AFL Telecommunications
A Fujikura Business

Test & Inspection

OTDRs

Microscopes

Loss Test Sets

Power Meters

Cleaning Supplies

NOYES
Test & Inspection

Table of Contents

NOYES Test & Inspection
A Division of AFL Telecommunications

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

M700 Compact Single-mode OTDR

The Noyes M700 from AFL Telecommunications is a compact, full featured, single-mode OTDR that includes an integrated Visual Fault Locator (VFL), an Optical Power Meter (OPM) displaying up to three wavelengths simultaneously, and a large transflective touch screen display suitable for both indoor and outdoor operation.

The M700 OTDR supports Real Time, Full-Auto, and Expert (manual) modes, precision event analysis, dual-wavelength testing, rich file naming, and an intuitive job set-up functionality. In addition to OTDR event analysis, pass/fail acceptance values, and marginal warning, specific values can be set to alert the test operator of failing or marginal events. Using one of the Least Squares Approximation (LSA) loss methods, events may be added or deleted manually.

Thousands of OTDR and OPM test results can be stored internally or on the supplied USB drive, and are transferable via a USB cable or drive to a computer for viewing, printing and analyzing with supplied Windows® compatible software. 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.

With short dead zones, a dynamic range of 38 dB, and greater than 8-hour battery life during continuous testing, the M700 is perfect for testing optical fibers in service provider metro areas.

Features

- 38 / 36 dB dynamic range @ 1310 / 1550 nm
- Integrated Optical Power Meter (OPM) and Visual Fault Locator (VFL, 650 nm)
- LSA Measurements and manual events in Expert mode
- Pass/Fail Event and Link Thresholds settings
- OTDR results saved as industry standard (GR-196) .SOR files
- OPM stores results and displays up to three wavelengths simultaneously
- Large, high bright, sunlight readable, transflective touchscreen
- Tool-free, switchable adapters (SC/FC/LC)
- Integrated fiber launch ring holder
- 2 USB host ports
- USB drive and Windows® compatible software included

Ordering Information

MODEL	DESCRIPTION	TEST PORT ADAPTERS
M700	1310/1550 nm single-mode OTDR	SC, FC, and LC *

* *ST test port adapter is available (order separately).*
All models include a 110/220 VAC power adapter with country-specific power cord, PC Trace analysis software, and user guide.

continued on the next page

M700 Compact Single-mode OTDR

Specifications

OTDR SPECIFICATIONS	
Emitter Type	Laser
Safety Class	Class 1 FDA 21 CFR 1040.0 & 1040.11
Center Wavelengths	1310/1550 nm
Dynamic Range (SNR = 1)	38 / 36 dB (1310/1550 nm)
Event Dead Zone [1]	0.9 m
Attenuation Dead Zone [2]	5.5 m
Pulse Widths	5, 10, 30, 100, 300 ns, 1, 3, 10, 20 µs
Range Settings	250 m to 256 km
Distance Sampling Points	max. 64,000 points
Data Point Spacing	0.25 m (range ≤ 4 km) 0.5 m (range = 8 km) Range/# of data points (range ≥ 16 km)
Group Index of Refraction (GIR)	1.4000 to 1.6000
Distance Uncertainty (m) [3]	± (1 + 0.0005% x distance + data point spacing)
Trace File Format	Bellcore GR-196 Version 1.1
Trace File Storage Media	Internal flash memory
	USB flash drive
	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	Modular cleanable SC/ST/FC/LC

1 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.

2 Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by a -45 dB event using 5 ns pulse width.

3 Does not include GIR uncertainty.

VISUAL FAULT LOCATOR SPECIFICATIONS	
Emitter Type	Laser
Safety Class	Class II FDA 21 CFR 1040.10 & 1040.11; IEC 825-1:1993, EN60825-1:1994
Wavelength	650 nm
Output Power (nominal)	0.8 mw

POWER METER SPECIFICATIONS	
Calibrated Wavelengths	850, 980, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)
Detector Type	Filtered InGaAs detector
Measurement Range (dBm)	+26 to -50 dBm
Accuracy [4]	±0.25
Measurement Units	dB, dBm, mW
Wavelength ID [5]	Yes
Set Reference	Yes
Data Storage	Yes
Tone Detection	270 Hz, 330 Hz, 1 kHz, 2 kHz

GENERAL SPECIFICATIONS	
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 to +50°C, 0 to 90% RH (non-condensing)
Storage Temperature	-20 to +60°C, 0 to 90% RH (non-condensing)
Power	Rechargeable Li-Ion or AC power adapter
Battery Life [6]	> 8 hours continuous OTDR testing
Recharge Time [7]	4 hours
Display	6.5 inch (16.51 cm), color, transflective

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

5 Automatic wavelength identification and switching when used with Noyes Wave ID Series Light Sources.

6 Typical, depending on display brightness.

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

All specifications are subject to change.

All specifications valid at 25°C unless otherwise specified.

External battery charger available.

OTDR Fiber Accessories

MODEL NUMBER	DESCRIPTION
FR1-SM-1KM-SC-FC	Fiber Ring SM SC/FC 1000m
FR1-SM-1KM-SC-LC	Fiber Ring SM SC/LC 1000m
FR1-SM-1KM-ASC-SC	Fiber Ring SM SC-APC/SC-UPC 1000m
8500-20-0900	Wet Cleaning Kit for SC/FC/ST/LC Connectors

M200 Handheld OTDR

The Noyes M200 from AFL Telecommunications offers unmatched OTDR capabilities in a handheld package weighing less than 1 kg (2 lb). Multimode, Single-mode, and 'Quad' wavelength models are offered. With short dead zone and intermediate range specifications, the M200 is ideal for Tier 2 testing of premises (building and campus) networks or certification and troubleshooting of FTTX PON networks. And its bright, transflective display makes it suitable for both indoor and outdoor operation.

The M200 is based on a new hardware/software platform that supports automatic and manual setup, precision event analysis, dual-wavelength testing, fiber identification using Noyes 'TR' test receivers, rich file naming and folder setup, 6 hour battery life, internal and removable media data storage, and USB connectivity. Test ports are equipped with tool-free adapters, which can be changed in seconds. A custom-designed polycarbonate case and shock-absorbing boot make it our most rugged OTDR ever.

Results are saved as industry standard .SOR files, which can be viewed, printed, and analyzed on a PC using free-ware available to you and your customers (go to www.afltele.com to download). Unit firmware, user settings, and test results are saved in non-volatile memory. Thus the M200 may be stored with battery removed for an extended period of time and still be up and running in seconds when needed.

New Feature

USB Host Port offers a new convenient way to transfer data from the M200 to a PC. By using a standard USB Flash Drive (not included) to transfer traces, the user no longer needs a USB Cable, ActiveSync or a Compact Flash reader. Using the Tools in the M200 File Manager, one or more folders or files can be copied to a USB Flash Drive for transfer to a PC. Thousands of files will fit on a 64 MB or larger USB Flash Drive.

Features

- Handheld, 0.9 kg (2 lb)
- 22 dB (MM), 26 dB (SM) dynamic range
- Integrated VFL (650 nm)
- Tool-free, switchable adapters
- Transflective (indoor/outdoor) touch-screen display
- USB Host and Function Ports

Applications

- Tier 2 testing of premises networks
- FTTX PON certification and troubleshooting
- Fast fault location
- Splice verification
- Network documentation

Ordering Information

MODEL NUMBER	DESCRIPTION	TEST PORT ADAPTERS
M200-K-QUAD	850/1300 nm multimode and 1310/1550 nm single-mode OTDR	(1) ST, (2) SC, and (1) FC *
M200-K-MM	850/1300 nm multimode OTDR	ST and SC *
M200-K-SM	1310/1550 nm single-mode OTDR	SC and FC *

** LC test port adapters are available (order separately).*

All models include a rugged, soft-sided carry case with shoulder strap, 110/220 VAC power adapter with country-specific power cord, and user guide.

continued on the next page

M200 Handheld OTDR

Specifications

OTDR SPECIFICATIONS		
	MULTIMODE	**SINGLE-MODE**
Emitter Type	Laser	
Safety Class	Class 1 FDA 21 CFR 1040.0 & 1040.11	
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 [1]	1.5 m	1.5 m
Attenuation Dead Zone [2]	9 m	9 m
Pulse Widths [3]	10, 30, 100, 300 ns, 1, 3 µs	10, 30, 100, 300 ns, 1, 3, 10 µs
Range Settings	250 m to 64 km	250 m to 208 km
Data Points	Up to 16,000	Up to 16,000
Data Point Spacing	0.25 m (range ≤ 4 km) Range/16000 (range ≥ 8 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 Version 1.1	
Trace File Storage Medium	Internal, non-volatile memory and removable Compact Flash Card	
Trace File Storage Capacity	> 100 internal; thousands on Compact Flash or USB Flash Drive	
Trace File Transfer to PC	USB Flash Drive Type 1.1, Compact Flash or Mini USB Cable with ActiveSync	
VISUAL FAULT LOCATOR SPECIFICATIONS		
Emitter Type	Laser	
Safety Class	Class II FDA 21 CFR 1040.10 & 1040.11; IEC 825-1:1993, EN60825-1:1994	
Wavelength	650 nm	
Output Power (nominal)	0.8 mw	
GENERAL SPECIFICATIONS		
Size (in boot)	23 x 11 x 7 cm (8.8 x 4.3 x 2.8 inches)	
Weight	0.9 kg (2 lb)	
Operating Temperature	-10 to +50 °C	
Storage Temperature	-20 to +60 °C	
Relative Humidity	0 to 95% RH (non-condensing)	
Power	Removable Lilon or 110/220 VAC power adapter	
Battery Life[4]	6 hours	
Recharge Time [4 & 5]	3 hours	

All specifications are subject to change.

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

1. 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.

