

# SMA \ SMA-E Spectrometer



**The SMA Spectrometer is Thunder Optics best-selling instrument. Moreover, the SMA is and one of the most affordable units in the global marketplace.**

Today, hundreds of these SMA Spectrometers are supporting the work of educators, students, and hobbyists. Thunder Optics also designed the spectrometer with research laboratories and institutions in mind. The professionals at these facilities purchase SMAs for innovative and experimental research programs.

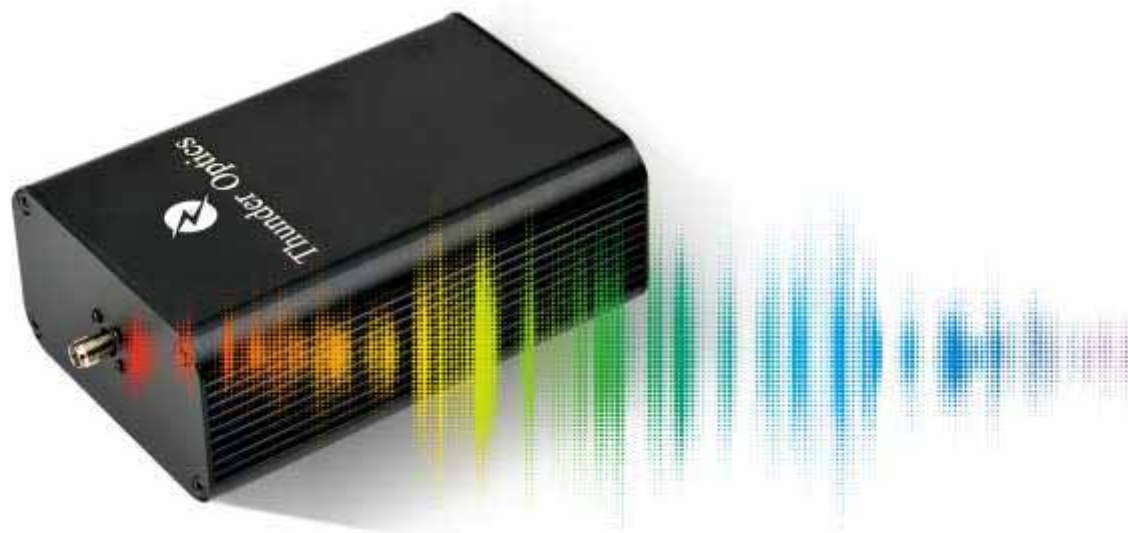
The SMA/SAMA-E Spectrometer is built on a transmission mode for light using the diffraction grid for simplified electronics and optics. The sensitivity of the instrument allows to acquire even in weak light conditions.

The spectrometer's SMA connector accommodates a fiber optic connection in order to integrate experimental measures that are more complex than the absorption measures from the transmission of liquids. The SMA \ SMA-E Spectrometer is connected to a computer by a means of an USB cable. Thus, allows the user to control the settings of the spectrometer and the examination of specters.

Users of Thunder Optics instruments **will get unique service of technical and scientific support.** Members of our team guide every customer through the use of the unit until they attain a comfortable level of expertise.

*«I am glad to offer my 25 years of experience in experimental physics and the best prices on the market.»*

Dr. Amayas T.M.  
The President of Thunder Optics





## BENEFITS

The SMA-E Spectrometer is an advanced model with a which is perfectly adapted to the experimental needs of students and hobbyists.

It includes the following enhancements:

- Extended wavelength range between 350 and 920 nm.
- Resolution of less than 1.5nm at 550nm.
- Better sensitivity in UV and NIR.
- Metallic high-quality slit.

## FEATURES

- Wavelength range over 480nm with a resolution of less than 1.5nm at 550nm.
- USB 2.0.
- Handy easy to use.
- 100 micrometers slit and 1000l/m grating.
- SMA/SMA-E spectrometers are sold pre-calibrated (+/- 1nm error).
- Replaceable slit 100µm (standard) or 200µm.
- CMOS detector of 1200 Pixels and more than 100 times more sensitive than the Mini USB Spectrometer model.
- SMA905 connector aligns the spectrometer with the light source and, thus, you can start acquiring spectra. It is also possible to connect an optical fiber to the SMA connector. The spectrometer is sold with no optical fiber.
- The second end of the optical fiber can be connected to a collimator for an enhanced signal.
- Compatible with Spectragryph software.

## DELIVERY PACK

- The spectrometer is packed pre-calibrated.
- User manuals along with a calibration file will be provided.
- Spectrometer comes without an optical fiber.

## APPLICATIONS

SMA\SMA-E Spectrometer allows you do different experiments, for example:

- Analyze the light emitted from light sources.
- Transmission of filters.
- Absorbance / Transmittance of substances (oil, colored liquids, est).
- Calibrate the spectrometer to calculate densities.

## RECOMMENDED ACCESSORIES

- Collimator.
- Optical fiber 100nm, 200nm, 400 nm; 0.5 m, 1 m long.
- Cuvette Holder.
- Halogen Light Source.



## OPTIONS

The SMA\SMA-E Spectrometer can have an optional slit of 200 µm width. Please, specify the slit size for your spectrometer.

## SOFTWARE

For non-commercial use we provide research-grade software. This software has wide ranging functionality which includes measurements of intensity, absorbance transmission, Raman, etc.



