EDINBURGH
ANALYTICAL

FE30 FLUORESCENCE SPECTROMETER

www.edinburghanalytical.com

INTRODUCING FE30
HIGH SENSITIVITY FLUORESCENCE SPECTROMETER

The FE30 Fluorescence Spectrometer enables high-sensitivity fluorescence measurements for advanced research and analysis.

Unlock more from your fluorescence measurements with the FE30 – a powerful benchtop spectrometer built for demanding applications. With an extended wavelength range, ultra-fast scanning, and optimised electronics, it delivers high-quality data out to 900 nm.

Spectracle® software makes advanced measurements feel effortless. Its intuitive Workspace Manager streamlines measurement workflows, helping you get the most from your instrument. Whether in research or industry, the FE30 brings reliable, high-performance fluorescence analysis to your lab.

KEY FEATURES

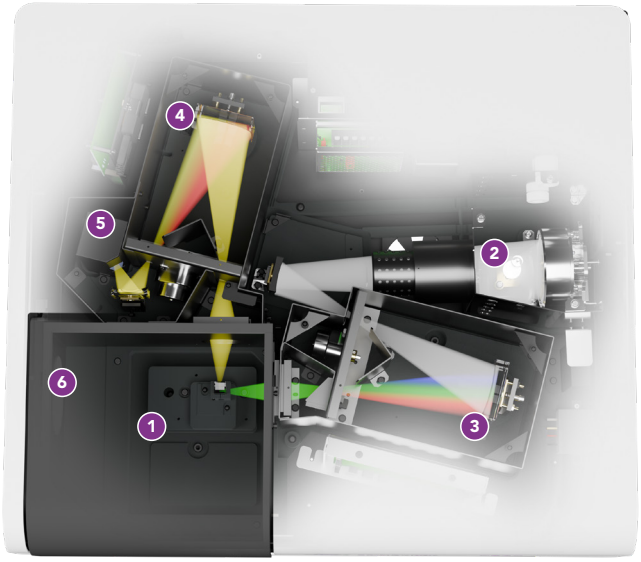
- Extended wavelength range of measurement up to 900 nm
- Fast scanning – out to 60,000 nm/min
- Excellent sensitivity
- 3D scanning and analysis functions
- Selection of accessories
- Modern and easy-to-use Spectracle® software for instrument control, measurement and analysis

FE30 APPLICATIONS

Semiconductors | Food | Molecular Biology | Chemistry | Life Sciences | Environmental | Material Science

MOLECULAR SPECTROSCOPY | UV-Vis | FTIR | Fluorescence

OPTICAL PLATFORM



KEY FEATURES

1. **Sample chamber**
   Large sample chamber to accept a variety of sample holders and accessories
2. **Xenon lamp**
   150 W xenon lamp with power saving auto on/off
3. **Excitation monochromator**
   Fast scanning and high resolution
4. **Emission monochromator**
   Fast scanning and high resolution
5. **PMT detector**
   Wide detection range from 200 to 900 nm
6. **Accessory port**
   Allows an external accessory or laser source to be used with the standard sample chamber

RAPID AND RELIABLE OPTICAL SYSTEM

EXCELLENT SIGNAL-TO-NOISE RATIO

WATER RAMAN 1,000:1 (RMS-PK) / 20,000:1 (RMS-BG)

The FE30 achieves high sensitivity by combining an efficient optical and electronic system with a high energy light source, and best-in-class photomultiplier tube (PMT) detector. This high sensitivity allows for fluorescence detection at small bandwidths and ensures accurate measurements, even for samples of very low concentrations.

EXTENDED WAVELENGTH RANGE (UP TO 900 NM)

A high performance PMT detector with wavelength range up to 900 nm is the standard configuration of FE30.

