

Quick Change Zinc Plate Large Capacity Zinc Air Test Cell

Item Number: BE02



Introduction

Quick change zinc plate zinc air test cell with transparent PMMA housing rapid anode replacement 30ml electrolyte capacity adjustable reaction areas and precise electrode spacing for reliable laboratory battery research and advanced materials evaluation under controlled experimental conditions

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Application	Description	Key Benefit
Zinc Air Battery Research	Evaluate zinc plate anodes, air cathode assemblies, and electrolyte behavior in laboratory-scale zinc air battery experiments.	Rapid electrode replacement accelerates sample comparison and screening.
Zinc Electrode Material Evaluation	Compare zinc plate compositions, surface treatments, thicknesses, and preparation methods within a defined cell geometry.	Consistent 0.5 cm electrode spacing improves test-to-test comparability.
Electrolyte Formulation Studies	Investigate the influence of different manually added liquid formulations on zinc air cell reaction behavior.	The 30 ml capacity supports longer reactions with fewer interruptions.
Battery R&D Laboratories	Support early-stage cell design, electrode validation, and performance experiments before larger-format development.	Compact dimensions conserve bench space while providing several reaction-area choices.
Academic Electrochemistry Research	Provide a visible test platform for teaching, research, and repeatable demonstrations involving zinc air electrochemistry.	Transparent PMMA construction makes internal conditions easier to observe.
Advanced Materials Development	Examine how new electrode or electrolyte materials perform in a controlled zinc air test configuration.	Quick anode changes improve experimental throughput during material screening.
Small-Scale Cell Assembly Studies	Assemble and assess laboratory battery structures using zinc plates within specified dimensional limits.	The fixed anode fixture simplifies positioning and replacement.

Parameter	Specification	Notes
Product item number	BE02	Site-facing identifier for this product
Site-facing variant identifiers	BE02 1 cm ² , BE02 2 cm ² , BE02 3 cm ² , BE02 4 cm ² , BE02 5 cm ²	Identifiers are differentiated by reaction area
Mold material	Organic glass PMMA	Transparent and durable housing material
Overall dimensions	6.5 × 6 × 7.2 cm	Length × width × height
Positive-to-negative electrode distance	0.5 cm	Fixed electrode spacing
Reaction area variants	1 cm ² , 2 cm ² , 3 cm ² , 4 cm ² , 5 cm ²	Selectable configuration range
Liquid capacity	30 ml	Capacity after assembly for sustained reaction testing
Compatible anode width	≤34 mm	Zinc plate requirement
Compatible anode thickness	≤2.5 mm	Zinc plate requirement
Compatible anode length	55 mm to 80 mm	Zinc plate requirement
Anode replacement method	Plug-in fixed anode structure	Replacement can be completed within approximately 2 seconds
Liquid addition method	Manual liquid addition only	Not suitable for circulation pumps

Parameter	Specification	Notes
PMMA cleaning restriction	Do not place the PMMA plate directly in alcohol solution or pour alcohol onto its surface	Alcohol exposure can cause surface cracking or damage
PMMA surface cleaning guidance	When oil is present, use a tissue lightly moistened with a small amount of alcohol to clean the surface	Apply alcohol sparingly and indirectly
Ultrasonic cleaning	Prohibited	Do not use ultrasonic cleaning on the PMMA plate