

Monochrome M-Spectrometer

The M-Spectrometer is an advanced SMA series model that offers superior sensitivity to light with a monochrome detector. It promises to eliminate the effect of the Bayer filter while delivering improved resolution, low noise architecture/performance, and a better signal-to-noise ratio.

The same technology makes astronomy cameras incredibly versatile and efficient by allowing them to collect dynamic narrowband images for early success. However, these cameras are costly. With the M-Spectrometer, we introduce the most affordable monochrome detector instrument on the market. As always, we have gone above and beyond to cut manufacturing costs and secure the best deals from suppliers just so Thunder Optics users can experience greater efficiency and accuracy with a high-grade instrument at unbelievably low rates.

The M-Spectrometer is built on a transmission light mode using the diffraction grid and simplified electronics and optics. Boasting an advanced optical design for near-perfect light collection, the new equipment is ideal for use in research and education.



Thanks to the high sensitivity, M-Spectrometer delivers fast, accurate, advanced elemental analysis even in weak light conditions.



It has several benefits over traditional models, which is why it is becoming increasingly popular among researchers, scientists, and educational institutions.

Users can expect to accurately measure the spectral lines of light emitted or absorbed by a molecule with minimal interference from other light sources.

The advanced functions of the M-Spectrometer allow users to isolate and study the spectrum of light, which can be incredibly useful in different applications. The improved bench performances due to extended depth of focus and accuracy open the door for new research opportunities, enabling users to investigate new phenomena.

FEATURES

Below are the top improvements made to the M-Spectrometer model to maximize its efficiency:

- Wavelength range over 480nm with a resolution of less than 1.5nm at 550nm.
- USB 2.0
- Handy to use.
- 100 micrometers slit and 1000 l/m gratings.
- M-Spectrometer is sold calibrated (± 0.5 nm).
- Optional slit 100 μ m (standard), 50 or 200 μ m.
- Monochrome CMOS detector of 1200 pixels.
- SMA905 connector aligns the spectrometer with the light source and an optical fiber.



OPTIONS

The M-Spectrometer can have an optional slit of 50 (for higher resolution) or 200 μ m for higher signal. The standard is 100 μ m.

BENEFITS

- The use of a new monochrome detector to eliminate the decay of the signal around 550nm (Bayer filter effect).
- Three times greater sensitivity than the SMA-E models.
- Enhanced UV detection (at least five times more sensitive).
- A wider acquisition time range for weak signal detection.



SOFTWARE

For non-commercial, private, academic, educational use, and for non-profit organizations, Spectragryph is free.

DELIVERY PACK

- Pre-calibrated M-Spectrometer with the USB 2.0 plug.
- Shock-resistance zip-case.

APPLICATIONS

- Analyze emitted light from any light source.
- Transmittance.
- Fluorescence (required LED or lasers that are not included).
- Measure absorbance and densities.



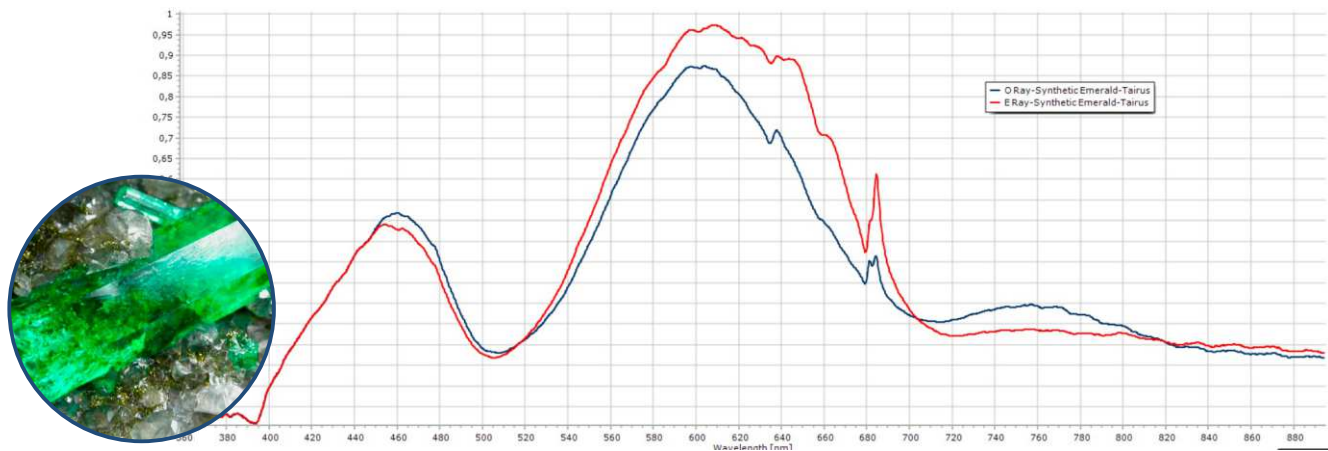
Thunder Optics users will receive dedicated technical and scientific support for the M-Spectrometer. Our team members are committed to guiding each customer to properly use the unit until they attain a certain level of expertise.



