FTB-4 Pro platform

VERSATILE MULTITECHNOLOGY PORTABLE TEST PLATFORM

PART OF THE
EXFO|FTB ecosystem

EXFO Connect
compatible

TestFlow

SPEC SHEET

The most flexible solution to test multiple technologies and high speed networks.

KEY FEATURES

Connects anywhere: USB, WiFi, Bluetooth, mobile and virtual private network (VPN)

Loaded with utilities: equipped with all the tools required to maximize field testing

Like a PC: quad-core processor with Windows 10 operating system

EXFO Connect-compatible: automated asset management; data goes through the cloud and into a dynamic database

RELATED PRODUCT

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

Specifications and descriptions are subject to change without prior notice.

Opternus **Opternus GmbH** Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

THE POWER AND FLEXIBILITY YOU NEED FOR ADVANCED APPLICATIONS

The FTB-4 Pro delivers all the power of a high-end platform in a go-where-you-need field-testing tool.

APPLICATIONS

ROADM and PTN turn-up testing
Combines SONET/SDH, OTN, Ethernet and Fibre Channel analysis, as well as an optical spectrum analyzer (OSA) with built-in polarization controller.

Gigabit/10 Gigabit Ethernet configurations
Gigabit Ethernet analyzer, OTDR and optical spectrum analyzer with polarization controller.

Fibre Channel
Fibre Channel is the protocol for the communication structure dedicated to carrying different types of traffic for applications that require first-rate capabilities of storage and technologies.

ROADM commissioning
Insert an OSA within this compact, portable solution for fast and accurate DWDM commissioning and turn up of high-speed networks up to 100/200/400 Gbit/s.

Multiservice testing
Easily turn up, validate and troubleshoot DSn/PDH, SONET/SDH and Ethernet services up to 10 Gbit/s in converged optical networks. Delivering IPTV test capabilities and transmission control protocol (TCP) throughput assessment.

Fiber characterization and troubleshooting
OTDR/iOLM testing combined with fiber endface inspection and optical power measurement for fiber characterization and troubleshooting of any network, including access, LAN/WAN, data center, FTTx, metro, long-haul and ultra-long-haul.

FTTH testing
With a dynamic range of up to 42 dB and enabling power meter and visual fault locator functionalities, the PON FTTx/MDU OTDR module allows fiber installers to seamlessly characterize splitters in PON FTTx and multiple dwelling unit (MDU) applications.

Ethernet testing from 10 Mbit/s to 100 Gbit/s
100% line-rate testing of IP traffic at up to 100G; RFC 2544 and ITU-T Y.1564 Ethernet service activation with full statistics, and packet captur traffic filtering, ping and traceroute with clear pass/fail verdicts.

CWDM turn-up testing
Integrate CWDM OTDR to test through CWDM-based MUX/DEMUX at ITU-recommended wavelengths.

DWDM testing
Highly accurate and reliable DWDM network commissioning, troubleshooting and channel analysis.

400+ Gbit/s testing applications
Advanced future-proof hardware, ready for today's and tomorrow's 400+ Gbit/s applications.

Distributed PMD analysis
Single-ended, span-by-span measurement of PMD, enabling targeted fiber upgrades and cost-effective deployment of transmission speeds at 10, 40 and 100 Gbit/s.

OPTICAL TEST MODULES

Optical spectrum analyzer	FTBx-5235 FTBx-5243-HWA FTBx-5245 FTBx-5255
OTDR	FTB-7400E FTB-7600E FTBx-720C FTBx-730C FTBx-735C FTBx-750C
OTDR CWDM/DWDM	FTB-7400E FTBx-740C
OLTS	FTBx-940 FTBx-945
Single-ended dispersion analyzer	FTB-5700
Chromatic dispersion (CD)	FTB-5800
Polarization mode dispersion (PMD)	FTB-5500B
Distributed PMD analyzer	FTB-5600

TRANSPORT AND DATACOM TEST MODULES

400G multiservice	FTBx-88460
1G-to-100G testing	FTBx-88260
Advanced 100G multiservice	FTBx-88200NGE
Versatile 10G multiservice	FTBx-8870 FTBx-8880

Specifications and descriptions are subject to change without prior notice.

Opternus

Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

OPTICAL PLUG-AND-PLAY OPTIONS

The platform can host optical plug-and-play 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 by yourself. No software update required.

