



FluoroMate FS-2

Fluorescence Spectrometer



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The SCINCO FS-2 fluorescence spectrometer delivers exceptional sensitivity for the most accurate measurements. Take your analysis to the next level of clarity with an industry leading 0.5 nm spectral bandwidth for both emission and excitation measurements. Accessories for temperature control, solid samples, and polarization give you sampling flexibility.

Build a complete system for your laboratory with our extensive line of accessories. Powerful FluoroMaster Plus software helps you move seamlessly from data acquisition to reporting results.

Fluorescence for Everyone

From life science to materials, photophysics to quantitative analysis, the FS-2 fluorescence spectrometer is designed to give you the research-quality data you demand. The resourceful SCINCO FluoroMaster Plus software makes data acquisition, analysis and reporting straightforward. Our software helps you move from spectra to answers quickly and efficiently. Useful features of the system include:



- Make fluorescence, chemiluminescence or phosphorescence measurements with sophisticated instrument control options
- An excitation shutter for protecting photosensitive samples
- Measure total fluorescence with zero-order options for both excitation and emission monochromators
- Qualification documentation is available to assist you with instrument qualification

A Complete System

Designed and manufactured to the highest standards, the FS-2 fluorescence spectrometer offers the highest quality optical and electrical components in a rugged and reliable system.

Your laboratory needs more than just an instrument and we deliver by supplying a complete fluorescence system. Our software and accessories can create a dedicated QA/QC analyzer or a flexible instrument for shared research laboratories. We offer accessories and software for:



- High resolution spectral analysis
- Thermal denaturation experiments with Peltier temperature control
- Rapid mixing accessories for microsecond kinetics measurements
- Solid sample measurements for optics, powders, and more
- Fluorescence polarization measurements
- Intracellular calcium measurements

1 2 High-Resolution Monochromators

FS-2 uses 20 cm focal length monochromators to deliver a narrow, 0.5 nm spectral bandwidth for high resolution measurements. The high-performance monochromators in the FS-2 are optimized with a concave grating for the highest throughput and 0.5 nm spectral bandwidth.

5 150 W Xenon Lamp

An ozone-free 150 W Xenon lamp provides extremely stable illumination throughout the full wavelength range of the FS-2. Avoid the noisy spikes and intense lines associated with xenon flash lamps and get reliable, consistent and intense illumination from the UV to the near-IR.

3 Fast Scanning Drive

Acquire data at speeds up to 6,000 nm/min with the precision wavelength drive of the FS-2 fluorescence spectrometer. A 20,000 nm/min slew speed accelerates scanning measurements and minimizes the exposure time of the sample to excitation light. Streamline synchronous and 3D experiments and maximize your sample throughput.

6 Customizable Various Filters

Three longpass filters ensure the highest spectral purity by blocking excitation and scattered light. Filters for 320, 435, and 530 nm are included as standard. An open position allows for white-light excitation and total fluorescence measurements. Customize your measurements by adding up to four additional 12.5 mm round filters.

8 Large Sample Compartment

The large sample compartment of the FS-2 fluorescence spectrometer easily accommodates accessories for temperature control, multi-cell holders, rapid mixing, solid sampling and polarization accessories. Customize the FS-2 to your specific applications and get the results you expect from a high-resolution spectrometer.

4 Variable Spectral Bandwidth

Precisely match the resolution you need with the compound you are analyzing by selecting the appropriate spectral bandwidth for your measurement. Choose from 0.5, 1.0, 2.5, 5.0, 10, 20 nm spectral bandwidths for both excitation and emission monochromators.

7 Horizontal Beam Geometry

A horizontal beam geometry provides optimum excitation to deliver the maximum fluorescence signal. It also allows accurate measurements with only 50 μ L of sample.

9 Sensitive Detector

A high-performance R-928 PMT detector provides unparalleled sensitivity from 190 – 900 nm. Use this extended measurement range for the analysis of near-IR dyes, chlorophyll, or phthalocyanine compounds.



