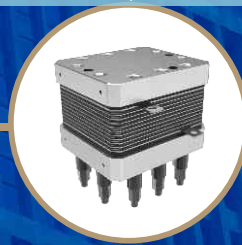




HOVOGEN

HOVOGEN HONG KONG CO., LTD.



淳华氢能
C-HYSA

**PREMIUM PROVIDER OF PEM WATER ELECTROLYSIS
HYDROGEN PRODUCTION EQUIPMENT**

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Core Products

- PEM Hydrogen Production System
- PEM Integrated H₂ Compressor
- Integrated Hydrogen Production and Refueling Unit
- Fuel Cell Power Generation System
- Hydrogen Energy Training Equipment
- PEM Electrolyzer Testing Platform
- PEM Electrolyzer Test Fixture
- Megawatt-scale PEM Electrolyzer
- Industrial-grade PEM Electrolyzer
- Commercial & Residential PEM Electrolyzer

COMPANY PROFILE



**Founding Inventor
of PEM Water
Electrolysis Hydrogen
Production Technology**

**Vice Chairmanship
Organization of China
New Energy Overseas
Development Alliance**

**Vice President
Organization of All
Japan Chinese Science
Promotion Association**

Premium Supplier of PEM Water Electrolysis Hydrogen Production Equipment

Hovogen Hydrogen Energy is a national high-tech enterprise dedicated to the development of the hydrogen energy industry. It focuses on the R&D, innovation, production, and sales of PEM water electrolysis hydrogen production equipment. The company has established R&D, production, and operational bases in Songshan Lake, Guangdong Province, and Zhuzhou, Hunan Province, China.

To date, the company has obtained management system certifications including ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018. It possesses a complete independent intellectual property rights system, has participated in the formulation of two national standards, and has been granted multiple national invention patents in the field of PEM water electrolysis hydrogen production. Additionally, it boasts a top-tier hydrogen energy technology R&D team in China, with core members consisting of experts in the hydrogen energy sector both domestically and internationally, bringing years of extensive research experience.

The company's core technology, PEM water electrolysis hydrogen production, is widely applied in renewable energy hydrogen production, energy storage, transportation, construction, industry, military, healthcare, and residential sectors. It achieves fully domestic independent production across the entire industry chain, addressing gaps in the domestic market.



Advance Hydrogen
Energy, Build a
Hydrogen Society



To Become a Globally
Leading PEM
Electrolyzer Supplier



Dedication, Wisdom,
Vision, Perseverance,
Openness, Sharing



The Organizer of Industry,
The Innovator of Technology,
The Standard-Setter,
The Pioneer of Markets



PRODUCTION BASE



Technical R&D Advantages

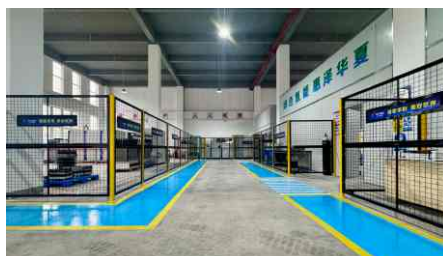
Complete in-house R&D system with extensive IP and mastery of core PEM electrolysis technology.

Supply Chain Advantages

Integrated system (R&D to service) that shortens development cycles.

Service Advantages

High-standard, efficient, and cost-effective customer-centric solutions with professional customization.



After more than a decade of product development, testing, technological preparation, and market integration, with an investment of over 80 million yuan, the team has established a complete independent intellectual property rights system. It has obtained multiple national invention patents in the field of PEM water electrolysis hydrogen production, participated in the formulation of two national standards, and developed into a first-class hydrogen energy technology R&D team in China with extensive experience in technology research, product development, and industrial production.



CORPORATE HONOR



Possesses several core invention patents in the PEM water electrolysis hydrogen production technology.

Participated in the development of national standards.

The company participated in the formulation of two hydrogen industry standards: "Technical Specifications for Pressure-Type Water Electrolysis Hydrogen Production Systems" (GB/T 37562-2019) and "Safety Requirements for Pressure-Type Water Electrolysis Hydrogen Production Systems" (GB/T 37563-2019).



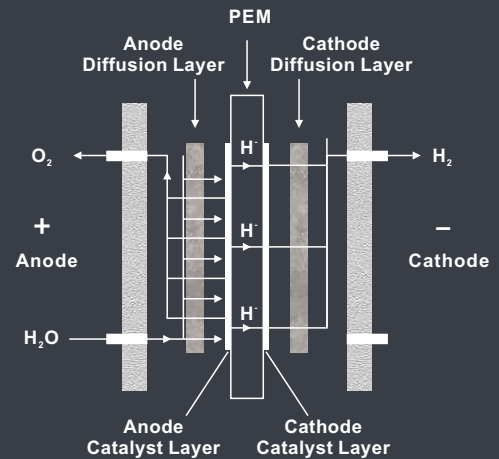
Invention Patent Certificate



CORE TECHNOLOGIES AND FEATURES

PEM water electrolysis uses renewable electricity to split water into ultra-pure (99.999%) hydrogen and oxygen with zero emissions. As the most promising electrolysis technology, it is efficient, compact, and responsive.

HovogenHydrogen Energy innovates in PEM electrolyzer production to become a leading global provider.



Independently masters the core technology of PEM water electrolysis for hydrogen production.

Series of high-efficiency membrane electrode preparation and production technologies

Highly corrosion-resistant current collector preparation and production technologies

High-performance bipolar plate design technology and machining processes

High-efficiency high-pressure sealing structure design technology and production processes

Series of PEM water electrolysis stack design and integrated testing technologies

PEM water electrolysis hydrogen production system design and system integration technology

Technical Features

High-Pressure Ultra-Pure Hydrogen Production:

Hydrogen output pressure reaches up to 7 MPa;
hydrogen purity exceeds 99.999%,
with a dew point below -74°C .

Stable Performance & Long Service Life:

Extended lifespan, low operating temperature, consistent performance, and low failure rate. Hydrogen pressure fluctuation during operation remains within 0.05 MPa.

High Current Density & Compact Design:

Highly integrated, safe, reliable, user-friendly, compact size, and easy installation.



Wide-Load Range & Fast Response:

Strong adaptability to load fluctuations; hydrogen production capacity is continuously adjustable from 20 to 120%, making it suitable for intermittent power sources such as wind and solar energy.

Precise Monitoring & High Safety:

Equipped with single-cell voltage monitoring capability to ensure consistency among cells and precise system control. Includes hydrogen leakage detection and comprehensive safety protection functions, such as emergency shutdown and interlock protection under emergency conditions.



CORE COMPETITIVENESS

Customization Services:

- ✓ **Functional:** Parametric tuning (temp./explosion-proof), interface expansion
- ✓ **Structural:** Resizing, modular design, lightweight optimization
- ✓ **Materials:** Medical silicone, aerospace aluminum
- ✓ **Appearance:** Logo engraving, color customization
- ✓ **Packaging:** Multi-language manuals, eco-friendly materials

Comprehensive PEM Water Electrolysis Hydrogen Production Solutions

01

Civilian-grade
PEM Water Electrolyzers



02

Industrial-grade
PEM Water Electrolyzers



03

PEM Water Electrolysis
Hydrogen Production Systems



04

PEM Integrated Hydrogen
Production and
Pressurization Equipment



05

Integrated Hydrogen Production
and Refueling Unit



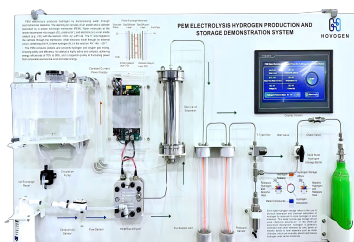
06

Fuel Cell Power
Generation System



07

Hydrogen Energy
Training Equipment



08

PEM Electrolyzer Testing
Platform



09

PEM Electrolyzer
Test Fixture



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen Production System | CH-200Nm³/h

Tailored solutions available for specialized applications.

Proton Exchange Membrane (PEM) water electrolysis hydrogen production technology is a novel solution aligned with national energy strategies. This fully integrated system electrolyzes pure water to rapidly generate hydrogen with a purity exceeding 99.999%.



✓ High-pressure hydrogen productiondelivering high-purity hydrogen	✓ Hydrogen leakage detection with comprehensive safety protection functions	✓ High product efficiency and strong load adaptability	✓ Single-cell voltage monitoring for precise control over hydrogen generation	✓ Cold/hot start capability with high efficiency and low energy consumption
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Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	300
Hydrogen Production Rate	Nm³/h	200
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.999
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380/10K
Dimensions	(L*W*H) mm	6100*2400*2600
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Off-grid photovoltaic hydrogen production;Wind-powered hydrogen generation; Cogeneration (CHP);Semiconductor industry;Integrated multi-energy independent microgrids.	



Hydrogen Production System Equipment

PEM Water Electrolysis
Hydrogen Production
System | CH-50Nm³/h

Tailored solutions available for specialized applications.



High-pressure hydrogen productiondelivering high-purity hydrogen



Hydrogen leakage detection with comprehensive safety protection functions



High product efficiency and strong load adaptability



Single-cell voltage monitoring for precise control over hydrogen generation



Cold/hot start capability with high efficiency and low energy consumption

Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	75
Hydrogen Production Rate	Nm³/h	50
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.999
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380
Hydrogen Generation Cabinet Dimensions	(L*W*H) mm	3500*1300*2400
Power Distribution Cabinet Dimensions	(L*W*H) mm	1100*1300*2400
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Off-grid photovoltaic hydrogen production;Wind-powered hydrogen generation; Cogeneration (CHP);Semiconductor industry;Integrated multi-energy independent microgrids.	



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen Production System | CH-10Nm³/h

Tailored solutions available for specialized applications.



✓ High-pressure hydrogen productiondelivering high-purity hydrogen	✓ Hydrogen leakage detection with comprehensive safety protection functions	✓ High product efficiency and strong load adaptability	✓ Single-cell voltage monitoring for precise control over hydrogen generation	✓ Cold/hot start capability with high efficiency and low energy consumption
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Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	15
Hydrogen Production Rate	Nm³/h	10
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.999
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380
Dimensions	(L*W*H) mm	3800*1450*2080
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Off-grid photovoltaic hydrogen production;Wind-powered hydrogen generation; Cogeneration (CHP);Semiconductor industry;Integrated multi-energy independent microgrids.	



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen Production System | CH-6Nm³/h

Tailored solutions available for specialized applications.



