



FUEL CELL
SYSTEMS

Convion C250e SOE – Decarbonizing Industry by Green H₂

Convion's Solid Oxide Electrolysis technology offers a solution for decarbonizing industries by integrated hydrogen production. Convion C250e is a modular steam electrolyser system with reversible operation (rSOC) functionality, and co-electrolysis of steam + CO₂ as alternate configuration options.

Modular architecture makes possible installation of multiple C250e units in parallel for desired capacity. Each module is a separate, hot-swappable conversion unit, able to operate independently.

Benefits of hydrogen production by Convion C250e SOE include

- **Premium efficiency and economy:** By superior electrolysis efficiency, SOE technology offers significant reduction in energy expenditure as compared with low temperature electrolysis technologies.
- **Flexibility:** rSOC functionality makes possible switching the system to power generation when electricity price is high. In power generation, hydrogen, biogas, or natural gas can be used as a fuel.
- **Carbon Capture & Utilization:** CO₂ can be used as a co-feedstock in co-electrolysis to produce synthesis gas for industrial use in a single processing step.
- **Integration:** C250e system consumes industrial LP steam as a feedstock. Steam can be generated by waste heat or other zero carbon heat sources, reducing need for electrical energy.



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General Specification		C250e	Unit
Power Connection			
AC connection		400	VAC
Power intake		249	kW
Steam feedstock			
Pressure		2.5–4.0 bar-g	
Temperature		200-250	°C
Flow, self-regulated		71	kg/h
Product Gas			
Hydrogen production		6.4	kg/h
Hydrogen fraction [1]		81	%-mol
Temperature		200–300	°C
Pressure		0–50	mbar-g
Sweep Air Exhaust			
Oxygen content		30–33	%-mol
Temperature		~200	°C
Energy Performance			
Electrolysis efficiency [2]		85	%-LHV
Steam consumption [3]		11.1	kg H ₂ O / kg H ₂
Power consumption		38.8	kWhe / kg H ₂

Design values have not been fully confirmed and do not imply guaranteed performance.

Installation	
Ingress protection class	IP53
Temperature [°C]	-20 ... +40
Altitude [m]	0 ... 1000
Dimensions h*w*l [mm]	3120*2090*2740
Installation	Outdoor by default, indoor possible

For further information & enquiries, please contact convion@convion.fi

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[1] Remaining content is steam and <1% N₂ originating from internal leakages.

[2] Product gas LHV/electrical energy input, excluding energy required for steam generation.

[3] Utilization of steam in conversion; water recovery from product gas not accounted for.