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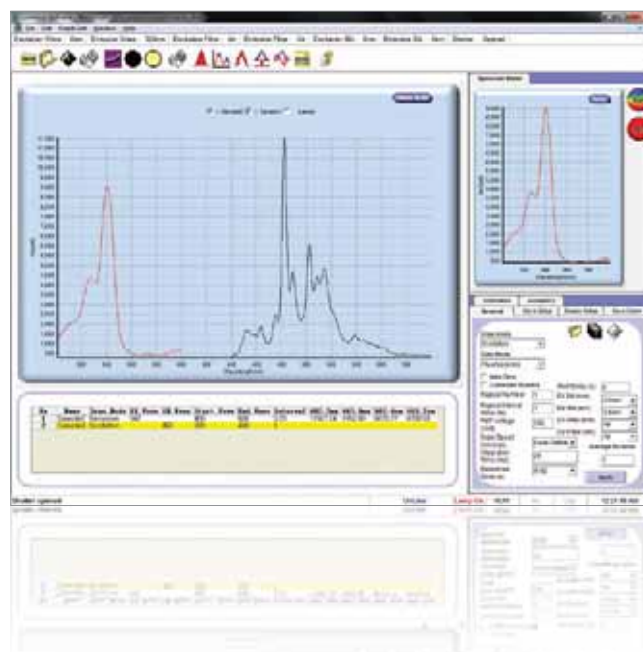
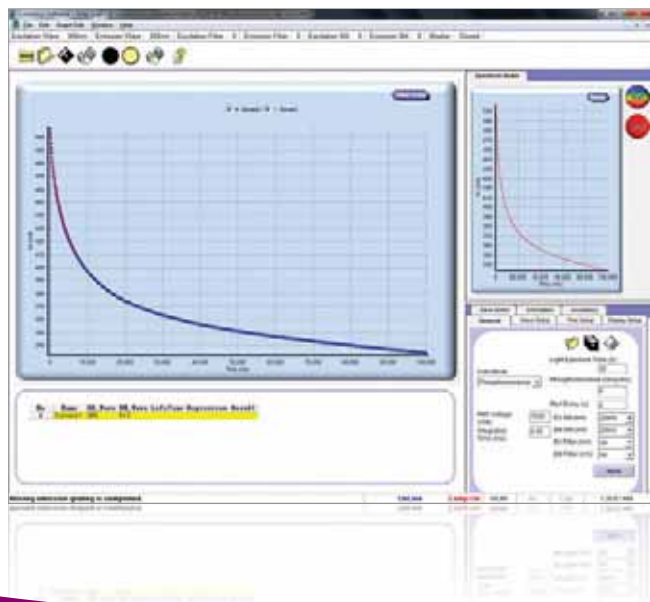
Fluorescence Spectrometer

Powerful Software for Complete Analysis

The FluoroMaster Plus software provides full control of the FS-2 fluorescence spectrometer and accessories. Data acquisition and processing, post-run spectral analysis, system validation and diagnostic testing are all integrated into a single platform for convenience. Take complete control of your measurements with intuitive method settings. Use a full suite of tools to process your data and then customize the information you report.

Wave Scan Mode

- Measure emission and excitation spectra using serial or synchronous scanning
- Analyze spectral data with a full suite of tools
- Use precise spectral data for examining photophysical properties of molecules, conformational changes, fluorescence anisotropy, or determining quantum yields
- Measure phosphorescence and luminescence

