

MultiTest Modules

FTB-3920 and FTB-1400



1625 nm light source

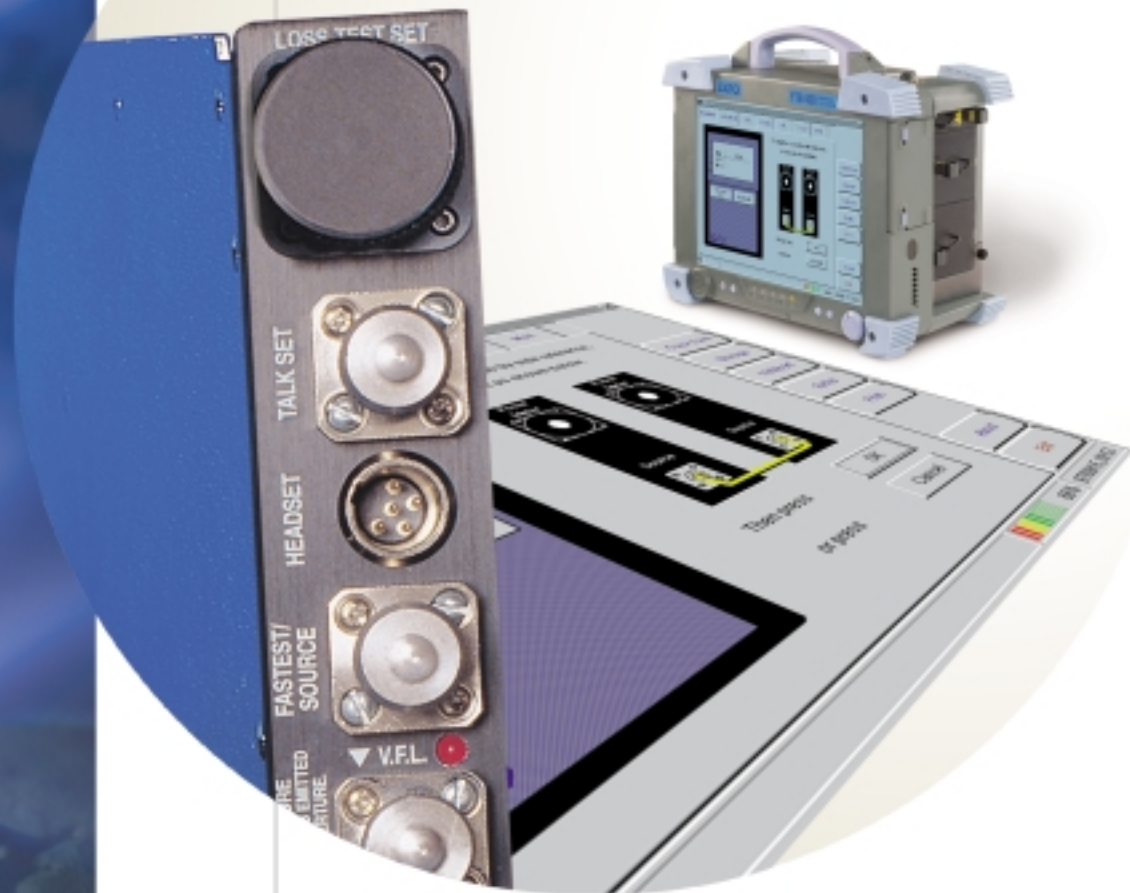
FasTesT™ system

Return loss test set

Visual fault locator

Digital talk set

Ultra-High Power™ power meter



Fiber-optic test, measurement
and monitoring instruments

EXFO

The FTB-3920 and FTB-1400: A Flexible Solution

Technicians working on metro and long-haul networks who need more than a handheld loss test set can count on the flexibility of EXFO's Universal Test System. Both the FTB-300 and FTB-400 modular test platforms provide a comprehensive range of testing options, from simple loss testing to ORL and OTDR measurement. The FTB-1400 and FTB-3920 MultiTest modules combine a power meter, light source, visual fault locator (vfl) and an optional optical return loss tester to meet a wide range of testing needs.

Key Features

- 1625 nm testing provides worst-case attenuation for the L-band
- Fiber identifier detects 2 kHz signals
- Notepad feature documents power meter results in the field or in the office
- Power meter or optical loss test set uses manual or automated operation
- Singlemode or multimode, digital talk set, offers full-duplex, hands-free communication
- Light source supports automated bidirectional loss and return loss testing
- Visual fault locator features 650 nm visible bright red source
- Ultra-High Power™ power meter models



Light Source Stability and Accuracy

EXFO light sources provide you with stability for reliable, accurate test results you can trust. Power meters can be combined with single- or dual-wavelength LED or laser light sources.

