





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



Detection Technique Single Photon Counting PMT-900, cooled and stabilised, 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised, 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Counting PMT-900, cooled and stabilised 200 nm - 900 nm Single Photon Single Ph	STANDARD	Optics	All-reflective for wave	elength independent focu	us with high brightness (sr	mall focus) at the sample
Light Source 150 W CW Czone free Xenon and lamp Commy Turner design with datal graining turnet; plane gratings for accurate focus at all washingtons and minimum stray light 200 mm. 1000 mm Spectral Coverage - Encisation 200 mm. 1000 mm 200 mm. 200 mm. 200 mm. 200 mm 200 mm. 200 mm 200 mm. 200 mm 2		Detection Technique				
Spectral Coverage - Excitation 230 mm - 1000 nm Spectral Coverage - Excitation 230 mm - 1000 nm Spectral Coverage - Emission 200 mm - 2970 nm Filter wheels Fully automated, included in both the excitation and emission monochromators 200 mm - 2970 nm Spectral Coverage - Excitation/Emission 100 rm/s 100 rm/		Light Source				
Spectral Coverage - Emission 200 nm ->870 nm Filly automated; included in both the excitation and emission monochromators		Monochromators				
Filter wheels Bandpass - Excitation/Emission Wavelength Accuracy Scan Speed - Excitation/Emission Integration Time From 1 ms From 1 ms DETECTORS Emission Detector Absorbance Detector Absorbance Accuracy Absorbance Accuracy Absorbance Accuracy Absorbance Range Absorbance Accuracy Absorbance Range Absorbance Accuracy Absorbance Range Absorbance Accuracy Absorbance Raccuracy Absorbance Ratio Water Raman Conditions Water Raman Conditions Absorbance Ratio Water Raman Conditions Base Ratio Water Raman Conditions Base Ratio Water Raman Conditions Absorbance Ratio Water Raman Conditions Base Ratio Water Raman Conditions Base Ratio Water Raman Conditions Absorbance Ratio Water Raman Conditions Base Ratio Water Ratio Water Raman Conditions Base Ratio Water Ratio Wate		Spectral Coverage - Excitation	230 nm - 1000 nm			
Bandpass - Excitation/Emission 2 30 nm, continuously adjustable 2 0 5 mm 2 0 0 0 0 0 mm 2 0 0 0 mm 2 0 0 0 mm 2 0 0 0 0 mm 2 0 0 0 0 mm 2 0 0 0 0 mm		Spectral Coverage - Emission	200 nm - >870 nm			
Wavelength Accuracy 50.5 mm 100 mm/s		Filter wheels	Fully automated; included in both the excitation and emission monochromators			
Scan Speed - Excitation/Emission 100 nm/s from 1 ms from 1		Bandpass - Excitaion/Emission	0 - 30 nm, continuously adjustable			
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 Ange 0 - 2 A Absorbance Accuracy ± 0.01 A SERSITIVITY Signal-to-Noise Ratio Volume Ratio Volume Ratio Water Raman Conditions \$\lambda_{\top} = 300 nm, bandpass = 5 nm, step size = 1 nm, integration time = 1 s, \$\lambda_{\top min} = 397 n noise measured at 450 nm and calculation based on the SQRT method DIMENSIONS Wx D x H 104 cm x 59 cm x 32 cm Weight 55 kg SEXCITATION WAVELENGTH Model FSS-UV EXECUTATION WAVELENGTH Extrension Emission Coverage 200 nm - 200 nm		Wavelength Accuracy	± 0.5 nm			
DETECTORS		Scan Speed - Excitation/Emission	100 nm/s			
Reference Detector Absorbance Detector Absorbance Detector Absorbance Range 0 - 2 A Absorbance Range 0 - 2 A Absorbance Range 0 - 2 A Absorbance Accuracy ± 0.01 A DIMENSIONS Water Raman Conditions Water Ra		Integration Time	from 1 ms			
Absorbance Detector Absorbance Range Absorbance Range Absorbance Range Absorbance Range Absorbance Accuracy 5 (201 A) SENSITIVITY Signal-to-Noise Ratio Water Raman Conditions WX D X H A — 350 nm, bandpass = 5 nm, step size = 1 nm, integration time = 1 s, \(\lambda_{post} = 397 \) n noise measured at 450 nm and calculation based on the SQRT method Weight 55 kg Upgrade Specifications EXECTATION WAVELENGTH EXTENSION Model Excitation Coverage Model Exitation Coverage Model Emission Coverage PMT-EXT FSS-NIR FSS-NIR FSS-NIR FSS-NIRA+ EXTENSION Model Emission Coverage PMT-EXT replaces a plus plus plus plus plus plus plus plus	DETECTORS	Emission Detector	Single Photon Counting, PMT-900, cooled and stabilised, 200 nm - 900 nm			
Absorbance Range Absorbance Accuracy Accuracy Absorbance Accuracy Accura		Reference Detector	UV enhanced silicon photodiode, 200 nm - 1000 nm			
Absorbance Accuracy ± 0.01 A		Absorbance Detector	UV enhanced silicon photodiode, 200 nm - 1000 nm			
Signal-to-Noise Ratio Water Raman Conditions \[\begin{align*} \limits_{\text{a}} = 350 \ nm, \text{ bard pass} = 5 \ nm, \text{ step size} = 1 \ nm, \text{ integration time} = 1 \ s, \lambda_{\text{poss}} = 397 \ n \text{ noise measured at 450 nm and calculation based on the SQRT method} \] \[\text{DIMENSIONS} \] \[\text{W} \times \text{D} \times \text{M} \text{ Weight} \] \[\text{V} \times \text{Sp cm x 32 cm} \] \[\text{V} \times \text{Weight} \] \[\text{Sp cm c} \text{Sp cm x 32 cm} \] \[\text{Sp cm x 32 cm} \] \[\text{V} \times \text{N} \times \text{V} \times V		Absorbance Range	0 - 2 A			
