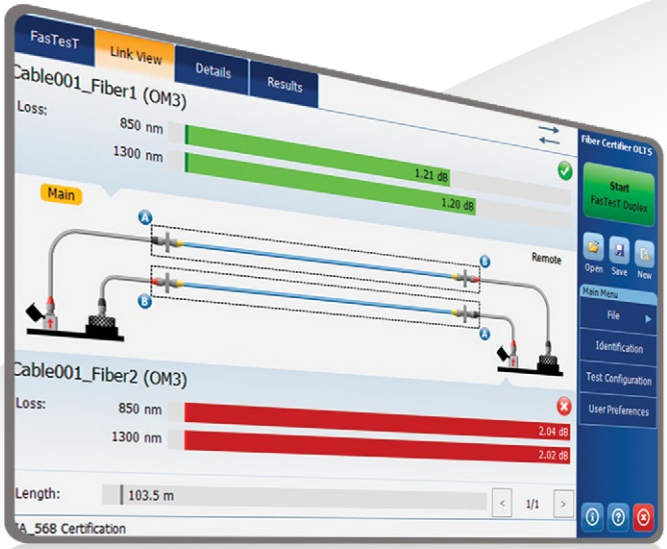
FTBx-940/945 Fiber Certifier OLTS

OPTIMIZED FOR DATA CENTER AND ENTERPRISE TIER-1 FIBER CERTIFICATION



FASTEST

EF COMPLIANT

EXFO Connect

DATA-CENTER SOLUTION

Feature(s) of this product is/are protected by one or more of: US design patent D798,171 and equivalent(s) in other countries; and US design patent D842,144.

SPEC SHEET

Fully featured Tier-1 certifier compatible with the FTB-1v2/FTB-1 Pro, FTB-2/FTB-2 Pro and FTB-4 Pro modular platforms. Combine the FTBx-940/945 with EXFO's OTDR/iOLM for an all-in-one Tier-1 & Tier-2 test.

KEY FEATURES

- Leading FasTesT™ performances: certifies two fibers at two wavelengths in 3 seconds
- Onboard assistant and diagnosis to reduce the risk 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
- Optional Optical Return Loss measure (FTBx-945)
- Batch processing of results with FastReporter 3 software
- Best-in-class singlemode distance range of 200 km
- EXFO Connect-ready

APPLICATIONS

- Data centers
- Enterprise structured cabling

COMPLEMENTARY PRODUCTS

Platform
FTB-1v2/FTB-1 Pro

Fiber inspection probe
FIP-400B (WiFi or USB)

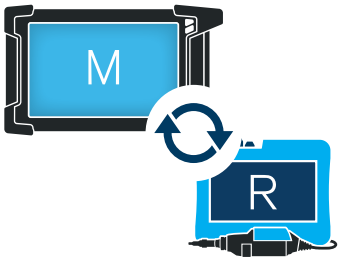
OTDR/iOLM
FTBx-720C LAN/WAN Access OTDR

EXFO

THE FIBER CERTIFIER OLTS WITH THE EXPERT BLUE TOUCH

The FTBx-940/945 Fiber Certifier OLTS 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 FTBx-940/945 Fiber Certifier offers icon-based functions, onboard assistance and onboard professional reporting.

FULL-FLEDGED UNITS AT BOTH ENDS



The FTBx-940/945 can be paired with another FTBx-940/945 or a handheld MaxTester 940/945 instrument. Both the main and remote units are full-fledged to maximize each technician's efficiency:

- 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 both units.

The FTBx-940/945 and MaxTester 940/945 Fiber Certifier gives remote technicians greater visibility and efficiency.

