The FS5 Spectrofluorometer
Taking Sensitivity to the Next Level

The FS5 is a fully integrated steady state fluorescence spectrometer designed to meet the highest specifications in the research and analytical markets. Ultimate sensitivity, coupled with high speed data acquisition and ease of use, makes the FS5 the ideal plug and play analytical tool. The optical design is the best in its class, utilising specially selected optics to achieve the maximum in signal throughput.

Using single photon counting techniques for the highest detection sensitivity, the FS5 delivers data you can trust for a broad array of samples, from solutions and powders to films.

The standard FS5 has a number of upgrade routes that are unique in its class, including:

- Extended wavelength coverage up to 1650 nm while maintaining the specified sensitivity in the UV and visible spectral range
- Computer-controlled polarisers to allow for automated anisotropy
- Phosphorescence lifetime option with a lifetime range of microseconds to seconds
- Fully integrated fluorescence lifetime option (TCSPC based) for the measurement of lifetimes from picoseconds to microseconds

Key Features

- Single Photon Counting for the highest sensitivity
- Two emission ports and NIR upgradeability makes the FS5 unique in its class
- Water Raman SNR > 6000:1
- 225 mm focal length monochromators for high resolution and maximum throughput
- Ultrafast data acquisition for steady state & lifetime
- Plug & Play sample modules for easy setup and flexibility
- All modes of operation, analysis and presentation controlled by one software package for ease of use
- Power saving features as standard - lamp powers down when not in use

Worldwide Service & Support

The FS5 delivers reliable fluorescence excitation and emission spectra. Advanced software enables 2D, 3D, contour and chromaticity plots.

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.

pH Dependence of Fluorescein
Wuyi, Chinese Green Tea Excitation-Emission Matrix (EEM)
### Technical Specifications

**Optics**  
All-reflective for a wavelength independent focus with high brightness (small focus) at the sample

**Source**  
150 W CW ozone-free xenon lamp

**Monochromators**  
Czerny-Turner design with plane gratings for accurate focus at all wavelengths and minimum stray light

**Spectral Coverage – Excitation**  
230 nm – 1000 nm

**Spectral Coverage – Emission**  
230 nm – 870 nm

**Bandpass – Excitation/Emission**  
0* to 30 nm, continuously adjustable

**Wavelength Accuracy – Excitation/Emission**  
± 0.5 nm

**Scan Speed – Excitation/Emission**  
100 nm/s

**Integration Time**  
1 ms – 200 s

**Emission Detector**  
Photomultiplier R928P, spectral coverage 200 nm – 870 nm, cooled and stabilised

**Reference Detector**  
UV enhanced silicon photodiode

**Transmission Detector**  
UV enhanced silicon photodiode

**Water Raman SNR**  
Signal >400,000 cps at 397 nm emission, excitation 350 nm, 5 nm bandpass, 1 s integration time, SNR >6000:1

**Dimensions**  
104 cm (w) x 59 cm (d) x 32 cm (h)

**Weight**  
55 kg

### FS5-MCS (Phosphorescence Lifetime)

**Source**  
5 W microsecond xenon flashlamp

**Lifetime range**  
<10 µs to >10 s

### FS5-TCSPC (Fluorescence Lifetime)

**Sources**  
Picoscosecond diode lasers (EPL series)  
Picoscosecond pulsed LEDs (EPLED series)

**Lifetime Range**  
<150 ps to >10 µs

**Lifetime Range of TCSPC+ Version**  
25 ps to >10 µs (EPL excitation)

### FS5-NIR (Near Infra-red)

**Computer Control**  
Change-over of detectors including associated gratings and spectral correction files

**Spectral Coverage**  
230 nm - 870 nm plus 600 nm - 1010 nm

**Spectral Coverage of NIR+ Version**  
230 nm - 1010 nm plus 950 nm - 1650 nm

### FS5-POL (Polarisation)

**Computer Control**  
In/Out of beam, polarisation angle 0° & 90°

**Spectral Coverage**  
240 nm - 2300 nm (excitation and emission)

*resolution limit of 0.3 nm