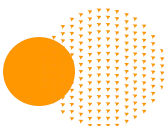
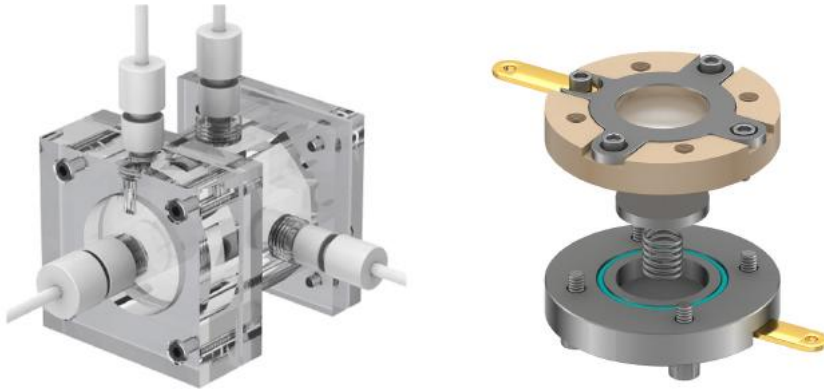


# Battery Test Cell Series



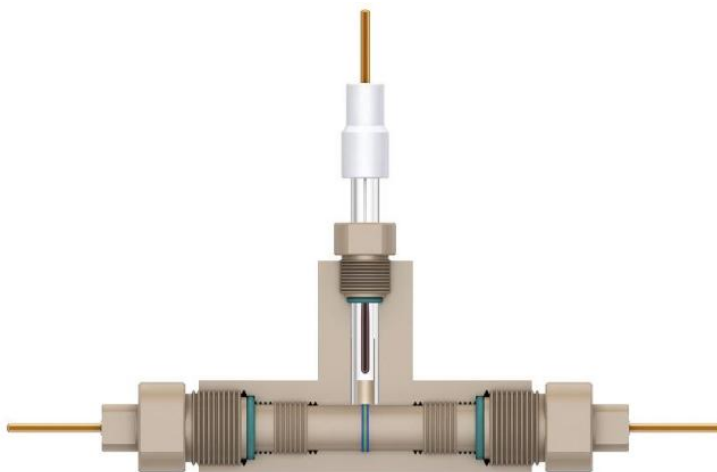
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## Battery Test Cell Series

### Swagelok-Type Battery Test Cell (Three-Electrode System)

Model: B001-1



The B001-1 is a Swagelok-type three-electrode battery test cell designed for advanced electrochemical studies requiring independent reference electrode monitoring. It is ideal for investigating electrode behavior and reaction mechanisms during battery operation.

#### Applications

- Three-Electrode Electrochemical Testing
- Electrode Potential Monitoring
- Battery Mechanism Studies
- Coin Cell Simulation

#### Features

- Integrated Reference Electrode: Enables independent potential measurement
- Glassy Carbon Current Collector: Minimizes side reactions
- PEEK Construction: Provides excellent chemical resistance
- Adjustable Compression Design: Ensures reliable electrode contact

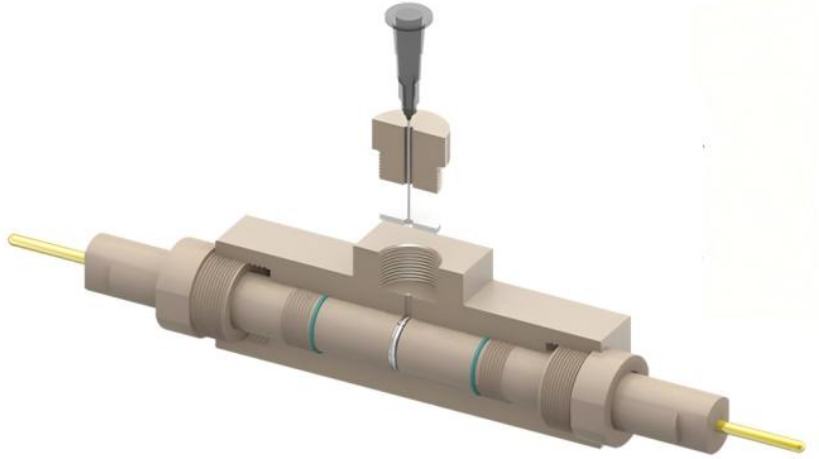
#### Specifications

- Configuration: Three-Electrode System
- Reference Electrode: Ag/AgCl
- Negative Current Collector: Glassy Carbon (GC- $\Phi$ 3)
- Compatible Sample Diameter: 10 / 12 / 16 mm

## Battery Test Cell Series

### Swagelok-Type Battery Test Cell (Two-Electrode System)

Model: B001-2



The B001-2 is a Swagelok-type two-electrode battery test cell designed for routine battery performance evaluation. Its simplified configuration makes it suitable for capacity, cycling, and rate capability testing under coin-cell-like conditions.