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 HFC networks or high-power signals. If used with an auto-lambda/auto-switching compatible light source, the power meter automatically syncs on the same wavelength, avoiding any risk of mismatched measurement.

› Extensive range of connectors
› Auto-lambda and Auto-switching
› Offers measurement storage and reporting
› Choice of seven standard or CWDM 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. Basic yet essential, this troubleshooting device 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, the VFL detects faults over distances of up to 5 km. (Available with the optical power meter only)

DO MORE!

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 the 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 and over-the-top (OTT) apps	Record and automate actions	Share files via cloud-based storage

Specifications and descriptions are subject to change without prior notice.

Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

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 probe can prevent a host of issues from arising further down the line, thus saving you time, money and trouble.

100% automated [a]

1-step process [a]

57% shorter test time [b]

The first fully automated fiber inspection probe for the field

Housing a unique automatic focus adjustment system, the FIP-430B USB and FIP-435B WiFi probes automate each operation in the connector endface inspection sequence, transforming this critical process into one quick and easy step, which 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.

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

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

Specifications and descriptions are subject to change without prior notice.

Opternus **Opternus GmbH** Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

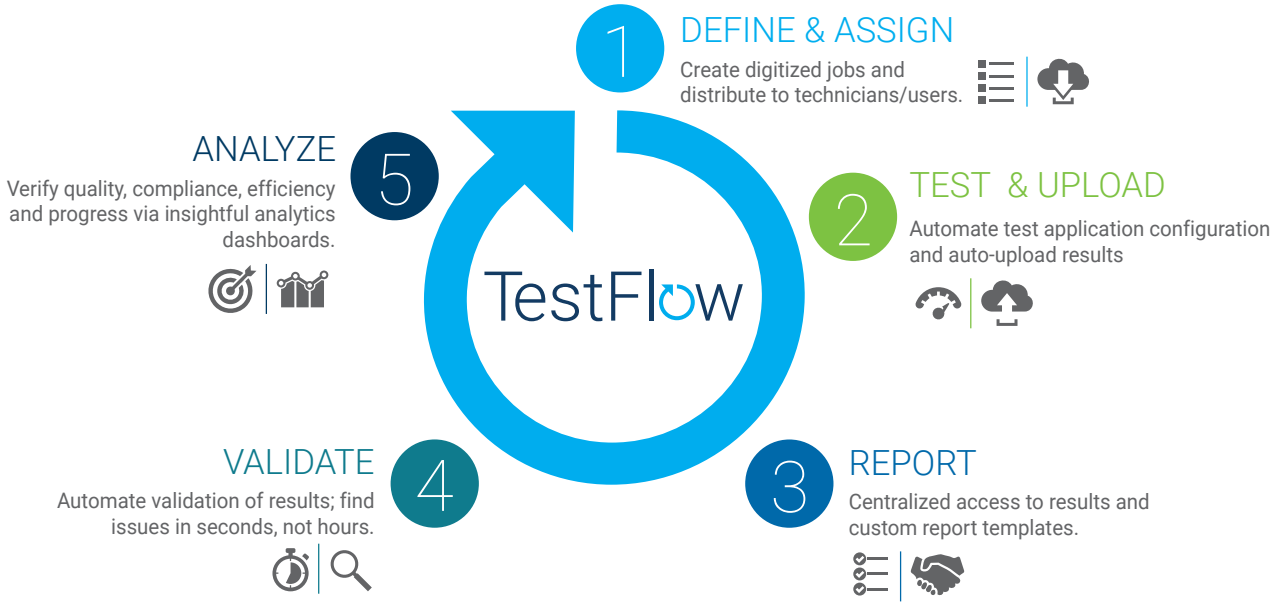
90-DAY FREE TRIAL

TestFlow

CLOUD-BASED FIELD TEST MANAGEMENT SOLUTION– 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.



ENSURE 100% COMPLIANCE	RIGHT THE FIRST TIME	AUTOMATE REPORTING AND BATCH AUDITING	FASTER INVOICING AND DEPLOYMENTS	INFORMED BUSINESS DECISIONS

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

EXFO

Opternus **Opternus GmbH** Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

SOFTWARE TEST TOOLS

This series of platform-based software testing tools enhance the value of the FTB-4 Pro platform, providing additional testing capabilities without the need for additional modules or units.

