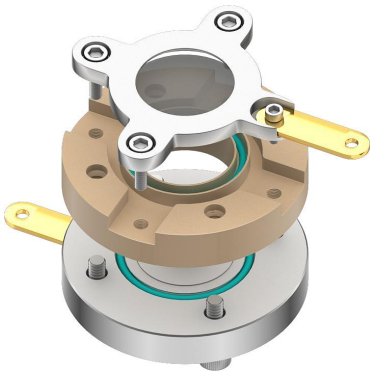
Battery Test Cell Series

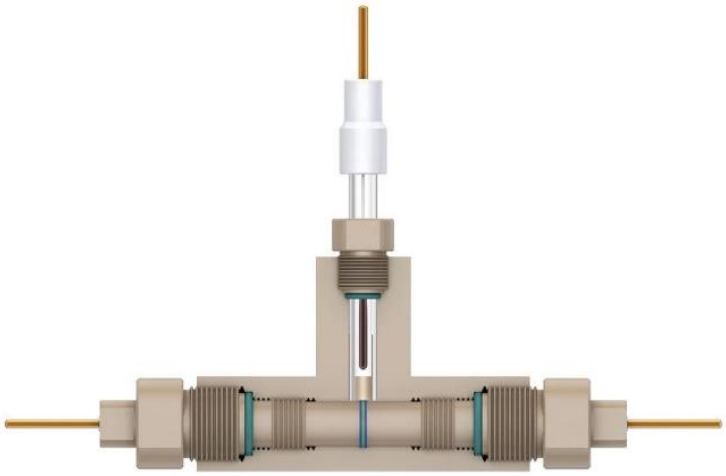


Contents

Swagelok-Type Battery Test Cell Series

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

Model: SWG-3E



The SWG-3E 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-Φ3)
- Compatible sample diameter: 10 / 12 / 16 mm

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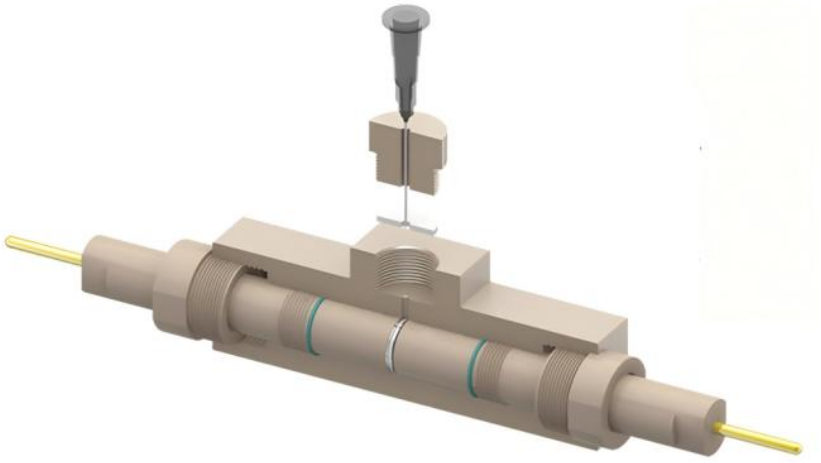
Swagelok-Type Battery Test Cell Series