#### Applications

- Battery Performance Evaluation
- Charge-Discharge Testing
- Cycling Stability Studies
- Coin Cell Simulation

#### Features

- Simplified Two-Electrode Design: Supports standard battery testing
- Glassy Carbon Current Collector: Provides stable conductivity
- PEEK Construction: Resists aggressive electrolytes
- Modular Assembly: Allows quick setup and maintenance

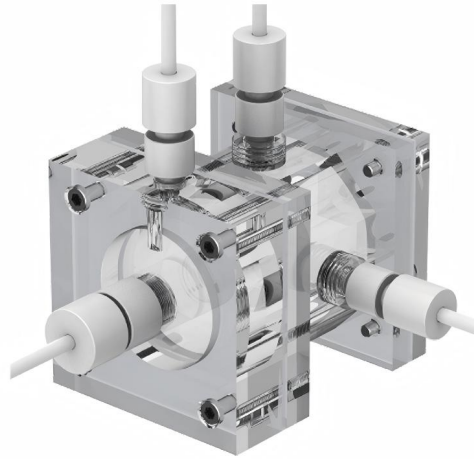
#### Specifications

- Configuration: Two-Electrode System
- Current Collector: Glassy Carbon (GC- $\Phi$ 3)
- Body Material: PEEK
- Compatible Sample Diameter: 10 / 12 / 16 mm

## Battery Test Cell Series

### Metal–Air Battery Test Cell

Model: Zn-1



The Zn-1 is a metal-air battery test cell designed for evaluating air-electrode performance and metal-air battery systems. Its transparent structure enables direct observation of electrode and electrolyte behavior during electrochemical testing, making it suitable for fundamental research and prototype development.

#### Applications

- Zinc-Air Battery Research
- Air Electrode Evaluation
- Metal-Air Battery Development
- Electrochemical Characterization

#### Features

- Transparent Cell Design: Enables direct visual observation during operation
- Open-Air Configuration: Simulates practical air-breathing conditions
- PMMA Construction: Provides chemical compatibility and mechanical stability
- Modular Assembly: Facilitates cell setup and maintenance

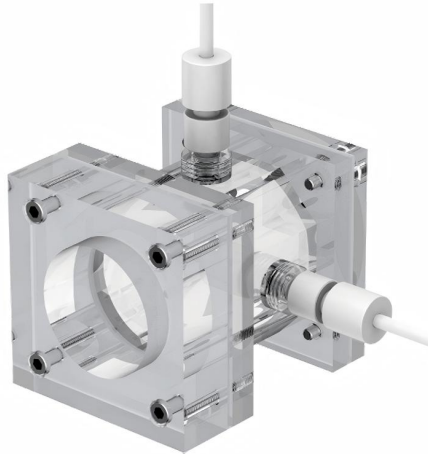
#### Specifications

- Cell Material: PMMA
- Air Access: Open-Air Configuration
- Observation Method: Direct Visual Monitoring
- Customization: Available Upon Request

## Battery Test Cell Series

### Metal-Air Battery Test Cell

Model: Zn-2



The Zn-2 is a metal–air battery test cell designed for electrochemical studies under controlled gas conditions. Compared with the Zn-1, its enclosed air chamber provides improved experimental repeatability and greater flexibility for investigating gas diffusion electrode performance and reaction mechanisms.

#### Applications

- Controlled Atmosphere Battery Testing
- Zinc–Air Battery Research
- Gas Diffusion Electrode Evaluation
- Metal – Air Battery Development

#### Features

- Sealed Air Chamber: Enables controlled gas environment studies
- Enhanced Experimental Repeatability: Minimizes external environmental influence
- Transparent Cell Design: Allows visual observation during testing
- Modular Construction: Supports flexible experimental configurations

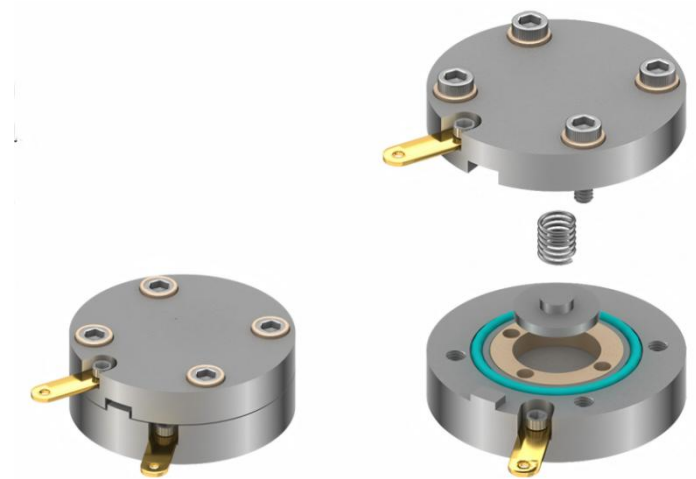
#### Specifications

- Cell Material: PMMA
- Air Chamber: Enclosed Configuration
- Observation Method: Direct Visual Monitoring
- Customization: Available Upon Request

## Battery Test Cell Series

Electrode Evaluation Cell (Two-Electrode System)

Model: B002



The B002 is a two-electrode evaluation cell designed for electrochemical testing of battery materials. Its titanium body, PEEK insulation, and spring-loaded structure provide reliable sealing, stable electrode contact, and repeatable performance for charge – discharge and cycling studies.

### Applications

- Battery Material Evaluation
- Charge–Discharge Testing
- Cycling Performance Studies
- Electrochemical Characterization

### Features

- Two-Electrode System: Supports standard electrode evaluation
- Spring-Loaded Compression: Allows load adjustment for testing
- O-Ring Sealing Design: Ensures reliable airtight sealing
- Easy Disassembly: Enables sample removal without damage

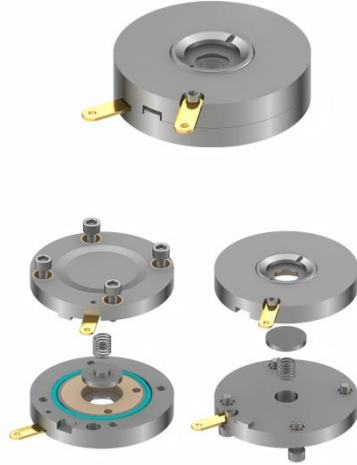
### Specifications

- Body Material: Titanium
- Insulation Material: PEEK
- Current Collector: Gold-Plated Copper
- Sealing Method: Chemically Resistant O-Ring

## Battery Test Cell Series

In-Situ Raman Battery Test Cell (Two-Electrode System)

Model: B002-RM



The B002-RM is an upgraded version of the B002 featuring in-situ Raman spectroscopy capability. It is specifically designed for investigating spectral and morphological changes of electrode materials during electrochemical experiments while maintaining the robust sealing and reproducibility of the standard evaluation cell.