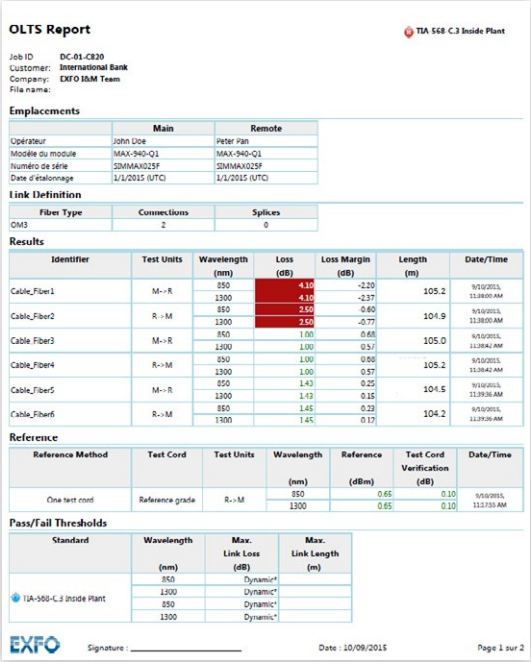
ONBOARD MULTISTANDARD CERTIFICATION

The FTBx-940/945 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 FTBx-940/945 Fiber Certifier comes with onboard PDF reporting to convert multiple measurements into a single professional report in a format recognized by 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 3 PC-based software designed for batch processing of high-count fiber and multiple measurement combinations (e.g., connector certification, loss and OTDR).



OLTS Report — TIA 568 C.3 Inside Plant

Job ID: DC-01-C820
Customer: International Bank
Company: EXFO I&M Team
File name:

Emplacements

	Main	Remote
Opérateur	John Doe	Peter Pan
Modèle du module	MAX-940-Q1	MAX-940-Q1
Numéro de série	SIMMAX025F	SIMMAX025F
Date d'étalonnage	1/1/2015 (UTC)	1/1/2015 (UTC)

Link Definition

Fiber Type	Connections	Splices
OM3	2	0

Results

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	9/10/2015, 11:38:00 AM
		1300	4.10	-2.37		
Cable_Fiber2	R -> M	850	2.50	0.60	104.9	9/10/2015, 11:38:00 AM
		1300	2.50	-0.77		
Cable_Fiber3	M-->R	850	1.00	0.68	105.0	9/10/2015, 11:28:42 AM
		1300	1.00	0.57		
Cable_Fiber4	R-->M	850	1.00	0.68	105.2	9/10/2015, 11:28:42 AM
		1300	1.00	0.57		
Cable_Fiber5	M-->R	850	1.43	0.25	104.5	9/10/2015, 11:39:36 AM
		1300	1.43	0.15		
Cable_Fiber6	R-->M	850	1.45	0.23	104.2	9/10/2015, 11:39:36 AM
		1300	1.45	0.17		

Reference

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	9/10/2015, 11:17:55 AM
			1300	0.65	0.10	

Pass/Fail Thresholds

Standard	Wavelength (nm)	Max. Link Loss (dB)	Max. Link Length (m)
TIA-568-C.3 Inside Plant	850	Dynamic*	
	1300	Dynamic*	
	850	Dynamic*	
	1300	Dynamic*	

EXFO Signature : _____ Date : 10/09/2015 Page 1 sur 2

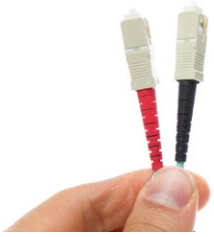
ONBOARD ASSISTANCE AND DIAGNOSIS

The FTBx-940/945 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 FTBx-940/945 Fiber Certifier goes even further by diagnosing the possible causes for fail results and provides guidance to fix issues.

BUILT-IN ENCIRCLED FLUX COMPLIANCY

Each 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, 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 FTBx-940/945 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 for 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).

Quad option for multimode units

The FTBx-940/945 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.

Test efficiency

- FasTesT™: acquisition time less than three seconds
- Online reporting–live from the field
- Maximum simplicity and fast-learning curve with onboard user assistance:
  - **Port LED indicators**: guide the user through the referencing and testing processes. LED indicators show the user on which optical port to connect the fiber and a beep indicates that the connection is established to confirm continuity.
  - **On-board diagnosis**: throughout the referencing and testing processes, the instrument delivers real-time information on the test cord health as well as pass/fail results according to pre-set or custom criteria. When performing testing, the instrument delivers diagnosis about the loss, length and can even identify the presence of a macrobend (refer to side picture).
  - **Margin meters**: indicate the result status as well as the margin according to preset thresholds.