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

Model: SWG-2E



The SWG-2E 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

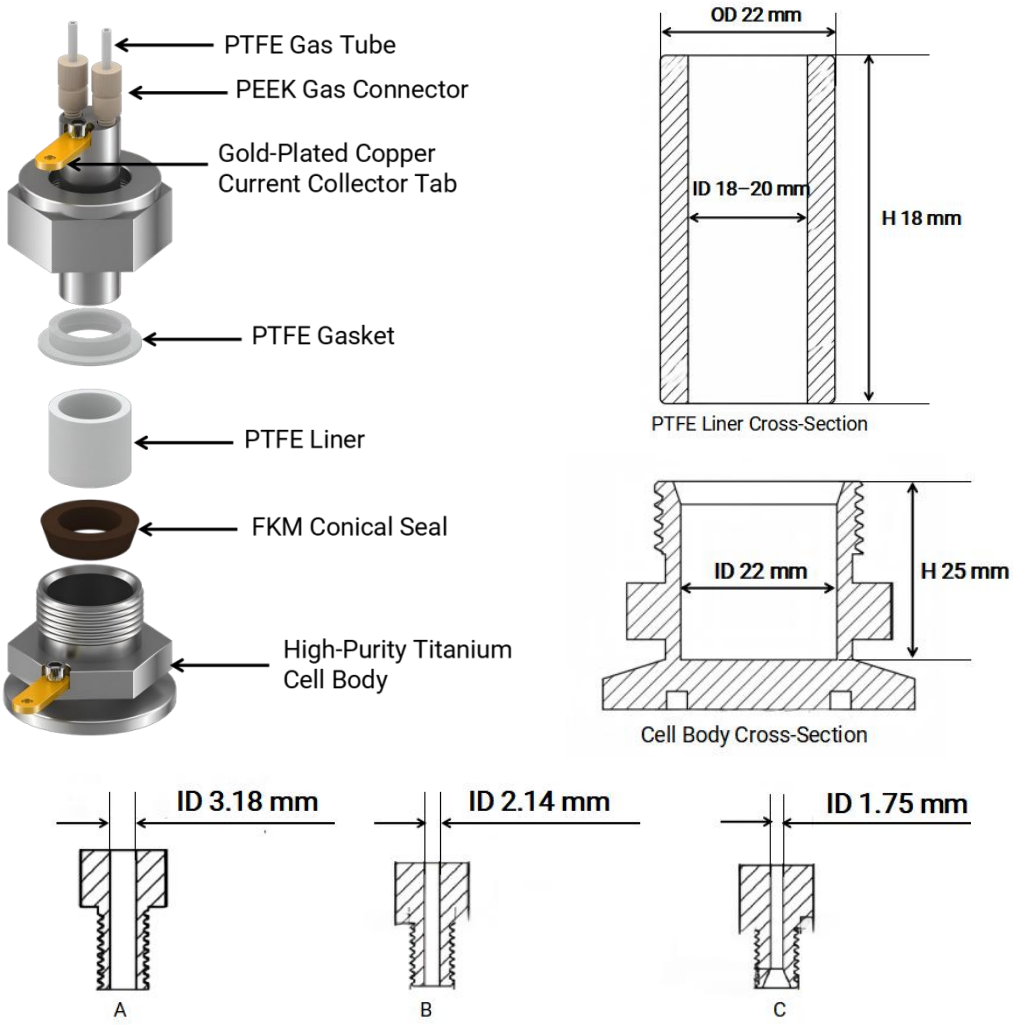
Specifications

- Configuration: Two-electrode system
- Current collector: Glassy carbon (GC-Φ3)
- Cell body material: PEEK
- Compatible sample diameter: 10 / 12 / 16 mm

Swagelok-Type Battery Test Cell Series

In Situ Gas Analysis Swagelok Cell

Model: SWG-GA



PEEK Gas Connector Cross-Section

The SWG-GA 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 Evolution Studies
- Operando Gas Analysis with GC, GC-MS, DEMS, or OEMS
- Electrolyte Decomposition and Interfacial Reaction Studies
- Advanced Battery System Evaluation

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^2 (20 mm electrode)
- Gas dead volume: Approx. 4.5 mL (excluding external tubing)
- PTFE liner dimensions: Ø18–20 mm × H18 mm (customizable; minimum wall thickness 1 mm)
- Main chamber dimensions: Ø22 mm × H25 mm
- Applicable tubing size: 1/16", 1/8"
- Overall height: Approx. 60 mm (excluding gas fittings)
- Base diameter: 45 mm
- Weight: 364 g

Lithium Battery Test Cell Series

Electrode Evaluation Cell (Two-Electrode System)

Model: CE-2E

The CE-2E 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

- Cell body material: Titanium
- Insulation material: PEEK
- Current collector tab: Gold-plated copper
- Cell body dimensions: Ø55 mm × H23 mm
- Compatible sample diameter: 20 mm

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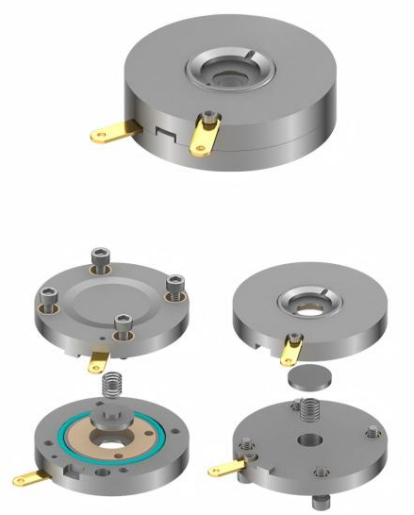
Lithium Battery Test Cell Series

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

Model: RM-2E



The RM-2E is an upgraded version of the CE-2E 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

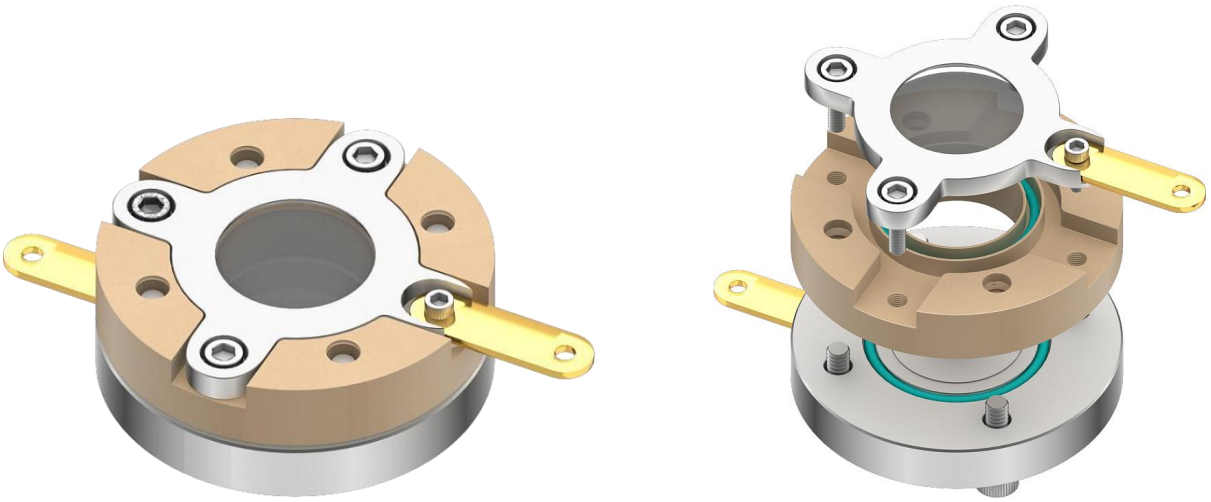
Specifications

- Configuration: Two-electrode system
- Cell body material: Titanium
- Insulation material: PEEK
- Optical window material: Sapphire
- Current collector tab: Gold-plated copper
- Cell body dimensions: Ø70 mm × H20 mm
- Compatible sample diameter: 20 mm
- Electrode-to-window distance: < 2 mm

