

AMSE

200 kW Alkaline Membrane Solid Electrolyte containerized electrolyzer stack complemented by the balance of plant (BoP).



Key features

- H₂ Output: 40 Nm³/h (~ 4 kg/h), up to 30 barg, 99.999% purity
- Cost-efficiency
- High degree of redundancy
- Rapid reaction times to variable renewables
- N₂ or other gasses provided for purging
- Lack of noble metals as catalyst
- Less water purity than PEM technology
- Less aggressive electrolyte solution with respect to AWE

Specification

Nominal H₂ flow	40 Nm ³ /h ~ 96 kg/24 h	Net volume flow rate
H₂ outlet pressure	Up to 30 barg	
H₂ purity	Up to 99.999% in molar fraction	Impurities only H ₂ O and O ₂
Nominal O₂ flow	20 Nm ³ /h	Net volume flow rate
O₂ outlet pressure	Atmospheric	
Sound pressure level	< 60 dB(A)	at 10 m
Flexibility	30% – 100%	Of nominal production rate
Stack nominal electrical power consumption	201 kW 268 kW	Beginning of life (BOL) Near end of life (EOL)
Specific power consumption (efficiency)	5 kWh/Nm ³ _{H₂} 55.9 kWh/kg _{H₂} 59.7%	Including all utilities inside the battery limits of the electrolyzer container (at beginning of life)
System efficiency over differentloads	60 – 100%: 5 kWh/Nm ³ 30 – 60%: 5.2 kWh/Nm ³ 10 – 30%: 5.6 kWh/Nm ³	Optional dryer excluded
Ambient operating temperature	-15 – 35 °C	
Nominal water consumption	40 L/h	Purified water
Water inlet conductivity	< 5 μS/cm	
Water inlet temperature	5– 55 °C	
Hot startup time	0 – 10% in 100 seconds	
Hot standby power consumption	Max. 6 kW	Stacks are hydrated and electrolyte solution is in circulation at minimum temperature
Cold startup time	0 – 100% in 30 minutes	Depending on ambient temperature
Cold standby power consumption	Max. 0.9 kW	All components are in standby and container heating is on
Shut down time	From 100% in 3 minutes	
Shut down period	Max. 12 weeks	
Frequency	50/60 Hz	
Dimensions	L: 12.2 m × W: 2.4 m × H: 2.6 m	
Weight	~ 30 t	
Stack lifetime	~ 80 000 operation hours	