

Standard Fuel Cell Test Cell

www.fuelcell.com

ElectroChem's Fuel Cell for research labs has been designed based on the company's experience of over 20 years in fuel cell development. The cells are virtually *No Leak* cells – which is achieved via

- Sophisticated Isotropic Graphite Plate
- High Precision Gasket Material
- Exhaustive Quality Control Process

2 Implement Pinch Adjustment Mechanism

Capable of Applying Torque Equally to the Bolts
Contain Flat Gaskets with High Precision Thickness

3 Fuel Cell Grade Isotropic Graphite Plate

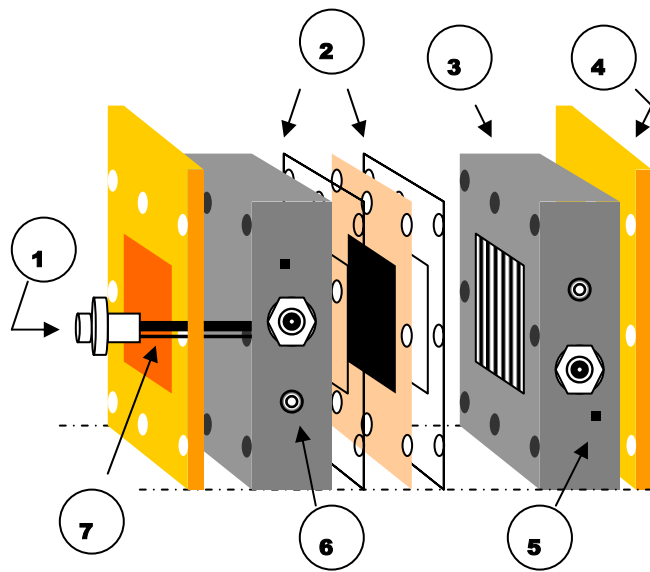
Gas Non Permeable / Excellent Chemical Resistance
High Electrical/Thermal Conductivity and Mechanical Strength
Adaptable to Varied Flow Field Plate Design

1 Through-Bolt Assembly Design

Quickly Assemble and Disassemble
Low Tightening Force Required
Create Uniformed Force Distribution

4 Current Collector Plate

Gold Plated Copper Plate



7 Silicone Rubber Heater

Provide Highest Watt Density
Maintain Uniform Cell Temperature
(using the highly thermally conductive graphite plate)

5 Thermocouple Insert Hole

Reach Thermocouple at Center of Fuel Cell Test Hardware
Precisely Control and Monitor the Temperature Closest to the MEA

6 Voltage Measurement Banana Plug

Measure Exact Cell Voltage
(using the highly electrically conductive graphite plate)
Eliminate Voltage Drop due to Contact Resistance



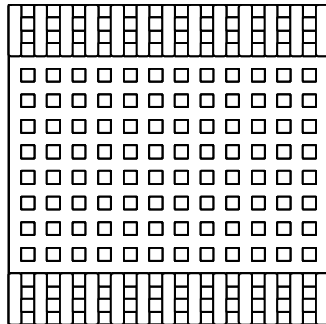


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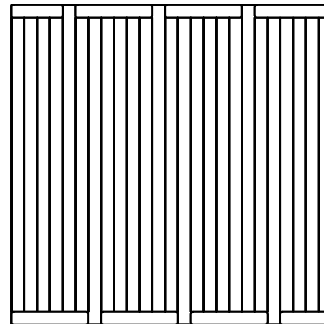
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Selection of FUEL CELL PLATE with Versatile Flow Field Design

Part Number	Active Area, cm ²	Flow Field Design
FC05-MP	5	Serpentine Flow Pattern
FC05-MPR	5	Serpentine Flow Pattern - with Reference Electrode
FC25-MPI	25	Column Flow Pattern
FC25-MP2	25	Serpentine Flow Pattern
FC25-MPR	25	Serpentine Flow Pattern - with Reference Electrode



Column Flow



Serpentine Flow

Selection of HIGH PRECISION GASKET with Large Variety in Thickness

		THICKNESS					
	<i>mils</i>	<i>5</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>
TEFLON	μm	127	203	203	254	279	305
SILICON	μm	127	203	254	305	381	

PROPERTY OF ISOTROPIC GRAPHITE

Property	Units
Flexural Strength	10,000 psi
Thermal Conductivity	120 watts/mK
Specific Resistivity	10.8 $\mu\text{ohm-m}$
Specific Gravity	1.99
Heat Resistance	180° C



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