Lithium Battery Test Cell Series

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

Model: XRD-2E



The XRD-2E is an in situ XRD battery test cell developed for real-time structural analysis of battery materials during electrochemical cycling. Based on the CE-2E 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

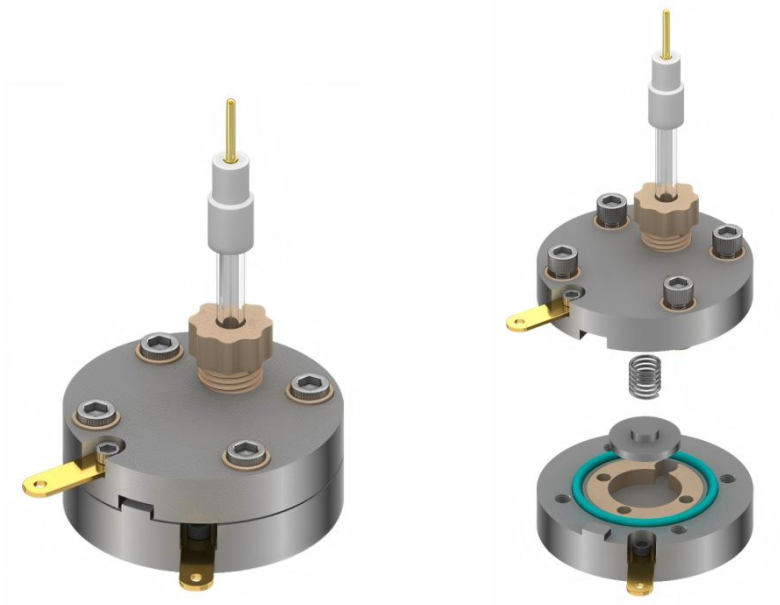
Specifications

- Cell body dimensions: Ø49.5 mm × H18 mm
- Window aperture diameter: 20 mm
- Sample diameter: 20 mm
- Minimum working angle: < 3°

Lithium Battery Test Cell Series

Standard Reference Electrode Battery Test Cell (Three-Electrode System)

Model: CE-R3E



The CE-R3E 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_2SO_4 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
- Cell body material: Titanium
- Insulation material: PEEK
- Current collector tab: Gold-plated copper

Lithium Battery Test Cell Series

Lithium-Reference Battery Test Cell (Three-Electrode System)

Model: CE-L3E

The CE-L3E is an upgraded version of the CE-2E 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

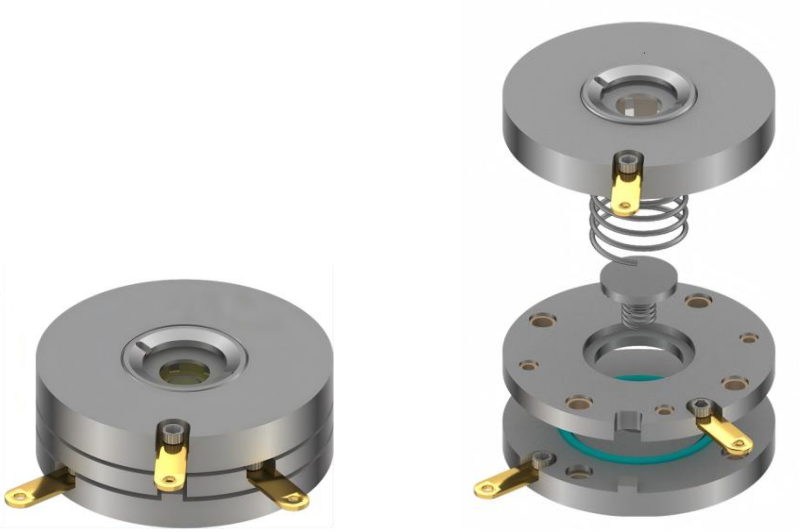
Specifications

- Configuration: Three-electrode system
- Reference electrode: Lithium wire
- Cell body material: Titanium
- Insulation material: PEEK
- Cell body dimensions: Ø70 mm × H24 mm
- Compatible sample diameter: 20 mm

Lithium Battery Test Cell Series

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

Model: RM-3E



The RM-3E is an upgraded version of the RM-2E 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