The FTB-3920 power meter series features a monitoring function to verify source stability over time and ensure accurate test results.



Power Meter Performance and Reliability

Two power meters have been developed for the MultiTest module: the FTB-1400 and the FTB-3920. The FTB-1400 is ideal for taking accurate absolute power measurements (in dBm and W) and loss measurements (in dB). The FTB-3920 series uses EXFO's patented FasTesT system to take you beyond the basic power meter. FasTesT gives you the power of fully automated fiber-optic attenuation measurement. The FTB-3920 series offers an optional ORL test set for measuring component back reflection and system return loss.

Step Up to the Ultra-High Power™ Models

EXFO is introducing another industry first in the FTB-3920 and FTB-1400 MultiTest modules. Directly measure the absolute power of high-power signals in the field with their Ultra-High Power™ capabilities. Accurately measure signals with power levels as high as +35 dBm without neglecting those at the lower end of the dBm range. The FTB-3920 and FTB-1400 MultiTest modules are the complete solution for advanced networks.

Leave Nothing to Chance

There is no substitute for practicing good laser safety. When handling high power, always take necessary precautions.

Digital Talk Set: Communication Made Easy

Digital signal encoding preserves voice clarity and message integrity for up to 45 dB of attenuation (1310 nm, 1550 nm and 1625 nm). The digital talk set does not require push-to-talk or voice-activated switching.

Seek function

The seek function automatically repeats a call until it is answered, so you can continue working while waiting for the call to go through. The talk set will automatically answer a call from another MultiTest module, a handheld VCS-20A Talk Set, a VCS-20PC Talk Set or a FOT-920 MaxTester with the talk set option.

Talk and test function

Use the talk set to communicate while performing tests or running other applications. When the talk set detects an incoming signal, it lets you know by producing a distinctive ring. The digital talk set ensures clear voice transmission every time.

Visual Fault Locator

Using a VFL is the easiest way to perform end-to-end identification or to pinpoint breaks, bends, faulty connectors or splices over a distance of up to 5 km. This 650 nm VFL offers excellent visibility. In pulsed or continuous operating mode, it creates a bright red glow, visible through most yellow-jacketed (singlemode or multimode fibers), at the exact fault location on singlemode or multimode fibers.

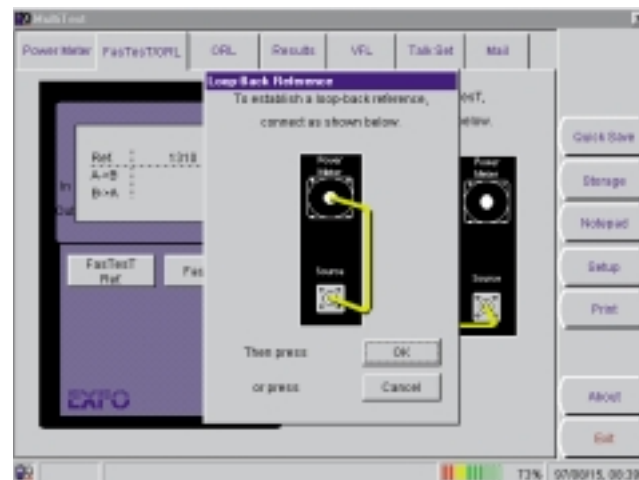
Easy Operation, Easy Integration

Step-by-step test guide

Our new ToolBox 6 software features detailed graphics to guide you through testing procedures. The FTB-400 Universal Test System screen gives step-by-step visual support at a glance for field instrument connection, helping you save training costs and time.



Once you've completed the setup, just press the appropriate button and let the unit do the work for you.



FasTesT Saves You Time at the Touch of a Button



FasTesT: The fastest automated bidirectional loss test

EXFO's FasTesT is simply the most advanced loss test system in the industry. It performs fully automated bidirectional loss testing at one, two or three wavelengths, at the touch of a single button, in under 30 seconds.



FasTesT automatic wavelength selection: an end to guesswork

The FasTesT Automatic Wavelength Selection feature takes power readings exactly at the calibration wavelength on the first try. There are no more guessing games, and you never need to retest.

