

The FLS980 Series

A complete luminescence laboratory in one instrument
(Fluorescence, Phosphorescence, Steady State and Lifetime)



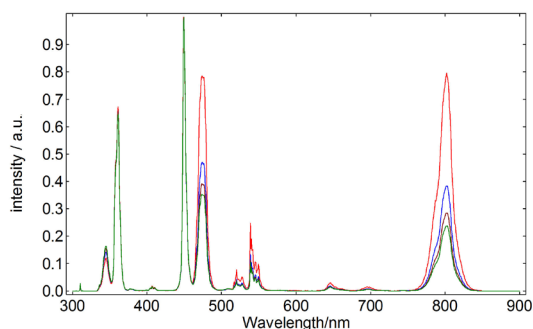
The FLS980 is a fully automated, modular and flexible fluorescence spectrometer for both fundamental research and routine laboratory applications. Its high accuracy and sensitivity are designed to set the standards for technical performance in luminescence spectroscopy.

The FLS980 can be customised and its flexibility enables you to integrate accessories and upgrades according to your requirements. Whether you are studying photophysics, photochemistry, biophysics, biochemistry or semiconductor physics, the FLS980 will enable you to reliably and accurately measure luminescence in either steady state and/or lifetime modes, while its large sample chamber can house a variety of sample holders and accessories.

Enhanced sensitivity of the FLS980 for spectral measurements is a pre-requisite for measurements of low sample concentrations and small sample volumes. The FLS980 is unbeaten with >25,000:1 water Raman SNR.

The FLS980 has a USB interface and all modes of operation are controlled by ONE data acquisition module, there is no need to reconfigure or reconnect cables even for complex configurations.

Our advanced software not only controls the instrument, but further contains fitting and mathematical routines for spectroscopic analysis. You can design your experiment from your desktop, watch your profiles build live on screen, and then comprehensively manipulate and analyse your data.



Spectral measurements from UV-NIR

Modularity enables flexibility

Ultrafast data acquisition using ONE acquisition module for Multi-Channel Scaling, Time Correlated Single Photon Counting (TCSPC), and Spectral Scanning

All modes of operation, analysis and presentation controlled by ONE software package

>25,000:1 Water Raman SNR

Large sample chamber with 6-axis access to your sample

Computer controlled filter wheels for higher order removal

High performance monochromators with high straylight rejection

NIR upgradeability

Compatibility with modern light sources and detectors

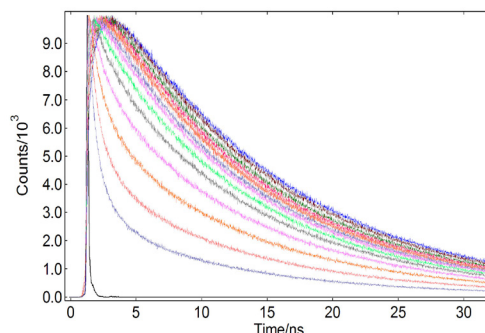
Auto-calibration at system initialisation

Direct one to one service support worldwide

The spectrometer can be configured to include one, two or three operational modes. The available options are - Steady State Mode, a Time Correlated Single Photon Counting (TCSPC) mode for decays in picoseconds to microseconds range and a Multi-channel scaling (MCS) mode for decays in nanoseconds to seconds range. Fluorescence lifetimes are typically measured by TCSPC, whereas phosphorescence lifetimes are typically measured by MCS.

The system is compatible with modern light sources and detectors. This capability enables spectral and lifetime measurements to be made from 200 nm-1700 nm using PMTs.

Analogue detectors can take spectral and temporal measurements from nanoseconds to seconds with pulsed lasers and flashlamps.



TCSPC Lifetime measurements

Technical Specifications

	FLS980 Spectral	FLS980 Fluorescence Lifetime	FLS980 Phosphorescence Lifetime		
System	A computer controlled spectrofluorimeter for measuring steady state luminescence spectra in the UV – NIR spectral range with single photon counting sensitivity.	Computer controlled spectrometer for measuring fluorescence lifetimes spanning the range from picoseconds to microseconds based on the technique of time correlated single photon counting.	Computer controlled spectrometer for measuring phosphorescence lifetimes spanning the range from microseconds to seconds based on the technique of time resolved single photon counting – multi channel scaling.		
Mode of Operation	Single Photon Counting	Time Correlated Single Photon Counting (TCSPC)	Time-Resolved single photon counting - Multi-Channel Scaling (MCS)		
Lifetime Range	Milliseconds to hours	100 ps – 50 μs (nF920) 5 ps – 50 μs (fs laser/MCP-PMT)	1 μs – 10 s (μF2) 10 ns – 10 s (pulsed laser)		
Sensitivity (Water Raman)	>25,000:1	n/a	n/a		
Monochromators					
Type	Czerny-Turner with Triple Grating Turret				
Focal length	300 mm, (double monochromators: 2 x 300 mm)				
Slits	<10 μm to 12 mm fully computer controlled				
Stray Light Rejection	1:10 ⁻⁵ (single) 1:10 ⁻¹⁰ (double)				
Gratings	Mounted to triple grating turret, fully computer controlled				
Excitation Sources					
Type	450W, Ozone free Xenon Arc Lamp	Nanosecond Flashlamp	Microsecond Flashlamp		
Mode of Operation	Steady State	TCSPC	MCS		
Spectral Range	230 nm - >1000 nm	200 nm - >400 nm	200 nm - >1000 nm		
Pulse Width	n/a	<1 ns	1-2 μs		
Options	Ozone generating lamp with spectral range 200 nm - >1000 nm	Picosecond pulsed diode lasers (EPLs) and pulsed LEDs (EPLDs)	Low to medium repetition rate pulsed lasers		
Detectors					
Photomultiplier	R928P	NIR PMT	R2658P	HIGH SPEED	MCP-PMT
Spectral Range	200 nm - 870 nm	300 nm - 1700 nm	300 nm - 1010 nm	230 nm - 870 nm	200 nm - 850 nm
Dark Count Rate	<50 cps (-20 °C)	<200 kcps (-80 °C)	<100 cps (-20 °C)	<100 cps (0 °C)	<50 cps (-20 °C)
Response Width	600 ps	800 ps	600 ps	200 ps	<50 ps
Options	A wide variety of photomultipliers and analogue detectors are available				
Geometry Options	Right angled geometry as standard. Additional geometries are available on request*				
Software					
Operating System	Windows 7 & 8				
Data Manipulation	Mathematical Smoothing, Integration, Differentiation, 2D and 3D Graphics, Contour Plots, Chromaticity, Quantum Yields, Multi-Exponential Deconvolution, Lifetime Analysis				
Options	FAST - Advanced Fluorescence Lifetime Software (lifetime distributions, batch analysis, global analysis, advanced anisotropy analysis. FRET analysis, stretched exponential analysis, micellar quenching and Förster analysis)				

*Contact us for more information.

Customer support is available worldwide.

For more information please visit www.edinst.com or contact us below:

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