

OP360

Handheld Bidirectional ILRL Tester

PRODUCT OVERVIEW

OptoTest's OP360 Bidirectional Insertion and Return Loss Tester combines several essential fiber optic measurement tools in a rugged handheld package for fast and precise bi-directional Tier 1 certification and reporting of single-mode and multimode optical fibers. Its advanced features and automated test process eliminates setup, training, and measurement errors, maximizing productivity and accuracy when qualifying networks with multiple wavelengths and fiber types.

Using a pair of OP360 instruments in autotest mode, two-way insertion loss can be displayed in real time at multiple wavelengths using one test hook up per fiber and a single press of a button. Fiber length and optical return loss (ORL) measurement options are also available in the OP360, resulting in a powerful and comprehensive test solution for fiber optic administrators, installers, and technicians.

An OP360 can also be used as a stand-alone optical light source or loss meter, allowing it to be used with OptoTest's OP310 handheld optical power meters and OP350 handheld optical light sources. By looping together the light source and power meter ports, a single OP360 can be used in one-way autotest mode to perform loss testing for up to three wavelengths.



KEY FEATURES & BENEFITS

- One Touch Bidirectional Tier 1 Fiber Certification**
 In two-way autotest mode, a pair of OP360 instruments can fully qualify a single-mode or multimode fiber in as fast as 5 seconds with one hookup and a single press of a button. Results can be exported in real time into a standards compliant Excel-based test report when connected to a PC.
- Eliminates Administration, Training, and Testing Errors**
 Automated test process uses the same method for all fibers in a network for more productivity and fewer mistakes. Simplified setup in autotest mode eliminates the need to specify master and slave instruments.
- Displays Measurements at Both Ends in Real Time**
 In autotest mode, measurement information is summarized simultaneously on the instruments at both fiber ends via a comprehensive LCD display. The high contrast display is backlit and can be read in bright sunlight for use underground or outside.
- Wide Range of Available Configurations**
 The OP360 can be specified with optional fiber length testing, optical return loss (ORL) testing, a visual fault locator (VFL), and ultra-stable zero warm up time light sources, putting the accuracy and versatility of a fiber optics lab in the palm of your hand. The optional ORL meter includes a full range of features and can be operated in stand-alone mode or integrated with the autotest mode.



TECH SUPPORT

Our team of experts is ready to assist you.



WARRANTY

OptoTest offers a three-year warranty on this product.

APPLICATIONS

- Field Insertion Loss Testing
- Field Polarity Testing
- Field MPO/MTP® Testing (large area detector)

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KEY FEATURES & BENEFITS (cont.)

- **Compatible with Other OptoTest Handheld Instruments**

The OP360 is fully compatible with OptoTest's OP310 handheld optical power meters and OP350 handheld optical light sources with matching wavelengths, extending your range of test capabilities with fewer equipment upgrades.

- **Multi Fiber ID**

The OP360 can identify up to 12 different fibers, in addition to standard optical test tones, i.e., 270Hz, 1KHz, and 2KHz, when used with another OP360 bidirectional loss tester or OP350 handheld optical light source. This makes continuity testing, polarity testing, and fault finding fast and reliable.

- **Large Internal Memory**

The OP360 internal memory records up to 8,000 tests with the date, time, and essential information including the reference value in dBm, detected wavelength in nm, autotest nominal source power, remote instrument serial number, and pass/fail status. Users can input and store up to 20 cable text ID tags using the front panel controls and recall them for easy reference.

- **Optional Visual Fault Locator (VFL)**

The OP360 can be ordered with an optional 650 nm Visual Fault Locator (VFL) with an output power of -1 dBm ±1 dB into single-mode and multimode fibers. Two-way autotest blinks the active test fiber, making it obvious to the user, and is mixed with a test tone for use with clip-on fiber identifiers. The visual fault locator also quickly flags fiber breaks, bad splices, pinched fibers, bending losses, and cracked connector ferrules with bright red light escaping from the defect.

- **Interchangeable Connectors are Protected Against Drops and Impact**

The OP360 accommodates a wide variety of industry standard fiber optic connectors, including FC, ST, LC, MU, HFBR, LSA-DIN47256, and E2000. Built-in bumpers and an integral dust cover protect the connector interface against damage and contamination. The dust cover doubles as a stand when used on a benchtop or other surface.

GENERAL SPECIFICATIONS

Battery Life	Laser/LED source: 80 hours in Autotest, typical. Power meter: 1000 hours, typical
Size/Weight	7.5 x 4.1 x 1.4" (190 x 105 x 35 mm) / 0.9 lb (420 gm). Shipping 3.3 lb (1.5 kg)
LCD Size	2.9 x 2.2" (74 x 55 mm)
Operating /Storage	-15 to 55 °C / -25 to 70 °C
Relative Humidity	0 ~ 95 %
Case	Polycarbonate / rubber edges & corners, moisture resistance, 1-meter drop tested
Dust Cap	Captive, functions as tilt bail when open
Tone Detection	150 ~ 9900 Hz ± 1 %
Power	2 x Alkaline / Lithium AA cells or 2 x NiMH AA cells, user selectable charging; Ext power input via micro-USB; Selectable auto-off, low battery indicator, backlit display
Memory	Test results & timestamp for 8,000 fibers, unlimited on USB memory key
USB interfaces	USB-micro type connector for general USB & power; USB-A type connector for memory key only

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BIDIRECTIONAL AUTOTEST SPECIFICATIONS

