Optical Wavelength Laboratories

10-Gig Testing
Pages 5 - 11

NEW! OTDRs starting under 1600.00

Factory located in the Heartland of America

For your local distributor, call 262-473-0643.

OWL-inc.com

FTTH - ORL - Certification Testing - Optical Power Loss - Length Testing - Optical Talk Sets - Visual Fault Locators

Fiber Optics Test Equipment Catalog

INTRODUCTION

ABOUT OWL - Going on our twelfth year, Optical Wavelength Laboratories, Inc. (OWL) was founded with the idea that high-quality, accurate, and user-friendly test equipment can be affordable for everyone. Since then, OWL has become well accepted globally in the fiber optics industry, upholding its commitment to providing quality, yet affordable fiber test equipment.

Utilizing industry standards such as TIA, EIA, ISO/IEC and Telcordia standards and Fiber Optic Test Procedures (FOTPs), OWL fiber optic test equipment is calibrated and traceable to National Institute of Standards & Technology (N.I.S.T.). OWL has proven quite able to give fiber optic professionals reliable test results for network quality assurance. These results are readily downloadable by most OWL meters to produce meaningful fiber optic certification reports via free OWL Reporter software.

12 years of excellence ! Quality fiber optic test equipment manufacturing since 2000.

ABOUT OWL PRODUCTS - OWL's fiber optic test equipment line includes optical power meters, optical loss test sets, optical return loss meters, multimode and singlemode test kits, light sources, talk sets, optical length testers, and visual fault locators, as well as a range of accessories for cleaning and connectivity. Applications include: LAN, WAN, MAN, Telco, CATV, Laboratory, and FTTH. All OWL test equipment comes with a two-year limited warranty, covering manufacturing and assembly defects. Re-calibration is reasonably priced at 50.00 dollars per unit.

WHO USES OWL METERS - In nearly twelve years on the market, OWL has achieved a high profile list of professional organizations that utilize OWL meters for vital test results. OWL fiber optic certification reports assure customers of the quality of service of their mission critical fiber optic networks. Below is a sample of a few high-profile organizations that use OWL fiber optic test equipment.

TELECOM
ADC Telecommunications
Alcatel
AOL Time Warner
AT&T
Black Box Networks
CenturyTel
Charter Communications
Cingular Wireless
Cisco Systems
Cogent Communications
Cox Communications
Embarq
EMC Computer Systems
Frontier Communications
Fujitsu Network Services
JDS Uniphase
Level (3) Communications
Nextel Communications
NTT Advanced Technology
OFS
Qwest Communications
SBC
Spirent Communications
Sprint
Sun Micro Systems
T-Mobile
TDS Telecom
Verizon

ENERGY
Chevron Products
Conoco
Florida Power and Light
GE Nuclear Energy
Marathon Petroleum
Oklahoma Gas & Electric
Progress Energy
Texaco Chevron
United Illuminating

GOVERNMENT AGENCIES
Center for Disease Control & Prevention
Federal Aviation Administration
Federal Bureau of Investigation
NASA
National Weather Service
Social Security Administration
USDA
US Mint
US Postal Service
US Naval Observatory

AEROSPACE
Johnson Space Center
Lockheed Martin
McDonnell Douglas (Boeing)
Northrop Grumman
IntelSat Corporation (Division of HUGHES)
Raytheon
TRW
Vandenberg Tracking Station

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ESPN
Major League Baseball
NBC News
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Walt Disney World
The Weather Channel
KCSN
KPDX
KTVK
WDBJ

INDUSTRIAL/MANUFACTURING/COMMERCIAL
Afton Chemical
Anteon
Atmel Semiconductor
BAE Systems
Black & Decker
Chubb Security Systems
Cooper Electrical
Cutler-Hammer
GE Medical Systems
GE Security
General Dynamics
General Motors
Hartz Mountain Corp
Hewlett-Packard
Honeywell
IBM Honeywell
Intel Corp.
International Paper
Levi-Strauss & Co.
Motorola
Office Depot
Panduit
Pepsi-Cola
Qlogic Corp.
Rockwell International
Samsung
Siemens
Simplex
Tektronix
Toyota
Tyco Electronics
United Parcel Service (UPS)
Westinghouse

FINANCE & BANKING
GMAC
NCR
Quicken Loans
Wachovia Corporation
Wells Fargo Bank

EDUCATIONAL
Baker College
California Instutite of Technology
Colorado State University
Eastern Illinois University
Massachusetts Institute of Technology
Michigan State University
Ohio University
Pennsylvania State University
Texas Wesleyan University
University of Arizona
University of California-Davis
University of California-Los Angeles
University of California-Santa Barbara
University of Connecticut
University of Hawaii
University of Houston
University of Maine
University of Michigan
University of Nebraska
University of North Carolina

plus many other community colleges and local school districts

Factory located in the Heartland of America

Contact OWL

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Website: **OWL-INC.COM**

US Government CAGE code:
35XR0

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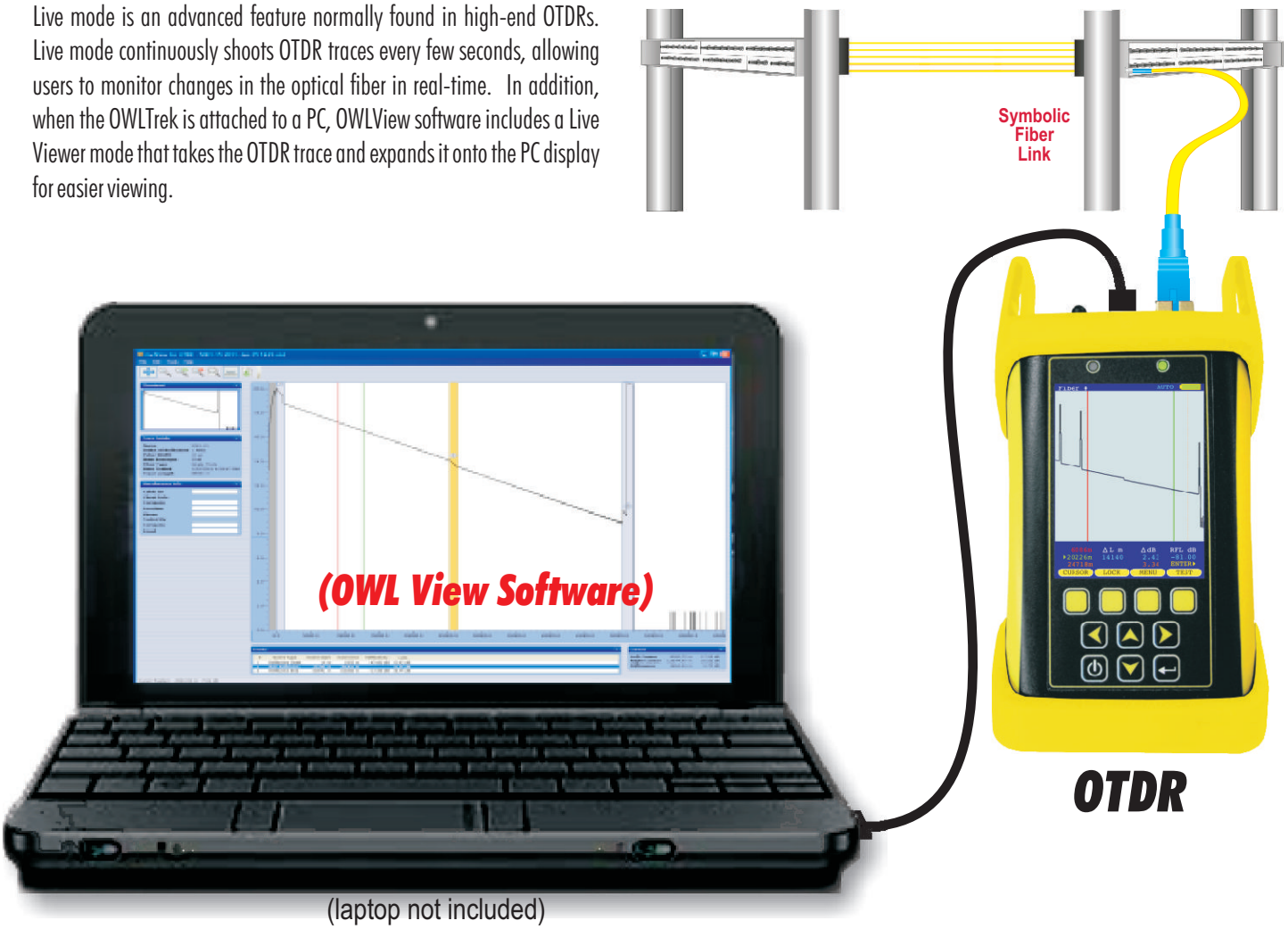
LIVE MODE *Display live traces on laptop!*

Live mode is an advanced feature normally found in high-end OTDRs. Live mode continuously shoots OTDR traces every few seconds, allowing users to monitor changes in the optical fiber in real-time. In addition, when the OWLTrek is attached to a PC, OWLView software includes a Live Viewer mode that takes the OTDR trace and expands it onto the PC display for easier viewing.



(laptop not included)

View traces in portrait mode...

...or landscape mode for greater trace viewing detail!

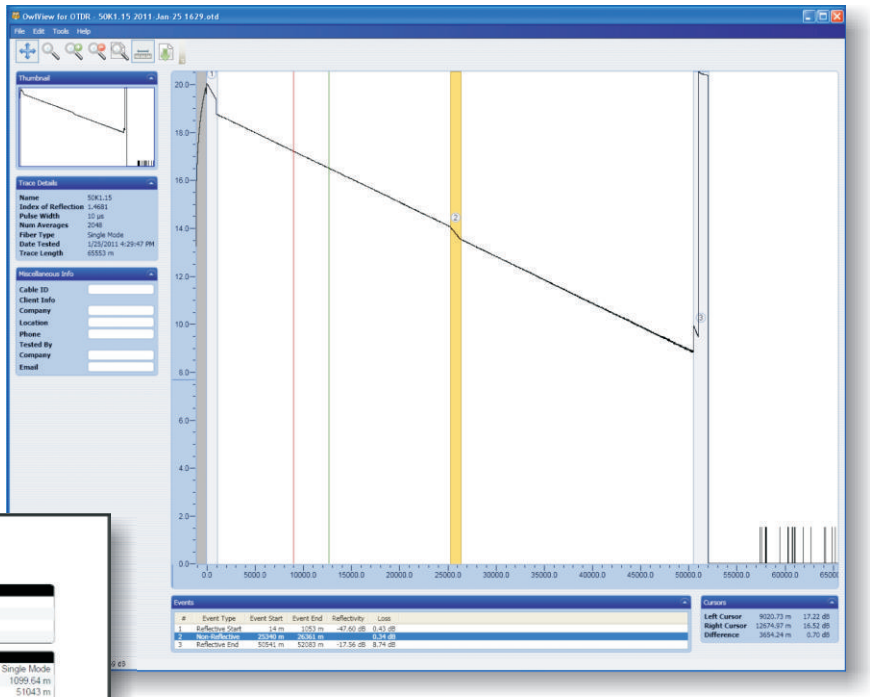
AUTOMATIC SCREEN ROTATION

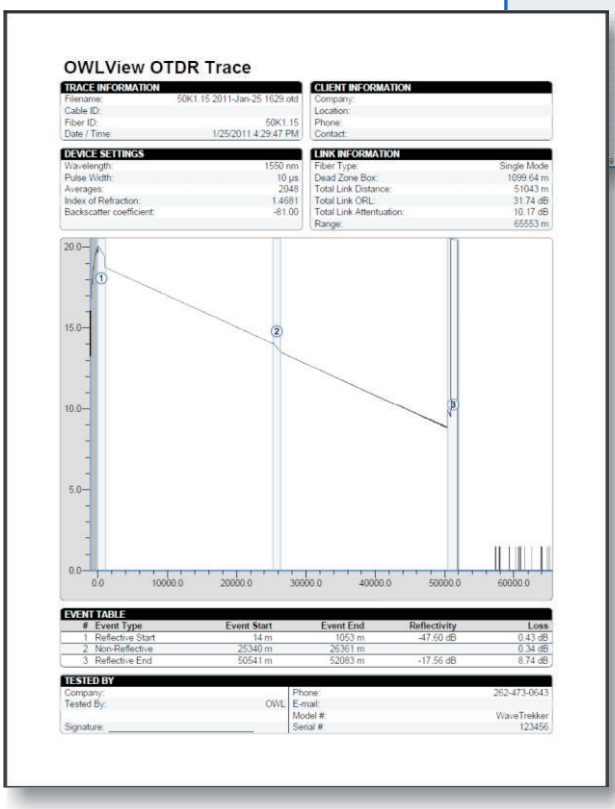
For greater viewing flexibility and trace detail, OWL has implemented state-of-the-art MEMS technology which "flips" the high-resolution color LCD display between portrait and landscape mode automatically. In landscape mode, a wider viewing area means greater viewing detail when zooming in on events.

OWLVIEW OTDR SOFTWARE

OWLView for OTDR software provides users with a powerful tool for analysis of fiber traces, and is included free of charge with each OWLTrek OTDR. Features include:

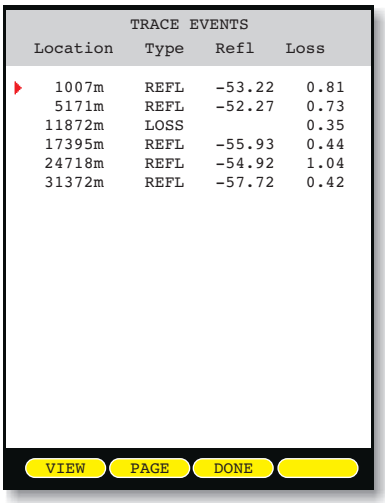
- Hard-disk trace storage
- Professional printed reports
- Event tables
- Event auto-marking
- Zoom in / out functionality
- Dual cursor positioning / locking
- Telcordia GR-196 .SOR version 2 file format
- Live Mode



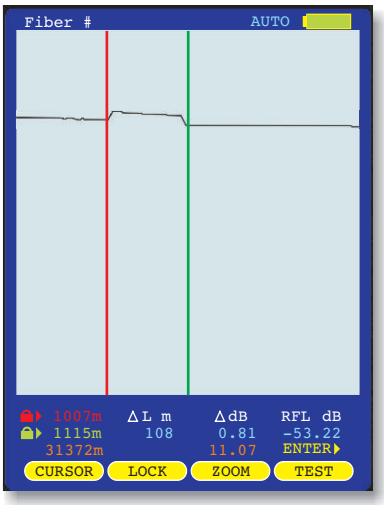


AUTOMATIC EVENT LOCATION / EVENT TABLES

Automatic event location is an advanced feature normally found only in expensive, high-end OTDRs. The OWLTrek OTDR now brings this feature to the entry-level OTDR market. The OWLTrek OTDR includes an event table showing the location, type, reflectance level, and loss of each event. Users can select an event to view, and automatically zoom in on the event on the OTDR display.



Select an event...



...zoom in automatically!