High-pressure hydrogen productiondelivering high-purity hydrogen



Hydrogen leakage detection with comprehensive safety protection functions



High product efficiency and strong load adaptability



Single-cell voltage monitoring for precise control over hydrogen generation



Cold/hot start capability with high efficiency and low energy consumption

Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	9
Hydrogen Production Rate	Nm³/h	6
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.999
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380
Dimensions	(L*W*H) mm	1800*1100*2200
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Off-grid photovoltaic hydrogen production;Wind-powered hydrogen generation; Cogeneration (CHP);Semiconductor industry;Integrated multi-energy independent microgrids.	



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen
Production System | CH-5Nm³/h

Tailored solutions available for specialized applications.



High-Pressure Hydrogen
Production of Ultra-High
Purity Hydrogen



Hydrogen leakage
detection with
comprehensive safety
protection functions



High product
efficiency and strong
load adaptability



Single-cell voltage
monitoring for precise
control over hydrogen
generation



Cold/hot start
capability with high
efficiency and low
energy consumption

Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	7.5
Hydrogen Production Rate	Nm³/h	5
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.5~99.9999999%
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380
Hydrogen Generation Cabinet Dimensions	(L*W*H) mm	1300*950*1930
Power Distribution Cabinet Dimensions	(L*W*H) mm	610*950*1930
Weight	kg	900
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Off-grid photovoltaic hydrogen production;Wind-powered hydrogen generation; Cogeneration (CHP);Semiconductor industry;Integrated multi-energy independent microgrids.	



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen
Production System | CH-2Nm³/h

Tailored solutions available for specialized applications.



High-Pressure Hydrogen
Production of Ultra-High
Purity Hydrogen



Hydrogen leakage
detection with
comprehensive safety
protection functions



High product
efficiency and strong
load adaptability



Single-cell voltage
monitoring for precise
control over hydrogen
generation



Cold/hot start
capability with high
efficiency and low
energy consumption

Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm ³ /h	3
Hydrogen Production Rate	Nm ³ /h	2
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.5~99.9999999%
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380
Dimensions	(L*W*H) mm	1300*950*1830
Weight	kg	510
DC Power Consumption	kW·h/Nm ³ H ₂	4.4
Wide Power Range	%	20-120
Application Fields	Glass manufacturing;Metal smelting;Cogeneration (CHP); Semiconductor industry;Integrated multi-energy independent microgrids	



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen
Production System | CH-1Nm³/h

Tailored solutions available for specialized applications.



High-Pressure Hydrogen
Production of Ultra-High
Purity Hydrogen



Hydrogen leakage
detection with
comprehensive safety
protection functions



High product
efficiency and strong
load adaptability



Single-cell voltage
monitoring for precise
control over hydrogen
generation



Cold/hot start
capability with high
efficiency and low
energy consumption

Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	1.5
Hydrogen Production Rate	Nm³/h	1
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.5~99.9999999%
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	380
Dimensions	(L*W*H) mm	1100*800*1600
Weight	kg	400
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Glass manufacturing;Metal smelting;Cogeneration (CHP); Semiconductor industry;Integrated multi-energy independent microgrids	



Hydrogen Production System Equipment

PEM Water Electrolysis Hydrogen Production System | CH-0.6Nm³/h

Tailored solutions available for specialized applications.



High-Pressure Hydrogen Production of Ultra-High Purity Hydrogen



Hydrogen leakage detection with comprehensive safety protection functions



High product efficiency and strong load adaptability



Single-cell voltage monitoring for precise control over hydrogen generation



Cold/hot start capability with high efficiency and low energy consumption

Parameter Name	Unit	Technical Specification
Gas Production Rate	Nm³/h	0.9
Hydrogen Production Rate	Nm³/h	0.6
Operating Temperature	°C	5-65
Hydrogen Purity	%	99.5~99.9999999%
Dew Point	°C	-70
Feed Water Quality Requirements	/	ASTM D1193 Type I Deionized Water (> 10 MΩ·cm)
Maximum Withstanding Pressure	MPa	3.0
Power Supply Voltage	V	220
Dimensions	(L*W*H) mm	1100*800*1600
Weight	kg	270
DC Power Consumption	kW·h/Nm³H₂	4.4
Wide Power Range	%	20-120
Application Fields	Glass manufacturing;Metal smelting;Cogeneration (CHP); Semiconductor industry;Integrated multi-energy independent microgrids	



Hydrogen Production System Equipment

PEM Integrated H₂ Production & Compression Unit | CH-0.2Nm³/h

Tailored solutions available for specialized applications.

Compact system combining PEM electrolysis with high-pressure compression. Features electrolyzer, power supply, pressure control, purifier, booster module, and smart display. Uses PEM membrane electrode technology—no alkali, no corrosion—delivering 99.999% pure hydrogen. Built-in compressor boosts to 35MPa for direct storage. 20%~120% dynamic load range enables seamless integration with renewable power.



Highly integrated easy to install and operate	Ultrapure hydrogen via PEM water electrolysis	Built-in 35MPa compression for direct storage	Wide power range for renewable integration	Cfully automated safe operation for diverse applications

Parameter Name	Unit	Technical Specification
Hydrogen Production Rate	Nm ³ /h(1atm,0°C)	0.6-2.0
Oxygen Production Rate	Nm ³ /h(1atm,0°C)	0.3-1
Hydrogen Purity (Before Purification)	%	99.8
Hydrogen Purity (After Purification)	%	99.999
Operating Temperature	°C	5~65
Operating Pressure	MPaG	0~35.0
Feed Water Inlet Pressure	barg	1~4
Feed Water Quality Requirement	/	ASTM D1193 Type I Deionized Water (>10MΩ·cm)
Power Supply Voltage	V	380
DC Power Consumption	kW·h/Nm ³ H ₂	4.4
Wide Power Range	%	20~120
Electrolysis Efficiency	%	>77.7%HHV
Start-up Time	Hot/Cold	0.5/5
Dynamic Response	%/s	>15%
Dew Point	°C	<-70
System Dimensions (with wheels)	(L*W*H) mm	<1400*1034*1879



PEM Water Electrolysis Integrated Hydrogen Production and Refueling Unit | LH/LH (2000-4000 ml/min)

Tailored solutions available for specialized applications.

The system comprises key components such as the electrolyzer, power supply, gas-liquid separation and purification units, PLC controls, circulation pumps, dryers, valves, piping, and safety systems. It enables households to produce hydrogen and refuel hydrogen-powered bicycles, while also supplying gas for semiconductors, chemical synthesis, and metal processing industries.



One-touch startup/
shutdown with
automatic fault
detection and diagnosis



Automatic tracking,
protection,
and control system



High efficiency
and fast response



High-purity,
non-corrosive,
and pollution-free
hydrogen output



High electrolysis
efficiency with low
power consumption

Parameter Name	Unit	Technical Specification
Hydrogen Production	mL/min	0-4000
Oxygen Production	mL/min	0-2000
Hydrogen Purity (Before Purification)	%	99.8
Hydrogen Purity (After Purification)	%	>99.999
Operating Temperature	°C	5~60
Operating Pressure	MPaG	≤1.6
Feed Water Pressure	barg	1~4
Power Supply Voltage	V	220
Electrolysis Efficiency	%	>77.7%HHV
Start-up Time	min	0.2
Dew Point	°C	<-45
System Dimensions (With Wheels)	(L*W*H) mm	500*400*505
System Dimensions (Without Wheels)	(L*W*H) mm	500*400*465



Hydrogen Production System Equipment

Visual Hydrogen Production and Refueling Integrated Machine

| LH/LH-T (2000-4000 ml/min)

Tailored solutions available for specialized applications.

The system comprises key components such as the electrolyzer, power supply, gas-liquid separation and purification units, PLC controls, circulation pumps, dryers, valves, piping, and safety systems. It enables households to produce hydrogen and refuel hydrogen-powered bicycles, while also supplying gas for semiconductors, chemical synthesis, and metal processing industries.



One-touch startup/
shutdown with
automatic fault
detection and diagnosis



Automatic tracking,
protection,
and control system



High efficiency
and fast response



High-purity,
non-corrosive,
and pollution-free
hydrogen output



High electrolysis
efficiency with low
power consumption

Parameter Name	Unit	Technical Specification
Hydrogen Production	mL/min	0-2000
Oxygen Production	mL/min	0-1000
Hydrogen Purity (Before Purification)	%	99.8
Hydrogen Purity (After Purification)	%	>99.999
Operating Temperature	°C	5~60
Operating Pressure	MPaG	≤1.6
Feed Water Pressure	barg	1~4
Power Supply Voltage	V	220
Electrolysis Efficiency	%	>77.7%HHV
Start-up Time	min	0.2
Dew Point	°C	<-45
System Dimensions	(L*W*H) mm	560*450*442



PEM Fuel Cell (PEMFC) Training Unit
| HOV-FC-TRN

Tailored solutions available for specialized applications.

Based on Proton Exchange Membrane Fuel Cell (PEMFC) technology, this system generates electricity through the electrochemical reaction of hydrogen ($2\text{H}_2 \rightarrow 4\text{H}^+ + 4\text{e}^-$) and oxygen ($\text{O}_2 + 4\text{e}^- + 4\text{H}^+ \rightarrow 2\text{H}_2\text{O}$), producing only water and electricity. it enables zero-carbon power supply. The system is ideal for outdoor backup power, military equipment, emergency relief, off-grid community power supply, and communication base stations.



Zero-emission
clean



High efficiency,
multi-scenario adaptability



Modular
distributed deployment



Stable under
extreme conditions



Visual appearance
showcasing reliability

Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Performance	Rated Power	kW	130
	Output Voltage (Customizable)	V	DC48/AC110/AC220
	Efficiency (DC Side)	%	45
Fuel	Hydrogen Purity	%	≥99.99(CO<1PPM)
	Inlet Pressure	Mpa	0.035-0.060
	Hydrogen Consumption	L/min	44.8
Operating Conditions	Ambient Temperature	°C	-5~45
	Storage Temperature	°C	-10~50
	Ambient Humidity	%	10~95
	Altitude	m	<1000
Electrolyzer Characteristics	Rated Voltage	V	60
	Rated Current	A	64
	Electrolyzer Cell Count	P	100
	Bipolar Plate Material	/	Carbon-Coated Titanium
	Cooling Method	/	Air Cooling
	Electrolyzer Weight	kg	6.8
	Electrolyzer Dimensions	mm	230*140*245
Power Battery	Battery Type	/	Ternary Lithium
	Battery Capacity	kWh	0.26
Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Fuel Cell System	Dimensions	(L*W*H) mm	500*280*450
	Weight	kg	35



Fuel Cell Power Generation System
| HOV-FC-5kW

Tailored solutions available for specialized applications.

