

FX95

MPO Optical Loss Test Set (OLTS) Automated Bi-Directional Tier 1 Certification



The FX95 is the industry's first fully automated bi-directional optical loss test set that can perform all the test requirements for Tier 1 (Basic) certification using a native MPO-24 APC interface per ANSI/TIA-568.3-E through the integration of source and power meter in each device. Multi-fiber certification with loss, polarity, and length measurements with on-board certification standards can be accomplished in 24 seconds for 24 fibers.

Key Benefits

- Quickly perform 1310/1550 nm Tier 1 certification of MPO links and generate bi-directional report for loss, polarity and length within 1m
- Instant boot-up to start testing
- Eliminate the need for technicians to swap locations to complete Tier 1 certification
- Simplify the job setup and one-button testing
- Comprehensive Tier 1 (Loss/Length/Polarity) Test Results
- Save 10,000 cable results in memory
- Quickly manage/transfer test results with our patented QR code feature, built-in web browser or USB stick
- Remote access/control via built-in web browser and VNC® client; compatible with VeEX EZ Remote services
- Li-Ion battery for 5 hours
- 7-inch color touchscreen
- Application free Test Result upload using NoApp® (US Patent 12,190,199) QR-code
- Fiberizer® Cloud test result management and custom report templates
- R-Server option for workflow and results management

Key Features

- Support 8/12/24 fiber-based testing
- Dual wavelength 1310/1550 source
- Integrated source and meter in native MPO-24 APC interface
- Insertion Loss measurement
- Smart polarity type validation and mapping (Type A, B and C)
- Up to 100 km length measurement
- Unidirectional or bidirectional
- In-line visual fault locator (VFL) for MPO cable tracing
- Smart automated referencing for Type A/B/C
- Pass/fail based on network standards or user defined
- Report format in .PDF or .CSV

Multi-Fiber Certification Tester

Overview

Data centers are experiencing unprecedented growth driven by cloud computing, artificial intelligence (AI), machine learning, and high-speed Ethernet technologies. Network architectures that once relied primarily on duplex fiber connections are rapidly transitioning toward high-density parallel-optics infrastructure utilizing MPO (Multi-Fiber Push-On) connectivity. Technologies such as 40GBASE-SR4, 100GBASE-SR4, 400G-DR4, and 800G-DR8 rely on MPO-based cabling systems containing 8, 12, 24, or more fibers operating simultaneously. As fiber density increases, installation, certification, and troubleshooting become significantly more complex.

The VeEX FX95 Bidirectional MPO Optical Loss Test Set (OLTS) is designed specifically to address these challenges. It provides automated bidirectional insertion loss, polarity, and length testing for MPO-based fiber links with a single button press, and generates centralized reports for Tier 1 certification workflows.

Automated Bidirectional Insertion Loss Testing

Standards and industry best practices often require bidirectional measurements because connector geometry, launch conditions, and directional variation can influence measured insertion loss. Rather than manually reversing test equipment and repeating measurements, paired FX95 units automatically exchange data and calculate bidirectional results.

Automated Polarity Verification

MPO polarity errors are among the most common causes of data center installation failures. Type A, Type B, and Type C MPO architectures each map fibers differently and create continuity mismatches if incorrectly installed or documented. The FX95 automatically identifies polarity and fiber mapping during testing, eliminating time-consuming manual tracing and reducing the risk of incorrectly certifying defective links.

Length Measurement

TIA MPO certification procedures include length verification as part of Tier-1 testing, in order to help validate installation quality and identify routing issues. The FX95 provides automated fiber length measurements alongside insertion loss and polarity data, allowing technicians to generate complete certification reports from a single test operation.

Automated Referencing

Automated smart bidirectional referencing saves time and ensures accurate results. The FX95 maintains mapping for industry-required 1, 2, and 3-cable referencing and tracks the input power in both directions, allowing technicians to quickly get a complete picture of the loss on the whole cable when it's time to test.

Pass/Fail Thresholds

The FX95 tests the cable against pass/fail thresholds defined by the user or based on the latest standards, including ANSI/TIA-526-28, IEC 61280-4-5, ANSI/TIA-568.3, and ISO/IEC 14763-3.

Easy On-Device Reporting

Technicians no longer need to waste time post-processing and compiling all the results from a job. The FX95 records all results and saves them into one complete PDF or CSV report, which can be pushed to the cloud using VeEX's Fiberizer Cloud and R-Server platforms or transferred off the device via USB.

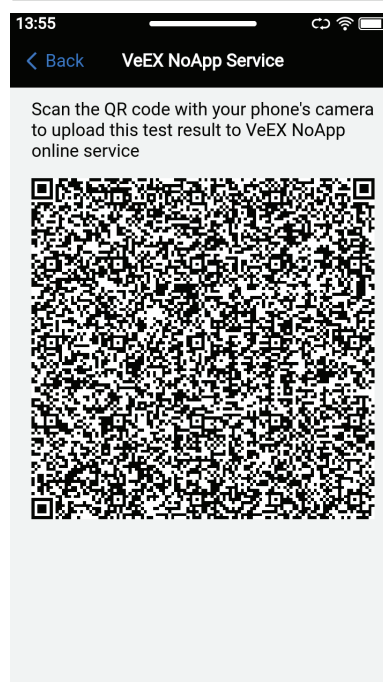
**This product is protected under U.S. Patent No. 12,190,199 and may be covered by additional patents. Any unauthorized reproduction, sale, or distribution is strictly prohibited and may result in legal action.*

NoApp® QR Code Transfer

VeEX's patented NoApp QR code result transfer technology allows users to transfer results without even connecting to the unit. Simply scan the QR code using a mobile device and view, edit, download, or transfer the result right from the browser—no application download required.

