

What makes the M Series spectrometers better

ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
CUSTOM SOLUTIONS
PARTICLE CHARACTERIZATION
RAMAN / AFM-RAMAN / TERS
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

Long Focal Length Spectrometers

M Series II: Ultimate Performance Research Spectrometers

When extremely low stray light levels are required, such as in Raman and fluorescence spectroscopy or when ultra high resolution is needed like plasma emission structure analysis, M Series II spectrometers are the solution for your application.

The M Series has long been a proved family of research-grade spectrometers, offering a degree of system automation and versatility not found in any comparable focal length spectrometer.

The Series II product line provides the reliability and unchallenged resolution that has come to be associated with M Series spectrometers. Improved features included a USB 2.0 computer interface, compatibility with HORIBA Jobin Yvon's complete library of interchangeable gratings, and easy integration of our Synapse™ CCDs, full line of single channel detectors, PMTS and accessories.

An Optical Design that Delivers Unmatched Spectral Resolution

Scanning Drive System - Accuracy and Repeatability

M Series II spectrometers deliver accurate wavelength positioning and uniform step size throughout the scan range with their precision sine drives. A fine step size of 0.00025 nm allows full resolution to be obtained. Both the 1000M and 1250M deliver superb accuracy (± 0.15 nm) and repeatability (± 0.005 nm).

High Precision Slits

Micrometer controlled slits are continuously adjustable from 3 μ m to 3 mm with calibration every 2 μ m. These bilateral slits maintain the central wavelength position seen by the detector as the slit width is adjusted.

Automated Four Port Capability

Dual entrance and exit ports, selectable with automated swing mirrors enhance the versatility and flexibility of your M Series II spectroscopy system. The dual exit port option allows you to simultaneously mount two detectors, switching between the detectors during a scan. Likewise, data acquisition can be automated from two different optical setups by toggling between entrance ports.

Kinematic Grating Mount

All m Series II spectrometers are available with your choice of individually mounted kinematic gratings. The ability to change gratings quickly and easily provides the ultimate flexibility to meet changing experimental needs and the ability to use the spectrometer for multiple applications.

Single Entrance and One or Two Exits

The M Series II is a group of high performance, research spectrometers with long focal length. The 1000M features a 1000 mm focal length with f/8 aperture. The 1250M has a 1250 mm focal length. Designed for experiments that require extremely low light-levels, the M Series II delivers unmatched spectral resolution for a variety of research applications, including:

- Raman
- Plasma emission
- Photoluminescence
- LIBS (Laser-induced breakdown spectroscopy)
- LIPS (Laser-induced plasma spectroscopy)
- LIF (Laser-induced fluorescence spectroscopy)

M Series II spectrometers feature a 150 nm to 15 μ m wavelength-range (depending on the grating and detector used). A fine step-size of 0.00025 nm allows full resolution to be obtained while delivering superb accuracy (± 0.05 nm) and repeatability (± 0.005 nm). Other features include

high-precision micrometer slits, a high-precision stepper drive, and a USB 2.0 computer interface.

Dual entrance and exit ports, with selectable swing mirrors, enhance the versatility and flexibility of the M Series II. This dual exit-port option allows for simultaneous mounting of two detectors. Data-acquisition can also be automated from two different optical setups by toggling between entrance ports. The M Series II is compatible with HORIBA Scientific's complete library of interchangeable gratings, and full line of single-channel detectors, PMTs, and accessories.

The M Series II uses a precision worm/wheel gear drive mechanism under stepper motor control which enables a user to drive precisely to a given wavelength or scan over a wavelength range. The drive has a scan range of 0 Å to 15 000 Å (0–1500 nm) for a 1200 gr/mm grating. The wavelength resolution of the drive is user-selectable with a minimum step size of 0.000 25 nm (with a 1200 gr/mm grating). The drive must be initialized upon powering up. The initialization process precisely homes the drive mechanism, allowing for very accurate and repeatable wavelength settings. The drive will hold position indefinitely as long as the unit is on. If the system is powered down, there can be a small shift in drive position.

Slits

The M Series II micrometer slit provides a continuously adjustable slit-width from 0 mm to 3 mm. The micrometer scale provides an accurate, repeatable means for setting the slit-width. The scale reading is in millimeters with the fine lines representing 2 µm increments. Although the slit-width can be set to 0, we recommend that the slit-width be set to a minimum of 6 µm for the 1000M and 3 µm for the 1250M.

You can add accessories to the M series spectrometers to obtain optimum results for a variety of applications. Most accessories can be mounted directly to the slit assembly or to the slit assembly via an adapter.

Spectroscopy Cameras

HORIBA Scientific offers a complete line of spectroscopic multi-channel detectors for scientific research. For spectral detection from UV to near-IR, two dimensional CCDs and indium gallium arsenide linear arrays offer a faster acquisition option over single point detectors with very high sensitivity. Coupled with HORIBA's range of aberration corrected, flat field imaging spectrographs, custom spectroscopy packages can be assembled for a variety of applications. To learn more, [click here](#).

Broad Band Light Sources

HORIBA Scientific has an excellent selection of broadband light sources. If you would like to couple the spectrograph/monochromator to one of these light sources, then we have adapters to physically connect them and create a tunable illuminator. To learn more about our broad band light sources, [click here](#). Incidentally, if you are looking for such a tunable illuminator we have a separate page describing our [Tunable PowerArc](#) compact tunable illuminator, and our ultimate [Tunable KiloArc™](#) illuminator.



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