Based on Proton Exchange Membrane Fuel Cell (PEMFC) technology, this system generates electricity through the electrochemical reaction of hydrogen ($2\text{H}_2\rightarrow4\text{H}^++4\text{e}^-$) and oxygen ($\text{O}_2+4\text{e}^-+4\text{H}^+\rightarrow2\text{H}_2\text{O}$), producing only water and electricity. it enables zero-carbon power supply. The system is ideal for outdoor backup power, military equipment, emergency relief, off-grid community power supply, and communication base stations.



Zero-emission
clean



High efficiency,
multi-scenario adaptability



Modular
distributed deployment



Stable under
extreme conditions



Compact size
easy installation

Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Performance	Rated Power	kW	5
	Output Voltage (Customizable)	V	DC45-54
	Efficiency (DC Side)	%	45
Fuel	Hydrogen Purity	%	≥99.99(CO<1PPM)
	Inlet Pressure	Mpa	0.06-0.65
	Hydrogen Consumption	L/min	120
Operating Conditions	Ambient Temperature	℃	-10~50
	Storage Temperature	℃	-40~60
	Ambient Humidity	%	95
	Altitude	m	<2000
Electrolyzer Characteristics	Rated Voltage	V	67
	Rated Current	A	91.8
	Electrolyzer Cell Count	P	98
	Bipolar Plate Material	/	Graphite
	Cooling Method	/	Air Cooling
	Electrolyzer Weight	kg	/
	Electrolyzer Dimensions	mm	313*134*391
Power Battery	Battery Type	/	Lithium Battery
	Battery Capacity	kWh	0.96
Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Fuel Cell System	Dimensions	(L*W*H) mm	600*498*360 (±2)
	Weight	kg	43.5 (±01)



Fuel Cell Power Generation System

| HOV-FC-10kW

Tailored solutions available for specialized applications.

Based on Proton Exchange Membrane Fuel Cell (PEMFC) technology, this system generates electricity through the electrochemical reaction of hydrogen ($2\text{H}_2 \rightarrow 4\text{H}^+ + 4\text{e}^-$) and oxygen ($\text{O}_2 + 4\text{e}^- + 4\text{H}^+ \rightarrow 2\text{H}_2\text{O}$), producing only water and electricity. it enables zero-carbon power supply. The system is ideal for outdoor backup power, military equipment, emergency relief, off-grid community power supply, and communication base stations.



Zero-emission
clean



High efficiency,
multi-scenario adaptability



Modular
distributed deployment



Stable under
extreme conditions



CHP-ready,
high efficiency

Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Performance	Rated Power	kW	10
	Output Voltage (Customizable)	V	DC48/AC220/AC380
	Efficiency (DC Side)	%	42
Fuel	Hydrogen Purity	%	≥99.99(CO<1PPM)
	Inlet Pressure	Mpa	1.2-1.5
	Hydrogen Consumption	L/min	145
Operating Conditions	Ambient Temperature	°C	-15~45
	Storage Temperature	°C	-20~50
	Ambient Humidity	%	10~95
	Altitude	m	<1000
Electrolyzer Characteristics	Rated Voltage	V	55.9~81.7
	Rated Current	A	0~400
	Electrolyzer Cell Count	P	78
	Bipolar Plate Material	/	Graphite
	Cooling Method	/	Liquid Cooling
	Electrolyzer Weight	kg	23.6
	Electrolyzer Dimensions	mm	400*140*276
Power Battery	Battery Type	/	Lithium Iron Phosphate
	Battery Capacity	kWh	5
Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Fuel Cell System	Dimensions	(L*W*H) mm	1150*560*815
	Weight	kg	260

Fuel Cell Power Generation System

| HOV-FC-20kW

Tailored solutions available for specialized applications.

Based on Proton Exchange Membrane Fuel Cell (PEMFC) technology, this system generates electricity through the electrochemical reaction of hydrogen ($2\text{H}_2 \rightarrow 4\text{H}^+ + 4\text{e}^-$) and oxygen ($\text{O}_2 + 4\text{e}^- + 4\text{H}^+ \rightarrow 2\text{H}_2\text{O}$), producing only water and electricity. it enables zero-carbon power supply. The system is ideal for outdoor backup power, military equipment, emergency relief, off-grid community power supply, and communication base stations.



Zero-emission
clean



High efficiency,
multi-scenario adaptability



Modular
distributed deployment



Stable under
extreme conditions



CHP-ready,
high efficiency

Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Performance	Rated Power	kW	20
	Output Voltage (Customizable)	V	DC48/AC380
	Efficiency (DC Side)	%	42
Fuel	Hydrogen Purity	%	≥99.99(CO<1PPM)
	Inlet Pressure	Mpa	1.2-1.5
	Hydrogen Consumption	L/min	290 (Altitude < 1000 m)
Operating Conditions	Ambient Temperature	°C	-15~45
	Storage Temperature	°C	-20~50
	Ambient Humidity	%	10~95
	Altitude	m	<1000
Electrolyzer Characteristics	Rated Voltage	V	110
	Rated Current	A	0~400
	Electrolyzer Cell Count	P	156
	Bipolar Plate Material	/	Graphite
	Cooling Method	/	Liquid Cooling
	Electrolyzer Weight	kg	35
	Electrolyzer Dimensions	mm	400*140*474
Power Battery	Battery Type	/	Lithium Iron Phosphate
	Battery Capacity	kWh	10
Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Fuel Cell System	Dimensions	(L*W*H) mm	1400*890*1050
	Weight	kg	550

Hydrogen Energy Outdoor Backup Power System | HOV-FC-PORT

Tailored solutions available for specialized applications.

Portable Backup Power System is designed for outdoor camping, emergency rescue, backup power, island living, environmental monitoring, and geological exploration. It features a fuel cell–lithium battery hybrid that generates electricity through a hydrogen-oxygen redox reaction, emitting only water for a clean power supply. The system provides 220V AC and USB/Type-C DC outputs, compatible with various devices.



High power
large capacity



Multiple output ports
strong compatibility



Safe and eco-friendly
real-time monitoring



Easy to transport
user-friendly design



Various power ranges
to meet diverse
application needs

Parameter Categories	Parameter Name	Unit	Technical Specification
Output Performance	Rated Power	W	1400
	Output Voltage	V	AC 220 V / USB 5V / TYPE-C
	Output Frequency	Hz	50
Fuel	Hydrogen Purity	%	≥99.95
	Hydrogen Storage Pressure	bar	0.5 ~0.8
	Hydrogen Storage Capacity	L	12
Environmental Characteristics	Operating Ambient Temperature	°C	-15 ~ 45
Power Battery	Battery Type	/	Lithium Battery
System Parameters	Dimensions	mm	816 × 522 × 323
	Weight	kg	28.5
	Display & Control	/	Display screen, one-key start/stop real-time monitoring
Applications		Power Supply Cycles / Duration	
MacBook 12-inch		~70 charges	
Digital Camera		~100 charges	
Huawei Mate60 Pro+		~160 charges	
12V/5W LED Light		~720 hours	
Microwave Oven		~3 hours	
Water Heater		~4 hours	

Six-Rotor Hydrogen-Powered Drone | HOV-DRONE-H2

Tailored solutions available for specialized applications.

An industrial-grade long-endurance drone with a 5 kg payload and 150-minute max endurance (no payload), combining long flight time with high efficiency. Supports multiple mission payloads for applications such as emergency rescue, lighting, pipeline inspection, and aerial mapping.



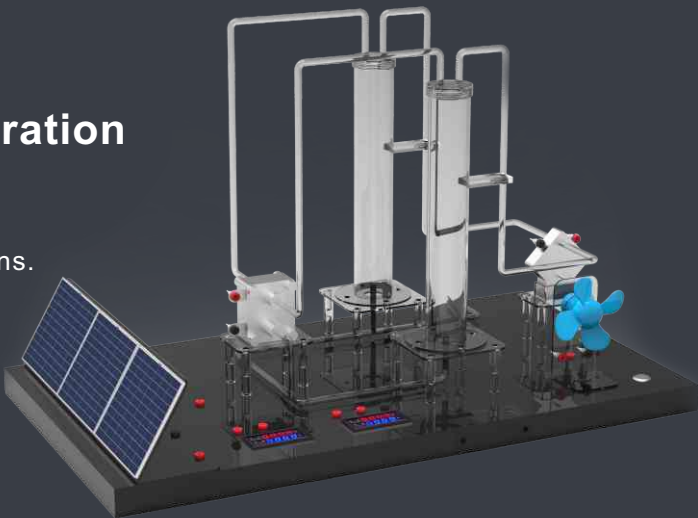
150 min endurance 5 kg payload	Dual RTK module highly stable flight	Remote control autonomous flight	Lightweight high-strength airframe	Efficient deployment rapid response

Parameter Name	Technical Specification	Parameter Name	Technical Specification
Wheelbase	1600mm	Number of Rotors	6
Airframe Weight	15.5kg	Maximum Takeoff Weight	20kg
Economical Payload Weight	<5kg (takeoff weight <20kg)	Maximum Payload Weight	<5kg
No-Payload Endurance	150min	Endurance with Payload	120min (with 3kg payload)
Maximum Range	100km	Maximum Level Flight Speed	40km/h
Maximum Climb Rate	5m/s	Service Ceiling	1200m
Wind Resistance Rating	Level 5	Operating Temperature	-20~40°C
Operating Voltage	52V DC	Communication Range	Unlimited (4G/5G)
Communication Range	<30km (digital transmission)		
Dimensions	1600mm(L)*1600mm(W)*620mm(H)		
Intelligent Flight	Remote autonomous takeoff/landing and flight operations, real-time audio & video transmission,4G/5G or satellite; real-time image transmission		

Photovoltaic Hydrogen Demonstration Unit | HOV-DP-PVK-60

Tailored solutions available for specialized applications.

This integrated teaching platform combines solar power, electrolysis, and fuel cell technology. Its visual, interactive setup demonstrates the entire process of renewable hydrogen production and use, supporting education and research in new energy.