Factory located in the Heartland of America

Optical Time Domain Reflectometer (OTDR)

TELCO NETWORK TESTING

Pricing			
Model #:	Description	List Price[1]:	Sale Price[1]:
WTO-S13	OWLTrek 1310	~~1995.00~~	1595.00
WTO-S15	OWLTrek 1550	~~1995.00~~	1595.00
WTO-S35	OWLTrek 1310/1550	~~2995.00~~	2495.00

Applications

- Optical fault location in singlemode fibers
- Loss measurement of reflective and backscatter events
- Link attenuation measurement
- Reflectance measurement of reflective events
- Optical fiber length measurement

Features

- 2.8" color LCD display automatically rotates based on orientation of OTDR (portrait vs. landscape)
- Live Mode allows users to expand OTDR display onto larger laptop screen
- Automatically locates events and places them in an internal event table
- Full horizontal and vertical pan/zoom function
- User-selectable parameters such as index of refraction, test mode, pulse width, and averaging
- Integrated user help screens
- SC/UPC connector port
- USB interface for downloading stored readings
- Integrated visual fault locator
- Re-chargeable Lithium Polymer battery allows for up to 20 hours of normal usage
- FREE OWLView for OTDR software prints OTDR trace reports and stored OTDR readings on hard disk for later retrieval

Description

With an unbeatable combination of a small pocket-sized form factor, a 2.8" high-resolution color LCD display, and some of the lowest pricing in the industry, OWLTrek singlemode OTDRs are the wise choice for cost-conscious buyers who need to perform basic troubleshooting or restoration tasks on singlemode optical fiber networks. All this from OTDRs that really are pocket-sized and fair priced, yet have comparable features and specifications to other OTDRs in their class.

Optical Specifications			
Model #:	WTO-S13	WTO-S15	WTO-S35
Output Wavelength:	1310nm	1550nm	1310/1550nm
Fiber Type:	Singlemode		
Dynamic Range (SNR=1)[2]:	25 dB	23 dB	25/23 dB
Event Dead Zone[3]:	2 meters (typical)		
Attenuation Dead Zone[4]:	7 meters (typical)		
Maximum Data Points:	64000		
Data Point Spacing:	Up to 64km: 1 meter // Over 64km: 2 meters		
Pulse Width:	1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 meters		
Index of Refraction:	1.4000 to 1.6000		
Distance Accuracy:	Up to 64km: 1 + (distance in meters/10000) // Over 64km: 2 + (distance in meters/10000)		
Distance Range[5]:	128 kilometers		
Number of Stored Traces:	Maximum trace distance: up to 200 // Minimum trace distance: 3000+		

General Specifications	
Display Type:	High-resolution Color LCD
Display Size:	2.8" diagonal
Battery Type:	Lithium Polymer
Battery Life:	up to 20 hours normal usage
Dimensions:	2.87" x 4.42" x 1.25"
Weight:	10 ounces (284 g)
Visual Fault Locator Specifications	
Output Wavelength:	650nm
Output Power:	1 mW
Operating Mode:	CW / Flash

1: All price shown are in US Dollars (USD). List price is shown for US customers only. Prices outside the US may vary based on individual countries' import duties and taxes, currency conversion, and other value added charges.
2: Using maximum pulse width
3: Width measured 1.5dB down on each side of a reflective event using 1 meter pulse width
4: Distance from event beginning to within 0.5dB where backscatter resumes using 1 meter pulse width
5: Out to furthest reflective event

Factory located in the Heartland of America

Small, pocket-sized OTDRs do same job as larger, more expensive OTDRs, for a fraction of the cost

Pricing			
Model #:	Description	List Price[1]:	Sale Price[1]:
WTO-Q	OWLTrek Quad Kit OTDR	~~4495.00~~	4395.00

Applications

- Optical fault location in multimode and singlemode fibers
- Loss measurement of reflective and backscatter events
- Link attenuation measurement
- Reflectance measurement of reflective events
- Optical fiber length measurement

Features

- 2.8″ color LCD display automatically rotates based on orientation of OTDR (portrait vs. landscape)
- Live Mode allows users to expand OTDR display onto larger laptop screen
- Automatically locates events and places them in an internal event table
- Full horizontal and vertical pan/zoom function
- User-selectable parameters such as index of refraction, test mode, pulse width, and averaging
- Integrated user help screens
- SC/UPC connector port
- USB interface for downloading stored readings
- Integrated visual fault locator
- Re-chargeable Lithium Polymer battery allows for up to 20 hours of normal usage
- FREE OWLView for OTDR software prints OTDR trace reports and stored OTDR readings on hard disk for later retrieval

Two Units are Better than One!

Most OTDR manufacturers tend to implement an inflexible approach by over-integrating four wavelengths into a single OTDR unit. OWL takes an innovative approach that very few OTDR manufacturers even consider – by including separate dual-wavelength multimode and singlemode OTDRs. There are two key disadvantages to using an over-integrated quad-wave OTDR. First, most installer firms need to have at least two crews working simultaneously to be profitable. Second, most fiber optic jobs rarely include both multimode and singlemode fibers. So, if one crew is installing multimode and another crew is installing singlemode, it makes sense to have separate multimode and singlemode OTDRs so one crew does not have to wait on the other to finish their job. And even with two separate units, the OWLTrek Quad Kit OTDR is still more cost-effective than other manufacturer's quad-wavelength OTDR options.

Optical Specifications				
Model #:	WTO-M83		WTO-S35	
Fiber Type:	Multimode		Singlemode	
Output Wavelength:	850 nm	1300 nm	1310 nm	1550 nm
Dynamic Range (SNR=1)[2]:	23 dB	25 dB	25 dB	23 dB
Event Dead Zone[3]:	2 meters (typical)			
Attenuation Dead Zone[4]:	7 meters (typical)			
Maximum Data Points:	64000			
Data Point Spacing:	1 meter		Up to 64 km: 1 meter / Over 64 km: 2 meters	
Pulse Width:	1, 2, 5, 10, 20, 50, 100 meters		1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 meters	
Index of Refraction:	1.4000 to 1.6000			
Distance Accuracy:	Up to 64km: 1 + (distance in meters/10000) / Over 64km: 2 + (distance in meters/10000)			
Distance Range[5]:	20 kilometers (12 miles)		128 kilometers (80 miles)	
Number of Stored Traces:	Maximum trace distance: up to 200 / Minimum trace distance: 3000+			

General Specifications	
Display Type:	High-resolution Color LCD
Display Size:	2.8″ diagonal
Battery Type:	Lithium Polymer
Battery Life:	up to 20 hours normal usage
Dimensions:	2.87″ x 4.42″ x 1.25″
Weight:	10 ounces (284 g)
Visual Fault Locator Specifications	
Output Wavelength:	650nm
Output Power:	1 mW
Operating Mode:	CW / Flash

1: All price shown are in US Dollars (USD). List price is shown for US customers only. Prices outside the US may vary based on individual countries' import duties and taxes, currency conversion, and other value added charges.

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4: Distance from event beginning to within 0.5dB where backscatter resumes using 1 meter pulse width

5: Out to furthest reflective event

Factory located in the Heartland of America

Stand-alone Optical Power Meter

TELCO NETWORK TESTING

Pricing		
ZO-2	ZOOM 2 optical power meter	289.00
ZO-2V†	ZOOM 2 VFL optical power meter	489.00
U2.5-4	Replacement 2.5mm universal adapter	35.00
U1.25-4	Replacement 1.25mm universal adapter	35.00

Applications

- Optical power measurement
- Optical loss (attenuation) measurement*
- Patch cord verification*
- FTTx link loss verification*

Features

- InGaAs photodetector
- Multimode and singlemode ready
- Universal detector port supports 2.5mm and 1.25mm connectors
- Set reference ("zeroing") function*
- Display absolute and relative power measurements in dBm, dB, and W
- Over 250 hours battery life (9V)
- NIST Traceable
- Optional integrated visual fault locator (VFL) port

† includes integrated visual fault locator (VFL) port
* requires additional light source

Description

The ZOOM 2 is a highly accurate hand-held optical power meter, capable of measuring optical power and optical loss in a wide range of test environments, including LAN, MAN, WAN, Telco, CATV, Manufacturing, and Laboratory. A 2.5mm universal and 1.25mm universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, MU, and other SFF. The ZOOM 2 is enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its easy-to-read 4-digit LCD display shows optical power in dBm and dB, selected wavelength, and battery power, and it has an intuitive 2-button interface for controlling power ON/OFF and wavelength selection. As an option, a visual fault locator (VFL) can be integrated into the ZOOM 2. VFLs are useful for locating faults behind patch panels, and for identifying optical ports at the far end of a fiber link.

Key Specifications	
Detector Type	InGaAs
Calibrated Wavelengths[1]	**850**, **1300**, **1310**, 1490, **1550**
Measurement Range	+5 to -60 dBm
Accuracy	±0.15 dB
Display Resolution	0.01 dB
Battery Life	Up to 250 hours (9V)
Connector Type	2.5mm/1.25mm universal
Displayed Measurement Units	dBm, dB, mW, μW
Display Type	LCD
Auto-shutdown	Yes
Operating Temperature	-10 to 55° C
Storage Temperature	-30 to 70° C
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)
Weight	10 oz. (284g)

1: Bold wavelengths are NIST Traceable

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

Factory located in the Heartland of America

Optional integrated VFL allows for quick and easy fault location and port identification

Visual Fault Locator (VFL)

TELCO NETWORK TESTING

Description

The PCVFL (precision-coupled visual fault locator) is a light-weight, hand-held fiber tester used to quickly troubleshoot faults in the near-end of both multimode and singlemode fibers, as well as for port identification and fiber continuity. The PCVFL holds its own against the best visual fault locators (VFL) in the industry. As with any quality VFL, the PCVFL uses a precision-coupled laser diode to inject a maximum amount of optical energy into an optical fiber. A multi-million dollar semiconductor machine is used in the manufacture of a special precision coupled micro sized ball lens, which focuses the high-intensity red laser at the optimum point of the optical fiber core. Since low-cost laser light pens do not use precision-coupling optics, their red lasers are not focused at the correct point, and thus produce sub-par results.

Pricing		
PCVFL-1	Precision-Coupled Visual Fault Locator	295.00

Applications

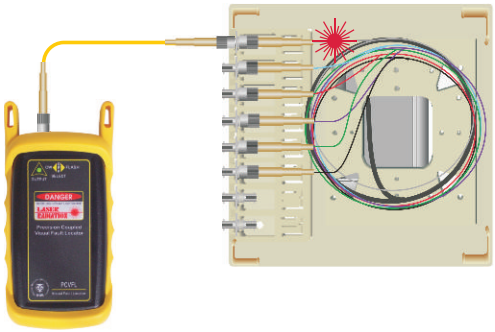
- Visual Fault Location
- Visual Fiber Identification

Features

- 650nm laser source
- Multimode / singlemode ready
- Continuous Wave (CW) and flashing output modes
- Visual range: up to 5 kilometers
- 15 hour battery life
- Low battery indicator
- 2.5mm universal connector port

Factory located in the Heartland of America

Visual Fault Location

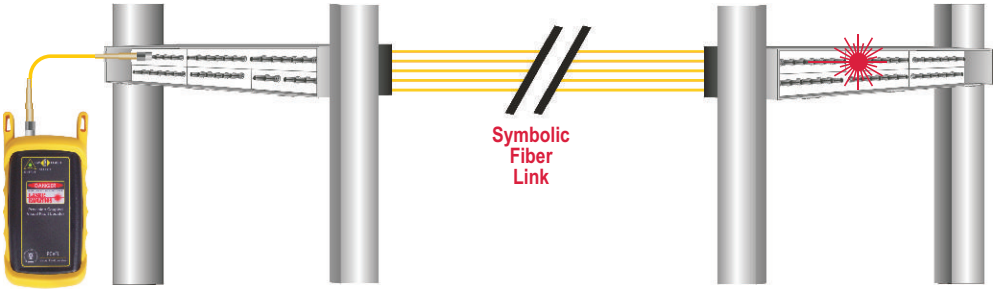


The PCVFL can be used as a troubleshooting tool to determine if there are breaks, micro-bends, or any other anomalies causing excessive loss within the first few feet of the fiber under test located in the splice tray. The laser diode in the PCVFL injects high-intensity red laser light into the near-end connector. If this light encounters any anomalies, such as a break or a micro-bend, the light is deflected into the fiber jacket, producing a red glow at the point of the anomaly. Some optical fiber jackets are colored so that it is difficult to see red light shining through, so it is recommended to keep the room light at a minimum when using the PCVFL for visual fault location.

Warning

Bright red visible laser radiation when power switch is set to the ON position – Avoid eye exposure to direct or scattered radiation

Port Identification



VFLs can help take the guesswork out of identifying ports in a fiber patch panel or checking polarity of a duplex connector. Connect the PCVFL to one end of a fiber link, and the high-intensity, precision-coupled red laser diode will allow the user to visually identify the port by the presence of a red glow emitting from the connector on the other end. The PCVFL allows for visual port identification of fiber optic links up to 5 kilometers (3.1 miles) away!

Singlemode Optical Return Loss Meter

TELCO NETWORK TESTING

Pricing		
FO-4-ORL	Fiber OWL 4 optical return loss meter	2950.00

Applications

SINGLEMODE ONLY

- Optical return loss
- Optical power measurement
- Optical loss (attenuation) measurement *
- Patch cord verification *
- Full-featured fiber link certification *
- FTTx link loss verification *

Features

- InGaAs photodetector
- 1310/1550 singlemode ORL measurement
- SC/APC optical connector
- Three operating modes: Simple, Certification, & Optical Return Loss
- User-friendly Link Wizard *
- Set reference ("zeroing") function *
- Shows PASS/FAIL readings *
- Display absolute and relative power measurements in dBm, dB, and W
- Backlit graphics LCD
- Up to 100 hours battery life (9V)
- USB interface for downloading stored readings
- FREE OWL Reporter software
- NIST Traceable

* requires additional singlemode laser source

Description

The Fiber OWL 4 ORL is a highly accurate hand-held optical return loss (ORL) meter, designed to measure the return loss of singlemode optical fiber networks. Its built-in Link Wizard walks the user through a series of steps, prompting the user to pick the parameters of their link under test, and sets an ORL reference based on these parameters. This reference is used as a point of reference by with a test will PASS or FAIL against the specified ORL level. Additionally, the Fiber OWL 4 ORL can be used for a wide range of functions, from simple optical power and loss measurements to standards-based link certification of singlemode fibers, and when used with WaveSource singlemode laser sources, the Fiber OWL 4 ORL provides fiber optic professionals with automatic dual-wavelength optical loss measurements, cutting down on testing time and human error. Up to 1000 fiber measurements can be stored in memory, which can be downloaded to a PC using the supplied download cable. OWL Reporter software prints test results, and saves measurement data on hard-disk for later retrieval.