Fast and easy communication with the Mailbox function

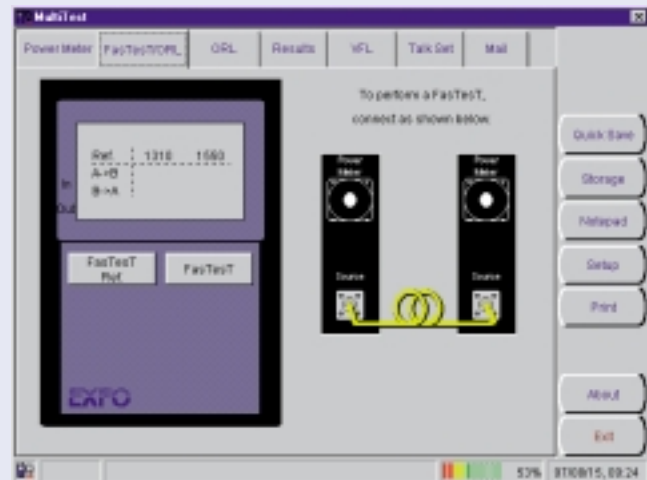
Send a message through the fiber under test to another FTB-300 or FTB-400 unit with the Mailbox function, and improve interaction between test units for increased efficiency.

FasTesT saves you time and money

The FasTesT procedure saves you approximately 90 seconds per fiber compared to a manual loss test with a separate light source and power meter. Save over 3.5 hours when testing high installation fiber (144 fibers x 90 seconds per fiber = 12 960 seconds)

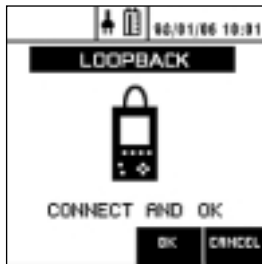
Add optical return loss measurement to your MultiTest module

Stringent transmission regulations for high-bandwidth applications require backreflection to be measured and documented for networks, components, and connectors. With the optical return loss (ORL) option, your FasTesT power meter becomes a complete attenuation/ORL test set. Backreflection from 0 to -65 dB can be precisely measured at 1310 nm, 1550 nm and 1625 nm.



Self-Reference Procedure Saves Setup Time

With FasTesT's simple loopback procedure, each unit sets its 0 dB reference independently and automatically so you can spend less time setting up and more time testing.



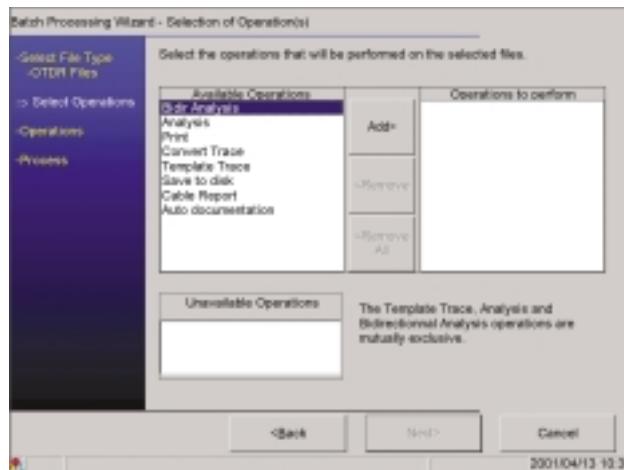
Why is Bidirectional Testing so Important?

- Coupler attenuation can significantly differ depending on the direction of the test.
- Fiber core mismatches will have different attenuation levels, depending on the direction of the measurement.
- The quality of the connector varies at either end of the network. If you use wide area detectors, the light at the endface of a scratched connector will be detected, but the fault will not appear.

An All-In-One Testing Solution

Complete Handheld Compatibility

The MultiTest module with FasTesT is fully compatible with other handheld equipment, such as the FOT-910 Automated Test System and FOT-920 MaxTester. You can combine the module's talk set with a VCS-20A Talk Set. For loss testing, the MultiTest module can be matched with most existing EXFO handheld equipment—in particular, the FOT-90A Power Meter and FLS-210A Light Source.



The MultiTest Module: Customized to Fit Your Requirements

MultiTest modules can be configured to meet your needs. It gives you the ability to perform a wide range of tests in the field, without having to bring along separate stand-alone equipment. Whether you need a simple power meter or a fully equipped attenuation test set, EXFO will customize a MultiTest module for you.



