



Stiesdal HydroGen Electrolyser

Technology	Pressurised Alkaline
Nominal AC Power Input	3.1 MW
Maximum AC Power Input	3.4 MW
Footprint per MW*	21 m ² / MW
Dry weight of total system	57 tons
Environment	Outdoor / IP54 / corrosion class C3H

* Without safety and service area.

Production

Net pure H₂ production rate*	Up to 639.4 Nm ^{3**} H ₂ per hour
Net pure O₂ production rate*	Up to 322 Nm ^{3**} O ₂ per hour
Ambient temperature range	-20°C to 45°C ⁺
Availability (target)	Above 97%
Design lifetime – system	30 years

* At nominal load.

** Volume in Nm³ refers to standard conditions at 273.15 K and 1.013 bara. + Standard offering has derating after 30°C.

Additional climate package options available to expand ambient temperature range where the electrolyser can operate at full capacity.

Efficiency	25% load	40-80% load	100% load
Guaranteed efficiency, system (AC)	71%	75%	73%
Guaranteed power consumption, system (AC)	5.00 kWh / Nm ³ H ₂	4.72 kWh / Nm ³ H ₂	4.85 kWh / Nm ³ H ₂
Nominal operating temperature	80°C		

Dynamic Operation

Operation range	25-100%
Start-up time*	Below 5 minutes (from no power on stack to 100% load)
Ramp up within operation range	1 % load / second
Ramp down	100 % load / second
Design for frequent start and stop	2-3 daily on average

* At cold start nominal efficiency is reached with nominal operating temperature.

Gas quality	
Delivery pressure without additional compression	Ambient to 35 bar
Delivery temperature	40°C
Hydrogen purity*	
H ₂ content	99.5% (minimum)
O ₂ content	0.2% (maximum)
Water content	0.3% (maximum)
Other impurities	0.1% (maximum)
Oxygen purity*	
O ₂ content	98.9% (minimum)
H ₂ content	0.8% (maximum)
Water content	0.3% (maximum)
Other impurities	0.1% (maximum)

* Values at 100% load, 35 bar delivery pressure, after start-up sequence.

Electricals	
Rectifier type	Full IGBT based
Frequency	50 Hz +/- 3 Hz
Supply voltage	3 x 750 VAC +10 % / -13 %
Supply current	2700 A
Built in auxiliary transformer	3 phase 400 V + PEN

Auxiliaries	
Water input	Less than 5 µS/cm purified water
Water consumption	0.81 liter / Nm ³ H ₂
Temperature outlet from heat exchanger	Up to 71°C
KOH concentration	25-35 weight %

Control and communications system	
Remote and automated operation	Yes
Communication protocol	OPC-UA

Compliance	
All our equipment is CE marked, in full compliance with European Union directives (Machinery, Low Voltage, Electro-Magnetic Compatibility, Pressure Equipment, ATEX)	

Stiesdal
Hydrogen

More
information



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