

# Optical Xplorer

THE FIRST OPTICAL FIBER MULTIMETER (OFM):  
LINK VERIFICATION WITH EMBEDDED FAULT TRACKING



Verify optical links in seconds and automatically explore further when potential issues are suspected. Accelerate fiber deployments, simplify activation procedures and improve robustness of repairs for better QoS and MTTR

## KEY FEATURES

Displays fiber length, loss and optical return loss (ORL) in under 3 seconds, with single-ended process

On-the-spot detection and location of common causes of failures using EXFO's patented Fault Xplorer™

Intelligent device: no settings required—making it an essential multimeter for any frontline technician in their toolkit

Built-in power checker and light source

Patented EXFO Advisor™ 5-star rating scale: qualitative approach to assess fiber links

A Go-No Go tester for day-to-day installation and repair work

Save on cost of ownership: lifetime calibration, no factory returns thanks to EXFO patented Click-Out Optical Connector™

Rechargeable battery for over 10 hours of use on a single charge

3-year warranty

## APPLICATIONS

Any singlemode link up to 40 km (point-to-point)

FTTx service activation

FTTx last mile installation and repair, including in-service testing

Last mile/access network installation and repair

Fiber health check-up

Power level testing

Insertion loss and ORL testing

Fiber break location

Fault identification and location (splices, connectors, macrobends)

SPEC SHEET

## RELATED PRODUCTS AND ACCESSORIES



Test Cord Box



Click-Out Optical Connector™



## NEW CATEGORY OF TESTER TO TAKE ON THE CHALLENGES AHEAD

Keeping up with the accelerating pace of fiber deployments implies a major transformation in the way testing is approached. Optical Xplorer™ has been designed from the ground up to tackle the challenges ahead and simplify testing. Optical Xplorer allows streamlined procedures that reduce delays and escalation costs on the field while freeing up expert technicians to focus on more relevant tasks.

Optical Xplorer is the industry's first optical fiber multimeter (OFM), a new purpose-built category of tools empowering frontline techs to effectively carry out installation, activation and repair operations. Optical Xplorer speeds up link health verification with embedded fault tracking – all in one single-ended test that's quick and easy.

To cope with the increasing volume of fiber being rolled out, Optical Xplorer has been designed from the start to equip large crews of frontline technicians:

- › Optimized for **utmost user experience**. It is highly intuitive and easy to use for any technician regardless of experience in fiber optics or other technologies (such as copper or DSL).
- › Designed to **reduce total cost of ownership (TCO)** throughout the product life cycle by cutting all hidden costs.

## 5-STAR FIBER-OPTIC TESTING ACCESSIBLE TO ALL

Optical Xplorer goes beyond basic testing as compared to power meters and fault locators. It offers a **brand new testing approach** powered by multiple pending patents.

Optical Xplorer determines overall link quality and tracks potential faults, this in turn helps to boost work efficiency and quality for frontline techs. Unlike traditional instruments in their toolbox, Optical Xplorer won't leave field technicians blind to faults. Instead, Optical Xplorer introduces new capabilities that break boundaries to redefine the role of field technicians. Each technician gets more autonomy to solve issues, enabling a leaner troubleshooting process that doesn't require several technicians with various skills. Optical Xplorer allows a fundamental shift in work organization—a new and better way to keep pace with the high volume of deployments and maintenance activities ahead.

## INTELLIGENTLY EXPLORE FAULTS WHEN VERIFYING LINKS

While displaying **insertion loss (IL)**, **optical return loss (ORL)** as well as **fiber length** under a few seconds and in one single-ended process, Optical Xplorer also looks for potential faults. It won't waste precious time on good links, but if a fault is suspected, Optical Xplorer will automatically explore further and diagnose the fault, if applicable.

EXFO's patented Fault Xplorer™ technology requires no additional steps or expertise to identify and locate common causes of failure (fiber breaks, macrobends, bad splices or faulty connectors), allowing technicians to fix problems on-the-go. Putting this new device in the hands of all technicians means faster installation and activation plus quicker mean time to repair (MTTR)—both with increased quality. Fully leverage the presence of fiber professionals on the field, while eliminating the cost and delays associated with dispatching experts and truck rolls. Once a link is verified with Optical Xplorer, a frontline technician can leave a site assured that everything concerning optical links is ready for seamless acceptance, activation or service recovery.

Combined with power checking and light source capabilities in a rugged and compact form factor, Optical Xplorer is an intuitive field companion that upskills any field technician.



