

READY IN 2025



Nedstack
FUEL CELL TECHNOLOGY



Modular Fuel Cell Power Solutions

For an absolute Zero Emission future



The Generation 3 is a modular hydrogen fuel cell system, producing electricity and heat only emitting water. It's unique design separates the fuel cell module from the air supply, enabling easier integration optimal operation. This next step in the PEMFC systems, enhances efficiency and accelerates sustainability in power generation.

Performance

Peak Power (BoL)	1000 kW
Prime Power (MCR)	900 kW ¹
Nominal Power	700 kW
Ramp Up Time	20 %/s
Start Up Time	<60 s
Voltage Output	800 VDC
Current Output	2 x 765 A

Environment

Air Supply	Ambient
Height (Altitude)	max 2000 m
Water Production (100% load)	~300 kg/h
Operating Temperature	-25 °C to 45 °C ²
Storage Temperature	-45 °C to 55 °C ³
Process Air	935 Nm ³ /h
Ventilation	500 Nm ³ /h

Cooling

Maximum heat generation (EoL)	1200 kW/t
Maximum Supply Temperature	≤ 35 °C
Maximum Return Temperature	55 °C

Efficiency and hydrogen consumption

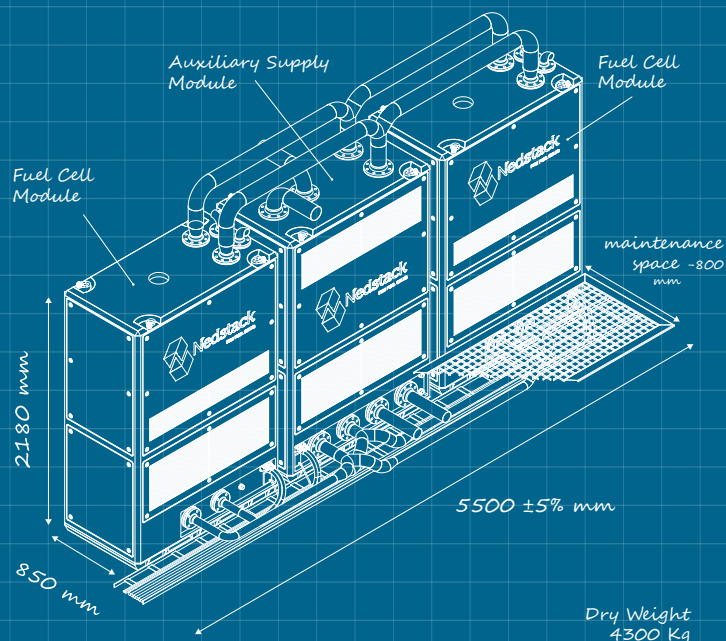
Net Output		Beginning of Life		End of Life	
110% load	1000 kW	49.5%	60.0 kg/h	-	-
100% load	900 kW	50.3%	53.1 kg/h	43.9%	60.8 kg/h
80% load	700 kW	51.9%	40.0 kg/h	45.6%	45.5 kg/h
50% load	450 kW	53.7%	25.0 kg/h	47.5%	28.2 kg/h
25% load	225 kW	51.9%	12.4 kg/h	48.4%	13.8 kg/h
5% load	50 kW	48.0%	3.2 kg/h	48.0%	3.2 kg/h

Inlet pressure	≥ 2 bar
Hydrogen Standards ⁴	Type 1, Grade E, Category 3 (ISO 14687-2)

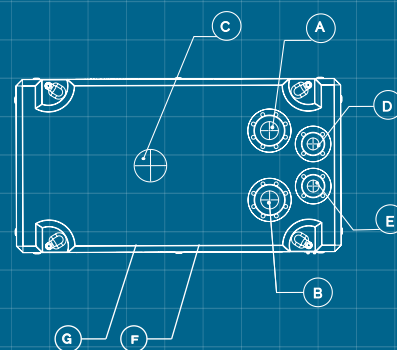
Compliance

Standards	IEC-62282-3
Maritime Approval (in progress)	Bureau Veritas, RINA

Complete Fuel Cell System

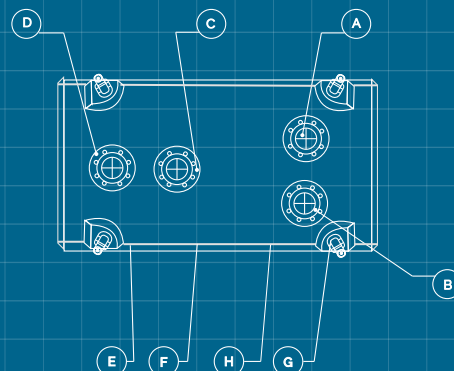


Fuel Cell Module



A = Cathode Air In	E = Anode Out
B = Cathode Air Exhaust	F = Secondary Coolant In
C = Ventilation FC Space	G = Secondary Coolant Out
D = Anode In	

Auxiliary Supply Module



A = Cathode Internal In	E = Secondary Coolant In
B = Cathode Internal Out	F = Secondary Coolant Out
C = Cathode External In	G = Tertiary Coolant In
D = Cathode External Out	H = Tertiary Coolant Out

- Optional galvanic isolation available up to 825kW
- Auxiliary supply required when shutdown
- Decommissioned storage only
- Contact Nedstack for other hydrogen purities