FS5

Spectrofluorometer

EDINBURGH INSTRUMENTS

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 flexibiltiy

Power saving
features as standard - lamp powers down when not in use

SPECIFICATIONS

STANDARD CONFIGURATION	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 - Excitaion/Emission	0 - 30 nm, continuously adjustable
	Wavelength Accuracy	± 0.5 nm
	Scan Speed - Excitation/Emission	100 nm/s
	Integration Time	from 1 ms
DETECTORS	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
SENSITIVITY	Signal-to-Noise Ratio	>10,000:1 (SQRT)
	Water Raman Conditions	λ_{ex} = 350 nm, bandpass = 5 nm, step size = 1 nm, integration time = 1 s, λ_{peak} = 397 nm, noise measured at 450 nm and calculation based on the SQRT method
DIMENSIONS	W x D x H	104 cm x 59 cm x 32 cm
	Weight	55 kg

Upgrade Specifications

EXCITATION WAVELENGTH EXTENSION	Model	**FS5-UV**			
	Source	150 W CW Ozone generating Xenon bulb			
	Excitation Coverage	<200 nm – 1000 nm			
EMISSION WAVELENGTH EXTENSION	Model	**PMT-EXT**	**FS5-NIR**	**FS5-NIR+**	**FS5-NIRA+**
	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	
POLARISATION / ANISOTROPY	Model	**FS5-POL**			
	Computer Control	In/Out of beam, polarisation angle 0° - 90°			
	Spectral Coverage	240 nm - 2300 nm (excitation and emission)			
PHOSPHORESCENCE LIFETIME	Model	**FS5-MCS**			
	Sources	Microsecond Xenon flashlamp Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Variable pulse sources (VPL/VPLED Series)			
	Lifetime Range	< 5 µs - > 10 s			
FLUORESCENCE LIFETIME	Model	**FS5-TCSPC**		**FS5-TCSPC+**	
	Sources	Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)		Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)	
		< 150 ps - > 10 µs		< 25 ps - > 10 µs	

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