

# MaxTester 735D

## metro/PON FTTx/MDU OTDR

OPTIMIZED FOR METRO/CORE AND FTTx/MDU FIBER DEPLOYMENTS AND TROUBLESHOOTING



- High-resolution OTDR designed for metro network testing and splitter characterization in PON FTTx applications.

COMPATIBLE WITH  
**EXchange**

**iOLM**  
READY

### KEY FEATURES

Dynamic range up to 42 dB for up to 144 km point-to-point (P2P)

Support high port count PON splitters (up to 1x128)

Live fiber testing

Short dead zones: event dead zone (EDZ) = 0.5 m; attenuation dead zone (ADZ) = 2.0 m; PON dead zone = 25 m

Single port for in-service troubleshooting with in-line 1490/1550 nm PON power meter (optional)

iOLM-ready: one-touch multiple acquisitions, with clear go/no-go results presented in a straightforward visual format

Industry-leading onboard PDF reporting and post-processing, included for all users

### APPLICATIONS

FTTx/MDU test challenges within PON networks

Metro/core network testing (P2P)

Manufacturing automation

### RELATED PRODUCTS AND ACCESSORIES



Fiber inspection scope  
FIP-400B (Wi-Fi or USB)



Soft pulse suppressor bag  
SPSB

**FastReporter**

Advanced data  
post-processing software

## THE HANDHELD OTDR... WITH PROVEN PERFORMANCE

The MaxTester 700D Series builds on the proven tablet-inspired, lightweight and rugged OTDR MaxTester platform. The familiar 7-inch, outdoor-enhanced touchscreen continues to deliver an unprecedented user experience with its intuitive Windows-like GUI ensures a fast learning curve. The OTDR environment offers icon-based functions, instant boot-up, automatic macrobend finders as well as improved auto and real-time modes.

The MaxTester 700D Series is a line of genuine high-performance OTDRs from the world's leading manufacturer. It delivers EXFO's tried and true OTDR quality and accuracy along with the best optical performance for right-first-time results, every time.

The amazing 12-hour battery life will never let a technician down, and the plug-and-play hardware options, like the VFL, power meter and USB tools, make every technician's job easier.

Most importantly, the MaxTester 700D Series is compatible with the intelligent Optical Link Mapper (iOLM), an intelligent OTDR-based application. This advanced software turns even the most complex trace analysis into a simple, one-touch task. Ultimately, the MaxTester 700D Series is small enough to fit in your hand and big enough to fit all your needs!



### SECURE YOUR INVESTMENT AGAINST THEFT

Protected instruments have no value on the black market making them completely unappealing to thieves. With our security management option, administrators can define and load a tamper-proof security profile on the MaxTester, displaying a property message on the home screen and securing it with a user password (permanent or renewable).

## LOADED WITH FEATURES TO BOOST YOUR EFFICIENCY



### Real-time averaging

Activates the OTDR laser in continuous shooting mode, the trace refreshes in real time and allows to monitor the fiber for a sudden change. Perfect for a quick overview of the fiber under test.



### Zoom tools

Zoom and center to facilitate the analysis of your fibers. Draw a window around the area of interest and center in the screen quicker.



### Set parameters on the fly

Dynamically change OTDR settings for the ongoing acquisition without stopping or returning to submenus.



### Macrobend finder

This built-in feature enables the unit to automatically locate and identify macrobends, no need to spend further time analyzing the traces.



### Automode

Used as a discovery mode, this feature automatically adjusts the distance range and the pulse width in function of the link under test. It is recommended to adjust the parameters to perform additional measurements to locate other events.



### Bidirectional analysis (Via FastReporter 3 data post-processing software)

Recommended to ensure true splice characterization, bidirectional analysis combines results from both directions to provide an average loss for each event. For a more complete event characterization, use intelligent Optical Link Mapper (iOLM) and benefit from maximum resolution on both directions (multiple pulse widths at multiple wavelengths) as well as a consolidated view.

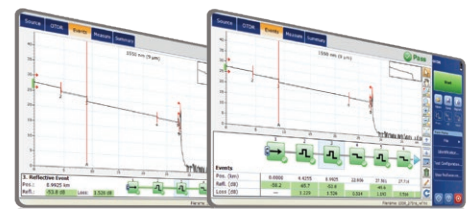
## LOOKING FOR ICON-BASED MAPPING?

