

## Test & Inspection



### Features

- Unique optical head with two-position plunger for use with all fiber types
- Built-in power meter with Set Reference feature
- Low insertion loss for in-service ID tasks
- Indicates direction of traffic
- Detects 270 Hz, 330 Hz, 1 kHz, 2 kHz test tones<sup>2</sup>
- High Power detection (OFI-400HP model)
- Powered by AAA batteries
- Automatic power down feature and battery gauge
- Built-in self-test
- One-hand operation
- Hand-held and lightweight
- Rugged, drop-proof construction
- Three-year calibration interval

### OFI-400 Series Optical Fiber Identifiers

NOYES OFI-400 Optical Fiber Identifiers are designed to detect and measure<sup>1</sup> the core power levels of optical signals on single-mode optical fiber without disconnecting or cutting the fiber. These instruments are simply clamped onto a fiber and indicate the presence and direction of traffic, continuous test signals and modulated test tones. This permits network personnel to easily and quickly identify a specific fiber without risk of revenue service disruption. The OLS7, OLS2, CSS1-SM and CSS1-MM series of optical light sources are ideal companions for the OFI-400 optical fiber identifiers.

#### No Adapters to Purchase, Store, Swap, or Misplace

The OFI-400 uses a unique optical head design featuring a two-position plunger that enables it to be used with 250  $\mu$ m, 900  $\mu$ m and ribbon fiber or 2 mm and 3 mm jacketed fiber. Other brands of optical fiber identifiers require users to purchase, store and swap out optical plungers each time a different type of fiber is tested. The OFI-400 optical head induces a safe, repeatable macro-bend to the fiber that allows a small amount of light to escape for analysis. The insertion loss induced by the macro-bend is too small to affect the signal on the fiber and the integrity of the fiber is unaffected by the measurement process.

OFI-400 instruments are designed to be simple, easy-to-use and reliable. Each features an ergonomically designed macro-bend trigger that is comfortable to use. An integrated, backlit LCD display allows OFI-400s to be used in dimly lit spaces. Powered by 1.5 V AAA batteries, the OFI-400 can make thousands of fiber tests before repalcing batteries.

#### Applications

- Live fiber detection to avoid technician-induced outages
- Fiber identification with CW or tone
- Core power measurements
- Optimized for use on 250  $\mu$ m, 900  $\mu$ m and ribbon fiber or 2 mm and 3 mm jacketed fiber

#### Notes:

1. Core power measurement accuracy is influenced by fiber type, coating material, jacket composition/hardness/color, temperature and other factors.
2. Requires compatible light source.



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### OFI-400 Series Optical Fiber Identifiers

#### OFI-400

The OFI-400 is designed for use with a wide range of single-mode fibers including 250 µm (bare) coated, 900 µm buffered and ribbon fibers or 2 mm and 3 mm jacketed fibers. The OFI-400 is ideal for network personnel involved in installation, reconfiguration, restoration and maintenance tasks that involve bare, buffered, jacketed or ribbon fibers in outside plant pedestals, fiber cabinets, aerial enclosures and inside plant premises demarcation cabinets. The slim design of the OFI-400 head facilitates access in crowded splice trays.

#### OFI-400C

Designed specifically for use with 2 mm or 3 mm jacketed single-mode fibers, the OFI-400C is ideal for general purpose maintenance, configuration and installation tasks. The OFI-400C is functionally equivalent to the OFI-400 but includes an optical head design and a calibration scheme optimized for use with jacketed fiber.

#### OFI-400HP

The OFI-400HP is designed for use where high levels of optical power are present. This includes fibers carrying a single high-power signal, CWDM or DWDM signals with high total power levels, amplified optical signals, or pump lasers associated with EDFA or Raman amplifiers.

When display reaches +23 dBm (200 mW) or greater, the OFI-400HP will display "High" warning indication.

#### Ordering Information

All OFI-400 products include a user's guide, 2 AAA batteries and a soft carry case. Each carries a 1-year warranty and a 3-year recommended calibration interval.