## TAKING ON YOUR CAPEX AND OPEX CHALLENGES

Large instrument fleets come with maintenance challenges, and hidden or unplanned costs including:

- › Cost of periodic calibration
- › Cost of entry connector replacement in factory
- › Cost of planned and unplanned downtime
- › Cost and complexity of instrument fleet's maintenance management

## Did you know?

**Up to 95 % of units sent back to factory for periodic calibration have severely damaged connectors needing replacement.**

Connector health is critical to ensuring optimal performance and accurate results for optical test instruments. Optical connectors have a hard life in the field, and are typically specified by connector manufacturers for 500 to 1000 matings.

## OPTICAL XPLOER TACKLES THE ROOT CAUSES OF THESE PAINS, ELIMINATING, BY DESIGN, HIDDEN COSTS OF OWNERSHIP:



### Lifetime calibration<sup>1</sup>

No yearly factory return costs and no downtime

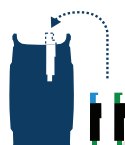


### Field replaceable battery

No factory or depot downtime



### 3-year warranty



### Patented Click-Out Optical Connector™<sup>2</sup>

Click-out your unit's connector and swap it for a brand new one on-the-go—no factory servicing costs nor downtime



### EXFO's proven robustness<sup>3</sup>

Extremely rare repair downtime and associated costs

## 5-STAR FIBER LINK ASSESSMENT: GO BEYOND A PASS/FAIL DIAGNOSIS



Until now, pass/fail thresholds have been fulfilling the need for assessment criteria. Typically, these thresholds include minimum/maximum values (loss, attenuation and reflectance) for individual events such as connections or splices, for fiber sections and for the overall link under test (total loss, ORL, length). These thresholds are meant to be a consistent and objective way to accept or reject a link. What's offered, in complement to quantitative assessment is a qualitative evaluation, one that looks at how efficiently and robustly a link is built.

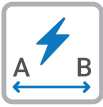
This is where EXFO's 30+ years of expertise and knowledge comes into play, intelligence acquired by working with the world's major operators, network builders and owners. We funneled that insight into algorithms that analyse fiber links based on industry best practices. Meet EXFO Advisor, our 5-star link quality indicator available on the Optical Xplorer.

1. Considering a product lifetime of 10 years.

2. Optical Xplorer PRO version only.

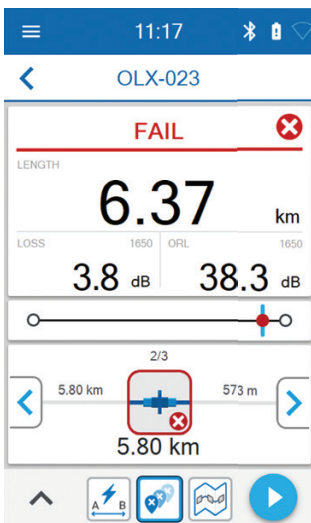
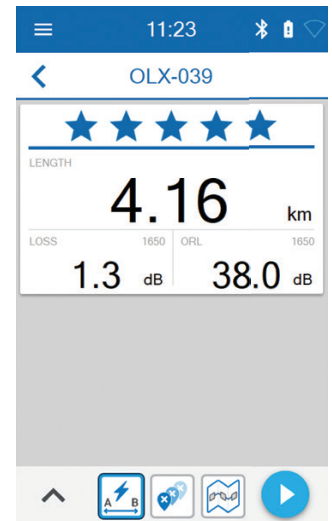
3. On a fleet of 500 EXFO optical testers, the average number of units returned yearly for repair is one (according to TL-9000 internal metrics).

## ONE OPTICAL XPLOER, MANY ESSENTIAL FUNCTIONS FOR THE FRONTLINE TECHNICIAN



### Lightning fast check of link length and quality

**Flash Advisor™** displays the following in under 3 seconds: link length, IL, ORL and provides a unique 5-star rating diagnosis. It's a single-ended test ideal for instant length check, sanity check or mass volume control on cables prior or after an installation or repair.



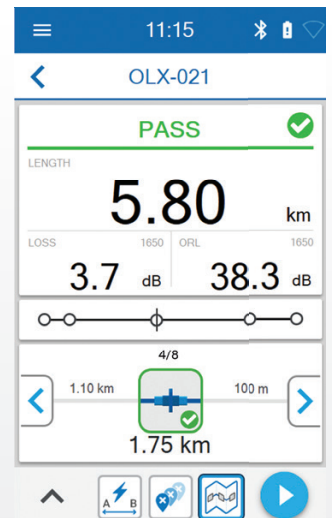
### Swift link verification with embedded fault tracking

Quickly verify a link after an installation or a repair while automatically, and only when necessary, exploring potential faults. Within five seconds, **Fault Explorer** will display IL, ORL and length on good links while tracking suspicious events. In the case of suspected underlying issues, Optical Xplorer will automatically allocate extra testing time to precisely diagnose (location, loss, reflectance, event type), or clear all doubts. Fault Explorer goes beyond flagging severe events like a fiber break, it identifies all link components that would not pass a full acceptance, giving techs the chance to solve problems on the spot, without escalation.



