

honeycomb spectroelectrochemical cell

Our unique spectroelectrochemical cell features a patterned "honeycomb" electrode card with USB-style connections, thin-layer quartz cuvette, cap to hold the honeycomb electrode, and external reference electrode.



The working electrode is perforated with a honeycomb pattern of holes which allow light to pass through the electrode. The active surface of the working electrode includes a metal coating along the inner walls of the holes. As the light beam from the spectrometer passes through the holes, the beam grazes the walls of each hole. Thus, the beam samples a relatively long path length along the surface of the working electrode by sampling along the walls of each hole.



Included in Kit

- 1 platinum electrode
- 2 gold electrodes
- quartz cuvette
- polymer cap
- Ag/AgCl reference electrode
- plastic fill pipettes

Product Specifications

- Path length 1.7 mm
- Connection working and counter electrode through USB-style connector
- Electrodes platinum working and counter /gold working and counter compatible with 3.5 mm OD reference electrodes
- Cap access slot for Honeycomb electrode card, 3.5 mm OD reference electrode, two 1/16" PTFE tubing access holes
- Beam height 15 mm (from bottom of cuvette to center of Honeycomb array)
- Honeycomb 19 channels, 0.5 mm OD, 0.75 mm center-to-center distance, array
- Potentiostat compatibility Ideal with Pine potentiostats (WaveNow, WaveDriver) any potentiostat (with generic USB style to banana jack cable)

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fully integrated spectroelectrochemical analysis system



Introducing our new integrated UV/Vis spectroelectrochemical analysis system!

Control both the potentiostat and UV/Vis spectrometer with AfterMath software to ensure proper timing integration, seamless operation, and ease of use.

Why struggle with trying to manually integrate a potentiostat and spectrometer? Instead, say goodbye to frustration. When used with the Pine Honeycomb Spectroelectrochemical Cell Kit, the system is fast, efficient, easy to use, and robust for applications from undergraduate education to high level research.

For our customers who already own one or more parts of the Fully Integrated Spectroelectrochemical Analysis System, Pine has custom product bundles available, which provide only the remaining components you need.

Spectroelectrochemistry is commonly used in:

- Measurement of transient chemical species or equilibrium spectra
- Determination of electroactive species reduction potential
- Measurement of electrochemical kinetics

Technical Specifications

Avantes AvaLight-DHc Full-range Compact Light Source

	Deuterium Light Source	Halogen Light Source
Wavelength Range	200 - 400 nm	400 - 2500 nm
Lamp Lifetime	1000 hours	2000 hours
Stability	<1 mAU	<1 mAU
Warm Up Time	8 min	1 min
Drift	< 0.25% / h	< 0.25% / h
Optical Power	0.2 μ W	7 μ W
Temperature Range	5° C - 35° C	5° C - 35° C
Power Supply	12 VDC / 450 mA	12 VDC / 450 mA
Dimensions	175 x 110 x 44 mm	175 x 110 x 44 mm

Avantes AvaSpec-UL S2048 UV/Vis Fiber-Optic Spectrometer

Wavelength Range	200 - 1100 nm
Resolution	0.05 - 20 nm (based on configuration)
Integration Time	1.11 ms - 10 minutes
Interface	USB 2.0
Dimensions	175 x 110 x 44 mm, 716 grams
Optical Bench	75 mm focal length
Sensitivity	310,000 count/ μ W per ms integration time
Detector	CCD linear array, 2048 pixels
Sample Speed	1.1 ms/scan

Included with Integrated System

- Pine Research Instrumentation USB potentiostat (WaveNow, WaveNano, WaveDriver 10, or WaveDriver 20) with AfterMath Data Organizer license, and all required cables
- Honeycomb Spectroelectrochemical Cell Kit with Ag/AgCl external reference electrode and LowProfile non-aqueous external reference electrode kit
- Avantes AvaSpec-UL S2048 UV/Vis Fiber-Optic Spectrometer and Avantes AvaLight-DHc Full Range Compact Light Source with AC Power Supply
- Fiber optic cuvette holder with two fiber optic cables, 600 μ m fiber, suitable for UV/Vis/NIR 250 to 2500 nm, 2m long with SMA-905 connectors

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