OPTICAL	CSS1-MM (SINGLE PORT)	
Output wavelength	850 nm ±20 nm	1300 nm +40/-60 nm
Spectral width (max)	35 nm	170 nm
Output power	⩾ -20.0 dBm into 62.5/125 fiber	
Emitter type	LED, Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Output stability	±0.1 dB over 1 hour (after 30 sec typically), ±0.15 dB over 8 hours (after 30 sec typically)	
Tone output	270, 330, 1000, 2000 Hz	
GENERAL		
Output connector	SC	
Power	2 AA batteries	
Battery life	30 hours typical	
Operating temperature	-10°C to 50°C, 90 % RH (non-condensing)	
Storage temperature	-30°C to 60°C, 90 % RH (non-condensing)	
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)	
Weight	0.18 kg (0.4 lb)	

CSM1-2 Specifications [a]

OPTICAL	CSM1-2
Calibrated Wavelengths	850, 1300, 1310, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm; +6 to -45 dBm for 850 nm
Accuracy [b]	±0.3 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries
Battery Life	>300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	11.4 x 6.4 x 3.2 cm (4.5 x 2.5 x 1.3 in)
Weight	0.18 kg (0.4 lb)

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Accuracy measured at 25ºC and -10 dBm per N.I.S.T. standards.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2006-2011, AFL, all rights reserved. CKM2-00-2000 Revision D, 2011-07-12
Specifications are subject to change without notice.

VFI2 Visual Fault Identifier

VFI2 Visual Fault Identifier

NOYES®
VFI2 and HiLite Visual Fault Identifiers

The NOYES VFI2 and HiLite visible red laser sources from AFL are designed to troubleshoot faults on fiber optic cables. Light generated by these units will escape from sharp bends and breaks in jacketed or bare fibers, as well as poorly-mated connectors. They can quickly identify faults in fiber optic jumper cables, distribution frames, patch panels, and splice trays.

The HiLite and VFI2 are an excellent complement to an OTDR because they can locate faults inside the OTDR's dead-zone. Other applications include end-to-end continuity checks, identifying connectors in patch panels and fibers during splicing operations.

Trace cables in messy or undocumented setups. A VFI unit provides a quick means of finding the "other end" from amongst cluttered cables. Simply connect the VFI to one end and look for the visual red light transmitted out the opposite connector.

- **HiLite is a miniature key-chain mountable (key chain included) fault locating tool.**
- **VFI2 is a larger hand-sized package offering longer battery runtime.**

Fiber Coupled Lasers for Best Test Results: NOYES VFI2 units deliver 1 mW of output power into 9/125 single-mode fiber to ensure long range and exceptional brightness for locating defects in single-mode and multimode fibers.

The VFI2 and HiLite units use a threaded connector adapter interface to support adapter removal for connector cleaning and field changing of adapter styles.

- **2.5 mm adapter accepts PC and angled connectors FC, SC, ST, etc.**
- **1.25 mm adapter accepts LC and MU connectors.**

A Visible Fault Indicator (VFI) is an essential tool for fiber technicians.

Features

- Visible red laser source, 650 nm
- High power, 1 mW into 9/125 single-mode fiber
- Compact size
- Universal connector interface for quick connection
- 2.5 mm Universal adapter included
- 1.25 mm Universal adapter available

Applications

- Identify fiber faults inside OTDR deadzone
- Identify sharp bends or breaks in fibers
- Identify poorly mated connectors
- Verify AFL FAST™ Connector Installation

© 2002-2011, AFL, all rights reserved. VFI3-00-2000 Revision M, 2011-07-29
Specifications are subject to change without notice.

NOYES®
VFI2 and HiLite Visual Fault Identifiers

Specifications [a]

OPTICAL	VFI2	HILITE
Emitter Type	Laser, Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1:2007-03	
Wavelength	650 nm ±20 nm	
Output Power	1 mW (into single-mode fiber)	
Modulation	2 Hz or CW selected	2 Hz
GENERAL		
Adapter	2.5 mm Universal	
Power	2 AA alkaline batteries (60 hours typical)	1 AAA alkaline battery (16 hours typical)
Operating Temperature	-10°C to 50°C, 85 % humidity non condensing	
Storage Temperature	-30°C to 60°C, 95 % humidity non condensing	
Size (H x W x D)	14.0 x 6.2 x 3.2 cm (5.5 x 2.4 x 1.3 in)	7.0 x 3.6 x 1.5 cm (2.8 x 1.4 x 0.6 in)
Weight	<200 g (7.06 oz)	50 g (1.75 oz)

Ordering Information

INCLUDES	AFL NO.
VFI2 unit, instruction card, and carrying case	VFI2
HiLite unit, instruction card, and carrying case	HiLite

Adapters

DESCRIPTION	AFL NO.
2.5 mm Universal adapter [b] with captivated sleeve	2900-50-0007MR
1.25 mm Universal adapter [c] with captivated sleeve	2900-50-0010MR

Notes:

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

b. 2.5 mm Universal adapter accepts SC, FC, ST, E2000 ferrules.

c. 1.25 mm Universal adapter accepts LC, MU ferrules.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. VFI3-00-2000 Revision M, 2011-07-29
Specifications are subject to change without notice.

Features

- Eye-safe viewing
- CW or 2 Hz output
- Direct connect – No fan-outs necessary
- Test 8 and 12 fiber MTP assemblies
- Test polarity, continuity and fiber mismatch

NOYES®
MT Tracer
12-Fiber Visible Laser Source and Display

The MT Tracer is a compact multi-fiber visual fault identifier (red laser source) supporting 8 or 12 fiber MTP® connections. The user simply connects the 12-fiber cable directly to the unit. Fibers can be tested individually or all at once. By progressing sequentially through the fibers, cables can be quickly checked for polarity by verifying the proper order at the output.

The MT Tracer Display is a passive optical device designed to receive the light from the MT Tracer Source and provide an eye-safe method of viewing the red light. Identification is accomplished by expanding the output of the MT ferrule to a large, easy to read panel–large enough to be read from several feet away.

Specifications

MT TRACER SOURCE SPECIFICATIONS	
Optical Wavelength	650 ±10 nm
Output Power Level	Minimum 0.5 mW, typical 1.0 mW (at each SM 9/125 fiber at the end of MTP patchcord)
Optical Connector	MTP male SM, angled
Number of Output Fibers	12
Power	2 AA alkaline batteries, optional AC adapter
Battery Life (alkaline)	40 hours
Low Battery	Indicated by 2 Hz LED blinking
Operation Temperature	0°C to 40°C, RH 85 % non-condensing
Storage Temperature	-30°C to 50°C, RH 95 % non-condensing
Dimensions	9.9 x 3.8 x 14.3 cm (3.9 x 1.5 x 5.6 in)
Weight	0.29 kg (0.63 lb)
MT TRACER DISPLAY SPECIFICATIONS	
Input Connector	MTP angled male 62.5 µm fiber
No. of input Connectors	1 (12-fiber MTP)
Power Consumption	N/A
Operation Temperature	0°C to 40°C. RH 85 % non-condensing
Storage Temperature	-30°C to 50°C, RH 95 % non-condensing
Dimensions	9.9 x 3.8 x 14.3 cm (3.9 x 1.5 x 5.6 in)
Weight	0.18 kg (0.4 lb)

Ordering Information

INCLUDES	AFL NO.
MT Tracer Source, MT Tracer Display, batteries, instruction card, and carry case.	MT Tracer Kit

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. TRCR-00-2000 Revision D, 2011-08-11
Specifications are subject to change without notice.

OFI-FTTx Active ONT Detector
U.S. Patent 7916983

NOYES®

OFI-FTTx Active ONT Detector

The OFI-FTTx is a rugged, hand-held optical fiber identifier designed to identify the presence or absence of an active Optical Network Terminal (ONT) on FTTx F2 fibers at the Fiber Distribution Hub (FDH). During a test the F2 fiber does not have to be removed from service. Thus the OFI-FTTx can verify whether a splitter pigtail at the FDH is connected to an active circuit before it is disconnected for fault location or re-use. The OFI-FTTx can help verify FTTx network records and recover splitter pigtails and F2 fibers that are connected at the FDH but, in fact, are available for new customers.

