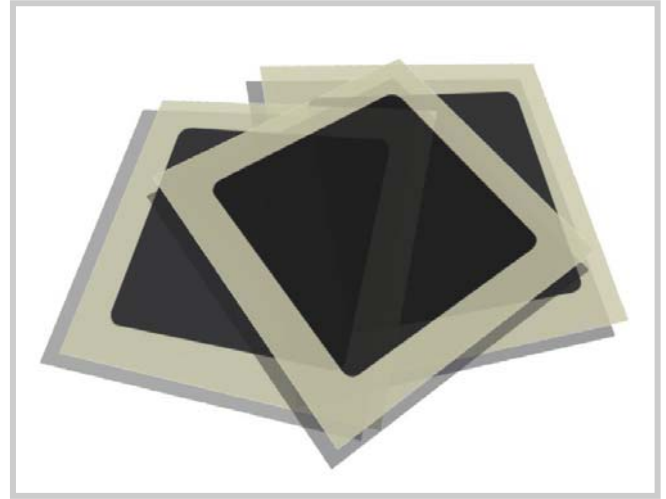


Membrane and Electrode Assemblies

Membrane and Electrode Assemblies (MEAs) for all Proton Exchange Membrane Fuel Cells, Regenerative Fuel Cells, and Electrolyzers

SPECIFICATIONS

- MEAs for use in all types of fuel cells including:
 - Hydrogen-Air
 - Reformate-Air
 - Hydrogen-Oxygen
 - Reversible Hydrogen-Oxygen
 - Direct Methanol
- Standard MEAs sizes
 - 5 cm² active area
 - 25 cm² active area
 - 50 cm² active area
 - 100 cm² active area
- Custom MEAs produced to specification in any size up to 20 cm x 20 cm (active area) and in virtually any shape
- Supplied with, or without, gas diffusion layers
- MEAs available in two configurations
- Custom membranes and catalysts available upon request
- Normal range of loadings: 0.3 mg/cm² to 8.0 mg/cm²



- High-quality, reliable MEAs
- Custom MEAs are manufactured to satisfy all application requirements and to ensure product performance
- Seasoned scientists and fuel cell experts available to provide guidance, as needed
- Strict confidentiality is maintained for each customer



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Membrane and Electrode Assemblies

MEMBRANES

- Standard membranes available:
Nafion™ 212
Nafion™ 115
Nafion™ 117
 Other membranes available upon request

CATALYSTS

- Standard catalysts available:
Pt on Carbon, Pt Black, Pd Black, PtRu, IrRu
 Other catalysts are available upon request, or send us your custom catalyst and we will apply it to a membrane for your use

STANDARD MEAS

Electrochemical Configuration	Active Area (cm ²)	GDLs	Membrane Area (cm ²)	Catalyst Loading (cm ²)		Nafion Type
				Anode	Cathode	
Electrolyzer	5		56	3 mg/cm ² IrRuox	3 mg/cm ² PtB	115
	25		110			
	50		196			
	100		309			
Reversible	5		56	1.5 mg/cm ² each PtB and IrRuox	3 mg/cm ² PtB	115
	25		110			
	50		196			
	100		309			
Direct Methanol (DMFC)	5	Elat and Carbon Cloth, Free Floating	56	4 mg/cm ² PtB	4 mg/cm ² PtB	117
	25		110			
	50		196			
	100		309			
Hydrogen Air	5	Elat, Pressed, or Free Floating	56	.5 mg/cm ² 60 wt% Pt on Carbon	.5 mg/cm ² 60 wt% Pt on Carbon	212
	25		110			
	50		196			
	100		309			
Hydrogen Oxygen	5	Elat, Pressed, or Free Floating	56	4 mg/cm ² PtB	4 mg/cm ² PtB	115
	25		110			
	50		196			
	100		309			

ADDITIONAL FEATURES

- Normal range of loadings is from 0.3 mg/cm² to 8.0 mg/cm²
- Supplied with, or without, gas diffusion layers
 MEAs without gas diffusion layers feature two thin film catalyst layers applied directly to a membrane (3-layer)
 MEAs with gas diffusion layers can have the catalyst as either a thin film on the membrane or on the gas diffusion structure (5-layer structure available)
- MEAs available in two configurations:
 a symmetrical (with identical catalysts on both sides) or
 asymmetrical (with different catalysts on each side)
- MEAs can be furnished with a thin film catalyst layer on one side of the membrane and a catalyzed gas diffusion structure on the other side