Transparent piping design for high visibility	Modular design, easy to understand and teach	Low voltage and power, safe and reliable	Suitable for teaching, training, and research	Visual interface with real-time data display

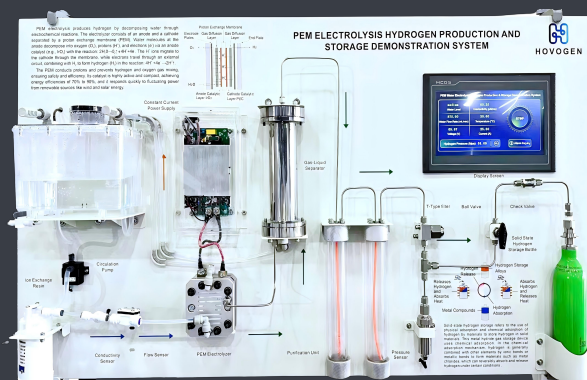
Parameter Category	Parameter Name	Unit	Technical Specification
Photovoltaic Panel	Total Power	W	12
	Rated Voltage	V	5
	Rated Current	A	2.4
PEM Electrolyzer	Rated Hydrogen Production Rate	mL/min	40
	Power Supply Voltage	V	3
	Rated Current	A	6
Fuel Cell	Rated Power	W	<1
	Rated Voltage	V	0.9
	Rated Current	A	1
Load	Power	W	0.019
	Rated Voltage	V	1
	Rated Current	mA	18.9
Demonstration Teaching Unit	Dimensions	(L*W*H) mm	750*420*330
	Weight	kg	6.2

PEM Hydrogen Production and Storage Training Unit

|HOV-DP-H2PS-500

Tailored solutions available for specialized applications.

This integrated teaching platform demonstrates PEM electrolysis for hydrogen production and storage. It covers the full process from generation to purification and storage, visually showing how renewable energy is converted into green hydrogen. Using pure water instead of alkaline electrolytes ensures safe, reliable operation in lab settings. With a modular interface and real-time monitoring, it supports hands-on learning and research in energy, chemistry, and engineering disciplines.



Modular Design & Quantitative Experimental Data



Integrated PEM Hydrogen Production and Solid-State Hydrogen Storage



Triple Protection Mechanism with Intelligent Monitoring System



Supports Scientific Research Projects



Visual Interface with Real-Time Data Monitoring

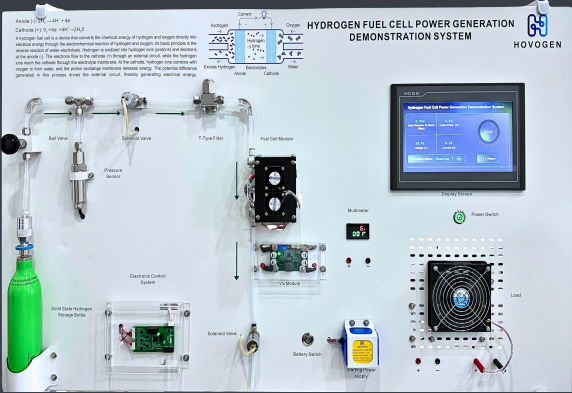
Category	Parameter Name	Unit	Technical Specification
PEM Electrolyzer	Hydrogen Production Rate	mL/min	500
	Oxygen Production Rate	mL/min	250
	Power Supply Voltage	V	9
	Power Supply Current	A	25
	Dim. (w/o Lugs/Conn.)	(L*W*H) mm	94*39*106
	Dim. (w/ Lugs/Conn.)	(L*W*H) mm	109*58*106
Solid-State Hydrogen Storage Tank	Cylinder Diameter	mm	60
	Cylinder Height	mm	258
	Weight	kg	1.5
	Hydrogen Storage Capacity	g	>22
	Hydrogen Filling Pressure	MPa	1.0
	Continuous Hydrogen Discharge Pressure	MPa	0.6
	Hydrogen Discharge Rate	L/min	>4
Demonstration System	Dimensions (Excluding Bracket)	(L*W*H) mm	1200*700*311
	Weight (Excluding Bracket)	kg	18
	Weight (Including Bracket)	kg	28

Hydrogen Fuel Cell Training Unit

| HOV-DP-FCPG-225

Tailored solutions available for specialized applications.

This integrated teaching platform demonstrates the complete hydrogen-to-power process, featuring solid-state storage, PEM fuel cell power generation, and intelligent power management. It reliably showcases core hydrogen energy conversion technology and supports experimental education and research in renewable energy, chemical engineering, and electrical automation.



- 

Modular Design & Quantitative Experimental Data
- 

Integrated Solid-State Hydrogen Storage & PEMFC
- 

Triple Protection Mechanism with Intelligent Monitoring System
- 

Supports Scientific Research Projects
- 

Visual Interface with Real-Time Data Monitoring

Category	Parameter Name	Unit	Technical Specification
Solid-State Hydrogen Storage Tank	Cylinder Diameter	mm	60
	Cylinder Height	mm	258
	Weight	kg	1.5
	Hydrogen Storage Capacity	g	>22
	Hydrogen Filling Pressure	MPa	1.0
	Continuous Hydrogen Discharge Pressure	MPa	0.6
	Hydrogen Discharge Rate	L/min	>4
Fuel Cell	Rated Voltage	V	19.8
	Rated Current	A	10.2
	Efficiency	%	≥45
	Hydrogen Pressure	MPa	0.035~0.05
	Hydrogen Purity	%	≥99.99(CO≤1PPM)
	Theoretical Hydrogen Consumption at Rated Power	L/min	2.89
	Theoretical Air Consumption at Rated Power	L/min	114.6
	Bare Stack Weight	kg	1.43
Demonstration System	Dimensions (Excluding Bracket)	(L*W*H) mm	1200*700*276
	Weight (Excluding Bracket)	kg	15
	Weight (Including Bracket)	kg	25

Hydrogen Fuel Cell Display Platform

Tailored solutions available for specialized applications.

The system is a fuel cell system consisting of several modules: fuel cell stack, hydrogen supply, thermal management, air supply, DC/DC converter, power battery, and power distribution. The connecting pipes and wiring harnesses between the modules are also included.



Clean and eco-friendly
zero emissions
no pollution



High conversion
efficiency



Modular design
supports distributed
deployment



Stable & reliable
power



High energy
efficiency

Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Performance	Rated Power	kW	3
	Output Voltage (Customizable)	V	DC48/AC220
	Efficiency (DC Side)	%	42
Fuel	Hydrogen Purity	%	≥99.99(CO<1PPM)
	Inlet Pressure	Mpa	0.05-0.08
	Hydrogen Consumption	L/min	45
Operating Conditions	Ambient Temperature	°C	-15~45
	Storage Temperature	°C	-20~50
	Ambient Humidity	%	10~95
	Altitude	m	<1000
Electrolyzer Characteristics	Rated Voltage	V	11.72
	Rated Current	A	0~256
	Electrolyzer Cell Count	P	41
	Bipolar Plate Material	/	Graphite
	Cooling Method	/	Liquid Cooling
	Electrolyzer Weight	kg	13
	Electrolyzer Dimensions	mm	320*142*182
Power Battery	Battery Type	/	Lithium Iron Phosphate
	Battery Capacity	kWh	1.5
Electrolyzer Parameter	Parameter Name	Unit	Technical Specification
Fuel Cell System	Dimensions	(L*W*H) mm	1100*700*664
	Weight	kg	150

PEM Water Electrolyzer Simple
Test Unit
| HOV-STP-300

Tailored solutions available for specialized applications.

This project aims to build a low-cost test bench for electrolyzers, enabling real-time monitoring and control of operating parameters to test their operational efficiency and stability.

- ✓ Modular High-Precision Design for Standardized Testing Environments
- ✓ Capable of Real-Time Monitoring and Adjustment of Power Parameters
- ✓ Electrolyzer Operation Status Monitoring



Category	Parameter Name	Unit	Technical Specification
Main Unit System	Display Panel	/	Digital Tube Display
	Communication Interface	/	USB
	Dimensions	(L*W*H) mm	280*390*355
Power Module	Voltage Range	V	0-15
	Current Range	A	0-30
	Current Accuracy in Constant Current Mode	mA	≤0.5%+30
Water Management Module	Medium	/	Deionized Water
	Water Flow Rate Range	mL/min	300
	Water Replenishment Method	/	Manual One-Button Water Refill
	Temperature Adjustment Range	/	Room Temp ~60°C (±1%)
	Conductivity	μS/cm	<1.5
Testing Function	Performance Test	Supports IV Curve Scanning Allows manual voltage adjustment with corresponding current recording	
	Stability Test	Supports long-duration operation in Constant Current (CC) or Constant Voltage (CV) mode Records I-t curve data	
Water Treatment System	Water Purification	Integrated resin filtration unit	
Data Management	Real-Time Monitoring	Real-time display of temperature, voltage, current, and total operating time	
	Data Logging	Automatically records test data points	
	Data Export	Supports export of test data (IV, I-t)	
Safety Protection	Electrical Safety	Includes protection against over-voltage, over-current, and short circuit	
	System Safety	Automatic fault diagnosis and alert function	
	Power Failure Protection	Automatically saves data and enters safe state during unexpected power outages	
Compatibility	Electrolyzer Type	Primarily designed for PEM electrolyzers	
	Installation Method	Supports quick installation and replacement of user-defined electrolyzers	

Advance PEM Water Electrolyzer

Test Platform

| HOV-ATX

Tailored solutions available for specialized applications.

This project involves the independent development of a modular, high-precision single-channel test platform for PEM electrolyzers. It provides a standardized testing environment for teaching experiments, scientific research, and industry-academia collaboration, with focus on addressing core challenges such as electrolyzer performance evaluation, operating condition simulation, and service life prediction.