When applied to a splitter pigtail at the FDH, the OFI-FTTx will report either that the ONT is 'Active' or 'Not Detected'. Time to complete each test is typically one second. The OFI-FTTx is compatible with 2 mm jumper cable containing standard single-mode fiber, such as SMF-28e®, or bend insensitive fiber (BIF) with a 15 mm bend radius specification, such as AFL Bend Insensitive.

The OFI-FTTx is powered by two standard AA alkaline batteries, provides a low battery indication and can typically be operated 800 times before battery replacement is necessary.

Features

- Rugged, hand-held, lightweight
- In-service detection of upstream (1310 nm) activity on FTTx networks
- Determines which unparked splitter pigtails are connected to ONTs
- Does not require travel to customer (ONT) site
- Does not require disconnect of splitter pigtails
- Visual and audible indicators
- Battery operated
- Low battery indication

Applications

- FACILITY RECOVERY:
  Harvest unparked splitter legs and F2 fibers not connected to subscribers
- TROUBLE-SHOOTING:
  Real-time confirmation of OLT to ONT connectivity at the FDH

© 2002-2011, AFL, all rights reserved. OFI5-10-2000 Revision F, 2011-07-19
Specifications are subject to change without notice.

NOYES®

OFI-FTTx Active ONT Detector

Specifications [a]

MODEL	OFI-FTTX
Network Types	FTTx BPON, GPON, EPON, ≥1:4 splitter ratio
Network Locations	Between splitter and customer ONT
Fiber Type	2 mm jacketed SMF-28e®, 15 mm bend radius AFL Bend Insensitive, and equivalents
Induced Loss (typ.)	<1 dB @ 1550 nm
Test Time (typ.)	1 sec
Operating Range [b]	Loss from ONT to FDH: 0 to 7 dB (BPON), 0 to 9 dB (GPON, EPON)
User-interface	Audio indicator and four red LEDs
Power	2 AA batteries
Battery Life	800 tests typical
Operating Temperature	-10°C to 40°C
Storage Temperature	-20°C to 50°C
Dimensions (H x W x D)	22 x 3.8 x 3.2 cm (8.5 x 1.5 x 1.25 in)
Weight	0.23 kg (0.5 lbs)

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Maximum values are typical and depend on fiber type and jacket material.

Ordering Information

INCLUDES	AFL NO.
OFI-FTTx, users guide and carry case	OFI-FTTx

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. OFI5-10-2000 Revision F, 2011-07-19
Specifications are subject to change without notice.

OFI-400 OFI-400C OFI-400HP

Features

- Unique optical head with two-position plunger for use with all fiber types
- Built-in power meter with Set Reference feature
- Low insertion loss for in-service ID tasks
- Indicates direction of traffic
- Detects 270 Hz, 330 Hz, 1 kHz, 2 kHz test tones [2]
- High Power detection (OFI-400HP model)
- Powered by AAA batteries
- Automatic power down feature and battery gauge
- Built-in self-test
- One-hand operation
- Hand-held and lightweight
- Rugged, drop-proof construction
- Three-year calibration interval

NOYES®

OFI-400 Series Optical Fiber Identifiers

NOYES OFI-400 Optical Fiber Identifiers are designed to detect and measure [1] the core power levels of optical signals on single-mode optical fiber without disconnecting or cutting the fiber. These instruments are simply clamped onto a fiber and indicate the presence and direction of traffic, continuous test signals and modulated test tones. This permits network personnel to easily and quickly identify a specific fiber without risk of revenue service disruption. The NOYES OLS7, OLS2, CSS1-SM and CSS1-MM series of optical light sources are ideal companions for the OFI-400 optical fiber identifiers.

No Adapters to Purchase, Store, Swap, or Misplace

The OFI-400 uses a unique optical head design featuring a two-position plunger that enables it to be used with 250 µm, 900 µm and ribbon fiber or 2 mm and 3 mm jacketed fiber. Other brands of optical fiber identifiers require users to purchase, store and swap out optical plungers each time a different type of fiber is tested. The OFI-400 optical head induces a safe, repeatable macro-bend to the fiber that allows a small amount of light to escape for analysis. The insertion loss induced by the macro-bend is too small to affect the signal on the fiber and the integrity of the fiber is unaffected by the measurement process.

NOYES OFI-400 instruments are designed to be simple, easy-to-use and reliable. Each features an ergonomically designed macro-bend trigger that is comfortable to use. An integrated, backlit LCD display allows OFI-400s to be used in dimly lit spaces. Powered by 1.5 V AAA batteries, the OFI-400 can make thousands of fiber tests before repalcing batteries.

Applications

- Live fiber detection to avoid technician-induced outages
- Fiber identification with CW or tone
- Core power measurements
- Optimized for use on 250 µm, 900 µm and ribbon fiber or 2 mm and 3 mm jacketed fiber

Notes:

1. Core power measurement accuracy is influenced by fiber type, coating material, jacket composition/hardness/color, temperature and other factors.
2. Requires compatible light source.

© 2004-2011, AFL, all rights reserved. OFI4-00-2000, Revision 1A, 2011-10-14
Specifications are subject to change without notice.

NOYES®

OFI-400 Series
Optical Fiber Identifiers

OFI-400

The OFI-400 is designed for use with a wide range of single-mode fibers including 250 µm (bare) coated, 900 µm buffered and ribbon fibers or 2 mm and 3 mm jacketed fibers. The OFI-400 is ideal for network personnel involved in installation, reconfiguration, restoration and maintenance tasks that involve bare, buffered, jacketed or ribbon fibers in outside plant pedestals, fiber cabinets, aerial enclosures and inside plant premises demarcation cabinets. The slim design of the OFI-400 head facilitates access in crowded splice trays.

OFI-400C

Designed specifically for use with 2 mm or 3 mm jacketed single-mode fibers, the OFI-400C is ideal for general purpose maintenance, configuration and installation tasks. The OFI-400C is functionally equivalent to the OFI-400 but includes an optical head design and a calibration scheme optimized for use with jacketed fiber.

OFI-400HP

The OFI-400HP is designed for use where high levels of optical power are present. This includes fibers carrying a single high-power signal, CWDM or DWDM signals with high total power levels, amplified optical signals, or pump lasers associated with EDFA or Raman amplifiers.

When the detected power levels are above +23 dBm (200 mW) and display reaches +23 dBm (200 mW) or greater, the OFI-400HP will display High warning indication.

Ordering Information

All NOYES OFI-400 products include a user's guide, 2 AAA batteries and a soft carry case. Each carries a 1-year warranty and a 3-year recommended calibration interval.

INCLUDES	AFL NO.
Users guide, 2 AAA batteries, soft carry case	OFI-400
Users guide, 2 AAA batteries, soft carry case	OFI-400C
Users guide, 2 AAA batteries, soft carry case	OFI-400HP

© 2004-2011, AFL, all rights reserved. OFI4-00-2000, Revision 1A, 2011-10-14
Specifications are subject to change without notice.