WL	1310 nm		1550 nm	
	A->B	B->A	A->B	B->A
13 - 1	0.37	0.40	3.79	3.59
14 - 2	0.51	0.42	4.66	4.47
15 - 3	0.19	0.22	2.15	1.84
16 - 4	0.52	0.38	4.23	4.20
17 - 5	0.31	0.26	3.12	2.73
18 - 6	0.16	0.06	2.49	2.23
19 - 7	0.25	0.24	3.89	3.65
20 - 8	0.51	0.42	4.67	4.02
21 - 9	0.16	0.29	2.92	2.65
22 - 10	0.23	0.06	2.46	2.47
23 - 11	0.48	0.42	3.52	3.21

Below the table is a diagram of a Type A cable with fiber mapping A and B. The mapping shows fibers 1-12 on one side and 13-24 on the other, with a specific cross-connection pattern.



Optical Specifications¹

OLTS	Specification
Optical Interface	Singlemode 9/125 μ m MPO-24/APC connector
Testing Speed	24 seconds (bidirectional test on 24 fibers cable)
Measurement Loss Range (dB)	Up to 40
Light Source (OLS)	Single Mode
Laser Safety	Class 1, 21 CFR 1040.10
Emitter Type	FP laser
Spectral Width (nm)	2 nm (typical)
Wavelengths (nm)	1310/1550
Output power (dBm)	> -2.5
Level Instability (dB)*	0.03 (15 min); 0.1 (8 hour)
Modulation (Hz) ³	270, 330, 1000, and 2000
Optical Power Meter (OPM)	InGaAs
Detector Type	InGaAs
Calibrated wavelengths (nm)	1310/1550
Power range (dBm)	-50 to +10
Tone Detection (Hz)	270, 330, 1000, or 2000
Loss Resolution (dB)	0.01
Linearity (dB)	± 0.1
Visual Fault Locator (VFL)	Optional
Fiber Channel	Fiber 1
Wavelength (nm)	650 ± 10
Output (mW)	> 0.5
Laser Safety	IEC 60825-1, Class II
Mode	CW, 2 Hz, 4 Hz

Ordering Information

Order #	
Z06-09-005P	FX95 Multi-Fiber Optical Loss Test Kit (OLTS) 1310/1550nm SMF native MPO-24/APC(M) Key-Up
Hardware Options	
Z66-00-106G	Wi-Fi and Bluetooth for Remote Control and File Transfer
Warranty Options	
D03-00-001P	1 Year Standard Warranty from initial purchase
D03-00-249P	FX95 1 Year Extended Warranty (Total 2 Year Warranty)
D03-00-250P	FX95 2 Year Extended Warranty (Total 3 Years from initial purchase)
Software Options	
499-05-876	Bootup PIN Code System Lock. Enables 6-digit theft-deterrent code. Allows users to set a PIN to unlock the test set before it can be used. (Warning: Forgotten PINs will require a service call to VeEX)
Accessories	
C02-00-049G	Extended Carrying Pouch for V90
F02-00-102G	OTG Cable, USB-C (m) to USB-A (f), 60 cm
F02-00-109G	OTG Cable, USB-C (m) to USB-C (m), 3 m
F02-00-110G	OTG Ethernet Adapter, USB-C (m) to RJ45 10/100/1000T (f) Ethernet, 15 cm

Notes

- All specifications are valid at 23°C $\pm$ 2°C (73.4°F $\pm$ 3.6°F).
- Maximum spectral width is 4 nm
- Modulated Power output $\sim$ 3dB lower than CW power.

*After 15 min warm-up

General Specifications

Display (LCD)	5 inch color screen, 720x1280px Capacitive multi-touch	Battery	
		Capacity	24 Wh, 3.3 VDC, 7200 mAh
Data Storage		Type	Rechargeable Lithium-Ion
Internal Flash	Built-in 3 GB (1 GB Data Storage)	AC/DC Adapter	45W, 15 VDC, 3.0A max
External	USB-C memory stick (not included)	AC Input	100-240 VAC 50/60 Hz, 1.3A max
Remote	Optional Upload via VeSion® R-Server	DC Output	15 VDC, USB-C Power Delivery (PD)
Connectivity/Management		Dimensions (W x H x D)	107 x 202 x 44 mm 4.21 x 7.95 x 1.73 inches
Wi-Fi	Optional Built-in Wi-Fi 802.11 b/g/n	Weight	594 g (1.31 lb) including battery
Ethernet	100/1000BASE-T (requires a USB-C to Ethernet adapter)	Environmental	
USB	USB Type-C PD	Operating Temperature	-5°C to 50°C (23°F to 122°F)
		Storage Temperature	-40°C to 60°C (-40°F to 140°F)
		Humidity	5% to 85%, non-condensing
		Compliance	CE, WEEE, RoHS