Thunder Optics

**\$220 - SMA-E Spectrometer  
(enhanced model)**

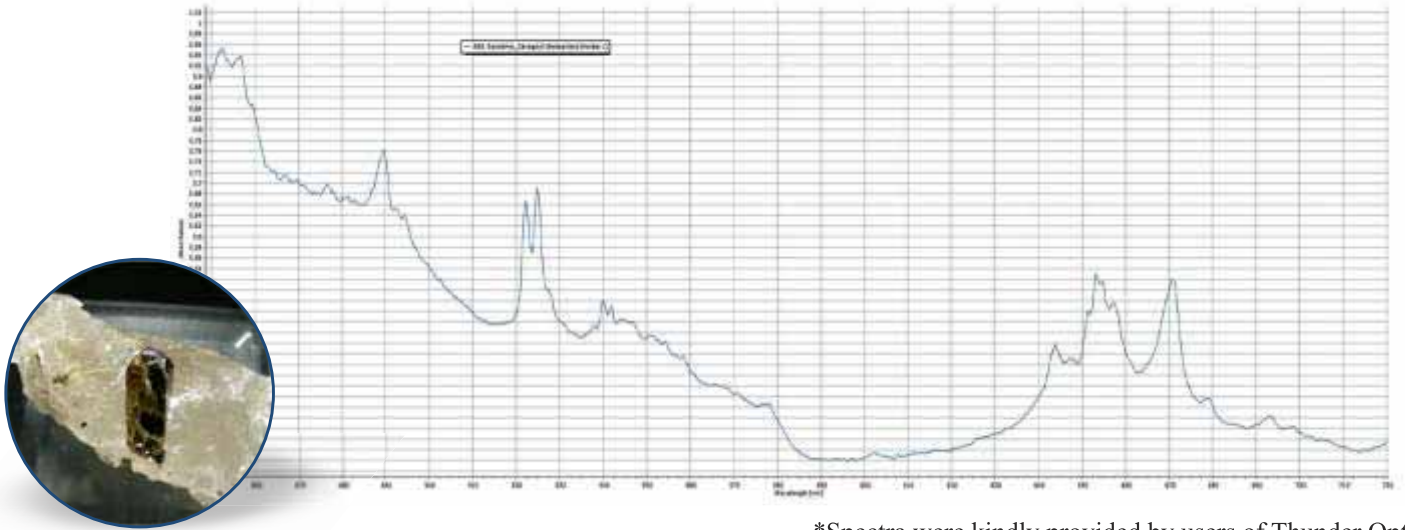
**\$190 - SMA Spectrometer  
(basic model)**



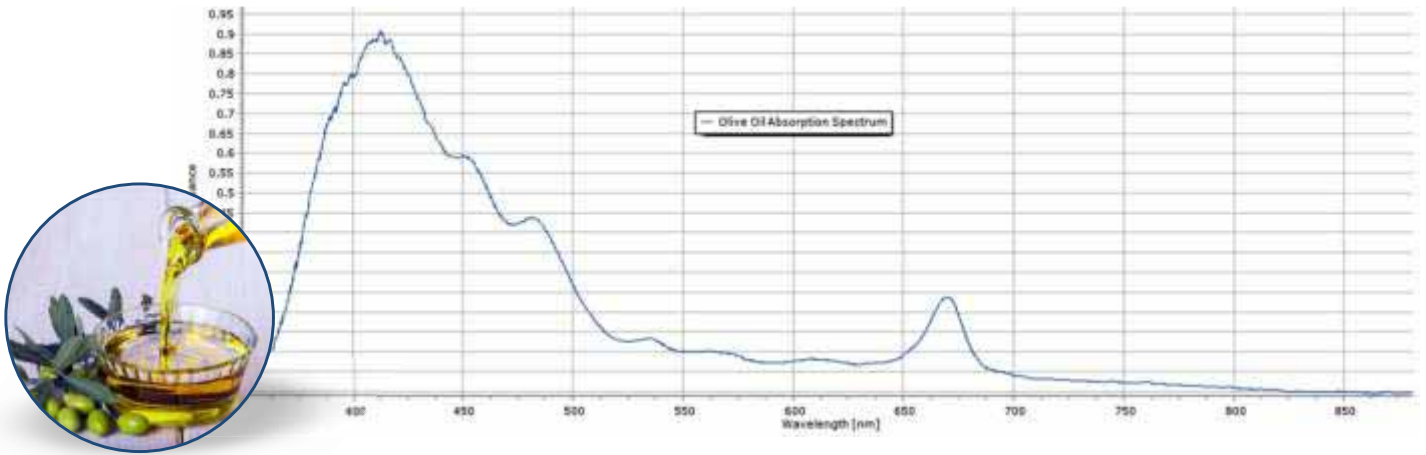
SUMMARY	SMA SPECTROMETER	SMA-E SPECTROMETER
Wavelength Range nm (+/- 15nm)	350 - 820	350 - 920 <b>!</b>
Chip Type	CMOS	CMOS
Chip Dim (pixels)	1800 x1200	1800 x 1200
Chip Dim (")	1/3	1/3
Diffraction Grating (lines/mm)	1000	1000
Slit Width (µm)	100 – standard 200 – optional	100 – standard 200 – optional
Optical Connector - Optical Fiber	SMA 905	SMA 905
Power Supply	USB 2.0	USB 2.0
Resolution @ 550nm	< 1.5 nm	< 1.5 nm
Software	Free for non-commercial use	Free for non-commercial use
Operating Systems	Windows, Mac OS	Windows, Mac OS
Dimension (mm)	111x38x14.8	111x38x14.8
Weight (gr)	300	300
Price	\$190	\$220

# SAMPLES

## XENOTIME\_CAVAGNOLI SWITZERLAND\*



## ABSORPTION SPECTRUM OF EXTRA VIRGIN OLIVE OIL



## FORS (FIBER OPTICS REFLECTANCE SPECTROSCOPY) OF A BLUE PIGMENT IN AN OLD MANUSCRIPT FROM KABYLIA (NORTH AFRICA)