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

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

4. New battery.

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

OFL 250 Handheld OTDR

The Noyes OFL 250 from AFL Telecommunications is a single-mode OTDR with an integrated Optical Power Meter (OPM), Laser Source (OLS), and Visual Fault Locator (VFL) in a handheld package weighing only 0.8 kg (1.7 lb). With short dead zone and mid-range dynamic range performance, the OFL 250 is ideal for testing optical fibers in service provider metro areas and FTTx networks.

The OFL 250 provides automatic and manual setup, precision event analysis, multiple-wavelength testing, a 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.

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.

Features

- Handheld, 0.8 kg (1.7 lb)
- Multiple-wavelength single-mode OTDR
- 1.5 m (typ.) event dead zone
- 26 dB dynamic range
- Integrated OPM, OLS, and VFL (650 nm)
- Tool-free, switchable adapters for OTDR & OPM ports (FC, SC, ST, LC, E2000 are available)
- Bellcore (GR-196) .SOR file format
- Rechargeable (> 12 hr) LiIon battery or AC power
- 3.5-inch, indoor/outdoor LCD
- Windows® compatible software to view, print, and archive test record
- Mini USB Port (connect to PC with cable)

Ordering Information

MODEL NUMBER	DESCRIPTION	WAVELENGTHS
OFL 250 1310/1550	Single-mode OTDR	1310/1550 nm

***NOTE**: All OFL 250 models come with: a carry case, SC and FC adapters for the OTDR/OLS port, 2.5 mm universal adapters for the OPM and VFL ports, USB cable (connects with normal (Type A) USB port on your PC), AC power adapter, country-specific power cord, and a user guide.*

continued on the next page

OFL 250 Handheld OTDR

Specifications

OTDR SPECIFICATIONS	
Emitter Type	Laser
Safety Class	Class 1 FDA 21 CFR 1040.0 & 1040.11
Fiber Type	Single-mode
Center Wavelengths	1310 / 1550 nm
Wavelength Tolerance	± 30 nm
Dynamic Range (SNR=1)	26 / 26 dB
Event Dead Zone [1]	1.5 m
Attenuation Dead Zone @ 5ns [2]	Typ.6.0 m, max. 6.5 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/16000 (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

1. *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.*
2. *Typical distance from event location to point where trace is within 0.5 dB of backscatter.*

OPTICAL POWER METER SPECIFICATIONS	
Calibrated Wavelengths	1310, 1490, 1550, 1625 nm
Detector Type	InGaAs
Measurement range	+23 to - 45 dBm
Tone detect range	+3 to -40 dBm
Wavelength ID range	+3 to -40 dBm
Accuracy (dB)	± 0.25 dB
Resolution (dB)	0.01 dB
Measurement units	dB, dBm, µW, nW

OPTICAL LIGHT SOURCE SPECIFICATIONS	
Emitter Type	Laser, Class 1 (FDA 21 CFR 1040.10 and 1040.11, and IEC 60825-1)
Fiber Type	Single-mode
Center Wavelengths	1310, 1550 nm
Wavelength Tolerance	± 20 nm
Spectral Width (FWHM)	2 nm (max)
Internal Modulation	1 kHz, 2 kHz
Wavelength ID	Compatible with Noyes Optical Power Meters & Light Sources
Output Power Stability	< ± 0.25 dB after 15 min
Output Power	– 3 dBm

VISUAL FAULT LOCATOR SPECIFICATIONS	
Emitter type	Laser
Safety Class	Class II (FDA 21 CFR 1040.10 and 60825-1:1994, IEC 825-1:1993)
Wavelength	650 nm
Output Power (nominal)	0.8 mW into SMF-28

GENERAL	
Size (in boot)	190 x 112 x 47 mm (7.5 x 4.4 x 1.9 inches)
Weight	0.8 kg (1.7 lb)
Operational Temperature	-10 to +50°C, 0 to 95% RH (non-condensing)
Storage Temperature	-20 to +60°C, 0 to 95% RH (non-condensing)
Power	Rechargeable Lilon or AC adapter
Battery life (backlight ON in OTDR mode)	> 12 hours
Display	LCD, 320 x 240, 3.5 inch (89 mm) , color, transflective
OTDR and OPM ports	Switchable. See website or contact AFL for available adapter types.

OFL 200 Single-mode OTDR

The OFL 200 OTDR sets new standards for size, weight, ease-of-use, and value in a telco/broadband OTDR. Smaller than many optical loss test sets, the OFL 200 has the range, features, and price to make it the perfect OTDR for outside plant crews installing and maintaining optical fiber cables in broadband, metro, access, and FTTH networks. Unlike 'optical fault locators', which detect only reflective events, the OFL 200 is a true OTDR, which detects fiber backscatter as well as fresnel reflections. Thus, the OFL 200 can locate reflective and non-reflective breaks, including those caused by crushed fibers. In addition, the OFL 200 provides an integrated 650 nm visual fault locator (VFL) for short-distance troubleshooting and fiber tracing. In its [Full Auto] mode, the OFL 200 measures fiber length and sets range, pulse width, and averaging time automatically. [Full Auto] mode is ideal for operators not familiar with OTDRs. [Semi Auto] mode allows the user to set range while the OFL 200 sets all other parameters. [Manual] mode is available for experienced users. [Live] mode is provided for first connector checking and troubleshooting. The fast change switchable adapter allows the OTDR to interface launch cables with a variety of connector styles. The OFL 200 can internally store up to 48 traces. Using the supplied serial cable, saved traces can be transferred to a PC for archiving, printing, and analyzing with the supplied Trace600 Windows® software. Test results are stored in Bellcore [*.sor] GR-196 Version 1.1 format.

Features and Applications

- Rugged, handheld, lightweight
- Designed for field use
- 1550 or 1625 nm single-mode OTDR
- Locates reflective and non-reflective breaks
- Built-in 650 nm visual fault locator (VFL) with universal adapter
- Switchable OTDR port adapter
- Cursor and zoom controls to measure event loss, reflectance, and location
- Automatic, semi-automatic, and manual setup modes
- Launch level connection quality indicator
- Large LCD with Backlight
- Free Windows® compatible software to view, print, and archive test records
- Rechargeable NiMH battery pack, AC adapter, or optional AA alkaline
- Wide temperature range: -10 to + 50°C

Ordering Information

MODEL	INCLUDES
OFL 200-1550 OFL 200-1625	SC, FC adapter caps (ST, LC available), universal AC power adapter, country- specific line cord, user's guide, and carry case.

Specifications

OFL 200 OTDR		
Emitter type	Laser	
Safety class	Class I, FDA 21 CFR 1040.10 & 1040.11	
Center wavelength (nominal)	1550 nm	1625 nm
Dynamic range (SNR = 1)	24 dB @ 10 µs, 3 min. test	23 dB @ 10 µs, 3 min. test
Maximum fiber length	70 km	
Event dead zone [1]	2 m typical / 3 m maximum	
Attenuation dead zone [2]	14 m typical / 18 m maximum	
Number of data points	4000 on ranges ≥ 4 km	
Resolution	1 m on ranges ≤ 4 km; Range / 4,000 on ranges > 4 km	

VISUAL FAULT LOCATOR (VFL)	
Emitter type	Laser
Safety class:	Class II, FDA 21 CFR 1040.10 & 1040.11 IEC 825-1: 1993, EN60825-1: 1994
Wavelength	650 nm
Output power (nominal)	0.8 mW into 9 µm single-mode optical fiber

GENERAL	
Size (H x W x D)	190 x 112 x 47 mm (7.5 x 4.4 x 1.9 inches)
Weight	0.6 kg (1.3 lb)
Operating 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 NiMH or AC adapter. Optional 4 x AA Alkaline
Battery life with backlight ON	NiMH: > 8 hours; 4 x AA: > 13 hours

[1] *1.5 dB down from each side of the peak, -45 dB reflective event*

[2] *From the start of an event to within 0.5 dB of backscatter, -45 dB reflective event.*

Fiber Ring (150 m)

Fiber Rings and Fiber Boxes

OTDRs require launch and receive test cables to measure the end-to-end loss of optical fiber links. 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 is connected to the far-end of the link, reveals the insertion loss and reflectance of the far-end connection. Noyes OTDR test cables are available in two forms. Fiber Rings, which provide 150 m of 50 µm, 62.5 µm, or single-mode fiber in a compact, light-weight ring, are ideal for testing optical fiber links (up to about 2 km) in premises networks. Fiber Boxes, which are available in standard lengths up to 1 km, are ideal for testing single-mode fiber spans (up to 50 km or longer) in Telco and Broadband networks.

Fiber Box (1 km)

Fiber Rings (FR) Specifications

MODEL	CONFIGURATION	FIBER TYPE	FIBER LENGTH
FR1-M5-150-x1-x2	Standard, one fiber	Multimode, 50 µm	150 m (492 ft)
FR1-M6-150-x1-x2	Standard, one fiber	Multimode, 62.5 µm	150 m (492 ft)
FR1-SM-150-y1-y2	Standard, one fiber	Single-mode	150 m (492 ft)
FR3-M5-x1-MTRJ	MT-RJ near-end, A and B fibers	Multimode, 50 µm	150 m (492 ft)
FR3-M6-x1-MTRJ	MT-RJ near-end, A and B fibers	Multimode, 62.5 µm	150 m (492 ft)
FR3-SM-x1-MTRJ	MT-RJ near-end, A and B fibers	Single-mode	150 m (492 ft)

Fiber Boxes (FB) Specifications

MODEL	CONFIGURATION	FIBER TYPE	FIBER LENGTH
FB1-SM-500-y1-y2	Standard, one fiber	Single-mode, SMF-28	500 m (1640 ft)
FB1-SM-1000-y1-y2	Standard, one fiber	Single-mode, SMF-28	1000 m (3281 ft)

x1, x2 — connectors for multimode cables, specify type (e.g. ST, SC)
y1, y2 — connectors for single-mode cables, specify type (e.g. ST, SC, FC)
Other connector types, fiber types, and fiber lengths will gladly be quoted upon request.