### Applications

- In-Situ Raman Analysis
- Electrode Material Research
- Structural Evolution Studies
- Electrochemical Cycling Tests

### Features

- In-Situ Raman Capability: Enables real-time monitoring of material changes during operation
- Short Optical Working Distance: Improves Raman signal collection efficiency
- Spring-Loaded Compression: Allows adjustable loading during testing
- Glovebox-Compatible Design: Supports assembly and operation in controlled environments

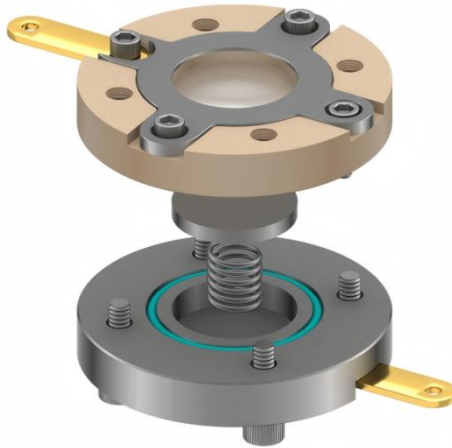
### Specifications

- Body Material: Titanium
- Insulation Material: PEEK
- Configuration: Two-Electrode System
- Electrode-to-Window Distance: < 2 mm

## Battery Test Cell Series

In-Situ XRD Battery Test Cell (Two-Electrode System)

Model: B002-XRD



The B002-XRD is an in-situ XRD battery test cell developed for real-time structural analysis of battery materials during electrochemical cycling. Based on the B002 platform, it incorporates a dedicated X-ray transmission window and is compatible with Bruker D8 diffractometers for operando XRD studies.

### Applications

- In-Situ XRD Analysis
- Phase Transition Studies
- Crystal Structure Evolution Monitoring
- Battery Material Characterization

### Features

- Beryllium X-Ray Window: Enables efficient X-ray transmission for diffraction measurements
- D8 Diffractometer Compatible: Designed for use with Bruker D8 systems
- Spring-Loaded Compression: Allows adjustable electrode loading during testing
- Glovebox-Compatible Design: Supports assembly in controlled environments

### Specifications

- Cell Diameter: 49.5 mm
- Window Aperture Diameter: 20 mm
- Sample Diameter: 20 mm
- Minimum Working Angle:  $< 3^\circ$

## Battery Test Cell Series

### Electrode Evaluation Cell (Three-Electrode System)

Model: B003



The B003 is an upgraded version of the B002 featuring independent reference electrode monitoring. By incorporating a dedicated reference electrode circuit, it enables precise electrode potential measurements and advanced electrochemical studies beyond conventional two-electrode testing.

#### Applications

- Three-Electrode Electrochemical Testing
- Electrode Potential Monitoring
- Battery Material Evaluation
- Electrochemical Mechanism Studies

#### Features

- Integrated Reference Electrode: Enables independent potential measurement
- Three-Collector Architecture: Separates working, counter, and reference electrodes
- Spring-Contact Reference Design: Provides reliable electrical connection
- Spring-Loaded Compression: Maintains consistent electrode pressure

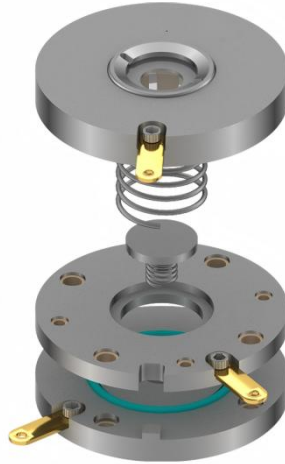
#### Specifications

- Configuration: Three-Electrode System
- Reference Electrode: Lithium Wire (not included)
- Body Material: Titanium
- Insulation Material: PEEK

## Battery Test Cell Series

In-Situ Raman Battery Test Cell (Three-Electrode System)

Model: B003-RM



The B003-RM is an upgraded version of the B002-RM featuring three-electrode in-situ Raman testing capability. It combines real-time Raman characterization with independent electrode potential monitoring, enabling comprehensive investigation of structural and electrochemical changes during battery operation.

### Applications

- Three-Electrode In-Situ Raman Analysis
- Electrode Potential Monitoring
- Structural Evolution Studies
- Electrochemical Mechanism Research

### Features

- Integrated Lithium Wire Reference Electrode: Enables independent potential measurement
- In-Situ Raman Capability: Supports real-time spectroscopic monitoring during cycling
- Spring-Contact Reference Design: Provides reliable electrical connection
- Spring-Loaded Compression: Maintains stable electrode contact

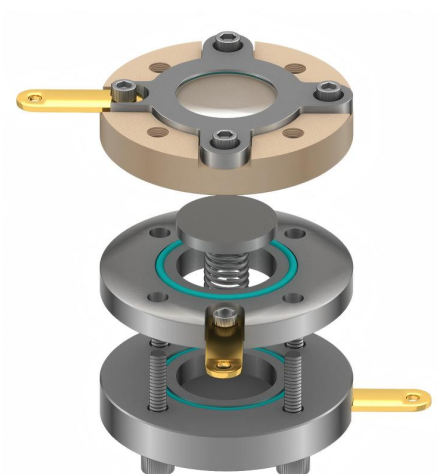
### Specifications

- Configuration: Three-Electrode System
- Reference Electrode: Lithium Wire (not included)
- Body Material: Titanium
- Electrode-to-Window Distance: < 2 mm

## Battery Test Cell Series

In-Situ XRD Battery Test Cell (Three-Electrode System)

Model: B003-XRD



The B003-XRD is an upgraded version of the B002-XRD featuring three-electrode operando XRD capability. By integrating a dedicated reference electrode into the XRD testing platform, it enables simultaneous structural analysis and electrode potential monitoring during battery cycling.

