

# Mini USB Spectrometer

Thunder Optics' Mini USB Spectrometer has a basic design and a compact structure. It is highly versatile and capable of performing a variety of simple experiments. The easy setup and simple integration make it highly user-friendly.

The spectrometer offers a correct spectral response and a wide wavelength range (400-700nm). It delivers a satisfying optical resolution of 2nm with a light detector of approximately 300 pixels. Its specifications make the USB photo-spectrometer a suitable option for educational and at-home projects.

*«I designed my first low-cost spectrometer for the Chemistry Graduate Program when I worked as a research professor in North Africa.*

*It is a basic but innovative idea that focused on the optimization of necessary optics and electronics to deliver an optimally-functioning spectrometer with no compromise on the quality».*

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

*The Mini USB Spectrometer is ideal for hobbyists and educators alike!*

## APPLICATIONS

- For absorbance/transmission of substances (i.e. oil or colored liquids).
  - \* A light source and cuvette are recommended accessories for this application and have to be purchased separately.
- Useful for analyzing and comparing light emissions from various sources.
- Identify the spectra of Cd, Na, Ne, Ar, Xe and Hg spectral lamps.
- It offers transmission for clean line filter and long pass filter.
- Qualitative evaluation of density.



## BENEFITS

The Mini USB spectrometer is the right size and has all the functions required for diverse low-scale experiments.

### FEATURES

- **Simple Installation**

The Mini USB spectrometer has a simple, no-tool installation process. It does not require any heavy-duty tools or spare parts for setup. The instrument comes with two downloadable software that enables users to plug and play the device without any additional steps.

- **Lightweight & Portable**

The dimensions (130mm X 80mm X 40mm) and weight (200g) make it one of the smallest spectrometers in the market. The handy design and basic features make it user-friendly for beginners and professionals. The compact size makes it more portable too.

- **Highly-Durable**

A high-grade aluminum casing supports its sturdy and well-crafted construction. The extra covering makes it weather-resistant and protects it from preventable damage.

- **Affordable**

This low-cost spectrometer is recommended for basic experiments where one does not require high sensitivity and precision (accuracy).

### SOFTWARE

The instrument comes with two third-party software that enables users to plug and play the device without any additional steps.

*The Mini USB Spectrometer is ideal for DIY home projects and educational use.*

### DELIVERY PACK

- Mini USB Spectrometer, 2.0 USB cable.
- The spectrometer is packed non-calibrated.
- Downloadable user manuals are provided right after purchasing the instrument.



*\*Setup example:  
Mini USB Spectrometer,  
cuvette, Mini LS.*



*\*Setup example:  
Mini USB Spectrometer  
and Mini LS.*



### OPTIONS

Adaptable grating lines. This versatile device comes with multiple grating lines (1000 lines / mm or 500 lines /mm). It features two different slit sizes. These include 0.09 mm and 0.18mm.

Users can select the size and options as per their project requirements.

Pro-tip: The 1000 lines/mm and 0.09 mm slit provides better accuracy and precision.

Please, do consult with our technical support via [support@thunderoptics.fr](mailto:support@thunderoptics.fr) regarding the application.

### RECOMMENDED ACCESSORIES

- Cuvette.
- Halogen Light Source.
- Mini Light Source.
- Mini Holder.

## \$90 – Mini USB Spectrometer

*Mini USB Spectrometer: Compact & Versatile*  
User-friendly and portable, the Mini USB spectrometer is ideal for small-scale lab, field, and processing projects.