NOYES®

OFI-400 Series Optical Fiber Identifiers

Specifications

DETECTABLE SIGNAL RANGE					
FIBER TYPE [a]	**PARAMETER**	**TEST CONDITIONS** [b]	**OFI-400**	**OFI-400C**	**OFI-400HP**
250 µm coated fiber (SMF-28 with 250 µm CPC6 coating)	Minimum level detected, average power	1310 nm, CW, Tone, Traffic 1550 nm, CW, Tone, Traffic	-45 dBm -50 dBm	N/A	N/A
	Insertion loss (typical/max)	@ 1310 nm @ 1550 nm	0.6 dB/0.8 dB 2.5 dB/2.6 dB	N/A	N/A
3 mm jacketed fiber (SMF-28/28E with 250 µm CPC6 coating and 3 mm, yellow jacket)	Minimum level detected, average power	1310 nm, CW, Tone, Traffic 1550 nm, CW, Traffic 1550 nm, Tone	-30 dBm -33 dBm -33 dBm	-35 dBm -40 dBm -40 dBm	-30 dBm -40 dBm -35 dBm
	Insertion loss (typical)	@ 1310 nm @ 1550 nm	1.0 dB 2.8 dB	1.0 dB 2.8 dB	0.2 to 0.5 dB 0.8 to 1.3 dB

OPTICAL SPECIFICATIONS [c]	**OFI-400**	**OFI-400C**	**OFI-400HP**
Detector Type	InGaAs	InGaAs	InGaAs
Wavelength Range	800 - 1700 nm	800 - 1700 nm	800 - 1700 nm
Calibrated Fiber and Wavelength	250 µm @ 1550 nm (SMF-28/28E)	3 mm @ 1550 nm (SMF-28/28E)	3 mm @ 1550 nm (SMF-28/28E)
Fiber Stress	<100 kPSI max	<100 kPSI max	<100 kPSI max
Working Fiber Size	250 µm, 900 µm, ribbon, 2 mm and 3 mm jacketed	2 mm and 3 mm jacketed	2 mm and 3 mm jacketed
Tone Detection	270, 330, 1000, 2000 Hz (±5 %)	270, 330, 1000, 2000 Hz (±5 %)	270, 330, 1000, 2000 Hz (±5 %)
Core Power Measurement Range	+13 to -50 dBm @ 1550 nm, 250 µm (SMF-28/28E)	+13 to -40 dBm @ 1550nm, 3 mm (SMF-28/28E)	+33 to -40 dBm @ 1550 nm, 3 mm (SMF-28/28E)
Measurement Units	dBm, dB	dBm, dB	dBm, dB

GENERAL SPECIFICATIONS	**ALL OFI-400 MODELS**
User Interface	Multi 7 segment LCD; 3 LEDs; 1 piezo buzzer
Power	2 x 1.5 V AAA alkaline
Battery Life	>10,000 operations typical
Operation Temperature	0°C to 50°C 90 % RH (Non-condensing)
Storage Temperature	-30°C to +60°C 90 % RH (Non-condensing)
Dimensions (H x W x D)	22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)
Weight	168 g (6 oz)

Notes:

a. 250 µm coated fiber parameters are specified with OFI plunger in the "250 / 900 / RIB" position.
2 mm / 3 mm jacketed fiber parameters are specified with OFI plunger in the "2 mm / 3 mm" position.

b. CW is a light signal that is not modulated.
Traffic is a light signal modulated by high speed user data.
Tone is a light signal modulated into a nominal 50 % duty cycle square wave.

c. Unless noted otherwise, all specifications are typical.
Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.
All specifications stated above are as measured at 25°C.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2004-2011, AFL, all rights reserved. OFI4-00-2000, Revision 1A, 2011-10-14
Specifications are subject to change without notice.

OFI-200

NOYES®

OFI-200 Optical Fiber Identifier

NOYES Optical Fiber Identifiers are rugged, hand-held, and easy-to-use fiber optic test instruments designed to detect optical signals transmitted through a single-mode fiber without disrupting traffic. During installation, maintenance, rerouting or restoration, it is often necessary to isolate a specific fiber. By simply clamping an Optical Fiber Identifier onto a gently-bent fiber, the unit will indicate if there is [No Signal], [Tone], or [Traffic] and identify signal direction.

The OFI-200 model is equipped with a unique two-position head design that can be configured to work with 250 µm, 900 µm, ribbon or jacketed fiber in seconds, without tools or adjustments. When testing coated fibers, the slim design of the OFI-200 allows easier access on a splice tray where the amount of work space is limited. The clamping trigger is ergonomically designed to fit the natural motion of the operator's hand. A high-impact molded plastic case makes the OFI-200 suitable for use outside plant or in the central office.

The OFI-200 is battery operated with a battery indication feature and performs thousands of tests before battery replacement is necessary.

Features

- Rugged, hand-held, lightweight
- Accepts 250 µm, 900 µm coated fiber, 3 mm jacketed fiber cable and ribbon fiber
- No head swapping or adjustments
- Identifies light carrying fiber and indicates direction of traffic
- Low insertion loss, traffic remains uninterrupted
- Indicates Tone signal visually and audibly
- 2 kHz Tone detection
- Low battery indication

Applications

- Live fiber identification - used during installation, maintenance, rerouting or restoration to positively identify fibers prior to cutting and splicing
- Tone detection

Ordering Information

INCLUDES	AFL NO.
Users guide and carry case	OFI-200D

© 2002-2011, AFL, all rights reserved. OFI1-11-2000, Revision C, 2011-10-14
Specifications are subject to change without notice.

NOYES®

OFI-200 Optical Fiber Identifier

Specifications

DETECTABLE SIGNAL RANGE			
FIBER TYPE [a]	**PARAMETER**	**TEST CONDITIONS** [b]	**OFI-200D**
250 µm coated fiber (SMF-28 with 250 µm CPC6 coating)	Minimum level detected, average power	1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone	-40 dBm -43 dBm -45 dBm -50 dBm
	Insertion loss (typical/max)	1310 nm 1550 nm	0.6 dB 2.5 dB
3 mm jacketed fiber (SMF-28 with 250 µm CPC6 coating and 3 mm, yellow jacket)	Minimum level detected, average power	1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone	-30 dBm -32 dBm -33 dBm -37 dBm
	Insertion loss (typical)	1310 nm 1550 nm	0.8 dB 2.5 dB

OPTICAL SPECIFICATIONS [c]

MODEL	**OFI-200D**
Detector Type	InGaAs
Wavelength Range	800 - 1700 nm
Calibrated Size of Fiber and Wavelength	N/A
Fiber Stress	<100 kPSI max
Fiber Size	250 µm, 900 µm, ribbon, 2 mm or 3 mm and jacketed fiber
Tone Detection	2000 ±100 Hz

GENERAL SPECIFICATIONS

Display Type	N/A
Power	1 9-Volt Alkaline
Battery Life	>10,000 operations typical
Operation Temperature	0°C to 50°C 90 % RH (Non-condensing)
Storage Temperature	-30°C to +60°C 90 % RH (Non-condensing)
Dimensions (H x W x D)	22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)
Weight	210 g (7.5 oz)

Notes:

a. 250 µm coated fiber parameters are specified with OFI plunger in the "250/900/RIB" position.
2mm/ 3mm jacketed fiber parameters are specified with OFI plunger in the "2 mm/3 mm" position.

b. CW is a light signal that is not modulated.
Traffic is a light signal modulated by a random data sequence.
Tone is a light signal modulated into a nominal 50% duty cycle square wave.

c. Unless noted otherwise, all specifications are typical. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.
All specifications stated above are as measured at 25°C.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. OFI1-11-2000, Revision C, 2011-10-14
Specifications are subject to change without notice.

DFS1 Digital FiberScope

Clean connector

Dirty connector

DFS1 Digital FiberScope with M200 OTDR

Features

- Ergonomic, hand-held design
- Single-handed operation
- 400x magnification
- Fast, easy focus and display capture
- Video output via USB port to M200, M700, C840, C850, C860 or C880
- Powered from USB; no batteries required
- Extensive assortment of interchangeable fiber connector and bulkhead adapter tips
- Adapter tips easily changed; no tools required

NOYES®

DFS1 Digital FiberScope

The DFS1 Digital FiberScope supports magnified video inspection of optical fiber connector end-faces during fiber optic cable and connector installation and maintenance. The ergonomically designed hand-held unit illuminates fiber end-faces and delivers magnified images via USB port to AFL's M-series OTDRs (M200, M700) or C-series OTDRs and Certification Testers (C840, C850, C860, C880). FiberScope software displays, labels and stores captured images as part of connector installation and/or maintenance records.

A large adjustment knob permits easy focusing using real-time view. Once focused, a conveniently located trigger button signals the attached display device to capture the image for analysis and archiving. The scope's ergonomic shape and control locations support comfortable, single-handed operation.

The DFS1 is powered through the USB port, eliminating the need for an additional battery or AC power supplies. Electronic video inspection eliminates all danger of eye damage from active (lit) fibers carrying either visible or infrared wavelengths.