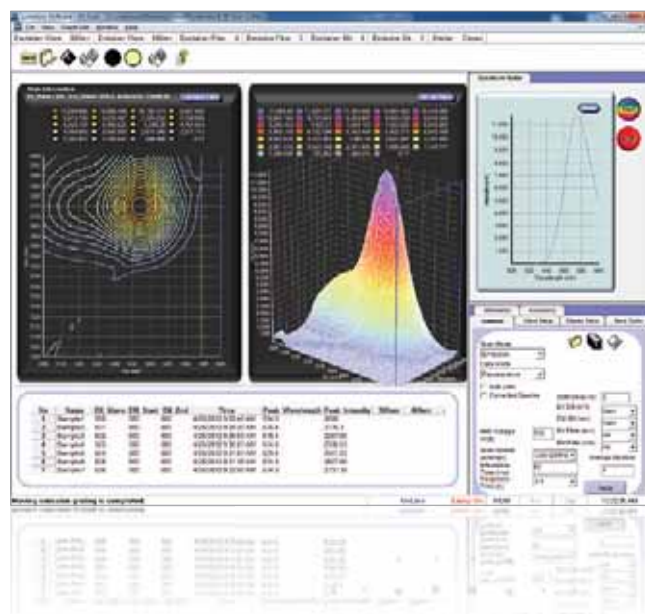
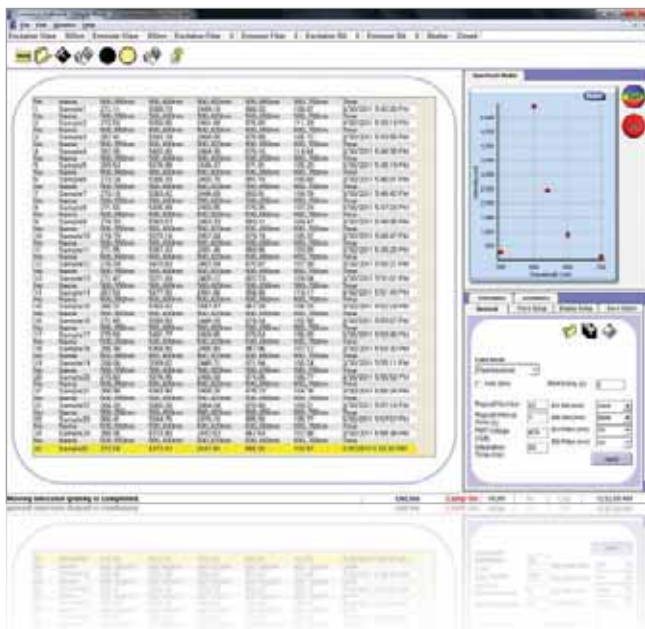
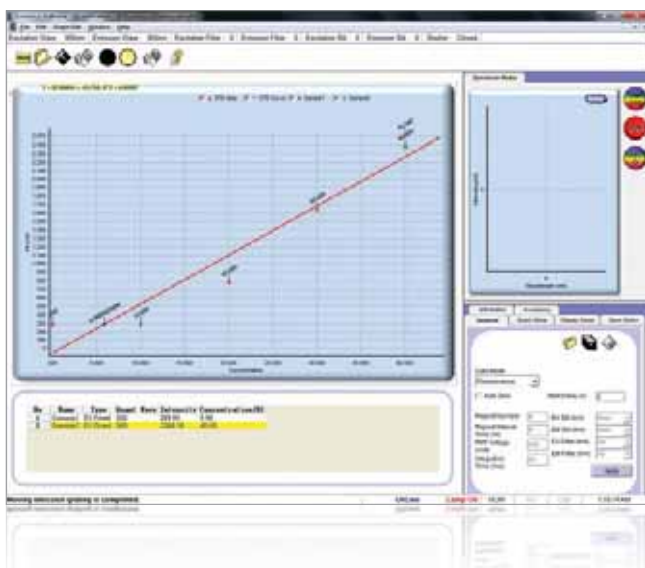


Time Scan Mode

- Use the Time Scan mode for acquiring kinetics data with 20 microsecond resolution
- Calculation methods for determining reaction rate, reaction mechanism and enzyme activity
- Measure Phosphorescence lifetime

3D Scan Mode

- Powerful 3D graphics mode for simultaneous analysis of excitation and emission spectra
- Use contour plots and data analysis tools for demanding compound identification applications



Quantification Mode

- Easy-to-use mode for measuring fluorescence standards
- Fit calibration data with linear, 2nd or 3rd order polynomials
- Automatic calculation of sample concentrations

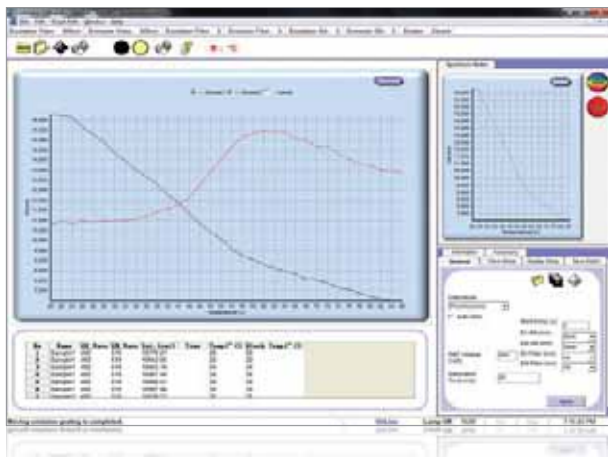
Simple Read Mode

- Quick measurement at the single wavelength

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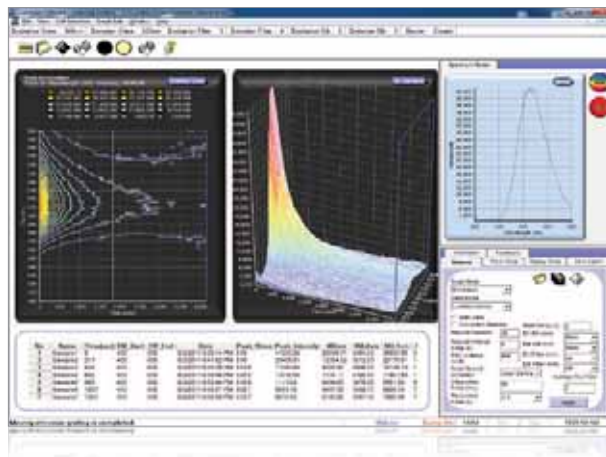
Fluorescence Spectrometer