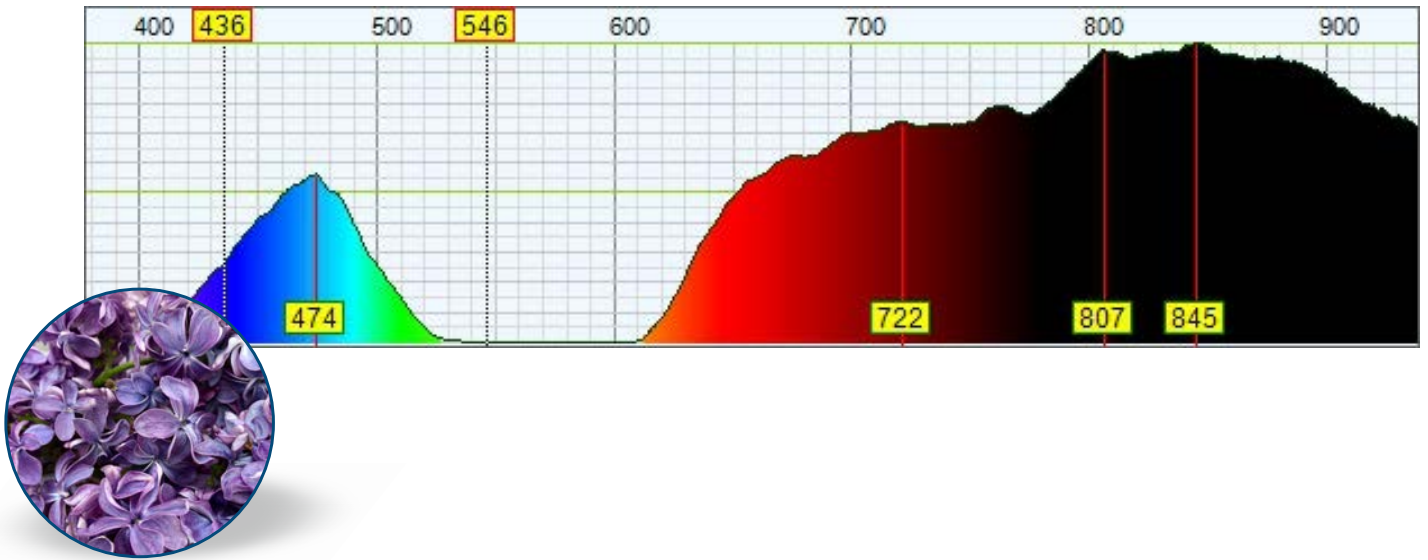
### SUMMARY

### MINI USB SPECTROMETER

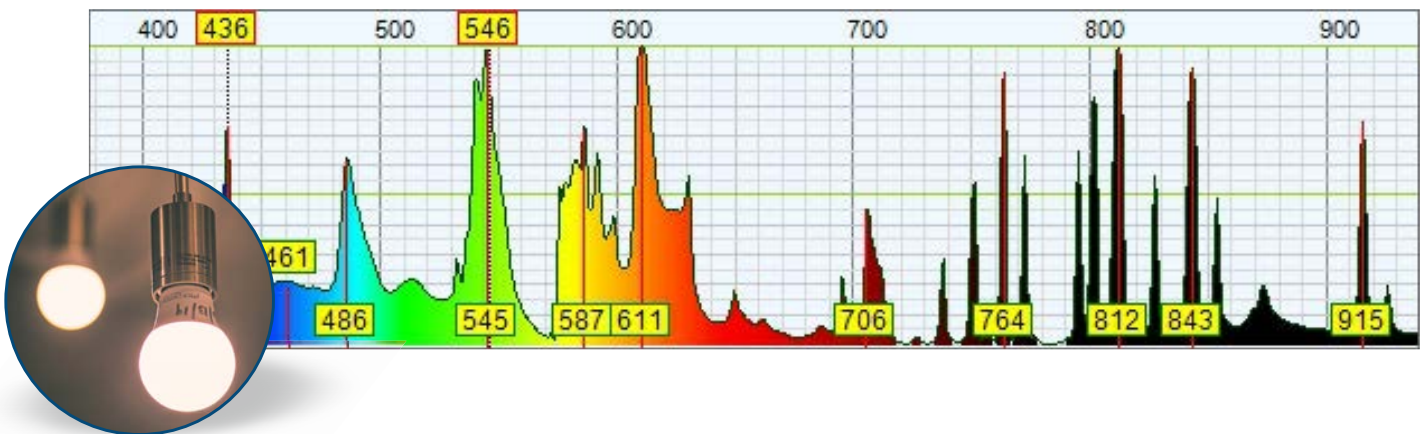
Dimensions (mm)	130 × 80 × 40
Weight (gr)	200
Wavelength range (nm)	400-700
Chip Type	CMOS
Chip Dim (pixels)	300
Chip Dim (")	1/3
Diffraction Grating (lines/mm)	1000 or 500
Slit Width (µm)	90
Resolution (nm)	< 3
Software	Theremino – Open Source system
OS	Windows
Price	\$90 – Mini USB Spectrometer

# SAMPLES

## ABSORPTION SPECTRUM OF GENTIAN VIOLET PIGMENT



## EMISSION SPECTRUM OF CCFL (FLUORESCENT LAMP)



## ABSORPTION OF OPTICAL FILTER