TR Series OTDR Test Receivers

A TR Series OTDR Test Receiver allows a single technician, equipped with an OTDR, to test multiple fibers terminating at a common location with only one visit to that location. A TR unit can greatly reduce the time need to test and certify the connectivity of FTTH passive optical networks (PON) or high-fiber-count, point-to-point spans. TR12 and TR24 OTDR Test Receivers house 12 or 24 OTDR receive fibers respectively, with lengths increasing in 20-foot increments, in a compact, shock-resistant chassis. TR12 and TR24 units are equipped with 12 or 24 SC/APC ports.

Ordering Information

MODEL	INCLUDES
TR12-K1-SC-ASC	(1) TR12 OTDR Test Receiver (1) Soft-sided carry case
TR24 K1-SC-ASC	(1) TR24 OTDR Test Receiver (1) Soft-sided carry case

Fiber Optic Loss / Return Loss Test Sets

Noyes Fiber Systems Fiber Optic Loss / Return Loss Test Sets are designed to measure loss and return loss on high speed digital or analog fiber optic spans in Telecom, CATV, and IXC networks. Models are available to perform loss and return loss measurements on single-mode fibers at 1310, 1550 and 1625 nm. Supplied with Windows® compatible data analysis software (WinTest), test results can be transferred from the internal memory, via the RS-232 port, to a PC for full fiber documentation.

Turbotest 500B - Broadband Loss / Return Loss

The new T500B Series is the continuation of the popular Turbotest 500 product line. The T500B Series offers the latest technology in a single fiber bi-directional loss and return loss testing. Five compact models are available, including the three wavelength (1310/1550/1625) T506B and (1310/1550/1490) T506B-FTTH. An optional dedicated digital talk option is available for full time/full duplex communication between test operators while testing other fibers in a bundle. T500B units are sold individually but normally used in pairs.

Specifications

MODEL	T503B	T504B	T505B	T506B	T506B-FTTH
Center Wavelengths (nm)	1310, 1550	1310, 1550	1550, 1625	1310, 1550, 1625	1310, 1550, 1490
Output Power (dBm)	-5	-5	-5	-5	-5
Emitter Type	Laser	Laser	Laser	Laser	Laser
Safety Class	FDA 21 CFR 1040.10 and 1040.11, and IEC 60825-1 amended Q2, 2001				
Detector Type	InGaAs	InGaAs	InGaAs	InGaAs	InGaAs
Insertion Loss Measurement Range (dB)	45	45	45	45	45
Optical Power Measurement Range (dBm)	+6 to -70	+26 to -50	+26 to -50	+26 to -50	+26 to -50
Optical Power Measurement Units	dB, dBm, µW				
ORL Dynamic Range (dB)	65				
Available Connector Types	ASC or AFC				
Power	Lithium-Ion or AC Adapter				
Li-Ion battery pack charging temp.	-10 to +45°C				

NOTES:

1. Add (-T) for 40 dB 1310 nm Talk Set Option. Add (-Y) for 40 dB 1550 nm Talk Set Option. (Example: T506B-Y is 1310/1550/1625 Turbo with 1550nm Talk Set Option)
2. T500B instruments are sold individually but normally used in pairs

OLTS 5 Optical Loss Test Set

The OLTS5 Optical Loss Test Set series offers end-to-end single-mode testing at either 1310/1550 nm or 1550/1625 nm. The OLTS5 may be operated in automatic or manual test modes. In its "two-unit" automatic test mode, a pair of OLTS5 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 OLTS5 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 OLTS5 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 OLTS5 test sets can operate either as an optical power meter (OPM) or dual-wavelength laser source. The OLTS5 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. Results are transferred to a PC via a serial link. Windows® software is provided to view, edit, and print test results. OLTS5 units are sold individually but normally used in pairs.

Features

- Rugged, handheld, designed for field use
- Integrated dual-wavelength laser source and optical power meter
- Automatic bi-directional, dual-wavelength insertion loss measurement
- Optical power meter and light source manual test modes
- Up to 1000 test records (40 files) storage and download
- Free Windows® compatible software to view, print, and archive test records
- (AA) alkaline. Optional internally recharged NiMH battery pack or AC adapter
- Cost-effective, easy to use

Ordering Information

MODEL	INCLUDES
All OLTS5 models	(1) OLTS5, (2) AA alkaline batteries, protective rubber boot, PC software, adapter cap of the same connector type as the transmit port, user's guide, and carry case.

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

Specifications

MODEL	OLTS5-3	OLTS5-5	OLTS5-6
TRANSMIT PORT (LASER SOURCE) SPECIFICATIONS			
Center wavelengths	1310 /1550 ± 20 nm	1550/1625 ± 20 nm	1310 /1550 ± 20 nm
Emitter type	Laser, Class 1 (FDA and IEC)*		
Output power into 9/125 SM fiber	-5 dBm (nominal)		
Stability	± 0.1 dB, up to 8 hours		
Insertion loss and power measurement resolution	0.01 dB		
Available connector types	SC or FC		
RECEIVE PORT (OPTICAL POWER MEASUREMENT) SPECIFICATIONS			
Detector type	InGaAs		Filtered InGaAs
Calibrated wavelengths	850, 980, 1300, 1310, 1480, 1550, 1625 nm		
OPM (manual) mode optical power display range	+ 10 to – 70 dBm		+ 16 to – 60 dBm
OLTS (automatic) mode insertion loss measurement range	45 dB		39 dB
Accuracy at –10 dBm, 25ºC	± 0.25 dB		
Connector types	Thread-on adapter cap mount		
GENERAL SPECIFICATIONS			
Display	128 X 64 dot matrix liquid crystal display		
Dimensions (H x W x D)	18.5 X 11.1 X 4.6cm (7.3 X 4.4 X 1.8in)		
Weight	0.55 kg (1.2 lbs.)		
Operating temperature and humidity	0 to +50°C, 90% RH (non-condensing)		
Storage temperature and humidity	-20 to +60°C, 95% RH		
Power	2 AA Alkaline (2-cell NiMH-or AC adapter optional)		
Battery life (typical)	(2) AA - 17 hours; NiMH battery pack - 11 hours		

** FDA 21 CFR 1040.10 and 1040.11, and IEC 60825-1 amended Q2, 2001*
***NOTE**: All specifications at room temperature (25ºC) unless indicated otherwise.*

Certification Test Sets

Testing fiber cable with the Turbotest 400 Series saves time and money. Once the testing standard has been selected, it's only moments after pressing the AutoTest key before PASS/FAIL results are displayed. AutoTests are based on length, propagation delay, dual-wavelength loss results and user-supplied data such as the number of splices and connections. The Turbotest 400 can also operate like a traditional optical power meter to measure optical power at 850, 1300, 1310, and 1550 nm. Using the supplied Windows® software, test results can be downloaded to your PC to document your network or to produce professional certification reports for your customer. The Turbotest 400 Series stores up to 1000 fiber test results in user defined files. To speed the testing process, both models can automatically increment fiber numbers. AutoTest certification standards include TIA 568-A, ISO 11801, EN 50173, 10 Base-FL, 100 Base-FX, 1000 Base-SX, 1000 Base-LX, and FDDI. Additional certification standards can be programmed by the user.

Turbotest 400 - Premises Certification

Turbotest 400 Fiber Certification Test Sets are designed to quickly test either multimode or single-mode fiber links, and generate certification reports based on the latest fiber standards. Two versions are available, the Turbotest 410 which operates at 850/1300 nm for multimode applications, and the Turbotest 420 which operates at 1310/1550 nm for single-mode applications.

Specifications

MODEL	T410	T420
Center Wavelengths	850/1300	1310/1550
Emitter Type	LED	Laser
Safety Class	IEC 1	FDA 1, IEC 1
Detector Type	Ge	Ge
Link Certification Range – Loss (dB) – Length (km)	11 5	11 20
Power Meter Measurement Range (dBm)	0 to -40	0 to -40
Available Connector Types	ST, SC	ST, SC, FC
Power	4 AA Alkaline or AC	4 AA Alkaline or AC

Accessories

MODEL	DESCRIPTION
4050-00-0112	AC Adapter, 100-240 VAC / 12 VDC
6000-00-0003	Serial Cable, 9-pin M to 9-pin F

Optical Power Meters

Optical power meters may be used to measure optical power in premises, telco, or broadband fiber optic networks. When used with an LED or laser light source, an OPM can also measure the attenuation (insertion loss) of multimode or single-mode cables.

OPM1 - Measures Optical Power in dBm

With only two controls – Power 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.

OPM4 - Adds Wave ID and Set Reference

The OPM4 offers automatic wavelength identification and switching when used with Wave ID light sources. The OPM4 stores optical references for each calibrated wavelength. An easy to read Dual Wavelength LCD display with Backlight shows measured power [dBm or µW] or insertion loss [dB], calibrated wavelengths, tone signal [Hz], wavelength ID, and the battery charge status.

OPM5 - Adds Wave ID and Data Storage

The OPM5 offers automatic wavelength identification and switching when used with Wave ID light sources. The OPM5 stores optical references for each calibrated wavelength. An easy to read Dual Wavelength LCD display with Backlight shows measured power [dBm or µW] or insertion loss [dB], calibrated wavelengths, tone signal [Hz], wavelength ID, and the battery charge status. Up to 500 records per wavelength of power or insertion loss measurements may be stored in internal non-volatile memory. Using the supplied Windows® compatible software and USB connection, test records may be transferred to a PC for storage, display, printing, and analysis.