Optical Power Meter Specifications	
Detector Type	InGaAs
Calibrated Wavelengths[1]	**1310**, 1490, **1550**, 1625
Measurement Range	+5 to -70 dBm
Accuracy	±0.15 dB
Display Resolution	0.01 dB
Battery Life	Up to 100 hours (9V)
Connector Type	SC/APC
Data Storage	Up to 1000 data points
Displayed Measurement Units	dBm, dB, mW, µW, nW
Modes of Operation	Simple, Certification
Length Measurement Range	up to 25 km
Length Measurement Accuracy	±2.5 m
Display Type	Backlit graphical LCD
Auto-shutdown	Yes
Operating Temperature	-10 to 55° C
Storage Temperature	-30 to 70° C
Dimensions	3.48 x 6.48 x 1.1 inches (88.39 x 164.59 x 27.94 mm)
Weight	12 oz. (373g)

1: Bold wavelengths are NIST Traceable

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

Optical Return Loss Specifications	
ORL Wavelengths	1310nm / 1550nm
Fiber Type	Singlemode
Dynamic Range	68 dB
Detector Sensitivity	-67 dBm
Measurement Range	76 dB
ORL Uncertainty	±0.5 @ 60 dBm

Factory located in the Heartland of America

Fiber Optic Talk Sets

TELCO NETWORK TESTING

Pricing		
LH-1310	Laser HOOTS 1310 singlemode talk set	1190.00
LH-1550	Laser HOOTS 1550 singlemode talk set	1690.00

Applications

- Full duplex voice communications using a pair of singlemode optical fibers

Features

- Each talkset includes a pair of talkset units
- Offers secure communications that is immune to EMI/RFI
- Automatic volume control
- Wide receiver dynamic range
- Long battery life
- Signal level indicator
- Battery level indicator
- 1310nm or 1550nm option
- ST connectors
- Headsets and headset adapters included
- Intuitive operation

Description

HOOTS stands for High Output Optical Talk Set. Laser HOOTS Series fiber optic talk sets use our laser source technology to convert your voice into optical signals and provide full-duplex communications using a pair of terminated optical fibers. These talk sets are a reliable alternative to wireless communications systems used within a fiber optic environment due to their electromagnetic immunity. We designed the Laser HOOTS Series to be economical in order to be sold as an alternative to walkie-talkies. Optionally, they can be embedded as a permanent part of a fiber network installation. Use them during the installation for end-to-end voice communications, then after installation leave them attached to a spare pair of optical fibers inside the fiber patch panel. This way, the Laser HOOTS can be used by Information Technology (I.T.) personnel for communications whenever operations or management functions need to be done in the fiber cable closet. There are several advantages to using a fiber talk set versus walkie talkies. The first advantage is when I.T. personnel are setting up voice or data optical equipment, they may give away passwords and secret net addresses over un-secure walkie-talkie channels to a nearby neighborhood of listening ears! The second advantage is that everyone is buying these cheap walkie-talkies from the local discount stores. It's getting much more difficult to find free channels over the air waves. The third advantage is the noise and walls in many plants inhibit radio transmissions. Fiber communications is more secure and most of all, immune to the effects of EMI/RFI. Two models are available: Laser HOOTS 1310 and Laser HOOTS 1550 for communicating over singlemode fibers. Each set comes with a pair of headsets and headset adapters, hard-shell carrying case, protective rubber boots, carrying straps, 9-volt batteries, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

To calculate talkset distance: $D = R / A$

where: D = talkset distance
R = dynamic range (Laser HOOTS = 20 dB)
A = typical fiber attenuation at specified λ

Example (λ = 1310nm, R = 20 dB, A = 1.0 dB/km):
D = 20 dB / (1.0 dB/km) = 20 km

Key Specifications		
Model	LH-1310	LH-1550
Fiber Type	Singlemode	Singlemode
Launch Method	FP Laser	FP Laser
Center Wavelength	1310 ± 20 nm	1550 ± 30 nm
Spectral Width	2 nm	2 nm
Output Power	-10 dBm	
Receiver Dynamic Range	20 dB (-10 to -30 dBm)	
Battery Life	up to 20 hours (9V)	
Operating Temperature	0 to 55° C	
Storage Temperature	0 to 75° C	
Dimensions (each unit)	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)	
Weight (full set)	32 oz. (907g)	

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

Factory located in the Heartland of America

C-band Optical Spectrum Analyzer

TELCO NETWORK TESTING

EXPECTED RELEASE 3RD QUARTER

Information about this product is preliminary and is subject to change without notice

Description

OWL optical channel monitors (OCM) provide users with quick and accurate optical channel measurement for DWDM networks using the wavelengths specified in the ITU G.694.1. Features include: user-definable optical power threshold, selectable channel spacing (50 & 100 Ghz), and data storage. Data can be viewed either as a bar graph or in tabular format, and the LCD display automatically rotates based on the orientation of the OCM unit. Viewing in landscape mode allows for more viewing detail.

Optical Specifications	
Operating Frequencies	191.6 to 195.9 Thz (C-band)
Total Channels	44 (100GHz spacing) 88 (50GHz offset)
Nominal Channel Spacing	100 GHz
Channel Input Power	-10 to -40 dBm
Total Input Power	7 dBm
Absolute Power Accuracy	-0.4 to 0.4 dB
Relative Power Accuracy	0.2 dB
Total Power Accuracy	-0.4 to 0.4 dB
Display Type	Backlit graphical LCD
Auto-shutdown	Yes
Operating Temperature	-5 to 70° C
Operating Humidity	5 to 85%
Storage Temperature	-40 to 85° C
Storage Temperature	5 to 95%

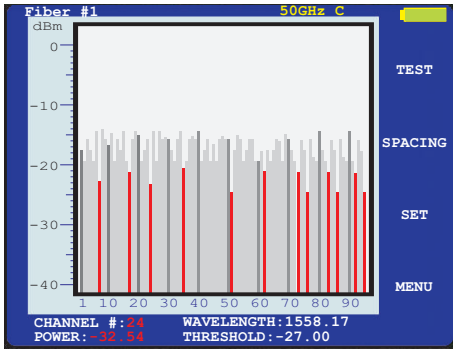
Pricing		
Model #:	Description	List Price:
OCM-C	C-band optical channel monitor	4895.00
Quantity discounts negotiable		

Applications

- C-band DWDM optical channel monitoring
- C-band optical spectrum analysis

Features

- Optical channel monitoring of ITU DWDM grid wavelengths with 50GHz and 100GHz spacing
- 2.8″ color LCD display
- SC/UPC connector port
- USB interface for downloading stored readings
- Re-chargeable Lithium Polymer battery allows for up to 20 hours of normal usage



Viewing data in landscape mode allows for greater viewing detail

General Specifications	
Display Type:	High-resolution Color LCD
Display Size:	2.8″ diagonal
Battery Type:	Lithium Polymer
Battery Life:	up to 20 hours normal usage
Dimensions:	2.87″ x 4.42″ x 1.25″
Weight:	10 ounces (284 g)

Factory located in the Heartland of America

IS YOUR PON METER LACKING NIST TRACEABILITY?

NOTICE: ENCLOSURE COLORS MAY VARY

WHY IS NIST TRACEABILITY IMPORTANT?

1) High-end corporate and government bids require that test equipment used to test network installations, including fiber optics testers, be NIST traceable.

2) Quality standards such as ISO 9000 often require annual re-certification of test equipment and that such records be available for audit.

3) Certification and NIST traceability often become a vital shield in potential litigation or arbitration of quality of work done for clients.

WHAT IS NIST TRACEABILITY?

Many OWL products are traceable to the National Institute of Standards and Technology (NIST). Traceability to NIST means that a product has been calibrated against a known US government standard, and ensures that the product's calibration procedure can be verified through an unbroken chain of documents.

NIST calibrates a single piece of test equipment and provides manufacturers with a report of calibration as proof of calibration according to their standard for this equipment. This report of calibration gives us a point of reference by which we can set the accuracy of our optical fiber test equipment.

All of our meters and sources are set to this point of reference with the US government equipment. Our customers can rest assured that their equipment is calibrated to US government standards, and provides them with the greatest amount of accuracy possible.

Features

- Handheld PON power meter
- Simultaneous measurement of PON signals
- Upstream (from ONT): 1310nm
- Downstream (from OLT): 1490 & 1550nm
- Data storage for up to 100 data points
- Stores up to 10 threshold sets
- 36-hour battery life (3x AAA batteries)
- 10-minute auto shutdown

Overview

The PON-2M PON power meter allows users to simultaneously measure signals upstream (1310nm) from the ONT and downstream (1490nm & 1550nm) from the OLT in FTTH/PON networks.

Up to 100 data points can be stored in internal memory, which can be recalled on the LCD display at a later time. As an additional option, models are available that allow users to also export test results to a PC in Excel spreadsheet format via USB cable.

Up to 10 threshold sets can be stored in internal memory, allowing users to measure PON signals against pre-set thresholds based on different measurement points in the FTTH network.

This unit runs 36 hours on 3 AAA batteries, and has 10-minute shutdown feature.

Specifications	
Measurement Range	1310nm: +10 to -35 dBm
	1490nm: +10 to -50 dBm
	1550nm: +25 to -45 dBm
ORL	APC: 55 dB; UPC: 35 dB
Pass-through Insertion Loss	< 1.5 dB
Accuracy (burst signal)	± 0.5 dB (burst signal)
Accuracy	± 0.2 dB
Threshold Sets	10
Data Storage	100
Connector	SC/PC
Auto Power Off	10 minutes of inactivity
Battery Charge	Yes
Operate Time	~ 36 hours
Storage Temperature	-20 to +60° C; 90% relative humidity
Operating Temperature	-10 to +50° C; 90% relative humidity
Power Supply	(3) AAA batteries or AC adapter
Size	7.48 x 3.54 x 1.57 inches
Weight	~ 1 pound

Pricing		
PON-2M	PON Power Meter	495.00
Quantity discounts negotiable		

400x Singlemode / Multimode Hand-held Video Inspection Scope

HELPS PREVENT EYE INJURY

A dependable connector endface inspection scope is a vital part of any fiber optic professional's tool kit. Inspecting patch cord connector endfaces before attaching them to equipment or patch panels saves time and effort, and ensures a clean, quality connection. These 400x video inspection scopes allow users to view connector endfaces on a video screen, preventing harmful invisible light from entering the users eye, and ensuring maximum eye protection. The VS400-H is a stand-alone video inspection scope, with a high-resolution LCD display that shows fiber endface anomalies in great detail. Up to xxx images can be stored in internal memory, which can then be downloaded via USB to a PC or laptop for later playback. These video images can also be analyzed with software specifically designed to digitally analyze endfaces for dust, dirt, finger oil, scratches, pits, and other anomalies.

Pricing		
VS400-H	400x hand-held video inspection scope	1845.00
Quantity discounts negotiable		

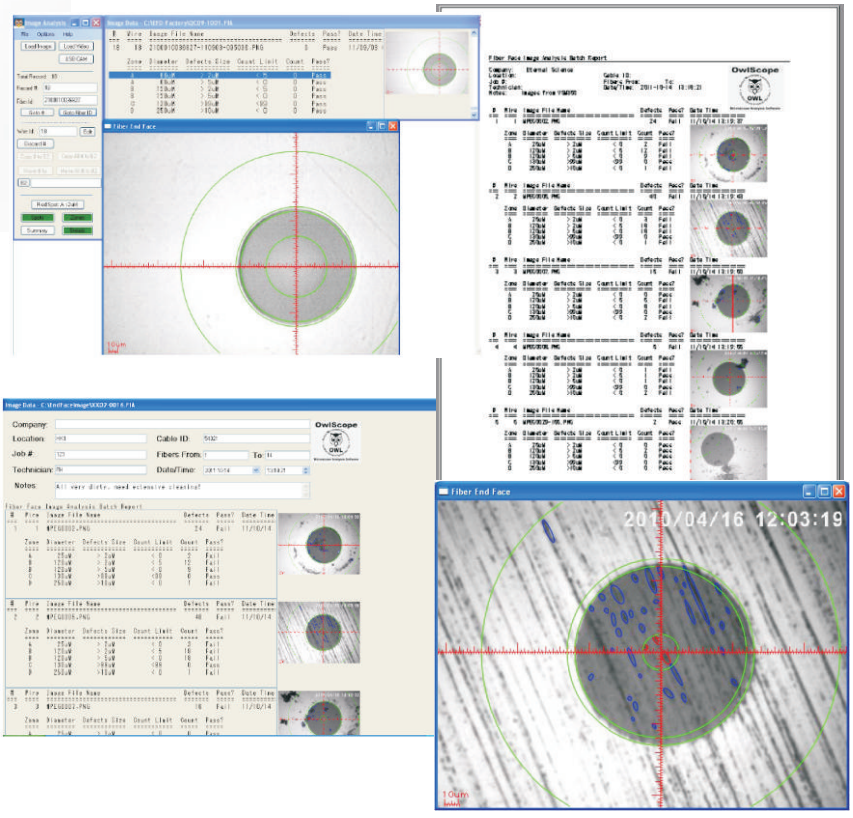
Features

- 400x magnification for use in both multimode and singlemode fiber endface analysis
- Helps prevent eye injury since the user does not directly view the fiber endface
- High-resolution LCD display shows endfaces in great detail
- Endfaces can be recorded for later playback

LETS YOU SEE INSIDE PATCH PANEL!

Video Scope Endface Analysis Software

Optional software analyzes fiber endfaces for issues that may indicate poor connector health, low quality terminations and excessively dirty endfaces!



Features

- Fiber endface measurements are digitized and uploaded to a PC for quick and easy file storage and retrieval
- Using the endface analysis software, many issues can be detected that may indicate poor connector health, low quality terminations, or excessively dirty endfaces
- Software is based on industry standard algorithms for analyzing fiber connector endfaces for damage such as scratches, cracks, chips, pits, and for debris such as dust, dirt, or finger oil
- Endface test results, including endface images, may also be printed and included with fiber link test reports, adding value to your OWL certification test reports

Pricing		
OWLMAS-2	OWL endface inspection software	CALL

400x Singlemode / Multimode USB Video Inspection Scope

HELPS PREVENT EYE INJURY

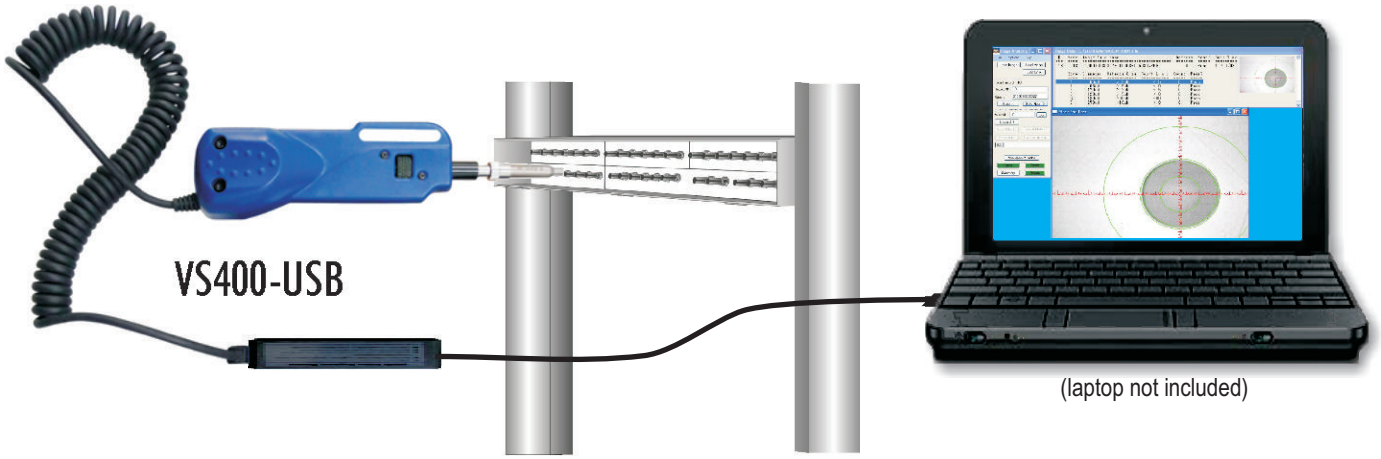
A dependable connector endface inspection scope is a vital part of any fiber optic professional's tool kit. Inspecting patch cord connector endfaces before attaching them to equipment or patch panels saves time and effort, and ensures a clean, quality connection. These 400x video inspection scopes allow users to view connector endfaces on a PC or laptop screen, preventing harmful invisible light from entering the users eye, and ensuring maximum eye protection. The VS400-USB is a video inspection scope that attaches to a PC or laptop, showing fiber endface anomalies in great detail. Images are stored on hard disk, and can be retrieved for later playback. These video images can also be analyzed with software specifically designed to digitally analyze endfaces for dust, dirt, finger oil, scratches, pits, and other anomalies.

