

# Fiber OWL 7+ Multimode Kit

Part #: KF7+MX

Multimode Tier 2 Certification Kit

## Applications

- Full-featured Tier 2 fiber link certification (Loss + OTDR)
- Full-featured Tier 1 fiber link certification (Loss)
- OTDR link characterization
- Optical fault location
- Visual fault location
- Visual fiber identification
- Fiber optic link length measurement
- Optical loss (attenuation) measurement
- Optical power measurement

## Features

- Multimode ready
- Full-featured built-in OTDR
- Visual fault location / visual fiber identification
- Color-coded PASS / FAIL status
- Unlimited job configurations
- User-friendly Link Wizard with helpful color on-screen diagrams to help guide the setup process
- Context-sensitive help
- Auto-wavelength recognition and data storage reduces testing time and human error
- Up to 10,000 power/loss readings can be stored in memory
- Prints official certification reports via OWLView certification software, including comprehensive Tri-Reports
- High-capacity re-chargeable Lithium Polymer batteries
- NIST Traceable
- Power meter adapters for 2.5mm (SC, ST, FC) and 1.25mm (LC) ferrule connectors
- Factory located in Heartland of America
- 2-year warranty



## Includes:

**Meter (multimode):** Fiber OWL 7+ Multimode Tier 2 Certifier (p/n: F7+M)  
**Light Source:** WaveSource Pro Multimode (p/n: WPMX)  
Patch cables, adapters, and other related accessories not included.

## Accessories:

Hard-shell carrying case  
Protective rubber boots  
2.5mm / 1.25mm in-adapter connector cleaners  
2.5mm / 1.25mm universal detector adapter caps  
USB download cables and battery chargers  
USB flash drive containing software and manual  
NIST certificate of calibration



**Factory located in the  
Heartland of America**



**Optical Wavelength Laboratories**

MANUFACTURER OF QUALITY OPTICAL FIBER TEST EQUIPMENT



Optical Wavelength Laboratories (OWL)  
N9623 Old Hwy 12 • Whitewater, WI 53190  
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## Overview

Many fiber optic network bids and Requests For Quote (RFQ) cite national and international cabling standards which specify the guidelines that the installer must follow during installation. Adherence to such standards ensures the quality of the installation and guarantees that the network will perform as it was designed.

The process of testing a network installation to ensure its adherence to such standards is called certification, and often requires hard-copy documentation as proof of adherence to standards.

With the rapidly expanding need for bandwidth of fiber networks coupled with increased capability (and decreasing cost) of fiber test equipment, cabling standards have evolved to include additional fiber optic test procedures (FOTP) to reflect more thorough testing and measurement of fiber networks, for example, OTDR link characterization.

The **Fiber OWL 7+ Multimode Kit** contains the tools necessary for certifying fiber optic links against a myriad of popular cabling standards in multimode networks, up to Tier 2 certification as specified in the TIA-568-3.D cabling standard.

The **Fiber OWL 7+ (p/n: F7+M)** optical power meter enables multimode certification, up to and including Tier 2 certification as defined in the TIA-568-3.D cabling standard, with a user-friendly Fiber Link Wizard with color diagrams to guide the setup process, calculate the link budget, and set the optical reference. Thousands of LOSS/OTDR fiber runs may be stored in internal memory, and can be downloaded to a PC for report generation with OWLView software.

Intelligent automated testing functions include automatic dual-wavelength storage and auto-wavelength recognition which reduce testing time and human error.

The universal detector port in each **Fiber OWL 7+** certifier comes with 2 adapter caps, one for 2.5mm connectors such as SC, ST, and FC, and the other for 1.25mm connectors such as LC, and the integrated OTDR port is used to measure the fiber cable length as well as characterize the fiber link. A visual fault locator is also included for basic troubleshooting of near-end faults, and check for fiber continuity and polarity.

The **WaveSource Pro Multimode (p/n: WPMX)** fiber optic light source is designed for accurate testing and certification of multimode networks at 850nm & 1300nm). Its dual-wavelength outputs are temperature-stabilized for accurate measurements.

The **WPMX** has a built-in auto-wavelength switching protocol designed to synchronize the power meter wavelength of the **7+** with the current output wavelength.

The light source comes configured with an SC connector port.



