

Fiber OWL 7+ Quad Bundle

Part #: KF7+QB

Multimode & Singlemode Tier 2 Certification Bundle

Applications

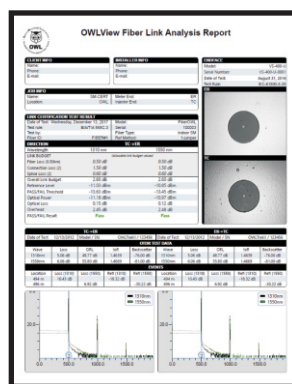
- Comprehensive Tri-Report (Loss, OTDR, endface analysis)
- Full-featured Tier 2 fiber link certification (Loss + OTDR)
- Full-featured Tier 1 fiber link certification (Loss)
- OTDR link characterization
- Fiber endface inspection and analysis
- Optical fault location
- Visual fiber identification
- Fiber optic link length measurement
- Optical loss (attenuation) measurement
- Optical power measurement

Features

- Multimode and 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



Factory located in the
Heartland of America



TRI-REPORT

Includes:

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

Accessories:

Hard-shell carrying case
Protective rubber boots
400x USB Video Microscope
2.5mm / 1.25mm in-adapter connector cleaners
150-meter 50/125 multimode OTDR fiber ring
500-meter singlemode OTDR fiber ring
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



Optical Wavelength Laboratories

MANUFACTURER OF QUALITY OPTICAL FIBER TEST EQUIPMENT



Optical Wavelength Laboratories (OWL)
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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 and/or fiber connector endface analysis.

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

Fiber OWL 7+ (p/n: F7+M / F7+S) optical power meters enable multimode and 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.

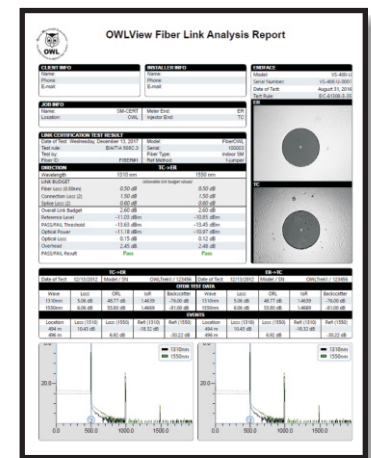
The universal detector port in each **Fiber OWL 7+** certifier comes with 2 adapter caps, one for 2.5mm connectors such as SC, ST, and FC, and the other for 1.25mm connectors such as LC, and the integrated OTDR port is used to measure the fiber cable length as well as characterize the fiber link. A visual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

The **WaveSource Pro Quad (p/n: WPMS)** fiber optic light source is designed for accurate testing and certification of multimode (850nm & 1300nm) and singlemode (1310nm & 1550nm) networks. Its dual-wavelength outputs are temperature-stabilized for accurate measurements.

The **WPMS** 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.

As a bundle, the **VS-400-U** video scope allows users to inspect and capture endface images, which can then be imported into OWLView software to produce a comprehensive **Tri-Report** as shown at right.



TRI-REPORT



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| OTDR Specifications | | | | General Specifications | | Optical Power Meter Specifications | | | |
|--|---|--------|--|------------------------|-------------------------------------|------------------------------------|--|--------------------|--|
| Fiber Type: | Multimode | | Singlemode | | Display: | 2.8" Color LCD | | Photodetector: | InGaAs |
| Output Wavelength: | 850nm | 1300nm | 1310nm | 1550nm | Battery Type: | Lithium Polymer | | Fiber Type: | Multimode / Singlemode |
| Dynamic Range (SNR=1) ¹ : | 27 dB | 29 dB | 28 dB | 27 dB | Battery Life: | up to 20 hours | | Wavelengths: | 850, 980, 1300, 1310 1490, 1550, 1625 |
| Data Point Spacing (m): | 1 | | Up to 64 km: 1 Over 64 km: 2 | | Dimensions: | 2.87" x 4.42" x 1.25" | | Accuracy: | 0.15 dB |
| Pulse Width (m): | 1,2,5,10,20,50,100,200 | | 1,2,5,10,20,50,100,200,500,1000 | | Weight: | 10 oz. (284 g) | | Resolution: | 0.01 dB |
| Distance Accuracy (m): | 1 + (distance in meters/10000) | | Over 64km: 1 + (distance in meters/10000) Over 64km: 2 + (distance in meters/10000) | | Visual Fault Locator Specifications | | | Measurement Units: | dBm / dB |
| Distance Range (km) ⁴ : | 20 | | 128 | | 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 | | Minimum Trace Distance: 3000 + Maximum Trace Distance: up to 200 | | Output Power: | 1 mW | | | |
| Event Dead Zone(m): ² | 2 | | | | Operating Modes: | CW / Flash | | | |
| Attenuation Dead Zone(m): ³ | 5 | | | | | | | | |
| Index of Refraction: | 1.4000 to 1.6000 | | | | | | | | |
| Maximum Data Points: | 64000 | | | | | | | | |

UNIVERSAL DETECTOR PORT

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

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

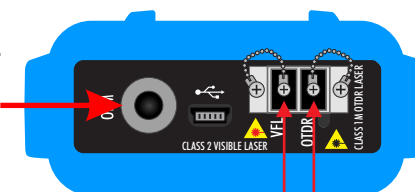
4: Out to furthest reflective event

| Light Source Specifications | | |
|-----------------------------|---|--|
| Output Type | Multimode | Singlemode |
| Launch Method | LED | FP Laser |
| Center Wavelength | 850 nm: 850 ± 30 nm 1300 nm: ± 50 nm | 1310 nm: 1310 ± 20 nm 1550 nm: 1550 ± 30 nm |
| Spectral Width | 850 nm: 50 nm 1300 nm: 180 nm | 1310nm: 2 nm 1550nm: 2 nm |
| Output Power | -20 dBm | -10 dBm |
| Output Modes | CW / Modulated | CW / Modulated |
| Initial Accuracy | ± 0.1 dB | ± 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.