Features

- 400x magnification for use in both multimode and singlemode fiber endface analysis
- High level of eye safety since the user does not directly view the fiber endface
- Endfaces can be viewed on PC or laptop screen, enabling greater viewing detail
- Endfaces can be recorded on PC for later playback

Pricing		
VS400-USB	400x USB video inspection scope	1195.00
Quantity discounts negotiable		

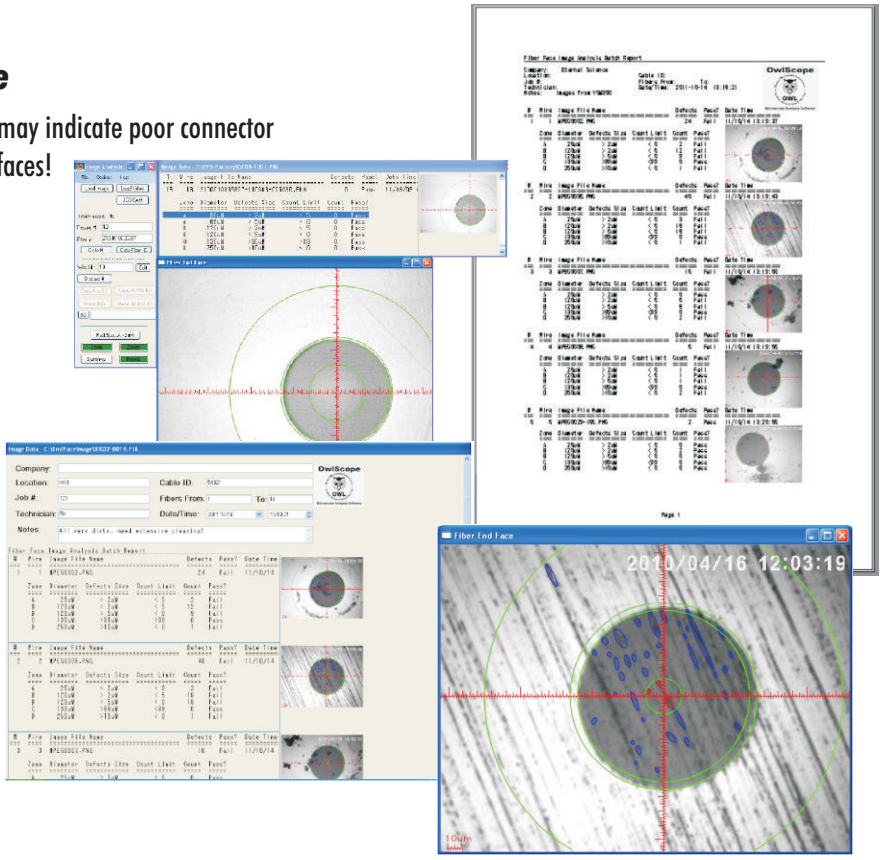
LETS YOU SEE INSIDE PATCH PANEL!



(laptop not included)

Video Scope Endface Analysis Software

Optional software analyzes fiber endfaces for issues that may indicate poor connector health, low quality terminations and excessively dirty endfaces!



Features

- Fiber endface measurements are digitized and uploaded to a PC for quick and easy file storage and retrieval
- Using the endface analysis software, many issues can be detected that may indicate poor connector health, low quality terminations, or excessively dirty endfaces
- Software is based on industry standard algorithms for analyzing fiber connector endfaces for damage such as scratches, cracks, chips, pits, and for debris such as dust, dirt, or finger oil
- Endface test results, including endface images, may also be printed and included with fiber link test reports, adding value to your OWL certification test reports

Pricing		
OWLMAS-2	OWL endface inspection software	CALL

400x Singlemode / Multimode Field Inspection Scope

A dependable connector endface inspection scope is a vital part of any fiber optic professional's tool kit. Inspecting patch cord connector endfaces before attaching them to equipment or patch panels saves time and effort, and ensures a clean, quality connection. This 400x fiber inspection scope is an excellent low-cost option for inspecting both multimode and singlemode fiber connectors, and includes a protective infrared (IR) filter designed for eye safety. Connector adapters for 2.5 and 1.25mm ferrule diameters are also included.

Pricing		
FS400	400X fiber optic field inspection scope	125.00

Features

- 400x magnification
- Multimode and singlemode fiber connector inspection
- PC, UPC, and APC
- Protective IR filter for eye safety
- 2.5mm and 1.25mm ferrule adapters

Cleaning Supplies

Dirty patch cord connectors and equipment ports can cause unreliable test results, thus it is vitally important to keep connectors and ports clean. Cleanliness is especially important during OTDR and Optical Return Loss (ORL) measurements. OWL offers cleaning supplies to ensure that patch cords and equipment ports are kept clean, thus ensuring accurate and reliable test results.

The OWL connector ferrule cleaner is used to clean the endface of a fiber optic connector. Each FCC-2 and FCC-2R can be used for up to 500 wipes.

Pricing		
FCC-2	OWL fiber connector cleaner	45.00
FCC-2R	Tape refull for FCC-2	18.00

OC series pen-style in-adaptor ferrule cleaners implement a new popular and innovative product design for cleaning inside connector ports. Models include a version for 2.5mm ports, and one for 1.25mm ports.

Pricing		
OC-2	2.5mm in-adapter ferrule cleaner	45.00
OC-1	1.25mm in-adapter ferrule cleaner	54.00

Pulse Suppressor Boxes

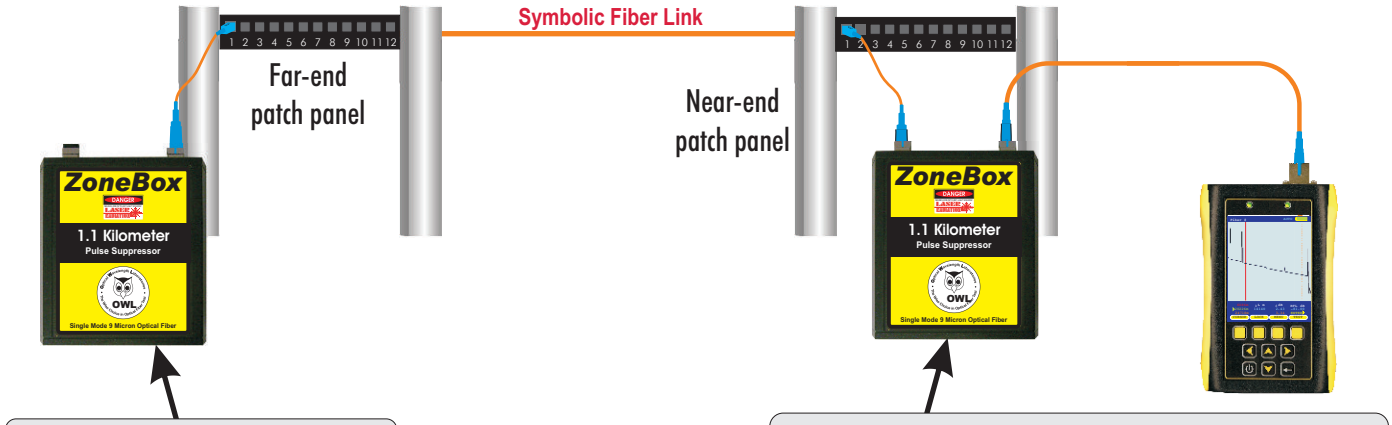
Pulse suppressor boxes, also known as dead-zone boxes or fiber rings, are vital to the success of an OTDR measurement. These boxes are simply long launch cables placed between the OTDR and the near-end patch panel, and serve two key purposes:

REFLECTIONS. Reflections caused by connector interfaces "blind" OTDRs for a short period of time. The period of time it takes for an OTDR to recover from this "blindness" is commonly referred to as a "dead-zone". During this dead-zone period, OTDRs are unable to distinguish one anomaly (e.g. breaks, shatters, bends, or even another connector) from another. Without a sufficiently long launch cable, the reflection from the near-end patch panel will be undetectable because it is within the dead-zone caused by the OTDR port.

LOSS MEASUREMENT THROUGH INTER-CONNECTIONS. To measure the optical loss of any event found on an OTDR trace, there must be sufficient measurable backscatter both before and after the inter-connection. Lack of a dead-zone box means there is no measurable backscatter outside the fiber link under test, preventing the OTDR from measuring the relative loss through both near-end and far-end patch panel connections. As a general rule, pulse suppressor boxes should be longer than the longest pulse width setting of the OTDR used for testing. In most cases, 1-kilometer launch cables are sufficient to account for dead-zones.

Pricing

Model #:	Length	Fiber	Connector	Price
DZB-SM-1100	1100m	9/125 singlemode	SC/UPC	335.00
DZB-M5-1100	1100m	50/125 multimode	SC/UPC	390.00
DZB-M6-1100	1100m	62.5/125 multimode	SC/UPC	390.00



Far-end dead-zone box allows the OTDR to measure loss through the far-end patch panel connection

Near-end dead-zone box serves two functions:
1) allows the OTDR to recover from the reflection received from the patch panel; and
2) allows the OTDR to measure loss through the patch panel connection.

Factory located in the Heartland of America

Universal Adapter Caps

These universal adapter caps fit all current models of OWL optical power meters. The U2.5-4 connects to 2.5mm connectors such as ST, SC, and FC, and the U1.25-4 connects to LC, MU, and other 1.25mm SFF connectors.

Pricing		
U2.5-4	2.5mm universal adapter cap	35.00
U1.25-4	1.25mm universal adapter cap	35.00

U2.5-4

U1.25-4

TECHNICAL NOTE: UNIVERSAL CONNECTOR PORTS

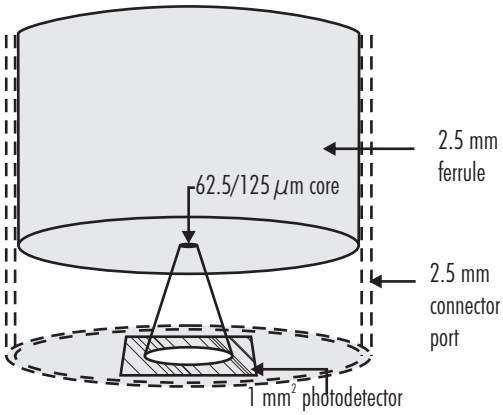
OWL optical power meters take advantage of a flexible universal connector port system which allows multiple fiber optic connector styles to connect to the same port. Fiber optic connector ferrules come in two common sizes: 2.5mm (for ST, SC, FC, etc.) or 1.25mm (LC, MU, and other SFF connectors). A universal adapter cap is available for each ferrule size.

What gives our universal port its flexibility is that only the ferrule is inserted into the port. Since there is no latching mechanism to speak of, most connectors can connect to this port as long as the ferrule size matches the adapter cap.

Each cap is designed so that once the ferrule is completely inserted, the cone of light from a fiber connector falls completely onto the photodetector, regardless of how the connector may turn, twist, or wiggle in the port. Because of this, you can be assured that the optical power reading will always be accurate.

By allowing connection to multiple connector types, OWL's universal port method minimizes costs and maintenance requirements.

Please call our knowledgeable technical staff at 262-473-0643 with any questions you may have about our universal ports or any of our other fiber optic test products.



2.5mm Universal Connector Port Diagram

Download Cables

USB-1 OWLTrek OTDRs, and Fiber OWL 4, Micro OWL 2, and WaveTester optical power meters come configured with a USB port for connection to a PC for downloading data.

DB9-D Previous models of the Fiber OWL 4, Micro OWL 2, and WaveTester series optical power meters used this RS-232 serial cable for connection to a PC for downloading stored data. The meter connection is a 1/8" phono plug, and the PC connection is a DB9 female serial connector.

Pricing		
USB-1	Replacement USB download cable	8.00
DB9-D	Duplex serial download cable	12.00

Power Transformers

Certain models of OWL test equipment come equipped with a charger port that can be used for continuous wall operation or for charging re-chargeable 9V batteries.

WS-9V-1.3 Fiber OWL 4 BOLT series power meters, and Dual OWL, Laser OWL, and WaveSource light sources

WS-9V-2.1 ZOOM 2, WaveTester and Micro OWL 2 series power meters

NOTE: using transformers while non-rechargeable batteries are in the unit may produce an unsafe condition, and may cause harm to the equipment or the user.

WS-9V-1.3

WS-9V-2.1

Pricing		
WS-9V-1.3	9v wall transformer (US only)-1.3mm	15.00
WS-9V-2.1	9v wall transformer (US only)-2.1mm	15.00

Description

With an unbeatable combination of a small pocket-sized form factor, a 2.8" high-resolution color LCD display, and some of the lowest pricing in the industry, OWLTrek multimode OTDRs are the wise choice for cost-conscious buyers who need to perform basic troubleshooting or restoration tasks on multimode optical fiber networks. All this from OTDRs that really are pocket-sized and fair priced, yet have comparable features and specifications to other OTDRs in their class.

Pricing

Model #:	Description	List Price[1]:	Sale Price[1]:
WTO-M85	OWLTrek 850	~~1995.00~~	1795.00
WTO-M13	OWLTrek 1300	~~1995.00~~	1795.00
WTO-M83	OWLTrek 850/1300	~~2995.00~~	2495.00

Applications

- Optical fault location in multimode fibers
- Loss measurement of reflective and backscatter events
- Link attenuation measurement
- Reflectance measurement of reflective events
- Optical fiber length measurement

Features

- 2.8" color LCD display automatically rotates based on orientation of OTDR (portrait vs. landscape)
- Live Mode allows users to expand OTDR display onto larger laptop screen
- Automatically locates events and places them in an internal event table
- Full horizontal and vertical pan/zoom function
- User-selectable parameters such as index of refraction, test mode, pulse width, and averaging
- Integrated user help screens
- SC/UPC connector port
- USB interface for downloading stored readings
- Integrated visual fault locator
- Re-chargeable Lithium Polymer battery allows for up to 20 hours of normal usage
- FREE OWLView for OTDR software prints OTDR trace reports and stored OTDR readings on hard disk for later retrieval

Optical Specifications			
Model #:	WTO-M85	WTO-M13	WTO-M83
Output Wavelength:	850nm	1300nm	850/1300nm
Fiber Type:	Multimode		
Dynamic Range (SNR=1)[2]:	23 dB	25 dB	23/25 dB
Event Dead Zone[3]:	2 meters (typical)		
Attenuation Dead Zone[4]:	7 meters (typical)		
Maximum Data Points:	64000		
Data Point Spacing:	1 meter		
Pulse Width:	1, 2, 5, 10, 20, 50, 100 meters		
Index of Refraction:	1.4000 to 1.600		
Distance Accuracy:	1 + (distance in meters/10000)		
Distance Range[5]:	20 kilometers		
Number of Stored Traces:	Maximum trace distance: up to 400 // Minimum trace distance: 3000+		

General Specifications	
Display Type:	High-resolution Color LCD
Display Size:	2.8" diagonal
Battery Type:	Lithium Polymer
Battery Life:	up to 20 hours normal usage
Dimensions:	2.87" x 4.42" x 1.25"
Weight:	10 ounces (284 g)
Visual Fault Locator Specifications	
Output Wavelength:	650nm
Output Power:	1 mW
Operating Mode:	CW / Flash

1: All price shown are in US Dollars (USD). List price is shown for US customers only. Prices outside the US may vary based on individual countries' import duties and taxes, currency conversion, and other value added charges.

