Test&Measurement

YOKOGAWA

Optical Spectrum Analyzer
supporting exNIR and MWIR

AQ6375B/AQ6376

The AQ6375B and AQ6376 are the bench-top optical spectrum analyzers of the diffraction grating type covering the long wavelengths over 2 µm. They are designed for researchers and engineers who have been struggling with inadequate test equipment to measure in these long wavelength ranges. The AQ6375B and AQ6376 achieve high speed measurements with high accuracy, resolution and sensitivity. Cumbersome optical alignment adjustment and wavelength calibration are no longer required thanks to the built-in light source.

World's best in class optical performance

- Wavelength range: 1200 to 2400 nm (AQ6375B)
  1500 to 3400 nm (AQ6376)
- Wavelength accuracy: ±0.05 nm (AQ6375B)
  ±0.5 nm (AQ6376)
- Wavelength resolution: 0.05 to 2 nm (AQ6375B)
  0.1 to 2 nm (AQ6376)
- Dynamic range: 55 dB or more
- Level range: +20 to –70 dBm (AQ6375B)
  +13 to –65 dBm (AQ6376)
- Takes only 0.5 s for 100 nm span.

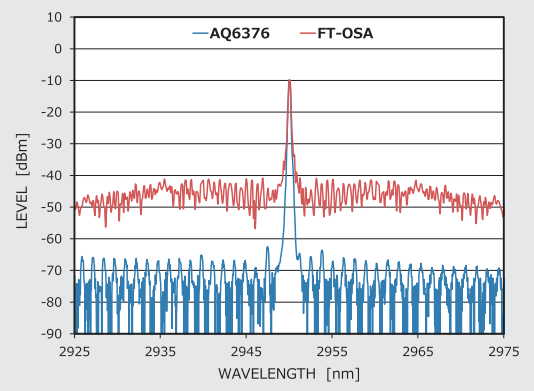
Features

- Gas purging feature
- Built-in cut filter for high order diffracted light
- Light source for wavelength calibration
- Free space optical input

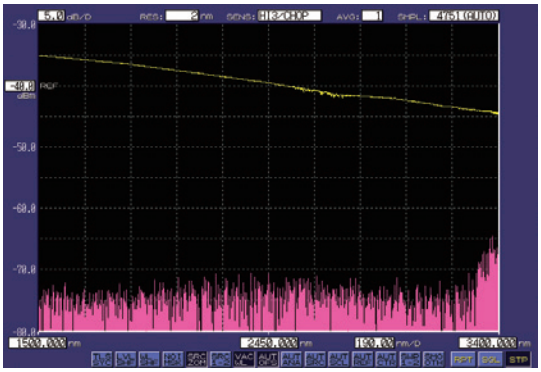
Expected application fields

- Environmental measurement/gas sensing
- Medical care and biotechnology
- Spatial optical communications
- Lasers
- Optical passive devices
- Optical fibers (highly nonlinear fiber, PCF, etc.)

With excellent optical performance such as high resolution, high sensitivity and high dynamic range, the AQ6375B and AQ6376 are able to measure the side mode suppression ratio (SMSR) of the laser and the spontaneous emission level accurately and quickly, which traditional analyzers of the interferometer type cannot measure.



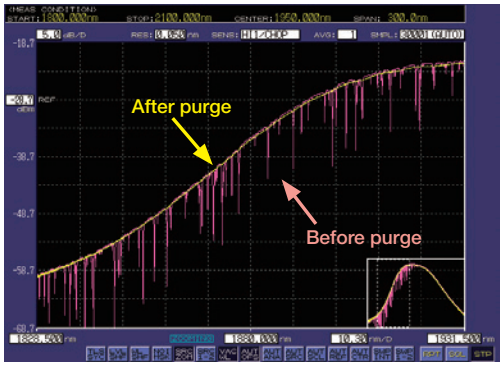
Comparison of dynamic range between AQ6376 and interferometer-type device (FT-OSA)



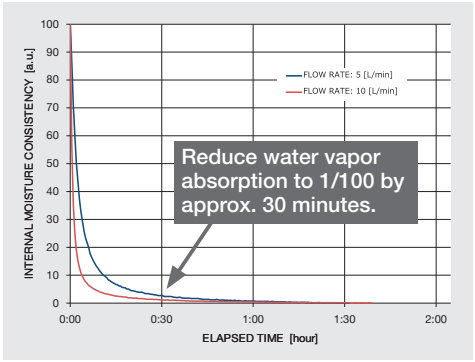
White light source's spectrum (yellow) and AQ6376's noise level (purple)