### Linear view (included on all EXFO OTDRs)

Available on our OTDRs since 2006, the linear view simplifies the reading of an OTDR trace by displaying icons in a linear way for each wavelength. This view converts the graph data points obtained from a traditional single pulse trace into reflective or non-reflective icons. With applied pass/fail thresholds, it becomes easier to pinpoint faults on your link.

This improved version of linear view provides the flexibility to display both the OTDR graph and its linear view without having to toggle to analyze your fiber link.

Although this linear view simplifies the OTDR reading of a single pulse width's trace, the user will still need to set OTDR parameters. In addition, multiple traces must often be performed in order to fully characterize fiber links. See the section below to learn how iOLM can do this automatically and provide more accurate results.



## iOLM—REMOVING THE COMPLEXITY FROM OTDR TESTING

OTDR testing comes with its load of challenges...



**In response to these challenges, EXFO developed a better way to test fiber optics:** The iOLM is an OTDR-based application designed to simplify OTDR testing by eliminating the need to configure parameters, and/or analyze and interpret multiple complex OTDR traces. Its advanced algorithms dynamically define the testing parameters, as well as the number of acquisitions that best fit the network under test. By correlating multipulse widths on multiple wavelengths, the iOLM locates and identifies faults with maximum resolution—all at the push of a single button.

### How does it work?



Turning traditional OTDR testing into clear, automated, first-time-right results for technicians of any skill level.

### Three ways to benefit from the iOLM

**COMBO**

Run both iOLM and OTDR applications (Oi code)

**UPGRADE**

Add the iOLM software option to your iOLM-ready unit, even while in the field

**iOLM ONLY**

Order a unit with the iOLM application only

### iOLM features value pack and options

In addition to the standard iOLM feature set, you can select added-value features as part of the **Advanced** or **Pro** packages, or standalone options. Please refer to the [iOLM specification sheet](#) for the complete and most recent description of these features.

#### iOLM Standard

- Dynamic multipulse multiwavelength acquisition
- Intelligent traces analysis and diagnostics
- Single link view and event table
- SOR trace generation
- Single iOLM file per link for easy reporting
- Unbalanced/tapered PON characterization and troubleshooting
- **Optimode**: Short-link close events, fast short link, fast medium range

#### iOLM Advanced (iADV)<sup>a</sup>

- Real-time OTDR
- SOR pulse and wavelength editor
- SOR trace view
- Custom elements
- Advanced link edition and re-analysis
- 2:N splitter characterization
- **Optimode**: SFP-Safe Troubleshooting<sup>b</sup>, PON last-mile certification

#### iLOOP<sup>a</sup>

- iOLM loopback
- iOLM automated bidirectional analysis over EXFO Exchange<sup>b, c</sup>

#### iCERT<sup>a</sup>

- Cabling certification option

a. Require enabling iOLM standard.  
 b. Singlemode only, configuration without splitter.  
 c. Requires EXFO Exchange account.

## FIBER CONNECTOR INSPECTION AND CERTIFICATION—THE ESSENTIAL FIRST STEP BEFORE ANY OTDR TESTING

Taking the time to properly inspect a fiber-optic connector using an EXFO fiber inspection scope can prevent a host of issues from arising further down the line, thus saving you time, money and trouble. Moreover, using a fully automated solution with autofocus capabilities will turn this critical inspection phase into a fast and hassle-free one-step process.

### Did you know that the connector of your OTDR/iOLM is also critical?

The presence of a dirty connector at an OTDR port or launch cable can negatively impact your test results, and even cause permanent damage during mating. Therefore, it is critical to regularly inspect these connectors to ensure that they are free of any contamination. Making inspection the first step of your OTDR best practices will maximize the performances of your OTDR and your efficiency.



FEATURES	USB WIRED	WIRELESS	AUTONOMOUS
	FIP-430B	FIP-435B	FIP-500
Image capture	•	•	•
Five-megapixel CMOS capturing device	•	•	•
Automatic fiber image-centering function and focus adjustment	•	•	•
On-board pass/fail analysis	•	•	•
Pass/fail LED indicator	•	•	•
USB connectivity to an EXFO platform or PC	•	•	
Wireless connectivity to an EXFO platform or PC		•	
Wireless connectivity to a smartphone		•	•
Manual scanning for multifiber / MPO connectors	•	•	
Semi-automated multifiber / MPO inspection	•	•	
Fully automated multifiber / MPO inspection			•
On-board touch screen			•
SmarTips with automated thresholds			•
Quick-connect mechanism			•

For more information, visit [www.EXFO.com/fiberinspection](http://www.EXFO.com/fiberinspection).

