

AQ6370 Series

Optical Spectrum Analyzer



AQ6370C / AQ6373 / AQ6375

VIS to NIR Applications
High resolution & dynamic range
Fast measurement
GP-IB/ Ethernet remote control
USB

QUALITY ■ INNOVATION ■ FORESIGHT

For more information, go to

tmi.yokogawa.com

Test & Measurement Instruments

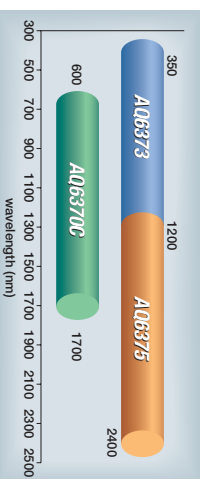
High Performance Optical Spectrum Analyzers Meeting Measurement Needs in a Broad Range of Applications

Wide Wavelength Coverage

AQ6370C (600 to 1700 nm)
Standard model optimized to the wavelengths often used in telecommunication applications.

AQ6373 (350 to 1200 nm)
for short-wavelength including visible light (VIS).
The VIS is from 380 to 780 nm.

AQ6375 (1200 to 2400 nm)
for long-wavelength over 2 μm .



The AQ6373 and AQ6375 can cover the entire wavelength range from 350 nm through 2400 nm.

World-class Optical Performance

**High Resolution 0.02 nm*
& High Dynamic Range 78 dB***

The advanced monochromator achieves high wavelength resolution and high close-in dynamic range. With the sharper spectral characteristics of the monochromator, spectral signals in close proximity can be separated clearly and measured accurately.

High Sensitivity: -90 dBm*

Weak optical signals can be measured accurately and quickly.

7 sensitivity settings

Can be selected according to test applications and measurement speed requirements. The settings correspond to the sensitivity from -60 dBm to -90 dBm in approx. 5 dB steps. In the case of AQ6370C.

High dynamic mode

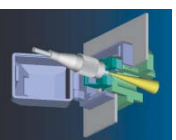
Obtains a better dynamic range by reducing the influence of stray-light, which is caused when the input is a strong optical signal.

Pulsed Light Measurement

• Peak-Hold and External Trigger mode
Measure a pulse peak spectrum or a pulsed light signal. Often used in the transmission loop testing of telecommunication systems, and also in the low power measurement at the early stage of laser chip development to catch the peak power of a pulsed signal.

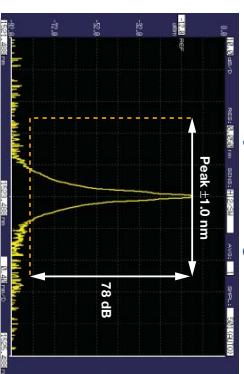
Free Space Input

• Multimode and single mode fiber on the same OSA.
AQ6370 series low insertion loss for multimode fiber is also beneficial to maintain the excellent measurement efficiency.
• Small insertion loss variation at the input connector increases measurement repeatability.
• No damage connecting fibers because there is no physical contact.



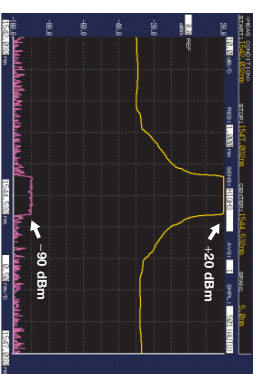
Optical input structure (note: AQ6370 uses a fixed connector)

Dynamic Range



AQ6370C, Peak: ±1.0 nm, Resolution setting 0.05 nm.
High dynamic mode: ON, High performance model, typical

Measurement Power Range



AQ6370C, Sensitivity setting: HIGH, High dynamic mode: OFF, typical

AQ6370 Series Optical Spectrum Analyzer

Excellent Efficiency

Fast Sweep

With an advanced monochromator, faster electrical circuits, and noise reduction techniques, the AQ6370 series achieves fast measurement speed even when measuring a steep spectrum from DFB-LD or DWDM signals, or when measuring a low power signal from a broadband light source.

Fast Remote Interface

AQ6370 series provides faster remote control and data transfer capability.

100x Ethernet interface is 100 times faster

10x GP-IB interface is 10 times faster

(compared with the conventional GP-IB used on Yokogawa AQ6317 series optical spectrum analyzer)

Wide Span Sweep yet High Resolution

The 50,001 data sampling points expands measurement range in a single sweep while keeping a high wavelength resolution. This makes your measurement easier and more efficient than conventional systems that use a low number of sampling points and require multiple partial measurements to cover the complete wavelength range.

Easy to Keep Accurate

Ambient condition change, vibration and shock to an optical precision product, will effect the optical components, and eventually degrade optical performance.

Using standard functions, AQ6370 series can maintain its high optical performance within a couple of minutes so that you can quickly start a measurement.

Optical Alignment Function

Automatically aligns the optical path in the monochromator using the built-in source to maintain high performance.

Wavelength Calibration Function

Automatically calibrates the spectrum analyzer with the built-in wavelength reference or an external light source, to ensure the wavelength accuracy.

Note: There are cases that the optical alignment and wavelength calibration function cannot correct optical performance. Periodical calibration is also required separately.