2: Using maximum pulse width

3: Width measured 1.5dB down on each side of a reflective event using 1 meter pulse width

4: Distance from event beginning to within 0.5dB where backscatter resumes using 1 meter pulse width

5: Out to furthest reflective event

Factory located in the Heartland of America

OWLTrek Quad Kit OTDR

Multimode 850/1300 and singlemode 1310/1550

Optical Time Domain Reflectometer (OTDR)

PREMISE NETWORK TESTING

Small, pocket-sized OTDRs do same job as larger, more expensive OTDRs, for a fraction of the cost

Two Units are Better than One!

Most OTDR manufacturers tend to implement an inflexible approach by over-integrating four wavelengths into a single OTDR unit. OWL takes an innovative approach that very few OTDR manufacturers even consider – by including separate dual-wavelength multimode and singlemode OTDRs. There are two key disadvantages to using an over-integrated quad-wave OTDR. First, most installer firms need to have at least two crews working simultaneously to be profitable. Second, most fiber optic jobs rarely include both multimode and singlemode fibers. So, if one crew is installing multimode and another crew is installing singlemode, it makes sense to have separate multimode and singlemode OTDRs so one crew does not have to wait on the other to finish their job. And even with two separate units, the OWLTrek Quad Kit OTDR is still more cost-effective than other manufacturer's quad-wavelength OTDR options.

Optical Specifications				
Model #:	WTO-M83		WTO-S35	
Fiber Type:	Multimode		Singlemode	
Output Wavelength:	850 nm	1300 nm	1310 nm	1550 nm
Dynamic Range (SNR=1)[2]:	23 dB	25 dB	25 dB	23 dB
Event Dead Zone[3]:	2 meters (typical)			
Attenuation Dead Zone[4]:	7 meters (typical)			
Maximum Data Points:	64000			
Data Point Spacing:	1 meter		Up to 64 km: 1 meter / Over 64 km: 2 meters	
Pulse Width:	1, 2, 5, 10, 20, 50, 100 meters		1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 meters	
Index of Refraction:	1.4000 to 1.6000			
Distance Accuracy:	Up to 64km: 1 + (distance in meters/10000) / Over 64km: 2 + (distance in meters/10000)			
Distance Range[5]:	20 kilometers (12 miles)		128 kilometers (80 miles)	
Number of Stored Traces:	Maximum trace distance: up to 200 / Minimum trace distance: 3000+			

1: All price shown are in US Dollars (USD). List price is shown for US customers only. Prices outside the US may vary based on individual countries' import duties and taxes, currency conversion, and other value added charges.
2: Using maximum pulse width
3: Width measured 1.5dB down on each side of a reflective event using 1 meter pulse width
4: Distance from event beginning to within 0.5dB where backscatter resumes using 1 meter pulse width
5: Out to furthest reflective event

Pricing			
Model #:	Description	List Price[1]:	Sale Price[1]:
WTO-Q	OWLTrek Quad Kit OTDR	~~4495.00~~	4395.00

Applications

- Fault location in multimode and singlemode fibers
- Loss measurement of reflective and backscatter events
- Link attenuation measurement
- Reflectance measurement of reflective events
- Optical fiber length measurement

Features

- 2.8" color LCD display automatically rotates based on orientation of OTDR (portrait vs. landscape)
- Live Mode allows users to expand OTDR display onto larger laptop screen
- Automatically locates events and places them in an internal event table
- Full horizontal and vertical pan/zoom function
- User-selectable parameters such as index of refraction, test mode, pulse width, and averaging
- Integrated user help screens
- SC/UPC connector port
- USB interface for downloading stored readings
- Integrated visual fault locator
- Re-chargeable Lithium Polymer battery allows for up to 20 hours of normal usage
- FREE OWLView for OTDR software prints OTDR trace reports and stored OTDR readings on hard disk for later retrieval

General Specifications	
Display Type:	High-resolution Color LCD
Display Size:	2.8" diagonal
Battery Type:	Lithium Polymer
Battery Life:	up to 20 hours normal usage
Dimensions:	2.87" x 4.42" x 1.25"
Weight:	10 ounces (284 g)
Visual Fault Locator Specifications	
Output Wavelength:	650nm
Output Power:	1 mW
Operating Mode:	CW / Flash

Factory located in the Heartland of America

ATTENTION: Multimode OTDRs require a pulse suppressor (dead-zone) box!

OPTICAL POWER METER FEATURE LIST

POWER METER SERIES	STANDARD FEATURES													OPTIONAL FEATURES		
	POWER AND LOSS MEASUREMENT	ZERO REFERENCE	MULTIMODE	SINGLEMODE	DATA STORAGE	IN-FIELD LINK CERTIFICATION	CERTIFICATION REPORTS	AUTO λ DETECTION	OPTICAL RETURN LOSS MEASUREMENT (ORL)	BATTERY CHARGER *	REMOTE MONITORING (DATA LOGGING)	DYNAMIC RANGE (dB)	MAXIMUM CALIBRATED WAVELENGTHS	FIBER LINK LENGTH MEASUREMENT *	BI-DIRECTIONAL TESTING	INTEGRATED VISUAL FAULT LOCATOR (VFL) *
INSTALLER SERIES	●	●	●	●	●	●	●	●		●	●	75	8			●
FIBER OWL 4	●	●	●	●	●	●	●	●		●	●	75	8	●	●	●
MICRO OWL 2	●	●	●	●	●	●	●	●		●	●	75	8			●
WAVETESTER	●	●	●	●	●		●	●		●	●	65	8			●
ZOOM 2	●	●	●	●				●		●		65	4			●

10-Gig
10-Gigabit Ethernet Ready

*** NOTE**

Integrated VFL option replaces length testing in the Fiber OWL 4, and the charger port in the Micro OWL 2, WaveTester, and ZOOM 2.

To determine which test kit best fits your application, use the following questionnaire as a guide:

The light source(s) included in every fiber optic test kit determine which type of fiber can be tested. Bear in mind that multimode light sources cannot be used for testing singlemode fibers, and that singlemode laser sources cannot be used to test multimode fibers.

QUESTION 1 **Do you need to test multimode, singlemode, or both multimode and singlemode fibers?**

Choose one of the options below:

MULTIMODE ONLY

SINGLEMODE ONLY

BOTH MULTIMODE AND SINGLEMODE

Installers and contractors are typically required to provide official documentation to their customers, proving that the optical fibers were installed according to industry standards and/or customer requirements.

For end-users, on the other hand, printing test reports may not be necessary.

QUESTION 2 **Do you need to print certification reports?**

NO; do not need to print test results **ZOOM 2 test kits – p. 27**

YES; need to print test results **Continue to next question**

Some OWL test kits are capable of immediately displaying industry-standard "PASS/FAIL" test results right in the field, thereby speeding up the testing process.

Other lower-cost OWL test kits can produce certification test results after the stored readings are downloaded to a PC or laptop.

QUESTION 3 **Do you need the test kit to show you "PASS / FAIL" right in the field, or would you rather use a laptop or PC to determine test results?**

NO; do not need to see PASS/FAIL in the field **WaveTester test kits – p. 25**

YES; need to see PASS/FAIL in the field **Continue to next question**

Many popular fiber optic cabling standards require end-to-end length of optical fiber links, for the purpose of determining standards-based optical loss budgets.

If the fiber length is unknown, it will need to be measured by the test equipment.

QUESTION 4 **Do you need to measure the end-to-end length of the fiber links you are testing?**

NO; do not need to measure the cable length **Installer Series test kits – p. 19; or Micro OWL 2 test kits– p. 23**

YES; need to measure the cable length **Fiber OWL 4 BOLT test kits – p. 21**

Optical Loss Test Kits

PREMISE NETWORK TESTING

Sooner or later, installer/contractor jobs will require certification report testing!

Applications

- Full-featured fiber link certification
- Optical loss (attenuation) measurement
- Patch cord verification

Features

- Multimode and singlemode ready
- User-friendly Link Wizard
- PASS / FAIL in the field
- Simultaneous dual-wavelength measurements
- Prints official certification reports
- NIST Traceable

Factory located in the Heartland of America

Pricing

Model[1]	Power Meter	Light Source[1]	Multimode	Singlemode	Auto Test[2]	Length[3]	Integrated VFL[4]	Price[5]
IS-KIT-Q	MO-2	WS-MDSDxx	850nm 1300nm	1310nm 1550nm	●	—	—	1640.00
IS-KIT-M	MO-2	WS-MDVxx	850nm 1300nm	—	●	—	—	790.00

Wouldn't it make more sense to spend less for a test kit with superior specifications AND fiber certification report printing?

That's what you get with OWL Installer Series test kits.

The real value of OWL Installer Series test kits is the ability to certify fiber links, a feature no fiber cable installer should go without. Not only are customers increasingly demanding printed certification reports for their fiber installations, certification reports are also proof of an installer's job well done in case of disputes. Key advantages of OWL Installer Series test kits:

AFFORDABILITY. Who can afford to spend a few extra dollars, especially in this economy?
SUPERIOR SPECIFICATIONS. Better accuracy, wider measurement range, and more wavelength options mean better value.
CABLING STANDARDS BUILT IN. No matter what current cabling standard your customer requests, you can test it.
PASS/FAIL RESULTS IN THE FIELD. No more guesswork or wondering if the link is "good or not".
DATA STORAGE/PRINTED TEST RESULTS. A requirement for most fiber optic installations, and is especially important when applying for cabling manufacturer warranties.
Across the board, the OWL Installer Series meets or beats the competition where it counts.

It is easy to see why OWL is the WISE choice for installers everywhere!

Stand-alone Optical Power Meter

PREMISE NETWORK TESTING

See inside back cover for important information about certification testing!

10-Gig
10-Gigabit Ethernet Ready

Pricing		
FO-4B	Fiber OWL 4 BOLT optical power meter	895.00
U2.5-4	Replacement 2.5mm universal adapter	35.00
U1.25-4	Replacement 1.25mm universal adapter	35.00

Applications

- Optical power measurement
- Optical loss (attenuation) measurement *
- Patch cord verification *
- Full-featured fiber link certification *
- Fiber optic link length measurement
- FTTx link loss verification *

Description

The Fiber OWL 4 BOLT is a highly accurate hand-held optical power meter, capable of performing a wide range of functions from simple optical power and loss measurements to full-featured standards-based link certification. Its integrated length tester is used for accurate optical length measurement of a fiber link, which is an important factor when performing link certification. When used with OWL WaveSource fiber optic light sources, the Fiber OWL 4 BOLT provides fiber optic professionals with automatic wavelength switching so that the power meter and light source are always set to the same wavelength, and automatic dual-wavelength storage cuts down on testing time and human error. Up to 1000 fiber runs can be stored in memory which can be downloaded to a PC using FREE OWL Reporter software via the supplied download cable. A 2.5mm universal and 1.25mm universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, MU, and other SFF.

Features

- InGaAs photodetector
- Multimode and singlemode ready
- Universal detector port supports 2.5mm and 1.25mm connectors
- Integrated optical length tester
- Dual-operating mode: Simple & Certification
- User-friendly Link Wizard *
- Set reference ("zeroing") function *
- Shows PASS/FAIL readings *
- Display absolute and relative power measurements in dBm, dB, and W
- Backlit graphics LCD
- Up to 100 hours battery life (9V)
- USB interface for downloading stored readings
- FREE OWL Reporter software
- NIST Traceable

* requires additional light source

Key Specifications	
Detector Type	InGaAs
Calibrated Wavelengths[1]	**850**, 980, **1300**, **1310**, 1490, **1550**, 1625
Measurement Range	+5 to -70 dBm
Accuracy	±0.15 dB
Display Resolution	0.01 dB
Battery Life	Up to 100 hours (9V)
Connector Type	2.5mm/1.25mm universal
Data Storage	Up to 1000 data points
Displayed Measurement Units	dBm, dB, mW, μW, nW
Modes of Operation	Simple, Certification
Length Measurement Range	up to 25 km
Length Measurement Accuracy	±2.5 m
Display Type	Backlit graphical LCD
Auto-shutdown	Yes
Operating Temperature	-10 to 55° C
Storage Temperature	-30 to 70° C
Dimensions	3.48 x 6.48 x 1.1 inches (88.39 x 164.59 x 27.94 mm)
Weight	12 oz. (373g)

1: Bold wavelengths are NIST Traceable

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

Factory located in the Heartland of America

Fiber Optic Link Certification Test Kits

PREMISE NETWORK TESTING

Sooner or later, installer/contractor jobs will require certification report testing!

Pricing

Model[1]	Power Meter	Light Source[1]	Multimode	Singlemode	Auto Test[2]	Length	Integrated VFL[3]	Price[4]
KIT-FO4B-WSMDxx	FO-4B	WS-MDxx	850nm 1300nm	—	●	●	—	1085.00
KIT-FO4B-WSMDVxx	FO-4B	WS-MDVxx	850nm 1300nm	—	●	●	●	1285.00
KIT-FO4B-WSSDxx	FO-4B	WS-SDxx	—	1310nm 1550nm	●	●	—	1495.00
KIT-FO4B-WSVSDxx	FO-4B	WS-VSDxx	—	1310nm 1550nm	●	●	●	1695.00
KIT-FO4B-WSMDSDxx	FO-4B	WS-MDSDxx	850nm 1300nm	1310nm 1550nm	●	●	—	1880.00
KIT-FO4B-D285xx	FO-4B	DO2-85xx	850nm	—	—	●	—	858.00
KIT-FO4B-D2xx	FO-4B	DO2xx	850nm 1300nm	—	—	●	—	1085.00
KIT-FO4B-L213xx	FO-4B	LO2-13xx	—	1310nm	—	●	—	1095.00
KIT-FO4B-L2xx	FO-4B	LO2xx	—	1310nm 1550nm	—	●	—	1420.00
KIT-FO4B-D285xx-L213xx	FO-4B	DO2-85xx	850nm	—	—	●	—	1253.00
		LO2-13xx	—	1310nm				
KIT-FO4B-D2xx-L2xx	FO-4B	DO2xx	850nm 1300nm	—	—	●	—	1805.00
		LO2xx	—	1310nm 1550nm				

1 xx : specify ST or SC depending upon preferred light source connector type.
2 Auto-testing allows users to measure two wavelengths simultaneously.
3 Light source includes integrated visual fault locator (VFL) port. VFLs can also be purchased separately. Contact OWL for more information.
4 Price shown in US Dollars (USD).

