

Technical Specification

Membrane-Free Electrolyser™



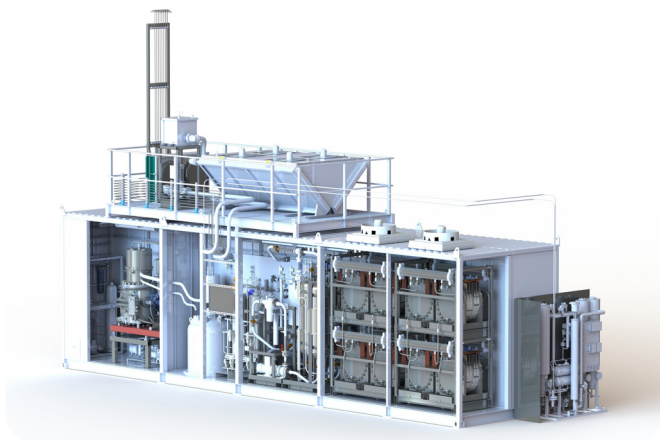
The **CPH2 Membrane-Free Electrolyser™ (MFE)** is the most cost-effective and efficient water electrolyser on the market, as it takes a totally different approach to splitting water into its constituent gases.

Water is mixed with electrolyte and travels to the stack, where the mixed gas is generated. The mixed gas is dried and cryogenically separated in the patented CPH2 system, producing purified hydrogen and medically pure oxygen.

This approach to hydrogen generation is both unique and patented. It results in a hydrogen purity of up to 99.999% and up to 99.8% purity for oxygen. But this method has a key advantage that PEM and Membrane Alkaline electrolysers don't. Our input water does not need to be as pure as for other systems and therefore reduces the volume wasted in purification systems.

With no membrane to degrade or fail, the **MFE** is simple to build, simple to operate, and simple to maintain. Constructed from readily available materials without using Platinum Group Metals (PGMs), or expensive polymer membranes, the stack components are more than 98% recyclable or reusable.

From a 1MW system to a multi-MW system, the **MFE** is designed to be fully scalable to meet the demands of the hydrogen economy.



MODEL	MFE220
Hydrogen Production [kg/day]	Up to 450
Oxygen Production [kg/day]	Up to 3,600
Gas Purity Hydrogen [%]	99.57
Gas Purity Hydrogen with optional DeOxy Drier [%]	Up to 99.999
Gas Purity Oxygen [%]	Up to 99.8
Maximum Allowable Operating Pressure [barg]	34
Water Consumption [L/hr]	< 200 approx.
Input Water Quality [mg/L] (Potable)	50 - 300
Stack Input Power [MW]	1.0
Plant Efficiency [kWh/kg]	<59
Input Voltage [VAC]	400-415, @50Hz, 3 phase
Weight (dry) [kg]	29,500
Packaging	40ft container
Water inlet pressure [barg]	Up to 8
Control	Siemens PLC
Communication	Modbus/Ethernet
Operating Temperature (standard config.) [°C]	-10 to +35
Recommended Preventive Maintenance [Mths]	6 & 12
Stack life [Yrs.]	25

Benefits:

- Potable water
- Simple, low-cost stack design with 25-year warranty*
- No Platinum Group Metals
- No reject water

*with maintenance contract



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Clean Power Hydrogen (CPH2) reserves the right to revise this documentation and to make changes in content from time to time without obligation on the part of CPH2 to provide notification of such revision or change.

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Simple. Safe. Sustainable.