EXFO Remote ToolBox

The Remote ToolBox application remotely controls T&D modules installed on the platform using a remote PC and an Ethernet connection.

Wireshark—Third-party test tools

This live-network packet-capture utility makes it possible to look *inside* the packets and obtain data, including transmission time, source, destination and protocol type. Users can then diagnose a problem or root out suspicious behavior.

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

Software applications

ConnectorMax

Providing lightning-fast results during the first step of fiber-link testing, ConnectorMax2 is a powerful, platform-based automated inspection application that delivers quick pass/fail assessment of connector endfaces, and which is specifically designed to save both time and money in the field.

FastReporter

Consolidated data management and post-processing tool designed to increase reporting productivity for connector endface inspection and all types of optical-layer testing: intelligent Optical Link Mapper (iOLM), OTDR, ORL, loss, PMD and chromatic dispersion (CD).

EXFO | MULTILINK

EXFO Multilink is a multi-user, multimodule and multiplatform client software application for remote controlled access of each platform and T&D module through a centralized dashboard featuring an easy-to-use GUI.

EXFO

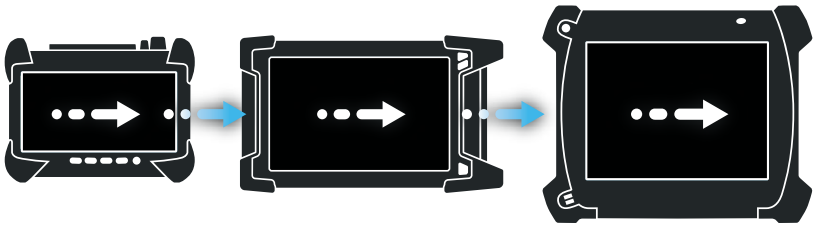
Specifications and descriptions are subject to change without prior notice.

Opternus

Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

CONNECTED ANYWHERE, ANYTIME

The value of connectivity resides in the ability to connect your platform anywhere, at any time. This is why we've equipped our platforms with technology offering unprecedented flexibility. Whether you need to transfer data to the cloud or interface with a smart device, you'll have the capability needed.



Bluetooth® Wi Fi 3G LTE GPS

Secure VPN communications

With Microsoft VPN on the FTB platforms, or the ability to install and configure any VPN client solution defined by your IT department on it, secure communications are now within your reach.

3G/LTE mobility

Get connected wherever you are: choose any Windows-supported 3G/LTE USB dongle and connect to your wireless service provider.

Remote control

Use remote assistance to troubleshoot units in the field, trigger tests remotely, or help a technician with a problem. Working without it is hard to imagine.

Instant messaging

Because our platforms are Windows-based, they function just like PCs. You can even use chat tools to quickly communicate with your team members (Skype comes preinstalled).

Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

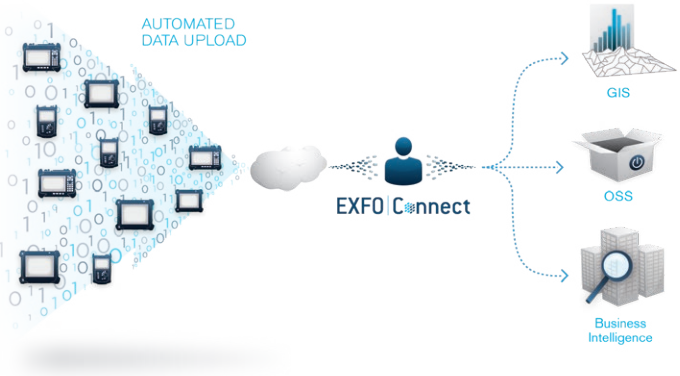
EXFO Connect

EXFO CONNECT MAKES YOUR DATA MEAN BUSINESS

EXFO Connect completely redefines integrated testing with its cloud-hosted solution. Equipped with a powerful database and application technologies, EXFO Connect provides an automated, secure environment that links together your EXFO test instruments, and centralizes captured data across your organization.

Test Equipment Manager

EXFO Connect's Test Equipment Manager is an automated application that centralizes the management of all EXFO test instruments. It is a repository for software loads, licenses and platform profiles to help managers handle constant demands for software updates. It keeps track of equipment and ensures field technicians are equipped with up-to-date capabilities.