An extensive assortment of adapters supports inspection of a wide range of optical jumper cable connector ferrules and bulkhead adapters. Bulkhead adapter tips are available in multiple lengths as well as 60° angle. Connector adapters are available for PC, UPC or APC polished ferrules in 1.25 mm, 2.5 mm and other diameters.

The DFS1 is available in three different kits which provide either PC/UPC adapters, APC adapters or no adapters. All kits include soft carry case, an adapter tip storage box, quick reference guide, plus FiberScope display software update for M200, M700, C840, C850, C860 and C880.

Applications

- Ideal for telco, broadband and enterprise applications
- Optical connector and bulkhead adapter inspection
- Display and analyze fiber end-face quality on M200, M700, C840, C850, C860 or C880
- Visually inspect fiber end-faces for damage or contamination impairing optical transmission
- Generate installation inspection records, associating captured digital photo with fiber ID

© 2011, AFL, all rights reserved. DFS1-00-2000 Revision 1B, 2011-05-24
Specifications are subject to change without notice.

DFS1 Digital FiberScope with M700 OTDR

NOYES®
DFS1 Digital FiberScope

Specifications (All specifications valid at 25°C unless otherwise specified)

PARAMETERS	VALUE
400X	Magnification
~400 µm x 300 µm	Field of View
0.5 µm detectable	Resolution
0°C to 50°C	Operating Temperature
-20°C to 70°C	Storage Temperature
Manual adjustment, 2 mm max travel	Focus
35 mm diameter x 175 mm length (without tip)	Dimensions
200 g	Weight
Blue LED	Light Source
USB port of M-series OTDRs or C-series OTDRS and Certification Testers	Power Supply

DFS1-00-04XU

Ordering Information

The DFS1 is available in three different kits which provide either PC/UPC adapters, APC adapters, or no adapters. All kits include soft carry case, a storage box to hold up to six adapter tips, FiberScope display software update for M series OTDRs (M200, M700) or C series OTDRs and Certification Testers (C840, C850, C860, C880), and a quick reference guide.

DESCRIPTION	AFL NO.
DFS1 Digital FiberScope PC/UPC Inspection Kit includes: (1) DFS1-00-04X0MR DFS1 USB Digital FiberScope (1) DFS1-00-0001MR Universal 1.25 mm male PC adapter tip (1) DFS1-00-0002MR Universal 2.5 mm male PC adapter tip (1) DFS1-00-0003MR SC and FC female bulkhead adapter tip (1) DFS1-00-0004MR LC female bulkhead adapter tip (1) DFS1-04-0001MZ soft carry case for scope and adapters (1) 8500-05-0001MZ One-Click Cleaner SC, ST, FC (1) 8500-05-0002MZ One-Click Cleaner LC/MU (1) 1400-01-0093MZ 6-compartment adapter tip storage box (1) Digital FiberScope display software update for M200, M700, C840, C850, C860, or C880	**DFS1-00-04XU**
DFS1 Digital FiberScope APC Inspection Kit includes: (1) DFS1-00-04X0MR DFS1 USB Digital FiberScope (1) DFS1-01-0002MR Universal 2.5 mm male APC adapter tip (1) DFS1-01-0003MR SC/APC and FC/APC bulkhead adapter tip (1) DFS1-01-0011MR SC/APC bulkhead adapter tip (1) DFS1-04-0001MZ soft carry case for scope and adapters (1) 8500-05-0001MZ One-Click Cleaner SC, ST, FC (1) 1400-01-0093MZ 6-compartment adapter tip storage box (1) Digital FiberScope display software update for M200, M700, C840, C850, C860, or C880	**DFS1-00-04XA**
DFS1 USB Digital Fiber Inspection Kit without Adapters includes: (1) DFS1-00-004X0MR DFS1 USB Digital FiberScope (1) Soft carry case for scope and adapters (1) 6-compartment adapter tip box (1) Digital FiberScope display software update for M200, M700, C840, C850, C860, or C880	**DFS1-00-04XN**

© 2011, AFL, all rights reserved. DFS1-00-2000 Revision 1B, 2011-05-24
Specifications are subject to change without notice.

NOYES®
DFS1 Digital FiberScope

DFS1-00-0001MR


DFS1-00-0002MR


DFS1-00-0003MR


DFS1-00-0004MR


DFS1-00-0013MR

Ordering Information (continued)

DFS1 Accessories

DESCRIPTION	AFL NO.
Soft carry case for DFS1 Digital FiberScope and adapters	DFS1-04-0001MZ
6-compartment adapter tip storage box	1400-01-0093MZ
11-compartment adapter tip storage box	1400-01-0094MZ
One-Click Cleaner SC, ST, FC	8500-05-0001MZ
One-Click Cleaner LC/MU	8500-05-0002MZ

DFS1 Adapter Tips

The following table identifies commonly required adapter tips. Other adapter tips available. Please consult the factory for additional adapter tips and prices.

DESCRIPTION	AFL NO.
PC FERRULE CONNECTOR ADAPTER TIPS	
Universal 1.25 mm tip for PC ferrule connector	DFS1-00-0001MR
Universal 2.5 mm tip for PC ferrule connector	DFS1-00-0002MR
Universal 2.0 mm tip for PC ferrule connector	DFS1-00-0005MR
Slim 1.6 mm tip for PC ferrule (termini)	DFS1-00-0006MR
Slim 1.25 mm probe tip for LuxCis and termini	DFS1-00-0038MR
Slim 2.5 mm PC ferrule tip for ELIO and termini	DFS1-00-0039MR
Tip for ELIO 1.25 mm ferrule connector	DFS1-00-0008MR
SC/PC AND FC/PC BULKHEAD ADAPTER TIPS	
Tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0003MR
Short extended tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0010MR
Medium extended tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0011MR
Long extended tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0012MR
60° angled tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0013MR
60º angled tip for SC/PC bulkhead adapter	DFS1-00-0040MR
ST/PC BULKHEAD ADAPTER TIPS	
Tip for ST/PC bulkhead adapter	DFS1-00-0014MR
Short extended tip for ST/PC bulkhead adapter	DFS1-00-0015MR
Medium extended tip for ST/PC bulkhead adapter	DFS1-00-0016MR
Long extended tip for ST/PC bulkhead adapter	DFS1-00-0017MR
60° angled tip for ST/PC bulkhead adapter	DFS1-00-0018MR
LC/PC BULKHEAD ADAPTER TIPS	
Tip for LC/PC bulkhead adapter	DFS1-00-0004MR
Short extended tip for LC/PC bulkhead adapter	DFS1-00-0019MR
Medium extended tip for LC/PC bulkhead adapter	DFS1-00-0020MR
Long extended tip for LC/PC bulkhead adapter	DFS1-00-0021MR
60° angled tip for LC/PC bulkhead adapter	DFS1-00-0022MR
E2000/PC BULKHEAD ADAPTER TIPS	
Short extended tip for E2000/PC bulkhead adapter	DFS1-00-0023MR
Medium extended tip for E2000/PC bulkhead adapter	DFS1-00-0024MR

© 2011, AFL, all rights reserved. DFS1-00-2000 Revision 1B, 2011-05-24
Specifications are subject to change without notice.

