High Transparency All Quartz Square Photoelectrochemical Cell With Ptfe Lid

Item Number: PL-DJ11

Introduction

Optimize your laboratory research with this premium all-quartz square photoelectrochemical cell, engineered with ninety-five percent light transmittance, integrated monolithic polishing, an adjustable PTFE cover, and exceptional resistance to high-temperature thermal sterilization processes.

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Application	Description	Key Benefit
Photoelectrochemical Water Splitting	Testing catalyst materials under simulated sunlight to split water into hydrogen and oxygen.	Maximum light transmission (>95%) ensures accurate solar-to-hydrogen efficiency calculations.
Solar Cell Research	Analyzing dye-sensitized solar cells (DSSCs) and perovskite thin films under specific wavelengths.	Integrated polishing prevents optical refraction, maintaining uniform light intensity across the active area.
Semiconductor Characterization	Evaluating the bandgap, flat-band potential, and carrier concentration of semiconductor electrodes.	High thermal resistance up to 900°C allows pre- or post-treatment testing without cell degradation.
Photocatalytic Degradation	Monitoring the degradation of organic pollutants under UV-Visible irradiation.	Chemically inert quartz prevents secondary reactions, guaranteeing pure analyte measurements.
Bio-Electrochemistry	Studying microbial fuel cells or electro-active biofilms that require rigorous autoclave sterilization.	The quartz body withstands thermal sterilization at high temperatures when decoupled from the PTFE lid.
Spectroelectrochemistry	In-situ monitoring of absorption spectrum changes during electrochemical redox cycles.	Monolithic quartz construction eliminates adhesive background noise and chemical leaching.

Parameter	PL-DJ11 (Standard Configuration)	PL-DJ11-S (Hermetic Sealed Variant)
Base Design Concept	Enhanced Open System (Improved from baseline)	Fully Hermetic Sealed System
Cell Body Material	High-Transparency Optical Quartz	High-Transparency Optical Quartz
Light Transmittance	≥ 95%	≥ 95%
Fabrication Method	Integrated Monolithic Polishing & Grinding	Integrated Monolithic Polishing & Grinding
Adhesive/Glue Usage	None (Zero Adhesive Contamination)	None (Zero Adhesive Contamination)
Max. Quartz Temperature	900°C	900°C
Lid Material	Polytetrafluoroethylene (PTFE)	Polytetrafluoroethylene (PTFE)
Lid Customization	Customizable round/square holes on demand	Customizable round/square holes on demand
Salt Bridge Compatibility	Frit Salt Bridge / Luggin Capillary Salt Bridge	Frit Salt Bridge / Luggin Capillary Salt Bridge
Primary Application	Photo-electrochemical research, gas venting	Volatile electrolyte testing, oxygen-free purging