Built-in Calibration Source

Wavelength reference source

For the wavelength calibration and optical alignment

Available on AQ6370C and AQ6375

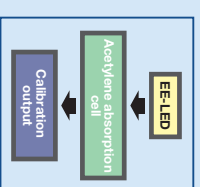
Note: SMA 9.5/2.5 μm fiber is required.

Optical alignment source

For the optical alignment

Available on AQ6373

Note: G150175 μm fiber is required. An external light source is required for the wavelength calibration.



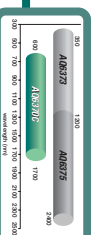
Structure of the built-in wavelength reference source.

Key Features

AQ6370 Series Optical Spectrum Analyzer

AQ6370C 600 to 1700 nm

STANDARD



Standard and High-performance models

There are two models available. Standard and High performance. The High performance model provides even higher wavelength accuracy and dynamic range.

High wavelength resolution: 0.02 nm

High wavelength accuracy: ± 0.01 nm

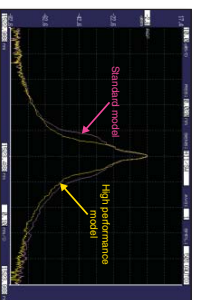
- High performance model: ± 0.01 nm (C band)
- Standard model: ± 0.02 nm (C+L band)

Ultra-High dynamic range: 78 dB typ.

With the reduced stray-light in the monochromator, AQ6370C achieves ultra-high dynamic range of typ. 78 dB.

Sharper filter edge

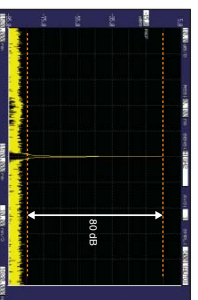
The high performance model can also achieve a higher dynamic range within 0.2 nm of the peak wavelength. With the sharper spectral characteristics of the monochromator, spectral signals in close proximity can be separated clearly and measured accurately.



Example of the spectral shape

Stray-light suppression ratio: 80 dB typ.

This new specification provides stray-light suppression capability without the High dynamic mode, which takes a longer measurement time. The AQ6370C contributes to shortening the measurement time with the high stray light suppression ratio.



Example of the stray-light suppression ratio
High dynamic mode: OFF (Resolution setting 0.1 nm)
High performance model

Applications

- Optical active devices (Laser diode/Fiber laser/Optical amplifier/Optical transceiver)
- Laser diode/Fiber laser/FP/G/Specially optical fiber
- Optical passive devices (Filter/PCG/AM/GWS/ROADM/Optical fiber)
- Optical transmission equipment (DWDM, CWDM)
- Development support of Applied photonics equipment

Wide level range: ± 20 dBm to -90 dBm

The AQ6370C can measure high power sources such as optical amplifiers and pump lasers for Raman amplifiers, and very weak optical signals as well. Measurement sensitivity can be chosen from seven categories according to test applications and measurement speed requirements.

Improved level sensitivity: -85 dBm (1000 to 1300 nm)

Smoothing function

Reduce noise on the measured spectrum.

APC level correction

The APC level correction function corrects the level offset caused by an insertion loss of angled PC connector.

Fast measurement: 0.2 sec. (100 nm span)

Single-mode and Multimode fibers

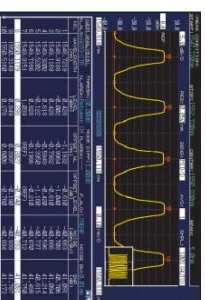
Built-in wavelength reference source for wavelength calibration and optical alignment

Universal optical connectors

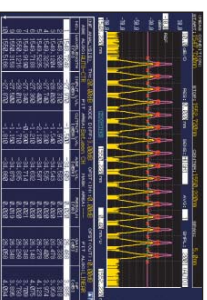
Optimized performance and functions for WDM systems

High wavelength linearity and Level flatness (1450 to 1620 nm)

WDM (OSNR) analysis and EDFA analysis



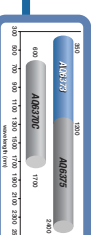
OSNR measurement on DWDM system
The WDM (OSNR) analysis function finds channel wavelength, power, channel spacing, and OSNR.



Optical amplifier (EDFA) measurement
The WDM-NF (EDFA) analysis finds channel wavelength, Gain and Noise figure (NF).

AQ6373 350 to 1200 nm

SHORT Wavelength



Wavelength accuracy: ± 0.05 nm

Wavelength resolution: 0.02 to 10 nm and 0.01 nm (400 to 470 nm)

Max safe input power: ± 20 dBm

Level sensitivity: -80 dBm

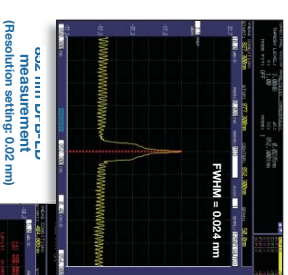
Dynamic range: ≥ 60 dB

Single-mode, Multimode, and Large-core fibers

Built-in optical alignment source

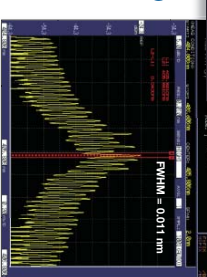
Wavelength calibration with an external reference source

Various analysis functions including the Color analysis function for Visible light



The details of oscillation modes can be measured with high resolution of 0.02 nm

In 400-470 nm range, achieves even higher resolution.