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

Applications

- Full-featured fiber link certification
- Optical loss (attenuation) measurement
- Patch cord verification
- Fiber optic link length measurement

Features

- Multimode and singlemode ready
- User-friendly Link Wizard
- PASS / FAIL in the field
- Simultaneous dual-wavelength measurements
- Prints official certification reports
- NIST Traceable

Factory located in the Heartland of America

No professional fiber cable installer can afford to go without certification testing capability. Without it, installers/contractors will not be able to submit bids for important government and corporate fiber jobs, and spreadsheets or hand-written results are not acceptable for cabling system warranties because there is no assurance that the report is genuine or has not been tampered with. Not only are customers increasingly demanding printed certification reports for their fiber installations, signed certification reports are also proof of an installer's job well done in case of the quality of their work is being disputed. Fiber OWL 4 BOLT Series test kits are ideal for the fiber optic professional who requires standards-based certification of multimode and/or singlemode fiber links, including TIA-568, ISO 11801, and Ethernet. OWL's user-friendly Link Wizard walks the user through the key parameters of the link under test – cabling standard, fiber type, fiber length, patch panels, splices, etc., and sets a reference for up to two wavelengths according to the chosen cabling standard. Once the certification parameters have been entered, the Fiber OWL 4 BOLT will show PASS/FAIL results right in the field. No more guesswork or wondering if the link is "good or not". When used with WaveSource series fiber optic light sources, measurements for two wavelengths can be taken simultaneously, cutting testing time nearly in half. Up to 1000 certification test results can be internally stored in the Fiber OWL 4 BOLT, which can then be later downloaded to a PC running OWL Reporter software, where they can be printed or stored on hard disk for later retrieval.

Stand-alone Optical Power Meter

PREMISE NETWORK TESTING

See inside back cover for important information about certification testing!

10-Gig
10-Gigabit Ethernet Ready

Pricing		
MO-2	Micro OWL 2 optical power meter	645.00
MO-2V†	Micro OWL 2 VFL optical power meter	845.00
U2.5-4	Replacement 2.5mm universal adapter	35.00
U1.25-4	Replacement 1.25mm universal adapter	35.00

Applications

- Optical power measurement
- Optical loss (attenuation) measurement *
- Patch cord verification *
- Full-featured fiber link certification *
- FTTx link loss verification *

Features

- InGaAs photodetector
- Multimode and singlemode ready
- Universal detector port supports 2.5mm and 1.25mm connectors
- Dual-operating mode: Simple & Certification
- User-friendly Link Wizard *
- Set reference ("zeroing") function *
- Shows PASS/FAIL readings *
- Display absolute and relative power measurements in dBm, dB, and W
- Backlit graphics LCD
- Up to 100 hours battery life (9V)
- USB interface for downloading stored readings
- FREE OWL Reporter software
- NIST Traceable
- Optional integrated visual fault locator (VFL) port

† includes integrated visual fault locator (VFL) port
* requires additional light source

Description

The Micro OWL 2 is a highly accurate hand-held optical power meter, capable of performing a wide range of functions from simple optical power and loss measurements to full-featured standards-based link certification. When used with OWL WaveSource fiber optic light sources, the Micro OWL 2 provides fiber optic professionals with automatic wavelength switching so that the power meter and light source are always set to the same wavelength, and automatic dual-wavelength storage cuts down on testing time and human error. Up to 1000 fiber runs can be stored in memory which can be downloaded to a PC using FREE OWL Reporter software via the supplied download cable. A 2.5mm universal and 1.25mm universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, MU, and other SFF. As an option, a visual fault locator (VFL) can be integrated into the Micro OWL 2. VFLs are useful for locating faults behind patch panels, and for identifying optical ports at the far end of a fiber link.

Key Specifications	
Detector Type	InGaAs
Calibrated Wavelengths[1]	**850**, 980, **1300**, **1310**, 1490, **1550**, 1625
Measurement Range	+5 to -70 dBm
Accuracy	±0.15 dB
Display Resolution	0.01 dB
Battery Life	Up to 100 hours (9V)
Connector Type	2.5mm/1.25mm universal
Data Storage	Up to 1000 data points
Displayed Measurement Units	dBm, dB, mW, µW, nW
Modes of Operation	Simple, Certification
Display Type	Backlit graphical LCD
Auto-shutdown	Yes
Operating Temperature	-10 to 55° C
Storage Temperature	-30 to 70° C
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)
Weight	10 oz. (284g)

1: Bold wavelengths are NIST Traceable

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

Factory located in the Heartland of America

Fiber Optic Link Certification Test Kits

PREMISE NETWORK TESTING

Sooner or later, installer/contractor jobs will require certification report testing!

Pricing

Model[1]	Power Meter	Light Source[1]	Multimode	Singlemode	Auto Test[2]	Length[3]	Integrated VFL[4]	Price[5]
KIT-M2-WSMDxx	MO-2	WS-MDxx	850nm 1300nm	—	●	—	—	935.00
KIT-M2-WSMDVxx	MO-2	WS-MDVxx	850nm 1300nm	—	●	—	●	1135.00
KIT-M2-WSSDxx	MO-2	WS-SDxx	—	1310nm 1550nm	●	—	—	1345.00
KIT-M2-WSVSDxx	MO-2	WS-VSDxx	—	1310nm 1550nm	●	—	●	1545.00
KIT-M2-WSMDSDxx	MO-2	WS-MDSDxx	850nm 1300nm	1310nm 1550nm	●	—	—	1730.00
KIT-M2-D285xx	MO-2	DO2-85xx	850nm	—	—	—	—	708.00
KIT-M2-D2xx	MO-2	DO2xx	850nm 1300nm	—	—	—	—	935.00
KIT-M2-L213xx	MO-2	LO2-13xx	—	1310nm	—	—	—	945.00
KIT-M2-L2xx	MO-2	LO2xx	—	1310nm 1550nm	—	—	—	1270.00
KIT-M2-D285xx-L213xx	MO-2	DO2-85xx	850nm	—	—	—	—	1103.00
		LO2-13xx	—	1310nm				
KIT-M2-D2xx-L2xx	MO-2	DO2xx	850nm 1300nm	—	—	—	—	1655.00
		LO2xx	—	1310nm 1550nm				

1 xx : specify ST or SC depending upon preferred light source connector type.
2 Auto-testing allows users to measure two wavelengths simultaneously.
3 Stand-alone optical length testers can be purchased separately. Contact OWL for more information.
4 Light source includes integrated visual fault locator (VFL) port. VFLs can also be integrated into the Micro OWL 2 optical power meter, or purchased as a separate unit. Contact OWL for more information.
5 Price shown in US Dollars (USD).

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

Applications

- Full-featured fiber link certification
- Optical loss (attenuation) measurement
- Patch cord verification

Features

- Multimode and singlemode ready
- User-friendly Link Wizard
- PASS / FAIL in the field
- Simultaneous dual-wavelength measurements
- Prints official certification reports
- NIST Traceable

Factory located in the Heartland of America

No professional fiber cable installer can afford to go without certification testing capability. Without it, installers/contractors will not be able to submit bids for important government and corporate fiber jobs, and spreadsheets or hand-written results are not acceptable for cabling system warranties because there is no assurance that the report is genuine or has not been tampered with. Not only are customers increasingly demanding printed certification reports for their fiber installations, signed certification reports are also proof of an installer's job well done in case of the quality of their work is being disputed. Micro OWL 2 Series test kits are ideal for the fiber optic professional who requires standards-based certification of multimode and/or singlemode fiber links, including TIA-568, ISO 11801, and Ethernet. OWL's user-friendly Link Wizard walks the user through the key parameters of the link under test – cabling standard, fiber type, fiber length, patch panels, splices, etc., and sets a reference for up to two wavelengths according to the chosen cabling standard. Once the certification parameters have been entered, the Micro OWL 2 will show PASS/FAIL results right in the field. No more guesswork or wondering if the link is "good or not". When used with WaveSource series fiber optic light sources, measurements for two wavelengths can be taken simultaneously, cutting testing time nearly in half. Up to 1000 certification test results can be internally stored in the Micro OWL 2, which can then be later downloaded to a PC running OWL Reporter software, where they can be printed or stored on hard disk for later retrieval.

Stand-alone Optical Power Meter

PREMISE NETWORK TESTING

See inside back cover for important information about certification testing!

10-Gig
10-Gigabit Ethernet Ready

Pricing		
WT-1	WaveTester optical power meter	450.00
WT-1V†	WaveTester VFL optical power meter	650.00
U2.5-4	Replacement 2.5mm universal adapter	35.00
U1.25-4	Replacement 1.25mm universal adapter	35.00

Applications

- Optical power measurement
- Optical loss (attenuation) measurement *
- Patch cord verification *
- Full-featured fiber link certification *
- FTTx link loss verification *

Description

The WaveTester is a highly accurate hand-held optical power meter, capable of performing a wide range of functions from simple optical power and loss measurements to full-featured standards-based link certification. When used with OWL WaveSource fiber optic light sources, the WaveTester provides fiber optic professionals with automatic wavelength switching so that the power meter and light source are always set to the same wavelength, and automatic dual-wavelength storage cuts down on testing time and human error. Up to 200 fiber runs can be stored in memory which can be downloaded to a PC using FREE OWL Reporter software via the supplied download cable. A 2.5mm universal and 1.25mm universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, MU, and other SFF. As an option, a visual fault locator (VFL) can be integrated into the WaveTester. VFLs are useful for locating faults behind patch panels, and for identifying optical ports at the far end of a fiber link.

Features

- InGaAs photodetector
- Multimode and singlemode ready
- Universal detector port supports 2.5mm and 1.25mm connectors
- Set reference ("zeroing") function *
- Display absolute and relative power measurements in dBm, dB, and W
- Backlit LCD
- Over 250 hours battery life (9V)
- USB interface for downloading stored readings
- FREE OWL Reporter software
- NIST Traceable
- Optional integrated visual fault locator (VFL) port

† includes integrated visual fault locator (VFL) port
* requires additional light source

Key Specifications	
Detector Type	InGaAs
Calibrated Wavelengths[1]	**850**, **1300**, **1310**, 1490, **1550**
Measurement Range	+5 to -60 dBm
Accuracy	±0.15 dB
Display Resolution	0.01 dB
Battery Life	Up to 250 hours (9V)
Connector Type	2.5mm/1.25mm universal
Data Storage	Up to 200 data points
Displayed Measurement Units	dBm, dB, mW, μW
Display Type	Backlit LCD
Auto-shutdown	Yes
Operating Temperature	-10 to 55° C
Storage Temperature	-30 to 70° C
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)
Weight	10 oz. (284g)

1: Bold wavelengths are NIST Traceable

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

Factory located in the Heartland of America

Sooner or later, installer/contractor jobs will require certification report testing!

Pricing

Model[1]	Power Meter	Light Source[1]	Multimode	Singlemode	Auto Test[2]	Length[3]	Integrated VFL[4]	Price[5]
KIT-WT-WSMDxx	WT-1	WS-MDxx	850nm 1300nm	—	●	—	—	785.00
KIT-WT-WSMDVxx	WT-1	WS-MDVxx	850nm 1300nm	—	●	—	●	985.00
KIT-WT-WSSDxx	WT-1	WS-SDxx	—	1310nm 1550nm	●	—	—	1195.00
KIT-WT-WSVSDxx	WT-1	WS-VSDxx	—	1310nm 1550nm	●	—	●	1395.00
KIT-WT-WSMDSDxx	WT-1	WS-MDSDxx	850nm 1300nm	1310nm 1550nm	●	—	—	1580.00
KIT-WT-D285xx	WT-1	DO2-85xx	850nm	—	—	—	—	558.00
KIT-WT-D2xx	WT-1	DO2xx	850nm 1300nm	—	—	—	—	785.00
KIT-WT-L213xx	WT-1	LO2-13xx	—	1310nm	—	—	—	795.00
KIT-WT-L2xx	WT-1	LO2xx	—	1310nm 1550nm	—	—	—	1120.00
KIT-WT-D285xx-L213xx	WT-1	DO2-85xx	850nm	—	—	—	—	953.00
		LO2-13xx	—	1310nm				
KIT-WT-D2xx-L2xx	WT-1	DO2xx	850nm 1300nm	—	—	—	—	1505.00
		LO2xx	—	1310nm 1550nm				

1 xx : specify ST or SC depending upon preferred light source connector type.
2 Auto-testing allows users to measure two wavelengths simultaneously.
3 Stand-alone optical length testers can be purchased separately. Contact OWL for more information.
4 Light source includes integrated visual fault locator (VFL) port. VFLs can also be integrated into the WaveTester optical power meter, or purchased as a separate unit. Contact OWL for more information.
5 Price shown in US Dollars (USD).

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

Applications

- Full-featured fiber link certification
- Optical loss (attenuation) measurement
- Patch cord verification

Features

- Multimode and singlemode ready
- Simultaneous dual-wavelength measurements
- User-friendly Link Wizard
- Prints official certification reports
- NIST Traceable

Factory located in the Heartland of America

Description

No professional fiber cable installer can afford to go without certification testing capability. Without it, installers/contractors will not be able to submit bids for important government and corporate fiber jobs, and spreadsheets or hand-written results are not acceptable for cabling system warranties because there is no assurance that the report is genuine or has not been tampered with. Not only are customers increasingly demanding printed certification reports for their fiber installations, signed certification reports are also proof of an installer's job well done in case of the quality of their work is being disputed. WaveTester Series test kits are ideal for the fiber optic professional who requires standards-based certification of multimode and/or singlemode fiber links, including TIA-568, ISO 11801, and Ethernet. When used with WaveSource series fiber optic light sources, the WaveTester's Auto-testing feature allows user to test two wavelengths simultaneously, cutting testing time nearly in half. Up to 200 test results can be internally stored in the WaveTester, which can then be later downloaded to a PC running OWL Reporter software using the supplied USB cable. OWL's user-friendly Link Wizard walks the user through the key parameters of the link under test – cabling standard, fiber type, fiber length, patch panels, splices, etc. – indicating a PASS or FAIL test result. Certification reports can then be printed, and data can be stored on hard disk for later retrieval.

Stand-alone Optical Power Meter

PREMISE NETWORK TESTING

Pricing		
ZO-2	ZOOM 2 optical power meter	289.00
ZO-2V†	ZOOM 2 VFL optical power meter	489.00
U2.5-4	Replacement 2.5mm universal adapter	35.00
U1.25-4	Replacement 1.25mm universal adapter	35.00

Applications

- Optical power measurement
- Optical loss (attenuation) measurement*
- Patch cord verification*
- FTTx link loss verification*

Description

The ZOOM 2 is a highly accurate hand-held optical power meter, capable of measuring optical power and optical loss in a wide range of test environments, including LAN, MAN, WAN, Telco, CATV, Manufacturing, and Laboratory. A 2.5mm universal and 1.25mm universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, MU, and other SFF. The ZOOM 2 is enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its easy-to-read 4-digit LCD display shows optical power in dBm and dB, selected wavelength, and battery power, and it has an intuitive 2-button interface for controlling power ON/OFF and wavelength selection. As an option, a visual fault locator (VFL) can be integrated into the ZOOM 2. VFLs are useful for locating faults behind patch panels, and for identifying optical ports at the far end of a fiber link.