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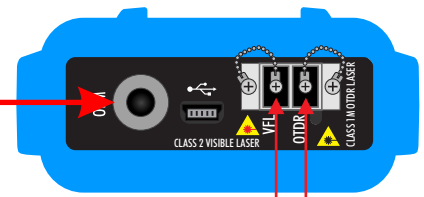
Multimode Tier 2 Certification Kit

OTDR Specifications		General Specifications		Optical Power Meter Specifications	
Fiber Type:	Multimode	Display:	2.8" Color LCD	Photodetector:	InGaAs
Output Wavelength:	850nm      1300nm	Battery Type:	Lithium Polymer	Fiber Type:	Multimode / Singlemode
Dynamic Range (SNR=1) <sup>1</sup> :	27 dB      29 dB	Battery Life:	up to 20 hours	Wavelengths:	850, 980, 1300, 1310 1490, 1550, 1625
Data Point Spacing (m):	1	Dimensions:	2.87" x 4.42" x 1.25"	Accuracy:	±0.15 dB
Pulse Width (m):	1,2,5,10,20,50,100,200	Weight:	10 oz. (284 g)	Resolution:	0.01 dB
Distance Accuracy (m):	1 + (distance in meters/10000)	<b>Visual Fault Locator Specifications</b>		Measurement Units:	dBm / dB
Distance Range (km) <sup>4</sup> :	20	Output Wavelength:	650nm	Measurement Range:	+5 to -70 dBm (typical; varies with wavelength)
Number of Stored Traces:	Minimum Trace Distance: 3000+ / Maximum Trace Distance: up to 400	Output Power:	1 mW		
ORL Measurement:	up to 76dB	Operating Modes:	CW / Flash		
Event Dead Zone(m) <sup>2</sup> :	2				
Attenuation Dead Zone(m) <sup>3</sup> :	5				
Index of Refraction:	1.4000 to 1.6000				
Maximum Data Points:	64000				

- 1: Using maximum pulse width
- 2: Width measured 1.5dB down on each side of a reflective event using 1 meter pulse width
- 3: Distance from event beginning to within 0.5dB where backscatter resumes using 1 meter pulse width
- 4: Out to furthest reflective event

### UNIVERSAL DETECTOR PORT

- Includes:
- 2.5mm adapter (SC,ST, FC)
- 1.25mm adapter (LC)

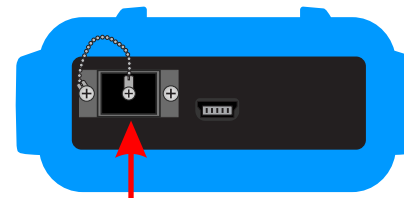
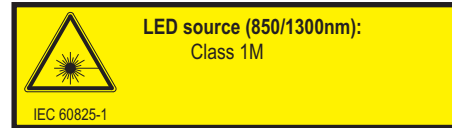


### VISUAL FAULT LOCATOR

compatible with multimode and singlemode fibers (LC connector)  
**OTDR**  
 multimode (LC connector)

Light Source Specifications	
Output Type	Multimode
Launch Method	LED
Center Wavelength	850 nm: 850 ± 30 nm 1300 nm: ± 50 nm
Spectral Width	850 nm: 50 nm 1300 nm: 180 nm
Output Power	-20 dBm
Output Modes	CW / Modulated
Initial Accuracy	± 0.1 dB
Battery Life	Up to 150 hours (Re-chargeable Lithium Polymer)
Operating Temperature	0 to 55° C
Storage Temperature	0 to 75° C
Dimensions	2.87 x 4.42 x 1.25 in. (72.9 x 112.3 x 31.8 mm)
Weight	10 oz. (284g)

Conforms to the Harmonized European Standards EN 61326-1 and EN 61010-1.



### MULTIMODE SOURCE PORT

Wavelengths: 850/1300nm  
 Connector Type: SC



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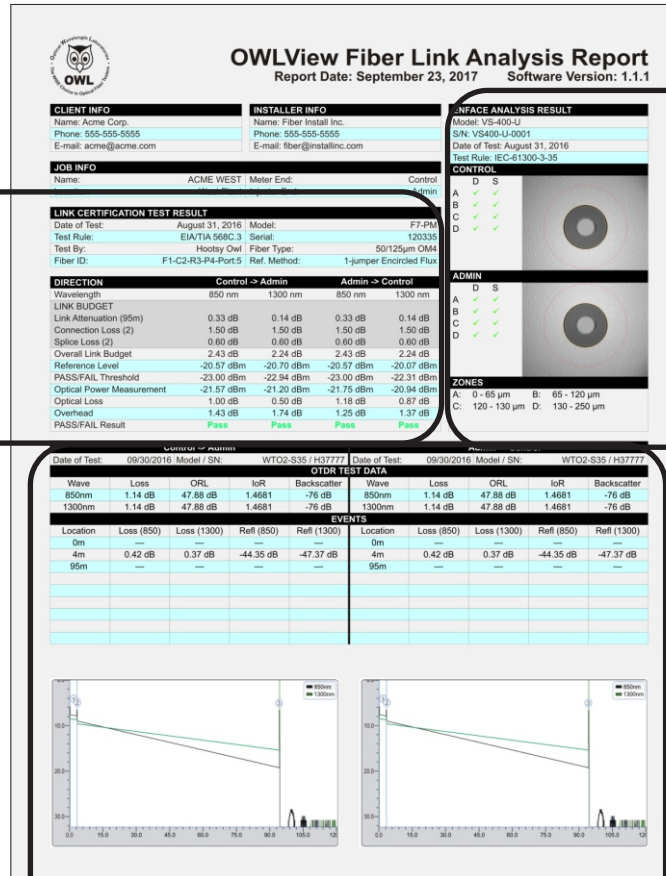
Three tests for a comprehensive view of the fiber installation, all on one page:

NOTE: Separate video microscope capable of capturing endface images (such as VS-400-U) required for endface analysis.