Fiber Type	Wavelengths	Loss Range	Loss Repeatability / Linearity	Length		
				Range	Accuracy	Resolution
MM	850, 1300 nm (62.5 μm) 850, 1300 nm (50 μm)	27 dB 24.5 dB	0.06 dB	5.5 dB 3.5 dB	1% ± 9m	1 meter (0.000~9.999 Km) 10 meters (10.00~99.99 Km) 100 meters (100.0~999.9 Km)
MM	850, 1300 nm VisiTester (62.5 μm) 850, 1300 nm VisiTester (50 μm)	24 dB 21.5 dB		5.5 dB 3.5 dB		
SM	1310, 1550 nm	47 dB	0.04 dB	30 dB		
SM	1310, 1490, 1550, nm 1310, 1550, 1625 nm	44 dB		27 dB		
SM	1310, 1550 nm, VisiTester	44 dB		27 dB		
SM	1310, 1490, 1550, nm, VisiTester 1310, 1550, 1625 nm, VisiTester	41 dB		24 dB		

ONE WAY AUTOTEST SPECIFICATIONS

Fiber Type	Wavelengths	Loss Range	Loss Repeatability / Linearity
MM	850, 1300 nm (62.5 μm) 850, 1300 nm (50 μm)	27 dB 24.5 dB	0.06 dB
MM	850, 1300 nm VisiTester (62.5 μm) 850, 1300 nm VisiTester (50 μm)	24 dB 21.5 dB	
SM	1310, 1550 nm	47 dB	0.04 dB
SM	1310, 1490, 1550, nm 1310, 1550, 1625 nm	44 dB	
SM	1310, 1550 nm, VisiTester	44 dB	
SM	1310, 1490, 1550, nm, VisiTester 1310, 1550, 1625 nm, VisiTester	41 dB	

OPTICAL RETURN LOSS SPECIFICATIONS

	LASER		LED
	1 or 2 λ	3 or 4 λ	
Range	0 ~ 65 dB	0 ~ 60 dB	0 ~ 40 dB (62.5 μm) 0 ~ 37 dB (50 μm)
Port Isolation	Standard > 30 dB; Optional > 50 dB		> 22 dB
ORL Accuracy	0 ~ 50 dB: 0.5 dB 50 ~ 65 dB: 1 dB after zero offset	0 ~ 45 dB: 0.5 dB 45 ~ 60 dB: 1 dB after zero offset	0 ~ 30 dB: 0.5 dB 30 ~ 45 dB: 1 dB after zero offset
Resolution	0 ~ 50 dB: 0.01 dB 50 ~ 65 dB: 0.1 dB	0 ~ 45 dB: 0.01 dB 45 ~ 60 dB: 0.1 dB	0 ~ 30 dB: 0.01 dB 30 ~ 45 dB: 0.1 dB
λ Available	See source options in LIGHT SOURCE SPECIFICATIONS		

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OPTICAL POWER METER SPECIFICATIONS

Response λ nm	Damage Level dBm	Calibration λ nm	Power Range dBm	Tone & Autotest Min dBm	Midrange Linearity ¹ dB	Calibration Accuracy ² %	Polarization Sensitivity ⁵ dB	Total Uncertainty ^{3,4} dB	λ Sensitivity ± 30 nm ² dB
InGaAs Detector									
600 ~ 1700	+15	780, 820, 850, 980	+10 ~ -60	-45	0.04	1% (0.06 dB)	< 0.05	0.3	0.03
		1270, 1290, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650	+10 ~ -70	-50					
Ge Detector									
600 ~ 1650	+20	635, 650, 660, 780, 820, 1590, 1610, 1625, 1650	+15 ~ -50	-40	0.06	1% (0.06 dB)	< 0.05	0.5	0.03
		850, 880, 910, 940, 980, 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570	+15 ~ -60	-50					
					typical		typical	max	typical

1: Mid-range linearity excludes top 5 dB and bottom 10 dB of range.

2: Calibration condition: non-coherent light, -35 ± 5 dBm, $23 \pm 1^\circ\text{C}$, ± 1 nm, 10 ± 3 nm FWHM, PC ceramic connector, 100 μm fiber.

3: Includes contributions of: varying optical connector types, calibration uncertainty, linearity over temperature & range, and fiber core diameter up to 200 μm .

4: At calibration wavelengths in bold type.

5: For APC connector only.

OPTICAL LIGHT SOURCE SPECIFICATIONS

	1310/1550nm F-P Laser	1490/1625 nm CWDM ¹ Laser	850/1300 nm LED	Comments
Power accuracy		± 1 dB		
Short term stability (dB)	0.04 / 0.03	0.06 / 0.04	0.01	Typical
Stability over temp (dB)	0.6 / 0.2	0.6 / 0.2	0.35	Typical / Max
λ initial tolerance (nm)	20	6.5	NA	At 25 °C
λ width, nm	3	< 1	NA	FWHM, typical
λ nm/°C	0.4	0.1	0.4	Typical
Mode Controlled Source	NA	NA	Mode controlled	50/125 compliant: IEC 61280-4-1 {Ed.1.0}, TIA/EIA 526-14A & TIA TSB-178.
Reconnection repeatability (dB)	0.1	0.1	0.05	95% confidence
Laser output power	Adjustable over 7 dB in 0.01 dB steps		NA	
Modulation	270 Hz, 1 kHz, 2 kHz $\pm 2\%$, 12 Multi-Fiber ID tones, 2 Hz blink for VisiTester			

1: CWDM laser wavelengths: 1270, 1290, (1310), 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, (1550), 1570, 1590, 1610 nm.

Product specifications and descriptions in this document
are subject to change without notice.

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