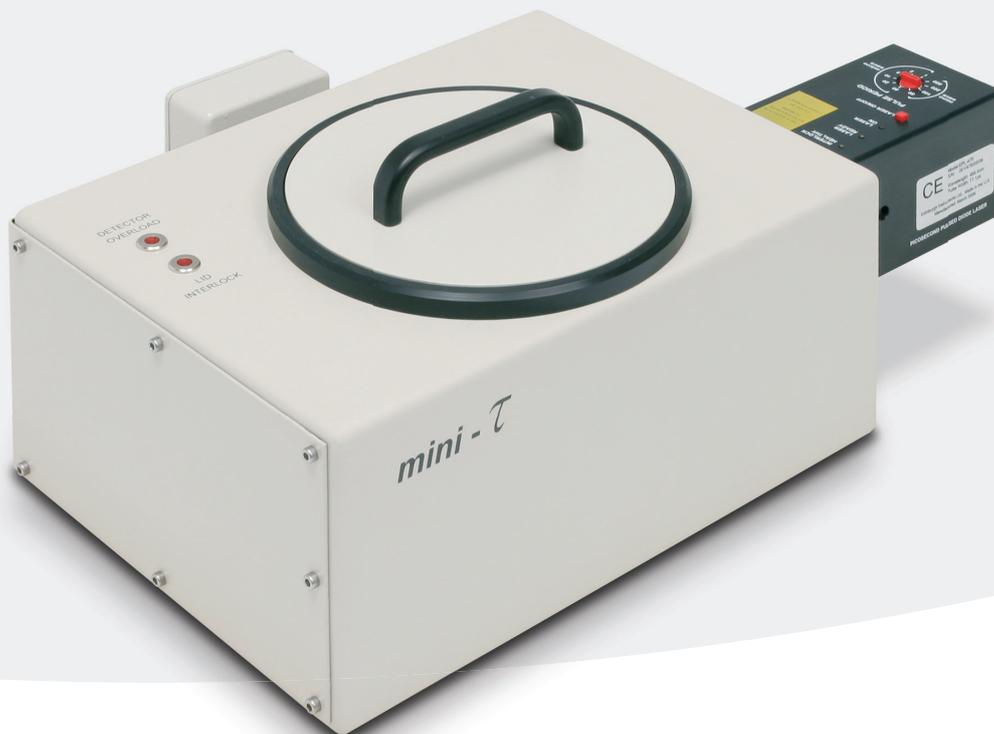


MINI- τ (MINI-TAU)

Research / Q.A. / Teaching Spectrometer



The Mini-tau is an ultra-compact, low cost, filter-based dedicated fluorescence lifetime spectrometer. Using the Time-Correlated Single Photon Counting (TCSPC) technique, the Mini-tau can measure fluorescence lifetimes ranging from 25 ps to 10 μ s.

It can also be equipped with Multi-Channel Scaling (MCS) electronics for long-range photoluminescence from 10 ns to 10 s.

Whether you need to measure fluorescence lifetimes or time-resolved fluorescence anisotropy for research, quality assurance or teaching applications, the Mini-tau is the ideal all-inclusive, fully-integrated solution. The Mini-tau measures fluorescence lifetimes after numerical deconvolution based on the established Marquardt-Levenberg algorithm.

The Fluoracle Software supplied with the Mini-tau has an easy-to-use interface and allows users to comprehensively record data and accurately analyse complex decay kinetics of up to 4 lifetimes.

Key Features



Turnkey instrument

Sample chamber, source, detector, and electronics in one compact package



Plug-and-play sources

Pulsed LED or picosecond diode laser (with choice of wavelength)



