

# MaxTester 940 Fiber Certifier OLTS

OPTIMIZED FOR DATA-CENTER AND ENTERPRISE TIER-1 FIBER CERTIFICATION



**FASTEST**

**EF COMPLIANT**

EXFO | Connect

**DATA-CENTER SOLUTION**

Fully featured tier-1 fiber certifier with a tablet-inspired design and short learning curve. Optimized, clear and fast first-time-right data-center system acceptance.

## KEY FEATURES

7-inch high resolution touchscreen—the widest screen on the market

Leading FasTest™ performances: certifies two fibers at two wavelengths in 2.6 seconds

Onboard assistant and diagnosis for elimination of reference errors and negative loss

Built-in Encircled-Flux compliancy as per ANSI/TIA and ISO/IEC

100% automated fiber inspection: one-step process with pass/fail analysis at both ends of the fiber

Certifies to multiple industry standards simultaneously

Onboard professional PDF reporting

Batch processing of results with FastReporter 2 software

Best-in-class singlemode distance range of 160 km

EXFO Connect-ready for cloud-based test asset management

## APPLICATIONS

Data centers

Enterprise structured cabling

## COMPLEMENTARY PRODUCTS



Fiber Inspection Probe  
FIP-400B (Wi-Fi or USB)



Data Post-Processing Software  
FastReporter 2



Platform  
FTB-720 QUAD OTDR/iOLM

**EXFO**

# THE FIBER CERTIFIER OLTS WITH THE EXPERT BLUE TOUCH

The MAX-940 Fiber Certifier OLTS is the first tablet-inspired solution that has been specifically designed to certify fiber cabling in data centers and enterprise networks. The unit's intuitive Windows-like user interface ensures a minimal learning curve. The MAX-940 Fiber Certifier offers icon-based functions, instant boot-up, as well as onboard assistance and onboard professional reporting.



## TABLET-INSPIRED DESIGN

With the most user-friendly display in the industry (7-inch high-resolution touchscreen), the MAX-940 Fiber Certifier delivers unprecedented user experience, and the unit's integrated Wi-Fi/Bluetooth allows for high connectivity. The MAX-940 Fiber Certifier guarantees a full day of fieldwork with 12 hours of battery autonomy and internal memory capacity of 150 000 test results.

## FULL-FLEDGED UNITS AT BOTH ENDS

Both the main and remote units are full-fledged to maximize the efficiency of each technician:

- › FasTesT™ results with diagnostics are displayed on both units at the end of each test.
- › Both technicians can certify the fiber connectors with a fiber inspection probe via the large touchscreens available on the both units.



The MAX-940 Fiber Certifier gives remote technicians greater visibility and efficiency.



## ONBOARD MULTISTANDARD CERTIFICATION

The MAX-940 Fiber Certifier lets you certify to both cabling and application standards simultaneously. You can therefore certify the cabling (i.e., the physical quality of the fiber and its components such as splices and connectors), as well as the application that the fiber can carry; for instance, IEEE or Fibre Channel.

## ONBOARD PDF REPORTING

The MAX-940 Fiber Certifier comes with unique onboard PDF reporting to convert multiple measurements into a single professional report in a format recognized by the industry standards. The reporting includes clear pass/fail certification status against the multiple standards tested, and a summary of the measurements with margins, anomalies, test-cord references and verification.

This feature serves as a natural complement to our FastReporter 2 PC-based software designed for batch processing of high-count fiber and multiple measurement combinations (e.g., connector certification, loss and OTDR).

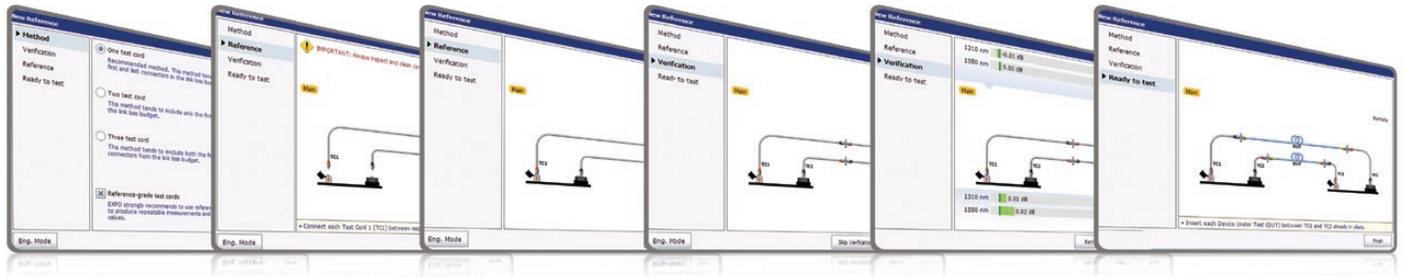


Figure 1. Compact, intuitive tablet-inspired design.

