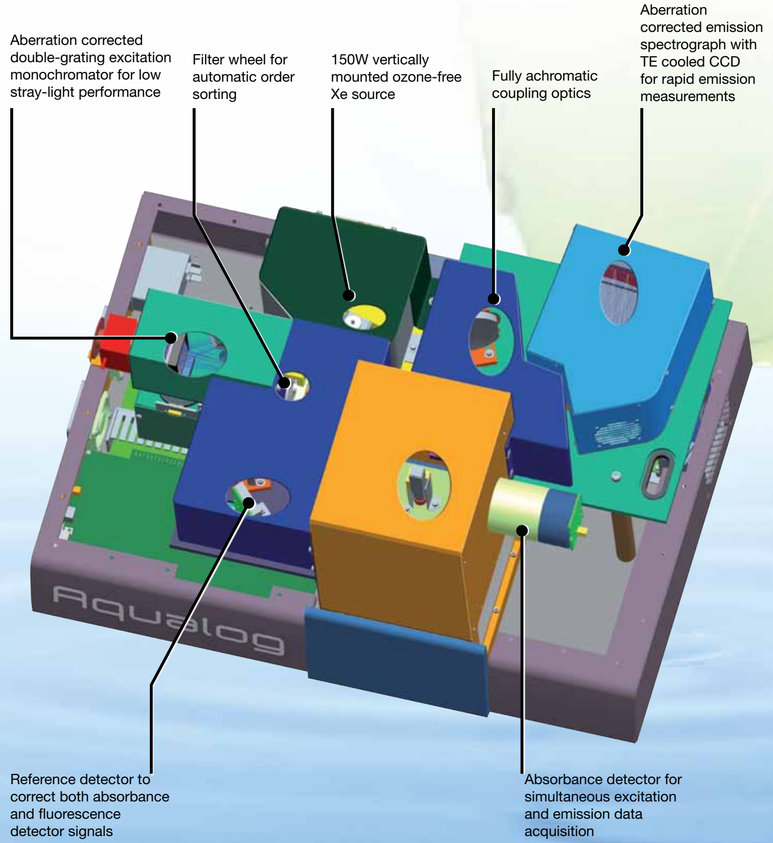
A Unique Advanced Optical Design



Fluorescence Hardware Specifications

Parameter	Specification
Light source	150 W ozone free vertically mounted xenon arc lamp
Excitation range	240-630 nm
Excitation bandpass	5 nm
Excitation monochromator	Subtractive double monochromator
Excitation gratingsW	1200 gr/mm, 250 nm blaze
Excitation wavelength accuracy	±1 nm
Emission range	240-630 nm
Emission bandpass	5 nm
Emission spectrograph	Fixed, aberration-corrected 140 mm focal length
Emission grating	405 gr/mm; 250 nm blaze
Emission detector	TE-cooled back-illuminated CCD
Emission integration time	1 ms minimum
Hardware pixel binning	0.41, 0.82, 1.64, 3.28 nm/pixel
CCD gain options	2.25 e-/cts in high gain, 4.5 e-/cts in medium gain, 9 e-/cts in low gain
Sensitivity	Water Raman SNR >20 000:1 (RMS method) (350 nm excitation, 30 s integrations)
Weight	33 kg (72 lbs)
Dimensions	LWH (618 x 435 x 336 mm); (24" x 17" x 13")

Absorbance Hardware Specifications

Parameter	Specification
Scanning range	230 - 800 nm (optical)
Bandpass	5 nm
Slew speed	Max 500 nm/s
Optical system	Corrected single beam
Detector	Si photodiode
Wavelength accuracy	±1 nm
Wavelength repeatability	+/- 0.5 nm
Photometric accuracy	±0.01 AU from 0 to 2A
Photometric stability	<0.002 AU per h
Photometric repeatability	+/- 0.002 AU (0 to 1 AU)
Stray light	<1% at 220 nm

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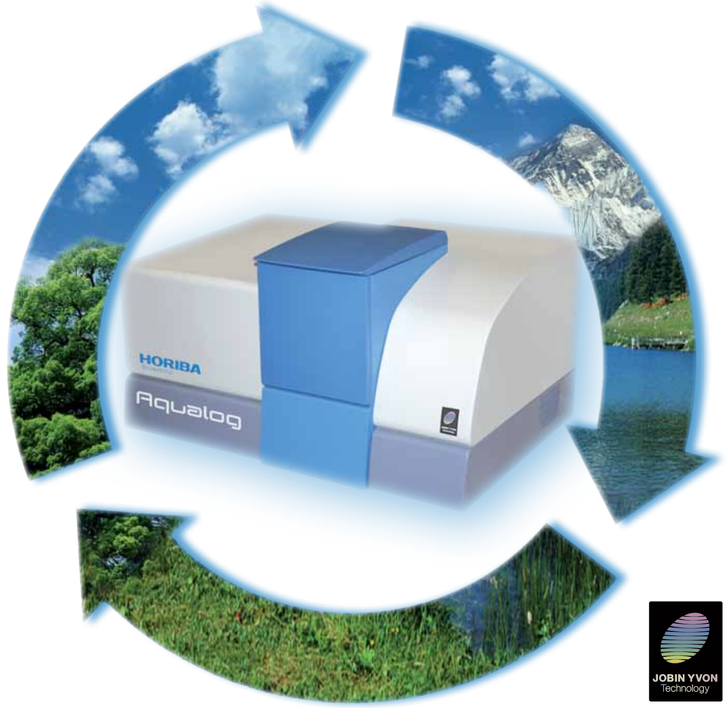
Aqualog

The Only Simultaneous Absorbance And Fluorescence System For Water Quality Analysis!