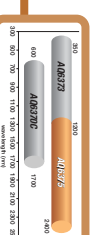
405 nm FP-LD measurement (Resolution setting: 0.01 nm)

Applications

- Optical active devices (Laser diode/Fiber laser)
- Optical passive devices (Filter/PCG/Specially optical fiber)
- Development support of Applied photonics equipment
- Medical/Bio area: Laser therapy, DNA sequencing, Microscopy, cell fluorescence
- Industrial area: Laser micro-machine, laser marker
- High speed optical communication: High speed optical disc, LED products
- Measurement/sensing area: LIDAR, interferometer
- Telecom area: Plastic Optical fiber (POF) communication

AQ6375 1200 to 2400 nm

LONG Wavelength



Wavelength accuracy: ± 0.05 nm

Wavelength resolution: 0.05 to 2 nm

Max input power: ± 20 dBm

Level sensitivity: -70 dBm

Dynamic range: ≥ 55 dB

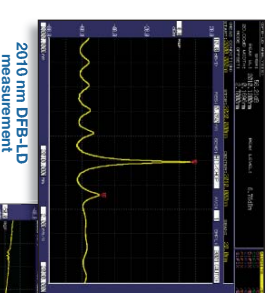
Single-mode and Multimode fibers

Built-in wavelength reference source for wavelength calibration and optical alignment

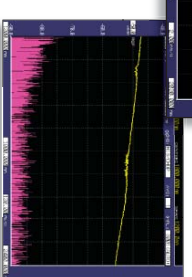
Universal optical connectors

Various analysis functions

X-axis: nm / THz / cm^{-1}



2010 nm DFB-LD measurement



White light source (yellow) and the background noise of AQ6375 (red)
Resolution: 0.05 nm, Span: 20 nm,
Sensitivity: HIGH/CHOP

Applications

- Optical active devices (Laser diode/Fiber laser)
- Optical passive devices (Filter/PCG/Specially optical fiber)
- Development support of Applied photonics equipment
- Measurement/sensing area: Gas/Environmental sensing
- Medical/Bio area
- Telecom area: Optical fiber/Free-space communication

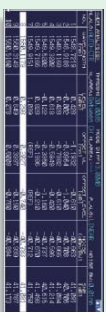
Test Applications and Related Products

A06370 Series
Optical Spectrum Analyzer

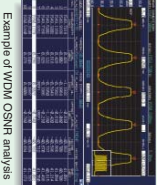
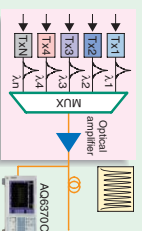
AQ6370C

WDM OSNR Test

AQ6370C's wide dynamic range allows accurate OSNR measurement of WDM transmission systems. The built-in WDM analysis function analyzes the measured waveform and shows peak wavelength, peak level and OSNR of WDM signals up to 1024 channels simultaneously. The curve fit function is used to accurately measure noise levels.



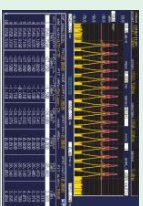
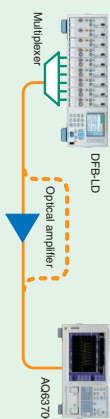
Example of analyzed data table



Optical Amplifier Test

The ASE interpolation method is used to measure gain, NF, and key parameters for optical fiber amplifier evaluation. With WDM-NF analysis function, up to 1024 channels of multiplexed signals can simultaneously be tested. An ASE level for NF measurement is calculated by using a curve-fit function for each WDM channel. The wave and noise spontaneous emission (SSP) suppress function enhance a measurement accuracy.

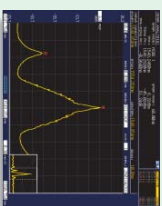
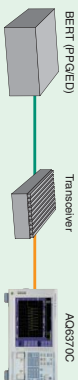
AQ2200
Main Application Test System



WDM waveform before and after amplification by EDFA

Optical Transceiver Test

In conjunction with bit error rate test (BERT) equipment, the AQ6370C can measure the center wavelength and spectral width of transceivers and LD modules. Various built-in analysis functions, such as DFB-LD, FP-LD (WSEL), and LED facilitate test process.

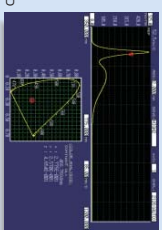


Example waveform and analysis result of transceiver output

AQ6373

Visible LED Test

The optical spectrum of visible LEDs used in lighting, indication, measurement and applications can be measured and analyzed. By supporting the large core fiber input, AQ6373 can efficiently get the LED light and measure its spectrum. The built-in color analysis function automatically evaluates a dominant wavelength and chromatic coordinates.

