All Ptfe Exchangeable Membrane Electrochemical Cell Dual Chamber Three Electrode Photoelectrochemical Cell For Laboratory Trace Analysis

Item Number: PL-DJ09

Introduction

Optimize your laboratory testing with this premium all PTFE exchangeable membrane electrochemical cell featuring a dual chamber design, precise electrode alignment, and customizable volumes from 30ml to 500ml for demanding research, impedance spectroscopy, and corrosion analysis.

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Application	Description	Key Benefit
CO2 Electrocatalytic Reduction	Electrochemical conversion of carbon dioxide into valuable chemical feedstocks in highly alkaline media.	Exceptional resistance to 2M KOH and precise sub-surface straight-tube gas purging for high Faradaic efficiency.
Nitrogen (N2) Reduction Reaction	Synthesis of ammonia from nitrogen gas under controlled atmospheric and potential conditions.	Hermetically sealed gas ports and L-shaped sub-surface purging optimize gas-liquid-solid triple-phase boundary reactions.
Through-Plane Ion Conductivity	Characterization of ion exchange membranes using electrochemical impedance spectroscopy (EIS).	Rigid dual-chamber clamping ensures a uniform, fully-wetted membrane interface for stable ohmic resistance measurements.
Photoelectrochemical Water Splitting	Solar-to-hydrogen conversion processes requiring simultaneous light illumination and electrical bias.	360-degree rotating core allows exact alignment of the working electrode with the quick-change quartz light window.
Trace Metal Electroanalysis	Detection of trace metal ions in highly acidic or corrosive liquid samples.	High-purity PTFE construction prevents sample contamination from leaching, ensuring accurate parts-per-billion detection.
Flow Battery Component Testing	Laboratory-scale testing of membrane degradation and electrode kinetics under cycling conditions.	Easy-to-swap membrane configuration allows rapid screening of multiple candidate membranes under identical cell geometry.
Alkaline Corrosion Testing	Evaluation of material degradation and passivation behavior in highly caustic environments.	Durable cell body withstands long-term exposure to aggressive alkaline solutions at elevated temperatures up to 80°C.

Parameter	Specifications (Model PL-DJ09)	Specifications (Model PL-DJ09-V)
Cell Body Material	High-Purity Polytetrafluoroethylene (PTFE)	High-Purity Polytetrafluoroethylene (PTFE)
Chamber Configuration	Dual-chamber (Anode & Cathode compartments)	Dual-chamber (Anode & Cathode compartments)
Membrane Separation	Exchangeable membrane clamped via pass-through bolts	Exchangeable membrane clamped via pass-through bolts
Standard Volume Options	30 mL, 50 mL, 100 mL, 250 mL, 500 mL (Customizable)	30 mL, 50 mL, 100 mL, 250 mL, 500 mL (Customizable)
Electrode Configuration	3-Electrode System (Working, Reference, Counter)	3-Electrode System (Working, Reference, Counter)
Required Electrode Type	Extended-length (□□□)	Extended-length (□□□)
Reference Electrode Placement	Same chamber as Working Electrode (Reduced IR drop)	Same chamber as Working Electrode (Reduced IR drop)
Sealing System Level	Semi-sealed / Gas-tight (O-ring compression)	Absolute sealed (Integrated lid control valves)
Optical Window Material	Quick-disassembly high-purity quartz plate	Quick-disassembly high-purity quartz plate
Alignment Mechanism	360-degree rotating inner PTFE core	360-degree rotating inner PTFE core

Parameter	Specifications (Model PL-DJ09)	Specifications (Model PL-DJ09-V)
Sub-Surface Gas Purging	Straight-type (for CO2 reduction) / L-shaped (for N2 reduction)	Straight-type (for CO2 reduction) / L-shaped (for N2 reduction)
Max. Operating Temperature	Up to 80°C	Up to 80°C
Optional Custom Add-ons	Sampling ports, customized volumes, custom port sizing	Sampling ports, customized volumes, custom port sizing