

Straight Five Port Hermetic Electrochemical Cell With Internal Plug In Design And Ptfе Lid

Item Number: PL-DJ16



Introduction

Premium high performance straight five port hermetic electrochemical cell with advanced PTFE lids and borosilicate glass. Perfect for precise three electrode laboratory analysis, gas purging, and controlled reactions with absolute sealing integrity.

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Application	Description	Key Benefit
Electrocatalytic Water Splitting	Testing of novel catalysts for hydrogen and oxygen evolution reactions under continuous gas purging.	Constant gas flow control and hermetic containment prevent atmospheric contamination and ensure precise collection of reaction gas products.
Corrosion and Passivation Analysis	Electrochemical impedance spectroscopy (EIS) and potentiodynamic polarization of metal alloys in aggressive acidic or saline media.	High borosilicate glass prevents chemical degradation from aggressive electrolytes, ensuring reproducible corrosion rate measurements.
Battery & Supercapacitor Testing	Evaluation of novel non-aqueous electrolytes and active materials in an oxygen-free, moisture-free sealed cell environment.	High-integrity hermetic sealing allows for reliable testing of air-sensitive lithium-ion or sodium-ion battery chemistries outside a glovebox.
Controlled-Temperature Kinetics	Kinetic studies of redox couples across varying temperatures using the double-layer jacketed configuration.	Constant-temperature water jacket maintains stable thermal equilibrium within the electrolyte, reducing experimental error from temperature fluctuations.
Organic Electrosynthesis	Running high-efficiency organic redox reactions under vacuum or elevated pressure up to 0.6 MPa with gas-phase reactants.	Single-layer round-bottom vessel safely accommodates positive pressures and high-vacuum conditions, broadening the synthetic envelope.
High-Purity Trace Analysis	Heavy metal detection and electrochemical trace analysis using highly sensitive stripping voltammetry.	Ultra-inert PTFE lid and borosilicate glass construction prevent trace metal contamination, ensuring outstanding signal-to-noise ratios.

Parameter	Single-Layer Model (PL-DJ16-S)	Double-Layer Jacketed Model (PL-DJ16-D)
Base Product Code	PL-DJ16-S	PL-DJ16-D
Cell Body Material	High Borosilicate Glass	High Borosilicate Glass with Integrated Glass Jacket
Lid Material	Virgin PTFE (Polytetrafluoroethylene)	Virgin PTFE (Polytetrafluoroethylene)
Port Design	Straight Five-Port Layout	Straight Five-Port Layout
Sealing System	Absolute Hermetic Internal Plug-In Port	Absolute Hermetic Internal Plug-In Port
Electrode Insertion	Dedicated Jack-style ports on Lid	Dedicated Jack-style ports on Lid
Constant Water Bath	Not Supported	Supported (via jacket inlet/outlet)
Vacuum Range	Down to -100 kPa	Down to -100 kPa
Max. Positive Pressure	Up to 0.6 MPa (Requires Round-Bottom Shape)	Strictly Prohibited (Thin Inner Glass Wall)
Electrode Matching	Must use specifically paired electrode shafts	Must use specifically paired electrode shafts
Salt Bridge Compatibility	No glass frit salt bridge / Luggin capillary	No glass frit salt bridge / Luggin capillary
Electrode Recommendation	Silver/Silver Chloride (Ag/AgCl) only	Silver/Silver Chloride (Ag/AgCl) only

Nominal Volume (ml)	Compatible Lid Size (Inner Thread Diameter)	Customization Options
10 ml	50 mm	Tailored volume and geometry available on request
25 ml	50 mm / 60 mm	Tailored volume and geometry available on request
50 ml	60 mm	Tailored volume and geometry available on request
100 ml	60 mm / 70 mm	Tailored volume and geometry available on request
150 ml	70 mm	Tailored volume and geometry available on request
250 ml	70 mm	Tailored volume and geometry available on request
500 ml	70 mm	Tailored volume and geometry available on request