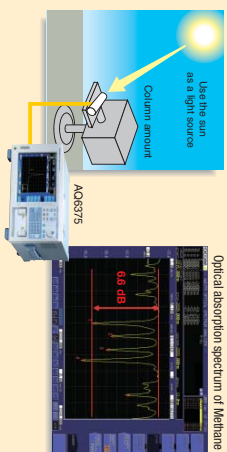


Color analysis of White LED

AQ6375

Global Warming Gas (Methane) Measurement

The global warming gases such as CO₂, SO_x, NO_x, and Methane, have strong optical absorption around 2 μm wavelength region. The distribution and concentration of those gases in the atmosphere can be determined by measuring the optical absorbance. Simply connecting the collected sunlight using an optical fiber AQ6375 can measure the optical absorbance corresponding to the gas' column concentration in the atmosphere.



Optical absorption spectrum of Methane

All models

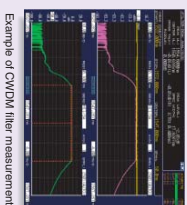
Passive Component Test

In conjunction with a white light source or an ASE light source or other broadband light sources, you can simply perform evaluation of passive devices such as WDM filters and FBG. The AQ6370 series' superb optical characteristics enable higher-resolution and wider dynamic range measurements. The built-in optical filter analysis function simultaneously reports peak/bottom wavelength, level, crosstalk, and ripple width.

AQ4305
White Light Source

AQ6370 series

DUT (FBG, WDM filter, etc.)



Example of CWDM filter measurement

Accessories (Optional)

AQ6370 Viewer (PC application software)

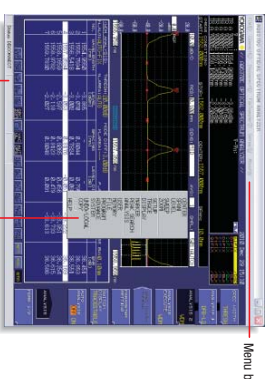
The AQ6370 Viewer is a package of PC application software for the AQ6370 series Optical Spectrum Analyzer.

- The same user interface and functions as the mainframe
- Display and analyze waveform data acquired by the mainframe
- Remote control and file transfer capability

Viewer function

Trace data files saved on the AQ6370 series can be retrieved and analyzed on a PC.

Note: Measurement cannot be initiated in the Viewer mode



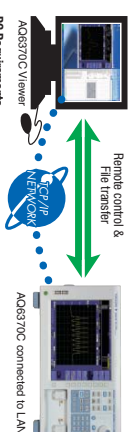
Remote control function

The remote control allows you to set measurement conditions and to execute a measurement on the mainframe from anywhere on an Ethernet network. Upon completion of a measurement on the mainframe, the AQ6370 Viewer downloads and shows the updated traces.

Note: Data transfer speed varies depending on PC and network performance. The program function is not supported. Some other restrictions may apply.

File transfer function

Transfer files from the mainframe to the PC and vice versa. The macro program file edited on the AQ6370 Viewer can also be transferred to the mainframe.



PC Requirements
<Hardware> HDD: 50 MB or more of available disk space, Memory 512 MB or more
<OS> Windows 2000 (Service Pack 4 or later) or Windows XP (Service Pack 1 or later)

Bundled software

- AQ6370 Viewer consists of the following software.
- AQ6370C Viewer: AQ6370C Optical Spectrum Analyzer
- AQ6373 Viewer: AQ6373 Optical Spectrum Analyzer
- AQ6375 Viewer: AQ6375 Optical Spectrum Analyzer (Discontinued)
- AQ6370b Viewer: AQ6370b Optical Spectrum Analyzer (Discontinued)

NA Conversion Adapter 735383-A001

The 735383-A001 is a unique adapter that reduces the numerical aperture (NA) of a connected fiber to half and is only applicable to the AQ6370 series optical spectrum analyzer in which free space optical input structure is used. With this adapter, AQ6370 series improves the dynamic range (signal to noise ratio) in the passive component measurement and the level stability in the active device measurement.

- Applicable fiber: Multimode fiber (650/125 μm)
- Wavelength range: 350 to 1700 nm

Related Products

White Light Source AQ4305

The AQ4305 is a high power and broadband light source using a halogen lamp. In conjunction with the AQ6370 series optical spectrum analyzer, the AQ4305 allows to measure the wavelength dependent loss characteristics of optical devices and optical fibers at wavelengths used for such applications as telecommunications, visible light, and environmental measurement.

- High power: ~40 dbm or more (at 650/125 nm)
- Wavelength range: 400 to 1800 nm
- High output stability: ±0.05 dB
- Optical output: Free space

Multi Application Test System AQ2200

The AQ2200 Multi Application Test System is the ideal system for building a measuring system in conjunction with the AQ6370 series for a wide range of optical devices and optical transmission systems. The AQ2200 is available in two different frame controller platforms and offers a variety of measurement modules to build a custom, yet flexible test system.

- Frame controllers: 3-slot model, 9-slot model
- Light source: DFB-LD
- Sensors: High sensitivity model, High power model, Dual model, Large diameter model.
- Optical attenuators: Simple ATTn, ATTn with monitor port, ATTn with built-in sensor
- Optical switches: Dual 1×2, Dual 2×2, 1×4, 1×8, 1×16
- Optical transceiver controllers



NA Conversion Adapter 735383-A001



White Light Source AQ4305 Broadband



AQ2200 system Modular Platform

Note: Models for multimode fiber are also available for the optical attenuator and optical switches.