### Applications

- Three-Electrode In-Situ XRD Analysis
- Electrode Potential Monitoring
- Phase Transition Studies
- Battery Material Characterization

### Features

- Integrated Reference Electrode: Enables independent electrode potential measurement
- Beryllium X-Ray Window: Provides efficient X-ray transmission for diffraction studies
- Three-Collector Architecture: Separates working, counter, and reference electrodes
- Spring-Contact Reference Design: Ensures reliable electrical connection

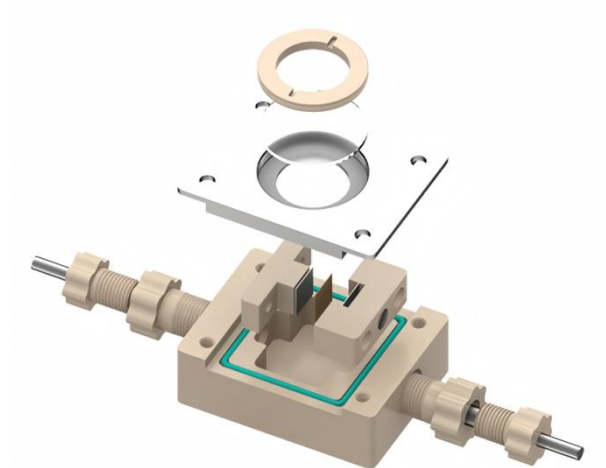
### Specifications

- Configuration: Three-Electrode System
- Reference Electrode: Lithium Wire (not included)
- Cell Diameter: 49.5 mm
- Window Aperture Diameter: 20 mm
- Sample Diameter: 20 mm

## Battery Test Cell Series

In-Situ Electrochemical Observation Cell (Torque-Adjustable Dendrite)

Model: B004



The B004 is an in-situ electrochemical observation cell designed for studying dendrite growth under controlled mechanical pressure. By simulating coin-cell conditions and applying adjustable electrode loading, it enables direct observation of dendrite formation during electrochemical operation.

### Applications

- Dendrite Growth Studies
- Lithium Metal Research
- Fuel Cell Catalyst Evaluation
- In-Situ Electrochemical Observation

### Features

- Adjustable Torque Loading: Enables controlled pressure application to electrodes
- Observation Window Design: Supports real-time visualization of dendrite growth
- Automatic Alignment Structure: Maintains uniform electrode contact
- Coin-Cell Simulation Configuration: Replicates practical battery conditions

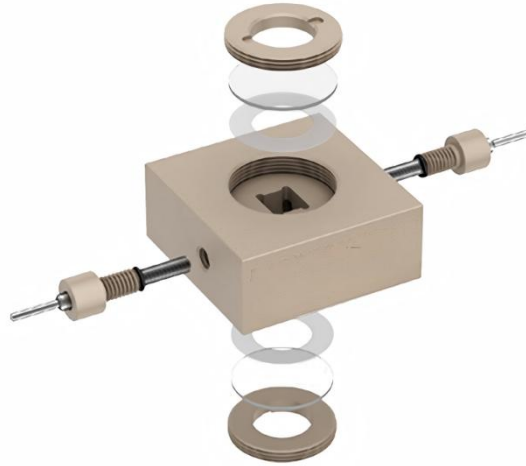
### Specifications

- Body Material: PEEK
- Window Material: Quartz Glass
- Electrode Area: 10 × 10 mm
- Current Collector: Glassy Carbon (GC  $\Phi 3$ )
- Pressure Control: Adjustable Torque Loading

## Battery Test Cell Series

In-Situ Electrochemical Observation Cell (Dendrite Growth Study)

Model: B004-2



The B004-2 is an in-situ electrochemical observation cell developed for direct visualization of dendrite growth during battery operation. Compared with the B004, it focuses on optical observation and simplified cell assembly without adjustable pressure loading.

### Applications

- Dendrite Growth Observation
- Lithium Metal Research
- Fuel Cell Catalyst Evaluation
- In-Situ Electrochemical Studies

### Features

- High-Transparency Quartz Window: Provides over 95% light transmission
- Observation Cell Design: Enables direct monitoring of dendrite formation
- Titanium Current Collector Base: Ensures reliable electrical conductivity
- Compact Structure: Simplifies assembly and operation

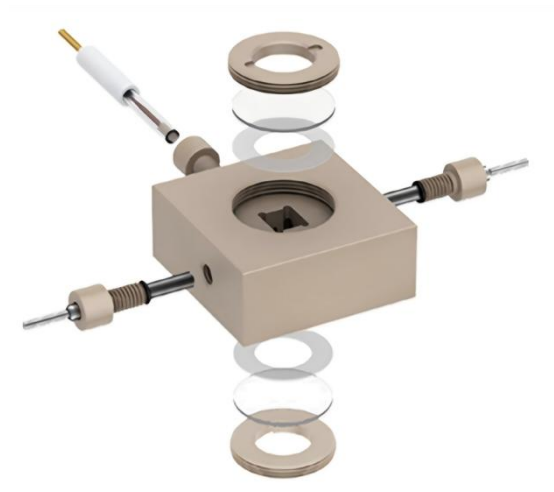
### Specifications

- Current Collector Base Material: Titanium
- Optical Window Material: Quartz
- Optical Transmission: > 95%
- Electrode Area: 10 × 10 mm

## Battery Test Cell Series

### In-Situ Electrochemical Observation Cell (Three-Electrode Dendrite)

Model: B004-3



The B004-3 is a three-electrode in-situ electrochemical observation cell developed from the B004-2 platform. By integrating an additional reference electrode, it enables simultaneous visualization of electrochemical processes and independent electrode potential monitoring, making it ideal for mechanistic studies of battery and electrocatalytic systems.