OLTS Report							TIA-568-C.3 Inside Plant	
Job ID	DC-01-CR20							
Customer	International Bank							
Company	EXFO I&M Team							
File name:								
<b>Emplacements</b>								
	Main			Remote				
Opérateur	John Doe			Peter Pan				
Modèle du module	MAX-940-Q1			MAX-940-Q1				
Numéro de série	58MAX0225F			58MAX0225F				
Date d'étalonnage	1/1/2015 (UTC)			1/1/2015 (UTC)				
<b>Link Definition</b>								
Fiber Type	Connections	Splices						
OM3	2	0						
<b>Results</b>								
Identifier	Test Units	Wavelength (nm)	Loss (dB)	Loss Margin (dB)	Length (m)	Date/Time		
Cable_Fiber1	M->R	850	4.10	-2.20	105.2	9/9/2015, 11:38:00 AM		
		1300	4.10	-2.37				
Cable_Fiber2	R->M	850	2.50	-0.60	104.9	9/9/2015, 11:38:00 AM		
		1300	2.50	-0.77				
Cable_Fiber3	M->R	850	1.00	0.68	105.0	9/9/2015, 11:38:42 AM		
		1300	1.00	0.57				
Cable_Fiber4	R->M	850	1.00	0.68	105.2	9/9/2015, 11:38:42 AM		
		1300	1.00	0.57				
Cable_Fiber5	M->R	850	1.43	0.15	104.5	9/9/2015, 11:39:36 AM		
		1300	1.43	0.15				
Cable_Fiber6	R->M	850	1.45	0.23	104.2	9/9/2015, 11:39:36 AM		
		1300	1.45	0.12				
<b>Reference</b>								
Reference Method	Test Cord	Test Units	Wavelength (nm)	Reference (dBm)	Test Cord Verification (dB)	Date/Time		
One test cord	Reference grade	R->M	850	0.65	0.10	9/9/2015, 11:37:55 AM		
			1300	0.65	0.10			
<b>Pass/Fail Thresholds</b>								
Standard	Wavelength (nm)	Max. Link Loss (dB)	Max. Link Length (m)					
TIA-568-C.3 Inside Plant	850	Dynamic*						
	1300	Dynamic*						
	1300	Dynamic*						
Signature: _____ Date: 10/09/2015 Page 1 sur 2								

## ONBOARD ASSISTANCE AND DIAGNOSIS

The MAX-940 Fiber Certifier provides a foolproof method against test-cord reference mistakes and negative loss thanks to its step-by-step wizard that guides technicians through the referencing and verification process, as per industry standards. The MAX-940 Fiber Certifier goes even further by diagnosing the possible causes for fail results and gives guidance to fix issues.



## BUILT-IN ENCIRCLED FLUX COMPLIANCY

Each MaxTester 940 Fiber Certifier comes with a built-in Encircled Flux (EF)-compliant multimode light source. Furthermore, in order to maximize measurement accuracy and avoid invalid results, EXFO designed reference-grade test cords in compliance with ISO/IEC 14763-3 standard requirements.



EXFO's test cords are made from reference-grade connectors, and the fiber used is strictly controlled to ensure proper core size and geometry. For multimode testing, this makes it possible to remain within Encircled Flux template limits at the output of the test cord (in compliance with the industry standards), without the need for an external EF-mode conditioner. These high-quality reference-grade test cords are less fragile and less expensive than EF-conditioned test cords, helping to reduce your overall equipment cost of ownership.

EXFO's test cords are also color-coded to prevent manipulation errors when they are connected to the test ports and device under test. The user interface displays animated instructions with the same color codes to facilitate the test process.



## THREE YEARS OF PEACE OF MIND FOR REPAIRS AND CALIBRATION



The MAX-940 Fiber Certifier has been rigorously tested to guarantee the highest standards of reliability and durability. This is why we feel so confident about offering a warranty and a recommended calibration interval of three years.

