

chronosFD



ChronosFD is the affordable solution for reliable time-resolved instrumentation.

ChronosFD is a frequency domain fluorometer with picosecond resolution. Its optical design and automatic instrument control are state-of-the-art for time-resolved fluorometers.

Designed for Steady-State & Time-Resolved Applications

Steady-State Measurements

- Intensity measurements at fixed wavelengths
- Polarization (anisotropy) measurements at fixed wavelengths
- Slow and fast kinetics
- Dual-wavelength emission-ratiometric measurements

Time-Resolved Measurements

- Frequency responses of single- and multi-exponential decays
- Anisotropy decays
- Phase- and modulation-resolved kinetics
- Phase- and modulation-resolved spectra
- Time-resolved spectra
- FRET

User-Friendly Software

ChronosFD includes *Vinci* – *Multidimensional Fluorescence Spectroscopy*, a powerful software package that provides several ready-to-use routines for reliable, user-friendly acquisition of complex fluorescence data:

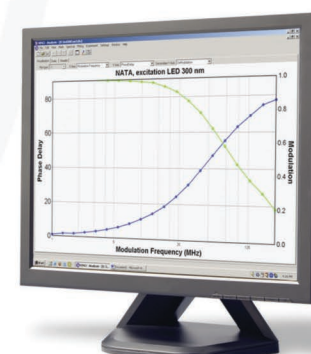
- Spectra (excitation, emission, synchronous, time-resolved and polarization)
- Measurements at fixed wavelengths (intensity and polarization)
- Measurement of kinetics
- Time-resolved measurements (lifetimes and rotational correlation times)

Key Features

- Flexible instrument configuration with a variety of light sources (laser diodes, LEDs and Ti:Sapphire laser)
- Millisecond to picosecond lifetime measurement capabilities
- Complete lifetime scans in less than one minute on routine samples with proprietary FastScan™ technology
- A compact footprint and short optical pathlength for maximum sensitivity and efficient light coupling into the sample
- T-format and parallel beam optical design for fast and precise polarization measurements
- Full automation of instrument components including: cuvette holder, polarizers, shutters, filter wheel, monochromators and stirrers
- PC-controlled integration of temperature bath, titrator, stopped-flow apparatus and pressure pump
- Fast kinetic measurements with one millisecond resolution in photon counting mode
- Upgradable to a full steady-state and time-resolved instrument

Vinci, the Complete Software Solution for Steady-State and Time-Resolved Applications

A powerful and flexible multidimensional fluorescence spectroscopy software with ready-to-use routines for data acquisition and analysis.



Software Specifications

Instrument Automation

ChronosFD is the instrument of choice for reliable time-resolved data acquisition using laser diodes and LEDs. All hardware components, including external devices, are automated and PC-controlled.

Adaptive Measurements

The operator has the option to choose between two Signal Quality Parameters: *Standard Deviation* and *Time*. Upon reaching either a pre-defined standard deviation or measurement time, the ChronosFD automatically continues the routine to the next data point.

Instrument Diagnostic and Noise Detection

Vinci includes routines for analyzing the instrument's performance, allowing the user to monitor data acquisition and noise level during the entire measurement. If sample saturation occurs the signal level is adjusted accordingly.

User-friendly Acquisition

A sequence of measurements is acquired through a one-time setup of the experiment file, allowing for the automatic acquisition of multiple data sets.

Personalized Log-on

With its unique system memory design, Vinci allows user-specific access. In multi-user environments each user may perform measurements with a personalized instrument configuration.

Data Analysis

Decay Times

Decay time analysis is performed on multiple data sets using various models including multi-exponential, non-exponential and lifetime distributions.

Rotational Correlation Times

Anisotropy decay data analysis of up to three species using models for isotropic, anisotropic and hindered rotators.

Phase- and Modulation-Resolved Spectra

Vinci also includes routines for the separation of up to three components in phase- and modulation-resolved spectra.

Phasor (polar) plot analysis

A powerful graphical approach to fluorescence decay data analysis used to quantify individual components of a mixture, FRET processes and excited states reactions.

Data Display & Export

- 2D and 3D display with user-defined colors and fonts
- 3D surface rotation and in/out zooming
- 3D display of user-defined functions
- Cursor identification of XY spectra coordinates
- Time-resolved spectra display as 3D and center of gravity plots
- Export to gif, png, jpeg, bitmap and metafile formats
- Data are generated and exported in ASCII format

Instrument Specifications

Light Source: Laser diodes (370, 405, 436, 473, 635, 690, 780 and 830 nm) and LEDs (265, 280, 300, 370, 460, 480, 500 and 520 nm). *Optional:* Xenon arc lamp, continuous-wave (CW) and Ti:Sapphire lasers

Focusing & Collection Geometry: Parallel beam design for precise polarization measurements

Polarizers: UV grade Glan-Thompson with L/A=2.0

Detectors: Photomultiplier tubes.
Optional: Cooled PMT, microchannel plate detector

Detection Modes: Fast analog and photon counting electronics

Frequency Response: 90 Hz – 6 GHz

Cross-Correlation Frequency: User-selectable up to 10 KHz

Filter Bandwidth: 0.05 Hz at 40 Hz

Lifetime Measurements Range: 10^{-12} to 10^{-2} sec

OS Requirements: Windows XP, Windows 7

Power Requirements: Universal power input of 110-240 V, 50/60 Hz, 400 VAC

Dimensions: 540 mm (L) x 400 mm (W) x 330 mm (H)

Weight: 26 kg

Information & specifications are subject to change without notice.

For more information and a complete list of accessories for ChronosFD, please visit www.iss.com.

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