#### Applications

- Three-Electrode Electrochemical Testing
- Dendrite Growth Studies
- Electrocatalyst Evaluation
- In-Situ Reaction Observation

#### Features

- Integrated Reference Electrode Port: Enables independent electrode potential measurement
- High-Purity Titanium Current Collector: Ensures stable electrical conductivity
- Quartz Optical Window: Provides >95% light transmittance for real-time observation
- Transparent Observation Design: Supports operando visualization of interfacial processes

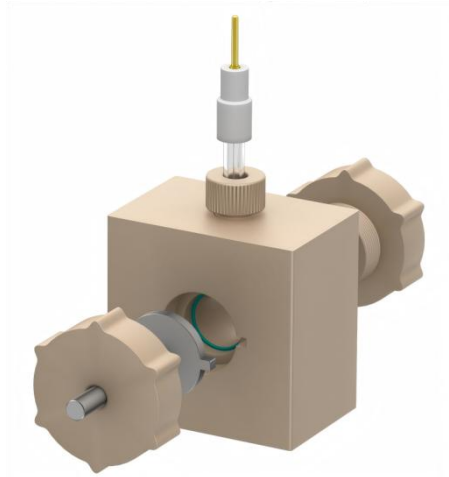
#### Specifications

- Configuration: Visualized Three-Electrode System
- Current Collector Material: High-Purity Titanium
- Optical Window Material: Quartz
- Electrode Area: 10 × 10 mm

## Battery Test Cell Series

Early-Stage Battery Evaluation Cell

Model: B005-1



The B005-1 is a three-electrode electrochemical cell designed for early-stage evaluation of lithium-ion battery materials and components. Its compact architecture enables reliable electrode screening and electrochemical characterization during the initial stages of battery development.

### Applications

- Battery Material Screening
- Electrode Evaluation
- Electrochemical Characterization
- Early-Stage Cell Development

### Features

- Three-Electrode Configuration: Enables independent electrochemical measurements
- Ag/AgCl Reference Electrode provides stable reference potential
- PEEK Cell Body offers excellent chemical resistance
- Compact Electrolyte Volume reduces material consumption

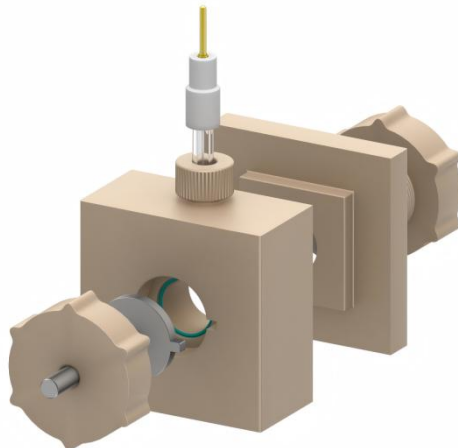
### Specifications

- Reference Electrode: Ag/AgCl (Ø2 mm)
- Electrode Area: Ø20 mm (customizable)
- Electrode Spacing: 5 mm
- Electrolyte Volume: < 1 mL

## Battery Test Cell Series

Replaceable-Membrane Early-Stage Battery Evaluation Cell

Model: B005-2



The B005-2 is an enhanced version of the B005-1 featuring an integrated membrane compartment between the working and counter electrodes. The design supports studies involving separator materials and membrane-assisted electrochemical systems.

### Applications

- Separator Evaluation
- Battery Material Screening
- Membrane-Based Electrochemical Studies
- Early-Stage Cell Development

### Features

- Replaceable Membrane Design: Supports separator and membrane performance evaluation
- Three-Electrode Configuration enables independent electrochemical measurements
- Silver/Silver Chloride Reference Electrode provides stable reference potential
- PEEK Construction ensures excellent chemical compatibility

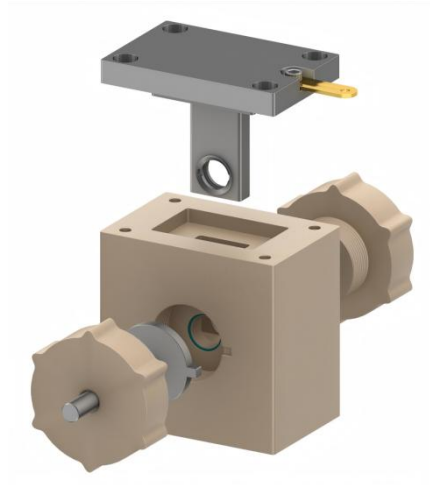
### Specifications

- Reference Electrode: Ag/AgCl (Ø2 mm)
- Electrode Area: Ø20 mm (customizable)
- Electrode Spacing: 5 mm
- Electrolyte Volume: < 1 mL

## Battery Test Cell Series

Lithium-Reference Early-Stage Battery Evaluation Cell

Model: B005-3



The B005-3 is a three-electrode battery evaluation cell designed for lithium-ion battery research requiring lithium-reference measurements. By incorporating a lithium wire reference electrode, it enables more accurate electrode potential monitoring during material development and electrochemical testing.

