

# FS5

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# FS5

Spectrofluorometer



The FS5 is a fully integrated, purpose-built spectrofluorometer. Suited for analytical and research laboratories, the FS5 can handle the speed of routine analysis and the sensitivity of demanding research requirements.

Comprehensive Fluoracle® software allows for astonishing ease of use and the design concept enables maximum flexibility, with multiple measurement modes all in one instrument:

- > Steady State Fluorescence
- > Fluorescence Lifetime (TCSPC)
- > Phosphorescence Lifetime (MCS)
- > Spectral Coverage into the Near-Infrared (NIR)
- > Polarisation and Anisotropy (POL)

Whether you need to measure excitation and emission spectra, quantum yields, kinetics, temperature and excitation-emission maps, or even phosphorescence and fluorescence lifetimes, the FS5 with its range of advanced accessories sets the new standard for fluorescence spectroscopy.

## Key Features



**>10,000:1**

Water Raman SNR, high sensitivity allows for detection of very weak fluorescence signals



**Multiple detector ports**

Two emission ports and NIR upgradeability makes the FS5 unique in its class



**Ultrafast data acquisition**

for steady state & lifetime



**Plug & Play**

sample modules for easy setup and flexibility



**Power saving**

features as standard - lamp powers down when not in use



# SPECIFICATIONS

<b>STANDARD CONFIGURATION</b>	Optics	All-reflective for wavelength independent focus with high brightness (small focus) at the sample
	Detection Technique	Single Photon Counting
	Light Source	150 W CW Ozone-free Xenon arc lamp
	Monochromators	Czerny-Turner design with dual grating turret; plane gratings for accurate focus at all wavelengths and minimum stray light
	Spectral Coverage - Excitation	230 nm - 1000 nm
	Spectral Coverage - Emission	200 nm - >870 nm
	Filter wheels	Fully automated; included in both the excitation and emission monochromators
	Bandpass - Excitation/Emission	0 - 30 nm, continuously adjustable
	Wavelength Accuracy	± 0.5 nm
	Scan Speed - Excitation/Emission	100 nm/s
	Integration Time	from 1 ms

<b>DETECTORS</b>	Emission Detector	Single Photon Counting, PMT-900, cooled and stabilised, 200 nm - 900 nm
	Reference Detector	UV enhanced silicon photodiode, 200 nm - 1000 nm
	Absorbance Detector	UV enhanced silicon photodiode, 200 nm - 1000 nm
	Absorbance Range	0 - 2 A
	Absorbance Accuracy	± 0.01 A

<b>SENSITIVITY</b>	Signal-to-Noise Ratio	>10,000:1 (SQRT)
	Water Raman Conditions	$\lambda_{ex} = 350$ nm, bandpass = 5 nm, step size = 1 nm, integration time = 1 s, $\lambda_{peak} = 397$ nm, noise measured at 450 nm and calculation based on the SQRT method

<b>DIMENSIONS</b>	W x D x H	104 cm x 59 cm x 32 cm
	Weight	55 kg

## Upgrade Specifications

<b>EXCITATION WAVELENGTH EXTENSION</b>	Model	<b>FS5-UV</b>
	Source	150 W CW Ozone generating Xenon bulb
	Excitation Coverage	<200 nm – 1000 nm

<b>EMISSION WAVELENGTH EXTENSION</b>	Model	<b>PMT-EXT</b>	<b>FS5-NIR</b>	<b>FS5-NIR+</b>	<b>FS5-NIRA+</b>
	Emission Coverage	200 nm - >980 nm	200 nm - >870 nm plus 600 nm - >1010 nm	200 nm - >870 nm plus 950 nm - >1650 nm	200 nm - >870 nm plus 870 nm - >1650 nm
		PMT-EXT replaces standard PMT-900	–	NIRA+ for spectral measurements only, PMT-EXT recommended with NIR+ and NIRA+ options	

<b>POLARISATION / ANISOTROPY</b>	Model	<b>FS5-POL</b>
	Computer Control	In/Out of beam, polarisation angle 0° - 90°
	Spectral Coverage	240 nm - 2300 nm (excitation and emission)

<b>PHOSPHORESCENCE LIFETIME</b>	Model	<b>FS5-MCS</b>
	Sources	Microsecond Xenon flashlamp Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLLED Series) Variable pulse sources (VPL/VPLED Series)
	Lifetime Range	< 5 $\mu$ s - > 10 s

<b>FLUORESCENCE LIFETIME</b>	Model	<b>FS5-TCSPC</b>	<b>FS5-TCSPC+</b>
	Sources	Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLLED Series)	Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLLED Series)
		< 150 ps - > 10 $\mu$ s	< 25 ps - > 10 $\mu$ s

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