



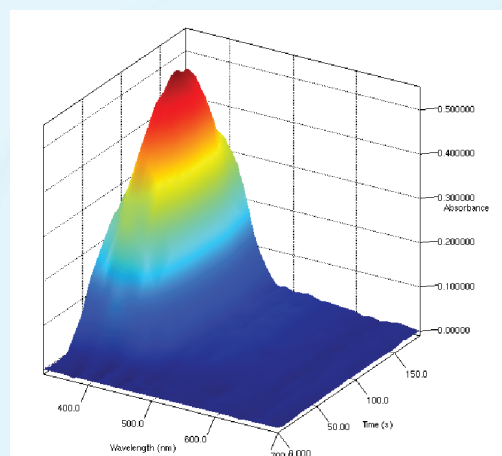
SPELEC is the **world's only equipment** in the market for performing **SPECTROELECTROCHEMISTRY** studies combining in **only one box** a **Lightsource** (UV-VIS-NIR wavelength range: 215-400 nm Deuterium, 360-2500 nm Tungsten halogen), a **Bipotentiostat/Galvanostat** (± 4 V DC potential range, ± 40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

Spectroelectrochemical Instrument

Ref. SPELEC

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 10⁷ (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 ± 4.096 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

Related products



TFLWCL



RFLWCL



TFIBER



RPROBE



CLENS

Full Catalogue



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