

Should I use a 1310 or 1550 optical power meter



Article Overview

Both 1310 nm and 1550 nm optical power meters are suitable for single-mode fiber testing, but 1310 nm is more sensitive to alignment issues while 1550 nm is better for detecting fiber bends and attenuation over longer distances.

Key Differences

- **Wavelength Characteristics:** 1310 nm light has lower dispersion, making it ideal for detecting alignment problems and short- to medium-distance testing. 1550 nm light has lower attenuation, which is advantageous for long-distance transmission and identifying issues caused by bends or cracks in the fiber .
- **Insertion Loss Testing:** Properly manufactured single-mode fibers show very similar insertion loss at both wavelengths, with 1550 nm typically showing slightly better results (0.01-0.05 dB lower) due to lower fiber attenuation .
- **Troubleshooting:** Comparing measurements at both wavelengths can help identify specific problems. For example, higher loss at 1550 nm compared to 1310 nm may indicate a bend or crack in the fiber .

Practical Recommendations

- **Standard Testing:** If your goal is general insertion loss measurement or certification, either wavelength can be used, as single-mode fibers perform similarly at both .
- **Comprehensive Testing:** For thorough diagnostics, it is best to test at both 1310 nm and 1550 nm. This approach helps detect subtle alignment issues (1310 nm) and lo...

Article Content

May 02, 2026

Benefits of Testing at two Wavelengths with MultiFiber Pro

Users testing MPO single mode links with MultiFiber Pro single mode sources have contacted TAC to ask which

Aug 21, 2025

What does "1310Nm" or "1550Nm" in common light test instruments

These wavelengths are used in various fiber optic applications, including transmission, testing, and maintenance. In this

Aug 12, 2025

What is the difference between 1310nm and 1550nm SFP□

The difference between 1310nm and 1550nm SFP (Small Form-factor Pluggable) transceivers lies in the wavelength at

Feb 26, 2026

How to Use an Optical Power Meter for Fiber Testing

Optical power meters are calibrated for specific wavelengths, and selecting the wrong one will give you an inaccurate

Jul 29, 2025

Measurements in fiber optic systems

This article summarizes the knowledge for the installer who faces the task of verifying the correctness of a fiber optic system. The

Nov 17, 2025

What is the difference between 1310 and 1550 wavelength□

The wavelengths 1310 nm and 1550 nm refer to specific ranges within the electromagnetic spectrum used in optical

Jul 22, 2026

Insertion Loss Troubleshooting Tip: Singlemode 1310 vs. 1550

Dan Rocheleau, Termination Expert at Fiber Optic Center, Inc. has published a new tip based on his work in fiber

Jun 02, 2026

SFP Wavelength Guide: 850nm vs. 1310nm vs. 1550nm

Choosing the wrong wavelength can result in immediate link failure, unstable performance, or insufficient optical

Feb 13, 2026

The FOA Reference For Fiber Optics

Optical power meters typically use semiconductor detectors since they are sensitive to light in the wavelengths and power levels

Sep 10, 2025

What is the difference between 1310nm and 1550nm fiber?

These additional wavelengths offer different performance characteristics and are used in specialized applications, further expanding

Nov 27, 2025

High-Power Nonlinearity of Optical Fiber Power Meters for Pump

In our previous work we have reported international comparisons of optical fiber power with several NMIs [1-7] at 1310 nm and 1550

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1310nm vs. 1550nm Lasers: Understanding the Differences for Fiber Optic ...

However, for longer distances where maintaining signal strength and minimizing dispersion are critical, 1550nm lasers

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1310nm vs 1550nm Wavelength: Which Has Lower Fiber Optic Loss?

Compare fiber optic cable loss at 1310nm and 1550nm wavelengths. Learn attenuation rates, transmission distances, and expert

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The FOA Reference For Fiber Optics

Every fiber optic power meter sold is calibrated traceable to the NIST standard so different meters should measure the same power,

Jan 17, 2026

Benefits of Testing at two Wavelengths with MultiFiber Pro

Ideally you would test single mode links at both 1310 and 1550 nm wavelengths. Generally speaking, the 1310 nm

Feb 05, 2026

Understanding Wavelengths In Fiber Optics

The wavelengths we use for transmission must be the wavelengths we test for losses in our cable plants. Our power meters are

Nov 20, 2025

1310nm vs 1550nm Wavelength: Which Has Lower Fiber Optic Loss?

In standard single-mode fiber (SMF/OS2), the typical attenuation rate at 1550nm is 0.20 dB/km, whereas it is 0.35 dB/km at 1310nm.

Sep 25, 2025

How to calibrate your optical fiber power meter?

This is a testing setup developed by NIST to calibrate optical power meters using either collimated-beam or connectorized-fiber

Dec 16, 2025

Fiber 101: 1310 nm vs. 1550 nm Transmitters

Choosing 1310 nm vs 1550 nm is one of the first decisions in any fiber link, and it shapes how far the signal travels,

Jan 02, 2026

What is the difference between 1310nm and 1550nm?

The light used in fiber optics has longer wavelengths at 850, 1310, and 1550 nm, so the attenuation of the fiber is less,

Mar 21, 2026

Insertion Loss Troubleshooting Tip: Singlemode 1310 vs. 1550

It's normal that Insertion Loss values for a connector be ~0.01 - 0.05 dB better at 1550 than 1310. A connector, or an

Feb 17, 2026

What is difference between 1310nm and 1550nm?

But there are benefits to making it standard practice to test ALL fiberoptic cable assemblies at both 1310 and 1550: the Insertion Loss

Apr 25, 2026

How to Use an Optical Power Meter(OPM): A Beginner's Guide

An optical power meter is a professional testing device used to measure the power of optical signals accurately. It is

Jan 07, 2026

Technical Characteristics Of 10G Optical Modules With 1310nm And

1. Optical communication wavelengths 2. 1310nm vs 1550nm 2.1 Attenuation characteristics 2.2 Dispersion 3. 10

Contact Us

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