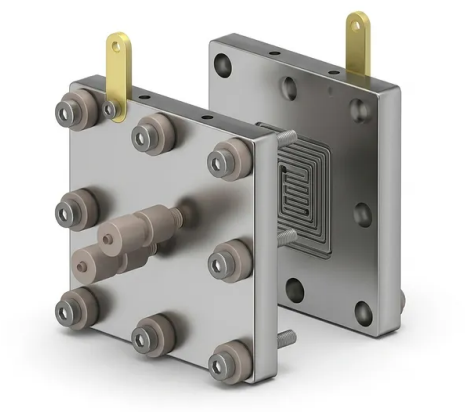
Bipolar Plate Membrane Electrode Assembly Mea Electrolysis Cell For Electrocatalysis And Carbon Dioxide Reduction Research

Item Number: PL-DJ28



Introduction

Optimize your electrochemical research with this premium bipolar plate membrane electrode assembly electrolyzer, engineered for fuel cells, carbon dioxide reduction, and synthetic electrochemistry, featuring highly customizable flow fields and robust high-purity titanium or nickel end plates.

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Application	Description	Key Benefit
Carbon Dioxide Reduction (CO_2RR)	Evaluation of gas-diffusion electrodes and catalysts for converting carbon dioxide into valuable chemical feedstocks like ethylene, carbon monoxide, or formic acid.	Precise gas flow distribution and customizable flow fields optimize gas-solid-liquid triple-phase boundary reactions.
PEM & AEM Fuel Cells	testing and optimization of proton and anion exchange membrane fuel cells, analyzing polarization curves, mass transport limitations, and catalytic activity.	Uniform compression reduces ohmic resistance, yielding highly accurate and reproducible power density data.
Water Electrolysis (HER/OER)	Studying acidic or alkaline water splitting for green hydrogen production, utilizing advanced catalysts for the hydrogen and oxygen evolution reactions.	High-purity titanium and nickel plates prevent degradation and catalyst poisoning under harsh anodization potentials.
Synthetic Organic Electrochemistry	Executing preparative organic electrolysis and electro-organic synthesis under constant potential or constant current density.	Excellent chemical compatibility with organic solvents and reagents prevents impurities from leaching into reaction mixtures.
Electrochemical Wastewater Treatment	Researching anodic oxidation, electro-coagulation, and advanced oxidation processes for degrading persistent organic pollutants in industrial wastewater.	Robust material selections resist highly corrosive wastewater matrixes containing active chlorine or strong oxidants.
Catalyst Performance Screening	High-throughput testing of newly synthesized nanomaterials, catalysts, and custom membrane formulations under realistic operating conditions.	Quick-change modular design minimizes downtime between tests, accelerating materials discovery and validation.

Technical Parameter	Specification Details for PL-DJ28
Model Designation	PL-DJ28
Active Electrode Area	5 cm^2 / 10 cm^2 / 25 cm^2 (Custom active areas available upon request)
Side Plate (End Plate) Options	High-Purity Titanium (Grade 1/2) or High-Purity Nickel (Ni200)
Flow Field Designs	Serpentine, Parallel, Interdigitated (Leaf Vein), Comb-type, Dot-Matrix (Custom CNC-machined)
Maximum Operating Temperature	Standard operation up to 150°C (depending on membrane and seal selection)
Thermal Management Ports	Standard integrated heating well & standard thermocouple sensor port
Fluid Connection Interfaces	Standard 1/8" or 1/4" NPT / Swagelok / Barb compression fittings
Wetted and Sealing Materials	High-purity PTFE, PFA, Viton / Silicone seals, and chosen metallics
Maximum Fluidic Operating Pressure	Up to 0.6 MPa (6 bar) depending on structural configurations
Electrical Terminals	Gold-plated current collectors with 4mm banana jack connection ports