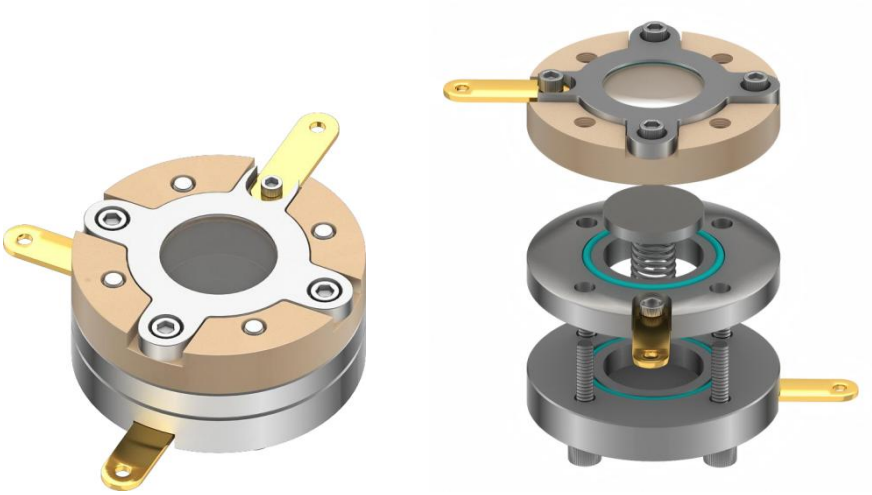
Specifications

- Configuration: Three-electrode system
- Reference electrode: Lithium wire
- Cell body material: Titanium
- Insulator material: PEEK
- Current collector tab: Gold-plated copper
- Optical window material: Sapphire
- Cell body dimensions: Ø70 mm × H24 mm
- Electrode-to-window distance: < 2 mm

Lithium Battery Test Cell Series

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

Model: XRD-3E



The XRD-3E is an upgraded version of the XRD-2E 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

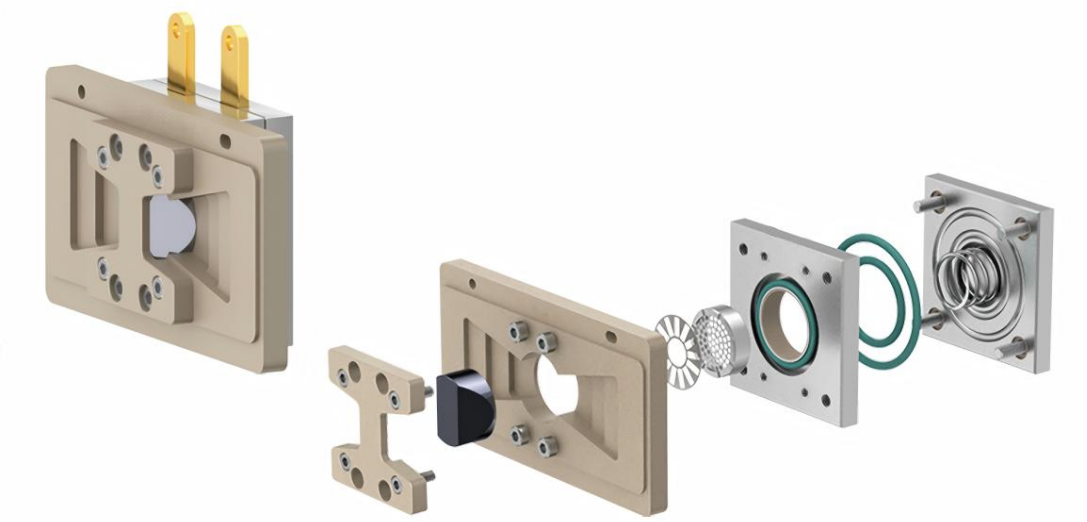
Specifications

- Configuration: Three-electrode system
- Reference electrode: Lithium ring
- Window material: Beryllium (Be)
- Cell body material: Titanium
- Insulator material: PEEK
- Current collector tab: Gold-plated copper
- Cell body dimensions: Ø49.5 mm × H23 mm
- Window aperture diameter: 20 mm
- Compatible sample diameter: 20 mm
- Minimum working angle: < 3°

Lithium Battery Test Cell Series

In Situ Infrared Li-Ion Test Cell

Model: IR-2E



The IR-2E 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

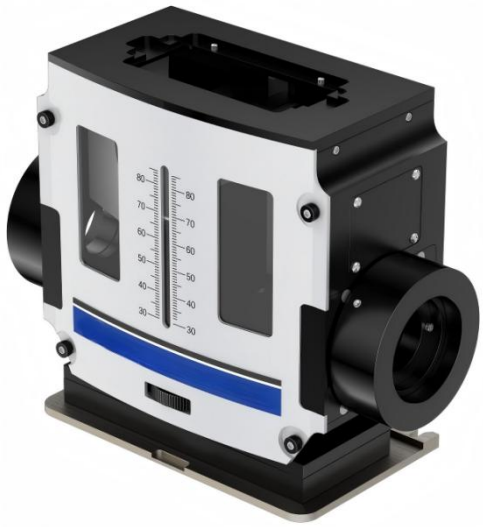
Specifications

- Infrared window material: Single-crystal silicon (Si)
- Cell body material: Titanium
- Cell dimensions: 50 × 50 × 20 mm

Lithium Battery Test Cell Series

Optical Table with Adjustable Incident Angle

Model: VeeMAX III



The VeeMAX III is an adjustable incident angle optical platform designed for optical measurements with variable incident angles and selectable crystal plates. It provides continuous angle adjustment and flexible optical configurations for controlling measurement depth according to different sample requirements.

