Fiber OWL 7+ Singlemode Kit

Part #: KF7+SX

Singlemode 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

- Singlemode 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 (singlemode): Fiber OWL 7+ Singlemode Tier 2 Certifier (p/n: F7+S)
Light Source: WaveSource Pro Singlemode (p/n: WPSX)
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

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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+ Singlemode Bundle** contains the tools necessary for certifying fiber optic links against a myriad of popular cabling standards in singlemode networks, up to Tier 2 certification as specified in the TIA-568-3.D cabling standard.

The **Fiber OWL 7+Fiber OWL 7+ (p/n: F7+S)** optical power meter enables singlemode certification, up to and including Tier 2 certification as defined in the TIA-568-3.D cabling standard, each containing 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 Singlemode (p/n: WPSX)** fiber optic light source is designed for accurate testing and certification of singlemode networks at 1310nm & 1550nm. Its dual-wavelength outputs are temperature-stabilized for accurate measurements.

The **WPSX** 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 SC connector ports.

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Part #: KF7+SX

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OTDR Specifications		
Fiber Type:	Singlemode	
Output Wavelength:	1310nm	1550nm
Dynamic Range (SNR=1)[1]:	28 dB	27 dB
Data Point Spacing (m):	Up to 64 km: 1 Over 64 km: 2	
Pulse Width (m):	1,2,5,10,20,50,100,200,500,1000	
Distance Accuracy (m):	Over 64km: 1 + (distance in meters/10000) Over 64km: 2 + (distance in meters/10000)	
Distance Range (km)[4]:	128	
Number of Stored Traces:	Minimum Trace Distance: 3000+ Maximum Trace Distance: up to 200	
Event Dead Zone(m):[2]	2	
Attenuation Dead Zone(m):[3]	5	
Index of Refraction:	1.4000 to 1.6000	
Maximum Data Points:	64000	

General Specifications	
Display:	2.8" Color LCD
Battery Type:	Lithium Polymer
Battery Life:	up to 20 hours
Dimensions:	2.87" x 4.42" x 1.25"
Weight:	10 oz. (284 g)

Visual Fault Locator Specifications	
Output Wavelength:	650nm
Output Power:	1 mW
Operating Modes:	CW / Flash

Optical Power Meter Specifications	
Photodetector:	InGaAs
Fiber Type:	Multimode / Singlemode
Wavelengths:	850, 980, 1300, 1310 1490, 1550, 1625
Accuracy:	0.15 dB
Resolution:	0.01 dB
Measurement Units:	dBm / dB
Measurement Range:	+5 to -70 dBm (typical; varies with wavelength)

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

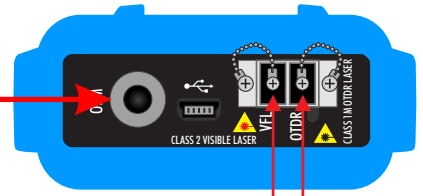
4: Out to furthest reflective event

UNIVERSAL DETECTOR PORT

Includes:

2.5mm adapter (SC,ST, FC)

1.25mm adapter (LC)



VISUAL FAULT LOCATOR

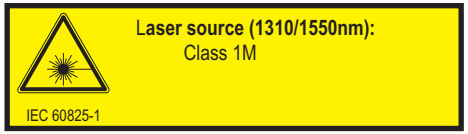
compatible with multimode and singlemode fibers (LC connector)

OTDR

singlemode (LC connector)

Light Source Specifications	
Output Type	Singlemode
Launch Method	FP Laser
Center Wavelength	**1310 nm:** 1310 ± 20 nm **1550 nm:** 1550 ± 30 nm
Spectral Width	**1310nm:** 2 nm **1550nm:** 2 nm
Output Power	-10 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)

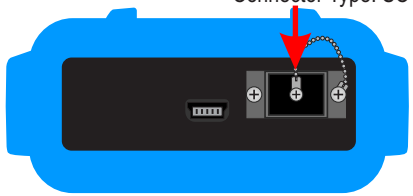
Conforms to the Harmonized European Standards EN 61326-1 and EN 61010-1.

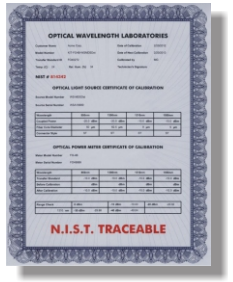


SINGLEMODE SOURCE PORT

Wavelengths: 1310/1550nm

Connector Type: SC





Factory located in the Heartland of America

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20 Years

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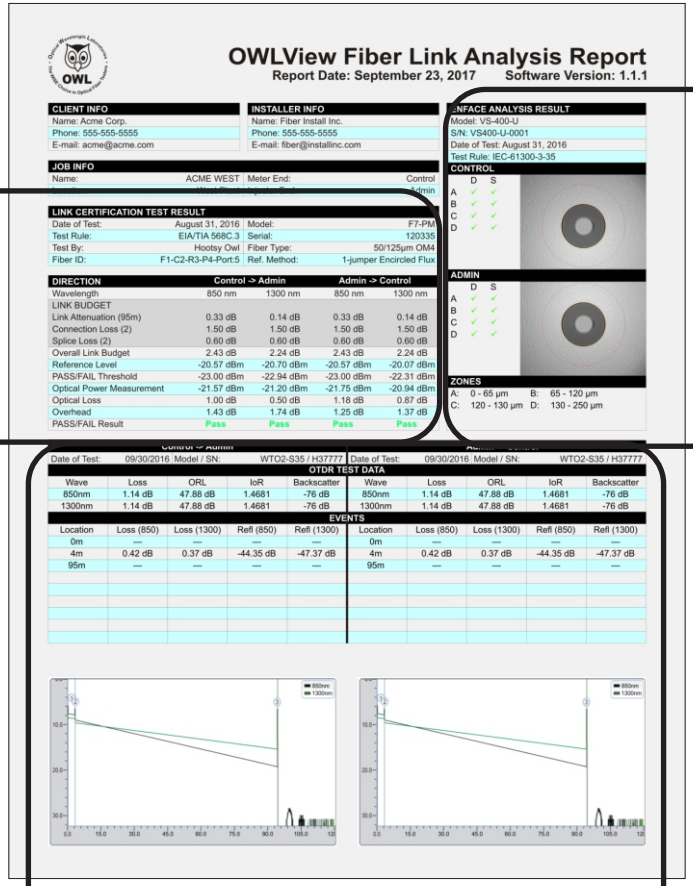
Three tests for a comprehensive view of the fiber installation, all on one page:

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.

TRI-REPORT



OWLView Fiber Link Analysis Report

Report Date: September 23, 2017 Software Version: 1.1.1

CLIENT INFO

Name: Acme Corp.
Phone: 555-555-5555
E-mail: acme@acme.com

INSTALLER INFO

Name: Fiber Install Inc.
Phone: 555-555-5555
E-mail: fiber@installinc.com

JOB INFO

Name: ACME WEST Meter End: Control

ENFACE ANALYSIS RESULT

Model: VS-400-U
S/N: VS400-U-0001
Date of Test: August 31, 2016
Test Rule: IEC-61300-3-35

CONTROL

	D	S
A	✓	✓
B	✓	✓
C	✓	✓
D	✓	✓

ADMIN

	D	S
A	✓	✓
B	✓	✓
C	✓	✓
D	✓	✓

ZONES

A: 0 - 65 µm B: 65 - 120 µm
C: 120 - 130 µm D: 130 - 250 µm

LINK CERTIFICATION TEST RESULT

Date of Test:	August 31, 2016	Model:	F7-PM
Test Rule:	EIA/TIA 568C.3	Serial:	120335
Test By:	Hootsy Owl	Fiber Type:	50/125µm OM4
Fiber ID:	F1-C2-R3-P4-Port:5	Ref. Method:	1-jumper Encircled Flux

DIRECTION	Control -> Admin		Admin -> Control	
Wavelength	850 nm	1300 nm	850 nm	1300 nm
LINK BUDGET				
Link Attenuation (95m)	0.33 dB	0.14 dB	0.33 dB	0.14 dB
Connection Loss (2)	1.50 dB	1.50 dB	1.50 dB	1.50 dB
Splice Loss (2)	0.60 dB	0.60 dB	0.60 dB	0.60 dB
Overall Link Budget	2.43 dB	2.24 dB	2.43 dB	2.24 dB
Reference Level	-20.57 dBm	-20.70 dBm	-20.57 dBm	-20.07 dBm
PASS/FAIL Threshold	-23.00 dBm	-22.94 dBm	-23.00 dBm	-22.31 dBm
Optical Power Measurement	-21.57 dBm	-21.20 dBm	-21.75 dBm	-20.94 dBm
Optical Loss	1.00 dB	0.50 dB	1.18 dB	0.87 dB
Overhead	1.43 dB	1.74 dB	1.25 dB	1.37 dB
PASS/FAIL Result	Pass	Pass	Pass	Pass

Control -> Admin

Date of Test: 09/30/2016 Model / SN: WTO2-S35 / H37777

OTDR TEST DATA

Wave	Loss	ORL	IoR	Backscatter
850nm	1.14 dB	47.88 dB	1.4681	-76 dB
1300nm	1.14 dB	47.88 dB	1.4681	-76 dB

EVENTS

Location	Loss (850)	Loss (1300)	Refl (850)	Refl (1300)
0m	—	—	—	—
4m	0.42 dB	0.37 dB	-44.35 dB	-47.37 dB
95m	—	—	—	—

Admin -> Control

Date of Test: 09/30/2016 Model / SN: WTO2-S35 / H37777

OTDR TEST DATA

Wave	Loss	ORL	IoR	Backscatter
850nm	1.14 dB	47.88 dB	1.4681	-76 dB
1300nm	1.14 dB	47.88 dB	1.4681	-76 dB

EVENTS

Location	Loss (850)	Loss (1300)	Refl (850)	Refl (1300)
0m	—	—	—	—
4m	0.42 dB	0.37 dB	-44.35 dB	-47.37 dB
95m	—	—	—	—

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.

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

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+ Singlemode Kit are NIST traceable, assuring accurate and precise test results.

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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+ Singlemode Kit can be upgraded to include multimode 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 50/125μm multimode OTDR fiber ring (LC/LC)
FR-M5-150-LCSC	150 meter 50/125μm multimode OTDR fiber ring (LC/SC)
FR-M6-150-LCLC	150 meter 62.5/125μm multimode OTDR fiber ring (LC/LC)
FR-M6-150-LCSC	150 meter 62.5/125μm 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 50/125μm multimode OTDR dead zone box (SC)
DZB-M6-450	450 meter 62.5/125μm multimode OTDR dead zone box (SC)

Encircled Flux Mode Controller Cables	
PART NUMBER	EF-(*core size*)-(*input port*)-(*output port*)
(core size)	**M5** = 50/125μm **M6** = 62.5/125μm
(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** = 50/125μm **M6** = 62.5/125μm
(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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