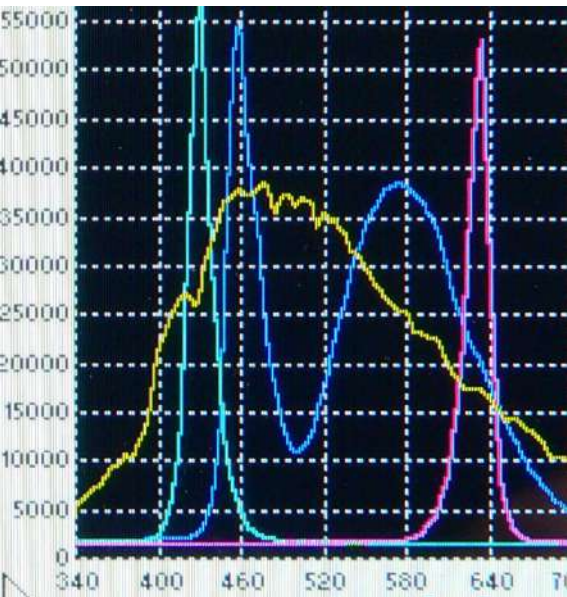


01 / Pocket-Sized Devices



SpectraPen SP 110

SpectraPen SP 110 is a low-cost, handheld spectrometer that is ideal as a general-purpose instrument for research labs, agricultural and industrial applications. SpectraPen is especially useful for rapid measurements of absorption, reflectance, transmittance, emission, color and fluorescence of various samples.

The SpectraPen works with Li-ion rechargeable battery and does not require for operation any PC or any other bulky accessory.

On the SpectraPen touch screen the wavelength and intensity readings and their spectral lines are instantly displayed. All recorded data are automatically stored into the device internal memory. The SpectraPen is suited for wide scope of agricultural and industrial applications.

The SpectraPen also includes a comprehensive software package comprising full system control, data acquisition and data processing.

APPLICATIONS

- Indoor and outdoor visible light source testing
- Optical filters and protecting screens spectra measurements
- Color measurements
- Absorption, reflectance, transmittance, emission and fluorescence measurements of various samples
- Ecology
- Agriculture and horticulture



KEY FEATURES

- Handheld and lightweight device with affordable price
- Both lab and field applications
- Programmable via intuitive touch-screen use
- Wide spectral response range: UV/VIS 340–780 nm; NIR: 640–1,050 nm
- Flexibility in measurement SET-UP
- Battery-powered
- USB connectivity
- No PC needed
- Specific setups for fluorescence or reflectance (optional)

▼ SPECTRAPEN MEASURES

- Scope – rough spectrum data
- Absorbance (external sample holder and light source needed)
- $A = \log(I_0/I)$, where I_0 is reference light intensity and I is measured light intensity
- Transmittance (external sample holder and light source needed)
- $T = I/I_0$, where I_0 is reference light intensity and I is measured light intensity

▼ SOFTWARE

- Different operation modes: scope, absorbance, transmittance
- Different tools: zoom, marker, auto scale, curve smoothing
- Automated setting of the integration time
- Data browsing and data averaging
- Visualization and data transfer routines to Microsoft Excel
- GPS mapping plug-in

▼ VERSIONS

SpectraPen SP 110-UVIS

- Wavelength range 340 to 780 nm

SpectraPen SP 110-NIR

- Wavelength range 640 to 1,050 nm



▼ TECHNICAL SPECIFICATION

- **Spectral Response Range:**
 - SP 110-UVIS: 340–780 nm
 - SP 110-NIR: 640–1,050 nm
- **Spectral Response Half Width:**
 - SP110-UVIS: 9
 - SP 110-NIR: 8
- **Optical Entrance:** SMA905 to 0.22 numerical aperture single-stand optical fiber
- **Spectral Straylight*:** -30 dB
- **Wavelength Reproducibility:** ±0.5 nm
- **Integration Time:** 5 ms to 10 s
- **Number of Pixels:** 256
- **System Data:** 16 bit A/D conversion
- **Dynamic Range:**
 - High gain: 1:4,300
 - Low gain: 1:13,000
- **Communication:** USB
- **SpectraPen Software:** Windows 7, or higher compatible
- **Memory Capacity:** 16 Mbit
- **Internal Data Logging:** Up to 4,000 measurements
- **Touch screen:** 240×320 pixels; 65,535 colors;
- **Battery:** Li-ion; rechargeable via USB port of a PC
- **Battery Life:** 48 hours typical with full operation
- **Size:** 153 × 76 × 44 mm
- **Weight:** 350 g
- **Case:** Splash-proof
- **Operating Conditions:**
 - Temperature: 0 to 55 °C
 - Relative humidity: 0 to 95 % (noncondensing)
- **Storage Conditions:**
 - Temperature: -10 to +60 °C
 - Relative humidity: 0 to 95 % (noncondensing)

* When monochromatic light of $\lambda = 550 \text{ nm}$ or $\lambda = 850 \text{ nm}$ is input, spectral stray light is defined as the ratio of the count measured at the input wavelength, to the count measured at a wavelength 40 nm longer or shorter than the input wavelength.