OP831

Bi-Directional Insertion Loss

Overview

Bi-Directional Insertion Loss Meter

The **OP831** is designed to perform bi-directional insertion loss measurements on single-fiber OR multi-fiber optic cables with optical switches. The integrated source and power meter together with the **OPL-PRO** application software allow for a fully automated bi-directional insertion loss analysis of the connected cable. This rack-mounted instrument can be equipped with either single wavelength or dual wavelength Laser or LED sources.

Model OP831 Bi-Directional Insertion Loss Meter

Features

- Streamlines and automates bi-directional insertion loss testing
- On-board optical power meters feature relative accuracy of 0.02dB between 0dBm and -65dBm
- Wide variety of source wavelength options, including 635nm, 850nm, 1310nm, and 1550nm among many others
- Various types of sources including LEDs, Fabry-Perot Lasers, and VCSELs
- Customizable fiber type such as 9/125µm, 50/125µm, 62.5/125µm. Please contact Optotest for other options
- Many common source connector outputs such as FC, SC, and ST
- Can be controlled remotely via USB
- Integrated temperature monitoring
- Convenient 19-inch rackmount frame
- Can be used to test multi-fiber patchcords when paired with two **OP720** switches and software

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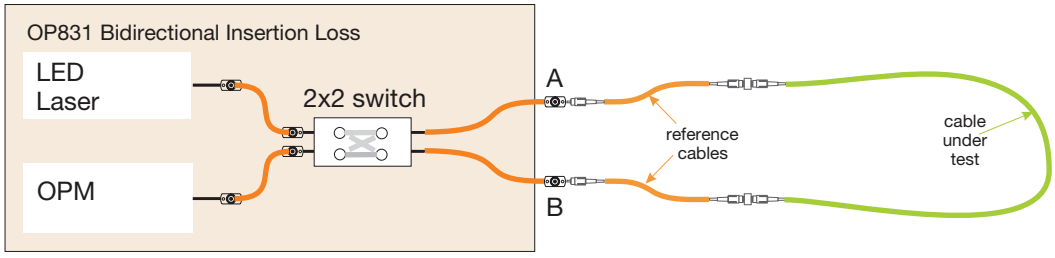
OP831

Bi-Directional Insertion Loss

Applications

Bi-Directional Insertion Loss Test on Single Cable

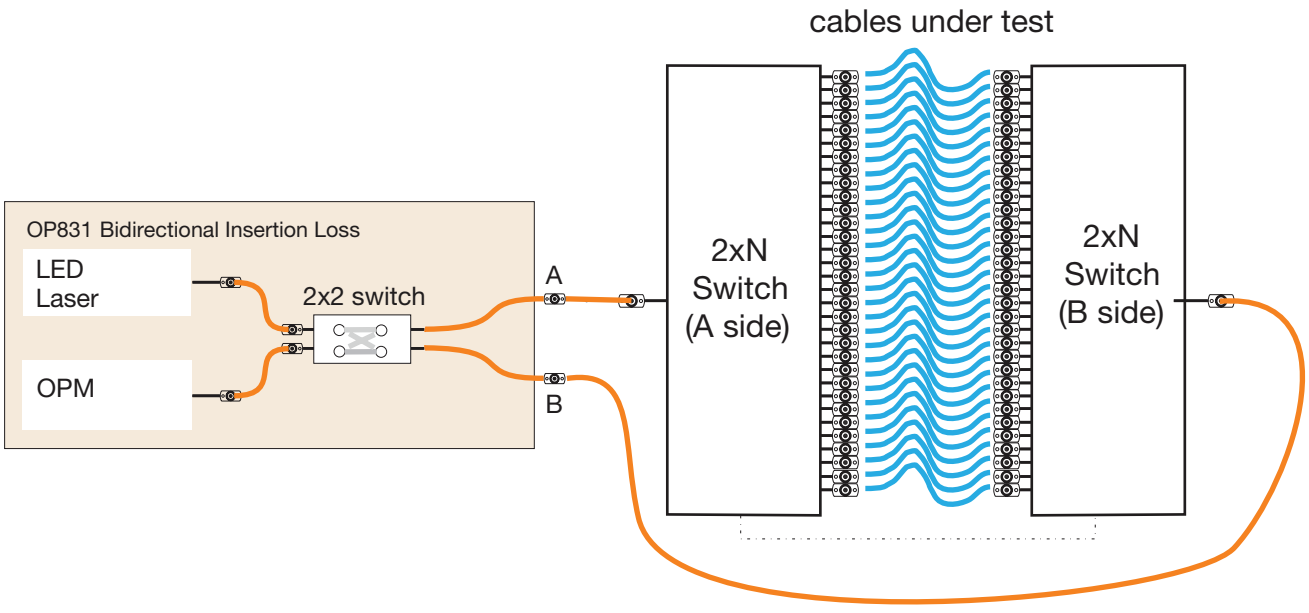


Test Report

Measurement	A-B 1310nm	A-B 1550nm	B-A 1310nm	B-A 1550nm	Avg 1310nm	Avg 1550nm	
#1 SNCBL 10101	-0.23dB	-0.32 dB	-0.21 dB	-0.34 dB	-0.22 dB	-0.33 dB	FAIL
#2 SNCBL 10102	-0.15dB	-0.26 dB	-0.17 dB	-0.26 dB	-0.16 dB	-0.26 dB	Pass
#3 SNCBL 10103	-0.08dB	-0.12dB	-0.11 dB	-0.13 dB	-0.10dB	-0.13 dB	Pass
#4 SNCBL 10104	-0.07dB	-0.07dB	-0.11 dB	-0.08 dB	-0.09dB	-0.07 dB	Pass

Block Schematic

Multichannel Bi-Directional Insertion Loss Test System



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SPECIFICATIONS

OptoTest
Test Solutions for Fiber Optics

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

Return Loss	1310nm/1550nm	1310nm/1490nm/1550nm/1625nm	850nm/1300nm
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	100 meters (standard)/ 2500 meters (Rep Rate adjusted)	100 meters (standard)/ 2500 meters (Rep Rate adjusted)	100 meters (standard)/ 2500 meters (Rep Rate adjusted)

Insertion Loss	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
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	Typical -2.5dBm	-18dBm: 62.5/125µm
Source Stability*	±0.02dB	±0.02dB	±0.02dB

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

Laser Classifications

All **OP930 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.

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