HIGH INTENSITY XENON LAMP

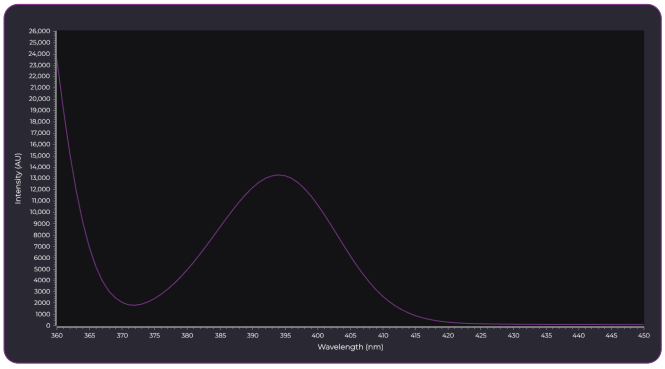
The high energy output 150 W xenon lamp ensures a sufficient and stable light source, which is critical to high sensitivity and accurate measurement.

RAPID AQUSITION RATE (60,000 NM/MIN)

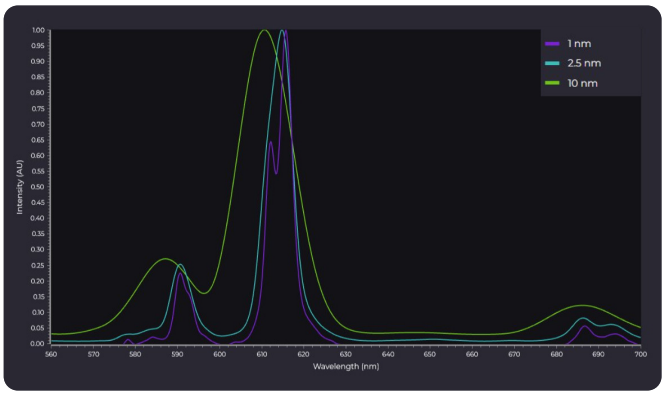
FE30 features rapid scanning rate up to 60,000 nm/min, allowing the fast measurement and construction of 3D spectra in a few minutes.

ADJUSTABLE BANDWIDTH

Spectral bandwidths can be adjusted easily using the Spectracle® software, allowing improvements in resolution and spectral analysis.



Water Raman Spectrum



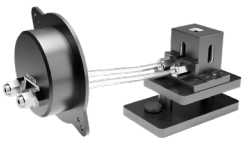
Europium is a rare earth with a sharp luminescent peak under excitation.
The narrow emission lines of Europium can be resolved at low emission bandwidths

SAMPLE ACCESSORIES

Name	Description
Standard Cell Holder	Standard cell holder for a 10 mm fluorescence cuvette, included with every FE30 unit
Thermostatic Water Bath Cell Holder	Cell holder with temperature control from ~0 – 100 °C
Variable Angle Solid Sample Holder	For powder and thin film samples, angle adjustable 0 – 90° with 360° rotation
Micro Powder Sample Holder	For small quantities of powder, angle adjustable 0 – 90°. Compatible with Standard Cell Holder
Polariser Accessor	For studying samples with fluorescence anisotropy
Laser Source Holder	For coupling with external laser source for excitation

STANDARD CELL HOLDER

Designed to hold a standard 10 mm path length fluorescence cuvette and accommodate the right-angle beam geometry of the spectrometer.



THERMOSTATIC WATER BATH CELL HOLDER

Designed for liquid samples that require controlled temperature conditions, or for applications involving temperature-dependent measurements, within a range of approximately 0 °C to 100 °C.

VARIABLE ANGLE SOLID SAMPLE HOLDER

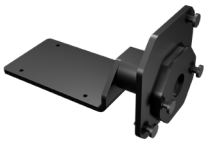
Designed for measurements of powder and thin film samples with high flexibility and precision. Accommodates a powder volume of approximately 100 mm³. Offers 360° of continuous rotation, adjustable from 0 to 90°.

MICRO POWDER SAMPLE HOLDER

Designed for measurements of small quantities of powder, with a typical sample volume of approximately 40 mm³. The measurement angle can be adjusted from 0 to 90°. Compatible with the Standard Cell Holder and the Thermostatic Cell Holder.

POLARISER ACCESSORY

Designed for studying samples with fluorescence anisotropy, using the Spectracle® software. Consists of two polarisers which can be manually rotated to 0°, 90°, and the magic angle. Compatible with the Standard Cell Holder.



