FX82/83/84

OPM/OLS/OLTS Meters

The FX82/83/84 family of optical test sets are lightweight, handheld, rugged and easy-to-use devices for installing, maintaining and troubleshooting legacy, CWDM, and FTTx/PON fiber networks.

Key Features

Platform

- High contrast, backlit LCD - visible indoors and outdoors
- Handheld, lightweight rugged design
- Protective rubber boot with tilt bail stand
- Splash and dust resistant design
- Non-volatile storage for saved test results
  - 1920 single wavelength records
- Date/time stamp of test results
- Programmable thresholds with Pass/Fail (FX84 only)
- USB interface for tethering or test result transfer
- Bluetooth® interface (optional) for test result transfer
- Rechargeable Li-polymer battery
- Micro-USB, 5 Volt DC adapter/charger

Software Support

- Fiberizer® LT-Sync Windows PC software for transferring test results and generating basic pdf or Excel reports
- Fiberizer Desktop Plus and Fiberizer Cloud software for advanced result post processing and on/off-line reporting
- Fiberizer Mobile OLTS for transferring test results via USB or optional Bluetooth I/F and generating basic PDF reports (USB for Android™ devices only)

Key Specifications

Optical Power Meter (OPM)

- Calibrated wavelengths: 850, 1300, 1310, 1490, 1550, 1625, 1650 nm
- Detector type: InGaAs
- Level measurement range:
  -PM1 version: -65 to +10 dBm
  -PM2 version: -50 to +25 dBm
- Accuracy: +0.2 dB or 5%
- Wave ID detection (compatible VeEX source)

Optical Light Source (OLS)

- Wavelengths: 2-, 3-, or 4-wavelength options
- Test Tone Generation: 270 Hz, 330 Hz, 1 kHz, 2 kHz
- Stability: ±0.03 dB for insertion loss measurements
- Laser Safety: Class 1

Product List

FX82 Optical Power Meter

- General purpose OPM with VFL option for legacy networks

FX83 Optical Light Source

- General purpose λ OLS with VFL option for legacy networks

FX84 Optical Loss Test Set

- Uni-directional OLTS with VFL option*

**MOQ - Consult factory*

FX82 Optical Power Meter (OPM)

The broadband OPM features a large, 1 mm InGaAs detector ensuring superb measurement accuracy over a wide wavelength and dynamic range. The detector's flat spectral response across the 1500-1600 nm window is particularly suited for DWDM C-band measurements. The optical power meter is factory calibrated at all legacy wavelengths and all CWDM wavelengths can be added as an option.

The unit measures continuous wave signal levels and detects 270 Hz, 330 Hz, 1 kHz, and 2 kHz modulated signals used for fiber identification. When paired with a VeEX optical light source in CW mode supporting WaveID, the unit automatically recognizes the incoming wavelength and applies the correct calibration factor accordingly. Interchangeable adapters support a wide range of industry connector types.

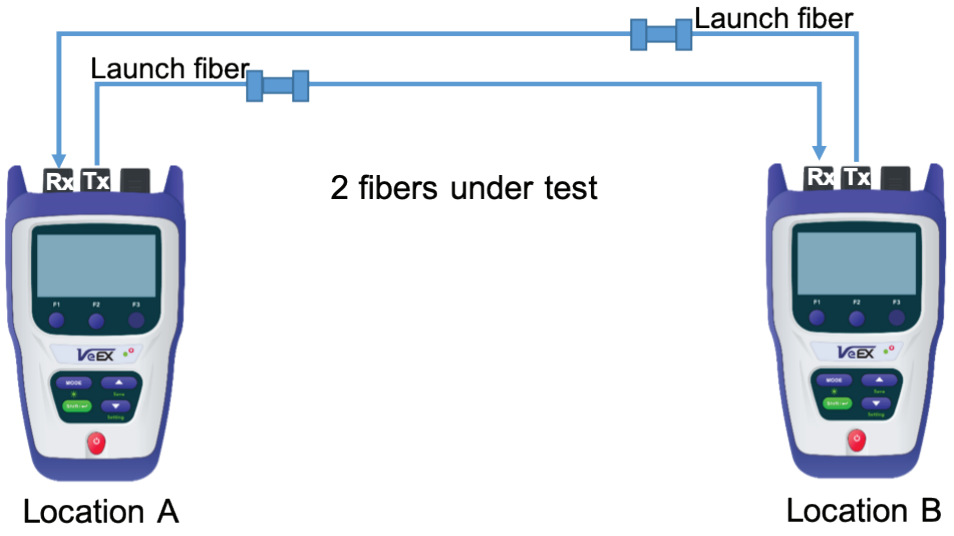
FX83 Optical Light Source (OLS)

