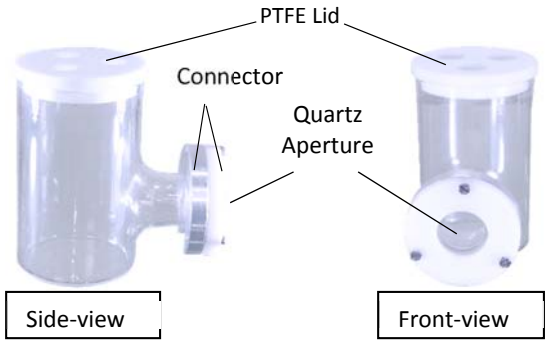
Photoelectrochemical Cell

KEC11

Photoelectrochemical Cell (150mL)

This is a single-compartment experimental photoelectrochemical (PEC) cell and is most common in water-splitting research. This cell is used to characterize photo-anode or photo-cathodes.



Product details

This cell is constructed with quartz, borosilicate glass, polytetrafluoroethylene (PTFE), and Aluminum. The volume of the cell is 150mL.
A Quartz optical window is attached to the cell in a leak-proof manner. The Quartz optical window diameter exposed to the reaction medium is 20mm. The Quartz disc thickness and diameter is 3 mm and 40mm respectively. The PTFE lid is suitable for holding electrodes, gas purging tube, and temperature sensor. The size and number of bores are customizable

Application note

The typical application includes fundamental photo-electrochemistry, Photo-induced charge separation, photolytic water splitting, photo-corrosion, photoelectrochemical dye degradations etc. This cell has been designed to investigate the performance of either photo-anode or photo-cathode (half-cell).

- The electrode under consideration (working electrode) is inserted inside the cell through the bore on the PTFE lid and placed on the path of visible and ultraviolet light, which enters through the quartz aperture inside the cell.
- In the three-electrode assembly, the counter electrode typically is a platinum electrode with a large surface area, and the reference electrodes are implemented with the working electrode.
- In the case of two-electrode measurements, counter and reference electrodes are connected together.
- The working electrode is typically a thin film of experimental materials deposited on a flexible or rigid (ITO/FTO-coated glass) transparent substrate.

Cleaning instruction

Cleaning this PEC cell is easy because of its simple design. The electrolyte inside the glass cell should be cleaned thoroughly with repeated washing with a suitable solvent and DI water. If necessary, then the three screws can be unscrewed to open the quartz chip and wash separately. After cleaning the H-cell, it should be dried and stored in a dry place.

Optional accessories

Reference electrodes

Different kinds of Kanopy reference electrodes are available. One can choose any of these according to the reaction conditions such as solution pH, aqueous solution, non-aqueous solution, temperature etc.

KRE01 Silver-Silver Chloride (Ag/AgCl) electrod etc
KRE03 Mercury-Mercurous Chloride (Hg/Hg_2Cl_2, saturated KCl) or Saturated Calomel Electrode (SCE)
KRE04 Mercury-Mercuric oxide (Hg/HgO)
KRE06 Silver-Silver ion non-aqueous electrode

Platinum electrodes (working and auxiliary)

KWE01 Platinum wire electrode
KCE01 Platinum mesh electrode
KCE02 Platinum coil electrode
KWE03 Platinum foil electrode

Disc type electrodes (working)

KDE01, KDE02 Glassy carbon disc electrode
KDE03, KDE04 Gold disc electrode
KDE05, KDE06 Platinum disc electrode

Working electrode holder

KWEH01 Working electrode holder, screw type

KWEH02B Working electrode holder, clip type

KEC10A
Banana Cable Set

KEC10B
Banana Connector Pin

KA01 (Red),**KA02** (Black)
Alligator Clip

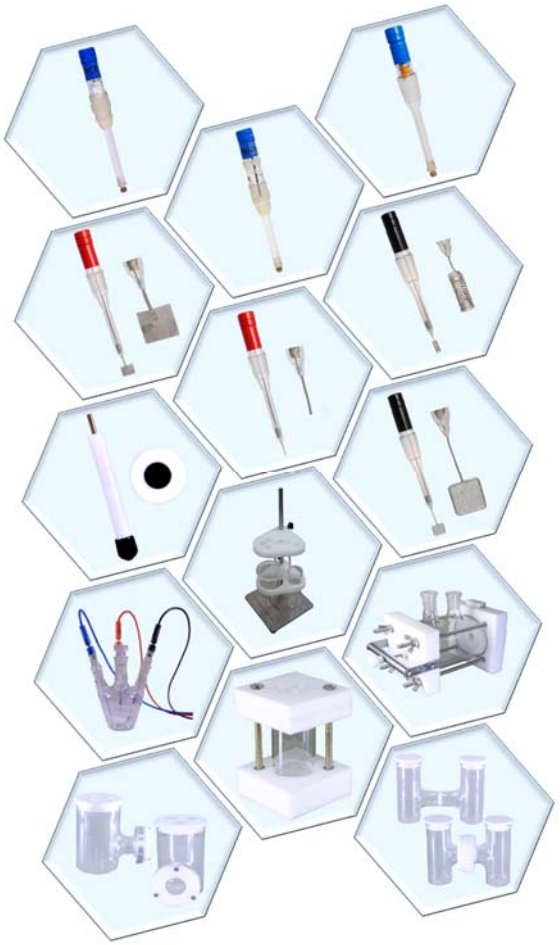
KA28
Thermometer

KA04 FTO Coated Glass

- **Substrate:** Sodalime float glass
- **Dimension:** 2cm x 1cm
- **Resistivity:** <10 ohms/sq
- **Film Thickness:** 1800-2000Å
- **Plate thickness:** 2.2mm
- **Transmittance at** 550nm ≥ 79%

KA03 ITO Coated Glass

- **Substrate:** Sodalime float glass
- **Dimension:** 2cm x 1cm
- **Resistivity:** ~10 ohms/sq
- **Film Thickness:** 1800-2000Å
- **Plate thickness:** 0.7mm/1.1mm
- **Transmittance at** 550nm ≥ 87%



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Kanopy Techno Solutions

Crafting electrochemistry for lives…

Product Information Leaflet

Photoelectrochemical cell (150mL)
Product ID: KEC11

A complete solution for your Electrochemistry research initiative…