### Link verification with element mapping<sup>1</sup>

Link Mapper documents the entire optical link, including sections length and all detectable faults or elements for enhanced visibility and traceability of fiber links after installation or repair.



### Light and identify a fiber

Optical Xplorer can be operated as a source in continuous mode or modulated signal (270 Hz, 330 Hz, 1 kHz, 2 kHz) for fiber identification.



### Check power and identify a fiber

Check power level or loss or detect a tone to identify and trace a fiber.

1. Optical Xplorer Pro version only.

## DESIGNED FOR EFFICIENCY

EXFO's extensive experience in field testing instruments has gone into creating Optical Xplorer. Its ergonomic, robust design is a perfect fit for today's field technician. After over 30 years pioneering essential solutions and technologies, EXFO has the leading expertise to diagnose the quality of your fiber—reliably and quickly.

- ❶ Optical test connector: field-replaceable Click-Out Optical Connector on Pro models, fixed connector on Basic models)
- ❷ Click-Out Optical Connector™ (PRO models)
- ❸ USB C charge port
- ❹ Power on/off
- ❺ 4-inch touchscreen



## PRO OR BASIC, FIND YOUR FIT

Optical Xplorer Basic and PRO versions are available in Installation (1310/1550 nm) or Maintenance (filtered 1650 nm) models. Go PRO and experience the complete list of Optical Xplorer benefits including full link mapping and lowest total cost of ownership thanks to our Click-Out Optical Connector™.

### BASIC

#### Features



Light source / Power checker



EXFO Advisor™ 5-star rating



Flash Advisor™



Fault Xplorer™



### PRO

#### Features



Light source / Power checker



EXFO Advisor™ 5-star rating scale



Flash Advisor™



Fault Xplorer™



Link Mapper



Click-Out Optical Connector™

SPECIFICATIONS <sup>a</sup>

OPTICAL SPECIFICATIONS	
Wavelengths	1310 nm $\pm$ 30 nm 1550 nm $\pm$ 30 nm 1650 nm $\pm$ 10 nm: Integrated filter isolation: 50 dB from 1265 nm to 1617 nm
Maximum link loss	15 dB
Link length	Maximum: 40 km
Testing time	Flash Advisor (Distance, IL, ORL): 3 s Fault Xplorer (Distance, IL, ORL, fault exploration): down to 5 s <sup>b</sup> Link Mapper (Distance, IL, ORL, mapping of detectable elements): down to 10 s <sup>b</sup>
Distance uncertainty	$\pm 1.5$ m <sup>c</sup>

POWER CHECKER	
Wavelengths	1310 nm, 1490 nm, 1550 nm, 1625 nm, 1650 nm
Power range <sup>d</sup>	-60 dBm to 15 dBm
Linearity	$\pm 0.15$ dB between -45 dBm to 10 dBm (no warm up needed <sup>e</sup> )
Power uncertainty <sup>f</sup>	$\pm 0.5$ dB at -20 dBm
Maximum input power	15 dBm
Tone detection <sup>g</sup>	270 Hz, 330 Hz, 1 kHz, 2 kHz

LIGHT SOURCE	
Wavelengths	1310 nm $\pm$ 30 nm 1550 nm $\pm$ 30 nm 1650 nm $\pm$ 10 nm
Output power <sup>h, i</sup>	> -8 dBm
Output power stability	$\pm 0.2$ dB after 30 minute warm up ((Max - Min)/2)
Source modulation	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz

**Notes**

- a. All specifications are typical, at 23 °C  $\pm$  2 °C unless otherwise specified.
- b. Depending on number of faults on link and link loss, measurement time will vary from 5 s to 40 s, typical.
- c. For a 5 km link, total insertion loss 3 dB, and reflectance -42 dB, excluding IOR.
- d. Display high and low outside range.
- e. Automatic offset nulling between -10 °C and 50 °C.
- f. Excluding connector uncertainty;  $\pm 1$  dB including connector uncertainty.
- g. Using an EXFO optical light source.
- h. Must use a power meter/checker having measurement range  $\geq 15$  dBm.
- i. Average power at duty cycle 1%.



## GENERAL SPECIFICATIONS

Display	4-inch touch screen
Size (H x W x D)	171 mm x 93 mm x 48 mm (6 <sup>3</sup> / <sub>4</sub> in x 3 <sup>11</sup> / <sub>16</sub> in x 1 <sup>7</sup> / <sub>8</sub> in)
Weight	0.5 kg (1.1 lb)
Battery autonomy	>10 hour autonomy (in typical conditions of use)
Battery charging	< 5 hours charging time, when unit is off USB-C Dual Role USB 2.0 charging port AC/DC charger/adaptor input: ~ 100 – 240 V; 50/60 Hz; 1.0 A max, output: --- 5 V; 2 A
Interfaces	WiFi 802.11 b/g/n 2.4 GHz, up to WPA2 encryption Bluetooth 4.2 with BLE, Class 2 (compatible with 4.0 smartphones)
Storage capacity	1000 test results for local reading
Temperature	
Operating	–10 °C to 45 °C (14 °F to 113 °F)
Storage	–40 °C to 70 °C (–40 °F to 158 °F) <sup>a</sup>
Relative humidity range	≤ 93 %, non-condensing
Drop resistance	1 m (39 in)

## Note

a. Without battery.