You can safely use this highly reliable instrument to get accurate test results while significantly reducing your certifier's cost of ownership (your cost of calibration and the related downtime will be divided by a factor of three).

## OPTICAL PLUG-AND-PLAY OPTIONS

The MaxTester 940 features plug-and-play optical options that can be purchased whenever you need them, at the time of your order or later on. In either case, installation is a snap: you can do it yourself with no need for any software updates.

### Visual Fault Locator (VFL)

The plug-and-play VFL easily identifies breaks, bends, faulty connectors and splices, in addition to other causes of signal loss. This basic, yet essential troubleshooting tool, should be part of every field technician's toolbox. Visually locating faults by creating a bright-red glow at the exact location of the fault on singlemode or multimode fibers, it can detect faults over distances of up to 5 km.



### Quad Option for Multimode Units

The MAX-940 Fiber Certifier multimode units offer maximum flexibility by featuring a unique quad-ready ability. Upgrading to the quad option is easy and instantaneous thanks to a software key that activates singlemode wavelengths that are precalibrated at the factory to enable you to test singlemode fibers immediately after the upgrade, without any other constraints. This will save you both time and money.

## FULLY AUTOMATED FIBER INSPECTION PROBE

Neglecting to clean, inspect and certify connectors can lead to serious, time-consuming problems accounting for up to 80% of network failures.

With its two full-fledged units, the MAX-940 Fiber Certifier lets you certify connectors at both ends of the fiber, in the same workflow as the tier-1 certification. Accordingly, it is now easy to include connector certification in your regular method of procedures without compromising the efficiency of your technicians. You'll no longer leave any stones unturned or any connectors uninspected!



Years of experience in the field has given EXFO the insight and the expertise to re-engineer a truly unique and innovative fiber inspection probe that greatly simplifies and speeds up this critical step.

Housing a unique automatic focus-adjustment system, the FIP-400B automates each operation in the connector endface inspection sequence. **The result: fiber inspection is now a quick, one-step process that can be performed by technicians of all skill levels.**

## FIVE MODELS TO FIT YOUR BUDGET

**The FIP-410B:** offers all the basic inspection features needed for manual inspection only.

**The semi-automated FIP-420B:** has the same features as the FIP-430B, without the automated focus adjustment.

**The semi-automated FIP-425B:** the wireless version of the semi-automated FIP-420B.

**The FIP-430B:** complete and fully automated feature set that includes the powerful fiber image-centering system, focus adjustment and optimization, and onboard pass/fail analysis.

**The FIP-435B:** go one step further with the wireless probe. Includes all FIP-430B features.

100%  
Automated<sup>a</sup>

1-step  
Process<sup>a</sup>

57%  
Shorter Test Time<sup>b</sup>



FEATURES	USB WIRED			WIRELESS	
	Basic FIP-410B	Semi-Automated FIP-420B	Fully Automated FIP-430B	Semi-Automated FIP-425B	Fully Automated FIP-435B
Three magnification levels	✓	✓	✓	✓	✓
Image capture	✓	✓	✓	✓	✓
Five-megapixel CMOS capturing device	✓	✓	✓	✓	✓
Automatic fiber image-centering function	X	✓	✓	✓	✓
Automatic focus adjustment	X	X	✓	X	✓
Onboard pass/fail analysis	X	✓	✓	✓	✓
Pass/fail LED indicator	X	✓	✓	✓	✓
Wi-Fi Connectivity	X	X	X	✓	✓

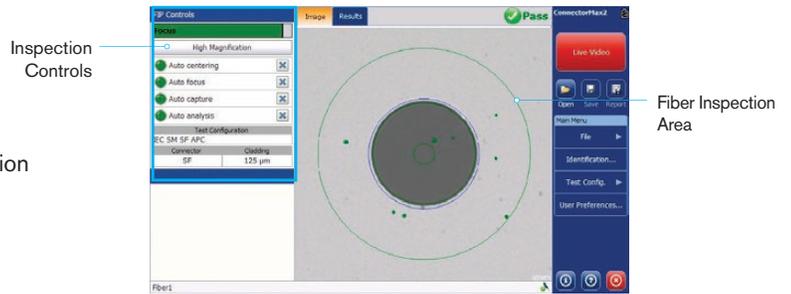
**Notes**

a. Models FIP-430B and FIP-435B.

b. Data sourced from EXFO's case study, with calculation based on typical analysis time.

