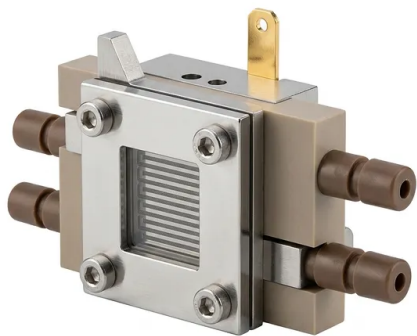


Visualized Gas Solid Electrochemical Cell With Quartz Window And Solid Electrolyte For Liquid Product Synthesis

Item Number: PL-DJ36



Introduction

This advanced B2B visualized gas-solid electrochemical cell features a high-transmittance quartz window and solid electrolyte interface, enabling direct in-situ optical observation and high-purity liquid product synthesis without ionic contamination for highly demanding laboratory research and catalyst evaluation projects.

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Application	Description	Key Benefit
Electrochemical CO2 Reduction	Direct conversion of carbon dioxide gas into valuable liquid chemical feedstocks like formic acid or alcohols at the gas-solid interface.	Eliminates the need to separate liquid products from salt-rich liquid electrolytes, yielding pure aqueous solutions.
Photoelectrochemical Catalysis	Utilizing external light sources directed through the high-transmittance quartz window to excite photo-active catalysts on the cathode.	Combines light excitation and electrochemical bias, improving reaction kinetics and carrier separation efficiency.
In-Situ Spectroscopy Studies	Interfacing the quartz window with Raman, FTIR, or UV-Vis spectrometers to monitor intermediate species during active reaction phases.	Provides real-time, non-invasive molecular insights into reaction pathways and catalyst surface reconstructions.
Nitrogen Reduction Reaction	Synthesis of green ammonia from nitrogen gas and water vapor using solid polymer electrolytes at ambient temperatures and pressures.	Circumvents the low solubility limit of nitrogen gas in liquid phase, vastly improving the reactant mass transfer rate.
Solid Membrane Performance Testing	Characterizing the ionic conductivity, crossover rates, and physical durability of newly developed ion-exchange membranes.	Delivers highly reproducible mechanical and chemical degradation profiles under realistic industrial operational conditions.
Electrocatalytic Gas Evolution	Visualizing bubble nucleation, growth, and detachment patterns at the working electrode under varied current densities.	Allows researchers to correlate physical gas-release dynamics directly with electrochemical performance curves.

Specification Parameter	Technical Details & Materials (Model: PL-DJ36)
Model Identifier	PL-DJ36 (Upgraded Visualization Series)
Bipolar Plate Material	High-Purity Titanium
Flow Channel Dimensions	20 mm × 20 mm
Middle Chamber Material	Polyetheretherketone (PEEK)
Middle Chamber Dimensions	20 mm × 20 mm
Middle Chamber Thickness	3 mm
Visualization Window Material	High-Transmittance Quartz Window
Chamber Configuration	Cathode chamber with optical visualization; solid electrolyte sandwich layout
Sealing Gaskets	High-performance chemical-resistant fluoropolymer gaskets
Working Temperature Range	Ambient to 80°C
Maximum Operating Pressure	0.3 MPa