NOYES®
DFS1 Digital FiberScope

Ordering Information (continued)

DESCRIPTION	AFL NO.
Long extended tip for E2000/PC bulkhead adapter	DFS1-00-0025MR
MU/PC BULKHEAD ADAPTER TIPS	
Tip for MU/PC bulkhead adapter	DFS1-00-0026MR
Short extended tip for MU/PC bulkhead adapter	DFS1-00-0027MR
Medium extended tip for MU/PC bulkhead adapter	DFS1-00-0028MR
Long extended tip for MU/PC bulkhead adapter	DFS1-00-0029MR
60° angled tip for MU/PC bulkhead adapter	DFS1-00-0030MR
MTP/PC MULTI-FIBER ADAPTER TIPS (FERRULE & BULKHEAD)	
MTP/PC ferrule and bulkhead adapter extended tip; includes base plus MTP/PC front end tip	DFS1-00-0037MR
Front end tip for MTP/PC ferrule and bulkhead adapter	DFS1-00-0041MR
MTP/PC and MTP/APC ferrule and bulkhead adapter extended tip kit; includes base plus MTP/PC and MTP/APC front end tips	DFS1-00-0042MR
MISCELLANEOUS PC BULKHEAD ADAPTER TIPS	
Tip for LEMO 2.0 mm bulkhead adapter	DFS1-00-0031MR
Tip for LX.5/PC bulkhead adapter	DFS1-00-0032MR
Tip for 2.0 mm termini bulkhead adapter	DFS1-00-0033MR
Tip for 1.6 mm termini bulkhead adapter	DFS1-00-0034MR
Tip for ELIO 1.25 mm bulkhead adapter	DFS1-00-0036MR
APC TIPS	
Universal 1.25 mm tip for APC ferrule connector	DFS1-01-0001MR
Universal 2.5 mm tip for APC ferrule connector	DFS1-01-0002MR
Tip for SC/APC and FC/APC bulkhead adapter	DFS1-01-0003MR
Tip for SC/APC bulkhead adapter	DFS1-01-0011MR
Tip for LC/APC bulkhead adapter	DFS1-01-0004MR
Short extended tip for SC/APC bulkhead adapter	DFS1-01-0005MR
60° angled tip for SC/APC bulkhead adapter	DFS1-01-0006MR
Tip for E2000/APC bulkhead adapter	DFS1-01-0008MR
Tip for LX.5/APC bulkhead adapter	DFS1-01-0009MR
MTP/APC ferrule and bulkhead adapter extended tip kit; includes base plus MTP/APC front end tip	DFS1-01-0010MR
Front end tip for MTP/APC ferrule and bulkhead adapter	DFS1-01-0012MR

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2011, AFL, all rights reserved. DFS1-00-2000 Revision 1B, 2011-05-24
Specifications are subject to change without notice.

NOYES®
AFL SimpleView™ Fiber Inspection Software

NEW

AFL SimpleView Fiber Inspection Software is an application that permits the NOYES DFS1 Digital FiberScope to be used with Windows® XP or Windows 7 computers. AFL SimpleView software provides a live, high-resolution video image of the end-face of an optical fiber. This capability enables fiber installers and network technicians to inspect and troubleshoot optical fibers and verify that they are clean and undamaged.

The DFS1 Digital FiberScope is an ergonomically-designed hand-held inspection probe that illuminates the end-face of single-mode or multimode optical fiber and delivers live video images to laptop computers and NOYES OTDRs.

Capabilities

- 0.5 µm detection
- 1.0 µm optical resolution
- 250 µm field of view (minimum)
- Integrated focus control

Applications

- Document "as-built" condition of patch cords and connectors
- Document "as-inspected" condition of malfunctioning links
- Perform final or incoming inspection of equipment and components

Minimum System Requirements

- OS: Windows XP or Windows 7
- USB: USB 1.1 Host

Scan the QR code with a smart phone to learn more.

AFL SimpleView software is available as a free download at:

http://www.AFLglobal.com/Contact/NOYES/SimpleView-Download

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2011, AFL, all rights reserved. SVSW-00-2000 Revision 1B, 2011-09-19
Specifications are subject to change without notice.

NOYES®
OFS 300 Optical Microscope

Inspect patch cords with NOYES OFS 300 from AFL. Designed for field use, with lab quality optics, the OFS 300 scope delivers a high quality end-face image at 200x magnification. Quickly identify scratches, dirt or other problems normally associated with poor network performance.

FACT: A large percentage of network failures are caused by dirty or damaged end-faces on fiber optic connectors. Inspecting jumper end-faces prior to connection is critical to network performance. The OFS 300 scope provides a quality optical inspection tool at an affordable price.

Safety: A built-in laser safety filter provides >40 dB IR protection to reduce risk of injury to the eye if accidentally viewing an active fiber.*

The OFS 300 features a universal adapter cap mount that accepts a variety of NOYES thread-on style adapter caps (ordered separately) to ease inspection of many connector style. A momentary power switch located on the top panel keeps one hand free for focusing.

Tri-pod mount: For stationary work, the tri-pod mount allows the OFS 300 to attach to any standard camera tri-pod.

The OFS 300 offers 60 hours of continuous battery life from standard 2 AA batteries and features an LED indicator, which will flash when batteries require replacement.

*Always follow your company's laser safety procedures and never use an optical microscope to view live fiber optic connectors.

Features

- Laser safety filter installed
- 200x image size
- 2.5 mm Universal connector Included
- Low battery LED indicator
- Long battery life with 2 AA alkaline
- Rugged, hand-held, easy-to-use
- Tripod mount

Applications

- Verify jumper ends are clean prior to connecting to network
- Inspect end-faces for scratches or pits
- Eliminate the most common network fault (bad connectors)

Specifications [a]

OPTICAL SPECIFICATIONS	
Nominal Magnification	200X
Adapter Mount	Universal, thread-on
Safety Filter	Schott KG3, >40 dB IR
GENERAL SPECIFICATIONS	
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +50°C
Power	2 AA batteries
Battery Life	>60 hours
Weight in Use	0.67 kg (1.5 lb)
Size (H x W x D)	13 x 5 x 20 cm (5 x 2 x 8 in)

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

Ordering Information

INCLUDES	AFL NO.
OFS 300 Inspection Scope, 2 AA batteries, neck strap, 2.5 mm universal adapter cap, and user's guide	OFS 300

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. OFS1-00-2000 Revision U, 2011-07-27
Specifications are subject to change without notice.

NOYES®
VS 300 View Safe Video Microscope

Inspect patch cords with NOYES VS 300 from AFL. Designed for field use, the VS 300 scope delivers a high quality end-face image at 400x magnification. Quickly identify scratches, dirt or other problems normally associated with poor network performance.

FACT: A large percentage of network failures are caused by dirty or damaged end-faces on fiber optic connectors. Inspecting jumper end-faces prior to connection is critical to network performance. The VS 300 scope provides a quality optical inspection tool at an affordable price.

Safety by design: The VS 300 utilizes a camera and micro display to provide an end-face image while eliminating the optical path to the technician's eye. This ensures no harm in the case of inadvertent viewing of live fibers. *

The VS 300 features a universal adapter cap mount that accepts a variety of NOYES thread-on style adapter caps (ordered separately) to ease inspection of many connector style. A momentary power switch located on the top panel keeps one hand free for focusing.

Tri-pod mount: For stationary work, the tri-pod mount allows the VS 300 to attach to any standard camera tri-pod.

Auto time-out feature provides long battery life from standard 2 AA alkaline batteries.

*Always follow your company's laser safety procedures and never use an optical microscope to view live fiber optic connectors.

Features

- Safety: The VS 300 has no optical path to the user's eye
- Ergonomic: Comfortable molded easy-grip case
- 2.5 mm Universal Adapter included (accepts FC, ST, FC, etc.)
- View PC and Angled connector types including MPO/MTP
- NTSC Video Output

Applications

- Verify jumper ends are clean prior to connecting to network
- Inspect end-faces for scratches or pits
- Eliminate the most common network fault (bad connectors)

Specifications [a]

OPTICAL	
Magnification	400X equivalent to 8" monitor for 20" distance
Adaptor Mount	Thread-on (Universal)
Safety Filter	Not Required - No optical path to user
Video Output	NTSC
GENERAL	
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +60°C
Humidity	0 to 90 % (non - condensing)
Power Supply	2 AA alkaline batteries, optional AC adapter
Battery Life	10 hours continuous
Indicators	Low battery
Weight	0.42 kg (0.94 lb)
Size (H x W x D)	3.5 x 1.5 x 8.5 in (8.9 x 3.8 x 21.6 cm)

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

Ordering Information

INCLUDES	AFL NO.
VS 300 Inspection Scope, 2 AA batteries, neck strap, 2.5 mm universal adapter cap, and users guide	VS 300

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. V0S3-00-2000 Revision E, 2011-07-27
Specifications are subject to change without notice.