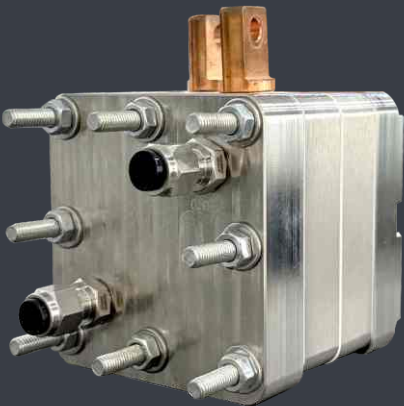


Category	Parameter Name	Unit	Technical Specification
Main Unit System	Display Panel	/	Touch Screen
	Alarm Component	/	Buzzer
	Communication Interface	/	USB, RJ45 Ethernet
	Dimensions	(L*W*H) mm	500*400*540
Hydrogen System Module	Back Pressure Range	MPa	0-0.4 MPa (3 MPa Optional)
	Flow Measurement Accuracy	/	Optional
	Back Pressure Accuracy	%FS	0.25
Power Module	Voltage Monitoring Range	V	0-3
	Voltage Range	V	0-15
	Voltage Scanning Measurement Accuracy	%	±0.2
	Current Range	A	0-60
	Current Accuracy in Constant Current Mode	mA	≤1%+30
Water Management Module	Medium	/	Deionized Water
	Adjustable Water Flow Range	mL/min	0.15-600
	Water Replenishment Method	/	Auto Water Refill
	Conductivity	μS/cm	<1.5
Temperature Control Module	Temperature Adjustment Range	/	Room Temp ~80℃ (±1%)
	Temperature Control Accuracy	℃	≤±0.5
	Temperature Measurement Accuracy	℃	≤±0.5℃ (Resolution: 0.01℃)
Data Acquisition	Real-time acquisition and recording of voltage (voltage sweep measurement 0-3V), current, temperature, pressure, flow rate, conductivity, etc.		
Basic Testing Functions	Polarization curve testing, durability testing, voltage monitoring		
Safety Protection	Hydrogen leakage detection, high-pressure alarm, emergency stop button, interlock alarm shutdown		
Structural Design	Modular design, compact layout, 316L stainless steel piping, desktop type		
Optional Functions	Online monitoring of oxygen-in-hydrogen/hydrogen-in-oxygen concentration, oxygen flow monitoring, dedicated test fixture		
Power Supply Characteristics	Programmable DC power supply, supports constant current/constant voltage modes, directly controlled by PLC		

PEM Electrolyzer Test Jig | 5×5 cm²

Tailored solutions available for specialized applications.

Designed for 5 cm² PEM electrolyzer MEA testing. Simply assemble the MEA with custom titanium felt into the precision flow field plate, connect to the system, and run. Integrated flow channels and specialized titanium felt ensure uniform, stable, and accurate testing. Ideal for MEA process optimization and electrochemical material R&D.



High precision and repeatability



Easy assembly disassembly for efficient operation



Corrosion-resistant highly conductive customizable



System-compatible and expandable for practical applications

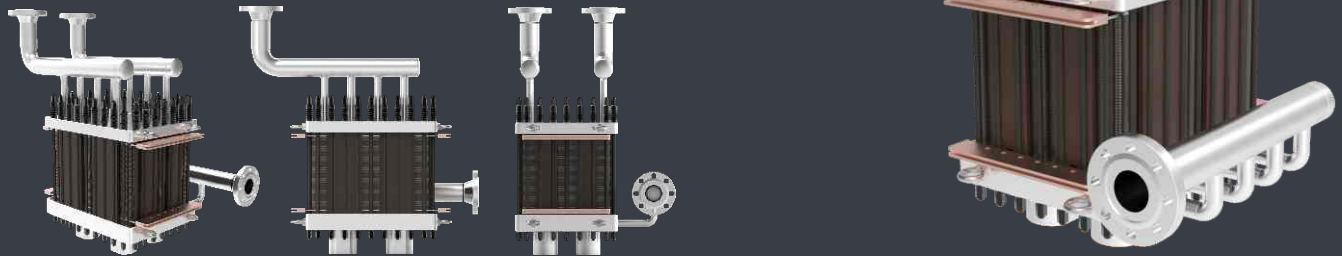


Simulates extreme conditions to capture real-world data

Technical Specifications		Unit	Technical Specification
Recommended Circulating Water Temperature		°C	5-80
Circulation Mode		/	Water Pump Circulation
Water Electrolysis Mode		/	Water Electrolysis
Max. Operating Pressure		MPa	0.5
Water Quality Requirement	Conductivity	μS/cm	≤1
Active Area		cm ²	5×5
Dimensions (without mounting ears)		(L*W*H) mm	97*65.2*94
Dimensions (with ears and fittings)		(L*W*H) mm	123*84*94
Weight		kg	2.2
Applications		MEA Process Optimization, Electrochemical Material R&D	

PEM Water Electrolyzer | CH-200 Nm³/h

Tailored solutions available for specialized applications.



Independently developed and manufactured



High pressure tolerance enables high-purity hydrogen production



Premium materials, precision engineering, extended lifespan.



Compatible with wide power fluctuations

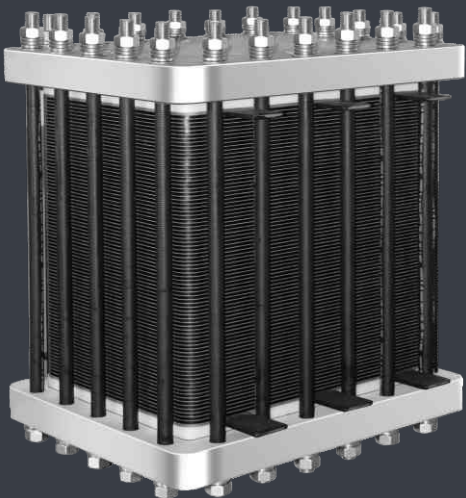
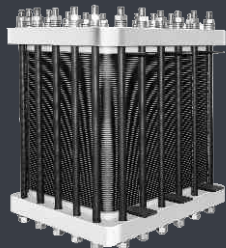


High current density with stable voltage operation

Product Model	CH-200Nm ³ /h type PEME		
Gas Production Rate	Nm ³ /h	300	H ₂ /O ₂ Mix Out
Hydrogen Production Rate	Nm ³ /h	200	Pure Hydrogen Output
Circulating Water Temperature	°C	25-70	
Circulating Water Volume	L/h	200	Pure Water / Deionized Water
Circulating Water Conductivity	μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method	/	Water Pump Circulation	
Hydrogen Purity	%	99.99	After Drying
Water Electrolysis Method	/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure	MPa	3.5	
Constant Current	A	3700	
Dim. (w/o Lugs/Conn.)	(L*W*H) mm	970*805*1205	
Dim. (w/ Lugs/Conn.)	(L*W*H) mm	970*905*1205	
Weight	kg	/	
Application Fields	On-site hydrogen production for large-scale renewable energy storage, chemical industry, fuel cell systems, hydrogen production and refueling stations, pharmaceuticals, and other related sectors.		

PEM Water Electrolyzer | CH-60 Nm³/h

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



Compatible with
wide power
fluctuations



High current density
with stable voltage
operation

Product Model	CH-60Nm ³ /h type PEME		
Gas Production Rate	Nm ³ /h	90	H ₂ /O ₂ Mix Out
Hydrogen Production Rate	Nm ³ /h	60	Pure Hydrogen Output
Circulating Water Temperature	°C	25-70	
Circulating Water Volume	L/h	60	Pure Water / Deionized Water
Circulating Water Conductivity	μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method	/	Water Pump Circulation	
Hydrogen Purity	%	99.99	After Drying
Water Electrolysis Method	/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure	MPa	3.5	
Constant Current	A	4000-4500	
Dim. (w/o Lugs/Conn.)	(L*W*H) mm	970*805*855	
Dim. (w/ Lugs/Conn.)	(L*W*H) mm	970*905*855	
Weight	kg	/	
Application Fields	On-site hydrogen production for large-scale renewable energy storage, chemical industry, fuel cell systems, hydrogen production and refueling stations, pharmaceuticals, and other related sectors.		

PEM Water Electrolyzer | CH-50 Nm³/h

Tailored solutions available for specialized applications.



Independently developed and manufactured



High pressure tolerance enables high-purity hydrogen production



Premium materials, precision engineering, extended lifespan.



Compatible with wide power fluctuations

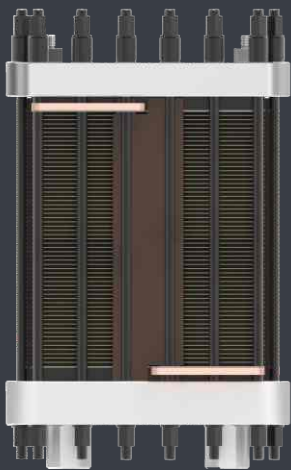
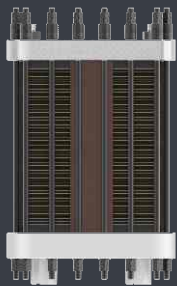


High current density with stable voltage operation

Product Model		CH-50Nm³/h type PEME		
Gas Production Rate		Nm³/h	75	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm³/h	50	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m³/h	≤12	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	86	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	1400	Rated
	Constant Voltage	V	258	Configurable voltage up to 258V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	/	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	940*770*1160	
Weight		kg	/	
Application Fields		On-site hydrogen production for large-scale renewable storage, chemicals, fuel cells, hydrogen stations, pharmaceuticals, and related industries.		

PEM Water Electrolyzer | CH-10 Nm³/h

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



Compatible with
wide power
fluctuations

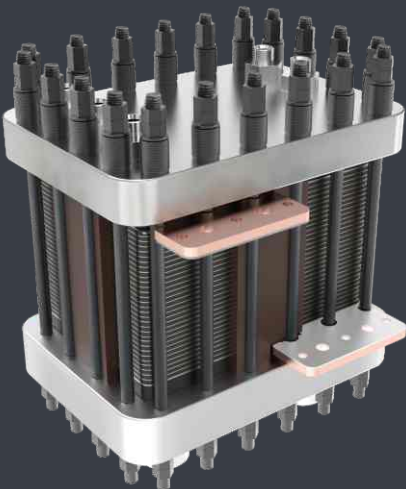


High current density
with stable voltage
operation

Product Model		CH-10Nm ³ /h type PEME		
Gas Production Rate		Nm ³ /h	15	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm ³ /h	10	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m ³ /h	≤2.4	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	68	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	355	Rated
	Constant Voltage	V	204	Configurable voltage up to 204V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	407*300*765.5	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	469*344.5*765.5	
Weight		kg	275	
Application Fields		Applications in energy systems (fuel cells, CHP, microgrids), semiconductors, and related fields.		

PEM Water Electrolyzer | CH-5 Nm³/h

Tailored solutions available for specialized applications.



Independently developed and manufactured



High pressure tolerance enables high-purity hydrogen production



Premium materials, precision engineering, extended lifespan.