## POWERFUL CONNECTOR ENDFACE IMAGE VIEWING AND ANALYSIS SOFTWARE

- › Automatic pass/fail analysis of the connector endfaces
- › Lightning-fast results in seconds with simple one-touch operation
- › Complete test reports for future referencing
- › Stores images and results for record-keeping



## FAST TRACK DATA POST-PROCESSING WITH FASTREPORTER2

Optical test-data analysis involves various challenges, whether for loss, OTDR and iOLM testing, or connector inspection. Designed for off-line analysis, EXFO's FastReporter 2 offers reliable data and report management in a user-friendly environment. This unit packs all the essentials to boost efficiency and productivity for all your optical tests.



### CHALLENGE NO. 1 EDITING MULTIPLE MEASUREMENT FILES

#### Close your jobs faster

Measurements often require extra processing in order to perform proper analysis, and ultimately document and report jobs appropriately. FastReporter 2 includes a series of powerful tools that automate repetitive operations on an unlimited number of files via batch operations.

### CHALLENGE NO. 2 ANALYZING MULTIPLE MEASUREMENT FILES

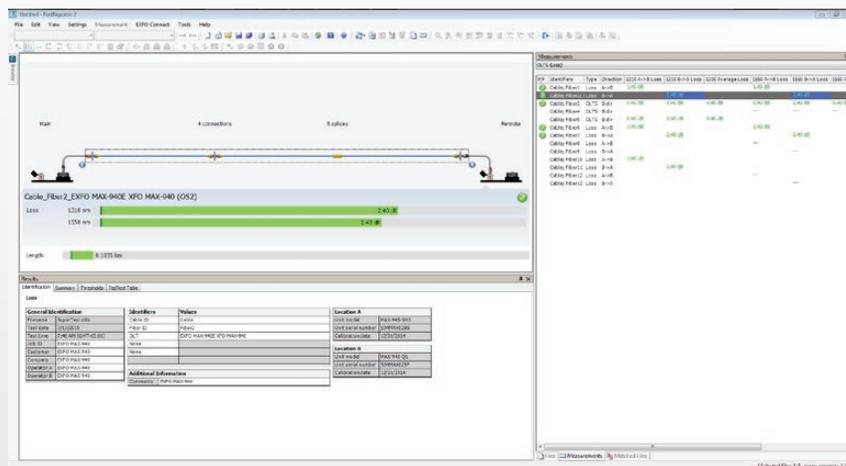
#### Wrong limits? Simply recertify

Setting up the wrong limits by selecting the wrong standard or the wrong project is no longer an issue. FastReporter 2 allows you to reset the limits and re-analyze the results to obtain the certification that you need. Instead of redoing tests, you can move on to other projects.

### CHALLENGE NO. 3 DOCUMENTING YOUR WORK

#### Create your report fast and like a pro

FastReporter 2 generates professional, customized reports containing all test measurements under multiple formats (PDF, HTML and XLS). Your customer can now easily see and validate the quality of your work.



# SMALL ENOUGH TO BE HANDHELD. LARGE ENOUGH FOR FULL-SCREEN VIEWING.

## PACKAGED FOR EFFICIENCY

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1 Stylus</li> <li>2 Singlemode source port</li> <li>3 Multimode source port</li> <li>4 Visual fault locator</li> <li>5 10/100 Mbit/s Ethernet port</li> <li>6 Two USB 2.0 ports</li> <li>7 InGaAs power meter</li> </ul> | <ul style="list-style-type: none"> <li>8 AC adapter</li> <li>9 Home/switch application and screen capture (hold)</li> <li>10 Power on/off/standby</li> <li>11 Battery LED status</li> <li>12 Built-in Wi-Fi/Bluetooth</li> <li>13 Stand support</li> </ul> |
|---|--|



## SOFTWARE UTILITIES

<b>Software update</b>	Ensure that your MaxTester 940 is up-to-date with the latest software.
<b>VNC configuration</b>	Virtual Network Computing utility allows technicians to easily remote control the unit via a computer or laptop.
<b>Microsoft Internet Explorer</b>	Access the Web directly from your device interface.
<b>Data mover</b>	Transfer all your daily test results quickly and easily.
<b>Centralized documentation</b>	Instant access to user guides and other relevant documents.
<b>Wallpapers</b>	Enhance your work environment with colorful and scenic backgrounds.
<b>PDF Reader</b>	View your reports in PDF format.
<b>Bluetooth file sharing</b>	Share files between your MaxTester 940 and any Bluetooth-enabled device.
<b>Wi-Fi connection</b>	Wireless inspection probe interface, upload test results and browse the Internet.
<b>Inspection probe</b>	USB probe to inspect and analyze connectors.