Features

- Unparalleled access to connectors and bulkhead adapters
- Resolves ¾ micron scratches
- 500 micron field of view (diagonal)
- Standard adapter tips for easy centering
- Precision focusing (left or right handed)
- Lithium-ion battery

Applications

- Inspect optical connector end faces for damage and contamination
- Patch cord inspection including a wide range of connector types
- In adapter inspection – view connectors in patch panels
- Rotating head feature to inspect connectors in tight locations with standard adapters

NOYES®

VFS 2 Video Fiberscope

The versatile VFS 2 Video Fiberscope, designed for inspection of dirty and/or damaged connectors, offers unparalleled access to connectors and bulkhead adapters and retains superior image quality associated with NOYES inspection products. The unique "optical-knuckle" design allows the user to orient the VFS 2 robe head in virtually any direction for viewing connectors that may be located in tight or difficult locations. Compatibility with standard adapters eliminates the need for expensive custom angled adapters reducing total cost of ownership. With a probe head length of less than 8 cm (3.25"), access into crowded and cramped quarters becomes a reality.

The VFS 2 resolves ¾ micron scratches keeping with our standard of quality end-face images. This inspection scope is one-handed operated and equally easy for both right and left handed individuals. The VFS 2 probe may be paired with the VFS 2 high-resolution 3.5" display unit.

Specifications [a]

OPTICAL	
Field of View	500 microns diagonal (300 µm vertical, 400 µm horizontal)
Magnification	180X on 3.5" display
Resolution	¾ micron scratch
Video Output	NTSC
VFS 2 PROBE SPECIFICATIONS	
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to + 60°C
Humidity	0 to 90% (non-condensing)
Probe Weight	0.2 kg (0.4 lb)
Probe Body Size (L x W x D)	15.9 x 3.3 x 3.3 cm (6.3 x 1.3 x 1.3 in)
Probe Head Size (with FC adapter), (L x W x D)	7.9 x 2.5 x 1.5 cm (3.1 x 1.0 x 0.6 in)
VFS 2 DISPLAY SPECIFICATIONS	
Display Screen Size	8.9 cm (3.5 in) TFT NTSC
Display Package With Protective Boot Size	22.9 x 5.1 x 11.9 cm (9.0 x 2.0 x 4.7 in)
Weight	2 lb (0.9 kg)
Power	Li-Ion battery pack or AC adapter
Battery Life With VFS2 Probe	>4 hours
Operating Temperature	0°C to 50° C
Storage Temperature	-20°C to +60°C
Humidity	0 to 90 % RH non-condensing
Li-Ion Battery Pack Charging Temperature	-10°C to +45°C
Li-Ion Battery Pack Recharging Time	4 hours

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

Ordering Information

INCLUDES	AFL NO.
VFS2 Probe, VFS 2 LCD Display, AC adapter	VFS2-00-0900
VFS2 Probe, VCP1 USB interface and basic software (requires computer with display)	VFS2-00-0903

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. VFS2-00-2000 Revision D, 2011-07-27
Specifications are subject to change without notice.

NOYES®

VOA6-SM Variable Optical Attenuator

The VOA6-SM is a rugged, lightweight variable optical attenuator that is ideal for use in a wide range of single-mode fiber link certification and engineering test applications. Managers will appreciate its simplicity, which minimizes training requirements and speeds deployment. Field technicians will appreciate the simple thumbwheel attenuation control, which allows precise, one-hand operation. Engineers will appreciate the accuracy and return loss performance of the VOA6-SM.

The VOA6-SM is a two-port passive optical device that, when inserted in an optical link, allows a technician to perform several important certification tasks. For example, when the fixed output level of a laser transmitter is too high for downstream devices, the VOA6-SM can be used to determine the amount of fixed attenuation required to match power levels. Alternately, during activation and certification of a new circuit, the VOA6-SM can be used to vary the amount of link loss and determine the optical headroom of the circuit. The 45 dB optical return loss of the VOA6-SM makes it ideal for use with sensitive DFB laser transmitters and other devices that can be degraded or damaged by reflected power.

The VOA6-SM is calibrated at key FTTx wavelengths including 1310, 1490, 1550 and 1625 nm and can be used in the calibration, engineering and production test lab as well as in the field. Its rugged construction ensures many years of service.

The VOA6-SM operates on an internal Li-Ion battery and includes a 10-minute auto power down and 60-second backlight power off capabilities. An AC adapter and battery charger is standard with every unit.

Features

- 9 µm /125 µm fiber applications
- 2 dB to 60 dB attenuation
- Thumbwheel for one-handed operation
- Calibrated for key FTTx wavelengths
- 45 dB return loss for use with DFB Lasers

Applications

- Validate link budgets and optical margin
- Determine optical pad value
- Characterize optical components, modules, and systems

© 2011, AFL, all rights reserved. VOA6-00-2000 Revision 1C, 2011-05-25
Specifications are subject to change without notice.

NOYES®
VOA6-SM Variable Optical Attenuator

Specifications [a]

OPTICAL	
Fiber Type	9/125 µm single-mode
Wavelength Range	1260 – 1650 nm
Calibrated Wavelengths	1310, 1490, 1550, 1625 nm
Measurement Range	2 – 60 dB
Insertion Loss	2 dB (max)
Resolution	0.05 dB
Linearity	±0.5 dB
Repeatability	±0.2 dB
Accuracy	±0.8 dB
Setting Type	Continuous over entire range
Function	Bi-directional
Return Loss [b]	45 dB
Max Input	+20 dBm
GENERAL	
Connector Adapters	FC/PC standard SC/PC, ST/PC (available – switchable)
Battery	Li-Ion rechargable
Battery Life [c]	100 hrs
Auto-Off Feature	10 min
Operating Temperature	-10°C to 55°C (14°F to 131°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	0 % to 90 % (non-condensing)
Dimensions	210 x 115 x 55 mm (8.27 x 4.53 x 2.17 in)
Weight	450 g (1.0 lb)

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.

b. Typical.

c. Unit powered off in between level changes. Typical time spent changing level <20 minutes per hour.

Ordering Information

VOA6-SM Variable Optical Attenuator comes with a protective rubber boot, AC adapter, Li-Ion battery, battery charger and a soft carry case.

DESCRIPTION	AFL NO.
VOA6-SM Variable Optical Attenuator	VOA6-SM-FC

Accessories and Connector Adapters

DESCRIPTION	AFL NO.
FC Connector (order 2)	2900-FT-LS-FC MR
SC Connector (order 2)	2900-FT-LS-SC MR
ST Connector (order 2)	2900-FT-LS-ST MR
Protective Rubber Boot	1400-10-0220PZ
Carry Case	1400-01-0087PZ
One-Click Cleaner SC/ST/FC	8500-05-0001MZ
Cletop-SB	8500-10-0016MZ
Visual Fault Identifier, 650 nm	HiLite

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

Features

- High speed (0 to 60 dB <3 seconds)
- 2 AA alkaline, AC power, or optional NiCad battery pack
- Long battery life (>16 hours)
- Hand-held, rugged, lightweight (0.55 kg)
- Cost-effective, easy to use

Applications

- BER testing
- System tolerance to signal attenuation
- New equipment turn-ups
- Lab quality motorized repeatable attenuator

NOYES®

VOA5-MM Variable Fiber Optic Attenuator

The NOYES VOA5-MM from AFL is a hand-held variable optical attenuator suited for a wide range of fiber link certification and production test applications. The VOA5-MM attenuator offers high bi-directional return loss and will maintain the set attenuation level when the unit is powered down.

Input/output ports of the VOA5-MM are equipped with tool-free removable adapters to allow the output connectors to be inspected and cleaned.

The VOA5-MM is powered by two (2) AA alkaline batteries or an AC power adapter. A NiCad rechargeable battery pack is available as an option.