UNIVERSAL DETECTOR PORT

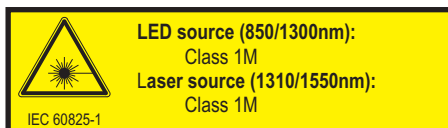
Includes:
2.5mm adapter (SC,ST, FC)
1.25mm adapter (LC)



VISUAL FAULT LOCATOR

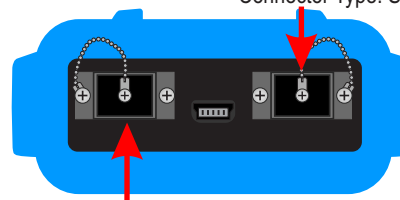
compatible with multimode and singlemode fibers (LC connector)

multimode or singlemode depending upon model (LC connector)



SINGLEMODE SOURCE PORT

Wavelengths: 1310/1550nm
Connector Type: SC



MULTIMODE SOURCE PORT

Wavelengths: 850/1300nm
Connector Type: SC



Factory located in the
Heartland of America



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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

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.

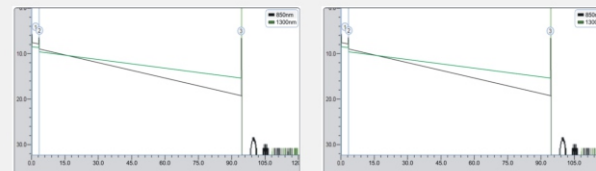
OWLView Fiber Link Analysis Report

Report Date: September 23, 2017 Software Version: 1.1.1



| CLIENT INFO | | INSTALLER INFO | | ENDFACE ANALYSIS RESULT | |
|--|--|------------------------------|--|-------------------------------|--|
| Name: Acme Corp. | | Name: Fiber Install Inc. | | Model: VS400-U | |
| Phone: 555-555-5555 | | Phone: 555-555-5555 | | S/N: VS400-U-0001 | |
| E-mail: acme@acme.com | | E-mail: fiber@installinc.com | | Date of Test: August 31, 2016 | |
| | | | | Test Rule: IEC-61300-3-35 | |
| JOB INFO | | | | CONTROL | |
| Name: ACME WEST | | Meter End: Control | | A D S | |
| | | | | B ✓ | |
| | | | | C ✓ | |
| | | | | D ✓ | |
| LINK CERTIFICATION TEST RESULT | | | | | |
| Date of Test: August 31, 2016 Model: F7-PM | | | | | |
| Test Rule: EIA/TIA 568C.3 Serial: 120330 | | | | | |
| Test By: Hooty Owl Fiber Type: 50/125um OM3 | | | | | |
| Fiber ID: F1-C2-R3-P4-Port5 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 | |

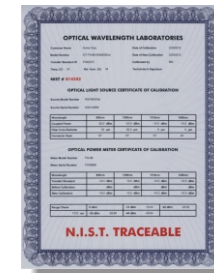
| CONTROL → ADMIN | | | | ADMIN → CONTROL | | | |
|-----------------|------------|-------------|-------------------|-----------------|------------|-------------|-------------------|
| Date of Test | 09/20/2016 | Model / S/N | WTQ2-S35 / H37777 | Date of Test | 09/20/2016 | Model / S/N | WTQ2-S35 / H37777 |
| OTDR TEST DATA | | | | | | | |
| Wave | Loss | ORL | Backscatter | Wave | Loss | ORL | Backscatter |
| 850nm | 1.14 dB | 47.88 dB | 1.4681 | 850nm | 1.14 dB | 47.88 dB | 1.4681 |
| 1300nm | 1.14 dB | 47.88 dB | 1.4681 | 1300nm | 1.14 dB | 47.88 dB | 1.4681 |
| EVENTS | | | | | | | |
| Location | Loss (850) | Loss (1300) | Ref (850) | Ref (1300) | Location | Loss (850) | Loss (1300) |
| 0m | --- | --- | --- | --- | 0m | --- | --- |
| 4m | 0.42 dB | 0.37 dB | -44.35 dB | -47.37 dB | 4m | 0.42 dB | 0.37 dB |
| 95m | --- | --- | --- | --- | 95m | --- | --- |



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 meters and light source in the Fiber OWL 7+ Quad Bundle 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) |

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 μ m multimode OTDR fiber ring (LC/LC) |
| FR-M5-150-LCSC | 150 meter 50/125 μ m multimode OTDR fiber ring (LC/SC) |
| FR-M6-150-LCLC | 150 meter 62.5/125 μ m multimode OTDR fiber ring (LC/LC) |
| FR-M6-150-LCSC | 150 meter 62.5/125 μ 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 μ m multimode OTDR dead zone box (SC) |
| DZB-M6-450 | 450 meter 62.5/125 μ 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 μ m M6 = 62.5/125 μ 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 μ m M6 = 62.5/125 μ 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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