

# The Mini- $\tau$ (Mini-tau)

Research / Q.A. / Teaching Spectrometer



The mini- $\tau$  is an ultra-compact, low cost, filter based fluorescence lifetime spectrometer. Using the Time Correlated Single Photon Counting (TCSPC) technique, the Mini-tau is supplied with F980 software and a TCC2 electronics module to enable fast, reliable and accurate measurement and data analysis.

So whether you need to use the mini- $\tau$  spectrometer for measuring 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.

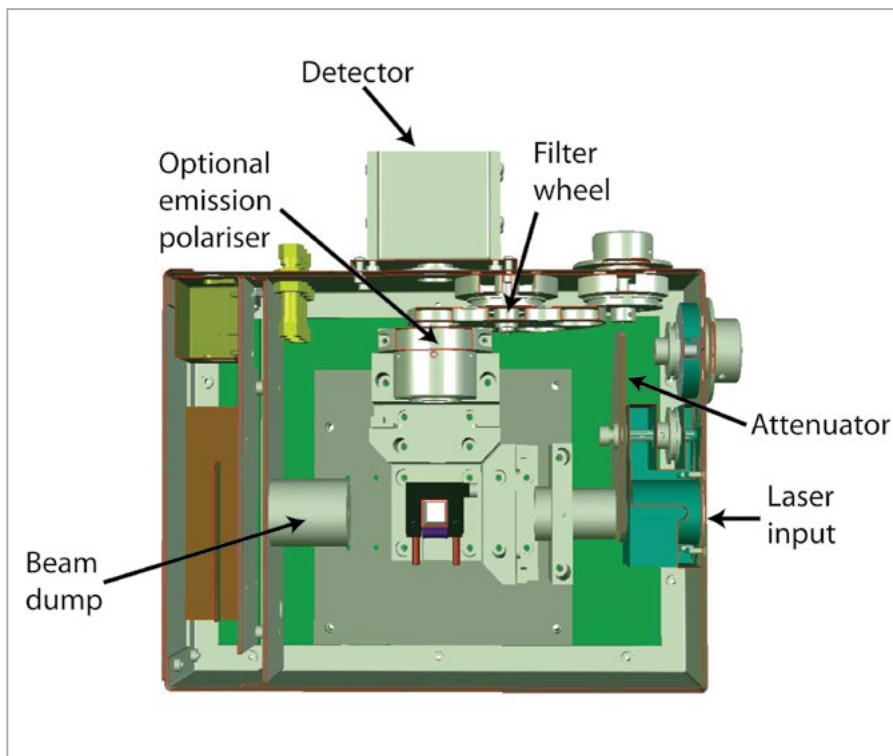
The mini- $\tau$  can measure fluorescence lifetimes between approximately 25 ps and 50  $\mu$ s, after numerical reconvolution based on the established Marquardt-Levenberg algorithm. The F980 software supplied with the Mini-tau has an easy-to-use graphical user interface and allows users to comprehensively manipulate data and can accurately analyse complex decay kinetics of up to 4 lifetimes.

## Mini-tau Product Features:

- A sample chamber with source and detector, PC and TCSPC plug-in board
- Sub nano-second pulsed LED or picosecond diode laser (with choice of wavelength)
- Integrated electronics with repetition rate up to 20 MHz
- Ultra-fast, blue or red sensitive single photon counting PMT
- F980 Windows application software for comprehensive data acquisition and analysis

## Technical Specifications

	Mini-tau
Mode of Operation	Time Correlated Single Photon Counting
Lifetime range	approx. 25 ps – 50 $\mu$ s
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
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	standard in excitation and emission to Holders: accept 50 mm x 50 mm filters
Detection	single photon counting PMT (Hamamatsu) – sensitive to 650 nm – dark count rate typ.80 cps – detector response: 250 ps (detectors with coverage up to 850 nm available, cooled or un-cooled)
Data Acquisition	TCC2 electronics module - up to 8192 channels per curve – forward or reverse mode – minimum channel resolution 305 fs – 20 ps time jitter - TAC ranges from 2.5 ns to 50 $\mu$ s
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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Customer support is available worldwide.

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