Features

- InGaAs photodetector
- Multimode and singlemode ready
- Universal detector port supports 2.5mm and 1.25mm connectors
- Set reference ("zeroing") function*
- Display absolute and relative power measurements in dBm, dB, and W
- Over 250 hours battery life (9V)
- NIST Traceable
- Optional integrated visual fault locator (VFL) port

† includes integrated visual fault locator (VFL) port
* requires additional light source

Key Specifications	
Detector Type	InGaAs
Calibrated Wavelengths[1]	**850**, **1300**, **1310**, 1490, **1550**
Measurement Range	+5 to -60 dBm
Accuracy	±0.15 dB
Display Resolution	0.01 dB
Battery Life	Up to 250 hours (9V)
Connector Type	2.5mm/1.25mm universal
Displayed Measurement Units	dBm, dB, mW, μW
Display Type	LCD
Auto-shutdown	Yes
Operating Temperature	-10 to 55° C
Storage Temperature	-30 to 70° C
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)
Weight	10 oz. (284g)

1: Bold wavelengths are NIST Traceable

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

Factory located in the Heartland of America

Optical Loss Test Kit

PREMISE NETWORK TESTING

Pricing								
Model[1]	Power Meter	Light Source[1]	Multimode	Singlemode	Auto Test[2]	Length[3]	Integrated VFL[4]	Price[5]
KIT-Z2-D285xx	ZO-2	DO2-85xx	850nm	—	—	—	—	408.00
KIT-Z2-D2xx	ZO-2	DO2xx	850nm 1300nm	—	—	—	—	635.00
KIT-Z2-L213xx	ZO-2	LO2-13xx	—	1310nm	—	—	—	645.00
KIT-Z2-L2xx	ZO-2	LO2xx	—	1310nm 1550nm	—	—	—	970.00
KIT-Z2-D285xx-L213xx	ZO-2	DO2-85xx	850nm	—	—	—	—	803.00
		LO2-13xx	—	1310nm				
KIT-Z2-D2xx-L2xx	ZO-2	DO2xx	850nm 1300nm	—	—	—	—	1355.00
		LO2xx	—	1310nm 1550nm				
KIT-Z2S-D285xx	ZO-2S[6]	DO2-85xx	850nm	—	—	—	—	348.00

1 xx : specify ST or SC depending upon preferred light source connector type.
2 Auto-testing allows users to measure two wavelengths simultaneously.
3 Stand-alone optical length testers can be purchased separately. Contact OWL for more information.
4 Light source includes integrated visual fault locator (VFL) port. VFLs can also be integrated into ZOOM 2 Series optical power meters, or purchased as a separate unit. Contact OWL for more information.
5 Price shown in US Dollars (USD).
6 ZO-2S optical power meters are calibrated at 650, 850, and 980nm.

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

Applications

- Optical loss (attenuation) measurement
- FTTx link verification
- Patch cord verification

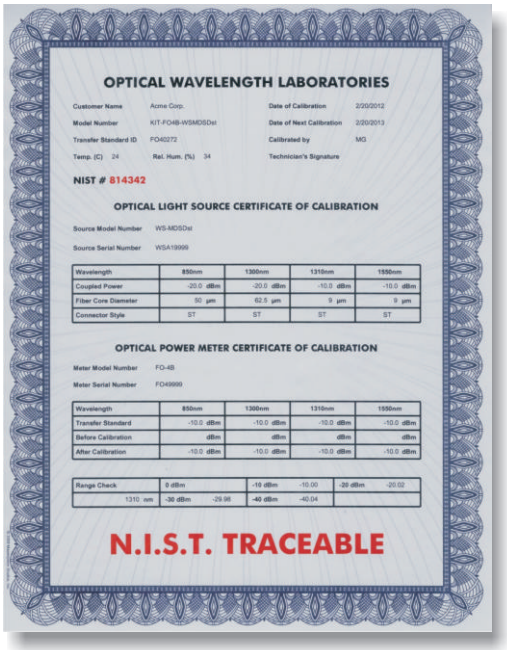
Features

- Economical option for quick attenuation (loss) measurement of multimode and/or singlemode networks
- Easy-to-read 4-digit 7-segment LCD display
- Stores reference values for all calibrated wavelengths
- Intuitive 2-button interface
- On-screen wavelength, measurement units, and low battery indicator
- NIST Traceable

Factory located in the Heartland of America

Description

ZOOM 2 Series test kits are ideal for fiber optic professionals who require quick and easy optical power and loss measurements of multimode and/or singlemode networks. The easy-to-read LCD display shows optical power/loss measurements in dBm, dB, mW, and uW, as well as selected wavelength and battery indicator. The intuitive 2-button interface on both units allow for easy wavelength selection and setting of optical references (or "zeroing"). References can be set for all calibrated wavelengths.



Pricing

Model[1]	Port 1[2]	Port 2[3]	List Price[4]
WS-MDxx	Multimode 850 / 1300nm	—	385.00
WS-MDVxx	Multimode 850 / 1300nm	VFL	585.00
WS-SDxx	—	Singlemode 1310 / 1550nm	1085.00
WS-VSDxx	VFL	Singlemode 1310 / 1550nm	1285.00
WS-MDSDxx	Multimode 850 / 1300nm	Singlemode 1310 / 1550nm	1470.00

1 **xx**: specify ST, SC, or FC connector type
2 Light source type contained in the left-hand port
3 Light source type contained in the right-hand port
4 Prices shown in US Dollars (USD)

Description

WaveSource series fiber optic light sources offer the fiber optic professional a wide range of options for their testing needs. Several combinations are available: multimode only, singlemode only, or both multimode and singlemode. Our quad-wavelength version (WS-MDSD) has all four wavelengths (850, 1300, 1310, 1550) in one unit! Visual Fault Locators (VFL) can also be added to multimode only and singlemode only versions. VFLs can be used in both multimode and singlemode fibers. All versions of the WaveSource have two transmission modes: Continuous Wave (CW) for accurate temperature-stabilized fiber optic tests; and modulated mode. Modulated mode provides for an auto-testing function when used with the Fiber OWL 4, Micro OWL 2, or WaveTester optical power meters. The modulated signal from the WaveSource tells the power meter to switch to the currently selected wavelength, which eliminates much of the guesswork during tests, and saves valuable time. WaveSource series light sources provide high output and stability at an economical price. The sources provide temperature-compensated outputs, and have an intuitive 4-button interface with controls for power, transmission mode, wavelength, and auto-test mode. LED indicators highlight the selected source and verify that battery power is sufficient to maintain the calibrated output power. WaveSource light sources come configured with your choice of SC, ST, or FC connector ports, as well as a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

Applications

- Optical loss measurement
- Fiber optic link certification
- Visual fault location / Visual fiber identification (requires VFL option)

Features

- Temperature stabilized outputs
- Multimode, Singlemode, and VFL options
- Two wavelengths in a single port
- Intuitive 4-button interface
- ST, SC, or FC connector options
- Continuous Wave (CW) and modulated output

IEC 60825

Laser source (1310/1550nm):
Class 1 Laser Output
Visual Fault Locator (635~650nm):
Class 2 Laser Output
Do NOT stare into beam.

Key Specifications

Output Type	Multimode	Singlemode	Visual Fault Locator (VFL)
Launch Method	LED	FP Laser	Red Laser
Center Wavelength	**850 nm:** 850 +30 / -10 nm **1300 nm:** ± 50 nm	**1310 nm:** 1310 ± 20 nm **1550 nm:** 1550 ± 30 nm	650nm
Spectral Width	**850 nm:** 50 nm **1300 nm:** 180 nm	**1310nm:** 2 nm **1550nm:** 2 nm	–
Output Power	-20 dBm	-10 dBm	~ 0 dBm
Output Modes	CW / Modulated	CW / Modulated	CW / Modulated
Initial Accuracy	± 0.1 dB	± 0.1 dB	–
Visual Range (VFL only)			3 miles (5 kilometers)
Battery Life	Up to 30 hours (9V)		fdas
Operating Temperature	0 to 55° C		
Storage Temperature	0 to 75° C		
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)		
Weight	10 oz. (284g)		

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

Factory located in the Heartland of America

Description

DUAL OWL SERIES MULTIMODE LIGHT SOURCES

Dual OWL Series fiber optic light sources offer fiber optic professionals a cost effective option for high quality multimode fiber testing in a compact, handheld package. The temperature compensated outputs are calibrated to couple -20dBm of optical power into multimode fiber. Light source options are offered with either 850nm or 1300nm, or both 850nm and 1300nm sources installed. The sources are simple to operate with an intuitive two-button interface controlling power and selecting the output wavelength. LED indicators highlight the selected source and verify that battery power is sufficient to maintain the calibrated output power. Dual OWL Series light sources come configured with your choice of SC or ST connector ports, as well as a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

LASER OWL SERIES SINGLEMODE LASER SOURCES

Laser OWL Series fiber optic light sources offer fiber optic professionals a cost-effective option for high quality singlemode fiber testing in a compact, handheld package. The temperature compensated outputs are calibrated to couple -10dBm into singlemode fibers. Light source options are offered with either 1310nm or 1550nm, or both 1310nm and 1550nm sources installed. The sources are simple to operate with an intuitive two-button interface controlling power and selecting the output wavelength. LED indicators highlight the selected source and verify that battery power is sufficient to maintain the calibrated output power. Laser OWL Series light sources come configured with your choice of SC, ST, or FC connector ports, as well as a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

Key Specifications		
Series	Dual OWL Series	Laser OWL Series
Fiber Type	Multimode	Singlemode
Launch Method	LED	FP Laser
Center Wavelength	**850 nm:** 850 ± 20 nm **1300 nm:** 1290 nm min; 1350 nm max	**1310 nm:** 1310 ± 30 nm **1550 nm:** 1550 ± 30 nm
Spectral Width	**850 nm:** 35 nm **1300 nm:** 170 nm	**1310nm:** 2 nm **1550nm:** 2 nm
Output Power	-20 dBm	-10 dBm
Initial Accuracy	0.1 dB	
Battery Life	up to 40 hours (9V)	up to 25 hours (9V)
Operating Temperature	0 to 55° C	
Storage Temperature	0 to 75° C	
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)	
Weight	10 oz. (284g)	

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

Pricing

Dual OWL Series Multimode Light Sources		
DO2-85st	Dual OWL 850 ST (850nm; ST connector)	158.00
DO2-85sc	Dual OWL 850 SC (850nm; SC connector)	184.00
DO2-13st	Dual OWL 1300 ST (1300nm; ST connector)	325.00
DO2-13sc	Dual OWL 1300 SC (1300nm; SC connector)	340.00
DO2st	Dual OWL ST (850/1300nm; ST connectors)	385.00
DO2sc	Dual OWL SC (850/1300nm; SC connectors)	385.00
Laser OWL Series Singlemode Laser Sources		
LO2-13xx	Laser OWL 1310 (1310nm; ST, SC, or FC)	395.00
LO2-15xx	Laser OWL 1550 (1550nm; ST, SC, or FC)	480.00
LO2xx	Laser OWL (1310/1550nm; ST, SC, or FC)	720.00

Applications

- Optical loss measurement
- Fiber optic link certification

Features

DUAL OWL SERIES

- Temperature-stabilized output
- Multimode LED source
- 850nm and/or 1300nm wavelength options
- ST or SC connector options
- Intuitive 2-button interface
- Battery power indicator LED
- NIST Traceable

LASER OWL SERIES

- Temperature-stabilized output
- Singlemode Laser source
- 1310nm and/or 1550nm wavelength options
- ST, SC, or FC connector options
- Intuitive 2-button interface
- Battery power indicator LED
- NIST Traceable

Factory located in the Heartland of America

Visual Fault Locator (VFL)

PREMISE NETWORK TESTING

Description

The PCVFL (precision-coupled visual fault locator) is a lightweight, hand-held fiber tester used to quickly troubleshoot faults in the near-end of both multimode and singlemode fibers, as well as for port identification and fiber continuity. The PCVFL holds its own against the best visual fault locators (VFL) in the industry. As with any quality VFL, the PCVFL uses a precision-coupled laser diode to inject a maximum amount of optical energy into an optical fiber. A multi-million dollar semiconductor machine is used in the manufacture of a special precision coupled micro sized ball lens, which focuses the high-intensity red laser at the optimum point of the optical fiber core. Since low-cost laser light pens do not use precision-coupling optics, their red lasers are not focused at the correct point, and thus produce sub-par results.

Pricing		
PCVFL-1	Precision-Coupled Visual Fault Locator	295.00

Applications

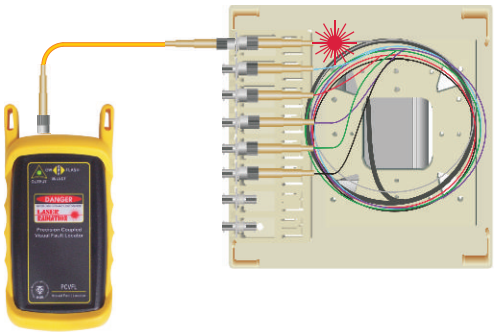
- Visual Fault Location
- Visual Fiber Identification

Features

- 650nm laser source
- Multimode / singlemode ready
- Continuous Wave (CW) and flashing output modes
- Visual range: up to 5 kilometers
- 15 hour battery life
- Low battery indicator
- 2.5mm universal connector port

Factory located in the Heartland of America

Visual Fault Location

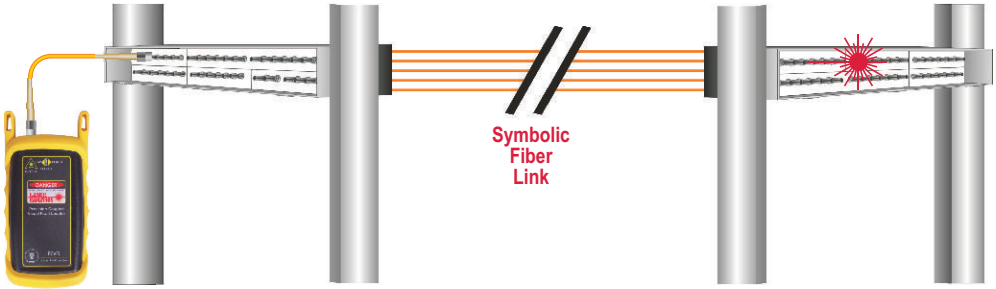


The PCVFL can be used as a troubleshooting tool to determine if there are breaks, micro-bends, or any other anomalies causing excessive loss within the first few feet of the fiber under test located in the splice tray. The laser diode in the PCVFL injects high-intensity red laser light into the near-end connector. If this light encounters any anomalies, such as a break or a micro-bend, the light is deflected into the fiber jacket, producing a red glow at the point of the anomaly. Some optical fiber jackets are colored so that it is difficult to see red light shining through, so it is recommended to keep the room light at a minimum when using the PCVFL for visual fault location.

Warning

Bright red visible laser radiation when power switch is set to the ON position – Avoid eye exposure to direct or scattered radiation

Port Identification



VFLs can help take the guesswork out of identifying ports in a fiber patch panel or checking polarity of a duplex connector. Connect the PCVFL to one end of a fiber link, and the high-intensity, precision-coupled red laser diode will allow the user to visually identify the port by the presence of a red glow emitting from the connector on the other end. The PCVFL allows for visual port identification of fiber optic links up to 5 kilometers (3.1 miles) away!