Specifications [a]

OPTICAL	
Fiber Type	62.5 µm, multimode
Wavelength Range	850 - 1300 nm
Calibrated Wavelengths	850, 1300 nm
Attenuation Range	0 to 30 dB
Insertion Loss (max.)	1.5 dB @ 850 nm 3.0 dB @ 1300 nm
Return Loss (min.)	20 dB
Display Resolution	0.1 dB
Accuracy @+25°C	±0.20 dB typical, ±0.4 dB max (0 dB to 30 dB) ±0.3 dB typical, ±0.6 dB max (30 dB to 60 dB)
Repeatability @+25°C	±0.25 dB [b]
Maximum Input Level	+24 dBm
GENERAL	
Battery Life (2 AA alkaline)	10 hours
Speed	0 to 30 dB in less than 5 seconds
Power	2 AA alkaline, AC adapter, or NiMH battery pack (optional)
Size (H x W X D)	18.5 x 11.1 x 4.6 cm (7.3 x 4.4 x 1.8 in)
Weight	0.55 kg (1.22 lb)
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +60°C
Relative Humidity	0 to 90 % (non-condensing)
Available Connectors	SC/UPC, FC/UPC, ST/UPC

Notes:

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

b. Repeatability is defined as the mean plus one standard deviation typical value.

Ordering Information

INCLUDES	AFL NO.
Protective rubber boot, 2 AA alkaline batteries, 120/ 220 V AC power adapter (specify optical connector and AC power cord type) and carry case	VOA5-MM

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. VOA5-00-2000 Revision D, 2011-07-27
Specifications are subject to change without notice.

Applications

- BER testing
- System tolerance to signal attenuation
- New equipment turn-ups
- Low cost lab attenuator

NOYES®

SVA1 Single-mode Variable Attenuator

The SVA1 Single-mode Variable Attenuator advances fiber optic field testing by offering superior performance in a low cost hand-held package. Utilizing a simplified, industry accepted attenuation technique, the innovative design of the SVA1 offers superior resolution across the entire 60 dB dynamic range.

Intended for field testing during installation, new equipment turn-ups or routine maintenance, the SVA1 is a complete, easy-to-use attenuator. Its unique features allow bidirectional signal transmission with no loss penalty.

Never be caught with low or discharged batteries. The mechanical design of the SVA1 uses no batteries – it is always ready when you need it.

Input/output ports of the SVA1 are equipped with tool-free removable adapters to allow the output connectors to be inspected and cleaned.

The SVA1 is available with a variety of connectors and reflectance options to better than 60 dB. With only two adjustments, COARSE and FINE, the SVA 1 is simple to understand and operate. The SVA1 is suited for all single-mode applications including telco, LANs, WANs, video and CATV.

Features

- Single-mode attenuator for a wide range of wavelengths
- Lightweight, robust, designed for field applications
- 60 dB dynamic range
- Coarse and fine adjustments
- Low insertion loss
- Swappable (FC, ST, SC, LC) adapters remove for cleaning

Specifications [a]

OPTICAL SPECIFICATIONS	SVA1
Wavelengths	1310 nm & 1550 nm ±30 nm
Insertion Loss	≤1.5 dB @ 1310 nm
Minimum Attenuation	60 dB
Return Loss	50 dB (≥60 dB optional - angled FC)
Coarse Adjustment	0 to 60 dB nominal
Fine Adjustment	0 to 10 dB nominal
Connector	FC, ST, SC
GENERAL SPECIFICATIONS	
Operating Temperature	-10°C to +55°C
Storage Temperature	-30°C to 60°C
Size (H x W x D)	14 x 7 x 3.8 cm (5.5 x 2.75 x 1.5 in)
Weight	168 g (6 oz)

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

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. SVA1-00-2000 Revision K, 2011-07-29
Specifications are subject to change without notice.

NEW

VOA6-SM Variable Optical Attenuator

OPM4-4D Optical Power Meter

OLS7-FTTH Laser Light Source

One-Click Mini Cleaner SC/ST/FC

NOYES®
Broadband Activation Kits

NOYES Broadband Activation Kits provide the essential tools field technicians need to install, certify, and activate single-mode broadband fiber links. Each kit includes a connector cleaner, an optical light source, an optical power meter and a variable optical attenuator.

As cleaning is an essential part of broadband activation, the NOYES One-Click Mini is a must-have for field technicians. Simply insert the One-Click Mini Cleaner into a connector and push until an audible "click" is heard.

The NOYES OPM4-4D Optical Power Meter simplifies installation and certification tasks by using innovative Wave ID-automatic wavelength identification capabilities to prevent setup and measurement errors. With +26 dBm input rating and 76 dB dynamic range, the OPM4-4D is ideal for passive FTTx and amplified Broadband networks.

The NOYES OLS7-FTTH Laser Light Source provides the CW, tone-modulated and encoded test signals that enable technicians to find, identify and certify fiber circuits. With just one output port, the OLS7-FTTH requires fewer test jumpers, reference measurements and cleaning steps than other dual-output light sources.

The NOYES VOA6-SM Variable Optical Attenuator makes quick work of optical headroom testing and optical power level balancing. Its simple thumbwheel control and one-hand operation makes activation and turn-up tasks a breeze.

TACT1-4-FH-FC Kit Features

- Includes:
  One-Click Mini Cleaner, VOA6-SM, OPM4-4D, OLS7-FTTH
- All devices calibrated for key FTTx wavelengths:
  1310, 1490, 1550 nm
  (OPM4-4D and VOA6-SM also calibrated at 1625 nm)
- All devices configured for FC connectors

TACT1-4-FH-SC Kit Features

- Includes:
  One-Click Mini Cleaner, VOA6-SM, OPM4-4D, OLS7-FTTH
- All devices calibrated for key FTTx wavelengths:
  1310, 1490, 1550 nm
  (OPM4-4D and VOA6-SM also calibrated at 1625 nm)
- All devices configured for SC connectors

© 2011, AFL, all rights reserved. TACT-BA-2000 Revision 1B, 2011-07-13
Specifications are subject to change without notice.

NOYES®
Broadband Activation Kits

Ordering Information

DESCRIPTION	AFL NO.
Kit includes: (1) VOA6-SM Variable Optical Attenuator [a] (1) OPM4-4D Optical Power Meter [b] (1) OLS7-FTTH Laser Light Source [c] (1) One-Click Mini SC/ST/FC Carry Cases	TACT1-4-FH-FC
Kit includes: (1) VOA6-SM Variable Optical Attenuator [a] (1) OPM4-4D Optical Power Meter [b] (1) OLS7-FTTH Laser Light Source [c] (1) One-Click Mini SC/ST/FC Carry Cases	TACT1-4-FH-SC

Notes:

a. VOA6-SM Variable Optical Attenuator comes with a protective rubber boot, AC adapter, Li-Ion battery and battery charger.

b. OPM4-4D Optical Power Meter comes with a protective rubber boot and 2 AA batteries.

c. OLS7-FTTH Laser Light Source comes with a protective rubber boot and 2 AA batteries.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2011, AFL, all rights reserved. TACT-BA-2000 Revision 1B, 2011-07-13
Specifications are subject to change without notice.

NEW

VOA6-SM Variable Optical Attenuator

OPM4-4D Optical Power Meter

OLS2-DUAL Laser Light Source

One-Click Mini Cleaner SC/ST/FC

NOYES®
Telecom Activation Kits

NOYES Telecom Activation Kits provide the essential tools field technicians need to install, certify and activate single-mode fiber links. Each kit includes a connector cleaner, an optical light source, an optical power meter and a variable optical attenuator.

As cleaning is an essential part of telecom activation, the NOYES One-Click Mini is a must-have for field technicians. Simply insert the One-Click Mini Cleaner into a connector and push until an audible "click" is heard.

The NOYES OPM4-4D Optical Power Meter simplifies installation and certification tasks by using innovative Wave ID-automatic wavelength identification capabilities to prevent setup and measurement errors. With +26 dBm input rating and 76 dB dynamic range, the OPM4-4D is ideal for passive and amplified telecom networks.

The NOYES OLS2-DUAL Laser Light Source provides the CW, tone-modulated and encoded test signals that enable technicians to find, identify and certify fiber circuits. With just one output port, the OLS2-DUAL requires fewer test jumpers, reference measurements and cleaning steps than other dual-output light sources.