Compatible with wide power fluctuations

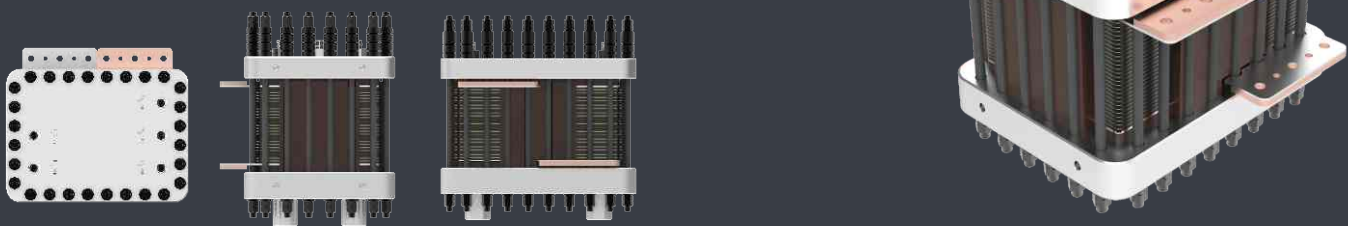


High current density with stable voltage operation

Product Model		CH-5Nm³/h type PEME		
Gas Production Rate		Nm³/h	7.5	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm³/h	5	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m³/h	≤1.2	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	34	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	355	Rated Current: 355A
	Constant Voltage	V	102	Configurable voltage up to 102V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	382*280*431	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	382*324.5*431	
Weight		kg	95	
Application Fields		Applications in energy systems (fuel cells, CHP, microgrids), semiconductors, and related fields.		

PEM Water Electrolyzer | CH-4 Nm³/h

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



Compatible with
wide power
fluctuations

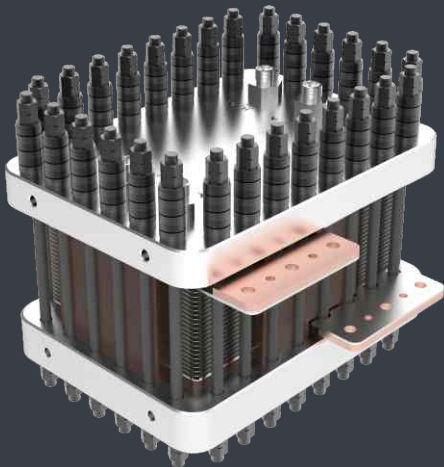
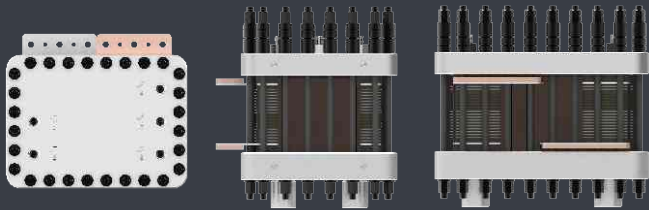


High current density
with stable voltage
operation

Product Model		CH-4Nm ³ /h type PEME		
Gas Production Rate		Nm ³ /h	6	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm ³ /h	4	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m ³ /h	≤0.96	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	27	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	355	Rated Current: 355A
	Constant Voltage	V	81	Configurable voltage up to 81V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	382*280*396	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	382*324.5*396	
Weight		kg	88	
Application Fields		Applications in energy systems (fuel cells, CHP, microgrids), semiconductors, and related fields.		

PEM Water Electrolyzer | CH-3 Nm³/h

Tailored solutions available for specialized applications.



Independently developed and manufactured



High pressure tolerance enables high-purity hydrogen production



Premium materials, precision engineering, extended lifespan.



Compatible with wide power fluctuations

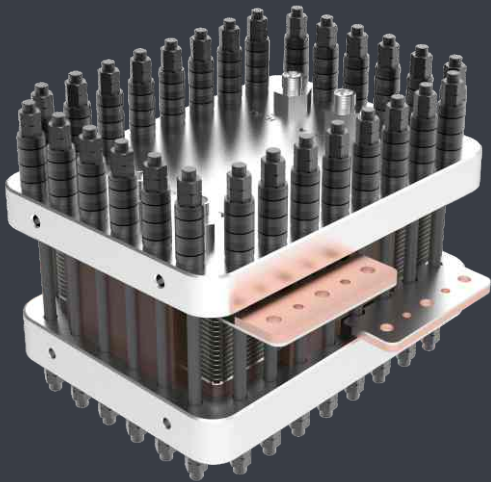


High current density with stable voltage operation

Product Model		CH-3Nm³/h type PEME		
Gas Production Rate		Nm³/h	4.5	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm³/h	3	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m³/h	≤0.72	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	21	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	355	Rated Current: 355A
	Constant Voltage	V	63	Configurable voltage up to 63V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	382*280*357	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	382*324.5*357	
Weight		kg	81	
Application Fields		Applications in energy systems (fuel cells, CHP, microgrids), semiconductors, and related fields.		

PEM Water Electrolyzer | CH-2 Nm³/h

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



Compatible with
wide power
fluctuations

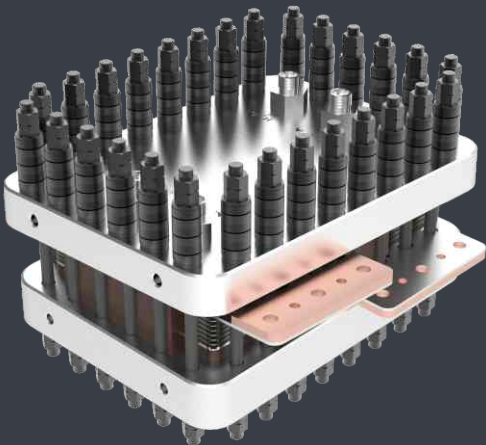
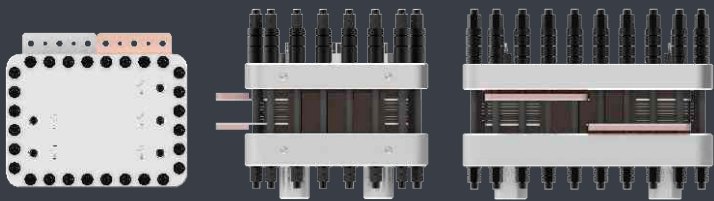


High current density
with stable voltage
operation

Product Model		CH-2Nm ³ /h type PEME		
Gas Production Rate		Nm ³ /h	3	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm ³ /h	2	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m ³ /h	≤0.48	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	14	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	355	Rated Current: 355A
	Constant Voltage	V	42	Configurable voltage up to 42V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	382*280*321	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	382*324.5*321	
Weight		kg	75	
Application Fields		Applications in energy systems (fuel cells, CHP, microgrids), semiconductors, and related fields.		

PEM Water Electrolyzer | CH-1 Nm³/h

Tailored solutions available for specialized applications.



Independently developed and manufactured



High pressure tolerance enables high-purity hydrogen production



Premium materials, precision engineering, extended lifespan.



Compatible with wide power fluctuations

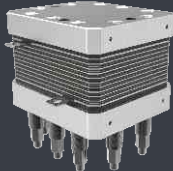
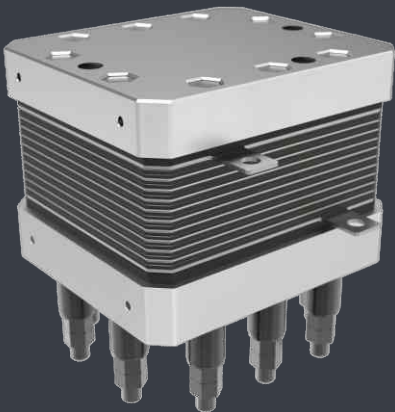


High current density with stable voltage operation

Product Model		CH-1Nm³/h type PEME		
Gas Production Rate		Nm³/h	1.5	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm³/h	1	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		m³/h	≤0.24	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	7	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	355	Rated Current: 355A
	Constant Voltage	V	21	Configurable voltage up to 21V required
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	382*280*290	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	382*324.5*290	
Weight		kg	68	
Application Fields		Applications in energy systems (fuel cells, CHP, microgrids), semiconductors, and related fields.		

PEM Water Electrolyzer | CH-0.6 Nm³/h

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



Compatible with
wide power
fluctuations



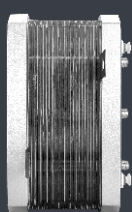
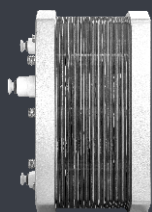
High current density
with stable voltage
operation

Product Model		CH-0.6Nm ³ /h type PEME		
Gas Production Rate		Nm ³ /h	0.9	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		Nm ³ /h	0.6	Pure Hydrogen Output
Circulating Water Temperature		°C	25-70	
Circulating Water Volume		mL/min	≤2400	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	3.5	
Number of Layers		PCS	18	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	80	Rated
	Constant Voltage	V	54	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	156*136*142	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	156*156.7*242.5	
Weight		kg	18	
Application Fields		Hydrogen Generators, Semiconductor Industry, Power Plants, Combined Heat and Power (CHP) Systems, Laboratory Hydrogen Applications.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CHL13-15000 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



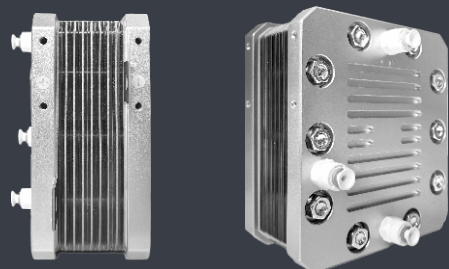
High current density
with stable voltage
operation

Product Model		CHL13-1 type PEME		
Gas Production Rate		mL/min	7500	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	5000	Pure Hydrogen Output
Circulating Water Temperature		°C	25-50	
Circulating Water Volume		mL/min	≥2100	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	55	
	Constant Voltage	V	39	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	136*87*156	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	157*104*156	
Weight		kg	4.5	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CHL8-13200 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



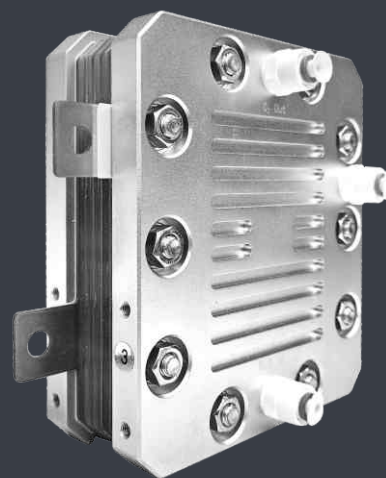
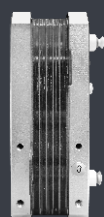
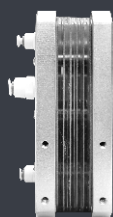
High current density
with stable voltage
operation

Product Model		CHL8-1 type PEME		
Gas Production Rate		mL/min	4800	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	3200	Pure Hydrogen Output
Circulating Water Temperature		°C	25-50	
Circulating Water Volume		mL/min	≥1400	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	55	
	Constant Voltage	V	24	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	136*63.85*156	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	156.75*83.85*156	
Weight		kg	3.4	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CHL5-1 2000 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