POWER METER SPECIFICATIONS <sup>a</sup>

Input connector	Interchangeable adapter (LC, SC or FC) <sup>b</sup>
Detector type	InGaAs
Measurement range (dBm)	5 to -75
Uncertainty <sup>c</sup>	±(5 % + 32 pW)
Wavelengths range (nm)	800 to 1650

FASTEST™ LOSS/LENGTH SPECIFICATIONS <sup>a</sup>

Testing speed <sup>d</sup>	FasTesT™ Duplex: 2.6 seconds (two wavelengths, one direction, automated)		
Input/Output connectors	Interchangeable adapter (LC, SC or FC) <sup>b</sup>		
Wavelengths (nm) <sup>d</sup>	Quad 850 ± 20 1300 ± 20 1310 ± 20 1550 ± 20	MM 850 ± 20 1300 ± 20	SM 1310 ± 20 1550 ± 20
Source type	LED (multimode) Laser (singlemode)	LED	Laser
Launch condition <sup>e</sup>	EF compliancy guaranteed at multimode source port Within TIA-526-14-B, ISO/IEC 14763-3 and IEC 61280-4-1 Encircled Flux template limits at the end of an EXFO reference-grade 50/125 µm test cord		
Length measurement range (km)	Multimode: 20 <sup>f</sup> Singlemode: 160		
Length measurement uncertainty <sup>d, g</sup>	±(0.5 m + 0.5 % x length)		
<b>Source</b>			
Output power (dBm) <sup>d</sup>	Multimode: -25 Singlemode: 2.5		
Output power stability (dB)	±0.05 over 8 h		
Spectral width (FWHM) (nm)	850 nm: 30 to 60 1300 nm: 100 to 150		

**Notes**

- At 23 °C ± 1 °C and 1550 nm, on batteries and after 15 minutes of warm up, unless specified otherwise.
- Specifications are provided with FC type connectors.
- Uncertainty is valid at calibration conditions.
- Typical.
- Measured at 850 nm.
- At 1300 nm.
- In duplex.

**VISUAL FAULT LOCATOR (VFL) (OPTIONAL)**Laser, 650 nm  $\pm$  10 nm

CW/Modulate 1 Hz

Typical  $P_{out}$  in 62.5/125  $\mu$ m:  $> -1.5$  dBm (0.7 mW)

Laser safety: Class 2

**LASER SAFETY**

If VFL option is available

**ENVIRONMENTAL SPECIFICATIONS**

Temperature	Operating	-10 °C to 50 °C (14 °F to 122 °F)
	Storage	-30 °C to 70 °C (-22 °F to 158 °F) <sup>a</sup>
Relative humidity		0 % to 95 % non-condensing

**GENERAL SPECIFICATIONS**

Display	7-in (178-mm) outdoor-enhanced touchscreen, 800 x 480 TFT
Size (H x W x D)	166 mm x 200 mm x 68 mm (6 <sup>9</sup> / <sub>16</sub> in x 7 <sup>7</sup> / <sub>8</sub> in x 2 <sup>3</sup> / <sub>4</sub> in)
Weight (with battery)	1.5 kg (3.3 lb)
Interfaces	Two USB 2.0 ports RJ45 LAN 10/100 Mbit/s
Storage	2 GB internal memory (150 000 test results, typical)
Battery <sup>b</sup>	Rechargeable lithium-polymer battery 12 hours of operation
Power supply	Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz, 9-16 V DCIN 20 W minimum
Warranty	Three (3) years
Recommended recalibration period	Three (3) years

**Notes**

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

b. Typical.