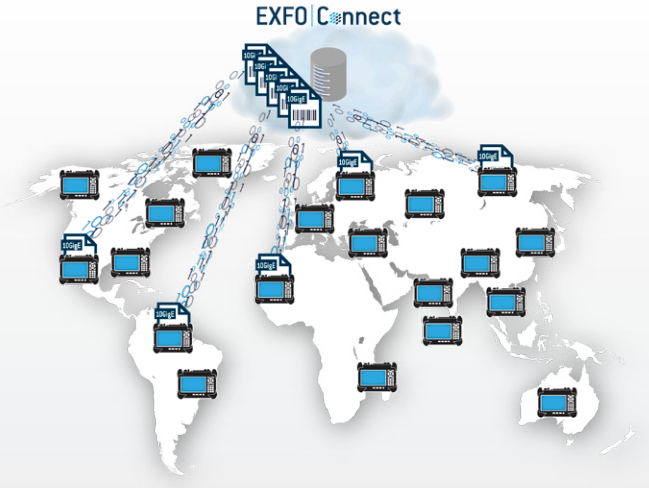


Test Data Manager

EXFO Connect's Test Data Manager is an automated application that provides a secure and centralized environment in which test data is collected, archived and referenced for future use. With test results at their fingertips, managers can create birth certificates, generate reports and set benchmarks.

FTB Anywhere™: Floating test licenses

FTB Anywhere enables the sharing of test licenses. It is a feature of the award-winning FTB platform ecosystem. FTB Anywhere enables network operators to purchase a certain number of cloud-hosted licenses that can be shared instantly with their technicians, wherever they are.



Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

DESIGNED FOR HIGH-SPEED AND MULTISERVICE

1. Power on/off
2. Battery LED
3. Switch application
4. Keyboard/screen capture
5. Battery compartment
6. Back stand
7. Stylus
8. Speaker
9. USB 2.0 port
10. Display port
11. Mic/Headset jack
12. Internal power supply
13. Module screws
14. Kensington security lock slot
15. 1 GigE port
16. USB 3.0 port
17. Power meter and VFL
18. Four (4) slots to house modules

Specifications and descriptions are subject to change without prior notice.

Opternus

Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

TECHNICAL SPECIFICATIONS [a]

Mainframe	Quad-core processor / 4 GB RAM / Windows 10
Display	Touchscreen, color, 1280 × 800 TFT 256 mm (10.1 in)
Interfaces	RJ45 LAN 10/100/1000 Mbit/s USB 2.0 ports (2) USB 3.0 port (1) Display port 3.5 mm headset/microphone port
Storage (internal flash memory)	128 GB
Battery (not included)	Two rechargeable Li-ion smart batteries (optional)
Power supply	AC input: ~ 100 – 240 V; 50/60 Hz; 5.2 – 1.9 A

GENERAL SPECIFICATIONS

Size (H x W x D)	199 mm × 333 mm × 170 mm (7 13/16 in × 13 1/8 in × 6 11/16 in)
Weight [b]	4.6 kg (10 lb)
Temperature	
Operating	0 °C to 40 °C (32 °F to 104 °F)
Storage [c]	–40 °C to 60 °C (–40 °F to 140 °F)

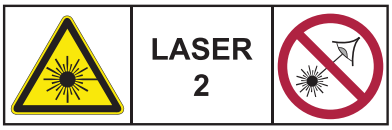
BUILT-IN POWER METER SPECIFICATIONS (GeX) (optional) [d]

Calibrated wavelengths (nm)	850, 1300, 1310, 1490, 1550, 1625, 1650
Optional CWDM calibrated wavelengths (nm)	1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1383, 1625
Power range (dBm) [e]	27 to –50
Uncertainty (%) [e, f]	±5 % ± 10 nW
Display resolution (dB)	0.01 = max to –40 dBm 0.1 = –40 dBm to –50 dBm

VISUAL FAULT LOCATOR (VFL) (optional)

Laser, 650 nm ± 10 nm
CW/Modulate 1 Hz
Typical P_{out} in 62.5/125 µm: > –1.5 dBm (0.7 mW)
Laser safety: Class 2

LASER SAFETY



The test modules that you use with your unit may have different laser classes. Refer to the module's documentation for exact information.

a. All specifications valid at 23 °C (73 °F).
b. Platform without batteries or modules.
c. Not including internal batteries. Battery storage temperatures: –20 °C to 60 °C (–4 °F to 140 °F) for shipping, and –20 °C to 45 °C (–4 °F to 113 °F) for long-term storage.
d. At 23 °C ± 1 °C, 1550 nm and FC connector. With modules in idle mode. Battery-operated after warm-up.
e. Typical.
f. At calibration conditions.