## CERTIFY + CHARACTERIZE + ANALYZE

### CERTIFY

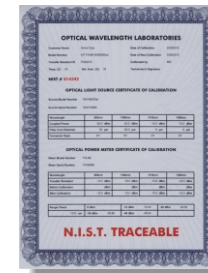
End-to-end optical loss measurements taken with a power meter and light source compared to industry standards provide the most meaningful results regarding the overall health of the fiber network, and provide assurance that the network will support the application for which it was designed.



### ANALYZE

The connector endface is the primary interface between the fiber link and the transmission equipment. As such, it is important to inspect the endface with a quality fiber microscope for any dust, dirt, debris, or damage that may adversely affect transmission or optical loss.

The endfaces can be further analyzed against industry standards for debris or scratches, which will determine whether or not the endface should be repaired or replaced.



### NIST Traceable

The power meter and light source in the Fiber OWL 7+ Multimode Kit are NIST traceable, assuring accurate and precise test results.

## TRI-REPORT

### CHARACTERIZE

OTDR traces display a "roadmap" of the fiber link, including the overall length of the fiber link, the individual component loss and reflectance of interconnections and splices, the overall optical return loss (ORL) of the link, and the consistent attenuation slope across the full span of the fiber link.



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## Accessories

### Fiber Optic Inspection Microscopes

PART NUMBER	DESCRIPTION
VS-400-U	400x USB Video Microscope
FS400	400x Direct-view Field Microscope

### Fiber Optic Cleaning Accessories

PART NUMBER	DESCRIPTION
FCC-2	Ferrule Connector Cleaner
FCC-2R	FCC-2 Replacement Cleaning Tape
OC-2	2.5mm In-adapter Ferrule Connector Cleaner
OC-1	1.25mm In-adapter Ferrule Connector Cleaner

### Download Cables/Chargers

PART NUMBER	DESCRIPTION
USB-1	USB Download / Charger Cable
WS-USB	USB Wall Charger

### Universal Adapter Caps

PART NUMBER	DESCRIPTION
U2.5-4	2.5mm Universal Adapter Cap (for SC, ST, FC)
U1.25-4	1.25mm Universal Adapter Cap (for LC)

## Upgrades

The Fiber OWL 7+ Multimode Kit can be upgraded to include singlemode certification capability.

Separate video microscope capable of capturing endface images (such as VS-400-U) required for endface analysis as part of a Tri-Report.

Contact OWL for more information.

### OTDR Fiber Rings

PART NUMBER	DESCRIPTION
FR-SM-500-LCLC	500 meter singlemode OTDR fiber ring (LC/LC)
FR-SM-500-LCSC	500 meter singlemode OTDR fiber ring (LC/SC)
FR-M5-150-LCLC	150 meter 50/125 $\mu$ m multimode OTDR fiber ring (LC/LC)
FR-M5-150-LCSC	150 meter 50/125 $\mu$ m multimode OTDR fiber ring (LC/SC)
FR-M6-150-LCLC	150 meter 62.5/125 $\mu$ m multimode OTDR fiber ring (LC/LC)
FR-M6-150-LCSC	150 meter 62.5/125 $\mu$ m multimode OTDR fiber ring (LC/SC)

### OTDR Dead Zone Boxes

PART NUMBER	DESCRIPTION
DZB-SM-1100	1100 meter singlemode OTDR dead zone box (SC)
DZB-M5-450	450 meter 50/125 $\mu$ m multimode OTDR dead zone box (SC)
DZB-M6-450	450 meter 62.5/125 $\mu$ m multimode OTDR dead zone box (SC)

### Encircled Flux Mode Controller Cables

PART NUMBER	EF-(core size)-(input port)-(output port)
(core size)	M5 = 50/125 $\mu$ m M6 = 62.5/125 $\mu$ m
(light source input port)	SC
(output port)	LC SC
Part # example: EF-M5-SC-LC	

### Encircled Flux Mode Extender Cords

PART NUMBER	EFXC-(core size)-(input port)-(output port)
(core size)	M5 = 50/125 $\mu$ m M6 = 62.5/125 $\mu$ m
(input port)	LC SC (must match the output of the EF mode controller cable)
(output port)	LC SC (must match the link under test)
Part # example: EFXC-M5-SC-LC	

\* Note: when used with EF Mode Controllers, one of the connector options must match the output port of the EF mode controller, and the other must match the link under test.



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