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MOS-200

Simple, Fast, Sensitive

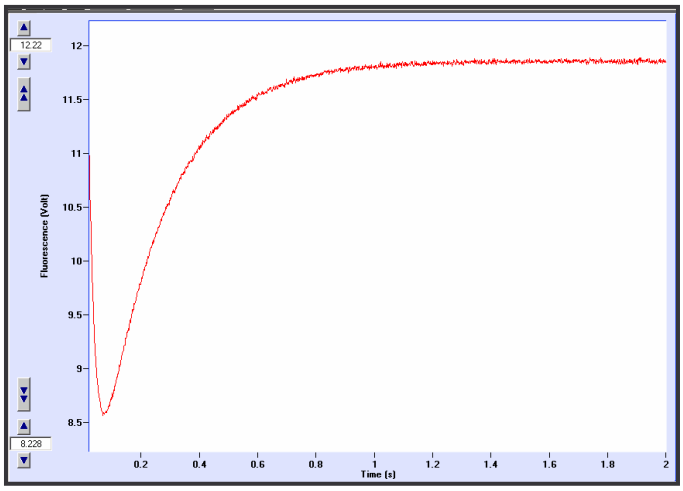
Compatible with { SFM-20 / SFM-300 / SFM-400



Absorbance - Fluorescence
90 °light scattering - Chemiluminescence

Simple and optimized for kinetics

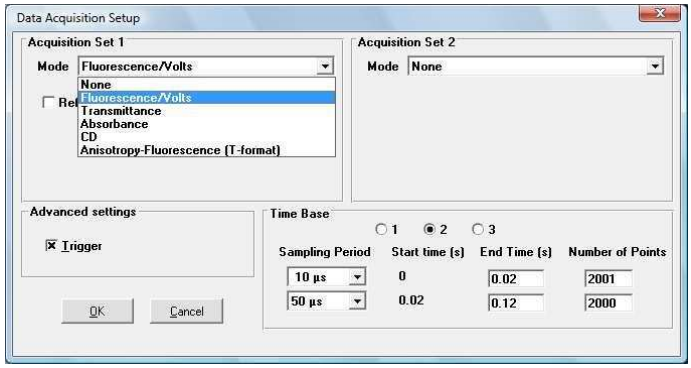
MOS-200 is an efficient single grating manual monochromator spectrometer. It has been specially designed to offer you the highest speed and sensitivity in rapid kinetics acquisitions. Coupled to one of our stopped-flow model it offers the most complete and flexible stopped-flow spectrometer configuration available.
A **Xe(Hg) or Xe high intensity light source** is used for illumination of sample. Connection to the stopped-flow cuvette is done through a fiber optic cable, which guarantees maximum and uniform light efficiency from the grating to the observation cell. Excitation wavelength is selected manually. Cut-off or low pass band filters can be used to select emission wavelength in fluorescence mode.
Bio-Kine is the reference software for kinetics studies. It includes efficient tools which provide fast and accurate data collection, display and analysis.



Fast and sensitive

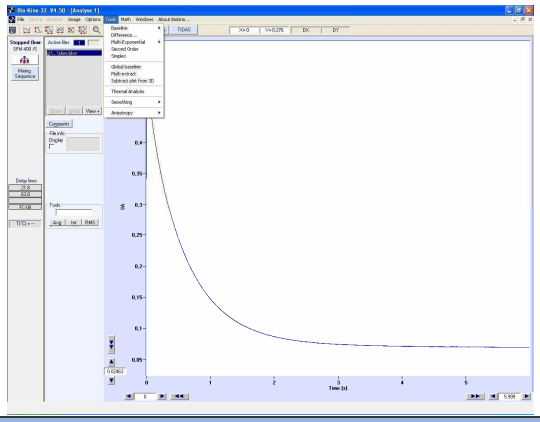
Detection is made using a high sensitivity photomultiplier tube (PMT) optimized for wavelength from 160 to 850 nm. **The same PMT can be used for both absorbance and fluorescence measurements: switch from one configuration to the other takes only 30 seconds** !.

The operator has the choice between single and multi time base acquisition modes with a **fastest sampling period of 1 measurement per 10 µs**. Combined with the **250 µs dead time** of the stopped-flow it offers ideal conditions for ultra-fast kinetics. Sampling rate is adjustable so complex reactions with different steps can be followed easily.