Simple to use

The MultiTest module comes complete with test application software that lets you control all the module's functions. It runs in the ToolBox 6 environment, where an intuitive graphical user interface makes your work easy with icons, buttons and pictograms. All FTB-400 software features the same intuitive interface, to reduce startup time.

Specifications¹

Power meter	-2	-2X	-3	-3X	
Detector type	Ge (2 mm)	GeX (2 mm)	InGaAs (2 mm)	InGaAs Ultra-High Power	
Power level	—	—	—	P1	P2
Wavelength range (nm)	780 to 1625	780 to 1625	840 to 1650	980 to 1625	980 to 1625
Measurement range (dBm) ²	10 to -68	21 to -60	4 to -70	28 to -45	35 to -45
Uncertainty (%) ^{3,4}	± 5	± 5	± 5	± 6 ⁵	± 6.5 ^{5,7}
Linearity (dB) ^{2,4}	± 0.06 (0 to -48 dBm)	± 0.06 (10 to -40 dBm)	± 0.06 (0 to -50 dBm)	± 0.1 ⁶	± 0.1 ⁶
Resolution (dB) ³	0.01	0.01	0.01	0.01	0.01

Light source ⁴	-12C	-12D	-23B	-23BL	-BR23BL	-34BL	-BR34BL
Emitter type	LED	LED	LED	laser	laser	laser	laser
Wavelengths (nm)	850 ± 30/ 1300 ± 30	850 ± 30/ 1300 ± 30	1310 ± 25/ 1550 ± 25	1310 ± 25/ 1550 ± 25	1310 ± 25/ 1550 ± 25	1550 ± 25/ 1625 ± 25	1550 ± 25/ 1625 ± 25
Spectral width (nm) ⁸	≤ 50/80	≤ 50/80	≤ 80/80	≤ 5/5	≤ 5/5	≤ 5/10	≤ 5/10
Output power (dBm)	≥ -23/-19	≥ -20/-21	≥ -25/-30	≥ -3.5/-5.5	≥ -5/-7	≥ -5.5/-5.5	≥ -7/-7
Stability (8 hours) (dB) ⁹	± 0.15	± 0.15	± 0.10	± 0.10	± 0.10	± 0.10	± 0.10

FasTesT ⁴	-12C	-12D	-23B	-23BL	-BR23BL	-34BL	-BR34BL
Emitter type	LED	LED	LED	laser	laser	laser	laser
Wavelengths (nm)	850/1300	850/1300	1310/1550	1310/1550	1310/1550	1550/1625	1550/1625
Range (dB)	41	44	39	60	60	60/55	60/55
Maximum deviation (dB) ^{3,10}	± 0.5	± 0.5	± 0.35/± 0.5	± 0.35/± 0.5	± 0.35/± 0.5	± 0.35/± 0.5	± 0.35/± 0.5
Resolution (dB) ³	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Optical return loss ¹¹	BR23BL	BR34BL
Range (dB)	65	65
Uncertainty (dB) ^{3,4}	± 0.4	± 0.4

Talk set ⁴	-T02C	-T02BL	-T03BL
Emitter type	LED	laser	laser
Wavelength (nm)	1300 ± 25	1310 ± 25	1550 ± 25
Dynamic range (dB)	30	45	45
Distance range (approx.) (km)	50	128	180
Optimum fiber type (μm)	50/125	9/125	9/125

Visual fault locator

Emitter type	laser
Wavelength (nm)	650 ± 10
Output power (CW) (dBm) ⁹	-1

General specifications

Size (H x W x D)	9 cm x 2.5 cm x 26 cm	(3 1/2 in x 1 in x 10 1/4 in)
Weight (varies with options)	0.49 kg	(1.08 lb)
Temperature		
operating	-5 °C to 40 °C	(23 °F to 104 °F)
storage	-20 °C to 60 °C	(-4 °F to 140 °F)
Relative humidity	0 % to 95 % non-condensing	

Notes

- At 23 °C ± 1 °C with FC/PC connector unless otherwise specified, with an offset nulling for the power meter.
- At 1310 nm for power meter models -2, -2X, -3; at 1550 nm for -3X models.
- Resolution and uncertainty are functions of input power; uncertainty is valid at calibration conditions.
- After a warm-up time of 20 minutes.
- At all calibrated wavelengths except 1625 nm.
- From -35 dBm to 0 dBm; ± 0.15 dB from 0 dBm to 28 dBm; ± 0.3 dB from 28 dBm to 35 dBm (for FTB-3923X-P2 only); always referenced at 0 dBm.
- When exposed to an input power higher than 28 dBm, uncertainty is valid for a maximum period of 15 minutes.
- As defined by Telcordia TR-TSY-000887, rms for lasers and FWHM for LEDs.
- The stability is expressed as ± half the difference between the maximum and minimum values measured during the period.
- Maximum deviation between FasTesT and manual measure, when loopback / side-by-side reference is taken. Maximum deviation is ± 0.45 dB/± 0.5 dB for Ultra-High Power™ models.
- Specifications with FC/APC connector.