- The FTBx-940/945 includes a *Test Again* feature allowing the user to re-test bad fibers in three easy steps:
  1. Go back to test results
  2. Quickly and correctly identify the bad fiber by looking at the pass/fail status
  3. Press *Test Again*

Optimized test sequence

- **Real-time continuity feature:** The main and remote units emit visual and audible signals to let the technicians on both ends know that a connection has been established on the specific fiber under test. This also allows the technicians to start the test right away, saving time on each fiber tested.
- **Text messaging capabilities:** Allows users to send text messages through the fiber under test faster than other test sets in the industry.

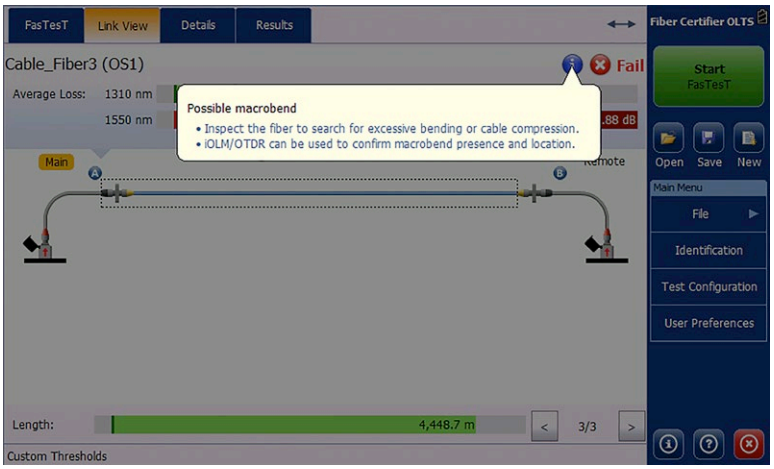


Figure 1. On-board diagnosis helps the technician take proper action

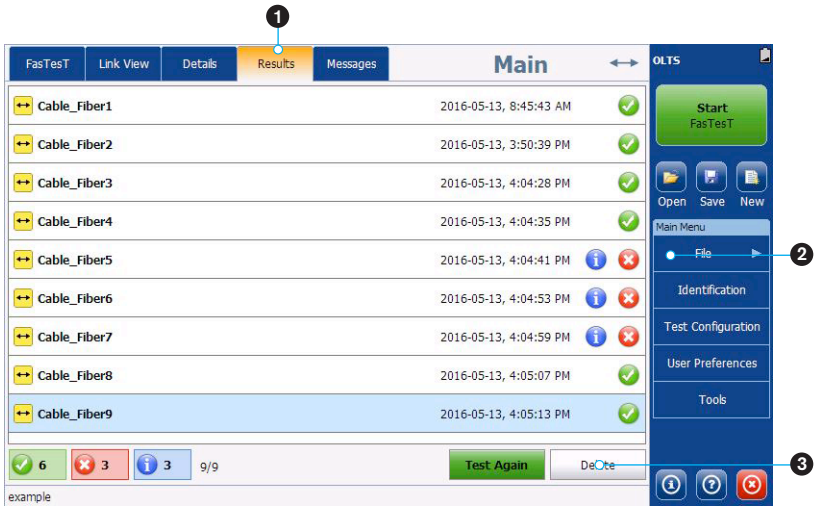


Figure 2. See results clearly and test again easily

1. ***Results*** tab lists all the fibers tested in a cable
2. Pass/Fail status indicated under ***Results***
3. ***Test Again*** button allows for testing a "failed fiber" using the same settings

FULLY AUTOMATED FIBER INSPECTION PROBE

100%
automated [a]

1-step
process [a]

57%
shorter test time [b]

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 FTBx-940/945 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 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

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	√	√	√	√
WiFi connectivity	X	X	X	√	√

For more information, visit www.EXFO.com/fiberinspection.