Major Specifications

A06370 Series

Optical Spectrum Analyzer

AC6370C

Items		Specifications	
Specs-code	Standard (410)	High performance (420)	
Wavelength range ¹	600 to 1700 nm		
Span ²	0.5 nm to 1100 nm (full span), and 0 nm		
Wavelength accuracy ^{3, 4, 5}	±0.02 nm (1550 to 1580 nm) ±0.02 nm (1580 to 1600 nm) ±0.04 nm (1600 to 1650 nm) ±0.10 nm (full range)	±0.01 nm (1520 to 1580 nm) ±0.02 nm (1580 to 1600 nm) ±0.04 nm (1450 to 1520 nm) ±0.10 nm (full range)	
Wavelength linearity ^{3, 4, 5}	±0.01 nm (1520 to 1580 nm), ±0.02 nm (1450 to 1520 nm, 1580 to 1620 nm)		
Wavelength repeatability ^{3, 4}	±0.005 nm (1 nm)		
Wavelength resolution setting ^{3, 4, 5}	0.02, 0.05, 0.1, 0.2, 0.5, 1 and 2 nm		
Wavelength resolution accuracy ^{3, 4, 5}	±5% (1450 to 1620 nm, Resolution setting: ≥ 0.1 nm, Resolution correction: ON, Number of sampling: AUTO)		
Min. sampling resolution ³	0.001 nm		
Number of sampling	101 to 50001, AUTO		
Level sensitivity setting	NORM, HOLD, NORM, AUTO, NORMAL, MID, HIGH1, HIGH2 and HIGH3		
High dynamic mode	SWITCH (Sensitivity: MID, HIGH1-3)		
Level sensitivity ^{3, 4, 5, 6, 7}	-90 dBm (1300 to 1620 nm), -85 dBm (1000 to 1300 nm), -60 dBm (600 to 1000 nm) (Sensitivity: HIGH1-3)		
Maximum input power ^{3, 4}	+20 dBm (Per channel, full range)		
Maximum static input power ^{3, 4}	+25 dBm (Total input power)		
Level accuracy ^{3, 4, 5, 6, 7, 8}	±0.4 dB (1310/1550 nm, input level: -20 dBm, Sensitivity: MID, HIGH1-3)		
Level linearity ^{3, 4, 5}	±0.05 dB (input level: -50 to +10 dBm, Sensitivity: HIGH1-3)		
Level flatness ^{3, 4, 5, 6, 7, 8}	±0.1 dB (1520 to 1580 nm), ±0.2 dB (1450 to 1520 nm, 1580 to 1620 nm)		
Polarization dependence ^{3, 4, 5, 6}	±0.05 dB (1550/1600 nm), ±0.08 dB (1310 nm)		
Dynamic range ^{3, 4, 5}	Resolution: 0.02 nm 55 dB (Peak: ±0.2 nm) 37 dB (Peak: ±0.1 nm)	59 dB (Peak: ±0.2 nm, Typ: 60 dB) 45 dB (Peak: ±0.1 nm, Typ: 50 dB)	
Applicable fiber	Resolution: 0.05 nm	73 dB (Peak: ±1.0 nm, Typ: 78 dB) 64 dB (Peak: ±0.4 nm, Typ: 70 dB) 50 dB (Peak: ±0.2 nm, Typ: 55 dB)	
	Resolution: 0.1 nm	60 dB (Peak: ±0.4 nm, Typ: 67 dB) 45 dB (Peak: ±0.2 nm, Typ: 50 dB)	
	Resolution: 0.1 nm	40 dB (Peak: ±0.2 nm)	
Sliver-light suppression ratio ^{3, 4, 5, 6}	73 dB	76 dB (Typ: 80 dB)	
Optical return loss ^{3, 4}	Typ: 35 dB (with angled-PC connector) SM (9.5/125 μm), GI (50/125 μm, 62.5/125 μm)		
Applicable fiber	Optical input: AQ6447 (□) Connector adapter (option) required Calibration output: AQ6941 (□) Universal adapter (option) required, (□) Connector type FC, SC, or ST		
Build-in calibration light source	Wavelength reference source (for optical alignment and wavelength calibration)		
Warm-up time ^{3, 4, 5}	Minimum 1 hour (After warming up, optical alignment adjustment with built-in light source is required) NORM, AUTO: 0.2 sec, NORMAL: 1 sec, MID: 2 sec, HIGH1: 3 sec, HIGH2: 20 sec, HIGH3: 75 sec		
Warm-up time			
1. Horizontal scale: Wavelength display mode.			
2. Wavelength range: 600 nm range mode fiber with a PC type connector, after 1 hour of warm-up, after optical alignment with built-in reference light source.			
3. Vertical scale: Absolute power display mode, Resolution setting: ≥ 0.05 nm, Resolution correction: OFF.			
4. Optical return loss: Absolute power display mode, Resolution setting: ≥ 0.05 nm, Resolution correction: OFF.			
5. Optical return loss: Absolute power display mode, Resolution setting: ≥ 0.05 nm, Resolution correction: OFF.			
6. After wavelength calibration with built-in reference light source, Sampling resolution: ≤ 0.003 nm, diameter: 5.5 μm, NA: 0.104 to 0.107.			
7. After wavelength calibration with built-in reference light source, Sampling resolution: ≤ 0.003 nm, diameter: 5.5 μm, NA: 0.104 to 0.107.			
8. Temperature variation changes to 25.5±0.1°C at 0.02 nm resolution setting.			