## ACCESSORIES

## Carrying pouches and cases

GP-3151	Optical Xplorer soft pouch
GP-10-061	Medium size soft carrying case
GP-10-071	Small size soft carrying case
GP-3157	Wrist strap

## Power adapters and battery

GP-2227	USB AC adapter (includes interchangeable plugs for North America, Europe, UK and Australia)
GP-2269	USB-A to USB-C cable (for charging purposes only - no data transfer)
GP-3150	Rechargeable battery

## Connectors

GP-3152	SC/APC Click-Out Optical Connector™ (for PRO models)
GP-3153	SC/UPC Click-Out Optical Connector™ (for PRO models)

## Test cord box

TCB-SM-SCA-SCA-20	SC/APC to SC/APC (SM fiber, 20 m)
TCB-SM-SCA-LCA-20	SC/APC to LC/APC (SM fiber, 20 m)
TCB-SM-SCA-FCA-20	SC/APC to FC/APC (SM fiber, 20 m)
TCB-SM-SCA-SCU-20	SC/APC to SC/UPC (SM fiber, 20 m)
TCB-SM-SCA-LCU-20	SC/APC to LC/UPC (SM fiber, 20 m)
TCB-SM-SCA-FCU-20	SC/APC to FC/UPC (SM fiber, 20 m)
TCB-SM-SCU-SCU-60	SC/UPC to SC/UPC (SM fiber, 60 m)
TCB-SM-SCU-LCU-60	SC/UPC to LC/UPC (SM fiber, 60 m)
TCB-SM-SCU-FCU-60	SC/UPC to FC/UPC (SM fiber, 60 m)



## YOUR STARTER KIT

Each Optical Xplorer comes with:

- › (1) soft pouch (GP-3151)
- › (1) power adapter (GP-2227+GP-2269)
- › (1) battery (GP-3150)
- › (1) wrist strap (GP-3157)

PRO models also include:

- › (1) Click-Out Optical connector with SC/APC (GP-3152) or SC/UPC (GP-3153) interface

Complement your kit with optional spare Click-Out Optical Connectors (PRO models only) and test cord boxes to optimize your Optical Xplorer experience.



Optical Xplorer starter kit

## ORDERING INFORMATION

**OX1-XX-XX-XX**

### Model

**I** = Installation - 1310/1550 nm  
**M** = Maintenance - 1650 nm (live)  
**PRO-I** = Installation - 1310/1550 nm PRO Version  
**PRO-M** = Maintenance - 1650 nm (live) PRO Version

### Connector interface \*

**88** = SC/APC  
**91** = SC/UPC

### Optional test cord box

**00** = None

### For SC/APC Optical Xplorer connector

**TCB-SM-SCA-SCA-20** = SC/APC to SC/APC (SM Fiber, 20 m)  
**TCB-SM-SCA-LCA-20** = SC/APC to LC/APC (SM Fiber, 20 m)  
**TCB-SM-SCA-FCA-20** = SC/APC to FC/APC (SM Fiber, 20 m)  
**TCB-SM-SCA-SCU-20** = SC/APC to SC/UPC (SM Fiber, 20 m)  
**TCB-SM-SCA-LCU-20** = SC/APC to LC/UPC (SM Fiber, 20 m)  
**TCB-SM-SCA-FCU-20** = SC/APC to FC/UPC (SM Fiber, 20 m)

### For SC/UPC Optical Xplorer connector

**TCB-SM-SCU-SCU-60** = SC/UPC to SC/UPC (SM Fiber, 60 m)  
**TCB-SM-SCU-LCU-60** = SC/UPC to LC/UPC (SM Fiber, 60 m)  
**TCB-SM-SCU-FCU-60** = SC/UPC to FC/UPC (SM Fiber, 60 m)

Example: OX1-PRO-M-88-TCB-SM-SCA-SCA-20

### Note

a. Fixed connector on Basic model, Click-Out Optical Connector™ on PRO models.

**EXFO Headquarters** > Tel.: +1 418 683-0211 | Toll-free: +1 800 663-3936 (USA and Canada) | Fax: +1 418 683-2170 | info@EXFO.com | [www.EXFO.com](http://www.EXFO.com)

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