

The Lightwave OSD

The Digital Lightwave LW OSD is a low-cost handheld instrument for identifying signals in fiber-optic cables without service interruption.

The Digital Lightwave LW OSD™ (Optical Signal Detector) is a low-cost, handheld instrument designed for identifying signals in fiber-optic cables. During maintenance, installation, rerouting, or restoration, it is often necessary to isolate a specific fiber from a bundle without disrupting service.

By simply clamping the LW OSD onto a fiber before making any cuts, the identifier will indicate if there is “Traffic,” “Tone,” or “No Signal.”

Although the LW OSD is recommended for up to 3 mm jacketed fiber, it is equipped with a unique two-position head design that can be configured to work with 250 μm, 900 μm, ribbon, or jacketed fiber in seconds—without tools or CAM adjustments. Front-panel LEDs indicate “Traffic” with direction, 2 KHz “Tone,” “No Signal,” and “Low Battery.” Additionally, an audible beeper sounds when the tone is detected. No tools or adjustments are

required. Using a low-insertion-loss macro-bending technique, the LW OSD detects optical signals without interrupting service or damaging the fiber.

When testing coated fibers, the slim design of the LW OSD allows easier access on a splice tray, where workspace is limited. The clamping trigger is ergonomically designed to fit the natural motion of the operator’s hand.



Lightwave OSD (LW OSD)

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The Lightwave (LW) product series is a comprehensive line of handheld and ultra-compact test equipment for measuring, maintaining, and documenting the physical-layer performance of fiber-optic networks.

Applications

- The LW OSD is used during restoration or rerouting to positively identify fibers prior to cutting and splicing.
- By sending a 2 KHz tone into a desired fiber at the head-end or central office, a field technician can use the LW OSD to locate the correct fiber without interrupting service. Locating a fiber with a 2 KHz signal is known as "toning out" the fiber.



Major Features

- Accepts 250 μ m, 900 μ m, coated fiber, 3 mm jacketed fiber cable, and ribbon fiber
- No head swapping or CAM adjustments
- Identifies light-carrying fiber
- Low cost, easy to use
- Handheld, 9 V battery operated
- Low insertion loss—traffic remains uninterrupted
- Indicates 2 KHz tone visually and audibly
- Indicates direction of traffic

Specifications are subject to change without notice.

Detectable Signal Range

250 μ m Coated Fiber

SMF-28 with 250 μ m CPC6 coating

Detect Range (average power, typical):

1310 nm, CW or Traffic, +23 to -24 dBm
 1310 nm, 2 KHz Tone, +20 to -27 dBm
 1550 nm, CW or Traffic, +23 to -33 dBm
 1550 nm, 2 KHz Tone, +20 to -36 dBm

Insertion Loss (typical)

1310 nm: 0.2 dB
 1550 nm: 2.5 dB

3 mm Jacketed Fiber

SMF-28 with 250 μ m CPC6 coating and a 3 mm, yellow jacket

Detect Range (average power, typical):

1310 nm, CW or Traffic, +23 to -30 dBm
 1310 nm, 2 KHz Tone, +20 to -33 dBm
 1550 nm, CW or Traffic, +23 to -37 dBm
 1550 nm, 2 KHz Tone, +20 to -40 dBm

Insertion Loss (typical):

1310 nm: 0.2 dB
 1550 nm: 1.8 dB

Optical Specifications

Detector Type	InGaAs
Specified Wavelength of Operation	1310 and 1550 nm
Fiber Stress	<100 kPSI max
Fiber Size	250 μ m, 900 μ m, 3 mm jacketed, and ribbon fiber
Tone Detection	2000 \pm 100 Hz
Measurement Time	<1.0 second

General Specifications

Operating Temperature	0° to 40° C
Storage Temperature	-30° to 60° C
Battery Life	>10,000 operations typical (9 V DC alkaline)
Dimensions (H x W x D)	8.5 x 1.5 x 1.1 in (22.0 x 3.8 x 2.8 cm)
Weight	7.5 oz (210 kg)

Notes:

- 250 μ m-coated fiber parameters are specified with LW OSD plunger in the "250/900/RIB" position. 3 mm jacketed fiber parameters are specified with LW OSD plunger in the "3 mm" position.
- Unless noted otherwise, all specifications are typical. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.
- "CW" or Continuous Wave is a light signal that is not modulated. "Traffic" is a light signal modulated by a random data sequence. "Tone" is a light signal modulated into a nominal 50% duty cycle square wave.



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Ordering Information For feature availability, ordering, and pricing information, call +1 727 442 6677 or visit www.lightwave.com.

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