AW-BEQLIQ
Hermetic Li Research 14 mm In-batch Cell

- For Energy-related research applications
- For EQCM applications where Li acts as pseudo-reference electrode
- For QCM 14 mm wrapped sensors
- Airtight operation – apt for volatile samples/electrolyte and long experimental runs

General specifications	
Sensor	14 mm QCM WRAPPED sensor
Connector	AWS connection
Dimensions	47 (L) x 33 (W) x 44.5 (H) mm
Volume	Max. sample volume: 3 mL; 2 mL would fill top of sensor cylinder, without contacting the steel rods
Assembly mechanism	Quick-Lock
Pressure rating	Low vacuum – 2 bar
Glove box operation	Allows assembly in controlled atmosphere, with size small enough to easily transfer it inside/outside the chamber
Seal	Liquid-tight seal prevents evaporation for weeks

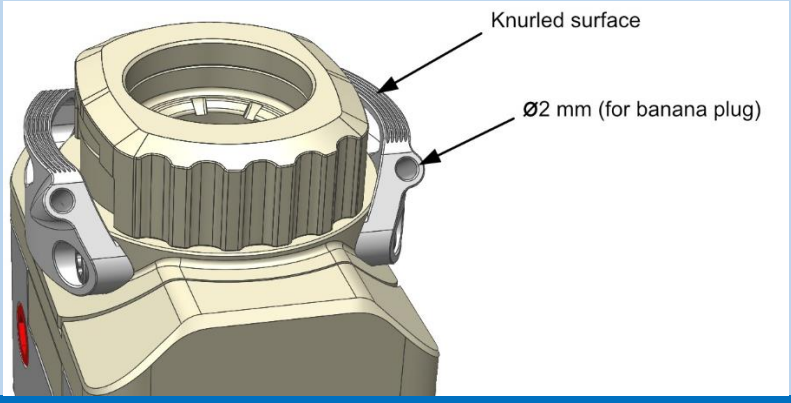
Materials	
Cell base	Aluminium
Sample contact	PEEK & stainless steel (electrode rods)
Window	Fused silica (Spectrosil® 2000)
O-ring	FFKM (sample, window lid)

Electrode Holder	
Li foil electrode	(2-electrodes cell / 3 electrodes cell)

BOTTOM SIDE: AWS connection

Developed in collaboration with the **Laboratoire Interfaces et Systèmes Electrochimiques** (CNRS - Sorbonne Université UMR8235)

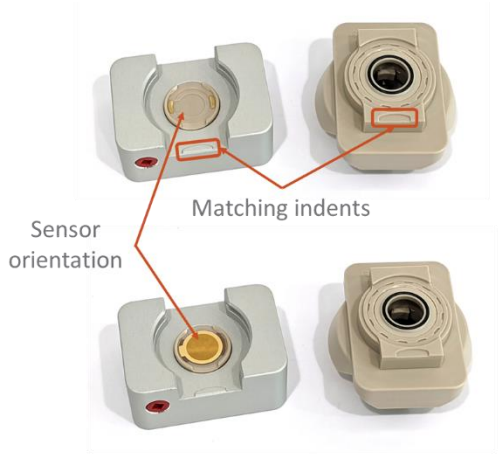
Cell design



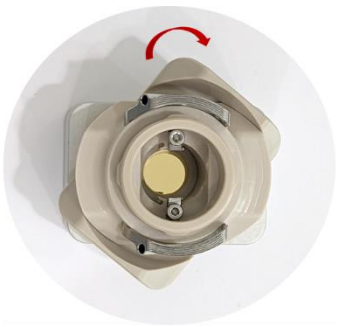
- ✓ Sample/electrolyte fill via open lid (removable quartz window).
- ✓ Banana plugs for potentiostat leads connection in the outer steel corona.
- ✓ Cell assembly inside glovebox; operation outside glovebox.
- ✓ Quick-lock assembly of the sensor; window lid fixed by rotating a quarter of a turn. Mind the guides for proper lid placement.
- ✓ Li foil electrode placed on the stainless-steel rods.

Cell Assembly

1 Use the tool provided for opening the window lid before opening the cell.



2 With the cell open, place the sensor minding the orientation drawn in the sensor bed. Identify and align the matching indents in base and lid of the cell before closing the cell.



3 Push lightly the lid into the base (vertically) and then, rotate a quarter of a turn to close the cell.

4 Fix your electrode in the steel rods at the sides of the lid or fix a mesh around the inner cylinder perimeter.

5 Fill the cell with the electrolyte, making sure the electrode is covered with liquid and close the window lid with the tool provided.

Cleaning recommendations and maintenance

- Generally, use a soft and clean, lint-free cloth to clean the cell.
- Use solvents that do not attack the cell materials (check chemical compatibility information).
- Do not immerse the cell in liquids.
- Dry the cell with streams of nitrogen gas.
- Avoid touching the seals and contacts to prevent damage and protect them from dust and oil.
- Keep electrical connectors clean by occasionally rubbing ethanol over them.
- Store the cell in its original packaging when not in use.

Chemical compatibility of materials (guidance)

PEEK

Polyether ether ketone, is a semi-crystalline thermoplastic with excellent mechanical and chemical resistance properties that are retained to high temperatures (up to 260 °C). It is resistant to radiation as well as to a wide range of solvents, both organic and aqueous. With its resistance to hydrolysis, PEEK can withstand boiling water and superheated steam used with autoclave and sterilization equipment at temperatures higher than 250 °C. It is attacked by halogens and strong Brønsted and Lewis acids as well as some halogenated compounds and aliphatic hydrocarbons at high temperatures. It has high resistance to biodegradation.

Perlast®

(FFKM) Perlast® (trademark of Precision Polymer Engineering Ltd) is a high-performance perfluoroelastomer material (FFKM). The most chemically resistant elastomer available, a rubber form of PTFE, it displays good properties in applications where purity, high temperatures and retention of sealing force are important.

Components manufactured with other materials may be available for applications with special requirements. Contact us for further information.