

## FluoTime 300 "EasyTau"

Fluorescence spectrometer for beginners and experts

- Fully automated system with modular and flexible design
- Time-resolved and steady-state operation
- Easy to use software with application wizards and scripting option
- Lifetimes from picoseconds to milliseconds
- Ultimate sensitivity with 29000:1 Water Raman SNR
- -07 and -42 cathodes with spectral ranges between 220 and 870 nm, detection efficiency up to 25 %
- Double monochromator in excitation and emission

## Applications

- Fluorescence Anisotropy (Polarization)
- Steady-State Fluorescence Spectroscopy
- Time-Resolved Photoluminescence (TRPL)
- Materials Science
- Photochemistry



The FluoTime 300 "EasyTau" is a fully automated, high performance fluorescence spectrometer for steady-state, life time and phosphorescence measurements. The FluoTime 300 contains the complete optics and electronics for recording steady state spectra and fluorescence decays by means of Time-Correlated Single Photon Counting (TCSPC) or Multichannel Scaling (MCS) from few picoseconds to several seconds. The system is designed to be used with picosecond pulsed diode lasers, LEDs or Xenon lamps (CW and pulsed). Multiple detector options enable a large range of system configurations from the UV up to the IR range. The system features an ultimate sensitivity with 29000:1 Water Raman SNR. The FluoTime 300 can be used to study fluorescence and phosphorescence decays from few picoseconds to several seconds. With a large range of additional accessories the system is an excellent standard for research and analysis.

## Specifications

Monochromators				
Туре	single, Czerny-Turner design	single, Czerny-Turner design		
Focal length	150 mm	300 mm		
Aperture	F/4.6	F/4.1		
Stray light rejection	10-5	10 <sup>-5</sup>		
Grating*	1200 g/mm blazed at 500 nm in emission	1200 g/mm, blazed at 300 nm in excitation 1200 g/mm, blazed at 500 nm in emission 600 g/mm, blazed at 1250 nm in emission		
Resolution	0.3 nm	0.3 nm		
Step size (min)	0.004 nm	0.004 nm		
Slit width adjustable between	0-10 mm, (0-54 nm BP) (continuously adjustable, completely motorized)	0-10 mm, (0-27 nm BP) (continuously adjustable, completely motorized)		
Wavelength accuracy	0.3 nm (1200 g/mm grating)	0.2 nm (1200 g/mm grating)		
Wavelength repeatability	± 0.05 nm	± 0.05 nm		
Dispersion	5.4 nm/mm	2.7 nm/mm		
Туре	double, Czerny-Turner design additive in excitation, additive and subtractive in emission			
Focal length	2 × 300 mm			
Aperture	F/4.1			
Stray light rejection	10 <sup>-8</sup>			
Grating*	1200 g/mm, blazed at 300 nm in excitation 1200 g/mm, blazed at 500 nm in emission 600 g/mm, blazed at 1250 nm in emission			
Resolution	0.3 nm (subtractive), 0.15 nm (additive)			
Step size (min)	0.004 nm			
Slit width adjustable between	0-10 mm (0-27 nm BP subtractive, 0-13.5 nm BP additive) (continuously adjustable, completely motorized)			
Wavelength accuracy	0.2 nm (1200 g/mm grating)			
Wavelength repeatability	± 0.05 nm			
Dispersion	2.7 nm/mm (subtractive), 1.35 nm (additive)			

Excitation sources					
Light source	Laser Diode Heads (LDH Series)	Picosecond Laser Module (VisUV / VisIR)			
Wavelengths	266-1990 nm (single wavelengths)	266, 355, 532, 766 and 1531 nm			
Pulse width	40-200 ps	70 ps			
Repetition rate	up to 80 MHz	up to 80 MHz			
Light source	pulsed LEDs (PLS Series)	pulsed Xenon lamp	CW Xenon lamp		
Wavelengths	245-600 nm	200-900 nm	200-900 nm		
Pulse width	400 ps - 1 ns	< 1 µs	-		
Repetition rate	up to 40 MHz	0.1 to 300 Hz	-		



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These tables are updated on a regular basis based on data of recently manufactured laser heads. Other specifications such as shorter pulse widths or higher powers than listed might be possible depening on the performance of diodes on stock. Please contact us for more information. All measurements shown may be subject to a 10 % callibration error. Each laser head undergoes an extensive burn-in test to ensure long-term stability and is shipped with a comprehensive set of test data. This test data is kept in our database, which already holds records of more than 18 years.

Detectors			
Туре*	PMT (PMA-C Series)	MCP-PMT	VIS/NIR-PMT
Spectral range (nm)	185-700 300-820 300-90	160-650 160-850 160-910	220-1010
Dark counts (cps, at 20 °C, typ. value)	- < 200 < 3000	< 50 < 500 < 2000	< 200
Transit time spread (ps)	< 180 < 180 < 180	< 25** < 25** < 25**	< 450 ***
Туре*	NIR-PMT	PMA Hybrid	
Spectral range (nm)	950-1400 950-1700	220-650 220-850 300-720	300-870 380-890
Dark counts (cps, at 20 °C, typ. value)	< 10.000 < 200.000'	* < 100 < 200 < 700	< 500 < 1000
Transit time spread (ps)	< 300 < 300 **	< 50 < 50 < 120	< 130 < 160
Data acquisition	1		
Туре	PicoHarp 300	TimeHarp 260 PICO	TimeHarp 260 NANC
Number of time channels/ curve	up to 65536	up to 32768	up to 32768
Count depth	16 bit	25 ps, 2.5 ns (long range mode)	32 bit
Time resolution (bin width)	4 ps	< 25 ns, 2.5 ns (long range mode)	250 ps
Dead time	< 95 ns	819 ns - 1.71 s	< 1 ns
Full scale time range	260 ns - 33 μs	81.92 μs - 171 s (long range mode)	260 ns - 33 µs 32.8 µs - 68.48 s
Operating environment	I		I
Computer system	Windows XP, Vista, 7, 8, 10		
Power requirements	110 V to 230 V, 50/60 Hz		
Dimensions (base unit)	1		
Without steady-state option	900×550×400 mm (w×d×h)		
With steady-state option	900×1100×400 mm (w×d×h)		

\* Other types are available upon request. \*\* Values provided by Hamamatsu. \*\*\* IRF, measured at FT300 with LDH 405 laser diode



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