The OLS is fitted with high performance lasers offering excellent wavelength and power stability over a broad operating temperature range. Each source is equipped with WaveID which is compatible VeEX optical power meters for fiber identification. The OLS can be configured with up to four singlemode wavelengths (1310 nm, 1490 nm, 1550 nm, or 1625 nm) on a single output port for verifying FTTx/PON telecom, CATV or government/defense fiber network applications.
Alternatively, up to four wavelengths (850/1300 nm multimode and 1310/1550 nm singlemode) can be configured on two individual ports for testing LAN/WAN access and enterprise/data centers that still utilize both multimode and singlemode fiber types. The Multi-wave (loop) function automatically toggles through all wavelengths for faster loss measurements.

When performing loss on multimode fiber networks, the standards recommend a LED source be used to control the launch conditions. In such test applications, VeEX recommends the use of an external, mode conditioner which modifies the FX83's laser output to provide repeatable launch conditions. Encircled Flux (EF) defined in TIA-526-14-B and referenced in TIA-568-C.0-2, ISO/IEC 11801 and ISO/IEC 14763-3 standards, mandates EF launch conditions for all multimode fiber loss measurements, including sectional attenuation (dB/km), link loss (dB), connector and splice loss (dB). EF compliance ensures maximum accuracy and repeatability between measurements by overcoming under-filled and over-filled launch conditions.

FX84 Optical Loss Test Set (OLTS)

The OLTS combines both power meter and light source functions into a single test unit. Individual test ports support uni-directional loss measurements allowing two technicians on opposite ends of a fiber link to test simultaneously. The auto-loop mode toggles the light source wavelengths automatically, while the OPM test partner detects the incoming wavelength/s using the WaveID feature. Single-ended loss is usually measured by mating the cable under test to a reference launch cable and measuring the power at the remote end.



Visual Fault Locator (VFL) Option

The VFL is an ideal tool for fiber identification and is often the tool of choice to visually locate major defects in optical distribution frames or within an OTDR's dead zone. The VFL employs a Class 2 eye-safe laser with 1 mW output supporting a 3-5 km test range.

Optical Connector Protector (Hardware Option)

Optical Connector Protector

Replaceable Ferrule

Optical Protector Cover (optional)

1 Patent pending
2 Spare ferrules available in pack of 4 for APC or UPC

The innovative, patent pending field-replaceable optical ferrule system[1] adds an extra layer of protection to the internal end-face of calibrated optical test ports, preventing contamination and accidental damage.

Users can quickly replace the ferrule[2] without the need for any tool while maintaining the integrity of the instrument's factory calibration. This novel approach eliminates the downtime, logistical hurdles and high cost associated with sending test sets to a service center for repair and recalibration.

All components in the system are reusable, with the exception of the small replaceable ferrule, helping to reduce environmental waste.

Field-Replaceable Optical Ferrule System

Universal Adapter

The universal connector adapter allows users to change the optical connector type conveniently whenever needed. Available in FC, SC, ST and LC.

Locking Ring

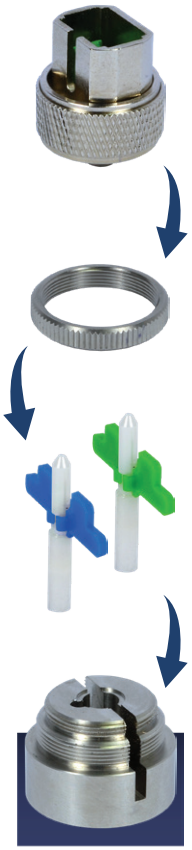
To secure the replaceable ferrule at its optimum location for the best performance.

Replaceable Ferrule with APC or UPC End-face

The self-aligned field-replaceable ferrule can be changed out in seconds. Users can select between APC or UPC end-face, ensuring compatibility with any test application requirement.

Optical Connector Protector Base

The panel mount protector base is made from high-grade stainless steel using a precision CNC process. This achieves proper alignment of the replaceable ferrule, minimizing insertion loss.



Fiberizer® Software Applications

Fiberizer software applications dramatically increase technician efficiency, workflow integration and process compliance. Test results from any FX80 series power meter can be transferred and processed in several ways depending on customer requirements or work practices.

Fiberizer LT-Sync

Windows PC software enabling technicians to transfer test results from any FX80 series power meter via USB or optional Bluetooth interface. Basic reporting in csv or pdf is supported including transfer or upload to Fiberizer Desktop Plus or Fiberizer Cloud applications.

