UV optical power meter



Overview

These optical power monitors are used for the measurement and monitoring of optical power from the UV to near IR.

Key Takeaways

UV optical power meters measure the absolute power of ultraviolet light across UVA, UVB, and UVC ranges, providing precise readings for laboratory, industrial, and field applications. OverviewUV optical power meters are specialized instruments designed to measure the absolute power of ultraviolet light. They are essential for applications such as UV curing, sterilization, photolithography, and LED characterization.

These meters typically cover a wide UV wavelength range and offer a flat spectral response, ensuring accurate measurements independent of the light source's spectral emission distribution (Hamamatsu).

Key Features

Wavelength Coverage: Many UV power meters measure across UVA (315–400 nm), UVB (280–315 nm), and UVC (100–280 nm) ranges, with some models extending into visible and near-infrared regions (200–1100 nm) for broader applications (Newport). Detector Types: Photodiode-based detectors are commonly used for high sensitivity and linearity, suitable for both free-beam and fiber-coupled measurements (Artifex Engineering). Calibration and Accuracy: Advanced meters include spectral mismatch correction and application-specific calibrations to minimize measurement uncertainty (Gigahertz-Optik).

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Connectivity and Software: Many modern meters offer USB connectivity, allowing real-time data acquisition, graphical user interface control, and integration with Python or LabVIEW for automated measurements (Artifex Engineering). Dynamic Range and Sampling: High dynamic range and fast sampling rates (up to 600 samples/s) enable accurate monitoring of fluctuating UV sources, including LEDs and lasers (Artifex Engineering).

Applications

Laboratory Research: Measuring UV output from LEDs, lamps, and lasers for photonics experiments. Industrial Processes: Monitoring UV curing systems, sterilization lamps, and quality control in manufacturing. Field Use: Portable UV meters allow on-site verification of UV intensity for safety and compliance.

Popular Models

Hamamatsu C10427 / H10428: Offers flat spectral response over a wide UV range, battery-powered, suitable for absolute power measurements (Hamamatsu).

Gigahertz-

Optik MDC4 Series: Provides centroid wavelength determination and modular design for low measurement uncertainty (Gigahertz-Optik). Artifex OPM150: USB-powered, high sensitivity, compatible with various detector heads, ideal for OEM and laboratory applications (Artifex Engineering). Newport PMKIT-05-03: Covers 200–1100 nm, suitable for beginners and general optical power measurements (Newport).

ConclusionUV optical power meters are critical tools for accurate measurement and monitoring of UV light intensity. When selecting a meter, consider wavelength range, detector type, calibration accuracy, connectivity options, and application requirements. Modern meters provide versatile solutions for both laboratory and industrial environments, ensuring reliable and repeatable UV measurements.

Article Content

Optical Power and Energy Meters

Thorlabs'' expanding line of optical power and energy meters includes a large selection of sensor heads, single- and dual-channel power and energy meter

USB Optical Power Meter » Artifex Engineering

These optical power monitors are used for the measurement and monitoring of optical power from the UV to near IR. The series of optical power monitors

UV power meter C10427_H10428 | Hamamatsu Photonics

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This optical power meter has a flat spectral response over a wide UV wavelength range and so can measure the optical power in the spectral response range independent of the spectral emission

UV power meter H12684_C12144 | Hamamatsu Photonics

The sensor is capable of measuring high-intensity UV light yet exhibits minimal decrease in sensitivity even under UV expo-sure, allowing

Digital Handheld Optical Power and Energy Meter Consoles

The consoles (and sensors, sold separately) are ideal for use as CW and pulsed source power meters, incoherent optical source power meters, general light power meters, fiber power meters, and more.

Laser power, laser energy and terahertz power measurement systems ...

Manufacturer of laser power & energy meters, as well as terahertz meters and beam profiling cameras. Gentec-EO has helped customers make high-accuracy measurements since 1972.

Optical Power Meters

VIAVI offers fast, cost-effective, and easy-to-use power meters for installation and maintenance of single mode and multimode fiber optic networks and advanced, photonic-layer power meters for lab and

Laser power and energy meters

Wide portfolio of laser power meters and laser energy meters able to perform laser measurements up to multi-kilowatts optical power level Tech solutions, unique on

Lasers | Coherent

Industry leading Coherent Lasers bring technical innovation and deliver better results and value in, medicine, OEM instrumentation, and

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 can be used to measure the power of a variety of fiber optic devices,

GAINWAY GW-2010 Portable UV Differential Optical Absorption ...

2-meter effective optical path length enables high-sensitivity UV-DOAS detection—achieving detection limits compliant with HJ 75–2017 and HJ 1045–2019 for fixed-source emission monitoring.

NOYAFA NF-8508 Multi Network Cable Tester

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NOYAFA NF-8508 is an optical wire meter tracer designed for use in network and cable testing applications. This device is used to trace and identify optical fibers

Semiconductor Industry Trends & Forecast by TMR

TMR''s market research reports and statistics on the semiconductor industry cover semiconductor and chip technologies, market size, trends, industry forecasts, and company profiles.

MKS Inc.

Power meter kits are especially useful for those who are new to optical measurements and who need simple measurement tools. Save big when purchased as a kit. The kit includes the following

MKS Inc.

Note that the 843-R Optical Power Meter is not compatible with the legacy 818P series Thermopile Sensors and the 818E series Pyroelectric Sensors. Consider purchasing the 843-R-USB for a USB

UV Meters for UVA, UVB and UVC Gigahertz-Optik

UV Meters A comprehensive range of UV light meters with optimized solutions for almost every UV application. The following product table lists UV radiometers for measuring UV-A, UV-B and UV-C

Optical Power Meters

Optical Power Meter Guide Optical power meters and detectors have been served by Newport for over 30 years. The offering ranges from a low cost, hand-held meter to the most advanced dual channel

Handheld Illuminance Meter TES-133 Luminous Flux Lumen Tester ...

Handheld Illuminance Meter TES-133 Luminous Flux Lumen Tester Luminometer Strength Test Accurate and Instant Response For LEDs Fiber Illuminators for Optical Power, UV Test (Black-c)

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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