Negative Optical Power Meter

Article Overview

A negative reading on an optical power meter usually indicates a sensor or measurement setup issue, not that the light source is producing negative power.

Understanding Optical Power Meters

An optical power meter (OPM) measures the power of light signals, commonly in fiber optic systems, using a calibrated sensor and display unit. Sensors can be photodiodes or thermopile detectors, converting incident light into an electrical signal that the meter interprets as optical power . The reading is typically displayed in watts or decibel-milliwatts (dBm) and depends on proper wavelength calibration .

Causes of Negative Readings

Thermopile Sensors

Thermopile sensors measure power based on a temperature gradient between the absorber disc and the sensor body. Normally, the absorber is hotter than the sensor body, producing a positive voltage. If the sensor body becomes warmer than the absorber—such as from holding the sensor in your hand or nearby heat sources—the thermal gradient reverses, flipping the voltage polarity and resulting in a negative optical power reading . Allowing the sensor to reach thermal equilibrium usually resolves this issue.

Photodiode Sensors

Article Content

Fiber Optic Series: Understanding dB and dBm values

When conducting tests on fiber optic networks, the results are typically presented on a meter readout in

Laser Power Meter Negative Reading: Why It Happens and How to

By Mark Slutzki / March 18, 2026 English A negative reading on a laser power meter can be confusing during laser

Beginner''s Guide to Power Meter Usage for Optical Networks

Use a power meter for fiber optic testing by cleaning connectors, setting wavelength, calibrating, and following step-by

How to Use an Optical Power Meter for Fiber Testing

Learn how to use an optical power meter to test fiber links, read power levels, measure loss, and work safely around

The FOA Reference For Fiber Optics

Typically both transmitters and receivers have receptacles for fiber optic connectors, so measuring the

OPTICAL POWER METER 3664

The Hioki 3664 is an optical power meter for measuring the optical power of a spatial light. It is ideal for testing the optical power of

How to Use an Optical Power Meter Correctly

Step-by-step guide to using a fiber optic power meter: connector cleaning, wavelength selection, reference

Optical Power Meter Basics

Introduction An optical power meter measures the photon energy in the form of current or voltage from an optical detector such as a

Optical Power and Energy Meters

Compatible sensors are easily identified by the red C-series connector. All of our old A/B-Type sensors are

Laser Power Meter Negative Reading: Causes & Fixes

A negative reading on a laser power meter can be confusing during laser measurements.

Optical Meter

New! Optical Meters Benchtop Power & Energy Meters Handheld Power & Energy Meters Virtual Power Meters

Laser Power Meter Negative Reading: Causes & Fixes

Laser power meter negative reading? Discover causes like thermopile thermal imbalance,

Optical Power Meter: A Tool for Measuring Fiber Optic Power

An optical power meter is a device used to measure the power of an optical signal. It is a valuable tool for fiber optic technicians, as it

Optical Power Meters

Our handheld optical power and energy meters are plug and play compatible with our wide range of calibrated optical sensors for the

Optical Power and Energy Meters

Thorlabs'' expanding line of optical power and energy meters includes a large selection of sensor heads,

The Essential Guide to Optical Power Meters for Fiber Optic Testing

Optical Power Meter is normally used by Technicians, Network engineers and Manufacturers. They used to check if

Beginner''s Guide to Power Meter Usage for Optical

You can detect high splice loss by using both your optical power meter and an OTDR

Step-by-Step Guide to Using an Optical Power Meter

An optical power meter is a key tool that measures light strength in the fiber, helping identify signal losses or

Optical Fiber Power Meter Calibrations at NIST

The magnitude of this effect is a function of both wavelength and connector type, and, as a result, the optical power meter should be

What Is Optical Power Meter and Why It Matters for SFP Testing

That is why optical power measurement is one of the most important tasks in installation, validation, and

The FOA Reference For Fiber Optics

Fiber Optic Power Meters Fiber optic power meters measure the average optical power out of an optical

Optical Power Meter User Guide

Introduction The RP460 Optical Power Meter is an ultra low cost, and compact power meter used for verifying both absolute and

OPTICAL FIBER POWER MEASUREMENTS

Abstract We describe NIST measurement services for the calibration of optical fiber power meters. To augment the absolute power

The FOA Reference For Fiber Optics

Optical loss is measured in “dB” while optical power is measured in “dBm.” Loss is a negative number (like

Optical Power Meters – optical power measurement

Optical power meters are instruments for optical power measurements, based on heating of an absorber structure, for example, or on

Optical Power Meters

Benchtop optical power meters provide accurate measurements of optical power and energy by reading the output of calibrated

The FOA Reference For Fiber Optics

If we are measuring loss, like of a connection, we measure power before the connection and after the

Fiber Optic Testing FAQs

You compare that loss to the dynamic range of the networking equipment to see if the range and link loss are compatible. How

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://jrsekwele.co.za
Email: info@jrsekwele.co.za
Phone: +31-20-794-2536
Address: Herengracht 47, 1015 BB Amsterdam, Netherlands

This document is for informational purposes only. Specifications subject to change without notice.