

# Datasheet





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# MaxTester 720C access OTDR

OPTIMIZED FOR MULTIMODE AND SINGLEMODE ACCESS NETWORK CONSTRUCTION AND TROUBLESHOOTING













GENERATION

Fully featured, entry-level, dedicated OTDR with tablet-inspired design; perfect for construction, troubleshooting and everyday field testing in any access network.

### **KEY FEATURES**

Handy, lightweight, powerful, tablet-inspired design

7-inch, outdoor-enhanced touchscreen—the biggest in the handheld industry

12-hour autonomy

Tamper-proof password protection

Dynamic range of up to 36 dB in singlemode and 29 dB in multimode

Live fiber testing at 1625 nm

iOLM-ready: intelligent and dynamic application that turns complex OTDR trace analysis into a one-touch task

Rugged design built for the outside plant

### **APPLICATIONS**

Access network construction and troubleshooting

FTTx/PON testing through splitters (up to 1x32)

Central office link certification

Data center and private networks

LAN/WAN characterization

Fronthaul/backhaul (FTTA, FTTT, RRH, DAS and small cells)

### COMPLEMENTARY PRODUCTS AND OPTIONS



FastReporter

Fiber inspector scope FIP-400B (WiFi or USB) Data post-processing software FastReporter



SPSB



### THE HANDHELD OTDR. . . REINVENTED.

The MaxTester 700B/C Series is the first tablet-inspired OTDR line that is handy, lightweight and rugged enough for any outside plant environment. With a 7-inch, outdoor-enhanced touchscreen—the most efficient handheld display in the industry—it delivers an unprecedented user experience. Its intuitive Windows-like GUI ensures a fast learning curve. Plus, its new and improved OTDR 2 environment offers icon-based functions, instant boot-up, automatic macrobend finders as well as improved auto and real-time modes.

The MaxTester 700B/C 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 700B/C Series is finally bringing the intelligent Optical Link Mapper (iOLM), an intelligent OTDR-based application, to the handheld market. This advanced software turns even the most complex trace analysis into a simple, one-touch task.

Ultimately, the MaxTester 700B/C Series is small enough to fit in your hand and big enough to fit all your needs!

### THE ENTRY-LEVEL SOLUTION DESIGNED FOR ALL YOUR TESTING NEEDS

The MaxTester 720C OTDR/iOLM features a dynamic range of 36 dB in singlemode and 29 dB in multimode, as well as industry-leading dead zones. This ensures efficient testing of closely spaced events such as patchcords in data centers, or patch panels in central offices (COs). The MaxTester 720C is optimized for point-to-point (P2P) testing of any access network, and is suitable for testing through 1x32 splitters.

Other models available:

- · MaxTester 715B short access and FTTx last-mile installation and troubleshooting
- · MaxTester 730C FTTH/PON installation and maintenance for testing through optical splitters and P2P metro

### SECURE YOUR INVESTMENT AGAINST THEFT

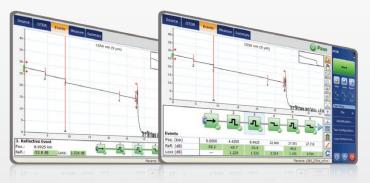
Protected instruments have no value on the black market making them completely unappealing to thieves. With our security management option, administrators can define and load a tamper-proof security profile on the MaxTester, displaying a property message on the home screen and securing it with a user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



### 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, non-reflective or splitter 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 the OTDR parameters. In addition, multiple traces must often be performed in order to fully characterize the fiber links. See the section below to learn how the iOLM can perform this automatically and with 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?

DYNAMIC MULTIPULSE ACQUISITION



INTELLIGENT TRACE ANALYSIS



ALL RESULTS
COMBINED INTO A
SINGLE LINK VIEW



COMPREHENSIVE DIAGNOSIS

See and the see an

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

### Three ways to benefit from the iOLM



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** packages or standalone options. Please refer to the <u>iOLM specification sheet</u> 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
- **Optimode**: Short-link close events, fast short link, fast medium range

### iOLM Advanced (iADV) a

- · 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 b

### iLOOP a

- · iOLM loopback
- iOLM automated bidirectional analysis over TestFlow b, c

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

Cabling certification option



a. Require enabling iOLM standard.

b. Singlemode only, configuration without splitter.

c. Requires TestFlow subscription.

