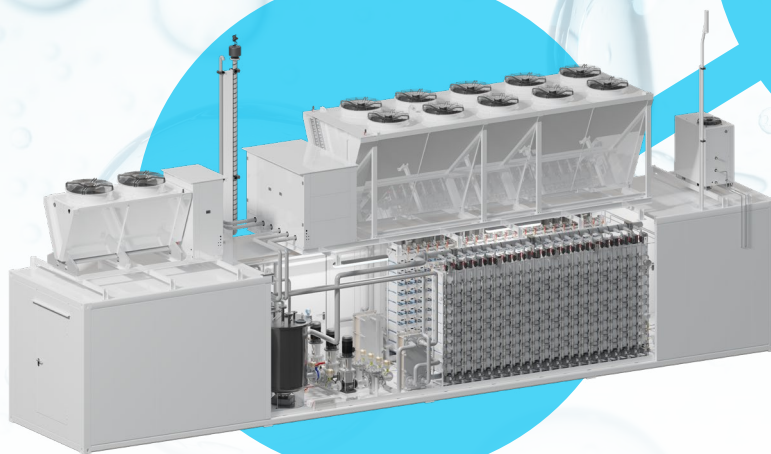




NEXUS 1000

FIRST AEM ELECTROLYSER OF THE MEGAWATT-SCALE



NEXUS 1000

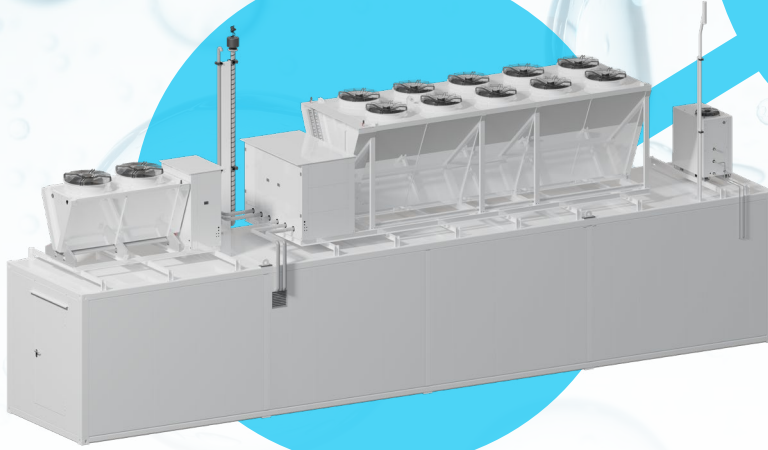
The AEM Nexus 1000 is the first AEM Electrolyser of the megawatt class. A ≈ 1 MW containerised electrolyser largely pre-assembled for fast commissioning featuring 420 AEM stack modules around a common balance of plant (BoP).

H₂ nominal flow	210 Nm ³ /h 453 kg/24h	Net volume flow rate
H₂ outlet pressure	Up to 35 barg	
H₂ purity	99.95% in molar fraction, equals dew point of -30 °C	Impurities: H ₂ O < 500 ppm, O ₂ < 5 ppm
H₂ purity with optional dryer	99.999% in molar fraction, equals dew point of -65 °C	Impurities: H ₂ O < 5 ppm, O ₂ < 5 ppm ≈ 5 kW consumption during regeneration
H₂ outlet temperature	5 – 55 °C	
O₂ nominal flow	105 Nm ³ /h	Vented at atmospheric pressure
Nominal power consumption	1,008 kW 1,200 kW	Beginning of life (BOL) Near end of life (EOL)
Voltage	3 × 400 VAC	± 10 %
Frequency	50/60 Hz	± 10 %; THD < 5 %
H₂O nominal consumption	190 L/h	Purified water
H₂O inlet quality	Minimum ASTM D1193-06 Type IV or recommended Type II or Type III ¹	
H₂O inlet temperature	5 – 55 °C	1 – 4 barg
Operational flexibility	3% – 100%	Of nominal H ₂ flow rate
Turndown ratio	33:1	Maximum flow/Minimum flow
Specific power consumption (Efficiency)	4.8 kWh/Nm ³ H ₂ 53.3 kWh/kgH ₂ 62.5% (LHV)	Including all utilities inside the battery limits of the AEM Nexus 1000 (at BOL)



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Hot startup time	0 – 100% in 100 seconds	Electrolyte is at min. 35 °C
Cold startup time	0 – 100% in 30 minutes	Assuming 5 °C ambient temperature
Shut down time	100 – 0 % in 3 minutes	Normal, gradual shut down
Hot standby power consumption	160 kW Max.	Stacks are hydrated and electrolyte circulates at min. temperature (35 °C)
Cold standby power consumption	20 kW Max.	All components in standby; container heating is on (only with < 5 °C ambient)
Ambient operating temperature	-15 – 35 °C	Up to 45 °C with hot-ambient version
Sound Pressure Level	62 db(A) Max.	At 10 m (Including all utilities)
Process heat output	300 kW	BOL; ≈ 50 °C
Dimensions	16 × 3 × 7.3 m	(L × W × H)
Weight	≈ 40 tons	