LASER SOURCE HOLDER

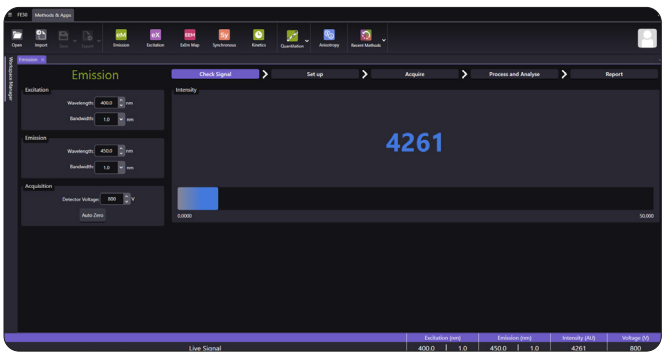
Provides a secure and light-tight means of coupling an external laser source with the FE30. When the holder is installed on the side port of the sample chamber, the laser head can be directly mounted to the holder platform.

SPECTRACLE® SOFTWARE

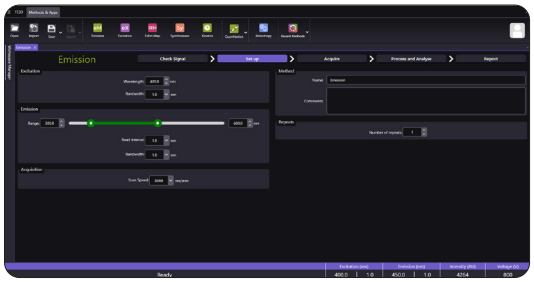
Check Signal is a new feature that allows the user to check and monitor the signal level and then adjust the related parameters such as Ex/Em bandwidth and PMT voltage to obtain the optimal signal intensity.

WORKFLOW

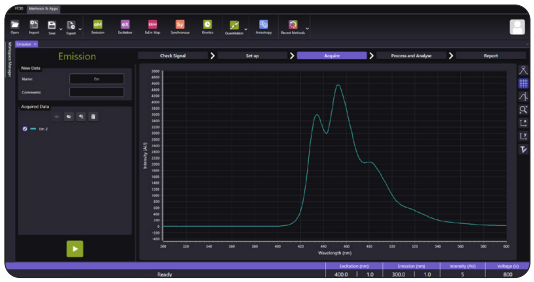
With its intuitive workflow design, Spectracle® makes it easy to create and customise method flows that streamline data acquisition. Users can work more efficiently and focus on obtaining high-quality results rather than manual setup.