### FastReporter

## GET THE BEST OUT OF YOUR DATA POST-PROCESSING—ONE SOFTWARE DOES IT ALL

This powerful reporting software is the perfect complement to your OTDR, and can be used to create and customize reports to fully address your needs.

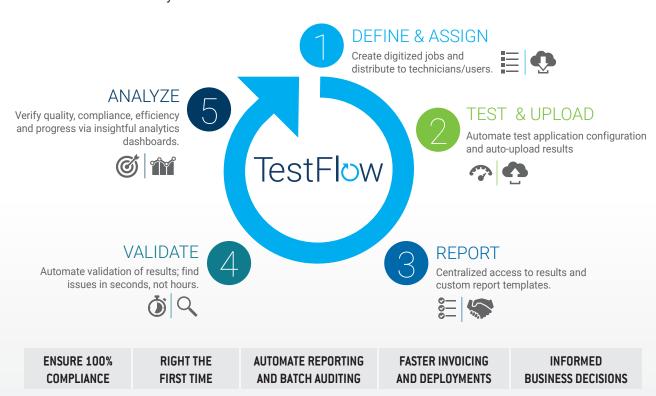


### TestFlow

### CLOUD-BASED FIELD TEST MANAGEMENT— GET MORE FROM FastReporter WITH TestFlow

### The TestFlow process

Whether you are a field technician, a site lead or a project manager, you can benefit from TestFlow.



Get your free trial today or for more info: <a>EXFO.com/TestFlow</a>



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### TROUBLESHOOTING HIGH-SPEED MULTIMODE NETWORKS WITH ENCIRCLED FLUX

Whether for expanding enterprise-class businesses or large-volume data centers, new high-speed data networks built with multimode fibers are running under tighter tolerances than ever before. In the event of failure, intelligent and accurate test tools are needed to quickly find and fix the fault.



Multimode fibers are the trickiest links to test, because the test results are highly dependent on each device's output conditions. Troubleshooting with a unit other than the construction unit may mislead the technician or result in the inability to find the fault, creating longer network downtimes.

For multimode fibers, EXFO recommends using an external launch mode conditioner that is Encircled Flux (EF)-compliant. The EF standard (as recommended in TIA-568 via TIA-526-14-B and IEC 61280-4-1 Ed. 2.0) is a way of controlling the source launch conditions so that tier-2 troubleshooting can be performed with maximum accuracy and consistency.



EF launch fiber (SPSB-EF-C30)

### QUAD OPTION FOR MULTIMODE UNITS

The 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 the singlemode wavelengths. Singlemode wavelengths are pre-calibrated at the factory, so you are ready to test singlemode fibers right after the upgrade with no other constraints. This will save you both time and money.



### OPTICAL PLUG-AND-PLAY OPTIONS

The MaxTester 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, and can be performed by the user without the need for any software update.

### Optical power meter

A high-level power meter (GeX) that can measure up to 27 dBm, the highest in the industry. This is essential for hybrid fiber-coaxial (HFC) networks or high-power signals. If used with an auto-lambda/auto-switching compatible light source, the power meter automatically synchronizes on the same wavelength, thus avoiding any risk of mismatched measurement.

- · Extensive range of connectors
- · Auto-lambda and auto-switching
- Offers measurement storage and reporting
- · Seven standard calibrated wavelengths

### 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. The VFL visually locates and detects faults over distances of up to 5 km by creating a bright-red glow at the exact location of the fault on singlemode or multimode fibers (available with the Optical Power Meter only).



