

# FluoTime 300

## High-End Photoluminescence Spectrometer



FluoTime 300 is a high performance photoluminescence spectrometer for materials science, life science and photochemistry applications.

- Steady-state and time-resolved (TCSPC, MCS) operation mode
- Highly modular and flexible design, optimal for upgradability
- Fully automated system for lifetime ranges from ps to s
- Spectral coverage from 230 to 1700 nm
- Superior sensitivity with > 32 000:1 water Raman SNR measured with PMA-Hybrid-06
- Switchable double monochromator between additive and subtractive modes in emission
- Intuitive acquisition and analysis [EasyTau 2](#) software with application wizards for easy and fast measurements

Our fully automated setup provides superior sensitivity, spectral and temporal resolution that allow the acquisition and analysis of:

- Fluorescence and Phosphorescence Spectra
- Fluorescence and Phosphorescence Lifetime Decay
- Fluorescence Anisotropy
- Absolute Quantum Yield
- Emission-Excitation Matrix (EEM)
- Time-Resolved Photoluminescence (TRPL)
- Time-Resolved Emission Spectra (TRES)

### Upgrades

- Micro-Photoluminescence via confocal ([MicroTime 100](#), [MicroTime 200](#)) or widefield (FluoMic) microscope coupling
- Integrating sphere for absolute luminescence quantum yield measurement
- Numerous sample holders for handling liquid and solid samples with temperature control option, ranging from standard cuvette to front face and wafer check
- Class 1 laser safety

## Specifications

Monochromators				
Type	Czerny-Turner design			
Focal length	300 mm (double monochromators: 2 × 300 mm), 150 mm			
Stray light rejection	1:10 <sup>-8</sup> (double), 1:10 <sup>-5</sup> (single)			
Grating*	600 g/mm, blazed at 1250 nm in emission 1200 g/mm blazed at 500 nm in emission 1200 g/mm blazed at 300 nm in excitation			
Spectral resolution	0.1 nm (double, additive), 0.2 nm (double, subtractive), 0.2 nm (single)			
Wavelength accuracy	0.2 nm (double), 0.3 nm (single)			
Dispersion	1.35 nm/mm (double, additive), 2.7 nm/mm (double, subtractive), 2.7 nm/mm (single, 300 mm), 5.4 nm/mm (single, 150 mm)			
Excitation sources				
Light source	Picosecond Pulsed Laser (LDH, LDH-I Series, Prima, VisUV)		Pulsed LEDs (PLS Series)	
Wavelengths	266 - 1990 nm		255 - 600 nm	
Pulse width	40 ps - 200 ps		400 ps - 1 ns	
Light source	Pulsed Xenon lamp		CW Xenon lamp	
Wavelengths	200 - 900 nm		200 - 900 nm	
Pulse width	< 1 μs		-	
Detectors*				
PMT	PMA-C 192		NIR-PMT**	
Spectral range	230 - 920 nm		950 - 1400 nm	950 - 1700 nm
Dark counts (at 20 °C)	< 1100 cps		< 10 000 cps	< 200 000 cps
Transit time spread	< 180 ps		< 300 ps	
PMA Hybrid	-07	-40	-42	-50
Spectral range	220 - 850 nm	300 - 720 nm	300 - 870 nm	380 - 890 nm
Dark counts (at 20 °C)	< 90 cps	< 80 cps	< 110 cps	< 250 cps
Transit time spread	< 50 ps	< 120 ps	< 130 ps	< 160 ps
Data acquisition	TimeHarp 260 PICO		TimeHarp 260 NANO	PicoHarp 300
Type	TCSPC	MCS	TCSPC	TCSPC
Number of time channels	up to 32 768		up to 32 768	up to 65 536
Bin width	25 ps	2.5 ns	250 ps	4 ps
Dead time	< 25 ns	< 2.5 ns	< 2 ps	< 95 ps
Operating environment				
Computer system	Windows 10			

\* Other types are available upon request.

\*\* Values provided by Hamamatsu.



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