**SPELEC** is the world's only equipment in the market for performing SPECTROELECTROCHEMISTRY studies combining in only one box a Lightsource (UV-VIS-NIR wavelength range: 215-400 nm Deuterium, 360-2500 nm Tungsten halogen), a Bipotentiostat/Galvanostat (± 4 V DC potential range, ± 40 mA maximum measurable current) and a Spectrometer (UV-VIS wavelength range: 200-900 nm).

All the components are perfectly fitted and synchronized, thus offering for the first time in the market a fully integrated synchronized spectroelectrochemical instrument.

The equipment can also be used independently as a Spectrometer or as a Bipotentiostat/Galvanostat.

**SPELEC** is controlled by the New DROPVIEW SPELEC Software for Windows, which provides powerful functions such as:

- **Shutter** lamp control (automatic dark and reference)
- **Real Time** panel that collects the generated spectra not only during the electrochemical measurement but continuously at any time.
- Spectroscopic measurements shown in **Counts**, **Absorbance**, **Transmittance** or **Reflectance** during the Electrochemical process.
- Plot of Optical Spectra vs. Electrochemical Curves at a specified wavelength (Voltabsorptogram, Chronoabsorptogram or Derived ones).
- Plot overlay, peak integration, smoothing, subtraction, derivative curve, baseline fitting.
- **3D** plotting of curves.
- Export to .csv all synchronized data.

**SPELEC** can be used with electrochemical sensors or electrochemical cells with three electrodes: working electrode, reference electrode and auxiliary electrode. Also, it can be used in bipotentiostat mode, with a two-working electrodes system sharing the same reference electrode and auxiliary electrode.

**SPELEC** can be used with standard cuvette holders or spectroelectrochemistry cells, but also with the new innovative DropSens cells for Transmission or for Reflection spectroelectrochemistry experiments using screen-printed electrodes (transparent ITO or PEDOT electrodes for transmission experiments, or other conventional screen-printed electrodes for reflection experiments).
### General Specifications

- **Power**: 12 V DC
- **PC interface**: USB
- **LED indicators**: Power
- **Dimensions**: 25 x 24 x 11 cm (L x W x H)
- **Weight**: 1950 g

### Lightsource

- **Wavelength range**: 215-400 nm (deuterium); 360-2500 nm (tungsten halogen)
- **Stability**: ~1.0% peak-to-peak (over 4 hours) after 30-minute warm-up
- **Time to stable output**: 10 minutes (deuterium); 1 minute (tungsten halogen)
- **Ignition delay**: <2.0 seconds (delay for cold start-up may be longer)
- **Bulb life**: >1,000 hours @ 240 nm (time)
  - <50% @ 240 nm (decrease of intensity)
  - Continuous operation (testing conditions)
- **Fiber optic connector**: SMA 905

### Spectrometer

- **Detector**: Linear silicon CCD array
- **Pixels**: 2048
- **Pixel size**: 14 μm x 200 μm
- **Pixel well depth**: ~62,500 electrons
- **Fiber optic connector**: SMA 905
- **Wavelength range**: 200 – 900 nm
- **Optical resolution**: ~0.3-10.0 nm FWHM
- **Signal-to-noise ratio**: 250:1 (at full signal)
- **A/D resolution**: 16 bit
- **Dark noise**: 50 RMS counts
- **Dynamic range**: 8.5 x 10^7 (system);
  - 1300:1 for a single acquisition
- **Integration time**: 1 ms to 65 seconds
- **Stray light**: ≤0.05% at 600 nm; ≤0.10% at 435 nm

### Potentiostat/Galvanostat

- **Operating modes**: BiPotentiostat, Potentiostat, Galvanostat
- **DC-Potential range**: ±4 V
- **Current ranges (potentiostat)**: ±1 nA to ±10 mA (8 ranges)
- **Maximum measurable current**: ±40 mA
- **Potential ranges (galvanostat)**: ±100 mV, ±1 V (2 ranges)
- **Applied Potential Resolution**: 1 mV
- **Measured Current Resolution**: 0.025 % of current range (1 pA on lowest current range)
- **Applied Current Resolution**: 0.1 % of current output range
- **Measured Potential Resolution**: 0.012 % of potential range
- **Potential Accuracy**: ±0.2 %
- **Current Accuracy**: ±0.5 % of current range at 100 nA to 10 mA

**Specifications are subject to change without previous notice**