### 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	√	√	X
Wireless connectivity to an EXFO platform or PC	X	√	X
Wireless connectivity to a smartphone	X	√	√
Manual scanning for multifiber / MPO connectors	√	√	X
Semi-automated multifiber / MPO inspection	√	√	X
Fully automated multifiber / MPO inspection	X	X	√
On-board touch screen	X	X	√
SmarTips with automated thresholds	X	X	√
Quick-connect mechanism	X	X	✓

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



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.
Microsoft Internet Explorer	Access the Web directly from your device interface.
Data mover	Transfer all your daily test results quickly and easily.
Centralized documentation	Instant access to user guides and other relevant documents.
Wallpapers	Enhance your work environment with colorful and scenic backgrounds.
PDF Reader	View your reports in PDF format.
Bluetooth file sharing	Share files between your MaxTester and any Bluetooth-enabled device.
WiFi connection	WiFi FIP inspection scope interface. Upload test results and browse the Internet.
Inspection scope	USB or WiFi scope to inspect and analyze connectors.
FTP server	Exchange files over WiFi 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

Singlemode OTDR port

Multimode OTDR port or Live singlemode OTDR port

3 Stylus

4 Power meter

5 Visual fault locator

6 10/100 Mbit/s Ethernet port

7 USB 2.0 ports (2)

8 AC adapter

Home/switch application and screen capture (hold)

Power on/off/stand by

Battery LED status

Built-in WiFi/Bluetooth

3 Stand support









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### **SPECIFICATIONS** a

TECHNICAL SPECIFICATIONS		
Display	7-in (178-mm) outdoor-enhanced touchscreen, 800 x 480 TFT	
Interfaces	Two USB 2.0 ports RJ45 LAN 10/100 Mbit/s	
Storage	2 GB internal memory (20 000 OTDR traces, typical)	
Batteries	Rechargeable lithium-polymer battery 12 hours of operation as per Telcordia (Bellcore) TR-NWT-001138	
Power supply	Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz	
Wavelength (nm) <sup>b</sup>	$850 \pm 20/1300 \pm 20/1310 \pm 20/1550 \pm 20/1625 \pm 10$	
SM live port built-in filter	1625 nm: highpass >1595 nm isolation >50 dB from 1270 nm to 1585 nm	
Dynamic range (dB) °	27/29/36/35/35	
Event dead zone (m) d	Singlemode: 0.7 Multimode: 0.5	
Attenuation dead zone (m)	Singlemode: 3 ° Multimode: 2.5 <sup>f</sup>	
PON dead zone (m) <sup>g</sup>	35	
Distance range (km)	Multimode: 0.1 to 40 Singlemode: 0.1 to 260	
Pulse width (ns)	Multimode: 3 to 1000 Singlemode: 3 to 20 000	
Launch conditions h	EF-compliant	
Linearity (dB/dB)	±0.03	
Loss threshold (dB)	0.01	
Loss resolution (dB)	0.001	
Sampling resolution (m)	Multimode: 0.04 to 5 Singlemode: 0.04 to 10	
Sampling points	Up to 256 000	
Distance uncertainty (m) i	±(0.75 + 0.0025 % x distance + sampling resolution)	
Measurement time	User-defined	
Reflectance accuracy (dB) <sup>b</sup>	±2	
Typical real-time refresh (Hz)	4	

- a. All specifications valid at 23 °C  $\pm$  2 °C with an FC/APC connector, unless otherwise specified.
- b. Typical
- c. Typical dynamic range with longest pulse and three-minute averaging at  $\ensuremath{\mathsf{SNR}}=1.$
- d. Typical, for reflectance from -35 dB to -55 dB in singlemode and -45 dB to -30 dB in multimode, using a 3-ns pulse.
- e. Typical at 1310 nm, for reflectance at -55 dB, using a 3-ns pulse. Attenuation dead zone is 4 m typical with reflectance below -45 dB.
- f. Typical, for reflectance at  $-35~\mathrm{dB}$ , using a 3-ns pulse.
- g. Non-reflective FUT, non-reflective splitter, 13-dB loss, 50-ns pulse, typical value.
- h. Compliant with Encircled Flux TIA-526-14-B and IEC 61280-4-1 Ed. 2.0 using an external EF conditioner (SPSB-EF-C-30).
- i. Does not include uncertainty due to fiber index.