## SOFTWARE TEST TOOLS

This series of platform-based software testing tools enhance the value of the FTB-1v2/FTB-1 Pro, FTB-2/FTB-2 Pro and FTB-4 Pro platforms, providing additional testing capabilities without the need for additional modules or units.

### Remote control and measurement automation

SCPI commands available for OTDR measurements. With FTB-1v2/FTB-1 Pro, FTB-2/FTB-2 Pro and FTB-4 Pro: GPIB (IEEE 488.1, IEEE 488.2) or Ethernet.

### Expert Test Tools

#### EXpert VoIP TEST TOOLS

EXpert VoIP generates a voice-over-IP call directly from the test platform to validate performance during service turn-up and troubleshooting.

- Supports a wide range of signaling protocols, including SIP, SCCP, H.248/Megaco and H.323
- Supports mean-opinion-score (MOS) and R-factor quality metrics
- Simplifies testing with configurable pass/fail thresholds and RTP metrics

#### EXpert IP TEST TOOLS

EXpert IP integrates six commonly used datacom test tools into one platform-based application to ensure that field technicians are prepared for a wide range of testing needs.

- Rapidly performs debugging sequences with VLAN scan and LAN discovery
- Validates end-to-end ping and traceroute
- Verifies file-transfer-protocol (FTP) performance and hypertext-transfer-protocol (HTTP) availability

#### EXpert IPTV TEST TOOLS

This powerful Internet-protocol-television (IPTV) quality assessment solution enables set-top box emulation and passive monitoring of IPTV streams, allowing for quick and easy pass/fail verification of IPTV installations.

- Real-time video preview
- Analyzes up to 10 video streams
- Comprehensive quality-of-service (QoS) and quality-of-experience (QoE) metrics, including the MOS score

**Automate asset management. Push test data to the cloud. Get connected.**

#### EXFO|Connect

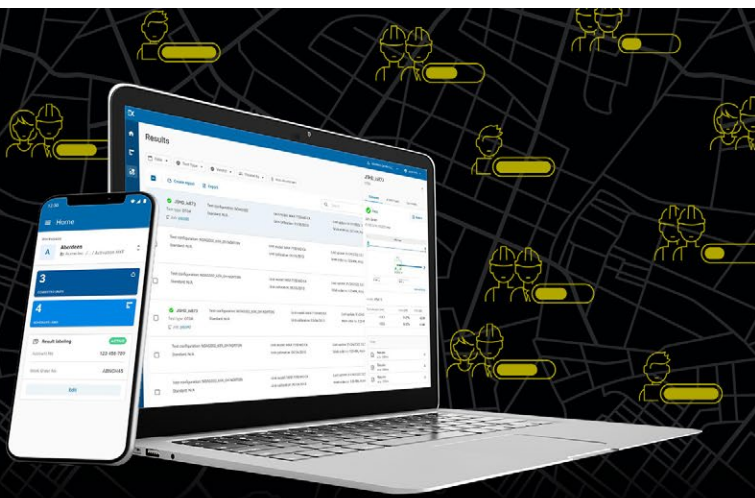
EXFO Connect stores test equipment and test-data content automatically in the cloud, allowing you to streamline test operation from build-out to maintenance.



**SHARE TEST RESULTS.  
BOOST COMPLIANCE.  
UNLOCK INSIGHTS.**

**Cloud-hosted solution for sharing test results and ensuring compliance.**

Paired with EXFO's leading test instruments, EXFO Exchange drives an entire ecosystem, while integrating seamlessly with existing operation processes.



### KEY BENEFITS



Automate test results management



Boost compliance and efficiency



Improve collaboration and visibility



Access comprehensive reporting



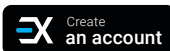
Unlock insights to see what matters

### SIMPLE SETUP IN THREE STEPS

1

#### Create your free EXFO Exchange account

Begin your journey by creating an EXFO Exchange account. Setting up your account is quick and easy.



2

#### Install the mobile app

Download the EXFO Exchange app to allow test data from compatible EXFO devices to be uploaded securely to the cloud (free of charge).



For MaxTester and FTB users, install the native app.



3

#### Save time and boost efficiency

Once your account created—and the mobile app installed and paired with compatible EXFO devices—all test results will be sent to the cloud. On the web app, you will see field test results from all invited testers.