Specifications

MODEL	OPM1-2C	OPM1-3C	OPM4-1D	OPM4-2D	OPM4-3D	OPM4-4D	OPM5-2D	OPM5-3D	OPM5-4D
Calibrated wavelengths (nm)	850, 1300, 1310,1550	850, 1300, 1310,1550	660, 780, 850	850, 1300, 1310,1550	850, 1300, 1310,1550, 1625	850, 980, 1310,1490, 1550, 1625	850, 1300, 1310, 1550	850, 1300, 1310,1550, 1625	850, 980, 1310,1490, 1550, 1625
Detector type	Germanium	InGaAs	Silicon	Germanium	InGaAs	Filtered InGaAs	Germanium	InGaAs	Filtered InGaAs
Measurement range (dBm)	+6 to -60	+6 to -70	+6 to -70	+6 to -60	+6 to -70	+26 to -50	+6 to -60	+10 to -75	+26 to -50
Measurement units	dBm	dBm	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW
Power	9 volt	9 volt	2 x AA batteries	2 x AA batteries	2 x AA batteries	2 x AA batteries	2 x AA batteries or AC	2 x AA batteries or AC	2 x AA batteries or AC
Wavelength ID	—	—	yes	yes	yes	yes	yes	yes	yes
Set reference	—	—	yes	yes	yes	yes	yes	yes	yes
Tone Detect*			yes	yes	yes	yes	yes	yes	yes
PC software & storage	—	—	—	—	—	—	yes	yes	yes

** 270 Hz, 330 Hz, 1 kHz, and 2 kHz Tone detection.*

Light Sources

OLS1
LED Light Source

The OLS1 series of LED light sources are inexpensive, practical instruments 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 power/wavelength select switch. Weighing only 0.65 lb, the OLS1 is compact and convenient for field use.

OLS1-Dual
LED Light Source with Wave ID

The OLS1-Dual light source 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. This light source offers three modes of operation: Dual wavelengths sending ID, single wavelength sending ID, and CW. The output port is equipped with a removable SC (FC & ST available) adapter to allow the output connector to be inspected and cleaned. The LED output is stabilized to ensure accurate test results per current TIA/EIA requirements.

OLS2
Laser Light Source

The OLS2 laser source is a cost-effective, rugged, handheld instrument 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 may be used for fiber identification. The LASER output is stabilized to ensure accurate test results per current TIA/EIA requirements. Three versions of the OLS2 are available for measurements at 1310 nm, 1550 nm, 1625 nm. These compact units operate in either continuous wave (CW) mode or 2 kHz modulated mode.

OLS2 - Dual
Laser Light Source with Wave ID

The OLS2-Dual features 1310 nm and 1550 nm LASER output from a single output port and is easy to operate. The LASER output is stabilized to ensure accurate test results per current TIA/EIA requirements. This light source offers 4 modes of operation: Dual wavelengths sending ID, single wavelength sending ID, CW, and modulated tone. When paired with an optical fiber identifier, the OLS2-Dual may be used for fiber identification. The output port is equipped with UCI based removable adapters to allow the output connector to be inspected and cleaned.

Light Sources (continued)

OLS4
Integrated LED & Laser Light Source with Wave ID

The OLS4 is an integrated, two-port LED and LASER light source. The LED and LASER outputs are stabilized to ensure accurate test results per current TIA/EIA requirements. The OLS4 features 850 nm and 1300 nm LED output from a multimode output port and 1310 nm and 1550 nm LASER output from a single-mode output port. This light source offers four modes of operation: Dual wavelengths sending ID, single wavelength sending ID, CW, and modulated Tone. [Active Output], [Tone], [Battery], and [External Power] indicators identify the currently enabled operating mode, 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.

OLS7-3
Triple Wavelength Laser Sources with Wave ID

The OLS7-3 laser source features 1310/1550/1625 nm triple wavelength LASER output from a single port and is easy to operate. Each wavelength may be transmitted individually at CW or with tone modulation at frequencies of 270Hz, 330Hz, 1kHz and 2kHz. Also, each wavelength may be transmitted with Wave ID. The OLS7-3 output port is equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

OLS7- FTTH
Triple Wavelength Laser Source with Wave ID

The OLS7-FTTH laser source is designed specifically for today's FTTH network architectures. It features a triple wavelength LASER output from a single port: 1310nm output for testing in the upstream direction and 1490 or 1550nm, for testing in the downstream direction. The OLS7-FTTH output port is equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

Light Sources (continued)

Specifications

PARAMETER	OLS1-1C	OLS1-2C	OLS2-1300	OLS2-1550
Output wavelengths (nm)	650 - red, 850 + 35/-40	850 + 35/-40, 1300 + 50/-10	1310 ±20	1550 ±20
Output ports	2	2	1	1
Emitter type	LED	LED	Laser	Laser
Safety class	IEC 1	IEC 1	FDA 1, IEC 1	FDA 1, IEC 1
Output power (nominal, dBm)	-10 @ 660 nm >-20 @ 850 nm	-20	-5 *	-5 *
Stability	± 0.1 dB over 8 hours	± 0.1 dB over 8 hours	± 0.1 dB over 1 hour ± 0.15 dB over 8 hours	± 0.1 dB over 1 hour ± 0.15 dB over 8 hours
Available connector types	ST	ST	FC, SC, ST	FC, SC, ST
Power	9 volt or AC	9 volt or AC	9 volt or AC	9 volt or AC

** Adjustable ± 1dB*

PARAMETER	OLS1-DUAL	OLS2-DUAL	OLS4	OLS7-FTTH			OLS7-3		
Wavelengths (nm)	850 ±30, 1300 +50/-10	1310 ±20 1550 ±20	850 ± 30 nm 1300 -10/+50 nm (MM port) 1310 ± 20 nm 1550 ± 20 nm (SM port)	1310 ±20	1490 ±20	1550 ±20	1310 ±20	1550 ±20	1625 ±20
Spectral width (nm)	—	—	—	5	3	5	5	5	2
Output ports	1	1	2	1					
Emitter type	LED	Laser	LED & Laser	Laser, Class I (FDA 21 CFR 1040.10 and 1040.11)					
Safety class	IEC 1	FDA 1, IEC 1	FDA 1, IEC 1	FDA 21 CFR 1040.10 and 1040.11					
Output power (dBm)	> -20*	0**	> -20* @ 850 nm > -20* @ 1300 nm 0 @ 1310 nm 0 @ 1550 nm	-5 (typical) into 9/125 fiber					
Stability	± 0.1 dB over 8 hours	± 0.05 dB over 1 hour ± 0.15 dB over 8 hours	± 0.1 dB over 1 hour (MM port) ± 0.05 dB over 1 hour ± 0.15 dB over 8 hours (SM port)	± 0.05 dB over 1 hr. (after 15 min warm-up, after 30 sec typical) ± 0.1 dB over 8 hrs (after 15 min warm-up, after 30 sec typical)					
Wave ID transmit	yes	yes	yes	yes					
Available adapters	FC, SC, ST	FC, SC, ST, LC	FC, SC, ST, LC	FC, SC, ST, LC					
Power	2 x AA batteries or AC	2 x AA batteries or AC	2 x AA batteries or AC	2 x AA batteries or AC					

** 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.*
*** Adjustable 2dB*

Fiber Optic Loss Test Kits

To accommodate your fiber optic loss testing needs, Noyes offers a variety of multimode (MLP) test kits, single-mode (SLP) test kits, single-mode/multimode (SMLP) and Contractor Series (CK) test kits. These kits are ideal solutions for testing and certifying a range of networks such as LANs, WANs, IXC, CATV, and Telecom. Kits come complete with an adapter cap, software, download cable and instructions.

CKM 2 - Contractor Series Multimode Test Kit with Set Reference

Combining the CSM 2 optical power meter and CSS-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.

CKSM 2 - Contractor Series Multimode & Single-mode Test Kit with Set Reference

Combining the CSM 2 optical power meter, CSS-MM Dual LED light source, and CSS-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.

Fiber Optic Loss Test Kits (continued)

MLP1 - Multimode Test Kit

The MLP1 test kits are inexpensive solutions for testing multimode and single-mode 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.

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

The MLP4-2 test kit offers accurate fiber optic testing at an affordable price. Combining the OPM4-2D optical power meter and the OLS1-Dual LED light source in a rugged carry case, the MLP4-2 is a complete test kit for fiber optic LANs, and WANs.

Used during installations or maintenance, the MLP4-2 performs insertion loss measurements on multimode fiber at 850 and 1300nm, as well as single-mode fiber at 1300nm. The OPM4-2D optical power meter stores reference values at each wavelength for direct loss readings in dB.

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

The MLP5-2 test kit raises field testing to new standards by combining our popular OPM5-2D optical power meter, and the OLS 1-Dual LED light source in a rugged carrying case. Used during installations, the MLP5-2 performs insertion loss measurements on multimode fiber at 850 and 1300 nm, as well as measurements on single-mode fiber at 1300 nm.

The OPM5-2D stores 500 loss readings for each wavelength. In addition, the OPM5-2D will remeasure any specific memory location without erasing or modifying other loss readings. With the supplied PC software, saved test results can be transferred to a PC for storage, analysis, and printing.

Fiber Optic Loss Test Kits (continued)

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

The SLP4-6D test kit combines an OPM4-4D optical power meter and an OLS2-Dual LASER light source and is ideally suited for testing single-mode fiber optic networks. Used during installations, the SLP4-6D performs insertion loss measurements on single-mode fiber at 1310 and 1550 nm.

The OPM4-4D optical power meter stores reference values at each wavelength for direct loss readings in dB.

SLP4-7 & SLP4-FTTH Triple Wave Test Kits with Wave ID and Set Reference

The Triple wavelength single-mode test kits are available in two models, SLP4-7 or SLP4-FTTH. The SLP4-7 and SLP4-FTTH model combine the OPM4-4D optical power meter with Wave ID - automatic wavelength identification and Set Reference feature and either OLS7 (1310/1550/1625 nm) or OLS7-FTTH (1310/1490/1550 nm) LASER source respectively.