High performance TCSPC

Electronics with 20 MHz repetition rate and <1 ps/channel resolution



Choice of detector

Ultra-fast, blue or red sensitive single photon counting PMT

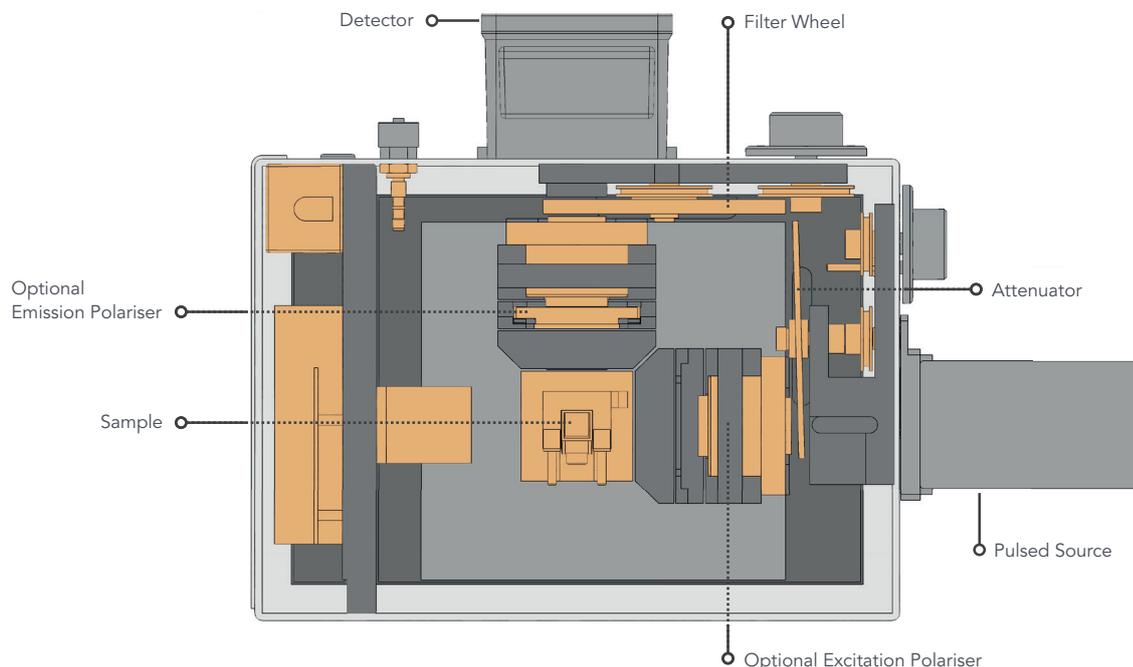


Fluoracle[®] software

Fluoracle Windows application software for comprehensive data acquisition and analysis



SPECIFICATIONS



Mini-tau Options

MINITAU-TCSPC	Time-Correlated Single Photon Counting for fluorescence lifetimes of ~25 ps - 10 μ s
MINITAU-MCS	Multi-Channel Scaling for phosphorescence lifetimes of 10 ns - 10 s
MINITAU-DUAL	Combines TCSPC and MCS to cover the full range of ~25 ps - 10 s

Specifications

MODE OF OPERATION	Time Correlated Single Photon Counting Multi Channel Scaling (MCS)
LIFETIME RANGE	approx. 25 ps - 10 μ s 10 ns - 10 s (MCS)
INSTRUMENTAL PULSE WIDTH	250 ps (in standard configuration with diode laser excitation)
EXCITATION WAVELENGTHS	375, 405, 445, 450, 475, 485, 510, 635, 640, 655, 670, 785, 800 or 980 nm picosecond laser diode 250, 255, 260, 265, 270, 280, 290, 295, 300, 310, 320, 330, 340, 365, 380, 560, 570, 590 or 610 nm pulsed LEDs (other wavelengths or Ti: Sapphire lasers are available)
ATTENUATION	4 orders of magnitude, linear
EMISSION WAVELENGTH	band pass filters (45 nm wide), centered at coverage: 450, 500, 550, 600 and 650 nm (other filter combinations available for detectors with broader coverage)
ADDITIONAL FILTER	Holders standard in excitation and emission accept 50 x 50 mm filters
DETECTION	Single photon counting PMT - sensitive to 850 nm, typical dark count rate 150 cps, typical response 180 ps (detectors with coverage up to 920 nm available, cooled or uncooled)
DATA ACQUISITION	TCC2 electronics module - up to 8192 channels per curve - forward or reverse mode - minimum channel resolution 305 fs. TAC ranges from 2.5 ns to 50 μ s in TCSPC mode. Up to 8000 channels per curve, 10 ns resolution and up to 10 MHz repetition rate in MCS mode.
DATA ANALYSIS	Marquardt-Levenberg Algorithm - up to 4 lifetimes - Anisotropy Calculation
DIMENSIONS	265 mm (w) x 195 mm (d) x 125 mm (h) (excluding laser, detector, lid)
WEIGHT	5 kg (excluding laser, detector)

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