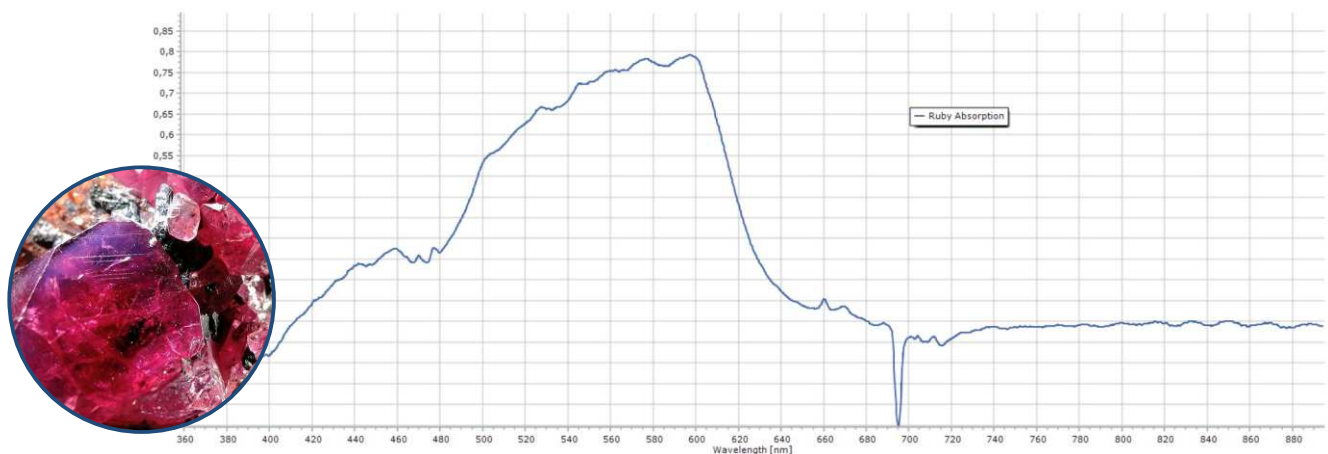
Wavelength range (nm)	350-890
Chip Type	CMOS, Monochrome
Chip Dim (pixels)	1800×1200
Chip Dim (")	1/3
Diffraction Grating (lines/mm)	1000
Slit Width (µm)	100 - standart, 200, 50
Optical Connector	SMA 905
Resolution @550 (nm)	<1
Acquisition time(ms)	0.12 - 8000
Power Supply	USB 2.0
Software	Spectragryph – optical spectroscopy software. Free for non - commercial use
OS	Windows
Weight(g)	300
Dimensions	11.5 × 8 × 4.5 cm

SAMPLES

BIREFRINGENT SPECTRA O AND E RAY OF AN EMERALD



ABSORPTION SPECTRUM OF A RUBY



EMISSION SPECTRUM OF THE SUN