Applications

- Optical measurements with variable incident angles
- Thin-film sample measurements
- Coating sample measurements
- Liquid sample measurements
- Powder sample measurements

Features

- Continuous Angle Adjustment: Enables incident angle adjustment from 30° to 80° for flexible measurement configurations
- Flexible Crystal Selection: Supports different crystal plate selections for controlling measurement depth
- High Optical Throughput: The 45° ZnSe crystal provides over 50% throughput to reduce sampling time
- Flexible Sample Handling: Optional high-pressure clamps support measurements of thin films, coatings, and powder samples
- Integrated Polarizer Position: Provides installation positions for manual or automatic polarizers

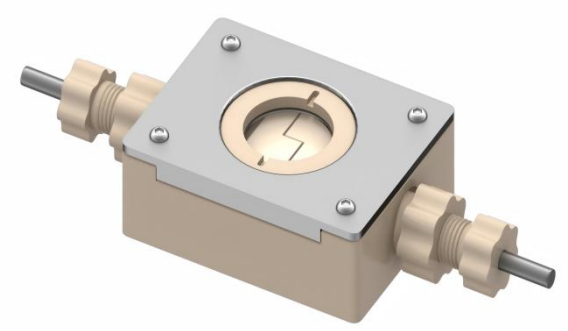
Specifications

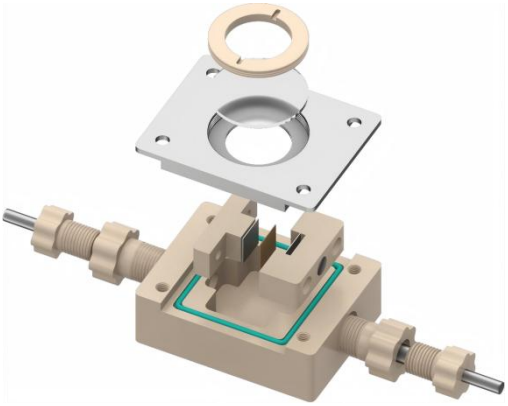
- Incident angle range: 30°–80° (continuously adjustable)
- Crystal material: ZnSe
- Crystal angle: 45°
- Optical throughput: >50% (45° ZnSe crystal)
- Penetration depth range: 0.4–46 μm

Lithium Dendrite Observation Cell Series

In Situ Electrochemical Observation Cell (Torque-Adjustable Dendrite)

Model: VI-T2E





The VI-T2E is an in situ electrochemical observation cell designed for lithium dendrite growth studies under controlled pressure conditions. It simulates a lithium-ion coin cell configuration and enables direct observation of lithium dendrite growth on the lithium metal electrode cross-section. The cell incorporates a glassy carbon conductive substrate, torque-adjustable pressure loading, and an automatic horizontal alignment structure to ensure uniform pressure distribution on the electrode surface.

Applications

- Lithium Dendrite Growth Observation
- Lithium Metal Electrode Studies
- In Situ Electrochemical Observation
- Coin Cell Simulation Testing

Features

- Glassy Carbon Conductive Substrate: Minimizes metal deposition on the current collector tab surface during testing
- Coin Cell Simulation Configuration: Simulates lithium-ion coin cell structures for lithium dendrite observation
- Torque-Adjustable Pressure Loading: Applies controlled pressure to the simulated battery electrodes with a torque wrench
- Automatic Horizontal Alignment Structure: Ensures uniform pressure distribution across the electrode surface
- Optical Observation Design: Enables direct observation of lithium dendrite growth through the optical window

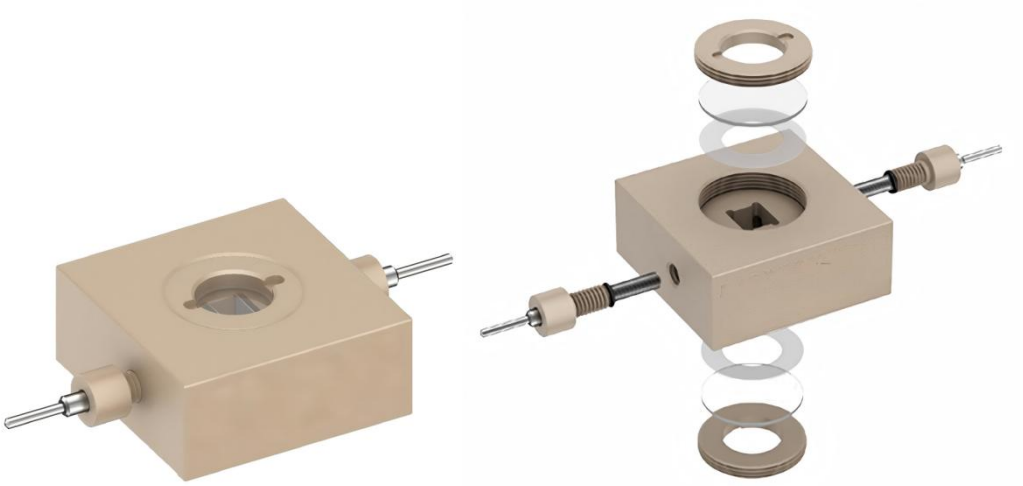
Specifications

- Cell body material: PEEK
- Optical window material: Sapphire glass
- Working electrode size: 10 × 10 mm
- Conductive substrate: Glassy carbon

