

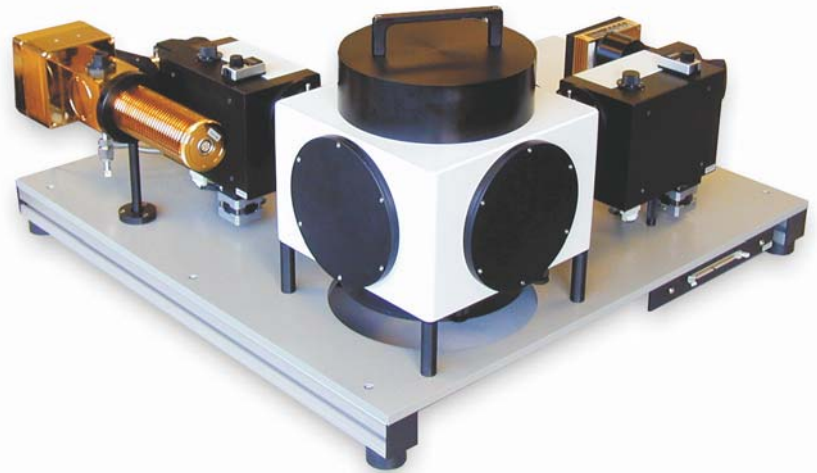


System 5000



The new standard in time-resolved fluorescence

The 5000U is a high performance, general purpose fluorescence lifetime system featuring compact modular construction, single-photon sensitivity, research flexibility and Windows™ software for enhanced ease of use. Measurement modes include...



- ✓ TCSPC acquisition mode for fast kinetics and lifetimes $< 100\text{ps}$ to $100\mu\text{s}$
- ✓ MCS acquisition mode for lifetimes $> 10\mu\text{s}$
- ✓ Anisotropy mode for determining rotational correlation times
- ✓ Time-resolved emission spectra (TRES) mode
- ✓ Fluorescence spectra using pulsed lamp or LED with time-gating
- ✓ Sample scanning mode (e.g. position, temperature)

The 5000U features...

Compatibility with a choice of excitation sources including pulsed laser diodes and LEDs, the coaxial nanosecond flashlamp (illustrated), xenon flashlamp and mode-locked lasers.

Extensive automation with software control of focusing, sample position*, sample temperature*, polarisers*, monochromator wavelengths, shutters, timing electronics, light source*, and detector*.

Fully modular construction allowing straightforward upgrades and customisation with expandable system electronics - don't make do with a "one-size-fits-all" system.

Unique combination of vertically dispersive optics and photon counting detection to achieve the ultimate in sensitivity.

Generous sample chamber with 50mm diameter synthetic fused silica lenses and temperature controllable cell holder.

Wide range of analysis models, including multiexponentials, FRET, anisotropy and lifetime distribution - all with automatic shift iteration and reconvolution using the proprietary IBH grid search algorithm.

*optional accessories.

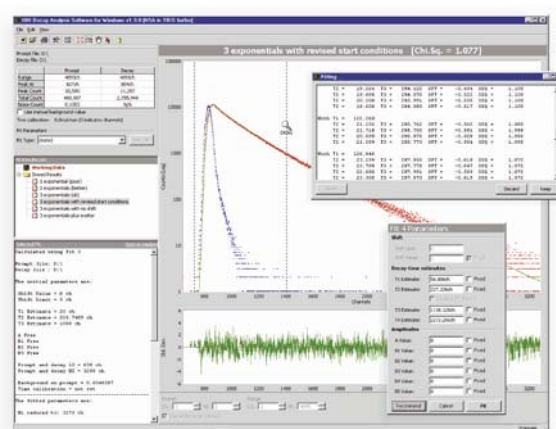
Brief specifications

For further detail see individual component datasheets or request a detailed product description

System type	Time-domain with photon counting acquisition (TCSPC and MCS modes as standard)
Lifetime range	20ps to >1s depending on options
Excitation source	Comprehensive selection - see Options & Accessories below
Detector type	TBX-04 module (spectral response 185nm to 650nm/850nm, <180ps timing jitter)
Monochromators	Seya-Namioka with motor & shutter (f/3 aperture, 200nm to 800nm, 0.13ps/nm time dispersion)
Optics	Refractive system with vertical dispersion and motorised Spectrosil-B lenses (50mm diameter)
Sample chamber	25cm square with temperature controllable cuvette holder on x-y positioning stage
Electronics	DataStation Hub data acquisition and system control
Software	DataStation2 (measurement), DAS6 (decay analysis), Plot6 (presentation)
Warranty	12 months (extended warranty available)

Lifetime solutions

Proteins	Membranes	Visual pigments
Peptides	Liposomes	Scintillators
GFP	Micelles	Crystals
Chlorophyll	Sol-gels	Semiconductors
Algae	Surfactants	Lanthanides
DNA	Polymers	...to name but a few!
Cells	Dyes	



Options and accessories

- NanoLED picosecond pulsed laser diodes with nominal wavelengths of 375nm, 405nm, 440nm, 635nm, 650nm, 785nm and 830nm, and nanosecond pulsed LEDs with nominal wavelength of 370nm, 450nm, 465nm, 490nm, 560nm, 590nm, 605nm and 625nm.
- 5000F coaxial nanosecond flashlamp. This is a broadband source particularly suited for use in the UV (e.g. tryptophan excitation).
- Laser input optics for mode-locked lasers, featuring optical synchronisation, beam steering & optional multiphoton excitation optics.
- Xenon flashlamp for UV-NIR phosphorescence and fluorescence spectra excitation.
- SpectraLED pulsed LEDs for phosphorescence and fluorescence spectra excitation at nominal wavelengths of 370nm, 450nm, 465nm, 490nm, 560nm, 590nm, 605nm and 625nm.
- Microchannel plate photomultiplier detection (e.g. R3809 with 25ps transit time spread) with or without cooled housing.
- Polarisers for anisotropy (manual or motorised).
- Additional temperature control options:
 - Cold-finger (-70 to +100°C),
 - Cryostat (liquid nitrogen or liquid helium).
- Front surface sample holder - ideal for solid samples.
- Four position sample turret with software control.
- Array detection and multiplexed TCSPC electronics.
- T-format e.g. with filter detection channel - ideal for weakly fluorescing samples.
- SAFE (simultaneous acquisition of fluorescence and excitation). Ideal when sample cannot be disturbed during long measurements (e.g. when using a cryostat or pressure cell).

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