### Applications

- Lithium-Ion Battery Research
- Electrode Potential Monitoring
- Battery Material Evaluation
- Electrochemical Mechanism Studies

### Features

- Lithium Wire Reference Electrode: Enables lithium-referenced potential measurements
- Three-Electrode Configuration supports advanced electrochemical analysis
- PEEK Cell Body provides excellent electrolyte compatibility
- Compact Electrolyte Chamber minimizes electrolyte consumption

### Specifications

- Reference Electrode: Lithium Wire (not included)
- Electrode Area: Ø20 mm (customizable)
- Electrode Spacing: 5 mm
- Electrolyte Volume: < 1 mL

## Battery Test Cell Series

### Solid-State Battery Fixture

Model: PB001



The PB001 is a dedicated pressure fixture for solid-state battery testing. Designed for both assembly and operando pressure evaluation, it provides adjustable stack compression, integrated pressure monitoring, and stable electrical contact for solid-state cell characterization and electrochemical performance studies.

#### Applications

- Solid-State Battery Testing
- Stack Pressure Evaluation
- Electrochemical Performance Analysis
- Pressure–Response Characterization

#### Features

- Integrated Pressure Sensor: Enables real-time pressure monitoring during testing
- Adjustable Horizontal Alignment: Ensures uniform pressure distribution across the electrode surface
- Large Travel Range: Accommodates electrodes of different thicknesses and cell formats
- Modular Quick-Assembly Design: Simplifies cell loading, unloading, and maintenance

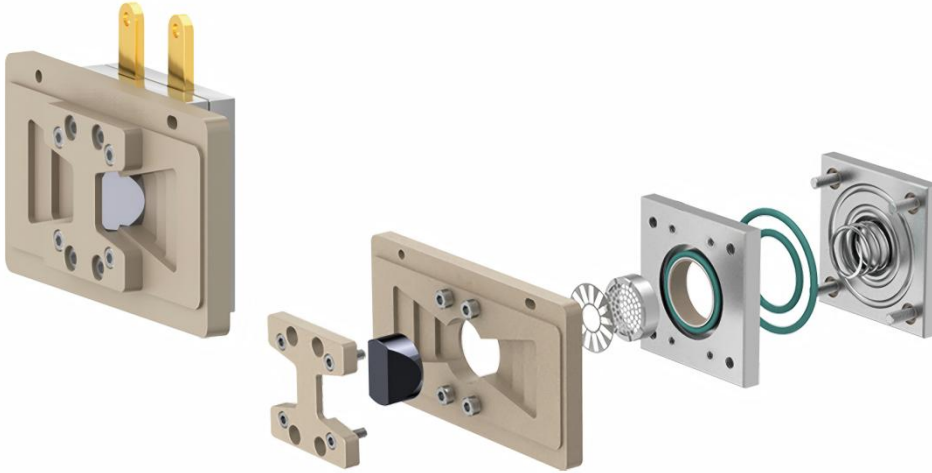
#### Specifications

- Body Material: High-Purity Titanium
- Electrical Tabs: Removable Gold-Plated Copper Tabs
- Pressure Control: Adjustable Stack Compression
- Pressure Monitoring: Integrated Pressure Sensor

## Battery Test Cell Series

In-Situ Infrared Li-Ion Test Cell

Model: B-IFA



The B-IFA is an in-situ infrared electrochemical cell developed for operando FTIR and ATR-SEIRAS studies of lithium-ion batteries. Utilizing a single-crystal silicon infrared window, it enables real-time investigation of interfacial reactions and structural evolution during battery operation.

### Applications

- In-Situ FTIR Analysis
- ATR-SEIRAS Studies
- Electrode–Electrolyte Interface Investigation
- Lithium-Ion Battery Research

### Features

- Single-Crystal Silicon Window: Optimized for electrochemical infrared spectroscopy
- ATR-SEIRAS Compatible Design: Enables enhanced surface-sensitive measurements
- Spring-Loaded Compression Structure ensures reliable electrode contact
- Dual O-Ring Sealing Design provides excellent airtight performance

### Specifications

- Infrared Window Material: Single-Crystal Silicon (Si)
- Body Material: Titanium
- Cell Dimensions: 50 × 50 × 20 mm

## Battery Test Cell Series

### Pressure Battery Test Cell (Two-Electrode System)

Model: PB002



The PB002 is a pressurized battery evaluation cell developed from the B002 platform. Equipped with an integrated pressure gauge and gas-pressure control system, it enables electrochemical testing under controlled pressure conditions, making it suitable for investigating pressure effects on battery performance and material behavior.

#### Applications

- Pressurized Battery Testing
- Battery Material Evaluation
- Charge - Discharge Cycling Studies
- Electrochemical Characterization

#### Features

- Integrated Pressure Gauge: Enables real-time pressure monitoring during testing
- Pressurized Cell Design: Supports operation up to 0.6 MPa (customizable)
- Adjustable Spring Compression allows controlled stack loading
- Glovebox-Compatible Assembly supports air-sensitive materials research

#### Specifications

- Maximum Operating Pressure: 0.6 MPa (customizable)
- Body Material: Titanium
- Insulation Material: PEEK
- Current Collector: Gold-Plated Copper
- Sample Diameter: 20 mm

## Battery Test Cell Series

In-Situ Raman Pressure Battery Test Cell (Two-Electrode System)

Model: PB002-RM



The PB002-RM is a pressurized operando Raman battery test cell developed from the B002-RM platform. Combining controlled gas pressure with in-situ Raman spectroscopy, it enables real-time monitoring of structural and morphological changes in electrode materials during electrochemical cycling.