Data post-processing software

**INCLUDED: ADVANCED FASTREPORTER CAPABILITIES**

FastReporter is a consolidated data management and postprocessing solution designed to improve results quality as well as auditing and reporting productivity. When logging onto EXFO Exchange on your tester, you will have access to all advanced FastReporter capabilities, including:

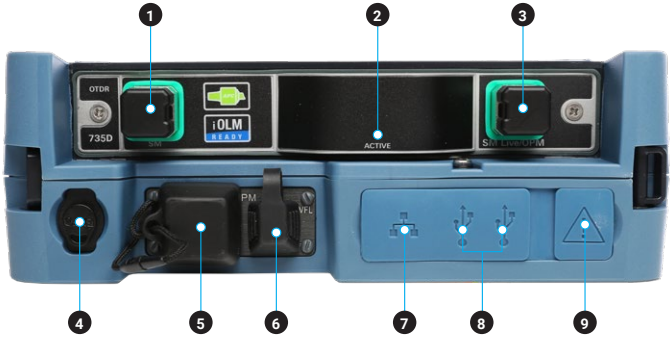
- Results viewer
- Advanced reporting formats (Excel, PDF, custom)
- Advanced editing
- Automated validation and results correction

SOFTWARE UTILITIES	
Software update	Ensure that your MaxTester is up-to-date with the latest software.
VNC configuration	The Virtual Network Computing (VNC) utility allows technicians to easily remote control the unit via a computer or laptop.
Data mover	Transfer all your daily test results quickly and easily.
Centralized documentation	Instant access to user guides and other relevant documents.
PDF Reader	View your reports in PDF format.
Bluetooth file sharing	Share files between your MaxTester and any Bluetooth-enabled device.
Wi-Fi connection	Wi-Fi FIP inspection scope interface. Upload test results.
Inspection scope	USB or Wi-Fi scope to inspect and analyze connectors.
FTP server	Exchange files over Wi-Fi to an FTP application on a smartphone for easier file sharing from the field.
Security management	Tamper-proof security profile with user password (permanent or renewable) and custom property message.



### PACKAGED FOR EFFICIENCY

- 1 Dark fiber singlemode OTDR port
- 2 Testing LED indicator
- 3 Singlemode Live OTDR port
- 4 Stylus
- 5 Power meter
- 6 Visual fault locator
- 7 10/100 Mbit/s Ethernet port
- 8 Two USB 2.0 ports
- 9 AC adapter
- 10 Home/switch application and screen capture (hold)
- 11 Power on/off/stand by
- 12 Battery LED status
- 13 Built-in Wi-Fi/Bluetooth
- 14 Stand support





## SPECIFICATIONS <sup>a</sup>

TECHNICAL SPECIFICATIONS	
Wavelengths (nm) <sup>b</sup>	1310 ± 20/1550 ± 20/1625 ± 10/1650 ± 5
Live wavelength (nm)	1650 nm: bandpass 1650 nm ± 7 nm isolation >50 dB out of 1650 nm ± 10 nm
Dynamic range (dB) <sup>c</sup>	42/42/42/42
Event dead zone (m) <sup>d</sup>	0.5
Attenuation dead zone (m) <sup>d</sup>	2.0
Distance range (km)	0.1 to 400
Pulse width (ns)	3 to 20 000
Linearity (dB/dB)	±0.03
PON dead zone (m) <sup>e</sup>	25
Loss threshold (dB)	0.01
Loss resolution (dB)	0.001
Sampling resolution (m)	0.04 to 10
Sampling points	Up to 256 000
Distance uncertainty (m) <sup>f</sup>	±(0.75 + 0.0025 % x distance + sampling resolution)
Measurement time	User-defined (maximum: 60 minutes)
Typical real-time refresh (Hz)	4
Reflectance accuracy (dB) <sup>b</sup>	±2

IN-LINE POWER CHECKER <sup>b, g, h</sup>	
Power range (dBm)	-60 to 23
Power uncertainty (dB) <sup>h, i</sup>	±0.5
Calibrated wavelengths (nm)	1310, 1490, 1550, 1625, 1650
Selectable wavelengths (nm)	1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1577, 1590, 1610, 1625, 1650
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz

TECHNICAL SPECIFICATIONS (in-line PON power meter with OPM2 in option) <sup>b, j</sup>	
Power range (dBm)	-60 to 23
PON power meter (nm)	Two channels: 1490/1550 and 1490/1577
Power uncertainty (dB) <sup>h, i</sup>	±0.5
Calibrated wavelengths (nm)	1310, 1490, 1550, 1625, 1650
Selectable wavelengths (nm)	1310, 1490, 1550, 1577, 1625, 1650, 1490/1550, 1490/1577

For complete details on all available configurations, refer to the Ordering information section.