Fiberizer Mobile OLTS (FMOLTS)

Software Application for mobile devices to transfer test results from any FX80 series power meter via USB cable (Android devices only) or optional Bluetooth interface. Technicians can subsequently upload test results directly from their mobile device to Fiberizer Cloud for further processing or archiving.

Fiberizer Desktop-Plus

Windows PC software for advanced post-processing, reporting and management of optical power meter results including test data from OTDR and Fiber Inspection Scopes.

Fiberizer Cloud

Enables technicians to store, analyze and access all power meter test data in a single on-line repository. Employing and leveraging advanced Cloud technology, this unique solution provides superior centralized test data management capability. Fully HTML5 compatible, technicians can use any browser, on any device to access their test data from almost any location, at any time.

Fiberizer Cloud and Fiberizer Desktop Plus applications are designed to work together - test data between your Cloud account and Fiberizer Desktop Plus software are automatically synchronized when saved in the VeEX Jobs folder. Project test results can easily be shared with your team and/or even with your customers.

Optical Specifications[1]

Broadband Optical Power Meter - FX82/84	
Wavelength Range (nm)	800 to 1700
Calibrated Wavelengths (nm)	Standard - 850/1300/1310/1490/1550/1625/1650 Optional - CWDM ITU-T 694.2 grid
Detector Type[2]	InGaAs
Measurement Range (dBm) Standard (PM1) High Power (PM2)[3]	 -70 to +10 -50 to +25
Power Measurement Accuracy, % (dB)[4]	±5 (±0.22)
Linearity, % (dB)	±2.5 (±0.11)
Readout Resolution (dB)	±0.01
Tone Detection (Hz)	270/330/1000/2000
Wave ID (Auto)	Compatible with VeEX light sources
Optical Adapters (interchangeable)	ST/SC/FC/LC, Universal 2.5/1.25 mm

Optical Light Source - FX83/84		
Fiber Type	Singlemode, 9/125 µm	Multimode, 50/125 µm5
Center Wavelengths (nm)	1310/1490/1550/1625	850/1300
Wavelength Tolerance (nm)	±2	±20 to 50
Line Width (nm)	≤1	≤50/135, 40-200 nm
Output Power (dBm)	>-2.5, ~0 (typ)	>-4, ~0 (typ)
Laser Safety	Class 1M	
Power Stability (dB)	±0.03 (15 min) ±0.1 (8 hr)	±0.05 (15 min) ±0.1 (8 hr)
Modulation (Hz)	CW and 270/330/1000/2000	
Wave ID	Yes	
Optical Connectors	Fixed (SC/FC/ST/LC) Optional Universal Interface with interchangeable adapters (SC/FC/ST/LC) Optional field replaceable Connector Protector (SC/FC/ST/LC)[6]	

Visual Fault Locator (VFL) Option - 82/83/84[7]	
Emitter Type	Laser
Wavelength (nm)	655 nm ±5 nm
Output Power (mW)[8]	1 mW
Laser Safety	Class 2
Modulation	CW, 1 Hz, 2 Hz
Connector Type[9]	Universal 2.5 mm

Notes

1. All specifications valid at 23°C ± 1°C after 15 minutes warm up
2. Filtered InGaAs detector used for high power PM2 version
3. Calibration conditions, -10 dBm
4. Range -65 to +6 dBm
5. For multimode requires Encircled Flux compliant reference cord
6. FX84 only
7. MOQ for FX84 - Consult factory
8. Typical value
9. 2.5 mm to 1.25 mm converter available

General Specifications

Size:	164.39 x 100 x 46.93 mm (6.47 x 3.94 x 1.85 in)*
Weight:	<400 g (<0.7 lbs.)*
Construction:	Rugged, polycarbonate chassis, 1 meter drop tested
Battery Life:	ORL mode only w/o backlight >14 hours OLS mode only w/o backlight >55 hours (FX83/FX84/FX85 models) OPM modes w/o backlight ~34 hours (measuring live signal)
Power Supply:	5 VDC charger, Micro USB interface
Connectivity:	Micro USB or optional Bluetooth
Test Data:	Transfer via LT-Sync or Fiberizer Mobile
Display:	High contrast LCD (124x68 pixels)
Operating Temp:	-10°C to +50°C (unless noted)
Storage Temp	-20°C to +70°C
Humidity:	0% to 95%, non-condensing

**Per Unit*

The Verification Experts

CE

VeEX Inc.
2827 Lakeview Court
Fremont, CA 94538 USA
Tel: +1.510.651.0500
Fax: +1.510.651.0505
www.veexinc.com
customercare@veexinc.com

D05-00-232P A00 2025/07