Fiber Optic Loss Test Kits (continued)

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

The SLP5-6D test kit combines an OPM5-4D optical power meter and the OLS2-Dual LASER light source and is ideally suited for testing single-mode fiber optic networks. Used during installations, the SLP5-6D performs insertion loss measurements on single-mode fiber at 1310 and 1550 nm.

The OPM5-4D stores 500 loss readings for each wavelength. In addition, the OPM5-2D will remeasure any specific memory location without erasing or modifying other loss readings. With the supplied PC software, saved test results can be transferred to a PC for storage, analysis, and printing.

SLP5-7 and SLP5-FTTH Triple Wave Test Kits with Wave ID, Set Reference, and Data Storage

The SLP5-FTTH and SLP5-7 models 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. 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 & OLS7-3 output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

Fiber Optic Loss Test Kits (continued)

SMLP4-4 Single-mode/Multimode 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 nm and 1300 nm LED output from a multimode output port and 1310 nm and 1550 nm LASER output from a single-mode output port. This light source offers 4 modes of operation: Dual wavelengths sending ID, single wavelength sending ID, CW, and modulated Tone.

The OPM4-2D measures loss results at 850 and 1300 nm for multimode fibers and 1310 and 1550 nm for single-mode fibers and stores reference values at each wavelength for direct loss readings in dB.

SMLP5-5 Single-Mode/Multimode 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 nm and 1300 nm LED output from a multimode output port and 1310 nm and 1550 nm LASER output from a single-mode output port. This light source offers four modes of operation: Dual wavelengths sending ID, single wavelength sending ID, CW, and modulated Tone.

The OPM5-2D measures and stores loss results at 850 and 1300 nm for multimode fibers and 1310 and 1550 nm for single-mode fibers. In addition, the OPM5-2D will remeasure any specific memory location without erasing or modifying other loss readings. With the supplied PC software, saved test results can be transferred to a PC for storage, analysis, and printing.

Fiber Optic Loss Test Kits (continued)

Specifications

MODEL	CKM 2	CKSM 2	MLP1-2	MLP4-2	MLP5-2B	SLP4-6D
Power Meter	CSM 2	CSM 2	OPM1-2C	OPM4-2D	OPM5-2D	OPM4-4D
Light Source	CSS-MM	CSS-MM, CSS-SM	OLS1-2C	OLS1-Dual	OLS1-Dual	OLS2-Dual
Fiber Type	MM	MM, SM	MM, SM	MM, SM	MM, SM	SM
Loss Measurements (nm)	850, 1300	850, 1300 1310, 1550	850, 1300	850, 1300	850, 1300	1310, 1550
Measurement Units	dB, dBm, µW	dB, dBm, µW	dBm	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW
Dynamic Range	40 dB @ 850 nm[1] 40 dB @ 1300 nm[1] 40 dB @ 1310 nm[2] 40 dB @ 1550 nm[2]	40 dB @ 850 nm[1] 40 dB @ 1300 nm[1] 60 dB @ 1310 nm[2] 60 dB @ 1550 nm[2]	40 dB @ 850 nm[1] 40 dB @ 1300 nm[1] 22 dB @ 1300 nm[2]	40 dB @ 850 nm[1] 40 dB @ 1300 nm[1] 22 dB @ 1300 nm[2]	40 dB @ 850 nm[1] 40 dB @ 1300 nm[1] 22 dB @ 1300 nm[2]	50 dB @ 1310 nm[2] 50 dB @ 1550 nm[2]
Wavelength ID	—	—	—	yes	yes	yes
Available Connector Types	SC	SC	ST	SC, ST, FC	SC, ST, FC	SC, ST, FC, LC
Set Reference	—	yes	—	yes	yes	yes
PC Software & Storage	—	—	—	—	yes	—

MODEL	SLP4-FTTH	SLP4-7	SLP5-6D	SLP5-7	SLP5-FTTH	SMLP4-4	SMLP5-5
Power Meter	OPM4-4D	OPM4-4D	OPM5-4D	OPM5-4D	OPM5-4D	OPM4-2D	OPM5-2D
Light Source	OLS7-FTTH	OLS7	OLS2-Dual	OLS7-3	OLS7-FTTH	OLS4	OLS4
Fiber Type	SM	SM	SM	SM	SM	MM, SM	MM, SM
Loss Measurements (nm)	1310 1490 1550	1310 1550 1625	1310 1550	1310 1550 1625	1310 1490 1550	850 1300 1310 1550	850 1300 1310 1550
Measurement Units	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW	dB, dBm, µW
Dynamic Range (dB)	45 @ 1310 nm[2] 45 @ 1490 nm[2] 45 @ 1550 nm[2]	45 @ 1310 nm[2] 45 @ 1550 nm[2] 45 @ 1625 nm[2]	50 @ 1310 nm[2] 50 @ 1550 nm[2]	45 @ 1310 nm[2] 45 @ 1550 nm[2] 45 @ 1625 nm[2]	45 @ 1310 nm[2] 45 @ 1490 nm[2] 45 @ 1550 nm[2]	40 @ 850 nm[1] 40 @ 1300 nm[1] 60 @ 1310 nm[2] 60 @ 1550 nm[2]	40 @ 850 nm[1] 40 @ 1300 nm[1] 60 @ 1310 nm[2] 60 @ 1550 nm[2]
Wavelength ID	yes	yes	yes	yes	yes	yes	yes
Available Connector Types	SC	SC	SC, ST, FC, LC	SC	SC	SC, ST, FC, LC	SC, ST, FC, LC
Set Reference	yes	yes	yes	yes	yes	yes	yes
PC Software & Storage	—	—	yes	yes	yes	—	yes

1 On 62.5/125 µm multimode fiber
2 On 9/125 µm single-mode fiber

Other test kit configurations available.

Fiber Optic Inspection Microscopes

Fiber inspection scopes are used to inspect optical fiber connectors for scratches, dirt, pits, or other problems normally associated with poor transmission performance. By using threaded adapter mounts, Noyes fiber scopes can inspect the fiber and surrounding ferrule of virtually any connector style. Three models, the VFS 1, OFS 300, and VS 300 are available for various applications.

OFS 300
Optical Microscope for Fiber Optic Connectors on Patch Cords

The OFS 300 optical microscope is designed to inspect connectors on fiber optic cables, patch cords, or test jumpers. Two versions of the OFS 300 offer different magnification power. The OFS 300-200C, with 200X magnification, is our most popular fiber scope for inspection of multimode or single-mode fibers. The OFS 300-400C, with 400X magnification, is ideal for critical inspection especially of single-mode fibers. Both models offer 60 hours of continuous battery life. A low battery indicator will flash when approximately 8 hours of optimum brightness remains, reducing the risk of eyestrain.

VS 300
View Safe Video Microscope for Fiber Optic Connectors on Patch Cords

The VS 300 view safe video microscope removes concerns for eye safety while inspecting optical fiber connectors. The design eliminates the optical path to the eye by utilizing a miniature camera and a state-of-the-art micro-display that achieves unparalleled clarity and resolution.

The VS300 is modeled after the functionality of our highly successful OFS300 product line with the following improvements:

- The VS300 has no optical path to the user's eye.
- The VS300 has NTSC video output.
- The VS300 has the familiar shape and control positions of the OFS 300 but is half the weight and has a molded easy grip case with easy access battery compartment.

The VS 300 Video Fiber Scope uses all the OFS 300 -200C adapter caps and has an energy saving automatic shutoff.

Specifications

MODEL	OFS 300-200C	OFS 300-400C	VS 300
Normal Magnification	200x	400x	400x
Adapter Mount	Thread-on	Snap-on	Thread-on
Infrared Safety Filter	Schott KG3	Schott KG3	not required - no optical path to laser
Power	2 AA Alkaline	2 AA Alkaline	2 AA Alkaline

Video Fiber Scopes

Features

- Unparalleled access to connectors and bulkhead adaptors
- One-handed operation
- Resolves ¾ micron scratches
- Precision adaptor tips for easy centering
- 350-micron field of view (diagonal)
- Smooth, precision focusing (left or right handed)
- Advanced lithium ion battery

VFS 2 Video Fiber Scope 2nd Generation

The VFS 2 is a small extremely versatile video fiber scope, which retains the superior image quality associated with Noyes inspection products. The unique “optical-knuckle” allows the user orient the probe head in virtually any direction. This feature allows the user to view connectors that may be located in tight or difficult locations. With a probe head length of less than 8 cm (3.25”), access into crowded/cramped quarters becomes a reality.

The VFS 2 resolves ¾ micron scratches, keeping with our standard of quality end-face images. The unit is designed for one-handed operation and with the “optical-knuckle” feature, the unit is equally easy for both right and left handed individuals. New precision adaptor tips put the fiber in the viewing area right away. These tips ensure the optics will view into the alignment sleeve, thereby simplifying centering the fiber.

The VFS 2 probe may be paired with the VFS 2 high-resolution 3.5” display unit, which features advanced lithium ion battery and charger technology for long, continuous operating times.

Specifications

Optical Specifications

PARAMETER	VALUE
Field of view	350 microns diagonal (208 microns vertical, 285 microns horizontal)
Magnification	250x on 3.5” display, 350x on 5” display
Resolution	¾ micron scratch
Video Output	NTSC

VFS 2 Probe Specifications

PARAMETER	VALUE
Operating temperature	0 to +50°C
Storage temperature	-20 to +60°C
Humidity	0 to 90% (non-condensing)
Probe weight	0.4 lb (0.2 kg)
Probe body size (L x W x D)	6.3 x 1.3 x 1.3 in (15.9 x 3.3 x 3.3 cm)
Probe head size (with FC adapter), (L x W x D)	3.1 x 1.0 x 0.6 in (7.9 x 2.5 x 1.5 cm)

VFS 2 Display Specifications

PARAMETER	VALUE
Display Screen Size	3.5 inch TFT NTSC
Display package with protective boot size	9.0 x 2.0 x 4.7 in (22.9 x 5.1 x 11.9 cm)
Weight	2 lb (0.9 kg)
Power	Li-Ion battery pack or AC adapter
Battery life with VFS2 probe	> 4 hours
Operating temperature	0° to 50° C
Storage temperature	-20 to +60°C
Humidity	0 to 90% RH non-condensing
Li-Ion battery pack charging temperature	-10 to +45°C
Li-Ion battery pack recharging	4 hours

VCP 1 USB Video Capture Port

Fiber end images displayed on a PC

VCP 1

System Requirements

- A 400 MHz (or faster) PC or laptop with USB 1.1 or better
- At least 800 x 600 SVGA display
- Windows 2000 or XP
- At least 128 MB of RAM
- A CD-ROM drive

The VCP 1 Video Capture Port is an interfacing module that provides high-speed composite video signal to a digital format conversion for capturing and displaying video data on a PC. The VCP 1 simply attaches via a standard USB connector to you computer and offers “plug and play” installation.

