

PRODUCT OVERVIEW

The OptoTest OP380 Insertion Loss Tester is an easy-to-use and rugged test set combining a multi-wavelength optical power meter and a mix of laser and LED sources in a compact handheld package. Designed for single-direction measurements, the OP380 can incorporate up to 6 different laser and LED sources and provides fiber optic administrators, installers, and technicians an ideal cost-effective solution for testing single-mode and multimode systems.

Built-in multi-fiber ID identifies up to 12 different test tones from multiple sources for simplified continuity and polarity testing. Multiple insertion loss test results can be stored in internal memory with a timestamp and user-specified cable name and then transferred to an external USB drive with a single press of a button for analysis and record keeping.

The OP380 is available in a wide range of configurations to meet virtually any fiber optic measurement requirement, and can be ordered with an optional VisiTester active fiber identifier and ultra-stable zero warm up light sources for added utility and accuracy.

KEY FEATURES & BENEFITS

• Maximum Versatility in a Rugged, Compact Package

With up to 6 Laser and LED sources and a multi-wavelength optical power meter packaged in a slim, shockproof, and durable polycarbonate housing, the OP380 is ideal for outside work in remote locations. Compliance with MIL PRF 28800F requirements assures that the instrument will stand up to unprotected and uncontrolled environments.

• More than 25 Calibrated Wavelengths Available

A fast and accurate optical power meter measures absolute power, relative power, and detects up to 12 test tones. Displays mW, μ W, nW, dB, and dBm to 0.01 dB resolution without range changing delays. Separate references for each wavelength are stored and displayed on a large backlit LCD screen that is easily readable in bright sunlight.

• Up to 6 Laser and Led Sources in Each Instrument

Multiple laser and LED source options built into the OP380 mean more time spent testing and less time juggling equipment. Laser sources are CWDM standards compliant, covering cable qualification for the O, E, S, C, and L bands, including the water absorption peak, 1625 and 1650 nm. Ultra-stable zero warm-up laser sources are also available, eliminating drift and guaranteeing precise single-mode measurements. LED sources are Encircled Flux (EF) compliant and include mandrel wraps for consistent and reliable test results.



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 MPO/MTP® Testing (large area detector)

KEY FEATURES & BENEFITS (cont.)

- **Optional VisiTester Identifies Active Test Fibers**

The OP380 can be ordered with a VisiTester option that blinks the active test fiber, making it obvious to the user. The test signal is mixed with a test tone for use with clip-on fiber identifiers. The VisiTester output also works as a standard visual fault locator (VFL), and quickly flags fiber breaks, bad splices, pinched fibers, bending losses, and cracked connector ferrules with bright red light escaping from the defect.

- **Compatible With Other OptoTest Handheld Instruments**

The OP380 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 OP380 can identify up to 12 different fibers, in addition to standard optical test tones, i.e., 270Hz, 1KHz, and 2KHz, when used by itself or with another OP380 handheld insertion loss meter, OP360 handheld 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 large OP380 internal memory records 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.

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

The OP380 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: 90/80 hours in Autotest, 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	1,000 four λ tests with date & time in internal memory, unlimited on USB memory key

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 dB ^{3,4}	λ Sensitivity $\pm 30 \text{ nm}^4 \text{ dB}$
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	+25	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±1°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 Laser	CWDM ¹	1625 nm Laser	650 nm VisiTester ²	850/1300 nm LED	Comments
OP350						
Short term stability (dB)	0.04	0.06	0.06	NA	0.01	For 15 min, typical $\pm \Delta 2^\circ\text{C}$, after warmup, ORL < -25 dB
Stability over temp (dB)	0.6	0.6	0.6	NA	0.35	Typical
OP350 Ultra Stable²						
Short term stability (dB)	0.03	0.05	0.05	NA	0.01	For 15 min, max, $\pm \Delta 3^\circ\text{C}$ no warmup
Stability over temp (dB)	0.2	0.2	0.2	NA	0.35	Max
OP350 / OP350 Ultra Stable						
λ initial tolerance (nm)	20	6.5	20	5	NA	At 25 °C
λ width, nm	3	< 1	3	3	NA	FWHM, typical
λ nm/°C	0.4	0.1	0.4	0.1	0.4	Typical
Mode Controlled Source	NA	NA	NA	NA	Mode controlled	50/125 compliant: IEC 61280-4-1 {Ed.1.0}, TIA/EIA 526-14A & TIA TSB-178.
Reconnection repeatability ³ (dB)	0.1	0.1	0.1	0.2	0.05	95% confidence
Modulation	270 Hz, 1 kHz, 2 kHz $\pm 2\%$, 12 Multi-Fiber ID tones, 2 Hz blink for VisiTester					
Output power level	Refer to ORDERING INFORMATION section for output power level of specific model					Laser: adjustable over 7 dB in 0.01 dB steps, LED: fixed
Output power accuracy	± 1 dB (For Laser @ SMF & LED @ 62.5 μm only)					

Class 1 Laser / LED infrared device. Compliant with IEC60825-1.

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

2: The VisiTester option mixes a laser VFL with Autotest, so at the power meter end, the active test fiber winks, making it obvious to the user. It also extends practical fault finding.

3: The OP350 light sources achieve very high reconnection repeatability of 0.1 dBm which provides steady output power every time connecting the sources.