Powerful Software for Complete Analysis



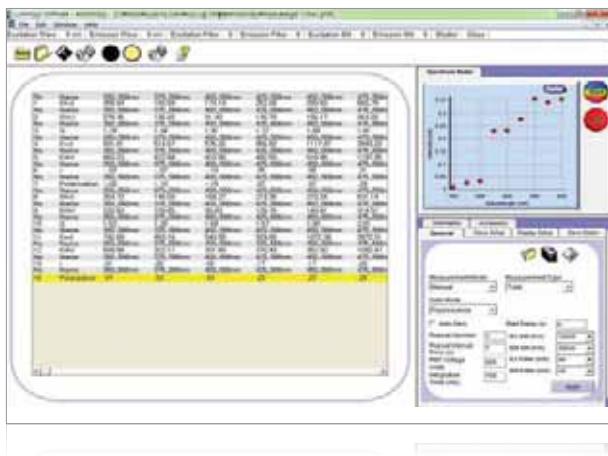
Thermal Mode

- Use precise Peltier temperature control for Temperature-Based Kinetic Scan
- Use Thermal mode for denaturation experiments like DNA melting and protein unfolding experiments



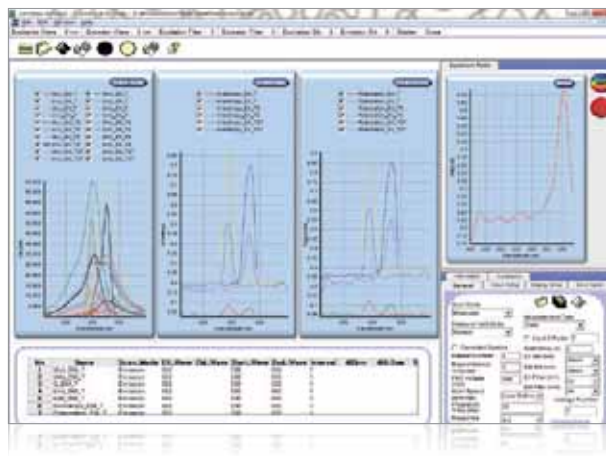
Scanning Kinetics Mode

- 3D graphics mode for simultaneous analysis of excitation or emission spectra over time
- Automated peak picking options and spectra extraction from 3D to 2D chart



Anisotropy Mode

- Use the Auto or Manual Polarizer for acquiring fluorescence anisotropy and polarization
- Use the anisotropy data for examining molecular interactions



Scanning Anisotropy Mode

- Scanning Fluorescence Anisotropy / Polarization at the selected wavelength range for examining molecular characteristics
- Intuitive excitation or emission spectra of anisotropy and polarization

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Fluorescence Spectrometer

Various Accessories

The FS-2 fluorescence spectrometer enables users from general analysis experiment to professional research. It provides reliable measurement results based on accurate data measurement and excellent responsibility.



Peltier Fluorescence Single Cell Holder & 4-Position Fluorescence Cell Holder

Delivers the power of Peltier temperature control for extreme temperature accuracy and reproducibility from -10 to 100°C . Temperature probe accessories allow you to monitor the temperature in two cuvettes during measurement.



〈Single Cell Peltier Holder〉



〈4-Position Multi-Cell Peltier Holder〉



Water Jacked 4-Position Fluorescence Cell Holder & 4-Position Fluorescence Cell Holder

For higher throughput fluorescence measurements for scanning, quantitative analysis, and kinetics. Recirculating water provides temperature control and optional stirring is available.



Micro Cell Holder

Allows you to accurately position small volume fluorescence cells in the FS-2. Get the maximum fluorescence possible with this precision accessory.



Cryostat Accessory

Designed for extremely low temperature experiment using liquid nitrogen, Cryostat accessory is mainly used for phosphorescence and delayed fluorescence measurements.

Solid Sample Holder

Make measuring fluorescence from solid materials easy. The specialized sample holder accommodates a wide range of samples from thin films to substrates several centimeters thick. Use the Quartz Powder Cell for measuring powder and granular samples.