When used in conjunction with the VFS 2 probe or VS 300 video microscope, the VCP 1 Video Capture Port allows you to inspect fiber optic end-faces and capture viewed images on your computer. With the supplied easy-to-use Windows software, fiber end images can be saved and organized for analyzing, printing, and archiving.

The VCP 1 front panel includes the video capture button - [Snap Shot] for single shot video capture and the [Active] LED, which indicates that the unit is operating.

Batteries or an AC adapter are not required; the VCP 1 power is supplied via the USB connection. The VCP 1 is ideal for laptop or desktop use. The VCP 1 package Includes: VCP 1 unit, CD-ROM with driver and software, and user’s guide.

Features

- Compact size
- Captures fiber end images directly into your computer
- Includes Includes “Video Capture”- Windows®-based software
- Converts analog video signal from Noyes RJ11 input to digital via USB A plug
- Supports NTSC or PAL system
- No battery - no need to install batteries or run off the AC adapter
- Low power consumption
- A single snap shot button takes still images at VGA resolution (640 x 480 pixels)
- Low CPU utilization at decompression
- Plug and play installation

Specifications

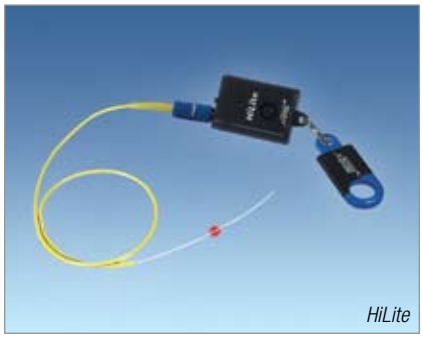
PARAMETER	VALUE
Interface type	USB
Operating system	Windows 2000 and XP
Video input	Noyes RJ11 connector
Output	USB Standard (VCP 1 is a Twain compatible device using supplied software)
Analog video format	NTSC or PAL
Video capture resolution	640 x 480 pixels
Snap shot	Single button to capture still images at 640 x 480 pixels
Video capture format(s):	JPEG
Power source	5VDC @500 mA (max) through USB port to 6 foot cord
USB data bandwidth	4Mbps - 8Mbps isochronous
Weight	0.25 lb (0.11 kg)
Size (L x W x D)	4.0 x 2.2 x 1.0 in (10.2 x 5.6 x 2.5 cm)

Visible Laser Sources

VFI 2

HiLite & VFI2

The HiLite and VFI 2 are compact but powerful visible red laser sources 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 identify faults in fiber optic jumper cables, distribution frames, patch panels, and splice trays. The HiLite and VFI 2 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. The universal connector interface provides fast operation with many connector styles without changing an adapter.


HiLite

MT Tracer (12-Fiber VFI 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.


MT Display *MT Tracer*

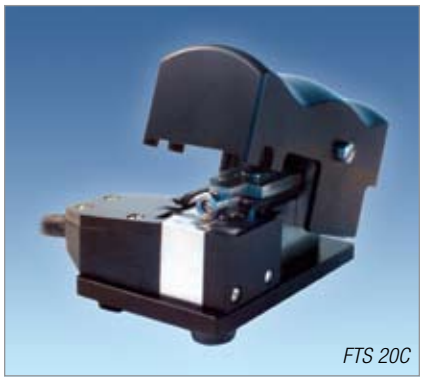
Specifications

MODEL	VFI 2	HILITE	MT TRACER SOURCE
Wavelength	650 nm	650 nm	650 nm
Optical Output Power (into Single-mode fiber)	1 mW, 2 Hz or CW	1 mW, 2 Hz	1 mW, 2 Hz or CW
Emitter Type	Laser	Laser	Laser
Safety Class	FDA 2, IEC 2	FDA 2, IEC 2	FDA 2, IEC 2
Connector Type	Universal 2.5 mm	Universal 2.5 mm	MTP®
Power	2 AA	1 AAA Alkaline	2 AA
Battery Life	60 hrs.	4 hrs.	40 hrs.

Fiber Optic Talk Sets

FTS 1

FTS 2


FTS 20C

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 multiparty 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.

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

Specifications

MODEL	FTS 1-2	FTS 2-1310	FTS 2-1550
Wavelength	1300 nm	1310 nm	1550 nm
Fiber Type	MM, SM	SM	SM
Dynamic Range (MM / SM)	12 dB / 20 dB	45 dB	45 dB
Output	Class I		
Connector Type	FC, SC, ST		
Power	9V or AC	4 AA Alkaline	4 AA Alkaline
One Fiber	Yes		
Digitial Modulation	Yes		
Multiparty	No	Yes	Yes

Accessories

MODEL	DESCRIPTION	FTS 1	FTS 2
4050-00-0111	AC Adapter 90-264 VAC / 9 VDC (specify power cord)	•	•
8500-10-0900	FTS-20C Clip-on Coupler		•

Fiber Optic Attenuators

SVA 1 Single-Mode Variable Attenuator

The SVA 1 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 SVA 1 offers superior resolution across the entire 60 dB dynamic range.

Intended for field testing during installation, new equipment turn-ups, or routine maintenance, the SVA 1 is a complete, easy to use attenuator. Its unique features allow bidirectional signal transmission with no loss penalty.

VOA 5 Variable Fiber Optic Attenuator

The VOA 5-MM (multimode) and VOA 5-SM (single-mode) are hand-held, field-rugged variable optical attenuators suited for a wide range of fiber link certification and production test applications. The VOA 5 can be operated under local control (front panel keypad) or from a PC via a serial link using the supplied PC software. The VOA 5 offers high bi-directional return loss and will maintain the set attenuation level when the unit is powered down.

Specifications

MODEL	VOA 5 MM	VOA 5 SM	SVA 1
Wavelengths or Range	850 & 1300 nm	1310 & 1550 nm	1250 - 1650 nm
Fiber Type	MM (62.5 µm)	SM (9 µm)	SM (9 µm)
Insertion Loss	1.5 dB @ 850 nm 3.0 dB @ 1300 nm	2 dB	< 1.5 dB @ 1310 nm
Attenuation Range	0 to 30 dB	0 to 60 dB	0 to 60 dB
Return Loss	18 dB	40 dB	50 dB
Connector Type	FC, SC, ST	FC, SC, ST	FC, SC
Power	2 AA Alkaline or AC Adapter or NiMH (optional)	2 AA Alkaline or AC Adapter or NiMH (optional)	N/A

OFI 200

OFI 400

OFI Optical Fiber Identifiers

Noyes Optical Fiber Identifiers are rugged, handheld, 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 and OFI 400 model Identifiers are 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 and OFI 400 models 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 models suitable for use outside plant or in the central office.

The OFI 400 model is the next generation of Noyes Optical Fiber Identifiers. It has all the features of the OFI 200 model plus easy-to-read LCD display with Backlight, multiple [TONE] signal detection (270 Hz, 330 Hz, 1 kHz, or 2 kHz), power saving feature, and [Set Reference] feature. The OFI 400 model also measures and displays fiber core power or relative power on an LCD display. Both models are battery operated with the battery indication feature and perform thousands of tests before batteries replacement is necessary.

Applications

- Live fiber identification - used during installation, maintenance, rerouting, or restoration to positively identify fibers prior to cutting and splicing
- Tone detection
- The OFI 400 models may also be used for measuring core power or relative power

Features

(OFI 200 and OFI 400models)

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

(OFI 200 model)

- 2kHz Tone detection - OFI 200 models

(OFI 400 model)

- 270Hz, 330Hz, 1kHz, 2kHz Tone detection
- Easy-to-read LCD display with Backlight
- Measures fiber core or relative power
- Power Off and Set Reference feature

OFI Optical Fiber Identifiers (continued)

Ordering Information

MODEL	INCLUDES
OFI 200D	User's guide and carry case
OFI 400	User's guide and carry case

Specifications

DETECTABLE SIGNAL RANGE

FIBER TYPE	PARAMETER	WAVELENGTH, SIGNAL	OFI 200D	OFI 400
250 µm coated fiber (SMF-28 with 250 µm CPC6 coating)	Minimum detect level (average power, typical)	1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone	-40 dBm -43 dBm -45 dBm -50 dBm	-45 dBm -45 dBm -50 dBm -50 dBm
	Insertion loss (typical)	1310 nm 1550 nm	0.6 dB 2.5 dB	0.6 dB 2.5 dB
3 mm jacketed fiber (SMF-28 with 250 µm CPC6 coating and 3 mm, yellow jacket)	Minimum detect level (average power, typical)	1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone	-30 dBm -32 dBm -33 dBm -37 dBm	-30 dBm -30 dBm -33 dBm -33 dBm
	Insertion loss (typical)	1310 nm 1550 nm	0.8 dB 2.5 dB	1.0 dB 2.8 dB

OPTICAL SPECIFICATIONS

MODEL	OFI 200D	OFI 400
Detector type	InGaAs	
Wavelength range	800 - 1700 nm	
Calibrated size of fiber and wavelength	N/A	250 µm (SMF-28) @1550 nm
Fiber stress	<100 kPSI max	
Fiber size	250 µm, 900 µm, 2 mm or 3 mm jacketed & ribbon fiber	
Tone detection	2000 ±100Hz	270, 330, 1000, or 2000 Hz (±5%)
Core power measurement range	N/A	+13 dBm to – 50 dBm SMF28/28E 250um @ 1550nm
Measurement units	N/A	dBm, dB

GENERAL SPECIFICATIONS

Display Type	N/A	Multi 7 segment LCD; 3 LEDs; 1 piezo buzzer
Power	1 x 9V Alkaline	2 x 1.5V Alkaline
Battery life	>10,000 operations typical	>10,000 operations typical
Operation temperature	0° to 50°C 90% RH (Non-condensing)	
Storage temperature	-30 to +60°C 90% RH (Non-condensing)	
Dimensions (H x W x D)	8.5 x 1.5 x 1.1 in. (22 x 3.8 x 2.8 cm)	
Weight	7.5 oz. (210 g)	6 oz (168 g)

NOTES:

1. *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.