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 recordkeeping

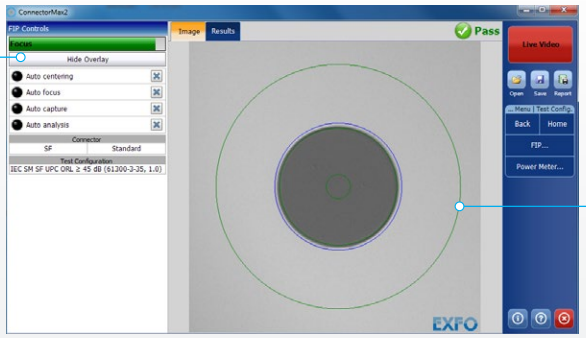


Figure 3. Clear pass/fail results

1 Inspection controls
2 Fiber inspection area

a. FIP-430B and FIP-435B models.
b. Data sourced from EXFO's case study, with calculation based on typical analysis time.

FAST TRACK DATA POST-PROCESSING WITH FastReporter 3

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 3 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.

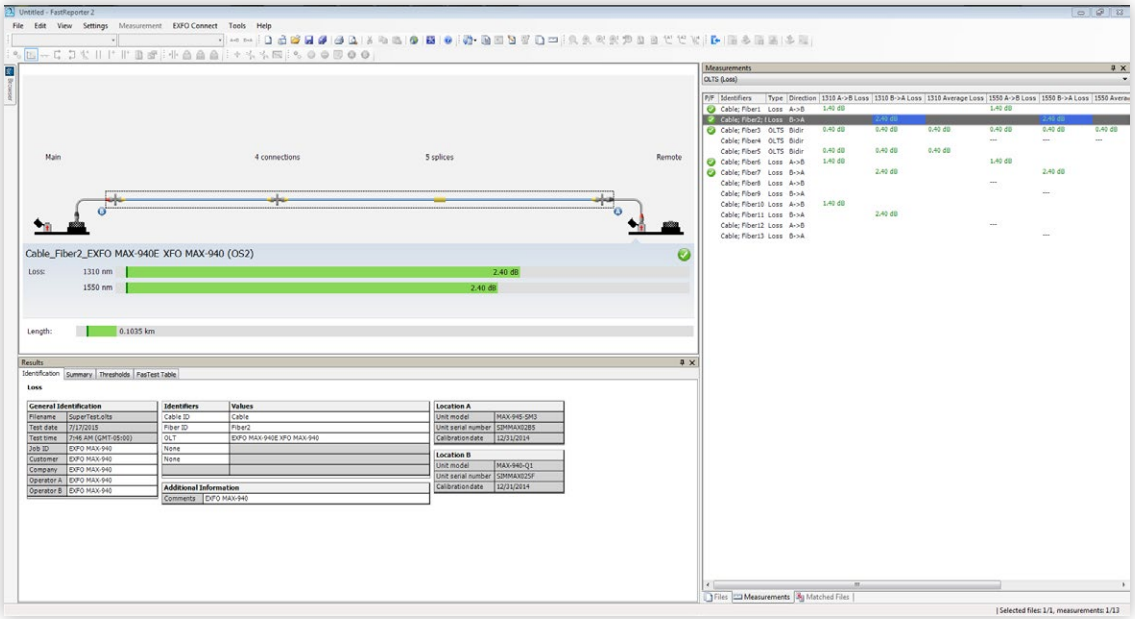


Figure 4. FastReporter takes care of all the documenting and reporting for you

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 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 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 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.

AVAILABLE IN THE FTB-1v2/FTB-1 PRO, FTB-2/FTB-2 PRO AND FTB-4 PRO PLATFORMS

The EXFO FTB platforms are the most compact solutions on the market for **multirate, multitechnology, multiservice testing**, delivering all the power of a high-end platform in a conveniently sized, go-anywhere field-testing tool.

INTUITIVE INTERFACE

Widescreen display and multitouch capability

UNMATCHED CONNECTIVITY

WiFi, Bluetooth, Gigabit Ethernet and multiple USB ports

INCREASED PRODUCTIVITY

Store, push and share test data automatically

Do more with the EXFO FTB platform

The Windows 10 operating system allows for a wide choice of third-party applications and supports an extensive range of USB devices.