Specifications and descriptions are subject to change without prior notice.

Opternus GmbH Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de

ORDERING INFORMATION

FTB-4-Pro-XX-XX-XX-XX-XX-XX-XX-XX-XX-XX

Model
FTB-4-Pro = Modular platform

Display
S1 = Standard display
S2 = Enhanced display for outdoor use

Memory
128G = 128 GB internal memory (flash)

Batteries
00 = without batteries
BTY = with batteries

WiFi/Bluetooth option
00 = Without RF option enabled
RF = With RF option/capability (WiFi and Bluetooth)
NRF = Without RF hardware components[a]

Power meter/VFL
00 = Without power meter
VPM2X = VFL platform; PM; GeX detector
VPM2X-CWDM = VFL platform; PM; GeX detector; CWDM wavelengths calibrated

Connector adapter[b]
FOA-12 = Biconic
FOA-14 = NEC D4: PC, SPC, UPC
FOA-16 = SMA/905, SMA-906
FOA-22 = FC/PC, FC/SPC, FC/UPC, FC/APC
FOA-28 = DIN 47256, DIN 47256/APC
FOA-32 = ST: ST/PC, ST/SPC, ST/UPC
FOA-54B = SC: SC/PC, SC/SPC, SC/UPC, SC/APC)
FOA-78 = Radiall EC
FOA-96B = E-2000 E-2000/APC
FOA-98 = LC
FOA-99 = MU

Software option
00 = Without any software option
IPT = Ping and traceroute functionalities
EXpert-VoIP = RTP-based call testing software application, including packet loss analysis, jitter measurement and complete voice quality metrics
EXpert-IP = IP/Ethernet test suite, with tests including FTP performance, HTTP availability, VLAN scan, LAN discovery, ping, traceroute and IP/Ethernet port statistics (license for a single platform)
EXpert-IPTV = IPTV test suite
EXpert-TPP-Bundle = Triple-play bundle for voice, video and data testing; includes EXpert IP Test Tools, EXpert IPTV Test Tools, EXpert VoIP Test Tools and EXpert SIP
EXpert-SIP = SIP call-signaling support[c]
EXpert-SCCP = SCCP call-signaling support[c]
EXpert-H.323 = H.323 call-signaling support[c]
EXpert-H.248 = H.248/Megaco call-signaling support[c]
FR2-PL = FastReporter 2 Software Fiber characterization package
FR2-PL-LB = FastReporter 2 Software Fiber characterization package and iOLM Loopback mode

Inspection probe base tips[d]
APC = Includes FIPT-400-U25MA and FIPT-400-SC-APC
UPC = Includes FIPT-400-U25M and FIPT-400-FC-SC

Inspection probe models
00 = Without inspection probe
FP410B = Digital video inspection probe[e] Triple magnification
FP420B = Analysis digital video inspection probe[e] Automated pass/fail analysis Triple magnification Autocentering
FP425B = Wireless digital video inspection probe[e, f] Automated pass/fail analysis Triple magnification Autocentering
FP430B = Automated analysis digital video inspection probe[e] Automated focus Automated pass/fail analysis Triple magnification Autocentering
FP435B = Wireless analysis digital video inspection probe[e, f] Automated focus Automated pass/fail analysis Triple magnification Autocentering

Example: FTB-4-Pro-S1-128G-RF-VPM2X-FOA-54B-FP420B-APC-EXpert-IP

a. Only available with S1 standard display.
b. Available if power meter is selected.
c. Available if EXpert VoIP selected.
d. Available if inspection probe is selected.
e. Includes ConnectorMax2 software.
f. Requires RF capability (WiFi/Bluetooth option).

EXFO headquarters **T** +1 418 683-0211 **Toll-free** +1 800 663-3936 (USA and Canada)

EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to www.EXFO.com/contact.

SPFTB4PRO.5AN Printed in Canada 20/08

Specifications and descriptions are subject to change without prior notice.

Opternus **Opternus GmbH** Bahnhofstr. 5 • D-22941 Bargteheide • Tel. +49(0)4532-20 44-0 • Fax -25 • E-Mail info@opternus.de • www.opternus.de