Functions & General Specifications

Functions	
Items	Functions
Measurement	CW light, Pulsed light, External trigger, AirVacuum wavelength, TLS synchronization (sweep: see AQ6374)
Sweep mode	Repeat, Single, AUTO (Self-configuration), Sweep between line markers, Zero span sweep (0 nm span)
Condition settings	Center wavelength, Span, Number of sampling, Wavelength resolution, Sensitivity, High dynamic mode, Number of averaging (1 to 999 times), Smoothing (see AQ6374), APC level correction (AQ6374 only)
Others	Sweep status output, Analog output
Display	Level scale (0.1 to 10 dB/div and linear), Level sub-scale (0.1 to 10 dB/div and linear), Reference level: Divisions 8, 10 or 12, power spectral density (dBm), dB/cm, %, Noise mask
Trace	Horizontal scale
Trace functions	Normal display, Split display, Data table, Label, Template, Measurement conditions
	7 independent traces, Maximum/Minimum hold, Calculation between traces, Normalized, Curve fit, Peak curve fit, Marker curve fit, Peak averaging (2 to 100 times)
	Traces copy/clear function, What'sFit setting, Display/Blink setting
Marker	Delta markers (Max. 1024), Vertical/horizontal line markers
Marker & Search	Peak, Bottom, Next peak, Next bottom, Auto-search (ON/OFF), Search between horizontal line markers, Search zoomed area
Data analysis	Special view (threshold, envelope, RMS peak (RMS, notch), WDM (OSNR) analysis, ECPA-WF analysis, see AQ6374, Filter pass/blocking analysis, WDM filter pass/blocking analysis, OFR-LD/FP-LD/LED analysis, SWSR analysis, Power analysis, PMD analysis, Color analysis (AQ6374 only), Pass/Fail analysis with template
Others	Auto-analysis (ON/OFF), Analysis between horizontal line markers, Analysis in zoomed area
Automated measurement	64 programs, 200 steps per program
Other functions	Auto-optical alignment with built-in light source Auto-wavelength calibration with built-in wavelength reference source (AQ6370 & AQ6375 only) or an external reference source. Non-AQ6373 requires an external reference source for wavelength calibration.

AC6373

	Items	Specifications
	Wavelength range ¹	350 to 1200 nm
	Span ²	0.5 nm to 850 nm (full span), and 0 nm
	Wavelength accuracy ³	±0.05 nm (633 nm), ±0.20 nm (400 to 1100 nm) (After wavelength calibration with 633 nm HeNe laser)
	Wavelength resolution setting ^{3, 4}	0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10 nm (full range), and 0.01 nm (400 to 470 nm)
	Minimum sampling resolution ³	0.001 nm
	Number of sampling	101 to 50001, AUTO
	Level sensitivity setting	NORM, HOLD, NORM, AUTO, NORMAL, MID, HIGH1, HIGH2 and HIGH3
	High dynamic mode	SWITCH (Sensitivity: MID, HIGH1-3)
	Level sensitivity ^{3, 4}	-80 dBm (500 to 1000 nm), -60 dBm (400 to 500 nm, 1000 to 1100 nm) (Typical, Resolution setting: ≥ 0.2 nm, Averaging: 10 times, Sensitivity: HIGH3)
	Maximum safe input power ³	-40 dBm (550 to 1100 nm), +10 dBm (400 to 550 nm) (Total input power)
	Level accuracy ³	±1.0 dB (850 nm, input level: -20 dBm, Resolution setting: ≥ 0.2 nm, Sensitivity: MID, HIGH1-3, SMF: MFD 5 μm @ 850 nm, NA: 0.14)
	Level linearity ³	±0.2 dB (input level: -40 to 0 dBm, Sensitivity: HIGH1-3)
	Dynamic range ³	60 dB (Peak: ±0.5 nm, Resolution setting: 0.02 nm, 633 nm, Sensitivity: HIGH1-3)
	Applicable fiber	SM, GI (50/125 μm, 62.5/125 μm), Large core fiber (up to 800 μm)
	Optical connector	FC type (Optical input and Calibration output)
	Build-in calibration light source	Optical alignment source (for optical alignment; Wavelength reference is not equipped)
	Warm-up time ^{3, 4, 5}	NORM, AUTO: 0.05 sec; NORMAL, 1 sec; MID: 2 sec; HIGH1-5 sec; HIGH2-20 sec; HIGH3-75 sec
	Warm-up time	Minimum 1 hour (After warming up, optical alignment adjustment with built-in light source is required)

Performance and functions can be limited by type of used fiber. The specifications are only guaranteed when a single mode fiber in which light travels in single mode at measured wavelength is used. In case used a measured spectrum may be inaccurate due to a speckle noise. Please be cautious especially when measuring high-concentrations spectra like gas laser and laser diode.