Lithium Dendrite Observation Cell Series

In Situ Electrochemical Observation Cell (Dendrite Growth Study)

Model: VI-2E



The VI-2E 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 Sapphire Optical Window: Provides over 95% light transmission
- Observation Cell Design: Enables direct monitoring of dendrite formation
- Titanium Conductive Substrate: Ensures reliable electrical conductivity
- Compact Structure: Simplifies assembly and operation

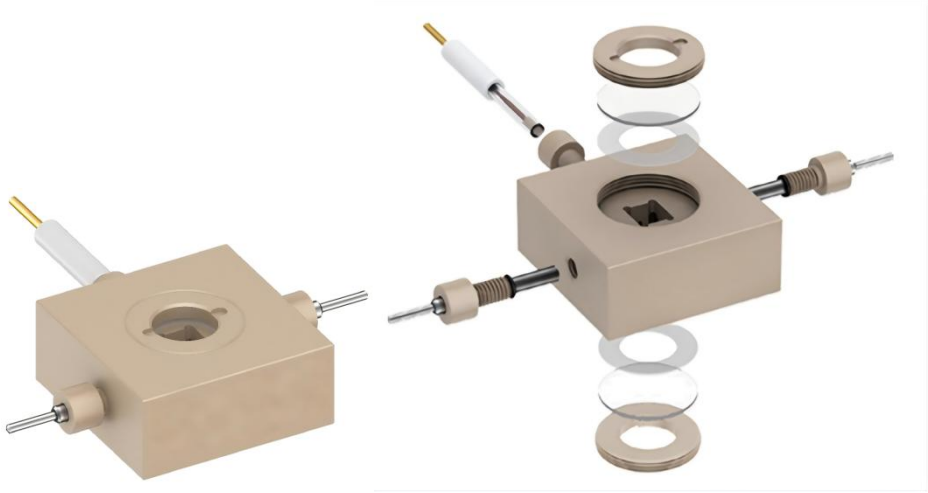
Specifications

- Conductive substrate: Titanium
- Optical window material: Sapphire
- Optical transmission: > 95%
- Electrode area: 10 × 10 mm

Lithium Dendrite Observation Cell Series

In Situ Electrochemical Observation Cell (Three-Electrode Dendrite)

Model: VI-3E



The VI-3E is a three-electrode in situ electrochemical observation cell developed from the VI-2E 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 Conductive Substrater: Ensures stable electrical conductivity
- Sapphire Optical Window: Provides >95% light transmittance for real-time observation
- Transparent Observation Design: Supports operando visualization of interfacial processes

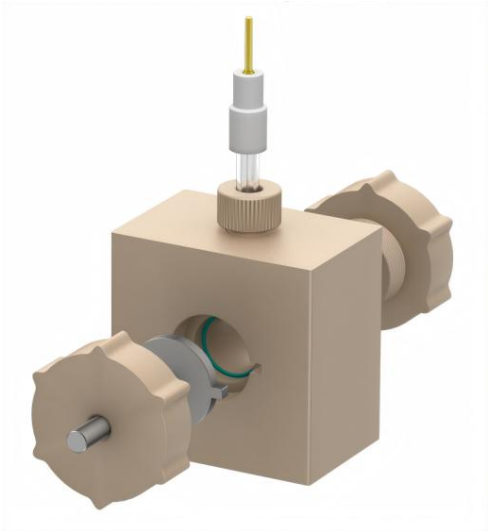
Specifications

- Configuration: Visualized Three-electrode system
- Conductive substrate: Titanium
- Optical window material: Sapphire
- Electrode area: 10 × 10 mm

Battery Evaluation Test Cell Series

Early-Stage Battery Evaluation Cell

Model: EV-3E



The EV-3E 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
- Low Electrolyte Volume: Reduces electrolyte consumption

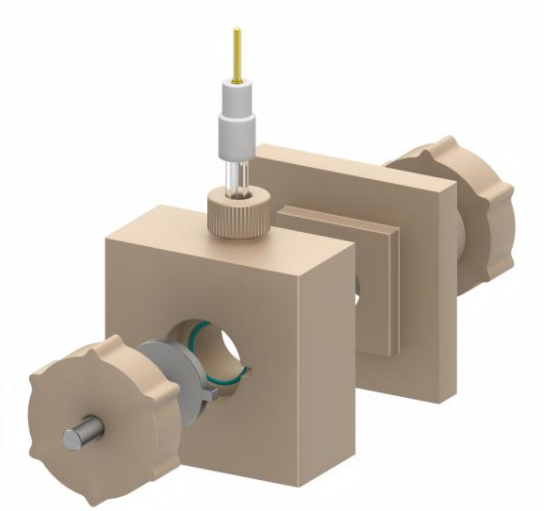
Specifications

- Cell body material: PEEK
- Current collector tab: Titanium
- Reference electrode: Ag/AgCl (Ø2 mm)
- Compatible sample size: Ø20 mm circular disk (customizable)
- Electrode spacing: 5 mm
- Electrolyte volume: < 1 mL