INCLUDES	AFL NO.
Users guide, 2 AAA batteries, soft carry case	OFI-400
Users guide, 2 AAA batteries, soft carry case	OFI-400C
Users guide, 2 AAA batteries, soft carry case	OFI-400HP

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### OFI-400 Series Optical Fiber Identifiers

#### Specifications

DETECTABLE SIGNAL RANGE					
FIBER TYPE <sup>a</sup>	PARAMETER	TEST CONDITIONS <sup>b</sup>	OFI-400	OFI-400C	OFI-400HP
250 µm coated fiber (SMF-28 with 250 µm CPC6 coating)	Minimum level detected, average power	1310 nm, CW, Tone, Traffic 1550 nm, CW, Tone, Traffic	-45 dBm -50 dBm	N/A	N/A
	Insertion loss (typical/max)	@ 1310 nm @ 1550 nm	0.6 dB/0.8 dB 2.5 dB/2.6 dB	N/A	N/A
3 mm jacketed fiber (SMF-28/28E with 250 µm CPC6 coating and 3 mm, yellow jacket)	Minimum level detected, average power	1310 nm, CW, Tone, Traffic 1550 nm, CW, Traffic 1550 nm, Tone	-30 dBm -33 dBm -33 dBm	-35 dBm -40 dBm -40 dBm	-30 dBm -40 dBm -35 dBm
	Insertion loss (typical)	@ 1310 nm @ 1550 nm	1.0 dB 2.8 dB	1.0 dB 2.8 dB	0.2 to 0.5 dB 0.8 to 1.3 dB

OPTICAL SPECIFICATIONS <sup>c</sup>	OFI-400	OFI-400C	OFI-400HP
Detector Type	InGaAs	InGaAs	InGaAs
Wavelength Range	800 - 1700 nm	800 - 1700 nm	800 - 1700 nm
Calibrated Fiber and Wavelength	250 µm @ 1550 nm (SMF-28/28E)	3 mm @ 1550 nm (SMF-28/28E)	3 mm @ 1550 nm (SMF-28/28E)
Fiber Stress	<100 kPSI max	<100 kPSI max	<100 kPSI max
Working Fiber Size	250 µm, 900 µm, ribbon, 2 mm and 3 mm jacketed	2 mm and 3 mm jacketed	2 mm and 3 mm jacketed
Tone Detection	270, 330, 1000, 2000 Hz (±5 %)	270, 330, 1000, 2000 Hz (±5 %)	270, 330, 1000, 2000 Hz (±5 %)
Core Power Measurement Range	+13 to -50 dBm @ 1550 nm, 250 µm (SMF-28/28E)	+13 to -40 dBm @ 1550nm, 3 mm (SMF-28/28E)	+33 to -40 dBm @ 1550 nm, 3 mm (SMF-28/28E)
Measurement Units	dBm, dB	dBm, dB	dBm, dB

GENERAL SPECIFICATIONS	ALL OFI-400 MODELS
User Interface	Multi 7 segment LCD; 3 LEDs; 1 piezo buzzer
Power	2 x 1.5 V AAA alkaline
Battery Life	>10,000 operations typical
Operation Temperature	0°C to 50°C 90 % RH (Non-condensing)
Storage Temperature	-30°C to +60°C 90 % RH (Non-condensing)
Dimensions (H x W x D)	22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)
Weight	168 g (6 oz)

#### Notes:

- 250 µm coated fiber parameters are specified with OFI plunger in the "250 / 900 / RIB" position.  
2 mm / 3 mm jacketed fiber parameters are specified with OFI plunger in the "2 mm / 3 mm" position.
- CW is a light signal that is not modulated.  
Traffic is a light signal modulated by high speed user data.  
Tone is a light signal modulated into a nominal 50 % duty cycle square wave.
- 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.  
All specifications stated above are as measured at 25°C.