The NOYES VOA6-SM Variable Optical Attenuator makes quick work of optical headroom testing and optical power level balancing. Its simple thumbwheel control and one-hand operation makes activation and turn-up tasks a breeze.

TACT1-4-6D-FC Kit Features

- Includes:
  One-Click Mini Cleaner, VOA6-SM, OPM4-4D, OLS2-DUAL
- All devices configured for FC connectors

TACT1-4-6D-SC Kit Features

- Includes:
  One-Click Mini Cleaner, VOA6-SM, OPM4-4D, OLS2-DUAL
- All devices configured for SC connectors

© 2011, AFL, all rights reserved. TACT-TA-2000 Revision 1B, 2011-07-13
Specifications are subject to change without notice.

NOYES®
Telecom Activation Kits

Ordering Information

DESCRIPTION	AFL NO.
Kit includes: (1) VOA6-SM Variable Optical Attenuator [a] (1) OPM4-4D Optical Power Meter [b] (1) OLS2-DUAL Laser Light Source [c] (1) One-Click Mini SC/ST/FC Carry Cases	TACT1-4-6D-FC
Kit includes: (1) VOA6-SM Variable Optical Attenuator [a] (1) OPM4-4D Optical Power Meter [b] (1) OLS2-DUAL Laser Light Source [c] (1) One-Click Mini SC/ST/FC Carry Cases	TACT1-4-6D-SC

Notes:

a. VOA6-SM Variable Optical Attenuator comes with a protective rubber boot, AC adapter, Li-Ion battery and battery charger.

b. OPM4-4D Optical Power Meter comes with a protective rubber boot and 2 AA batteries.

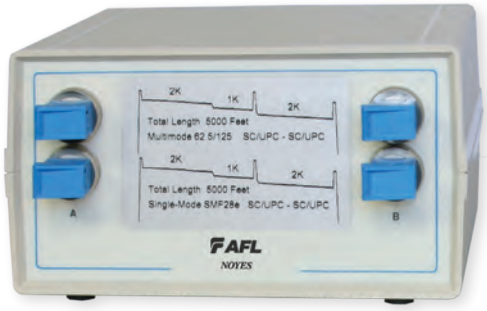
c. OLS2-DUAL Laser Light Source comes with a protective rubber boot and 2 AA batteries.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2011, AFL, all rights reserved. TACT-TA-2000 Revision 1B, 2011-07-13
Specifications are subject to change without notice.

NSR-Series Rack-mountable Network Simulators



NS-Series NS Bench Top Network Simulators

Features

- User-specified fiber type
- User-specified fiber types and lengths
- User-specified events such as mechanical or fusion splices
- OTDR trace provided for documentation
- Variety of connector styles available
- NSR models are Rack-mountable
- The NS models are rugged, field-portable
- The NSR models can accommodates up to 100 km of fiber (NSR Models)
- N.I.S.T. Traceable

Applications

- Laboratory testing
- Classroom training
- Field troubleshooting
- OTDR calibration

NOYES®

NS and NSR Series Fiber Optic Network Simulators

NOYES Fiber Optic Network Simulators from AFL are custom built "fiber boxes" intended to duplicate installed fiber optic facilities. Training schools, laboratory testing or field troubleshooting are just few of the many applications for units. Network simulators may be ordered with customer-specified lengths of multimode or single-mode fiber. Events such as connections, fusion splices and mechanical splices can be added at various points within the fiber to duplicate installed networks. A full range of connector types are available including SC, ST, FC and LC. Angled or non-angled connectors can be specified. Each NOYES network simulator includes full documentation for insertion loss, attenuation/km and event location/value.

The NS models network simulators are housed in rugged field-portable, bench top cases. The NS models accommodates up to 15 km of optical fiber.

The NSR models network simulators are custom built rack-mountable fiber boxes. The NSR models are housed in either 18 or 23-inch rack-mountable box. These network simulators can accommodate multiple lengths.

Ordering Information

Contact AFL at (800) 321-5298 or (603) 528-6278 for a quote for your custom Network Simulator.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. NSR1-00-2000 Revision 1C, 2011-06-20
Specifications are subject to change without notice.

FTS 1 FTS 2

FTS-20C

NOYES®
FTS Series Fiber Optic Talk Sets

Fiber optic talk sets are an inexpensive solution to meet your communication needs when testing multimode or single-mode fiber optic cables. Designed for voice communication over spare fibers, they provide full duplex, hands-free operation. Ease-of-use and compact size allow the operators to focus on the task at hand, rather than operating the talk set.

Two talk set models are available, the FTS 1 for communication on single-mode or multimode fiber and the FTS 2 for long-range single-mode applications. The FTS 2 model includes a multi-party communication feature, which provides the connection of two talk sets at a common site to extend the range or to include three or more persons in the conversation.

FTS-20C Clip-on Coupler

A clip-on coupler is available for bare fiber access where terminated ends are not available. The FTS 20C allows bi-directional communication from the center point on a fiber link or from the unterminated end. When used with a fiber talk set, such as the FTS2, the user can access the intended talk fiber at the mid-point across the span, usually at the splice enclosure. The FTS-20C can also be used in conjunction with a laser source or a tone detector to inject or detect 2 kHz test tones. It works at 1310, 1550 or 1625 nm. Coupling efficiency is approximately 18 dB.

Features

- Single fiber, full duplex
- Multimode and single-mode models
- Field portable, hands-free operation
- Automatic connection
- Multi-party communication
- Digital technology
- Call-back feature/ringing (FTS 2 model)

Applications

- Voice communication over optical fiber links
- Testing schedule not impacted by cell phone coverage
- Military and other secure locations

© 2002-2011, AFL, all rights reserved. FTS2-00-2000 Revision L, 2011-06-20
Specifications are subject to change without notice.

NOYES®
FTS Series Fiber Optic Talk Sets

Specifications [a]

MODEL	FTS 1-2	FTS 2-1310	FTS 2-1550
OPTICAL			
Wavelength	1300 nm	1310 nm	1550 nm
Dynamic Range MM/SM	12 dB / 17 dB	45 dB	45 dB
Distance Range (km) Typical 62.5 or 50 µm MM fiber [b] Typical 1310 nm optimized SM fiber [c] Typical 1550 nm optimized SM fiber [d]	 >10 50 40	 N/A 113 90	 N/A 150 180
Fiber Type	MM/SM	SM	
Connector	FC, SC, ST	FC, SC, ST	
Emitter Type	LED	Laser	
Emitter Classification	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03		
GENERAL			
Power	9V alkaline	4 AA alkaline or AC adapter	
Weight in Use	0.25 kg (0.56 lb)	0.52 kg (1.16 lb)	
Size (H x W x D)	16.8 x 7.9 x 3.8 cm (6.6 x 3.1 x 1.5 in)	18.5 x 11.1 x 4.6 cm (7.3 x 4.4 x 1.8 in)	
Operating Temperature	0°C to +50°C, RH 0 to 90 % non-condensing		
Storage Temperature	-20°C to +50°C, RH 0 to 90 % non-condensing		

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. 2.8 dB/km @ 850 nm, 0.6 dB/km @ 1300 nm.
c. 0.4 dB/km @ 1310 nm, 0.3 dB/km @ 1550 nm.
d. 0.5 dB/km @ 1310 nm, 0.25 dB/km @ 1550 nm.

Ordering Information

INCLUDES	AFL NO.
Protective rubber boots, batteries, headsets, manual and carry case	FTS 1 FTS 2

Fiber optic talk sets are purchased in pairs. Two units are required for communication.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

© 2002-2011, AFL, all rights reserved. FTS2-00-2000 Revision L, 2011-06-20
Specifications are subject to change without notice.

Please contact your AFL Sales Representative for information about our other products or services.

CLEANING SUPPLIES

FCC2 - Fiber Connector Cleaner

CLETOP-S

FiberWipes™

FUSION SPLICING SYSTEMS

FSM-11R – SpliceMate™

FSM-100P

FSM-60S

Along with a broad range of products, we also offer professional training through The Light Brigade®. Over 40,000 people have completed a Light Brigade training course making us the leading fiber optic training provider in the world.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

AFL

www.AFLglobal.com

CAT-01008