- Start faster and multitask
- Use any office suite
- Connect to printers, cameras, keyboards, mice, and more

Bring your own apps

- Share your desktop (e.g., using TeamViewer)
- Antivirus software
- Communicate via email services and over-the-top (OTT) apps
- Record and automate actions
- Share files via cloud-based storage

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.

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 in the cloud. Get connected.

EXFO Connect

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

EXFO

POWER METER SPECIFICATIONS [a]

Input connector	Interchangeable adapter (LC, SC or FC) [b]
Detector type	InGaAs
Uncertainty [c]	±(5 % + 32 pW)
Measurement range (dBm)	5 to –75
Calibrated wavelengths (nm)	8850, 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1383, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650
Tone detection (Hz)	270/330/1000/2000

SOURCE SPECIFICATIONS

Output power (dBm) [d]	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

FasTesT™ LOSS/LENGTH SPECIFICATIONS [a]

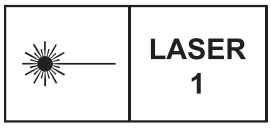
Testing speed [d]	FasTesT™ Duplex: 3 seconds (two wavelengths, one direction, automated, IL + fiber length) FasTesT™ Simplex: 5 seconds (two wavelengths, bidirectional, automated, IL + ORL + fiber length)
Input/Output connectors	Interchangeable adapter (LC, SC or FC) [b]
Wavelengths (nm) [d]	MM (LED) 850 ± 20 1300 ± 20
Launch condition [e]	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 [f] Singlemode: 200
Length measurement uncertainty [d, g]	±(0.5 m + 0.5 % x length)
ORL measurement range (dB) [d, h]	50
ORL measurement uncertainty (dB) [d, h, i]	± 1

GENERAL SPECIFICATIONS

Size (H x W x D)		158 mm x 25 mm x 196 mm (6 ¼ in x 1 in x 7 ¾ in)
Weight		0.4 kg (0.9 lb)
Temperature	Operating Storage	0 °C to 50 °C (32 °F to 122 °F) –30 °C to 70 °C (–22 °F to 158 °F)
Relative humidity		0% to 95% non-condensing

This picture is shown as a guideline only. Actual module may differ depending on the configuration selected.

LASER SAFETY



a. At 23 °C ± 1 °C and 1550 nm, on batteries and after 15 minutes of warm up, unless specified otherwise.
b. Specifications are provided with FC type connectors.
c. Uncertainty is valid at calibration conditions.
d. Typical.
e. Measured at 850 nm with SC connector.
f. At 1300 nm.
g. In duplex.
h. ORL measurement available on MaxTester 945 singlemode wavelengths only.
i. No discrete reflectance greater than –65 dB. Up to 45 dB

ORDERING INFORMATION

FTBx-940-XX-XX

Model
FTBx-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 [a]
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

Example: FTBx-940-ICERT-Q1-QUAD-EI-EUI-91

FTBx-945-XX-XX

Model
FTBx-945 = Fiber Certifier OLTS

Optical configuration
ICERT-Q1-QUAD = Quad
Port 1: 850/1300 nm IL and length measurement
Port 2: 1310/1550 nm IL, length and ORL measurement

Connector [b]
EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EA-EUI-98 = APC/LC
EI-EUI-89 = UPC/FC [c]
EI-EUI-91 = UPC/SC [c]
EI-EUI-98 = UPC/LC [c]

Example: FTBx-945-ICERT-Q1-QUAD-EA-EUI-91

a. EUI adapters are the same on SM, MM source ports and power meter ports. Multimode connectors are always UPC.
b. Connector adapters are the same on singlemode source ports, multimode source ports and power meter ports. Multimode connectors are always UPC.
c. An hybrid REF grade test cord will be supplied when EI (UPC) interfaces is required.

EA CONNECTORS

To maximize the performance of your FTBx-945 ORL measurements, APC connectors are mandatory on the singlemode port. These connectors generate lower reflectance, which is a critical parameter that affects performance for ORL measurement. APC connectors provide better performance than UPC connectors, thereby improving testing efficiency.

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