

# Side Illumination All Quartz Electrochemical Cell Hermetic Photoelectrochemical Reaction Cell With Ptfе Lid

Item Number: PL-DJ15



## Introduction

This premium side-illuminated all-quartz electrochemical cell delivers exceptional 95% light transmission and an absolute hermetic seal via a PTFE flange lid, ensuring high-accuracy data in photocatalysis, electrochemistry, and advanced solar energy research applications.

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Application	Description	Key Benefit
<b>Photoelectrochemical Water Splitting</b>	Evaluates hydrogen and oxygen evolution reactions (HER/OER) on catalytic surfaces under direct simulated solar light.	Provides reliable, highly accurate photocurrent-to-hydrogen conversion metrics without ambient gas interference.
<b>Carbon Dioxide Photocatalytic Reduction</b>	Houses catalysts during the reduction of carbon dioxide into liquid or gas-phase hydrocarbons under light illumination.	Ensures complete containment of gaseous reaction products for high-precision gas chromatography analysis.
<b>Semiconductor Photoanode Profiling</b>	Characterizes flat-band potentials, carrier densities, and charge transfer kinetics in metal-oxide thin films.	Eliminates optical distortion, ensuring uniform light intensity reaches the semiconductor-liquid junction.
<b>Organic Optoelectronic Redox Catalysis</b>	Facilitates light-driven chemical synthesis and green organic redox reactions in highly polar organic solvents.	Prevents solvent evaporation and resists aggressive solvents due to the robust PTFE lid and fusion-welded quartz.
<b>Dye-Sensitized Solar Cell Testing</b>	Evaluates the regeneration kinetics and electron injection efficiency of dye molecules adsorbed on TiO <sub>2</sub> .	Minimizes optical scattering at the cell boundary, allowing exact calculation of incident photon-to-current efficiency (IPCE).
<b>Electrochemical Impedance under Light Cycling</b>	Performs high-frequency impedance spectroscopy under modulated light-on/light-off conditions to study interface kinetics.	Guarantees absolute electrode stability and consistent contact resistance via the internal plug-in interface.

Technical Parameter	Specification Details for Model PL-DJ15
<b>Product Model</b>	PL-DJ15
<b>Predecessor Comparison</b>	Upgraded and improved on the design basis of the C018-1 model
<b>Cell Construction Method</b>	100% All-Quartz Fusion Welding (Completely Adhesive-Free / No Glues Used)
<b>Optical Transmittance</b>	≥ 95% (High-Purity Quartz Glass Construction)
<b>Lid Material</b>	Premium CNC-Machined Polytetrafluoroethylene (PTFE)
<b>Sealing System</b>	Integrated Quartz Flange with Lock-Ring Tensioner and Gasket Compression
<b>Sealing Rating</b>	Absolute Hermetic Seal System
<b>Electrode Sealing Interface</b>	Internal plug-in/unplug system utilizing integrated earphone-style jacks in the lid
<b>Compatible Reference Electrode</b>	Standard 3.8 mm Diameter Silver/Silver Chloride (Ag/AgCl) Electrode
<b>Compatible Counter Electrode</b>	0.5 mm Diameter Platinum (Pt) Wire Electrode or Platinum (Pt) Sheet Electrode
<b>Compatible Working Electrode</b>	3.0 mm Diameter Glassy Carbon (GC), Gold (Au) Disc, or Platinum (Pt) Disc
<b>Gas Management</b>	Equipped with dual gas inlet and outlet purging ports
<b>Electrode Availability</b>	Electrodes are sold separately and must be configured to match the PL-DJ15 cell interface