Gas purging feature

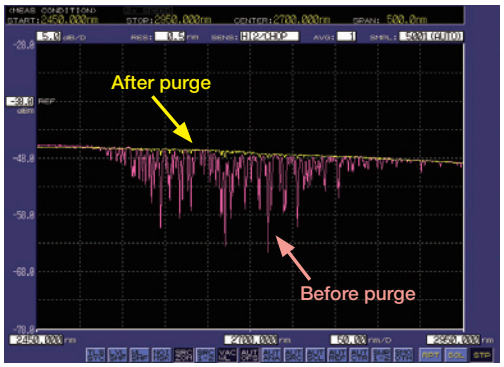
The AQ6375B and AQ6376 can detect the presence of water molecules in the air. The water vapor detected in the upper Near-IR wavelength region could overlay or mask the spectral characteristics of the actual device under test. By continuously supplying a pure purge gas such as nitrogen to the monochromator through the ports on the back panel, the OSAs can measure a spectrum which is no more affected by the water vapor absorptions.



Purge effect
(dry air for one hour)
Water vapor
absorption around
1900 nm



Purge
characteristics



Purge effect
(dry air for one hour)
Water vapor
absorption around
2700 nm

Purge gas IN/OUT

Purge specifications:

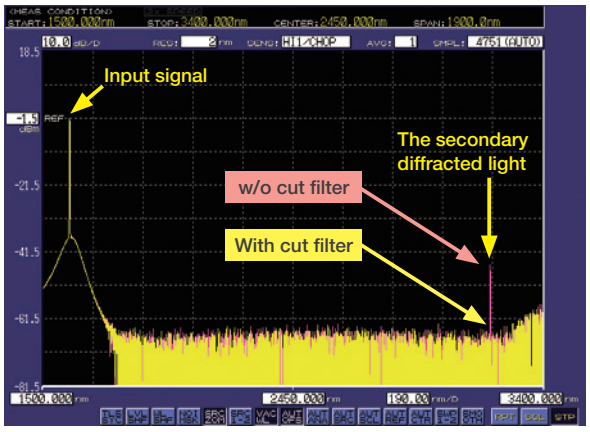
- Outside diameter 1/4 quick connector and nylon tube (inch size)
- Maximum rating
  Pressure: 1.5 psig/0.01 MPaG
  Flow rate: 12 L/min/25 SCFH
- Dry nitrogen made from vaporized 99.9999% super-high-purity liquefied nitrogen is recommended.

Built-in cut filter for high order diffracted light

Due to the diffractive technology used, the monochromator in some circumstances could generate high order diffracted light which appears at wavelengths equal to the integral multiple of input wavelengths. The AQ6375B and AQ6376 reduce the influence of high order diffracted light on the measurement by setting the built-in filter according to the measurement wavelength range.

Cut-filter effect

- Input signal: 1600 nm
- The secondary order diffracted light appears at 3200 nm.
- The AQ6376's cut-filter reduces the secondary order diffracted light to less than the noise level.



Characteristics example of cut-filter for high order diffracted light (AQ6376)

YOKOGAWA

http://tmi.yokogawa.com/

YMI-KS-MI-SE05

YOKOGAWA TEST & MEASUREMENT CORPORATION
Global Sales Dept. /Phone: +81-422-52-6237 E-mail: tm@cs.jp.yokogawa.com
Facsimile: +81-422-52-6462

YOKOGAWA CORPORATION OF AMERICA		E-mail: tmi@us.yokogawa.com	
YOKOGAWA EUROPE B.V.	Phone: +31-88-4641000	E-mail: tmi@nl.yokogawa.com	
YOKOGAWA SHANGHAI TRADING CO., LTD.	Phone: +86-21-6239-6363	E-mail: tech@ysh.com.cn	Facsimile: +86-21-6880-4987
YOKOGAWA ELECTRIC KOREA CO., LTD.	Phone: +82-2-2628-3810	E-mail: TMI@kr.yokogawa.com	Facsimile: +82-2-2628-3899
YOKOGAWA ENGINEERING ASIA PTE. LTD.	Phone: +65-6241-9933	E-mail: TMI@sg.yokogawa.com	Facsimile: +65-6241-9919
YOKOGAWA INDIA LTD.	Phone: +91-80-4158-6396	E-mail: tmi@in.yokogawa.com	Facsimile: +91-80-2852-1442
YOKOGAWA ELECTRIC CIS LTD.	Phone: +7-495-737-78-68	E-mail: info@ru.yokogawa.com	Facsimile: +7-495-737-78-69
YOKOGAWA AMERICA DO SUL LTDA.	Phone: +55-11-5681-2400		
YOKOGAWA MIDDLE EAST & AFRICA B.S.C(c)	Phone: +973-17-358100	E-mail: help.ymatmi@bh.yokogawa.com	Facsimile: +973-17-336100