User-friendly

Bio-Kine includes analysis functions so data can be fitted using predefined or user-defined equations. Operations such as smoothing, linear or Log sampling, and baseline subtractions are standard. RMS noise analysis is available, and residuals analysis helps you estimate the quality of the fit. Data is saved as text files for easy transfer to other software.



Specifications

Light source	
Number of lamps	2
Nature/Power	super quiet 150W Xe(Hg) **and** 150W Xe *(tungsten lamp available in option)*
Wavelength range	220 to 700 nm Xe(Hg) 200 to 800 nm Xe
Stability	better than 1% for Xe(Hg) better than 0,3% for Xe
Nature of spectrum	sharp lines for Xe(Hg) continuous spectrum for Xe
Light source power supply	
Ripple (50 to 60Hz)	< 0,1 % rms
Low frequency noise	< 0,05 % peak to peak
Drift	< 0,1% minute after one hour warm up
Manual Monochromator	
Grating	1200 grooves/ nm
Focal length	100 mm
Aperture	F/# = 3,5
Wavelength range	zero order and 200-800 nm
Linear dispersion	8 nm/mm
Accuracy	± 0,5 nm

Fiber optic	
Material	quartz
Wavelength range	200-800 nm
Length	1,5 m
Dimensions	1mm x 3mm (monochromator side) 1,9 mm diameter (stopped-flow side)
Detection	
Photomultiplier tube	11 stage, optimized for UV **and** visible
Operating voltage	0 to 1200 V
Wavelength range	160 to 850 nm
Low-pass filters	manual
Data acquisition	
Acquisition board type	High speed 4 channel A/D
Sampling rate	10 µs to 1000s/ point
Number of time bases	1 to 3
Noise level in fluorescence	S/N > 1000 at 1 ms integration time (using FC-15 and 1µM NATA)
Noise level in absorbance	5x10 -5 AU rms at 1ms integration time
System requirements	Windows PC with 2000, XP, Vista and 1 open PCI slot (required)

Specifications are subject to change without prior notice

Included with MOS-200

- Optical rail
- Manual monochromator
- Photomultiplier tube and control unit
- Photomultiplier control unit (PMS-250)
- Acquisition board and communication cable
- 320 nm cut-off filter
- Single light source + power supply (ALX-250)
- 1.5 meter fiber optics (other dimensions available on request)
- Fiber optics adaptor for stopped-flow head
- Trigger cable
- Biokine and SFit software
- Connector block (PCI / PMS-250 / Trigger)

Endless upgrade possibilities

Additional detection channel :
For simultaneous absorbance/fluorescence and double fluorescence measurements. This includes a second photomultiplier tube and control unit.

T-format anisotropy kit :
It includes a set of Glan-Taylor polarizers and an additional detection channel. Polarizers are installed in PMT holder for easy removal in absorbance mode. Triple simultaneous measurements (absorbance/T-format anisotropy, fluorescence) is available with optional 049-10.

Motorization of monochromator
For full software control of excitation wavelength and PMT voltage. It includes MM-450. It allows kinetics in wavelength tracking mode(multi wavelength measurements). Automatic reconstruction of 3D data for global fitting analysis

MOS-200/M and MOS-450/AF-CD :
MOS-200 can be upgraded to higher spectrometer models to access detection techniques such as Circular Dichroism, Linear dichroism and Fluorescence Anisotropy using **our patented EMFA method (Excitation Modulated Fluorescence Anisotropy**).