1. Horizontal scale: Wavelength display mode.

2. Actual wavelength resolution varies according to a measured wavelength. Actual resolution at 10 nm range mode: OFF, Number of sampling: 1001, Average number: 1, Span: ≤ 100 nm, Resolution setting: 0.02 nm, MID: 2 sec, HIGH1-5 sec, HIGH2-20 sec, HIGH3-75 sec.

3. Vertical scale: Absolute power display mode.

4. High dynamic mode: OFF, Number of sampling: 1001, Average number: 1, Span: ≤ 100 nm, Resolution setting: 0.02 nm, MID: 2 sec, HIGH1-5 sec, HIGH2-20 sec, HIGH3-75 sec.

General Specifications

Items		Specifications	
Electrical interface	GP-IB: ×2 (standard/optional), RS-232, Ethernet, USB, RS-485 (optional), SVOK output, Analog output port, Trigger input port, Trigger output port		
Remote control ¹	GP-IB: RS-232, Ethernet (TCP/IP), RS-485 (optional), SVOK output, Analog output port, Trigger input port, Trigger output port		
Data storage	Internal storage: 512 MB (typical), External storage: USB storage (memory/DVD), FAT32 format		
Display ²	10.4-inch color LCD (Resolution: 800 × 600)		
Printer	Built-in thermal printer (Factory installed option)		
Dimensions	468 (W) × 221 (H) × 459 (D) mm (Excluding protector and handle)		
Mass	AC6370C: 19.5 kg, AC6373: 20 kg, AC6375: 27 kg (without prime option)		
Power requirements	100 to 240 V AC, 50/60 Hz, approx. 150 VA		
Environmental conditions	Performance guarantee temperature: -18 to +28°C Storage temperature: -45 to +35°C Humidity: ≤ 80% RH (no condensation)		

¹ Some AC6373 series commands may not be compatible due to changes in specifications or software versions. Please refer to the user manual for details.

² Liquid crystal display may include a few defective pixels (within 0.002% with respect to the total number of pixels including RGB). There may be a few pixels on the liquid crystal display that do not emit all the time or remain ON at the time. These are not malfunctions.

AC6375

Item	Specifications
Wavelength range ¹	1200 to 2400 nm
Span ²	0.5 nm to 1200 nm (full span), and 0 nm
Wavelength accuracy ^{3, 4, 5}	-0.05 nm (1520 to 1580 nm), ±0.10 nm (1580 to 1620 nm)
Wavelength repeatability ^{3, 4}	±0.05 nm (Full range)
Wavelength resolution setting ^{3, 4}	±0.05 nm (1 nm)
Minimum sampling resolution ³	0.05, 0.1, 0.2, 0.5, 1 and 2 nm
Number of sampling	0.002 nm
Level sensitivity setting	101 to 50001, AUTO
Level sensitivity ^{3, 4, 5, 6, 7}	NORM, HOLD, NORM, AUTO, NORMAL, MID, HIGH1, HIGH2 and HIGH3
Maximum input power ^{3, 4}	Only high dynamic mode (CHOP in HIGH1-3)
Maximum safe input power ^{3, 4}	-70 dBm (1800 to 2200 nm), -67 dBm (1500 to 1800 nm) to 2400 nm, -60 dBm (1300 to 1500 nm) (Sensitivity: HIGH3)
Level accuracy ^{3, 4, 5, 6, 7, 8}	-20 dBm (Per channel, full wavelength range)
Level linearity ^{3, 4}	-25 dBm (Total input power)
Polarization dependence ^{3, 4, 5}	±1.0 dB (1550 nm, input level: -20 dBm, Sensitivity: MID, HIGH1-3)
Dynamic range ^{3, 4}	-0.05 dB (input level: -30 to +10 dBm, Sensitivity: HIGH1-3)
Applicable fiber	±0.1 dB (1550 nm)
Optical connector	45 dB (Peak: ±0.4 nm resolution 0.05 nm, 55 dB (Peak: ±0.8 nm resolution 0.05 nm)
Build-in calibration light source	(1523 nm, Sensitivity: HIGH1-3)
Warm-up time ^{3, 4, 5}	SM, GI (50/125 μm, 62.5/125 μm)
	Optical input: AQ6447 (□) Connector adapter (option) required
	Calibration output: AQ6941 (□) Universal detector (option)
	required, (□) Connector type FC, SC, or ST
	Wavelength reference source (for optical alignment and wavelength calibration)
	NORM, AUTO 0.5 sec, NORMAL: 1 sec, MID: 10 sec, HIGH1-20 sec
	Warm-up time (After warming up, optical alignment adjustment
	within 1 hour source is required)

Performance and functions can be limited by type of used fiber. The specifications are only guaranteed when a single mode fiber in which light travels in single mode at measured wavelength is used. In case used a measured spectrum may be inaccurate due to a speckle noise. Please be cautious especially when measuring high-concentrations spectra like gas laser and laser diode.

1. Horizontal scale: Wavelength display mode.

2. Wavelength range: 1200 nm range mode fiber with PC type connector, after 10 hours of warm-up, after optical alignment with built-in reference light source.

