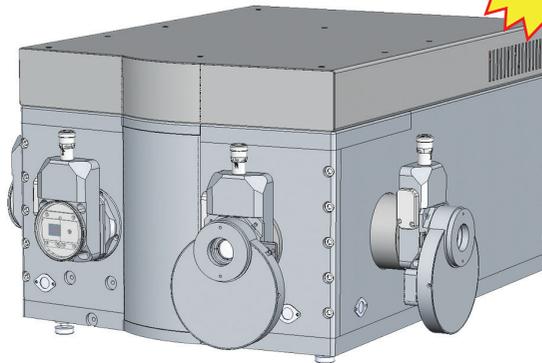


AUTOMATED MONOCHROMATOR-SPECTROGRAPH M522



M522 is a long-focal automated universal monochromator-spectrograph that is characterized with a high line quality and low-level stray light.



FEATURES

High aperture ratio (F=1:3.8), low stray light and perfect line quality enable successful use of the M522 in a wide range of applications.

Two input and two output ports can be completed with the full set of accessories manufactured by SOLAR LS: standard and crossed entrance slits, order separating filter wheels, aperture matching units and optical fibers, CCD detectors and adapters for them.

The M522i in the Imaging mode provides absolute astigmatism compensation and high spatial resolution along the exit slit, meanwhile preserving the ideal line quality.

Fully automated control. Scanning and changing of diffraction gratings, order separating filters, adjustment of slit width and selection of an output port are performed automatically and controlled via the intelligent and easy-to-use software.

An automatic shutter provides for automatic background (dark current) subtraction, along with detector protection against excessive illumination from the light source.

Two output slits in M522 feature precise slit focusing units.

Detector adapters in M522 feature ability for fine through focus adjustment.

The SolarLS.LAB software provides automated control over the M522 and its detector. It allows to stitch spectra obtained by several diffraction grating scans in order to get a panoramic spectrum. Many possibilities of spectra processing and analysis are provided as well.

DLLs and LabVIEW drivers can be supplied at your request, allowing to control the instrument via individually designed software.

APPLICATIONS

- Emission and Fluorescence Spectroscopy
- Absorption, Reflection and Transmission measurements
- Multi-Channel Spectroscopy
- Analytical Tasks Demanding High Resolution in the Range from UV to IR

OPTICS AND ACCESSORIES

The M522 monochromator-spectrograph has a wide range of options and accessories that provide efficient light collection from the sample located at a finite distance and at infinity, delivering light to the monochromator with and without an optical fiber, effective aperture matching of the optical fiber and monochromator.

- **Order Separating Filters Wheels**
- **Aperture Matching Adapters**
- **Condensers for collecting light into the fiber**
- **Condensers for collecting light into the monochromator**
- **Crossed Entrance Slit (optionally installed instead of the Standard Entrance Slit)**
- **Optical Fibers**
- **Adapters for attaching CCD detectors**
- **CCD detectors**
- **Cassegrain lenses**

Possible types of detectors and PMT for monochromator-spectrograph M522 are listed on the page 53.

M522 SPECIFICATIONS

Optical scheme	Optimized Czerny-Turner with two inputs and two outputs								
Spectral range	typical 190 - 4500 nm								
F/Number	1 : 5,3								
Focal length, mm	522								
Flat field, mm	30 x 10								
Imaging	Option. Available for the both output ports simultaneously.								
Diffraction gratings	70x70x10 mm, one grating or a turret with 4 gratings from the list below ¹⁾								
Grooves/mm	2400	1800	1200	600	400	300			
Reciprocal linear dispersion (average) nm/mm ²⁾	0.66	1	1.4	2.8	2.6	4.37	3.68	5.56	5.16
Blaze wavelength, nm	225	270	400	750	1000	800	1700	1500	2000
Spectral range, nm ³⁾	190-500	190-600	260-900	480-680	648-250	515-1800	1095-3825	965-3375	1290-4500
Mechanical range for axial port, nm	0-550	0-730	0-1100	0-2200	0-2200	0-3300	0-3300	0-4405	0-4405
Multichannel array bandpass (average), nm ⁴⁾	17	25.3	38	78	70	123	96	155	140
Spectral resolution (average), nm ⁴⁾	<0.016	<0.022	<0.035	<0.07	<0.06	<0.1	<0.09	<0.14	<0.13
Wavelength accuracy, nm	± 0.01	± 0.015	± 0.022	± 0.05		± 0.07		± 0.09	
Wavelength reproducibility, nm	± 0.005	± 0.0075	± 0.011	± 0.025		± 0.035		± 0.045	
Step of grating rotation, nm	0.007	0.009	0.013	0.026		0.04		0.05	
Scanning rate, nm/s	12,5	16,7	25	50		75		100	
Entrance/exit slits	Automatic and manual adjustment								
Slit width, mm	0-2								
Slit height, mm	12								
Parallelism, µm	± 1								
Micrometer reading accuracy, µm	± 1								
Step size, µm	0,5								
Precision, µm	± 10								
Filter wheel	Automatic switching								
Max number of filters	8								
Standard number of filters	5								
Filter size, mm	20								
Light aperture, mm	18								
Integrated shutter	Computer controlled, serves for dark signal measuring								
Computer interface	High-Speed USB								

¹⁾ Upon your request diffraction gratings differing from the above can be used.

²⁾ Reciprocal linear dispersion is indicated for blazing wavelength.

³⁾ Wavelength range for which diffraction efficiency exceeds 40%.

⁴⁾ For detector with 8 µm pixel size and 29.1 mm length of active area.