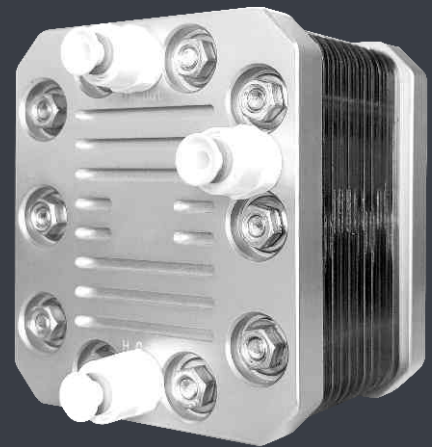
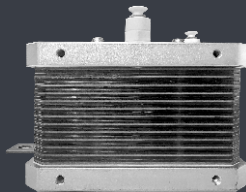
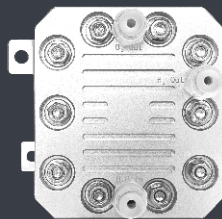
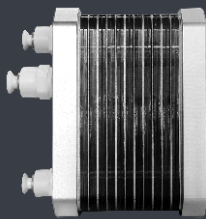
High current density
with stable voltage
operation

Product Model		CHL5-1 type PEME		
Gas Production Rate		mL/min	3000	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	2000	Pure Hydrogen Output
Circulating Water Temperature		°C	25-50	
Circulating Water Volume		mL/min	≥880	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	55	
	Constant Voltage	V	15	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	136*53*156	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	157*68*156	
Weight		kg	3	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH11-12000 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



High current density
with stable voltage
operation

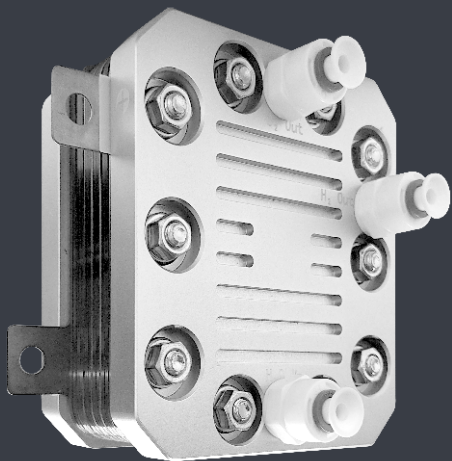
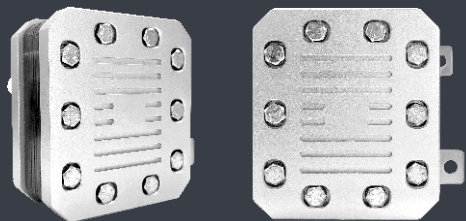
Product Model		CH11-1 type PEME		
Gas Production Rate		mL/min	3000	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	2000	Pure Hydrogen Output
Circulating Water Temperature		°C	25-50	
Circulating Water Volume		mL/min	≥800	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	25	
	Constant Voltage	V	33	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*75*106	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*92*106	
Weight		kg	1.75	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer

| CH7-11200 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



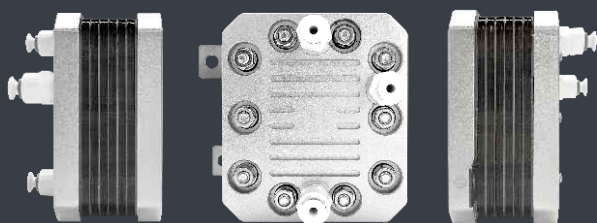
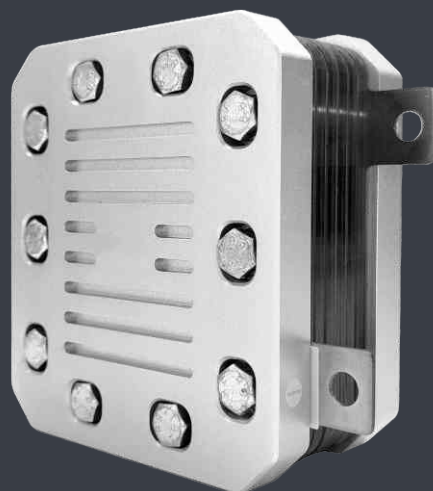
High current density
with stable voltage
operation

Product Model		CH7-1 type PEME	
Gas Production Rate		mL/min	1800
Hydrogen Production Rate		mL/min	1200
Circulating Water Temperature		°C	25-45
Circulating Water Volume		mL/min	≥520
Circulating Water Conductivity		μS/cm	≧1
Circulation Method		/	Water Pump Circulation
Hydrogen Purity		%	99.99
Water Electrolysis Method		/	Water Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5
Single Cell Voltage		V	1.75-2.5
Power Supply	Constant Current	A	25
	Constant Voltage	V	21
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*58*106
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*73*106
Weight		kg	1.33
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.	

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH6-11000 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



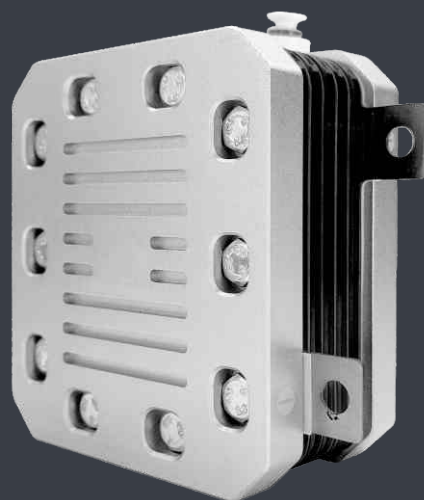
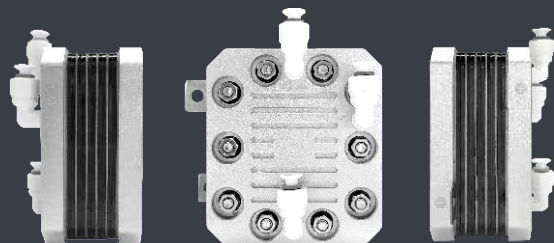
High current density
with stable voltage
operation

Product Model		CH6-1 type PEME		
Gas Production Rate		mL/min	1500	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	1000	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥440	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	25	
	Constant Voltage	V	18	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*52*106	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*68*106	
Weight		kg	1.3	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH5-1800 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.

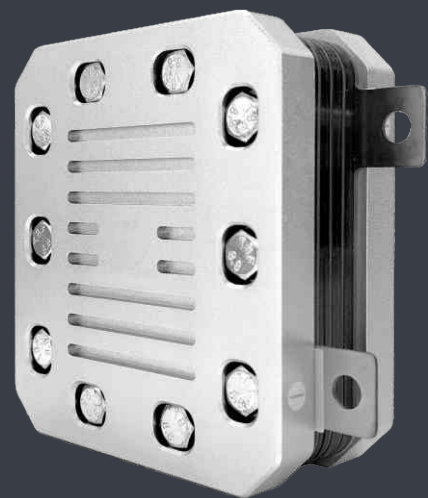
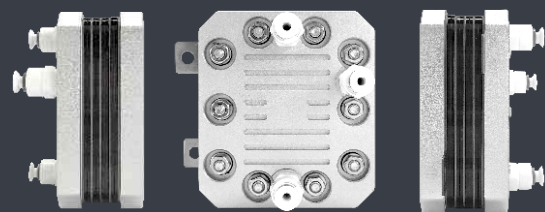


High current density
with stable voltage
operation

Product Model		CH5-1 type PEME		
Gas Production Rate		mL/min	1200	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	800	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥360	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≧1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	25	
	Constant Voltage	V	15	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*48*106	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*64*106	
Weight		kg	1.2	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

PEM Water Electrolyzer | CH4-1600 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



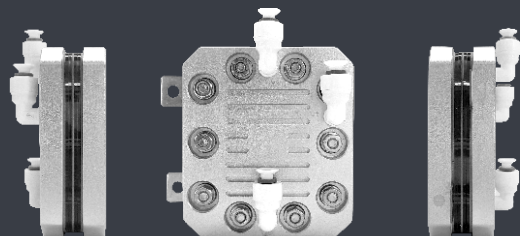
High current density
with stable voltage
operation

Product Model		CH4-1 type PEME		
Gas Production Rate		mL/min	900	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	600	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥300	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	12	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*43*106	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*62*106	
Weight		kg	1.1	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH2-1 300mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



High current density
with stable voltage
operation

Product Model		CH2-1 type PEME		
Gas Production Rate		mL/min	450	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	300	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥150	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	7	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*34*106	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*53*106	
Weight		kg	0.91	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH1-1 150mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



High current density
with stable voltage
operation

Product Model		CH1-1 type PEME		
Gas Production Rate		mL/min	225	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	150	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥80	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5~3.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	3.5	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	94*30*106	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	109*46*106	
Weight		kg	0.81	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH04D-1 600mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



High current density
with stable voltage
operation

Product Model		CH04D-1 type PEME		
Gas Production Rate		mL/min	900	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	600	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥270	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	12	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	68*40*78	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	79.75*60.5*78	
Weight		kg	0.5	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH03D-1 450mL/min

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and manufactured



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hydrogen production



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extended lifespan.



High current density
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operation

Product Model		CH03D-1 type PEME		
Gas Production Rate		mL/min	675	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	450	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥200	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	9	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	68*34.4*78	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	79.75*55.9*78	
Weight		kg	0.46	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH02D-1 300mL/min

Tailored solutions available for specialized applications.



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and manufactured



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hydrogen production



Premium materials,
precision engineering,
extended lifespan.



High current density
with stable voltage
operation

Product Model		CH02D-1 type PEME		
Gas Production Rate		mL/min	450	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	300	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥140	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	7	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	68*30.8*78	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	79.75*51.3*78	
Weight		kg	0.45	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH01D-1 150mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



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precision engineering,
extended lifespan.



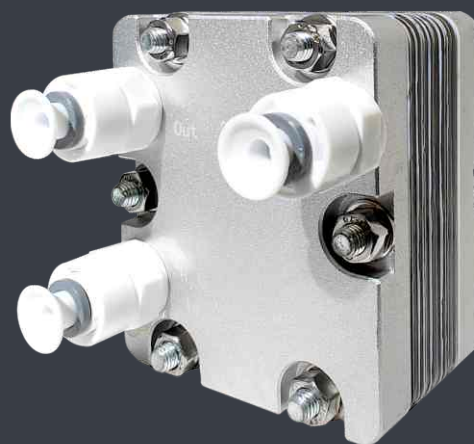
High current density
with stable voltage
operation

Product Model		CH01D-1 type PEME		
Gas Production Rate		mL/min	225	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	150	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥70	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	20	
	Constant Voltage	V	3.5	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	68*26.2*78	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	79.75*46.7*78	
Weight		kg	0.4	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH04-1 400 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



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enables high-purity
hydrogen production



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precision engineering,
extended lifespan.