Auto / Manual Polarizer

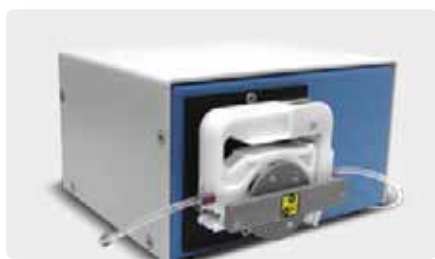
Useful for measuring anisotropy and polarization. Choose either the Auto Polarizer(Film) installed in the auto-wheel inside the system or the Manual Polarizer(Cube) installed in the sample compartment with Polarizer mount.

Variable Angle Solid Sample Cell Holder

Designed for variable angle (0 ~ 360°) measurements of solids and front-face illumination of liquid samples.

Fast Filter Accessory

Used for fast data acquisition in the biochemical study such as intracellular ion concentration calculation with various ion probes (FURA-2, INDO-1, etc.) or polarization applications. The minimum measurement time is 150 ms for the Ratio Mode and 4 s for the Polarization Mode.



Automated Sipper

Use complete software control for automation of liquid sampling.

Optical Fiber Accessory

Remote fluorescence measurements for solids and liquids.

Rapid Mixing Accessory

Allows you to measure reaction kinetics up to 1,000 times faster than manual mixing. Exploit the 20 microsecond data acquisition time of the FS-2 and get the most accurate kinetic data.

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Wide Range of Applications

Fluorescence measurements offer a spectroscopic window into molecular properties and behavior. The SCINCO FS-2 fluorescence spectrometer delivers sensitivity and high resolution for exceptional performance. FS-2 meets the demands for both research and routine lab analysis for a wide range of applications.



01 Life science

- Basic biological reaction research
- Amino acid sequence analysis
- Investigation on interaction about in vivo protein, DNA, RNA using FRET and BRET
- Study on in vivo protein, nucleic acid structure and concentration
- Enzyme activation check

02 Pharmaceutical

- Analysis on the structural information of chromosome
- In vivo mechanism and concentration distribution trace of antibiotic
- Morphological research of the virus

03 Analytical chemistry

- Identification and detection of fluorescence materials
- Characteristic verification in the excited state
- Analysis of chemical reaction
- Measurement of quantum yield and phosphorescence lifetime

04 Environment

- Quantification of fluorescence whitening agent
- High-sensitive detection and distinction of organic and inorganic toxic materials in the air, water, soil, etc.
- Distribution analysis of organic compounds in the water

05 Material

- Analysis of fluorescence character of organic, inorganic fluorescent material
- Develop versatile materials using quantum dot
- Study of the excitation and emission spectrum of OLED and high intensity fluorescence for inorganic plasma display panel and vacuum fluorescence display

06 Others

- Check food quality and nutrient conditions in the agriculture and food industries
- Qualify the spreading condition of paint, polymer, fluorescence brightening agent, etc.
- Characterize the crude oil

Specifications

Model	FluoroMate FS-2 Spectrometer
Light Source	150W Continuous Wave Xenon-Arc Lamp
Detector	Photodiode for reference PMT for Excitation and Emission Spectrum
Wavelength Range	190 ~ 900 nm for Excitation and Emission
Wavelength Accuracy	$\leq \pm 0.5$ nm
Wavelength Reproducibility	$\leq \pm 0.2$ nm
Wavelength Slew Speed	20,000 nm/min
Wavelength Scan Speed	1 ~ 6,000 nm/min
Sensitivity	Better than 1,000 : 1 (peak to peak) Better than 4,000 : 1 (RMS) Water Raman, 10 nm spectral bandwidth
Monochromator	1,200 groove/mm, 250 nm blazed for Excitation, 400 nm blazed for Emission.
Minimum Resolution	0.5 nm
Slit width	0.5, 1, 2.5, 5, 10, 20 nm
Minimum Data Interval	0.1 nm
Operating System	Microsoft® Windows XP, Windows 7
Communication	RS-232, USB to RS-232 converter
Dimensions	62 W x 73 D x 31 H cm
Weight	53 kg
Power Requirements	100 - 240 V a.c., 50/60 Hz

Certificates

CE, UL, FCC



Warranty

One year full warranty provided for the complete system

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"Scientific Instrument Company"



scinco

Website : www.scinco.com E-mail : scinco@scinco.com

SCINCO

627, Bongeunsa-ro, Gangnam-gu, Seoul 135-090 Korea
Tel : +82-2-2143-8200 Fax : +82-2-2143-8355

R&D Center

746, Daedeok-daero, Yuseong-gu, Daejeon 305-348 Korea
Tel : +82-42-610-7400 Fax : +82-42-610-7500