Optical Length Testers

PREMISE NETWORK TESTING

Pricing		
BOLT-NL	Beaming Optical Length Tester	575.00
VOLT-1	Visual Optical Length Tester	395.00

Applications

BOLT-NL

- Optical length measurement
- 2 kHz tone for use with Live Fiber Identifiers

VOLT-1

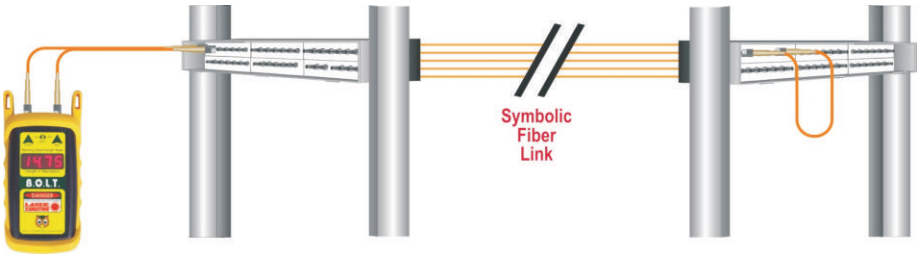
- Optical length measurement
- Visual Fault Locator (VFL)
- Visual Fiber Identification

APPLICATION NOTE: To avoid confusion, the BOLT-NL is NOT designed to measure distance to a fault like an OTDR.

The BOLT-NL is designed to measure the end-to-end length of a fiber cable. A pair of terminated fibers – looped back at the far end of the cable – are required for end-to-end fiber cable length measurement.

Description

OWL optical length testers offers a unique, low-cost alternative for users who need to measure the length of optical fibers. Fiber installations are increasingly required to have fiber length measurements to comply with bid requirements. Rather than purchasing a costly new certification test set, these items can be added to an installer's existing fiber test kit. OWL length testers use a "round-robin" method of measuring fiber length (see diagram below). The round trip time that the light takes to travel through both fibers is converted to length in kilometers, then divided by two to show the end-to-end length of the fiber cable. This method of length testing provides accurate measurements, and saves time and money, since there is no need to measure the length of all the fibers; the length measurement can be applied to all fibers in the cable.



Optical measurement of fiber links is especially useful when cable jacket markings are not visible, or when the fiber link runs through multiple interconnects, requiring each segment to be inspected for jacket markings. Optical measurement of fiber produces accurate results without the need for jacket markings or manual length measurement.

Features

BOLT-NL

- Measures the length of both multimode and singlemode fibers up to 25 kilometers
- ± 2.5 meter accuracy
- Generates a 2 kHz tone for use with fiber identifiers
- Easy-to-read red LED display
- 10 hours continuous use (9V)
- Low battery indicator

VOLT-1

- Measures the length of both multimode and singlemode fibers up to 1.5 kilometers
- ± 2.5 meter accuracy
- Red laser doubles as visual fault locator and visual fiber identifier
- Easy-to-read red LED display
- 10 hours continuous use (9V)
- Low battery indicator

Key Specifications		
Model	BOLT-NL	VOLT-1
Output Type	FP Laser	Red Laser
Output Wavelength	1310nm	650nm
Measurement Range	up to 25 kilometers	up to 1.5 kilometers
Fiber Type	Multimode / Singlemode	
Display Resolution	0.001 km	
Measurement Accuracy	± 2.5 meters	
Connector Type	ST	
Display Type	4-digit red LED	
Battery Life	Up to 10 hours (9V)	
Dimensions	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)	
Weight	10 oz. (284g)	
Additional Function	2 kHz tone for use with Live Fiber Identifiers	Visual fault location Visual fiber identification

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

Factory located in the Heartland of America

Fiber Optic Talk Sets

PREMISE NETWORK TESTING

Pricing		
HO-850	HOOTS 850 multimode talk set	490.00
HO-1300	HOOTS 1300 multimode talk set	900.00

Applications

- Full duplex voice communications using a pair of multimode optical fibers

Features

- Each talkset includes a pair of talkset units
- Offers secure communications that is immune to EMI/RFI
- Automatic volume control
- Wide receiver dynamic range
- Long battery life
- Signal level indicator
- Battery level indicator
- 850nm or 1300nm option
- ST connectors
- Headsets and headset adapters included
- Intuitive operation

Description

HOOTS stands for High Output Optical Talk Set. HOOTS Series fiber optic talk sets use our light source technology to convert your voice into optical signals and provide full-duplex communications using a pair of terminated optical fibers. These talk sets are a reliable alternative to wireless communications systems used within a premise environment due to their electromagnetic immunity. We designed the HOOTS Series to be economical in order to be sold as an alternative to walkie-talkies. Optionally, they can be embedded as a permanent part of a fiber network installation. Use them during the installation for end-to-end voice communications, then after installation leave them attached to a spare pair of optical fibers inside the fiber patch panel. This way, the HOOTS can be used by Information Technology (I.T.) personnel for communications whenever operations or management functions need to be done in the fiber cable closet. There are several advantages to using a fiber talk set versus walkie talkies. The first advantage is when I.T. personnel are setting up voice or data optical equipment, they may give away passwords and secret net addresses over un-secure walkie-talkie channels to a nearby neighborhood of listening ears! The second advantage is that everyone is buying these cheap walkie-talkies from the local discount stores. It's getting much more difficult to find free channels over the air waves. The third advantage is the noise and walls in many plants inhibit radio transmissions. Fiber communications is more secure and most of all, immune to the effects of EMI/RFI. Two models are available: HOOTS 850 and HOOTS 1300 for communicating over multimode fibers. Each set comes with a pair of headsets and headset adapters, hard-shell carrying case, protective rubber boots, carrying straps, 9-volt batteries, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

To calculate talkset distance: $D = R/A$

where: D = talkset distance
R = dynamic range (HOOTS = 20 dB)
A = typical fiber attenuation at specified λ

Example (λ = 1300nm, R = 20 dB, A = 1.0 dB/km):
D = 20 dB / (1.0 dB/km) = 20 km

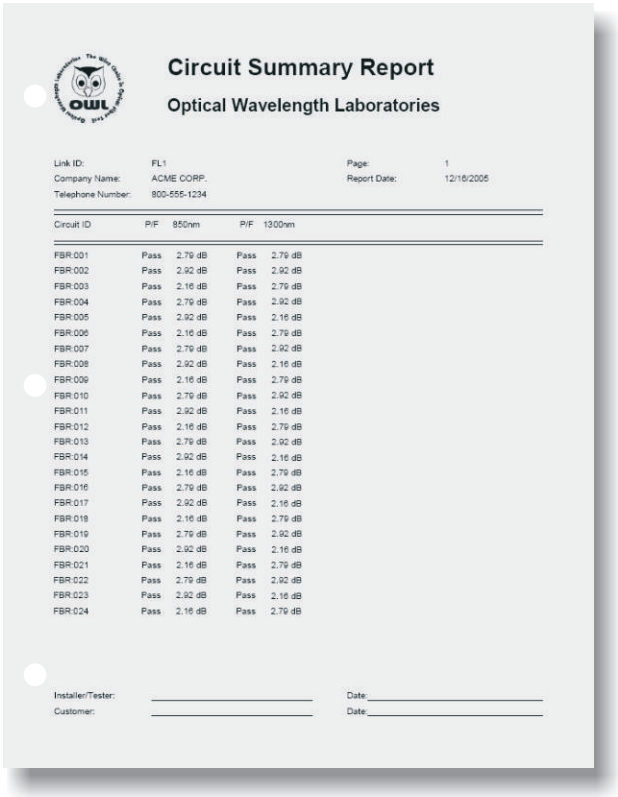
Key Specifications		
Model	HO-850	HO-1300
Fiber Type	Multimode	Multimode
Launch Method	LED	LED
Center Wavelength	850 + 30 / -10 nm	1300 ± 50 nm
Spectral Width	50 nm	180 nm
Output Power	-20 dBm	
Receiver Dynamic Range	20 dB (-20 to -40 dBm)	
Battery Life	up to 20 hours (9V)	
Operating Temperature	0 to 55° C	
Storage Temperature	0 to 75° C	
Dimensions (each unit)	2.75 x 4.94 x 1.28 inches (69.85 x 125.48 x 32.51 mm)	
Weight (full set)	32 oz. (907g)	

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

Factory located in the Heartland of America

See page 8 for singlemode talksets!

Advantages of Using a Fiber Optic Certification Test Kit



Circuit Summary Report

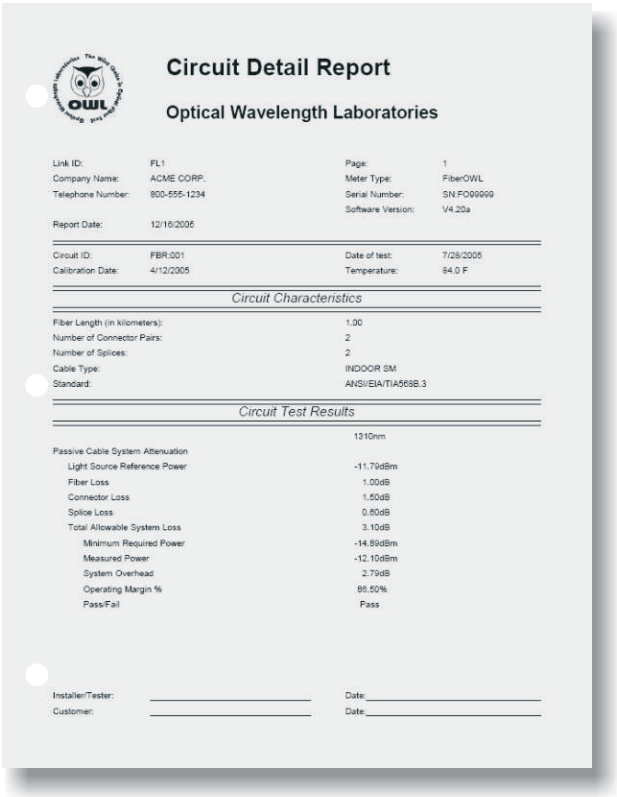
Optical Wavelength Laboratories

Link ID:	FL1	Page:	1
Company Name:	ACME CORP.	Report Date:	12/16/2005
Telephone Number:	800-555-1234		

Circuit ID	P/F	850nm	P/F	1300nm
FBR:001	Pass	2.79 dB	Pass	2.79 dB
FBR:002	Pass	2.92 dB	Pass	2.92 dB
FBR:003	Pass	2.16 dB	Pass	2.79 dB
FBR:004	Pass	2.79 dB	Pass	2.92 dB
FBR:005	Pass	2.92 dB	Pass	2.16 dB
FBR:006	Pass	2.16 dB	Pass	2.79 dB
FBR:007	Pass	2.79 dB	Pass	2.92 dB
FBR:008	Pass	2.92 dB	Pass	2.16 dB
FBR:009	Pass	2.16 dB	Pass	2.79 dB
FBR:010	Pass	2.79 dB	Pass	2.92 dB
FBR:011	Pass	2.92 dB	Pass	2.16 dB
FBR:012	Pass	2.16 dB	Pass	2.79 dB
FBR:013	Pass	2.79 dB	Pass	2.92 dB
FBR:014	Pass	2.92 dB	Pass	2.16 dB
FBR:015	Pass	2.16 dB	Pass	2.79 dB
FBR:016	Pass	2.79 dB	Pass	2.92 dB
FBR:017	Pass	2.92 dB	Pass	2.16 dB
FBR:018	Pass	2.16 dB	Pass	2.79 dB
FBR:019	Pass	2.79 dB	Pass	2.92 dB
FBR:020	Pass	2.92 dB	Pass	2.16 dB
FBR:021	Pass	2.16 dB	Pass	2.79 dB
FBR:022	Pass	2.79 dB	Pass	2.92 dB
FBR:023	Pass	2.92 dB	Pass	2.16 dB
FBR:024	Pass	2.16 dB	Pass	2.79 dB

Installer/Tester: _____ Date: _____

Customer: _____ Date: _____



Circuit Detail Report

Optical Wavelength Laboratories

Link ID:	FL1	Page:	1
Company Name:	ACME CORP.	Meter Type:	FiberOWL
Telephone Number:	800-555-1234	Serial Number:	SN:FO99999
		Software Version:	V4.20a
Report Date:	12/16/2005		
Circuit ID:	FBR:001	Date of test:	7/28/2005
Calibration Date:	4/12/2005	Temperature:	84.0 F

Circuit Characteristics

Fiber Length (in kilometers):	1.00
Number of Connector Pairs:	2
Number of Splices:	2
Cable Type:	INDOOR SM
Standard:	ANSI/EIA/TIA568B.3

Circuit Test Results

	1310nm
Passive Cable System Attenuation	
Light Source Reference Power	-11.79dBm
Fiber Loss	1.00dB
Connector Loss	1.50dB
Splice Loss	0.60dB
Total Allowable System Loss	3.10dB
Minimum Required Power	-14.89dBm
Measured Power	-12.10dBm
System Overhead	2.79dB
Operating Margin %	86.50%
Pass/Fail	Pass

Installer/Tester: _____ Date: _____

Customer: _____ Date: _____

Test kits containing a certification-ready optical power meter and fiber optic light source are the best option for fiber network certification, preferably ones that come pre-configured with fiber cabling standard loss parameters. These kits ensure that the network meets the end-to-end loss requirements based on industry-accepted cabling standards. And as bandwidth requirements increase, link budgets become tighter, requiring greater accuracy from fiber optic loss testing equipment.

Invariably, someone will ask about certifying a fiber network with an optical time domain reflectometer, or OTDR. OTDRs are excellent pieces of equipment and are a vital part of any fiber optic professional's test arsenal. OTDRs are good at getting a snapshot of the fiber link and determining where a problem is, but are not a viable option for network certification since they are inherently inaccurate in measuring optical power.

Certification test sets also offer a distinct advantage over standard optical loss kits and bit-error rate (BERT) testers. Here is an analogy to help demonstrate this advantage: suppose you need to cross a frozen lake, and can see that it is frozen, but are unsure if the ice is thick enough to support your weight, or better yet, the maximum weight it can support. Thus, you need to test the ice to make sure you can cross. Likewise, a fiber can pass light but until the fiber is certification tested, you cannot be sure if the amount of light will be enough to support your current bandwidth requirements. Is your network operating with sufficient overhead, or are some of your fiber links operating right on the line of your PASS/FAIL threshold, ready to suffer intermittent failures with the slightest change in environment (i.e. temperature, humidity, or mechanical vibration)? Also, will the fiber support the future bandwidth requirements of next generation fiber networks? Can your current link power budget be resilient enough to handle an upgrade to gigabit standards? The only way to know for sure is by using quality certification test sets such as the OWL series of certifying fiber optic test equipment.

Optical certification is widely accepted as the proper way to test a fiber network, and is required by industry and governments worldwide. No reputable fiber optic cable installer goes without a certifying power meter for reasons including:

Network cable warranties - Almost every extended fiber optic cable warranty requires a certification report be sent to the cable manufacturer to qualify for long term warranty approval;

Network installation bids - Bids more often than not require the installer to submit certification reports, especially when working with government institutions;

Arbitration resolution - Certification reports can be used as proof of quality work in case a dispute arises between installer and customer, such as determining whether the problem is related to the active network equipment or the fiber optic installation.

With NIST-traceable OWL certification test kits and proper industry test procedures, you and your customers can rest assured that you have installed a quality fiber optic network.


Optical Wavelength Laboratories
OWL
The Wise Choice in Optical Fiber Test

OWL-inc.com