### Applications

- Operando Raman Spectroscopy
- Pressurized Battery Testing
- Electrode Material Research
- Structural Evolution Studies

### Features

- In-Situ Raman Capability: Enables real-time spectroscopic monitoring during cycling
- Pressurized Cell Design: Supports operation up to 1 MPa
- Integrated Pressure Gauge provides continuous pressure monitoring
- Short Optical Working Distance improves Raman signal collection efficiency

### Specifications

- Maximum Operating Pressure: 1 MPa
- Body Material: Titanium
- Insulation Material: PEEK
- Electrode-to-Window Distance: < 2 mm

## Battery Test Cell Series

### Pressure Battery Test Cell (Three-Electrode System)

Model: PB003



The PB003 is a pressurized battery test cell developed from the B003 platform. It integrates gas-pressure monitoring with independent reference electrode measurement, supporting advanced electrochemical studies under controlled pressure conditions.

#### Applications

- Pressurized Battery Testing
- Electrode Potential Monitoring
- Battery Material Evaluation
- Electrochemical Mechanism Studies

#### Features

- Pressurized Three-Electrode Design: Supports advanced testing under controlled gas pressure
- Lithium Wire Reference Electrode: Enables independent potential monitoring
- Integrated Pressure Gauge: Provides real-time pressure indication
- Spring-Loaded Compression: Allows adjustable stack loading during testing

#### Specifications

- Maximum Operating Pressure: 0.6 MPa customizable
- Body Material: Titanium
- Insulation Material: PEEK
- Current Collector: Gold-Plated Copper
- Reference Electrode: Lithium Wire (not included)

## Battery Test Cell Series

In-Situ Raman Pressure Battery Test Cell (Three-Electrode System)

Model: PB003-RM



The PB003-RM is a pressurized in-situ Raman battery test cell developed from the B003-RM platform. It combines gas-pressure control, independent reference electrode monitoring, and operando Raman spectroscopy for real-time investigation of electrode structural evolution during cycling.

### Applications

- Pressurized Operando Raman Analysis
- Electrode Potential Monitoring
- Structural Evolution Studies
- Battery Mechanism Research

### Features

- Pressurized Three-Electrode Raman Design: Combines pressure testing, Raman analysis, and reference electrode monitoring
- Short Optical Working Distance: Improves Raman signal collection efficiency
- Integrated Pressure Gauge: Enables real-time pressure monitoring
- Lithium Wire Reference Electrode: Supports independent electrode potential measurement

### Specifications

- Maximum Operating Pressure: 1 MPa
- Body Material: Titanium
- Insulation Material: PEEK
- Current Collector: Gold-Plated Copper
- Electrode-to-Window Distance: < 2 mm

## Battery Test Cell Series

### Electrode Evaluation Cell (Three-Electrode System)

Model: B003-AgCl



The B003-AgCl is a three-electrode electrochemical cell designed for electrode evaluation and electrochemical characterization. By incorporating a standard reference electrode interface, it enables accurate potential control and monitoring for advanced electrochemical studies.

#### Applications

- Electrode Performance Evaluation
- Electrochemical Characterization
- Electrode Potential Monitoring
- Mechanistic Electrochemical Studies

#### Features

- Standard Reference Electrode Interface: Compatible with a wide range of commercial reference electrodes
- Flexible Reference Electrode Selection: Supports Ag/AgCl, SCE, Hg/HgO, and Hg/Hg<sub>2</sub>SO<sub>4</sub> reference electrodes
- Spring-Loaded Compression: Provides adjustable electrode loading
- Glovebox-Compatible Design: Supports assembly and testing of air-sensitive materials

#### Specifications

- Reference Electrode Diameter: 6 mm
- Body Material: Titanium
- Insulation Material: PEEK
- Current Collector: Gold-Plated Copper

## Battery Test Cell Series

### Push-Type Battery Test Cell

Model: TB002



The TB002 is a battery test cell designed for controlled electrode compression studies. Based on the B002 platform, it incorporates a precision push-type loading mechanism, enabling fine adjustment of electrode pressure during electrochemical testing.

#### Applications

- Electrode Compression Studies
- Battery Material Evaluation
- Charge–Discharge Testing
- Electrochemical Characterization

#### Features

- Precision Push-Type Loading Mechanism: Enables controlled electrode compression during testing
- Micrometer-Scale Displacement Adjustment: Provides 0.02 mm displacement per scale increment
- Integrated Alignment Structure: Minimizes the risk of sample fracture during compression
- Spring-Loaded Architecture: Supports repeatable electrode contact and loading

