

PRESS RELEASE

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Yokogawa Announces Release of AQ6375 Optical Spectrum Analyzer Covering Long Wavelengths over 2 μm

On November 15, Yokogawa Electric Corporation will release the AQ6375 Optical Spectrum Analyzer^{*1}, an instrument that utilizes dispersive spectroscopy to measure a laser optical spectrum in the 1.2 to 2.4 μm range with high wavelength resolution and high speed.

The AQ6375 Optical Spectrum Analyzer measures the spectral composition of light emitted from various types of optical devices. The AQ6375 is capable of measuring the optical spectrum of 2 μm band near-infrared semiconductor lasers that are mainly used in the environmental measurement field. With its high speed and resolution, it improves the performance of near-infrared semiconductor lasers and is leading to their wider use.

Yokogawa will exhibit this product at the Measurement & Control Show 2007 Tokyo to be held at Tokyo Big Sight exhibition center starting November 7, 2007, and will also present it in a technical seminar at this venue.

Development Background

Increasing concern about global environmental issues is driving various initiatives to reduce greenhouse gases. In addition to CO₂, which is a well known greenhouse gas, there are other gases such as sulfur dioxide (SO₂) and nitrogen dioxide (NO₂) that can damage the environment.

Laser absorption spectroscopy^{*2} is drawing attention and is being actively developed as a method for detecting small concentrations of gas molecules. Large-scale spectrometers have been used to measure near-infrared laser emissions in the 2 μm wavelength band. However, as there are problems with measurement resolution,

measurement speed, operability, and maintainability, requests have been made for an optical spectrum analyzer that is smaller and has higher performance.

The AQ6375 is based on optical spectrum measurement technologies for the communications wavelength range that were developed by Yokogawa, and is capable of measuring the spectrum of near-infrared lasers.

Product Features

1. Wide near-infrared measurement range

The AQ6375 can measure wavelengths in the 1.2 to 2.4 μm range, so it covers not only the wavelength range for laser absorption spectroscopy, but also the 1.31 to 1.55 μm wavelength range used in communications. The AQ6375 is suitable not only for measuring the optical spectrum from semiconductor lasers, but also the ultra-wide band spectrum of a supercontinuum (SC) source^{*3}.

2. High wavelength resolution and measurement sensitivity

The AQ6375 has a higher wavelength resolution (up to 0.05 nm) than conventional measurement systems that use a standalone spectrometer. The AQ6375 features a minimum optical spectrum receiving sensitivity of -70 dBm, and is capable of measuring, for example, spontaneous emissions of semiconductor lasers with a high signal-to-noise ratio. Furthermore, the AQ6375 allows the wavelength resolution to be set between 0.05 nm and 2.0 nm, and can be used in combination with a broadband light source to measure the wavelength characteristics of a passive optical device.

3. High-speed measurement, and high operability and maintainability

With Yokogawa's proprietary technology, the optical spectrum in the 0.1 μm wavelength span can be measured in one second or less. The AQ6375 also features superior operability and maintainability.

Main Markets

Optical semiconductor device manufacturers and optical module manufacturers

Applications

Evaluation of the optical spectrum from semiconductor lasers and evaluation of the wavelength characteristics of optical devices

*1 Optical spectrum analyzer: an instrument that measures the spectral composition of light, and measures its wavelength distribution

*2 Laser absorption spectroscopy: a method for analyzing the optical spectrum to measure the concentration of molecules. This method makes use of the fact that when the light from a laser interacts with a molecule, a specific wavelength of that light is absorbed depending on the molecule type.

*3 SC source: A wide-band light source produced by passing a high-energy short-pulse laser light through a specialty optical fiber.

About Yokogawa

Yokogawa's global network of 18 manufacturing facilities, 84 companies, and over 650 sales and engineering offices spans 33 countries. Since its founding in 1915, the US\$4 billion company has been engaged in cutting-edge research and innovation, securing more than 7,000 patents and registrations, including the world's first digital sensors for flow and pressure measurement. Industrial automation and control, test and measurement, information systems and industry support are the core businesses of Yokogawa. For more information about Yokogawa, please visit our web site at www.yokogawa.com.