READY IN 2025

Nedstack
FUEL CELL TECHNOLOGY

Modular Fuel Cell Power Solutions

For an absolute Zero Emission future

PemGen

FUEL CELL POWER

DRAFT

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 Beginning of Life	1000 kW
Prime Power	900 kW
Nominal Power	700 kW
Stack Operation Temperature	65 °C
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 [1]
Storage Temperature	-45°C to 55 °C [2]
Process Air	935 Nm^3°/h
Ventilation	500Nm^3/h

Cooling

Maximum heat generation (EoL)	1200 kWt
Maximum Supply Temperature	≤ 35 °C
Maximum Return Temperature	60 °C

Efficiency and hydrogen consumption

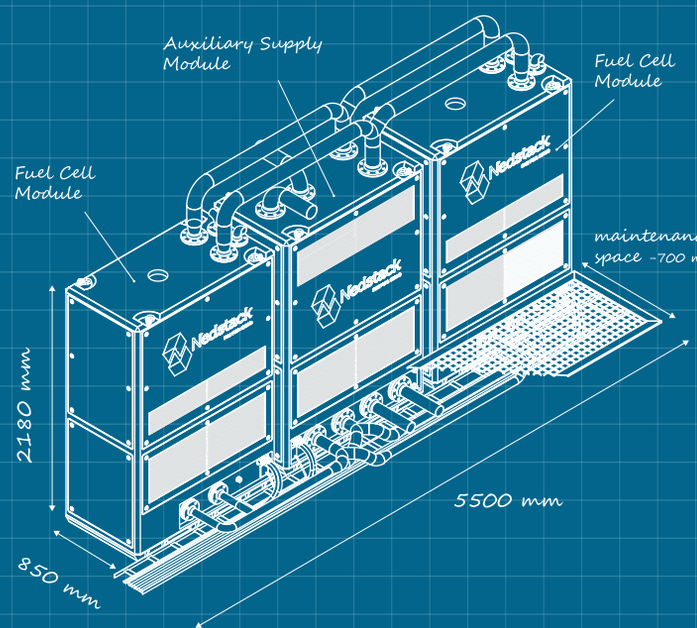
Net Output		Beginning of Life		End of Life	
110% load	1000 kW	49.5%	60.0 kg/h	-	-
100% load	900 kW	50.3%	53.1 kg/h	43.9%	60.8 kg/h
80% load	700 kW	51.9%	40.0 kg/h	45.6%	45.5 kg/h
50% load	450 kW	53.7%	25.0 kg/h	47.5%	28.2 kg/h
25% load	225 kW	51.9%	12.4 kg/h	48.4%	13.8 kg/h
5% load	50 kW	48.0%	3.2 kg/h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

Inlet pressure	≥ 2 bar
Hydrogen Standards [3]	Type I, Grade E, Category 3

Compliancy

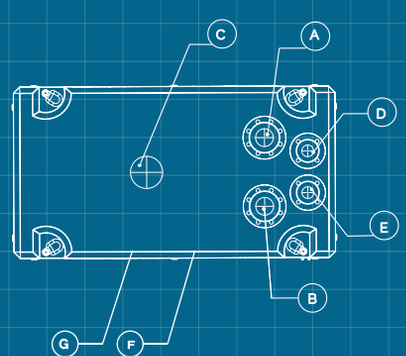
Standards	IEC-62282-3
Maritime Approval (in progress)	Bureau Veritas, RINA

Complete Fuel Cell System



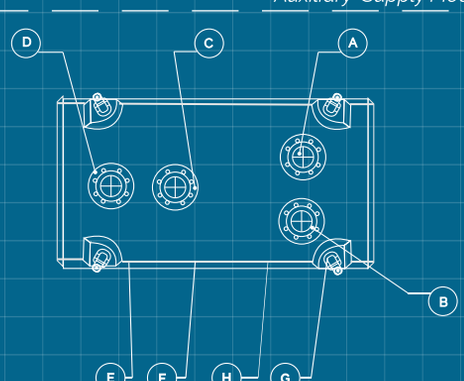
Dry Weight 4300 Kg

Fuel Cell Module



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

Auxiliary Supply Module



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

1. Auxiliary supply required when shutdown
2. Decommissioned storage only
3. Contact Nedstack for other hydrogen purities

*All data are subject to change without prior notice

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