OP940

Insertion Loss & Return Loss Meter

Overview

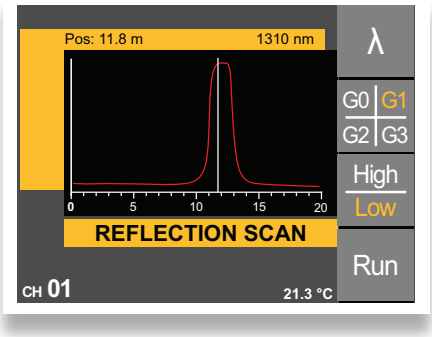
Insertion Loss & Return Loss Meter

The **OP940** system is an insertion loss (IL) and return loss (RL) meter that features a color LCD screen, an optical reflectance scan mode, programmable pass/fail for editable test criteria and on screen context help. Additionally, the **OP940** can measure return loss (RL) at two positions simultaneously through the front panel and it offers expandable functionality. As with our other IL/RL systems, the **OP940** measures RL quickly and accurately without the need for mandrel wrapping or the use of index matching gel, and is available in Single Mode, Multimode, and FTTX variants.

An OP940 benchtop insertion loss and return loss test set displaying color-coded ILRL test results

Features

- Fully automated, concurrent IL and RL displayed simultaneously
- Front panel optical reflectance trace
- Manually adjust RL reference position and value
- Measures RL at multiple connection points through the front panel
- Programmable pass/fail for multiple test criteria
- Various detector options for measuring simplex to multifiber connectors
- On screen help
- Configurable timer settings, such as dwell times
- User accessible source connector
- Color display
- Intuitive operation
- Can be controlled remotely via USB
- Integrated temperature monitoring
- Convenient benchtop size
- Wide dynamic range for RL measurements:
  - SM, FTTX: 10dB to 80dB
  - MM: 10dB to 58dB



Scan mode with reflection at 11.8m

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SPECIFICATIONS

OptoTest
Your Partner in Fiber Optic Test Solutions

Return Loss

	Single Mode	FTTX	Multimode
Source Wavelength	1310nm, 1550nm	1310nm, 1550nm, 1490nm, 1625nm	850nm, 1300nm
Calibrated Measurement Range	-10dB to -80dB	-10dB to -80dB	-10dB to -58dB
Measurement Linearity	±1dB (-12dB to -72dB)	±1dB (-12dB to -72dB)	±1dB (-10dB to -45dB)
Distance Range	up to 2500 meters		
Mandrel-free minimum distance	1.7 meters (both reflections <-45dB)		

Insertion Loss

	Single Mode	FTTX	Multimode
Source Center Wavelength	±30nm from nominal	±30nm from nominal	±30nm from nominal
Source Bandwidth	<10nm	<10nm	<140nm (850nm) <200nm (1300nm)
Internal Fiber	9/125µm (SMF28)	9/125µm (SMF28)	50/125µm, 62.5/125µm, 105/125µm
Launch Condition	N/A	N/A	Available upon request
Output Power* (typical)	-1.5dBm	-2.5dBm	-18dBm(850nm) -20dBm(1300nm): 62.5/125µm
Insertion Loss Stability**	±0.02dB	±0.02dB	±0.02dB
Measurement Linearity (Relative Accuracy)*			
Deviation ± 0.05dB	0dBm to -65dBm at 1490nm		
Deviation ± 0.01dB	<10dB power variation		

*For single channel systems. **Over 1 hour with a max. change of 1°C. ***For 1, 2, and 3mm detectors.*

Optical Power Meter

	1mm InGaAs	3mm InGaAS	5mm InGaAs	10mm InGaAs	3mm Silicon
Measurement Range	+6dBm to -72dBm at 1490nm	+3dBm to -72dBm at 1490nm	0dBm to -65dBm at 1490nm	0dBm to -55dBm at 1490nm	0dBm to -65dBm at 980nm
Wavelength Range	850nm to 1650nm				400nm to 1100nm
Selectable Wavelength	Standard wavelengths (850nm, 980nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm)				Standard wavelengths (650nm, 850nm, 980nm)
Measurement Resolution (Display)	0.001dB				
Absolute Accuracy	±0.25 dB at calibration conditions for all NIST traceable wavelengths				
Measurement Linearity (Relative Accuracy)					
Deviation ± 0.05dB	+3dBm to -65dBm at 1490nm	0dBm to -65dBm at 1490nm	0dBm to -55dBm at 1490nm	0dBm to -45dBm at 1490nm	0dBm to -55dBm at 980nm
Deviation ± 0.01dB	<10dB power variation	<10dB power variation	<10dB power variation	<10dB power variation	<10dB power variation

Source

	1310nm/1550nm LASER	1310nm/1490nm/1550nm/1625nm LASER	850nm/1300nm LED
Source Center Wavelength	±30nm from nominal	±30nm from nominal	±30nm from nominal
Source Bandwidth	<10nm	<10nm	<140nm (850nm) <200nm (1300nm)
Internal Fiber	9/125µm (SMF28)	9/125µm (SMF28)	50/125µm, 62.5/125µm, 105/125µm
Launch Condition	N/A	N/A	Available upon request
Output Power (typical)	-1.5dBm	-2.5dBm	-18dBm(850nm) -20dBm(1300nm): 62.5/125µm
Source Stability*	±0.02dB	±0.02dB	±0.02dB

** Over 1 hour with a max. change of 1°C.*

Measurement Timing

	Single Mode	FTTX	Multimode
IL and RL, Dual Wavelength	3s*	6s	3s*
Switching Time (Multichannel)	100ms		

** Using the front panel in Dual ILRL mode or running OPL-Pro with real-time update enabled.*

Mainframe

	Half-Rack Units	Full-Rack Units	OP710s/OP740s	OP940-SWs
Dimensions	8 ⅜" x 3.5" x 12"	16 ¾" x 3.5" x 12"	16 ¾" x 3.5" x 8"	16 ¾" x 3.5" x 14"
Power Supply	90VAC ... 264VAC; 47Hz to 63Hz; 0.7Amps (115VAC) 0.4Amps (230VAC); Fuse: T1A, 250V			
Warm-up time	5-15 minutes			
Operating Temperature	5°C to 40°C			
Maximum Relative humidity*	80%			

** For temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C.*

Laser Classifications

All **OP940 Insertion Loss and Return Loss Test Sets** utilize a **Class I Laser Source**. Unless otherwise noted, all **OP250**, **OP715**, and **OP750** source units with internal laser sources utilize a **Class I Laser Source**. Unless otherwise noted, all **OP815** and **OP850 Insertion Loss Test Sets** with internal laser sources utilize a **Class I Laser source**. All **OP280 Visual Fault Finder** units utilize a **Class III Laser Source**.
OptoTest strongly suggests that all necessary precautions be taken whenever any Class I or Class III laser source is used.

Specifications are subject to change, please confirm specific performance characteristics of the product at the time of ordering. All specifications are valid within temperature range of 18°C to 24°C unless otherwise noted. For additional specifications please contact OptoTest.