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MOS-200/M

The motorized version

Compatible with { SFM-20 / SFM-300 / SFM-400

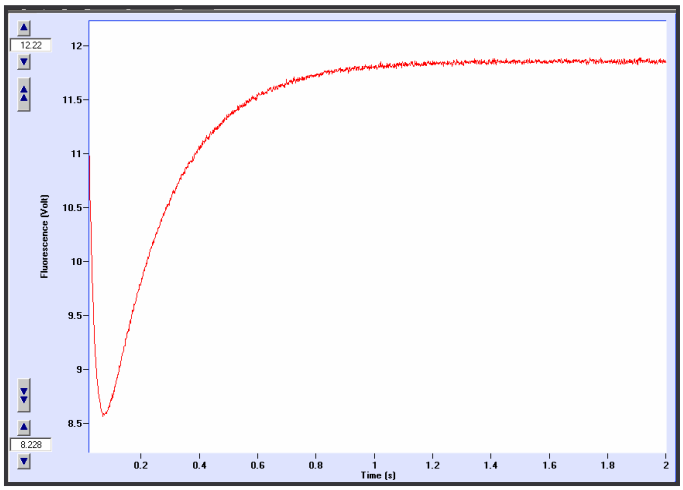


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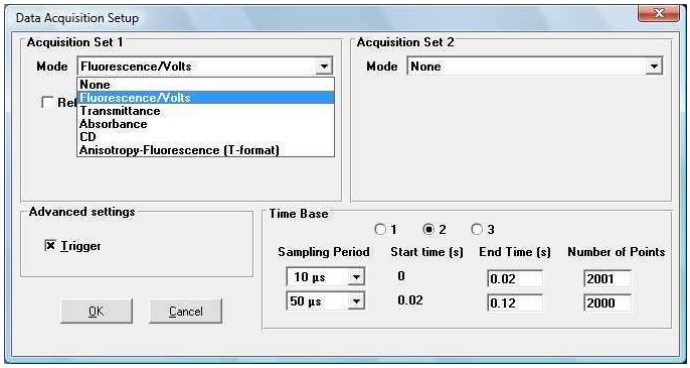
MOS-200/M is the motorized version of MOS-200. It offers the same speed and sensitivity with the addition of full software control over wavelength, PMT gain, and acquisition speed. Coupled to one of our stopped-flow model it offers the most complete and flexible stopped-flow spectrometer configuration available.

A double Xe/Xe(Hg) light source allows changing lamps without any lamp handling. It is perfect for easy switching from kinetics to steady state applications. Connection to the stopped-flow cuvette is done through a fiber optic cable, which guarantees maximum and uniform light efficiency from the grating to the observation cell. Cut-off or low pass band filters can be used to select emission wavelength in fluorescence mode.



Full automation

Detection is made using a high sensitivity photomultiplier tube (PMT) optimized for wavelength from 160 to 850 nm. **The same PMT can be used for both absorbance and fluorescence measurements: switch from one configuration to the other takes only 30 seconds** !.The PMT is fully software controlled.



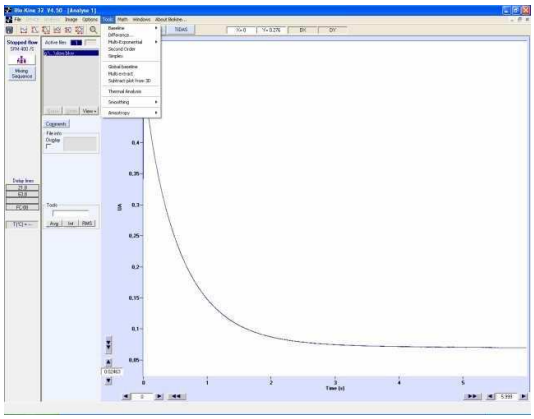
The operator has the choice between single and multi time base acquisition modes with a **fastest sampling period of 1 measurement per 10 µs**. Combined with the **250 µs dead time** of the stopped-flow it offers ideal conditions for ultra-fast kinetics. Sampling rate is adjustable so complex reactions with different steps can be followed easily.

Wavelength tracking mode : the user can program a series of shots at different wavelength to build 3D data (λ, time, signal) . Such data give access to SVD and global fitting analysis using **Sfit** with a 10 µs resolution !

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User-friendly software

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Operating voltage	0 to 1200 V
Wavelength range	160 to 850 nm
Low-pass filters	automatic
Data acquisition	
Acquisition board type	High speed 4 channel A/D
Sampling rate	10 µs to 1000s/ point
Number of time bases	1 to 3
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- ♦ Photomultiplier tube
- ♦ Photomultiplier control unit (PMS-250)
- ♦ Acquisition board and communication cable
- ♦ 320 nm cut-off filter
- ♦ Double light source + power supply (ALX-250)
- ♦ 1.5 meter fiber optics (other dimensions available on request)
- ♦ Fiber optics adaptor for stopped-flow head
- ♦ Trigger cable
- ♦ Bio-Kine and SFit software
- ♦ MM-450 control unit

Endless upgrade possibilities

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Additional detection channel :
For simultaneous absorbance/fluorescence and double fluorescence measurements. This includes a second photomultiplier tube and control unit.

MOS-450/AF-CD :
MOS-200/M can be upgraded to more advanced spectrometer models with detection techniques such as Circular Dichroism, Linear dichroism and Fluorescence Anisotropy using **our patented EMFA method (Excitation Modulated Fluorescence Anisotropy**).

Emission monochromator:
For fluorescence emission spectra or kinetics detection at a fixed wavelength. Monochromator is available in both manual and motorized version.

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