- a. All specifications valid at 23 °C ± 2 °C with an FC/APC connector, unless otherwise specified.
- b. Typical.
- c. Typical dynamic range with longest pulse and three-minute averaging at SNR = 1.
- d. Typical, for reflectance at -55 dB, using a 3-ns pulse. Attenuation dead zone at 1310 nm is 2.5 m (typical) with reflectance below -45 dB.
- e. Non-reflective FUT, non-reflective splitter, 13-dB loss, 50-ns pulse, typical value at 1550 nm.
- f. Does not include uncertainty due to fiber index.
- g. Not available when OPM2 is selected
- h. At calibrated wavelengths.
- i. Requires a good entry connector's health.
- j. Specifications valid when OTDR not in operation or in idle mode.

**SOURCE**

Output power (dBm) <sup>a</sup>	0
Modulation	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz

**GENERAL SPECIFICATIONS**

Size (H × W × D)	166 mm × 200 mm × 68 mm (6 9/16 in × 7 7/8 in × 2 3/4 in)
Weight (with battery)	1.5 kg (3.3 lb)
Temperature	Operating: -10 °C to 50 °C (14 °F to 122 °F) Storage: -40 °C to 70 °C (-40 °F to 158 °F) <sup>b</sup>
Relative humidity	0 % to 95 % non-condensing

**BUILT-IN POWER METER SPECIFICATIONS (GeX) (optional)<sup>c</sup>**

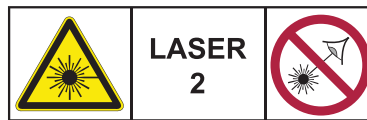
Calibrated wavelengths (nm)	850, 1300, 1310, 1490, 1550, 1577, 1625, 1650
Selectable wavelengths (nm)	850, 1300, 1310, 1490, 1550, 1577, 1625, 1650
Power range (dBm) <sup>d</sup>	27 to -50
Uncertainty (%) <sup>e</sup>	±5 % ± 10 nW
Display resolution (dB)	0.01 = max to -40 dBm 0.1 = -40 dBm to -50 dBm
Automatic offset nulling range <sup>d, f</sup>	Max power to -30 dBm
Tone detection (Hz)	270/330/1000/2000

**VISUAL FAULT LOCATOR (VFL) (optional)**

Laser, 650 nm ± 10 nm
CW/Modulate 1 Hz
Typical P <sub>out</sub> in 62.5/125 μm: > -1.5 dBm (0.7 mW)
Laser safety: Class 2

**LASER SAFETY (complies with FDA 1040.10 and IEC 60825-1:2014)**

With VFL:



Without VFL:

**ACCESSORIES (optional)**

GP-10-061	Soft carrying case	GP-2209	Spare battery
GP-10-072	Semi-rigid carrying case	GP-2240	Utility glove
GP-10-100	Rigid carrying case	GP-2242	Replacement hand strap
GP-1008	VFL adapter (2.50 mm to 1.25 mm)	GP-2243	Spare AC/DC adapter (specify country power cord)
GP-2155	Carry-on size backpack	GP-3115	Kickstand
GP-2205	DC vehicle battery-charging adaptor (12 V)	GP-3207	Replacement APC Swap-Out connector
GP-2208	Spare stylus	GP-3208	Replacement UPC Swap-Out connector

a. Typical output power is given at 1550 nm.

b. -20 °C to 60 °C (-4 °F to 140 °F) with the battery pack.

c. At 23 °C ± 1 °C, 1550 nm and FC connector. With modules in idle mode. Battery operated after 20-minute warm-up.

d. Typical.

e. At calibration conditions.

f. For ±0.05 dB, from 10 °C to 30 °C.