2. *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.*

3. *[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.

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 BendLite ™.

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

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.

Features

- Rugged, handheld, 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

Ordering Information

MODEL	INCLUDES
OFI-FTTx	OFI-FTTx, user's guide, and carry case

Specifications

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 BendLite ™ (BIF); and equivalents
Induced Loss (Typ)	< 1 dB @ 1550 nm
Test Time (Typ)	1 sec
Operating Range*	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 x AAA batteries
Battery Life	800 tests typical
Operating Temperature	-10 to 40°C
Storage Temperature	-20 to 50°C
Dimensions (H x W x D)	8.5 x 1.5 x 1.25 in (22 x 3.8 x 3.2 cm)
Weight	0.5 lbs (0.23 kg)

** Maximum values are typical and depend on fiber type and jacket material.*

Patent pending.

FCC2 Fiber Connector Cleaner

FCC2 is a nonflammable, environmentally safe, residue-free solvent engineered to clean fiber connector end-faces. A new and improved design of the 3-way dispenser intended for easy one-handed use with fiber wipes, convenient wetting of CCT connector cleaning tips, and spray nozzle functionality. Packaged in unique, spill-proof containers, it can be shipped with tool kits so technicians avoid wasting time sourcing a cleaner locally. Offering high purity and fast consistent cleaning, FCC2 was developed with and is packaged by Micro Care Corporation, a world leader in cleaning solvents.

Features

- **New 3-way dispenser** in one convenient package
- Electrically conductive, FCC2 neutralizes “particle cling” by releasing ionic bonds that bind contaminates to the fiber end-face
- Double-filtered to 0.2 microns, this optical grade solvent leaves no residue when drying
- Less drying time than IPA Alcohol
- Low odor, nonflammable
- Ozone safe, environmentally safe, US EPA SNAP approved
- Not Hazardous/Not Regulated for all modes of transport, including air cargo
- Can be shipped with a fusion splicer or test equipment

Applications

- Designed for use with CCT Connector Cleaning Sticks
- Excellent for cleaning light oils, salts, moisture, fingerprints, dust, lint, grime, flux residues, and uncured epoxies
- With rapid drying time, the FCC2 is essential when cleaning connectors in adapters where airflow is minimal

NOTE: *While it is generally safe on plastics, testing is recommended when used on plastic optical fibers*

EU RoHS / WEEE Compliant

- FCC2 is certified as a lead-free product and meets RoHS and WEEE standards.

Health, Safety & Environmental Data

PARAMETER	VALUE
Weight	3 oz / 85 g
Flashpoint (TCC)	None
Safety Rating	Nonflammable
NFPA	Health: 1 Fire: 0 Reactivity: 1
Vapor Density (Air = 1)	4
Ozone Impact	Zero
TSCA Listed	No

Ordering Information

PART NUMBER	DESCRIPTION
FCC2-00-0900	FCC2 Fiber Connector Cleaner in 3 oz / 85 g can
FCC2-00-0901	Case of 12 cans

FPF1 Fiber Preparation Fluid

FPF1 fluid is a nonflammable, nonhazardous cleaner for use on optical fiber after stripping, prior to termination or fusion splicing, and for cleaning connector end-faces after polishing. A new and improved design of the 3-way dispenser intended for easy one-handed use with fiber wipes, convenient wetting of CCT connector cleaning tips, and spray nozzle functionality. Packaged in unique, spill-proof containers, it can be shipped with tool kits so technicians avoid wasting time sourcing a cleaner locally. Offering high purity and fast consistent cleaning, FPF1 was developed with and is packaged by Micro Care Corporation, a world leader in cleaning solvents.

Features

- **New 3-way dispenser** in one convenient package
- Electrically conductive, FPF1 neutralizes “particle cling” by releasing ionic bonds that bind contaminates to the fiber end-face
- Double-filtered to 0.2 microns, this optical grade solvent leaves no residue when drying
- Less drying time than IPA Alcohol
- Low odor, nonflammable
- Ozone safe, environmentally safe, US EPA SNAP approved
- Not Hazardous/Not Regulated for all modes of transport, including air cargo.
- Can be shipped with a fusion splicer or test equipment

Applications

- Cleaning optical fibers prior to termination or fusion splicing
- Excellent for cleaning light oils, salts, moisture, fingerprints, dust, lint, grime, flux residues, and uncured epoxies.

NOTE: *While it is generally safe on plastics, testing is recommended when used on plastic optical fibers*

EU RoHS / WEEE Compliant

- FPF1 is certified as a lead-free product and meets RoHS and WEEE standards.

Health, Safety & Environmental Data

PARAMETER	VALUE
Weight	3 oz / 85 g
Flashpoint (TCC)	None
Safety Rating	Nonflammable
NFPA	Health: 1 Fire: 0 Reactivity: 1
Vapor Density (Air = 1)	4
Ozone Impact	Zero
TSCA Listed	No

Ordering Information

PART NUMBER	DESCRIPTION
FPF1-00-0900	FPF1 Fiber Preparation Fluid in 3 oz / 85 g can
FPF1-00-0901	Case of 12 cans

FiberWipes™

New Material – New Packaging – Superior Wipes

Specifically designed to remove and trap common contaminants found in fiber optic installations, AFL Telecommunications' FiberWipes provide superior cleaning results from material that is stronger and more absorbent, yet softer than traditional cellulose wipes. Packaged in a clean room, the fabric is considered "fiber optic grade". FiberWipes are available in rugged mini-tubs (90 wipes) or in hermetically sealed individual packages (FiberAide 1) and are the perfect size for tool kits and test kits.

Applications

- Cleaning optical fibers prior to termination or splicing
- Cleaning fiber optic connector end-faces
- Cleaning lenses, mirrors, and other optical surfaces

Features

- Lint free
- Sized for fiber and connector cleaning
- Robust and tear-resistant

FiberWipes

- Small package footprint ideal for a laboratory or field use
- Rugged 90-wipe mini-tub keeps wipes clean and dry prior to use
- Octagonal cover minimizes rolling distance if dropped
- Solvent safe; may be moistened to provide wet / dry cleaning
- Instructions for use on the side of the tub

FiberAide 1

- Hermetically sealed wipes remain uncontaminated and ready for use
- Foil backed wipes protect skin from cleaning solvents and cable gel
- Packaging contains no glues to leach out
- Button hole for placement on panel board or keychain
- Ideal for shipping with OEM equipment to prevent contamination of fiber surfaces at installation
- Solvent safe; may be moistened to provide wet / dry cleaning
- Pictorial instructions on each package

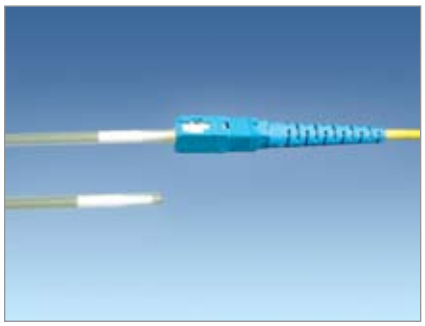
Specifications

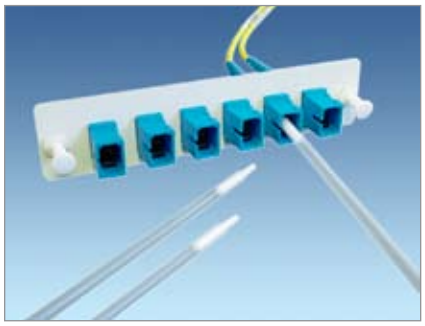
PRODUCT	WIPE SIZE	PACKAGE SIZE	PACKAGE WEIGHT
FiberWipes	4.25" W x 2" H	3" Dia x 3" H	2.6 oz
FiberAide 1	2.75" W x 1.5" H	4.25" W x 2.75" H	0.6 oz / 10 packets

Ordering Information

PART NUMBER	DESCRIPTION
9000-03-0026MZ	FiberWipes – case of 24 mini-tubs (2160 total wipes, 90 wipes per mini-tub)
9000-03-0027MZ	FiberAide 1 – case of 600 packets (60 bundles, 10 packets per bundle)

FiberWipes is a trademark of MicroCare Corporation.
FiberAide 1 is patent pending.





CCT - Connector Cleaning Tips

Noyes Test & Inspection is pleased to offer a unique technology in fiber connector end-face cleaning. Rather than a fabric-covered or foam-covered stick, we are offering a molded cleaning tip that will trap contamination and wick cleaning solvents from bulkhead connectors. This new cleaning tip is a molded, sintered polymer that is both porous and pliable conforming to virtually any fiber end-face polish geometry while trapping and absorbing contaminants.

