

FluoroMax spectrofluorometer / SPEX.

Contributors

SPEX Industries.
Instruments S.A. (UK Ltd)

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SPEX

FluoroMax

SPECTROFLUOROMETER

Fluorescence



FluoroMax A New Concept in Spectrofluorometers

The FluoroMax is a totally new design in spectrofluorimeters. For the first time, the outstanding performance of SPEX optics, electronics, and software is available in an economical, automated package. Now your fluorescence analyses and research can benefit from these FluoroMax features:

SENSITIVITY

All reflective optics and photon-counting detection produce an instrument that can acquire spectra impossible to detect with other systems in this price range.

SPEED

By coupling sensitivity with a unique, fast-scanning drive system, spectra can be acquired in seconds, saving you time to concentrate on your samples and data. And time-based measurements can be as rapid as one millisecond per data point.

SIMPLICITY PLUS POWER

Automated, variable slits, self-calibration, and menu-driven, user-proven DM3000 software mean you can begin collecting data as soon as you turn on the instrument. All controls are at your fingertips through the keyboard of a PC compatible computer.

APPLICATIONS

FluoroMax is perfect for any investigation requiring excitation, emission, synchronous or time base spectra from the uv to the near ir. Here are a few examples:

Biochemistry	FluoroMax analyzes protein folding, conformation, and protein functions like catalysis and transport.
Medicine	FluoroMax determines trace levels in biological samples.
Pharmaceuticals	FluoroMax produces quality assurance tests of drugs, monitors drug delivery and interactions during metabolism.
Photochemistry	FluoroMax uncovers properties of macromolecules and the reactivity of organic compounds in photochemical reactions.
Food Science	FluoroMax measures trace components like proteins, vitamins, and amino acids in food substances.
Analytical Chemistry	FluoroMax reveals properties of organic and inorganic compounds, characterizing trace levels of polynuclear aromatic hydrocarbons and carcinogens.
Organic and Inorganic Chemistry	FluoroMax detects chemical reactions and analyzes the effects of group substituents on aromatic rings.
Environmental Analysis	FluoroMax monitors pollutants in air, water, and soil.
Industry	FluoroMax insures product reproducibility and reliability in manufacturing processes.

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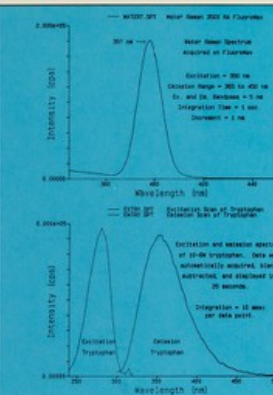
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PERFORMANCE

Sensitivity

The outstanding performance of the FluoroMax is illustrated by this water Raman spectrum acquired using photon-counting electronics that reject noise. All FluoroMax instruments are tuned at the factory to achieve a minimum specification of 160,000 counts/second above background for the water Raman peak for a Signal-to-Noise ratio of 550. This, and low-stray-light spectrometers, insures that your fluorescence samples will provide clearly defined spectra easily separated from the background.



Speed

FluoroMax can scan spectra as fast as 160 nm/second. Besides saving you precious laboratory time, this means you can even obtain accurate data from unstable, changing samples. Or you can do rapid kinetics on a one millisecond time scale.

The excitation and emission spectra of tryptophan shown here were acquired in a mere 4 seconds using a 10 msec integration time. Note the excellent signal-to-noise ratio supplied by FluoroMax's superior sensitivity.

Simplicity Plus Power

All FluoroMax functions are under total control of the DM3000 spectroscopy software which communicates between a PC computer and the FluoroMax. Since DM3000 software is user-proven in hundreds of labs worldwide, trouble-free operation is assured. Turn on FluoroMax and it immediately calibrates the wavelength drive of both excitation and emission spectrometers. Now select your parameters for scanning spectra or taking time-based measurements. Bandpasses will be set automatically, and in seconds your data will appear on the screen for review, further processing, or hard-copy output.

DM3000 software features include:

- Fully corrected excitation and emission spectra
- User-definable programs to automate routine measurements
- Function keys for fingertip access to operations
- Display of multiple, color-coded spectra with custom labeling
- Expanded multi-peak analysis and manipulations
- Self-contained instruction manual includes on-line HELP
- 3D Spectral Display
- Quantitative concentration curve program

Additional Software Packages

- Subroutine Library
- Polarization and Anisotropy
- Graphics plotting
- Multi-wavelength scanning for cation and pH measurements

The FluoroMax is available with a computer, or use your own PC compatible computer.

ACCESSORIES

The FluoroMax also offers a full line of accessories for your special-purpose applications. Some examples include the following:

- Polarization analyzers
- Thermostatted cell holders with stirrer
- HPLC Flow Cell
- Solid Sample Holder
- Trigger Accessory and Injection Port
- Fiber optic accessory for remote sampling

If you don't see the accessory you need, give us a call. We'll supply you with a detailed list of accessories and specifications.



SPECIFICATIONS

Below you'll find a list of guaranteed specifications for the FluoroMax spectrofluorometer. Compare them with other instruments and you'll see why FluoroMax is uniquely suited to your application.

Optics

All reflective for focusing at all wavelengths and precise imaging for microsamples

Source

Ozone-free xenon lamp eliminates venting

Spectrometers

Plane-grating Czerny-Turner design maintains focus at all wavelengths

Excitation

Range 200-950 nm, optimized in the uv

Emission

Range 200-950 nm, optimized in the visible

Bandpass

0-30 nm, continuously adjustable from computer

Wavelength Accuracy

± 0.5 nm

Step Size

.0625 - 100 nm

Scan Speed

160 nm/second

Integration Time

One millisecond to 160 seconds

Emission Detector

Photomultiplier range 200-680 nm, less than 100 dark counts/second. (Option to 850 nm)

Reference Detector

Photodiode selected for stability

Water Raman Signal

160,000 counts/second minimum
Ex = 350 nm
Em = 397 nm
Bandpass = 5 nm
Integration = 1 sec

Signal-to-Noise Ratio

550/1

System Control

PC computer

Dimensions (FluoroMax)

34.5 x 17 x 26.5 in. w x h x d
88 x 43 x 67 cm. w x h x d

Sample Compartment

Laser port and removable front plate for additional accessories

Dimensions (Sample Compartment)

6.5 x 9 x 10.5 in. w x h x d
16.5 x 23 x 27 cm w x h x d

Power Requirements

5 amps @ 120V
2.5 amps @ 240V
50/60Hz single phase



SPEX

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