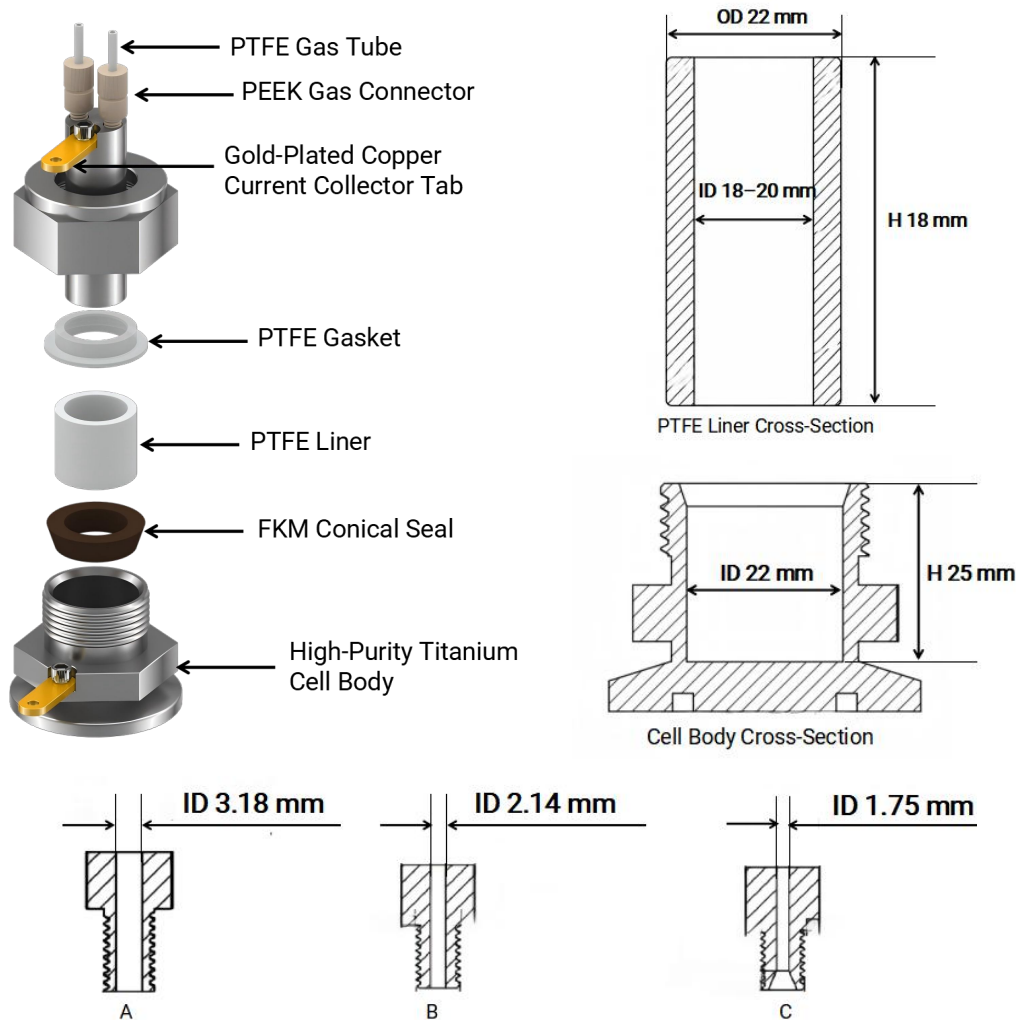
#### Specifications

- Displacement Resolution: 0.02 mm per scale division
- Sample Diameter: 20 mm
- Body Material: Titanium
- Insulation Material: PEEK
- Current Collector: Gold-Plated Copper

# Battery Test Cell Series

In-Situ Gas Analysis Swagelok Cell

Model: IGA-SC-01



PEEK Gas Connector Cross-Section

The IGA-SC-01 is an operando battery research platform that integrates electrochemical testing with online gas analysis in a compact Swagelok-type cell architecture. The design combines reliable electrode contact, gas-tight sealing, and dedicated gas sampling interfaces for real-time monitoring of battery gas evolution during operation.

The product is designed for in-situ gas evolution studies of lithium-ion, sodium-ion, zinc-ion, solid-state, and other emerging battery systems. Combined with GC, GC-MS, DEMS, or OEMS, it enables qualitative and quantitative analysis of gas evolution behavior, supporting studies of electrolyte decomposition, interfacial reactions, parasitic reactions, and battery safety. The standardized gas interfaces allow integration with commercial gas analysis platforms from Hiden Analytical, Spectro Inlets, Agilent, Shimadzu, and Thermo Fisher Scientific.

## Applications

- Battery gas sampling and operando monitoring with GC, GC-MS, DEMS, or OEMS integration.
- Study of electrolyte decomposition, interfacial reactions, and gas evolution mechanisms during battery cycling.
- Electrochemical testing of lithium-ion, sodium-ion, zinc-ion, solid-state, and other advanced battery systems.

## Features

- Operando gas sampling design: Integrates dedicated gas inlet and outlet ports for continuous gas sampling during battery operation and compatibility with GC, GC-MS, DEMS, and OEMS analysis systems.
- Chemically resistant cell construction: High-purity titanium and PTFE components provide excellent chemical stability and corrosion resistance for various battery chemistries.
- Reliable Electrical and sealing performance: Titanium electrode posts, gold-plated copper tabs, and FKM conical seals ensure stable electrical contact and repeatable gas-tight sealing.
- Flexible gas interface compatibility: PEEK gas connectors support standard 1/16" and 1/8" tubing for integration with different gas analysis configurations.
- Glovebox-compatible modular design: Compact Swagelok-type structure enables convenient assembly, disassembly, and maintenance in inert environments.
- Large electrode compatibility: Supports electrodes up to approximately 20 mm, providing a test configuration closer to CR20xx coin cells.
- Pressure-controlled assembly (optional): Enables reproducible stack pressure control during battery assembly.

## Specifications

- Effective electrode area: Up to 3.14 cm<sup>2</sup> (20 mm electrode)
- Gas dead volume: Approx. 4.5 mL (excluding external tubing)
- PTFE liner dimensions: ID 18–20 mm × H 18 mm (customizable; minimum wall thickness 1 mm)
- Main chamber dimensions: ID 22 mm × H 25 mm
- Applicable tubing size: 1/16", 1/8"
- Overall height: Approx. 60 mm (excluding gas fittings)
- Base diameter: 45 mm
- Weight: 364 g