Water Raman Conditions Water Raman Conditi		Absorbance Accuracy	± 0.01 A			
DIMENSIONS Wx D x H Weight Model Source Wission Coverage Model Emission Coverage FSS-NIR FSS-N	SENSITIVITY	Signal-to-Noise Ratio	>10,000:1 (SQRT)			
Weight 55 kg Upgrade Specifications EXCITATION WAVELENGTH EXTENSION Model Source 150 W CW Ozone generating Xenon bulb (200 nm - 1000 nm) EMISSION WAVELENGTH EXTENSION Model Excitation Coverage (200 nm - 1000 nm) PMT-EXT FS5-NIR FS5-NIR FS5-NIR FS5-NIR FS5-NIR FXTENSION MODEL Emission Coverage (200 nm - >980 nm 200 nm - >870 nm plus plus plus plus 600 nm - >1050 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm plus 950 nm - >1650 nm 870 nm 200 nm - >870 nm 200 nm 2		Water Raman Conditions	$\lambda_{\rm ex}$ = 350 nm, bandpass = 5 nm, step size = 1 nm, integration time = 1 s, $\lambda_{\rm peak}$ = 397 nm, noise measured at 450 nm and calculation based on the SQRT method			
Upgrade Specifications EXCITATION WAVELENGTH EXTENSION Model Excitation Coverage Model Emission Coverage Model Emission Coverage PMT-EXT FSS-NIR FSS-NIR+ FSS-NIR+ FSS-NIR+ FSS-NIR+ FSS-NIR+ Emission Coverage PMT-EXT PMT-EXT FSS-NIR FSS-NIR+ FSS-N	DIMENSIONS	WxDxH	104 cm x 59 cm x 32 cm			
EXCITATION WAVELENGTH EXTENSION Model Excitation Coverage EMISSION WAVELENGTH EMISSION WAVELENGTH EMISSION WAVELENGTH EXTENSION Model Emission Coverage PMT-EXT FSS-NIR F		Weight	55 kg	55 kg		
Dozone generating Xenon bulb	EXCITATION WAVELENGTH	Model				
EMISSION WAVELENGTH EXTENSION Emission Coverage			Ozone generating Xenon bulb			
Emission Coverage 200 nm ->980 nm 200 nm ->870 nm plus 600 nm ->1010 nm 950 nm ->1650 nm 870 nm ->165 PMT-EXT replaces standard PMT-900 POLARISATION / ANISOTROPY Model Computer Control Spectral Coverage PHOSPHORESCENCE LIFETIME Model FS5-MCS Lifetime Range FS5-MCS Lifetime Range Alignment of the spectral peasurements only, in recommended with NIR+ and NIRA+ operation and lensistion and emission) FS5-MCS Microsecond Xenon flashlamp Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Variable pulse sources (VPL/VPLED Series) Variable pulse sources (VPL/VPLED Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)		Excitation Coverage	<200 nm – 1000 nm			
Emission Coverage 200 nm - >980 nm 200 nm ->870 nm 200 nm 2		Model		FS5-NIR	FS5-NIR+	FS5-NIRA+
POLARISATION / ANISOTROPY Model Computer Control Spectral Coverage Model FS5-POL In/Out of beam, polarisation angle 0° - 90° Spectral Coverage 240 nm - 2300 nm (excitation and emission) PHOSPHORESCENCE LIFETIME Model Sources Microsecond Xenon flashlamp Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Variable pulse sources (VPL/VPLED Series) Variable pulse sources (VPL/VPLED Series) FS5-TCSPC+ Sources Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)		Emission Coverage	200 nm - >980 nm	plus	plus	200 nm - >870 nm plus 870 nm - >1650 nm
ANISOTROPY Computer Control Spectral Coverage 240 nm - 2300 nm (excitation and emission) PHOSPHORESCENCE LIFETIME Model Sources Microsecond Xenon flashlamp Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Variable pulse sources (VPL/VPLED Series) Variable pulse sources (VPL/VPLED Series) FILUORESCENCE LIFETIME Model FS5-TCSPC FS5-TCSPC+ Sources Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)				-		
Spectral Coverage 240 nm - 2300 nm (excitation and emission)		Model	FS5-POL			
PHOSPHORESCENCE LIFETIME 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 Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)		Computer Control	In/Out of beam, polarisation angle 0° - 90°			
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 Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)		Spectral Coverage	240 nm - 2300 nm (excitation and emission)			
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 Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)		Model	FS5-MCS			
FLUORESCENCE LIFETIME Model FS5-TCSPC FS5-TCSPC+ Sources Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Picosecond pulsed LEDs (EPLED Series)		Sources	Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)			
Sources Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series) Picosecond pulsed LEDs (EPLED Series)		Lifetime Range	< 5 µs - > 10 s			
Picosecond pulsed LEDs (EPLED Series) Picosecond pulsed LEDs (EPLED Series	FLUORESCENCE LIFETIME	Model	FS5-TCSPC		FS5-TCSPC+	
$< 150 \text{ ps} -> 10 \mu\text{s}$ $< 25 \text{ ps} -> 10 \mu\text{s}$		Sources	·		Picosecond pulsed diode lasers (EPL Series) Picosecond pulsed LEDs (EPLED Series)	
			< 150 ps - > 10 μs		< 25 ps - > 10 μs	



