FluoTime 250

Compact Lifetime Fluorometer

FluoTime 250 is a compact table-top though flexible lifetime fluorometer. This setup enables users to carry out routine lab work quickly, reliably and with high precision for life science, materials science and photochemistry applications. In basic configuration, FluoTime 250 consists of a motorized filter wheel for selection of emission wavelengths with the choice of filters depending on customers' requirements. The system can be additionally equipped with an optional monochromator for UV-Vis spectral range.

- Steady-state and Time-resolved (TCSPC, MCS) operation mode
- Easy-handling, compact setup for fast and precise measurements
- Flexible filter-based emission wavelength selection
- Fully automated system for lifetimes ranges from ps to s
- Intuitive acquisition and analysis EasyTau 2 software with application wizards for easy and fast measurements

FluoTime 250 offers high spectral and temporal resolution that allow the acquisition and analysis of:

- Fluorescence spectra
- Fluorescence ifetime decay
- Phosphorescence lifetime decay
- Fluorescence anisotropy
- Time-resolved photoluminescence (TRPL)

Upgrades

- Micro-Photoluminescence via confocal (MicroTime 100, MicroTime 200)
- Optional UV-Vis monochromator in emission
- Various sample holders ranging from standard cuvette to solid samples

Specifications

Optional monochromator			
Type	**single, Czerny-Turner design**		
Focal length	150 mm		
Stray light rejection	$1:10^{-5}$		
Grating*	1200 g/mm blazed at 500 nm		
Resolution	0.3 nm		
Step size (min)	0.01 nm		
Adjustable slit width	0 - 10 mm, (0-54 nm BP) (continuously adjustable, completely motorized)		
Dispersion	5.4 nm/mm		

Excitation sources			
Light source	**Laser Diode Heads (LDH Series)**	**Pulsed LEDs (PLS Series)**	**ps Laser Module (Prima)**
Wavelengths	375 - 1990 nm	255 - 600 nm	375, 405, 450, 485, 515, 640 nm
Pulse width	< 40 ps - 200 ps, up to 6,000 ps	400 ps - 1200 ps	< 85 up to < 170 ps
Repetition rate	1 Hz up to 100 MHz	1 kHz up to 40 Mhz[a]	1 kHz up to 200 MHz
Operation modes	Pulsed, CW and fast switched CW mode	Pulsed, CW[a] and burst mode[a]	Pulsed, CW and fast switched CW mode

Detectors				
PMT based	**PMA-C-175**		**PMA-C 192**	
Spectral range	230 - 700 nm		230 - 920 nm	
Dark counts (at 20 °C)	< 50 cps		< 1,100 cps	
TTS (FWHM)	< 180 ps			
Recom. max. count rate	< 5.0 MHz			
PMA Hybrid based	**PMA Hybrid-07**	**PMA Hybrid-40**	**PMA Hybrid-42**	**PMA Hybrid-50**
Spectral range	220 - 850 nm	300 - 720 nm	300 - 870 nm	< 370 - 920 nm
Dark counts (at 20 °C)	< 150 cps	< 150 cps	< 200 cps	< 600 cps
TTS (FWHM)	< 50 ps	< 120 ps	< 130 ps	< 160 ps
Recom. max. count rate	< 80 MH [b]			

TCSPC electronics			
TCSPC device	**PicoHarp 330**	**TimeHarp 260 Pico**	**TimeHarp 260 Nano**
Number of channels	1 + 4[c]	1 + 1 or 2	1 + 1 or 2
Min. bin width	1 ps	25 ps / 2.50 ns (MCS)	250 ps
Max. number of time bins	65,536	32,768	
Full scale time range	65,536 ps - 550 ms	819 ns - 170 s (MCS)	8.20 µs - 17.10 s
Interface	USB 3.0	PCIe 2.0 x1	

Operation conditions		
Type	**Czerny-Turner design**	
PC requirements	Dual Core CPU (x86 chipset), min. 1.5 GHz CPU clock, min. 1 GB RAM memory	
Operating system	Windows™ 10 / 11	
Power requirements	110 V to 230 V, 50 / 60 Hz	
Dimensions and weight		
Configuration	Filter based	Single monochromator based
Dimensions	586 mm x 544 mm x 260 mm (l × w × h)	586 mm x 746 mm x 260 mm (l × w × h)
Weight	50 kg	70 kg

a For PLS-IB only
b With CW excitation
c Upgradeable

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