Ordering Information

FTB-1400 Power Meter and Options

FTB-140X - XX (XXXX - XX, XXXX - XX, XXX - XX) options

X : Detector code

- 2 = Ge
- 2X = High power Ge
- 3 = InGaAs
- 3X = InGaAs Ultra-High Power¹

XX : Power Level

- P1: 28 dBm
- P2: 35 dBm

XXXX : CW source code

- 23B = 1310/1550 nm LED
- 23BL = 1310/1550 nm laser
- 34BL = 1550/1625 nm laser

XXXX : Talk set code²

- T02C = 1300 nm LED
- T02BL = 1310 nm laser
- T03BL = 1550 nm laser

XXX-XX : VFL connector code³

- VFL-50 = FC/PC
- VFL-54 = SC/PC
- VFL-74 = ST/PC

XX : Source or talk set connector code

- EI = UPC Universal Interface
- EA = APC Universal Interface

The fixed-base plate (EI or EA) must be ordered with a removable universal connector adapter (EUI-XX). Please specify one EUI from the following list:

- EUI-28 = DIN 47256
- EUI-76 = HMS-10/AG (EI only)
- EUI-89 = FC
- EUI-90 = ST (EI only)
- EUI-91 = SC
- EUI-95 = E-2000

Specify model number and the connector adapter you wish to obtain (one free connector adapter included).

- FOA-12 = Biconic
- FOA-14 = D4: D4, D4/PC
- FOA-16 = SMA/905, SMA/906
- FOA-22 = FC: FC, FC (/PC/SPC/UPC/APC), NEC-D3
- FOA-24 = Radiall VFO/DF (/straight/slant)
- FOA-28 = DIN 47256 (LSA): DIN 47256 (/PC/APC)

- FOA-32 = ST: ST, ST(/PC/SPC/UPC)
- FOA-34 = Mini-BNC
- FOA-40 = Diamond HMS-0, HFS-3 (3.5nm)
- FOA-42 = Radiall PFO
- FOA-44 = Radiall MFO
- FOA-48 = HP HFBR-4501 HFBR-4503
- FOA-52 = Biconic Bayonet
- FOA-54 = SC: SC(/PC/SPC/UPC/APC)

- FOA-68 = AT&T Rotary Splice
- FOA-76 = FSMA HMS-10/AG, HFS-10/AG
- FOA-78 = Radiall EC
- FOA-84 = Diamond HMS-10, HFS-13
- FOA-96 = E-2000
- FOA-98 = LC
- FOA-99 = MU

Notes

1. No source, talk set or VFL option available with the Ultra-High Power™ detector
2. The talk set is offered as an option with the power meter (except with the Ultra-High Power™ models). It is not offered as a stand alone.
3. The VFL is offered as an option with the power meter (except with the Ultra-High Power™ models). It is not offered as a stand alone.

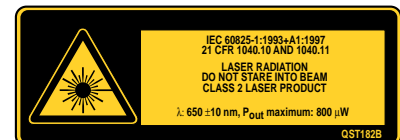
Safety

The emitter types for the back reflection, FasTesT, light source and talk set comply with 21 CFR 1040.10, and comply with IEC 60825-1:1993+A1:1997.