**ORDERING INFORMATION**

**MAX-735D-XX-XX-XX-XX-XX-XX-XX-XX-XX-XX-XX**

**Optical configuration**

SM1 = SM OTDR module, 1310/1550 nm  
 SM3 = SM OTDR module, 1310/1550/1625 nm  
 SM8 = SM OTDR module, 1310/1550 and 1650 nm filtered

**Base software**

OTDR = Enables OTDR application only  
 iOLM = Enables iOLM application only  
 Oi = Enables OTDR and iOLM applications

**Connector**

EA-EUI-28 = APC/DIN 47256  
 EA-EUI-89 = APC/FC narrow key  
 EA-EUI-91 = APC/SC  
 EA-EUI-95 = APC/E-2000  
 EA-EUI-98 = APC/LC  
 EI connectors = See section below

**OPM option**

00 = In-line power checker  
 OPM2 = In-line PON power meter mode (dual band)<sup>a</sup>

**iOLM software pack<sup>b</sup>**

00 = iOLM Standard  
 iADV = iOLM Advanced

**Software option**

00 = Without additional software option  
 iLOOP = iOLM loopback mode<sup>b</sup>  
 iCERT = iOLM tier-2 certification<sup>b</sup>  
 PSWRD = Security management option

**Power meter**

00 = Without power meter  
 VFL = Visual fault locator (650 nm)  
 PM2X = Power meter; GeX detector  
 VPM2X = VFL and power meter; GeX detector

**Wi-Fi and Bluetooth**

00 = Without RF components  
 RF = With RF capability (Wi-Fi and Bluetooth)<sup>c, d</sup>

**Extra FIPT-400B tips<sup>e</sup>**

**Bulkhead tips**  
 FIPT-400-LC-SQ = LC tip for bulkhead adapters<sup>f</sup>  
 FIPT-400-LC-APC = LC/APC tip for bulkhead adapter<sup>g</sup>  
 FIPT-400-SC-APC = SC APC tip for bulkhead adapter<sup>g</sup>

**Patchcord tips<sup>h</sup>**

FIPT-400-U12M = Universal patchcord tip for 1.25 mm ferrules<sup>f</sup>  
 FIPT-400-U12MA = Universal patchcord tip for 1.25 mm ferrules APC<sup>h</sup>  
 FIPT-400-U25M = Universal patchcord tip for 2.5 mm ferrules<sup>f</sup>  
 FIPT-400-U25MA = Universal patchcord tip for 2.5 mm ferrules APC<sup>g</sup>

**Base tips**

APC = Includes FIPT-400-U25MA and FIPT-400-SC-APC  
 UPC = Includes FIPT-400-U25M and FIPT-400-FC-SC

**Inspection scope model<sup>i</sup>**

00 = Without inspection probe  
 FP430B = Automated analysis digital video inspection probe  
 Automated focus  
 Automated pass/fail analysis  
 Triple magnification  
 Autocentering  
 FP435B = Wireless analysis digital video inspection probe<sup>d</sup>  
 Automated focus  
 Automated pass/fail analysis  
 Triple magnification  
 Autocentering

**Power meter connector adapter**

FOA-22 = FC/PC, FC/SPC, FC/UPC, FC/APC  
 FOA-32 = ST: ST/PC, ST/SPC, ST/UPC  
 FOA-54B = SC: SC/PC, SC/SPC, SC/UPC, SC/APC  
 FOA-96B = E-2000/APC  
 FOA-98 = LC  
 FOA-99 = MU

Example: MAX-735D-SM3-Oi-EA-EUI-91-00-iADV-VPM2X-FOA-54B

- a. Available with SM8 model.
- b. Please refer to the [iOLM specification sheet](#) for the complete and most recent description of these value packs. Only available if iOLM or Oi base software option is selected.
- c. Not available in China.
- d. Included with FP435B scope options.
- e. This list represents a selection of fiber inspection tips that covers the most common connectors and applications but does not reflect all the tips available. EXFO offers a wide range of inspection tips, bulkhead adaptors and kits to cover many more connector types and different applications. Please contact your local EXFO sales representative or visit [www.EXFO.com/FIPTips](http://www.EXFO.com/FIPTips) for more information.
- f. Included when UPC base tips are selected.
- g. Included when APC base tips are selected.
- h. Includes a bulkhead adapter for patchcord inspection.
- i. Includes ConnectorMax2 software.

**EI CONNECTORS**



To maximize the performance of your OTDR, EXFO recommends using APC connectors on singlemode port. These connectors generate lower reflectance, which is a critical parameter that affects performance, particularly in dead zones. APC connectors provide better performance than UPC connectors, thereby improving testing efficiency.

For best results, APC connectors are mandatory with the iOLM application.

Note: UPC connectors are also available. Simply replace EA-XX by EI-XX in the ordering part number. Additional connector available: EI-EUI-90 (UPC/ST).

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In case of discrepancy, the web version takes precedence over any printed literature.