3. Vertical scale: Absolute power display mode, Resolution setting: ≥ 0.1 nm, Resolution correction: OFF.

4. Optical return loss: Absolute power display mode, Resolution setting: ≥ 0.05 nm, Resolution correction: OFF.

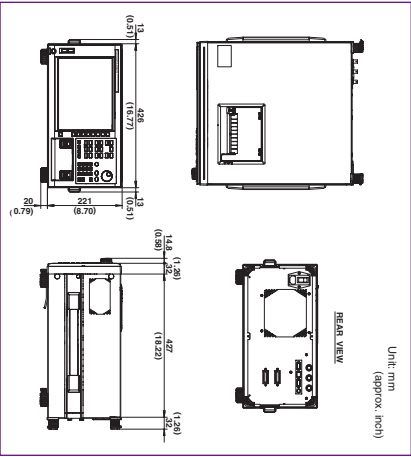
5. Optical return loss: Absolute power display mode, Resolution setting: ≥ 0.05 nm, Resolution correction: OFF.

6. After wavelength calibration with built-in reference light source, Sampling resolution: ≤ 0.003 nm, diameter: 5.5 μm, NA: 0.104 to 0.107.

7. After wavelength calibration with built-in reference light source, Sampling resolution: ≤ 0.003 nm, diameter: 5.5 μm, NA: 0.104 to 0.107.

8. Temperature variation changes to 25 °C at 0.1 nm resolution setting.

Dimensions



Ordering Information

AQ6370 Series
Optical Spectrum Analyzer

Models and Suffix Codes

AQ6370C

Model	Suffix	Descriptions	
AQ6370C		AQ6370C Optical Spectrum Analyzer	
Spec code	-10	Standard model	
	-20	High performance model	
Power cord	-D	UL/CSA standard	
	-F	VDE standard	
	-R	AS standard	
	-H	GB standard	
	-Q	BS standard	
Factory installed options	/FC	AQ9447(FC) Connector Adapter	For Optical Input
	/SC	AQ9447(SC) Connector Adapter	
	/ST	AQ9447(ST) Connector Adapter	
	/RFC	AQ9441(FC) Universal Adapter	For Calibration Output
	/RSC	AQ9441(SC) Universal Adapter	
	/RST	AQ9441(ST) Universal Adapter	
	/B5	Thermal Printer	

AQ6373

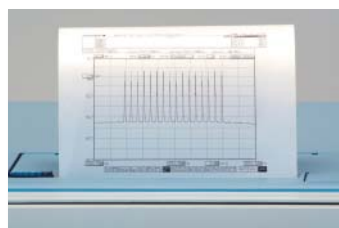
Model	Suffix	Descriptions	
AQ6373		AQ6373 Optical Spectrum Analyzer	
Spec code	-10	Standard model	
	-20	High performance model	
Power cord	-D	UL/CSA standard	
	-F	VDE standard	
	-R	AS standard	
	-H	GB standard	
	-Q	BS standard	
Factory installed options	/B5	Thermal Printer	

AQ6375

Model	Suffix	Descriptions	
AQ6375		AQ6375 Optical Spectrum Analyzer	
Spec code	-10	Standard model	
	-20	High performance model	
Power cord	-D	UL/CSA standard	
	-F	VDE standard	
	-R	AS standard	
	-H	GB standard	
	-Q	BS standard	
Factory installed options	/FC	AQ9447(FC) Connector Adapter	For Optical Input
	/SC	AQ9447(SC) Connector Adapter	
	/ST	AQ9447(ST) Connector Adapter	
	/RFC	AQ9441(FC) Universal Adapter	For Calibration Output
	/RSC	AQ9441(SC) Universal Adapter	
	/RST	AQ9441(ST) Universal Adapter	
	/B5	Thermal Printer	

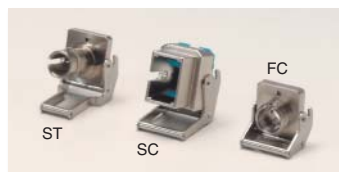
Factory Installed Options

Built-in Printer



An optional built-in thermal printer is provided to instantly print out a screenshot of the display, the analysis results, a marker list and a macro program list.
Accessory: printer roll paper (1 roll)

Optical Connector Adapters (AQ6370C & AQ6375)



For optical input port
AQ9447 Connector Adapter
/FC, /SC, /ST



For calibration output port
AQ9441 Universal Adapter
/RFC, /RSC, /RST

Accessories (optional)

Model	Suffix code	Descriptions
735371		AQ6370 Viewer (Including AQ6370, AQ6370B, AQ6370C, AQ6375, and AQ6373 Viewers)
810804602		AQ9447 Connector Adapter
	Connector type -FCC	FC type
	-SCC	SC type
	-STC	ST type
813917321		AQ9441 Universal Adapter
	Connector type -FCC	FC type
	-SCC	SC type
	-STC	ST type
735383-A001		NA Conversion Adapter (for GI50/125 μm)
751535-E5		19 inch Rack mount kit
B9988AE		Printer roll paper (10 m roll, 10 rolls/1 unit)

Note



- Before operating the product, read the user's manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

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