CLASS 1 LASER PRODUCT

CLASS 1 LED PRODUCT

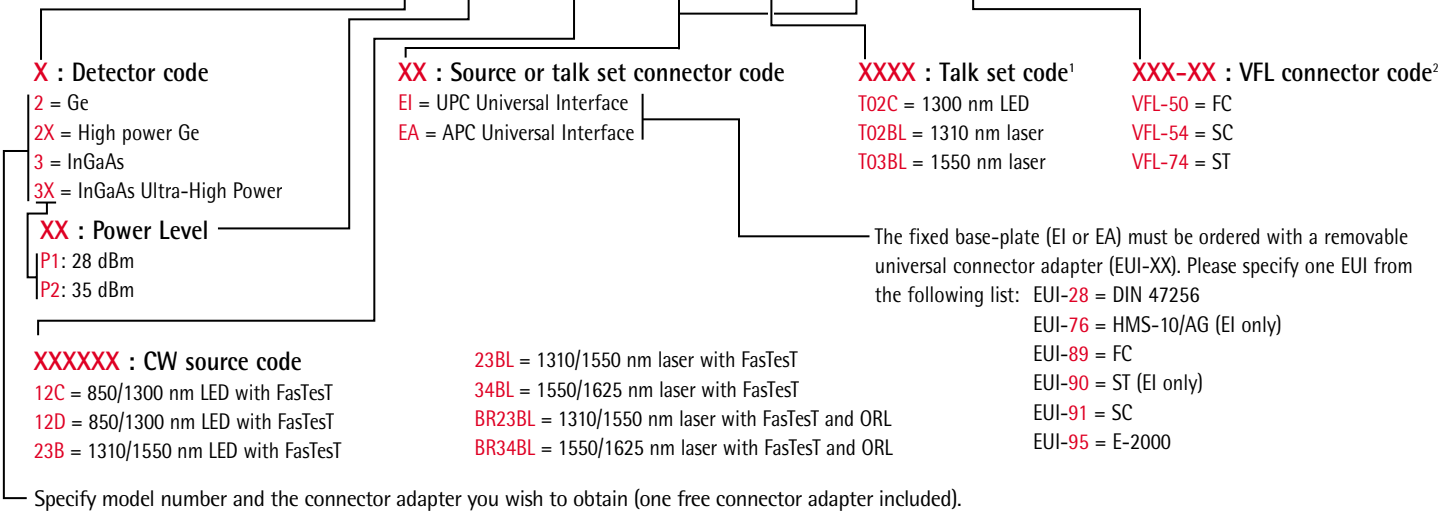
The VFL option of the FTB-3920 or FTB-1400 is a class 2 laser product. Actual power output level may be lower than specified on label. Refer to "Specifications" for output power and wavelength combinations.



Ordering information

FTB-3920 Power Meter, Sources and Options

FTB-392X - XX - XXXXXX - XX, (-XXXX - XX XXX - XX) options






- FOA-12 = Biconic
- FOA-14 = D4: D4, D4/PC
- FOA-16 = SMA/905, SMA/906
- FOA-22 = FC: FC, FC (/PC/SPC/UPC/APC), NEC-D3
- FOA-24 = Radiall VFO/DF (/straight/slant)
- FOA-28 = DIN 47256 (LSA): DIN 47256 (/PC/APC)
- FOA-32 = ST: ST, ST(/PC/SPC/UPC)
- FOA-34 = Mini-BNC
- FOA-40 = Diamond HMS-0, HFS-3 (3.5nm)
- FOA-42 = Radiall PFO
- FOA-44 = Radiall MFO
- FOA-48 = HP HFBR-4501 HFBR-4503
- FOA-52 = Biconic Bayonet
- FOA-54 = SC: SC(/PC/SPC/UPC/APC)
- FOA-68 = AT&T Rotary Splice
- FOA-76 = FSMA HMS-10/AG, HFS-10/AG
- FOA-78 = Radiall EC
- FOA-84 = Diamond HMS-10, HFS-13
- FOA-96 = E-2000
- FOA-98 = LC
- FOA-99 = MU

Notes

1. The talk set is offered as an option with the power meter. It is not offered as a stand alone.
2. The VFL is offered as an option with the power meter. It is not offered as a stand alone.

Find out more about EXFO's extensive line of high-performance portable instruments by visiting our Web site at www.exfo.com

 <p>Rugged Handheld Solutions</p> <ul style="list-style-type: none"> • OLTS • Power Meter • Light Source • Talk Set 	 <p>Modular Platforms</p> <ul style="list-style-type: none"> • OTDR • OLTS • and more 	 <p>Advanced DWDM Test Systems</p> <ul style="list-style-type: none"> • OSA • PMD • Multiwavelength Meter
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EXFO is certified ISO 9001 and attests to the quality of these products, which come with a 12-month warranty and after-sales support service. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. EXFO has made every effort to ensure that the information contained in this specification sheet is accurate. However, we accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation. Units of measurements in this document conform to SI standards and practices.
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