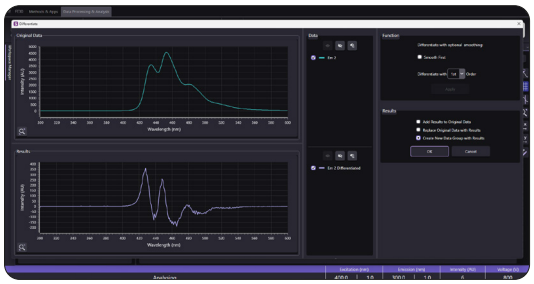
Check Signal feature



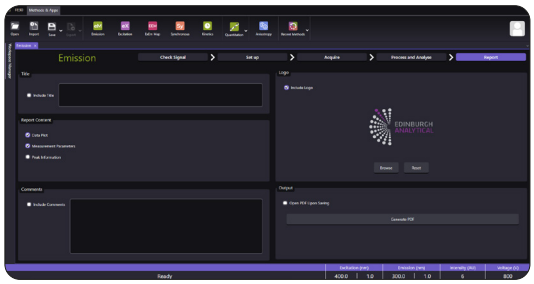
1 Method Setup



2 Acquisition



3 Data Processing and Analysis

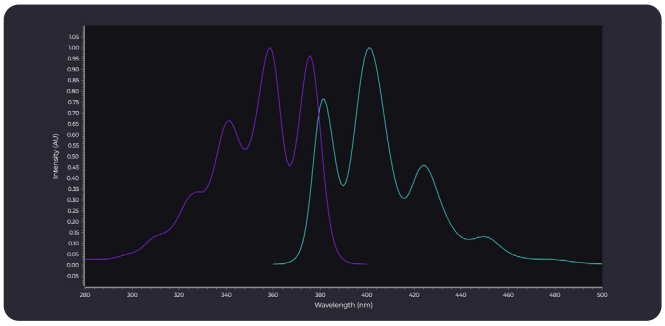


4 Reporting

SOFTWARE MEASUREMENTS

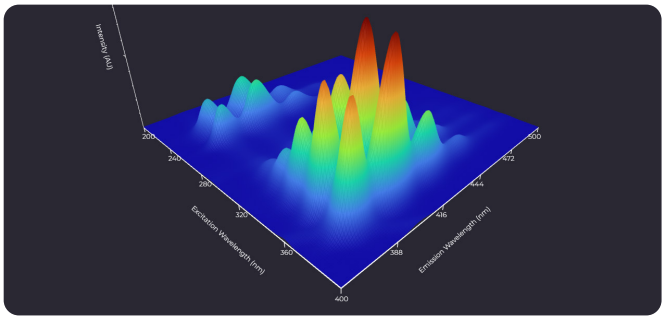
MEASUREMENT MODES

- **Wavelength scan:**
  Measure Excitation, Emission or Synchronous wavelength scans of different samples. The spectra can be analysed using the built-in spectrum calculator, or manipulated in Workspace environment
- **Time scan:**
  Perform kinetic measurement such as enzyme activity or other reactions
- **3D Scan:**
  3D scan can be used for quick overview of the fluorescence characteristics of the sample. It can also be used for fingerprint analysis or advanced modelling techniques
- **Quantitation:**
  Generate calibration curves, including second order
- **Anisotropy:**
  Fluorescence polarisation measurements for applications in biochemistry and biophysics



Excitation and emission spectra of anthracene

Calibration curve of fluorescein



Excitation emission map of anthracene

SOFTWARE CONTROL

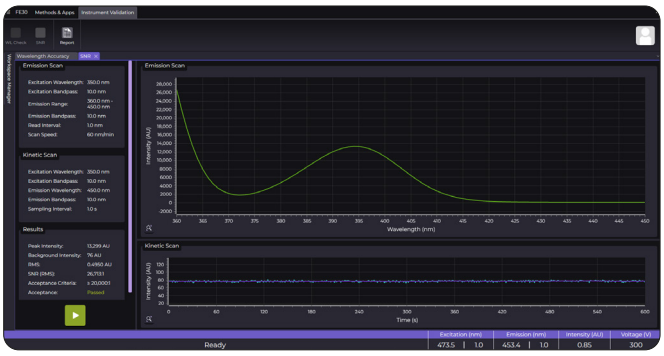
SPECTRACLE® PC-CONTROLLED SOFTWARE

Spectracle® offers all control, validation, data analysis and reporting functionalities for FE30 in one PC-operated software package. Collected data is stored in individual data files or grouped data, where it can then be organised and analysed, as well as exported in .TXT, .CSV or PDF format.

VALIDATION FUNCTIONS & AUTOMATION

- Raman Water scan for Signal-to-Noise ratio
- Excitation and Emission wavelength accuracy

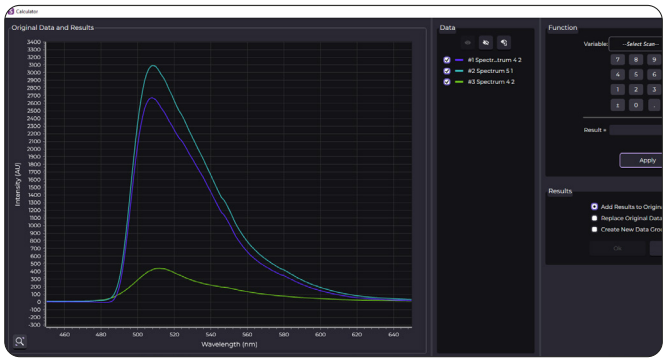
Wavelength accuracy validation



Signal-to-noise ratio validation

DATA HANDLING

- Rescaling, data readout, spectrum overlay, peak & trough analysis, arithmetic, smoothing, differentiation, area & rate calculating
- Report generation and file output in .CSV or PDF format