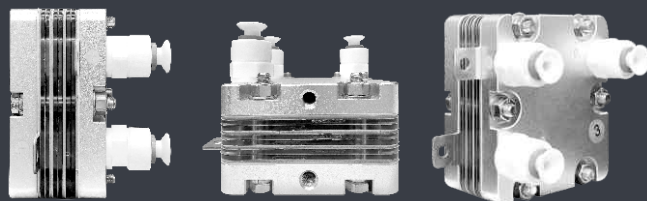
High current density
with stable voltage
operation

Product Model		CH04-1 type PEME		
Gas Production Rate		mL/min	600	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	400	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥200	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	15	
	Constant Voltage	V	12	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	60*40*72	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	71.75*57.7*72	
Weight		kg	0.5	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH03-1300 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
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extended lifespan.



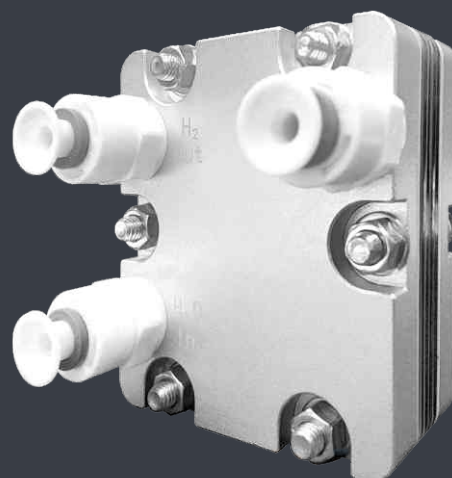
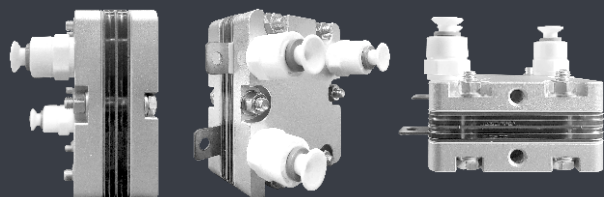
High current density
with stable voltage
operation

Product Model		CH03-1 type PEME		
Gas Production Rate		mL/min	450	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	300	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥150	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	15	
	Constant Voltage	V	9	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	60*35.4*72	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	71.75*53.1*72	
Weight		kg	0.45	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH02-1200 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



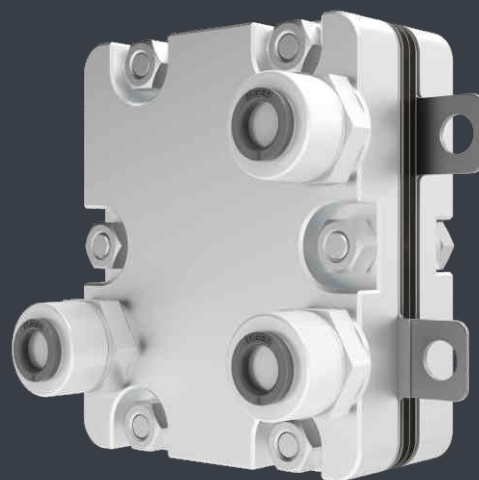
High current density
with stable voltage
operation

Product Model		CH02-1 type PEME		
Gas Production Rate		mL/min	300	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	200	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥100	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	15	
	Constant Voltage	V	7	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	60*30.8*72	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	71.75*48.5*72	
Weight		kg	0.4	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH01-1 100 mL/min

Tailored solutions available for specialized applications.



Independently developed
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enables high-purity
hydrogen production



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extended lifespan.



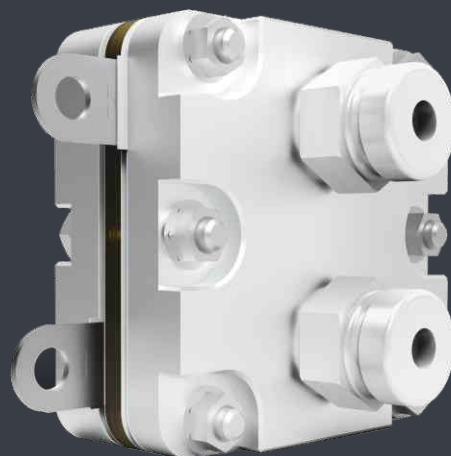
High current density
with stable voltage
operation

Product Model		CH01-1 type PEME		
Gas Production Rate		mL/min	150	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	100	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥50	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	15	
	Constant Voltage	V	3.5	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	60*26.2*72	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	71.75*43.9*72	
Weight		kg	0.3	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH60-1 60 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



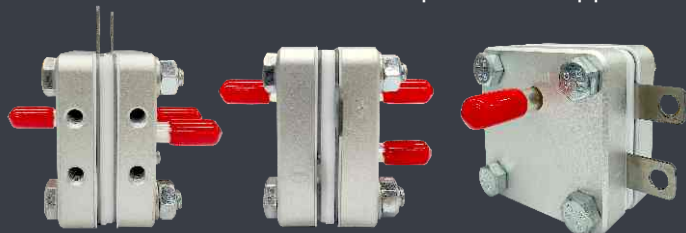
High current density
with stable voltage
operation

Product Model		CH60-1 type PEME		
Gas Production Rate		mL/min	90	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	60	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥30	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	8	
	Constant Voltage	V	3.5	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	50*38.8*60	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	65*57.5*60	
Weight		kg	0.3	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

Hydrogen life · Small Scale | 0.06-0.5 Nm³/h

PEM Water Electrolyzer | CH40-1 40 mL/min

Tailored solutions available for specialized applications.



Independently developed
and manufactured



High pressure tolerance
enables high-purity
hydrogen production



Premium materials,
precision engineering,
extended lifespan.



High current density
with stable voltage
operation

Product Model		CH40-1 type PEME		
Gas Production Rate		mL/min	60	H ₂ /O ₂ Mix Out
Hydrogen Production Rate		mL/min	40	Pure Hydrogen Output
Circulating Water Temperature		°C	25-45	
Circulating Water Volume		mL/min	≥20	Pure Water / Deionized Water
Circulating Water Conductivity		μS/cm	≥1	Compliant with ISO 3696:1987 Grade 1 Standard
Circulation Method		/	Gravity Circulation / Water Pump Circulation	
Hydrogen Purity		%	99.99	After Drying
Water Electrolysis Method		/	Water Electrolysis	Proton Exchange Membrane (PEM) Electrolysis
Maximum Withstanding Pressure		MPa	0.5	
Single Cell Voltage		V	1.75-2.5	
Power Supply	Constant Current	A	5.3	
	Constant Voltage	V	3.5	
Dim. (w/o Lugs/Conn.)		(L*W*H) mm	50*26.7*50	
Dim. (w/ Lugs/Conn.)		(L*W*H) mm	64*66.7*50	
Weight		kg	0.21	
Application Fields		GC Hydrogen (Fuel & Carrier); ELCD/AED Reaction Gas; Hydrogen Water Generators; Hydrogen Inhalers.		

APPLICATION CASES

Here are on-site photos of some delivered equipment. Our mission is to transform cutting-edge hydrogen technology into accessible value and benefits for customers.

Successful application cases epitomize Hovogen's profound technical expertise and extensive project experience. We are committed to providing clients with technologically advanced, stable-operating hydrogen equipment that achieves optimal lifecycle costs, jointly driving the commercialization of the hydrogen energy industry. "Welcome to inquire for your exclusive customized solution."



◀ SFA Aviation Fuel Research Project ▶



◀ Semiconductor Hydrogen Supply Project ▶



◀ 35MPa High-Pressure Hydrogen Production Project ▶



◀ Small-Scale Off-Grid Photovoltaic Hydrogen Production Project ▶



◀ Ultra-High Purity Hydrogen (99.99999%) Application Project ▶



◀ SOFC Fuel Cell Hydrogen Supply Project ▶



◀ CE-Certified Hydrogen Production Equipment Export to Europe ▶



◀ Skid-Mounted PEM Hydrogen Production Project ▶

APPLICATION

PEM water electrolysis for hydrogen production is not merely a hydrogen generation technology, but a critical bridge connecting renewable energy with traditional industries, transportation energy, and power systems. The PEM electrolyzer serves as the core equipment enabling the transition from "grey hydrogen" to "green hydrogen," representing an indispensable component of the future green low-carbon energy system. As costs continue to decline, its application scope will further expand.



Energy Storage Applications

Application Scenarios: Integrated wind-solar-hydrogen-storage projects, hydrogen energy storage power plants;
Core Value: Utilizes green electricity for green hydrogen production, enabling large-scale energy storage;
PEM Technology Advantages: Fast response, broad load adaptability, high efficiency.



Transportation Sector

Application Scenarios: Integrated hydrogen production and refueling stations, ports, airports, logistics hubs;
Core Value: Achieves deep decarbonization and reduces hydrogen cost and risk;
PEM Technology Advantages: Compact and flexible, high purity, suitable for on-site hydrogen production.



Industrial Sector

Application Scenarios: Refining, metallurgy, ammonia synthesis, glass processing, electronics manufacturing;
Core Value: Replaces fossil-based hydrogen production and promotes deep decarbonization of industrial processes;
PEM Technology Advantages: High purity, high reliability, meets specific process requirements.



Power System Services

Application Scenarios: Grid peak-shaving power plants, industrial park microgrids;
Core Value: Enhances grid stability and improves renewable energy integration capacity;
PEM Technology Advantages: Millisecond-level response, flexible load operation, serves as an energy coupling hub.



Community Energy / High-Altitude Military Outposts

Application Scenarios: Hydrogen-based cogeneration systems, building microgrids;
Core Value: Enables zero-carbon communities and enhances energy resilience;
PEM Technology Advantages: High efficiency, rapid dynamic response, intelligent control.



Scientific Research & Special Applications

Application Scenarios: Scientific experiments, aerospace and deep-sea life support systems, specialty gas applications;
Core Value: Provides high-purity hydrogen or oxygen to meet special environmental needs;
PEM Technology Advantages: High purity, compact design, enhanced safety.

DEVELOPING HYDROGEN ENERGY AND BUILDING A HYDROGEN SOCIETY

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