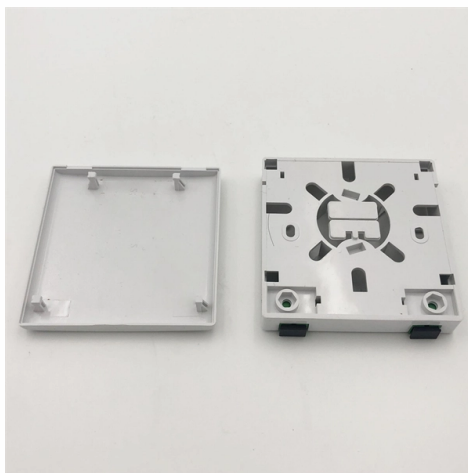


RIVO MULTITRADE OPTICAL SYSTEMS

Osa Spectrometer



Overview

Unparalleled Optical Performance The AQ6380 OSA is the highest performance optical spectrum analyzer from Yokogawa.

Key Takeaways

An OSA spectrometer is a precision instrument that measures and displays the power distribution of light across different wavelengths, enabling detailed spectral analysis for optical systems. What is an OSA?

An Optical Spectrum Analyzer (OSA) is a device used to measure the spectral composition of light signals. It provides a graphical representation of optical power versus wavelength, allowing engineers and researchers to analyze parameters such as wavelength, optical power, and signal-to-noise ratio (SNR) in optical systems. OSAs are widely used in telecommunications, fiber optic testing, spectroscopy, laser diagnostics, and R&D laboratories.

How an OSA Works

OSAs operate by dispersing incoming light into its component wavelengths using diffraction gratings, prisms, or interferometers. The dispersed light is then detected by a photodetector array, which measures the intensity of each wavelength. The resulting spectrum is displayed on a screen or transmitted to a connected computer for further analysis. This allows detection of issues such as chromatic dispersion, laser drift, or unwanted harmonics in optical systems.

Applications

- Telecommunications: Testing wavelength division multiplexing (WDM) systems, measuring optical powers of different channels, and evaluating SNR .
- Laser and LED characterization: Monitoring linewidth, spectral shape, and stability of laser sources .
- Spectroscopy: High-resolution analysis in Raman or fluorescence spectroscopy, and visible or infrared light studies .
- Industrial and environmental monitoring: Gas/chemical analysis, sensing, and microscopy .

Types and Features

OSAs vary in wavelength range, resolution, and sensitivity. Some are specialized for telecom bands (e.g., C-band 1530–1565 nm, L-band 1565–1625 nm), while others cover broader ranges from visible to infrared light (400–1700 nm or more), . Advanced models, like the Yokogawa AQ6361, offer high-speed measurements, high dynamic range, and compact form factors suitable for production lines and laboratory use . Features may include multiple resolution settings (0.03–2 nm), stray light suppression, and software for data analysis.

Summary

An OSA spectrometer is an essential tool for analyzing optical signals, ensuring system performance, and supporting research and production in optical technologies. Its ability to provide precise spectral information makes it indispensable in telecom, laser diagnostics, spectroscopy, and industrial applications .

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OSA Specifications Explained

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The OSA is the common name for a spectrometer used specifically in the telecom test field. The main difference between a “plain”

AQ6380 Optical Spectrum Analyzer 1200

Unparalleled Optical Performance The AQ6380 OSA is the highest performance optical spectrum analyzer from Yokogawa. Its

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EXFO provides highly accurate, easy-to-use intelligent optical spectral analyzers (OSAs) tailored to both laboratory and

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