Spectrum calculation

Linearity plot

SPECIFICATIONS

FE30 Fluorescence Spectrometer	
Working Environment and Requirements	
Working Temp	10 – 35°C ambient temperature
Power Supply	100 – 240 V, 50-60 Hz
Main Specifications	
Excitation Source	High intensity 150 W continuous xenon lamp
Wavelength Range	Excitation: 200 – 900 nm Emission: 200 – 900 nm
Spectral Bandwidth	Excitation: 1, 2.5, 5, 10, 20 nm Emission: 1, 2.5, 5, 10, 20 nm
Wavelength Accuracy	±1.5 nm
Wavelength Repeatability	±1.0 nm
Sensitivity	RMS-PK = 1,000:1, RMS-BG = 20,000:1*
Wavelength Scan Speed	Max 60,000 nm/min; Selectable from 30, 60, 240, 600, 1200, 2400, 8000, 12,000, 30,000, 60,000 nm/min
Scan Interval	0.1 – 10.0 nm
Detector Voltage	Continuously adjustable negative high voltage 200 – 1,000 V
Fluorescence Intensity Drift	<1.5% Ex: 450 nm, Em: 450 nm (within 10 min)
Fluorescence Value Range	0 to 50,000
Detector	Photomultiplier tube R928
Software	Spectracle® PC-controlled software
Sample Chamber Dimension	247 (W) × 215 (D) × 172 (H) mm
Instrument Dimension	660 (W) × 600 (D) × 250 (H) mm
Weight	55 kg
Software Functions	
Wavelength Scan	Excitation, Emission, Synchronous
Kinetics	Fixed wavelength time scan
Quantitation	Quantitative analysis, calibration curve (1st and 2nd order), sample blank measurement, sample measurement, standard curve coefficient input
ExEm Map	2D, 3D, heatmap view
Applications	Anisotropy
Spectral Processing	Normalise, smooth, differentiate, integrate, calculate, peak analysis
Validation Function	S/N ratio measurement, wavelength check
Application Report Output	Anisotropy wavelength scan and quantitative analysis PDF report output, export to Excel™
Scope of Delivery	
Box Includes	1 x FE30 Unit 1 x Installation and Quick Guide 1 x Quartz Cuvette 1 x Diffuser 1 x USB Cable
After Sales Service	
Warranty	Guaranteed (under normal maintenance) for one year from the date of delivery

*Standard water Raman measurement conditions: excitation wavelength = 350 nm, excitation and emission bandwidth = 10 nm, emission range = 360 – 450 nm, read interval = 1 nm, scan speed = 60 nm/min. Calculation based on the root mean square (RMS) method.

EDINBURGH
ANALYTICAL

SCAN ME

EXCELLENCE IN SPECTROSCOPY

PRECISION IN EVERY MEASUREMENT

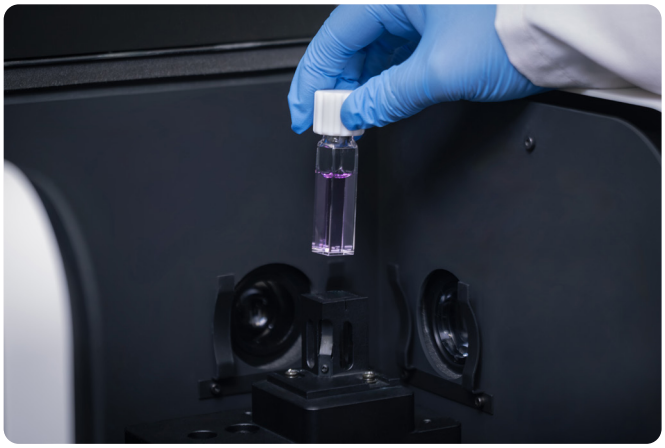
EDINBURGH ANALYTICAL

Edinburgh Analytical provides cutting-edge solutions and support for general and analytical laboratories while maintaining the core values and culture of excellence that define Edinburgh Instruments.

EDINBURGH INSTRUMENTS

Edinburgh Instruments has been providing high performance molecular spectroscopy instrumentation for over 50 years.

Our photoluminescence, Raman, and transient absorption spectrometers set the standard in advanced optical spectrometers for research and industry.



EDINBURGH ANALYTICAL

2 Bain Square, Livingston, EH54 7DQ, United Kingdom

Tel: +44 (0)1506 425 300
Fax: +44 (0)1506 425 320

sales@edinst.com

Registered in England and Wales No: 962331 VAT No:GB 271 7379 37

STG12 / 05.2026

Customer support is available worldwide

www.edinburghanalytical.com