GENERAL SPECIFICATIONS	
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)
Temperature Operating Storage	-10 °C to 50 °C (14 °F to 122 °F) -40 °C to 70 °C (-40 °F to 158 °F) <sup>a</sup>
Relative humidity	0 % to 95 % non-condensing

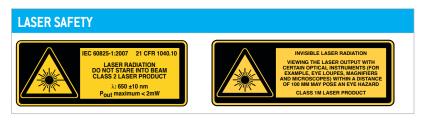
SOURCE	
Output power (dBm) <sup>b</sup>	Multimode: -3 Singlemode: -6
Modulation	CW, 330 Hz, 1 kHz, 2 kHz, 1 kHz + blink, 2 kHz + blink

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

# 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)

Typical P<sub>out</sub> in 62.5/125 μm: > –1.5 dBm (0.7 mW)

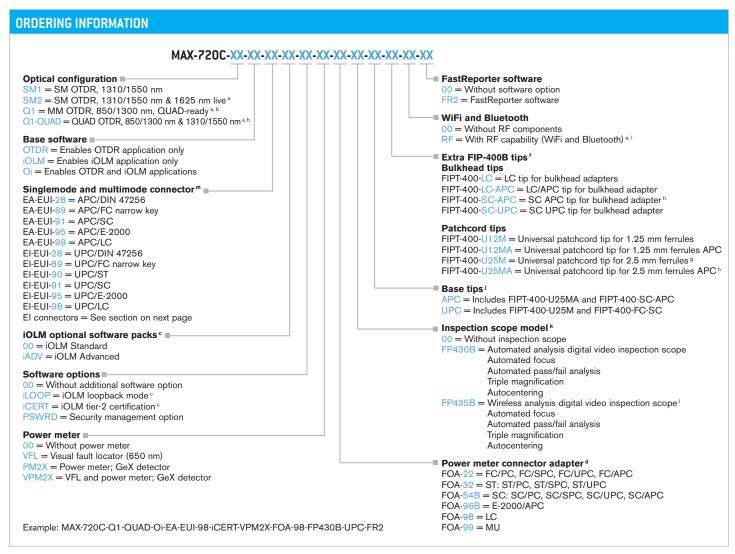
Laser safety: Class 2



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)	SPSB-EF-C30	Encircled Flux launch cables (specify connectors)	
GP-2208	Spare stylus			

- a. -20 °C to 60 °C (-4 °F to 140 °F) with the battery pack.
- b. Typical output power is given at 1300 nm for multimode output and 1550 nm for singlemode output.
- c. At 23 °C  $\pm$  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  $\pm 0.05$  dB, from 10 °C to 30 °C.





- a. The two ports are configured with the same adapter type.
- b. Multimode connector port will be supplied in UPC.
- Please refer to the <u>iOLM specification sheet</u> for the complete and most recent description of these value packs Only available if iOLM or Oi base software option is selected.
- d. Only available if power meter option is selected. Additional connector adapters available, contact EXFO.
- e. Not available in China.
- f. 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 <a href="www.EXFO.com/FIPtips">www.EXFO.com/FIPtips</a> for more information.
- g. Included when UPC base tips are selected.
- h. Included when APC base tips are selected.
- i. Includes a bulkhead adapter for patch cord inspection.
- j. Available if inspection scope is selected.
- k. Includes ConnectorMax2 software.
- RF option is mandatory and automatically included if FP435B fiber inspection scope model is selected.
- m. Multimode connectors available in EI (UPC) only

#### **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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For the most recent version of this spec sheet, please go to www.EXFO.com/specs

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



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### **LOCATIONS**

### LONDON, HEATHROW

Sunbelt Rentals UK Test & Monitoring

242-252 London Road, Staines, London TW18 4JQ 0333 122 3126

www.sunbeltrentals.co.uk/find-a-depot/london-heathrow

### **REDCAR**

Sunbelt Rentals UK Test & Monitoring

Unit 5 Kirkleatham Business Park, Redcar TS10 5SQ 0370 330 6021

www.sunbeltrentals.co.uk/find-a-depot/teesside





### **STOKESLEY**

Sunbelt Rentals UK Test & Monitoring

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