Battery Evaluation Test Cell Series

Replaceable-Membrane Early-Stage Battery Evaluation Cell

Model: EV-M3E



The EV-M3E is an enhanced version of the EV-3E 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
- Ag/AgCl Reference Electrode: Provides stable reference potential
- PEEK Construction: Ensures excellent chemical compatibility

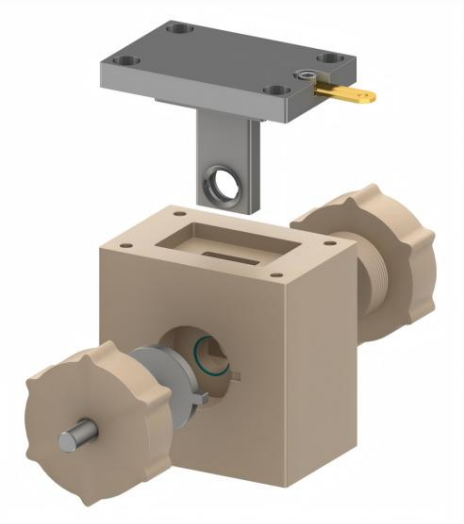
Specifications

- Cell body material: PEEK
- Current collector tab: Titanium
- Reference electrode: Ag/AgCl (Ø2 mm)
- Compatible sample size: Ø20 mm circular disk (customizable)
- Electrode spacing: 5 mm
- Electrolyte volume: < 1 mL

Battery Evaluation Test Cell Series

Lithium-Reference Early-Stage Battery Evaluation Cell

Model: EV-L3E



The EV-L3E 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

- Cell body material: PEEK
- Current collector tab: Titanium
- Reference electrode: Lithium wire
- Compatible sample size: Ø20 mm circular disk (customizable)
- Electrode spacing: 5 mm
- Electrolyte volume: < 1 mL

Pressure Battery Evaluation Test Cell Series

Pressure Battery Test Cell (Two-Electrode System)

Model: CE-P2E

The CE-P2E is a pressurized battery evaluation cell developed from the CE-2E 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: Enables controlled stack loading
- Glovebox-Compatible Assembly: Supports air-sensitive materials research

Specifications

- Maximum operating pressure: 0.6 MPa (customizable)
- Cell body material: Titanium
- Insulation material: PEEK
- Current collector: Gold-plated copper
- Sample diameter: 20 mm

Pressure Battery Evaluation Test Cell Series

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

Model: RM-P2E

The RM-P2E is a pressurized operando Raman battery test cell developed from the RM-2E 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
- Cell body material: Titanium
- Insulation material: PEEK
- Optical window material: Sapphire
- Current collector tab: Gold-plated copper
- Cell body dimensions: Ø70 mm × H30 mm
- Compatible sample diameter: 20 mm
- Electrode-to-window distance: < 2 mm

Pressure Battery Evaluation Test Cell Series

Pressure Battery Test Cell (Three-Electrode System)

Model: CE-P3E

The CE-P3E is a pressurized battery test cell developed from the CE-L3E 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)
- Reference electrode: Lithium wire
- Cell body material: Titanium
- Insulation material: PEEK
- Current collector: Gold-plated copper
- Compatible sample diameter: 20 mm

Pressure Battery Evaluation Test Cell Series

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

Model: RM-P3E

The RM-P3E is a pressurized in situ Raman battery test cell developed from the RM-3E 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
- Cell body material: Titanium
- Insulation material: PEEK
- Optical window material: Sapphire
- Current collector: Gold-plated copper
- Cell body dimensions: Ø70 mm × H40 mm
- Compatible sample diameter: 20 mm
- Electrode-to-window distance: < 2 mm

Pressure Battery Evaluation Test Cell Series

Push-Type Battery Test Cell

Model: CP-2E

The CP-2E is a battery test cell designed for controlled electrode compression studies. Based on the CE-2E 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
- Compatible sample diameter: 20 mm
- Cell body material: Titanium
- Insulation material: PEEK
- Current collector: Gold-plated copper

Metal-Air Battery Test Cell Series

Metal-Air Battery Test Cell

Model: MA-1

The MA-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

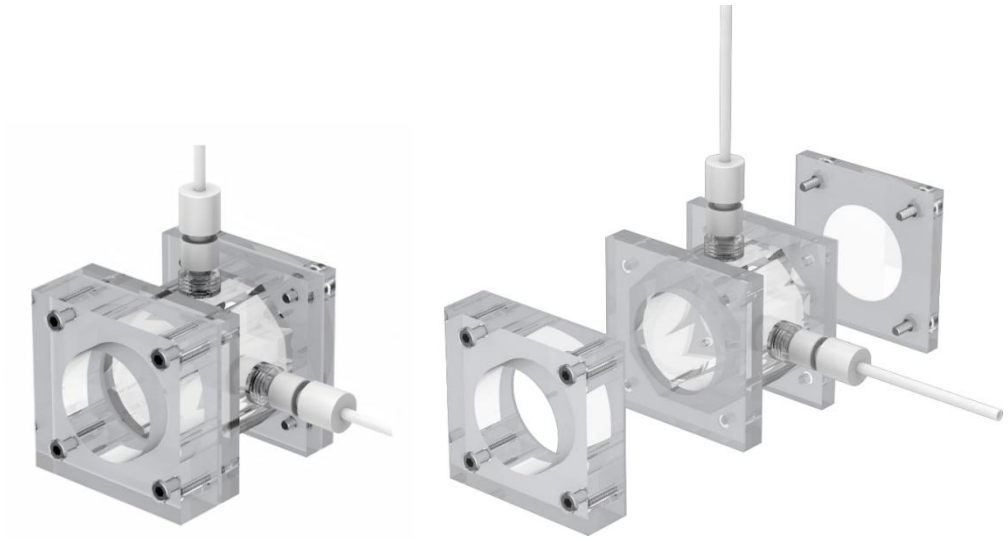
Specifications

- Cell body material: PMMA
- Air access: Open-air configuration
- Observation method: Direct visual monitoring