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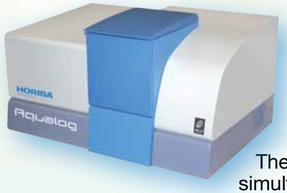
Aqualog

CDOM measurements made easy



The only simultaneous absorbance and fluorescence system for water quality analysis!

The new Aqualog is the only instrument to simultaneously measure both absorbance spectra and fluorescence Excitation-Emission Matrices. EEMs are acquired up to a 100 times faster than with other instruments. Dedicated software automates traceable Quinine Sulfate Unit calibration and correction of inner-filter effects and Rayleigh and Raman scattering lines, enabling rapid export to modeling algorithms like PARAFAC.

Hardware Features

- The only true simultaneous absorbance-fluorescence system available
- TE-cooled CCD fluorescence emission detector for rapid data acquisition up to 100 times faster than any other benchtop fluorometer
- Corrected UV-VIS absorbance detection path for stability and accuracy
- Double grating excitation monochromator for superior stray light rejection
- Matching bandpass for absorbance and fluorescence spectra
- Automatic sample changer option (2 or 4 position)
- Compatible with flow cells and titrator

Full Suite of Performance Validation Tests

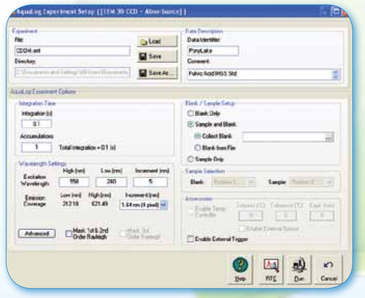
- NIST Fluorescence Standard Reference Materials for spectral calibration and correction (SRMs: 2940, 2941, 2942, 2943)
- Starna® Standard Reference Material for Quinine Sulfate Fluorescence Emission Spectral Correction (RM-QS00)
- NIST Absorbance Standard Reference Materials for Ultraviolet-Visible Spectrophotometry (SRM 931g)
- Starna® Standard Reference Materials for Ultraviolet-Visible Spectrophotometry (RM-06HLKI)
- Water Raman signal-to-noise evaluation

Software Features

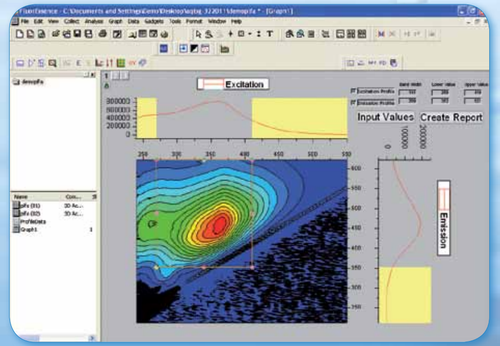
- Optimized experiment set-up menus minimize user configuration time
- Complete NIST-traceable corrected fluorescence spectra automatcally generated
- Spectral and kinetic analysis tools for both absorbance and fluorescence data
- Methods and batch protocols for automating multiple sample measurement

Experimental Menu

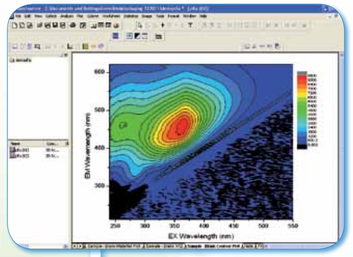
- Absorbance spectra
- Absorbance kinetics
- Fluorescence emission spectra
- Fluorescence emission spectra kinetics
- Combined fluorescence emission spectra and absorbance kinetics
- Fluorescence excitation-emission matrices (EEMs)
- Combined excitation-emission matrices and absorbance spectra

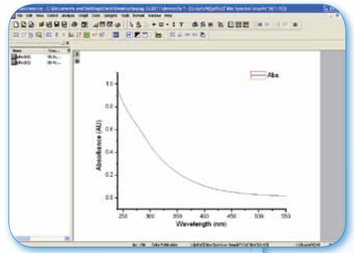


2-Dimensional Excitation And Emission Spectral Profile Extraction From EEMs

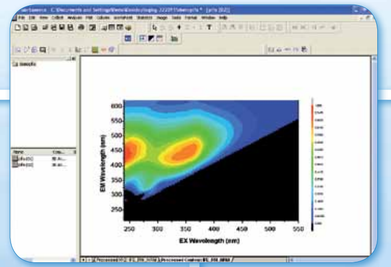


Built-in EEM Analysis Tools





1. Inner-filter effect correction
2. Rayleigh Masking (1st and 2nd grating orders)
3. Normalization (Quinine sulfate units or Raman scattering units)



Batch EEM export

Mulitvariate Analysis
e.g. PARAFAC
(Parallel Factor Analysis)