## ORDERING INFORMATION

## MAX-940-XX-XX-XX-XX-XX-XX-XX-XX

**Model**

MAX-940 = Fiber Certifier OLTS

**Optical configuration**

ICERT-SM1 = Singlemode OLTS 1310/1550 nm

ICERT-Q1 = Multimode OLTS 850/1300 nm

ICERT-Q1-QUAD = Quad OLTS 850/1300 nm;  
1310/1550 nm**Optical connector <sup>a</sup>**

EA-EUI-89 = APC/FC

EA-EUI-91 = APC/SC

EA-EUI-98 = APC/LC

EI-EUI-89 = UPC/FC

EI-EUI-91 = UPC/SC

EI-EUI-98 = UPC/LC

**Optical options**

00 = Without optical option

VFL = Visual fault locator

**Inspection probe model**

00 = Without inspection probe

FP410B = Digital video inspection probe <sup>c</sup>  
Triple magnificationFP420B = Analysis digital video inspection probe <sup>c</sup>  
Automated pass/fail analysis  
Triple magnification  
AutocenteringFP425B = Wireless digital video inspection probe <sup>c, d</sup>  
Automated pass/fail analysis  
Triple magnification  
AutocenteringFP430B = Automated analysis digital video inspection probe <sup>c</sup>  
Automated focus  
Automated pass/fail analysis  
Triple magnification  
AutocenteringFP435B = Wireless analysis digital video inspection probe <sup>c, d</sup>  
Automated focus  
Automated pass/fail analysis  
Triple magnification  
Autocentering**FastReporter**

00 = Without FastReporter 2

FR2 = With FastReporter 2 PC software

**Connectivity**

00 = Without RF components

RF = With RF capability (Wi-Fi and Bluetooth)

**Extra FIPT-400B tips <sup>b</sup>****Bulkhead tips**

FIPT-400-FC-APC = FCAPC tip for bulkhead adapter

FIPT-400-FC-SC = FC and SC tip for bulkhead adapter <sup>e</sup>

FIPT-400-LC = LC tip for bulkhead adapters

FIPT-400-LC-APC = LC/APC tip for bulkhead adapter

FIPT-400-MU = MU tip for bulkhead adapters

FIPT-400-SC-APC = SC APC tip for bulkhead adapter <sup>f</sup>

FIPT-400-ST = ST tip for bulkhead adapter

**Patchcord tips**

FIPT-400-U12M = Universal patchcord tip for 1.25 mm ferrules

FIPT-400-U12MA = Universal patchcord tip for 1.25 mm ferrules APC

FIPT-400-U16M = Universal patchcord tip for 1.6 mm ferrules

FIPT-400-U20M2 = Universal patchcord tip for 2.0 mm ferrules (D4, Lemo)

FIPT-400-U25M = Universal patchcord tip for 2.5 mm ferrules <sup>e</sup>FIPT-400-U25MA = Universal patchcord tip for 2.5 mm ferrules APC <sup>f</sup>**Multifiber tips**

FIPT-400-MTP2 = MTP/MPO UPC tip for bulkhead adapter

FIPT-400-MTPA2 = MTP/MPO APC tip for bulkhead adapter

FIPT-400-MTP-MTR = MTP/MPO multirow UPC tip for bulkhead adapter

FIPT-400-MTP-MTRA = MTP/MPO multirow APC tip for bulkhead adapter

**Tip kits**

FIPT-400-LC-K = LC tip kit including: FIPT-400-LC: LC tip for bulkhead adapters,

FIPT-400-LC-APC: LC/APC tip for bulkhead adapter,

FIPT-400-U12M: Universal patchcord tip for 1.25 mm ferrules,

FIPT-400-U12MA: Universal patchcord tip for 1.25 mm ferrules APC

FIPT-400-LC-K-APC = LC tip kit including: FIPT-400-LC-APC: LC/APC tip for bulkhead adapter and FIPT-400-U12MA: Universal patchcord tip for 1.25 mm ferrules APC

FIPT-400-LC-K-UPC = LC tip kit including: FIPT-400-LC: LC tip for bulkhead adapters and FIPT-400-U12M: Universal patchcord tip for 1.25 mm ferrules

FIPT-400-MTP-MTR-K = MTP/MPO multirow APC and UPC tip for bulkhead adapter

**Base tips**

APC = Includes FIPT-400-U25MA and FIPT-400-SC-APC

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

Example: MAX-940-ICERT-Q1-QUAD-EI-EUI-91-VFL-FP420B-UPC

**Notes**

a. EUI adapters are the same on SM, MM source ports and power meter ports. Multimode connectors are always UPC.

b. Available with probe option.

c. Includes ConnectorMax2 software.

d. Includes RF option.

e. Included in UPC base tips option.

f. Included in APC base tips option.

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