Metal-Air Battery Test Cell Series

Metal-Air Battery Test Cell

Model: MA-2



The MA-2 is a metal–air battery test cell designed for electrochemical studies under controlled gas conditions. Compared with the MA-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

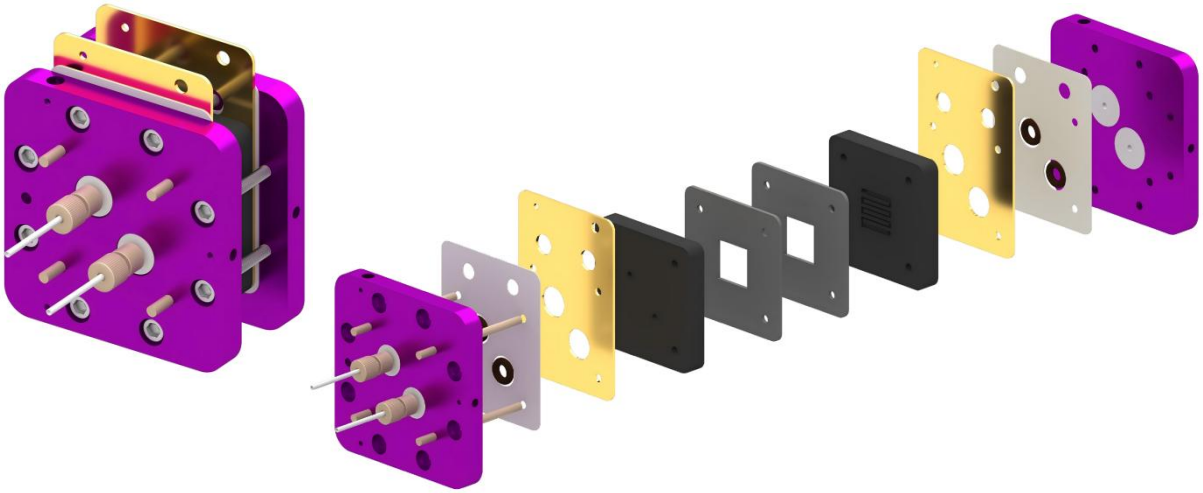
Specifications

- Cell body material: PMMA
- Air chamber: Enclosed configuration
- Observation method: Direct Visual monitoring

All-Vanadium Redox Flow Battery Test Cell Series

All-Vanadium Redox Flow Battery Test Cell

Model: VRFB-1



The VRFB-1 is an all-vanadium redox flow battery test cell designed for vanadium battery energy storage research. The cell adopts a modular structure consisting of end plates, current collector plates, bipolar plates, and electrode frames. The bipolar plates are made of high-purity graphite with PEEK fixing rods to provide stable electrical connection and structural support.

Applications

- All-Vanadium Redox Flow Battery Testing
- Vanadium Ion Electrochemical Evaluation
- Battery Cycling Performance Studies
- Energy Storage Battery Research

Features

- Large Flow Channel Area: Provides a 50 cm^2 flow channel area and supports customization according to user requirements
- High-Purity Graphite Bipolar Plate: Ensures electrical conductivity during vanadium redox flow battery testing
- Modular Cell Configuration: Integrates end plates, current collectors, bipolar plates, and electrode frames into a complete test cell structure
- PEEK Fixing Rod Design: Provides stable fixation of the cell components
- Continuous Vanadium Ion Operation: Supports stable vanadium ion release during discharge experiments

Specifications

- Flow channel area: 50 cm^2 (customizable)
- Bipolar plate material: Graphite
- Fixing rod material: PEEK

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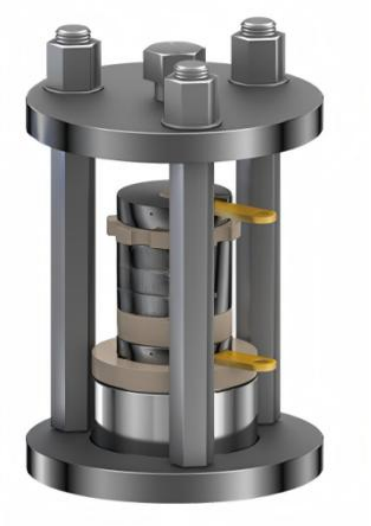
Solid-State Battery Research Accessories Series

Solid-State Battery Fixture

Model: SS-CP



The SS-CP 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: Titanium
- Electrical Tabs: Removable Gold-Plated Copper Tabs
- Pressure Control: Adjustable Stack Compression
- Pressure Monitoring: Integrated Pressure Sensor