Features

- Molded sintered polymer construction assures perfect bulkhead fit and consistent performance with each cleaning tip
- No fibers, binders, adhesives or outgassing that may contaminate the connector
- Traps and holds liquid and particle contaminants in an absorbent open cell matrix ranging from 10-25 microns
- The elastic cleaning head enhances entrapment of particles and oils, while allowing the tip to conform to virtually any fiber end-face geometry (8 degree, domed polish, etc.)
- Very absorbent
- US and Foreign patents pending

Applications

- Dual-head design permits wet and dry cleaning in one swab
- Solvent and chemical resistant, not physically altered by solvent contact
- Designed to work with Noyes FCC2, Fiber Connector Cleaner
- Most connectors cleaned the first time

Tip Configurations

- SOCKET – cleaning tip exposed for cleaning ferrule end-faces in alignment sleeves that are recessed within sockets or bulkhead adaptors
- PIN – cleaning tip recessed in the "straw" for cleaning exposed ferrules and termini (jumpers)

Ordering Information

Cleaning tips are available for most common commercial and Mil Spec ferrule sizes.

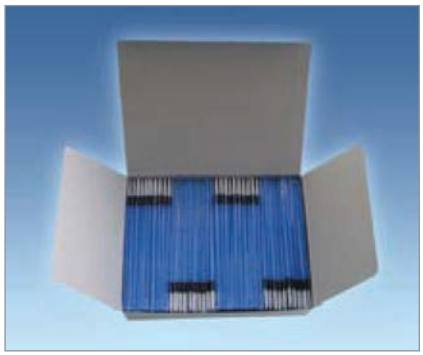
SIZE (diameter of ferrule or termini)	TYPE	PART NUMBER	COMMENTS
2.5 mm	Pin	CCTP-25-0900	Examples: SC, ST, FC, etc.
2.5 mm	Socket	CCTS-25-0900	Examples: SC, ST, FC, etc.
2.0 mm	Pin	CCTP-25-0900	Mil T 29504/14 For Mil C 28876
2.0 mm	Socket	CCTS-16-0900	Mil T 29504/15 For Mil C 28876
1.6 mm	Pin	CCTP-25-0900	Mil T 29504/04 For Mil C 38999
1.6 mm	Socket	CCTS-16-0900	Mil T 29504/05 For Mil C 38999
1.25 mm	Pin	CCTP-25-0900	Examples: LC, MU
1.25 mm	Socket	CCTS-12-0900	Examples: LC, MU
MT ferrule	Pin	CCTX-MT-0900	Examples: MTP®*, MPX®**
MT ferrule	Socket	CCTX-MT-0900	Examples: MTP®*, MPX®**

* Registered Trademark of US Conec Ltd.

** Registered Trademark of TYCO Electronics Corp.

Type 2.5 mm

Type 1.25 mm



Cletop Adapter Cleaning Sticks

Cletop (ACT) adapter cleaning sticks are an easy to use efficient means of cleaning fiber optic connectors in adapters and cleaning adapter alignment sleeves. Cletop sticks are available in sizes for most common commercial connectors (ST, SC , FC, LC, MU), military connectors, and LEMO connectors for video applications. When connectors need to be cleaned inside adapters, you can rely on the Cletop stick.

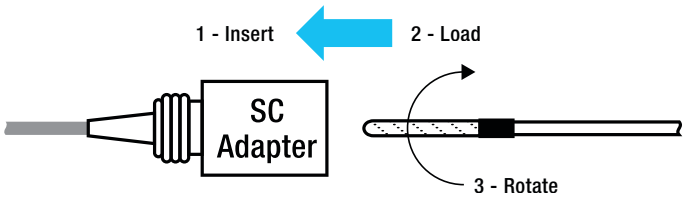
Features

- Easy to use and efficient. Delivers a consistently high level of cleaning performance.
- Easy to clean ferrule end-faces inside the plug-in fiber optic connectors and various adapters.
- Lightweight and safe to use. Compact and disposable.
- Suitable for cleaning inside adapters for dust control.

Ordering Information

PART NUMBER	DESCRIPTION	CONNECTORS
8500-10-0024MZ	ACT-01 – 2.5mm Cletop Sticks (Box of 200)	FC, SC, ST, & D4
8500-10-0022MZ	ACT-02 – 1.25mm Cletop Sticks (Box of 200)	LC & MU
8500-10-0023MZ	ACT-03 – 2.0mm Cletop Sticks (Box of 200)	Military Termini. High definition television camera connectors such as LEMO.
8500-10-0030MZ	Double-ended 2.0/2.5mm Cletop Sticks (Box of 100)	
8500-10-0031MZ	2.5mm Cletop Stick with Guide Sleeve (Box of 100)	

Recommended Cleaning Procedure for ACT Cleaning Sticks



Procedure:

1. **Insert**: Ensure that stick is held straight when inserting into sleeve.
2. **Load**: Apply sufficient pressure (approx. 600-700g) to ensure ferrule is a slightly depressed in sleeve.
3. **Rotate**: Rotate stick clockwise 4-5 times, while ensuring direct contact with ferrule end-face is maintained.

Notes:

1. Number of uses per stick:
   Maintenance (repair) – 1 use
   Equipment construction – 4 uses (max.)
2. FCC2 Fluid will improve cleaning performance.

Cletop -S Series

Cletop Series

Cletop Cassette Cleaner Series

The Cletop connector cleaner is a rugged palm-sized cleaner that offers exceptional performance with a proven track record. The choice of many leading manufacturers and telecom carries worldwide for nearly 20 years – Cletop is a name you can rely on.

Why Clean Fiber Connectors?

- Pits and scratches are often caused by dirt
- Dust, dirt, oils, etc. are everywhere and will migrate to exposed connector end-faces
- Dirty connectors attenuate signal levels and can increase digital bit error rates
- Always clean both connectors when mating / unmating to avoid contamination transfer

Cletop Cassette Cleaner Options

- Cletop Series - Original version (proven reliability)
- Cletop -S Series - Second generation cleaner offering the same Cletop cleaning performance with "Drop-in" replacement tape cartridge and ergonomic design that works equally well for left or right handed operators
- Type A & -SA – Designed for single 2.5mm ferrules (SC, FC, ST, & D4)
- Type B & -SB – Cleans SC, SC2, FC, ST®, DIN, D4, MU, LC, MT, MPO/MTP® without pins, MT-RJ without pins
- Type MPO – Accepts MPO/MTP® connectors with pins
- Type MT-RJ – Accepts MT-RJ connectors with pins

Features

- Compact and lightweight design is ideal for use in laboratories, assembly lines, or in the field
- Consistent cleaning results without IPA alcohol, which is toxic, flammable, and leaves a residue on fiber ends (white haze)
- Excellent anti-static properties for static sensitive applications and to minimize reattachment of dust to ferrule after cleaning
- Simple push button shutter operation exposes cleaning tape only when in use – minimizing unwanted dust
- Replaceable and cost effective cleaning tape
- Over 400 wipes per tape

Specifications

PARAMETER	VALUE
Size	5.1 x 3.0 x 1.6 inches (130 x 75 x 40 mm)
Weight	0.35 pounds / 160 grams

Ordering Information

PART NUMBER	DESCRIPTION
CLETOP-S SERIES	
8500-10-0020MZ	Cletop -SA with Blue tape
8500-10-0029MZ	Cletop -SB with Blue Tape
8500-10-0016MZ	Cletop -SB with White tape
8500-10-0021MZ	Replacement Tape Type S - Blue
8500-10-0017MZ	Replacement Tape Type S - White
CLETOP ORIGINAL SERIES	
8500-10-0027MZ	Cletop Type A with Blue tape
8500-10-0011MZ	Cletop Type A with White tape
8500-10-0028MZ	Cletop Type B with Blue Tape
8500-10-0014MZ	Cletop Type B with White tape
8500-10-0032MZ	Cletop for MT-RJ with pins (White tape)
8500-10-0033MZ	Cletop for MPO/MTP with pins (Blue tape)
8500-10-0012MZ	Replacement Tape Blue
8500-10-0015MZ	Replacement Tape White

ST is a registered trademark of Lucent Technologies

MTP is a registered trademark of US Conec

FCP1 Fiber Cleaning Pack

AFL Telecommunications offers a complete selection of Noyes brand fiber optic cleaning kits for field cleaning of connector end faces in fiber frames, adapters and on jumpers. Using our exclusive FCC2 non-hazardous cleaning fluid and CCT molded cleaning tips, the FCP1 Series of kits delivers compact, safe, easy to use, reliable cleaning for all types of fiber optic connector end faces including Military and Multiple Fiber Ferrule designs.

Kit Contents by Application

APPLICATION	CLEANING MATERIALS	DESCRIPTION
For cleaning connector end-faces within alignment sleeves (bulkhead adaptors, female socket connectors)	FCC2	Optical quality cleaning fluid
	CCTS-25	2.5mm cleaning tips for FC, SC, ST type standard connectors
	CCTS-12	1.25mm cleaning tips for LC, MU type small form factor connectors
	CCTS-16	1.6mm cleaning tips for 2.0mm and 1.6mm termini in military connectors and D4 connectors
For cleaning ferrule end-faces that are exposed (jumpers and patch cords)	FCC2	Optical quality cleaning fluid
	Cletop	Reel type cleaner
	CCTP-25	Universal cleaning tip for exposed ferrule and termini end-faces on jumpers or military connectors
For cleaning alignment sleeves	FCC2	Optical quality cleaning fluid.
	ACT01	2.5mm swabs for FC, SC, ST type standard connectors
	ACT02	1.25mm swabs for LC, MU type small form factor connectors
	Cletop Stick-Type	2.0mm swabs for D4 connectors
Additional options	Canned air	For cleaning work area
	VS 300 OFS 300-200 OFS 300-400	Optical or video microscope for end-face inspection

See individual data sheets for specification on individual supplies.

Ordering Information

A wide variety of pre-stocked kits makes ordering easy. Choose from the standard kits listed on the page 2 or call us at 800-321-5298 for a custom kit to meet your application needs. To keep your cleaning kits stocked and ready for use, page 3 lists individual cleaning items (refills).