



NEDSTACK FCS 10-XXL PEM FUEL CELL STACK

SPECIFICATIONS

Electrical - Beginning of Life

Rated power : 10.6 kWe @ 230 A
Power at lower current : see graph

Mechanical

Weight : 35 kg (approx)
Size : 499(l)x196(w)x288(h) mm
Cell count : 75

Hydrogen

Humidification : $\geq 50\%$ RH at 62 °C at inlet (75% recommended)
Purity (dry) : Grade ≥ 2.5 (max: CO 0.2ppm, CO₂ 0.5vol%, total sulphur 4ppb, formaldehyde 0.01ppm, formic acid 0.2ppm, ammonia 0.1ppm, total halogenated compounds 0.05ppm, particles 1 μ g/Nl. Hydrogen specification adapted from ISO 14687-2:2008)
Pressure drop : < 0.05 bar at full power
Pressure level : 0.15 - 0.3 barg
Stoichiometry : 1.25 - 1.50 for H₂, minimum flow = 56 Nl/min
Max H₂ consumption : 120 Nl/min at full power

Air

Filtered
Humidification : 75% RH at 62 °C
Purity : instrument air quality (max: CO 25ppm, Sulphur 0.01ppm, nitrogen dioxide 0.3ppm, ammonia 0.1ppm, particles 1 μ g/Nl)
Pressure level : Ambient (no backpressure allowed)
Pressure drop : < 0.12 bar at max power
Stoichiometry : ≥ 2.0 , minimum flow = 105 Nl/min
Max air required : 572 Nl/min at full power

MEA

Pressure difference : <0.3 bar

Emissions

Noise : 0
Water production : 0.5 l/kWh_e(approx.)
H₂ respiration : 60 ml/min (max)

PRODUCT DATA SHEET – NEDSTACK FCS 10-XXL



Nedstack
PEM FUEL CELLS

Cooling

Nominal temperature	: 65 °C
Max temperature	: 70 °C
Capacity	: < 10 kW _{th} at full power
Medium	: de-mineralized water or BASF glycantine FC G20
Purity	: conductivity < 10 μS.cm ⁻¹
Pressure difference	: < 0.15 bar (DI water) or < 0.45 bar for glycantine
Operating window	: ΔT < 5K

Note that proper material selection in the tempering device is important to avoid release of ions into the coolant.

Connectors

Coolant	<i>Standard</i>	: Nedstack quick coupling (male)
	<i>Optional</i>	: quick coupling (female)
Hydrogen	<i>Standard</i>	: Nedstack quick coupling (male)
	<i>Optional</i>	: quick coupling (female)
Air	<i>Standard</i>	: Nedstack quick coupling (male)
	<i>Optional</i>	: quick coupling (female)
Current		: Busbar with 10.5 mm hole (2x)
Cell voltage connector		: M12 connector (2x)

Appearance Impression



Nedstack fuel cell technology B.V.

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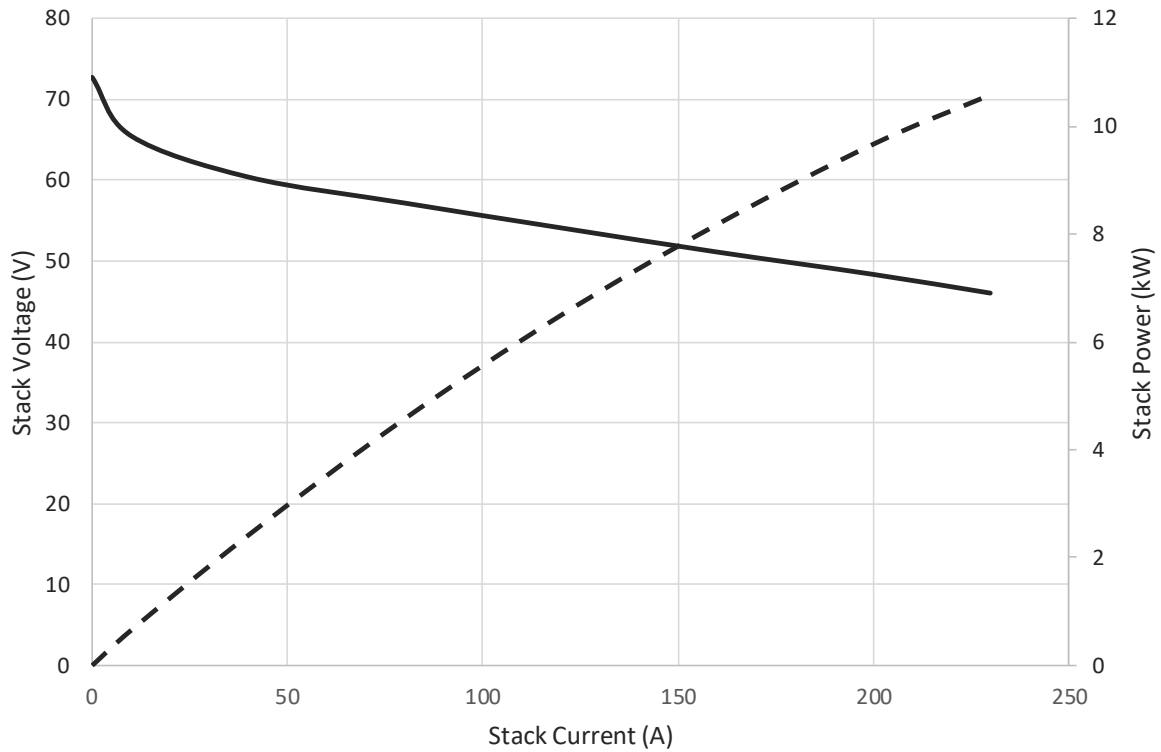
Electrical specifications

Beginning of Life stack performance data under standard conditions:

Stack temperature = 62 °C, Ambient pressure

Hydrogen: stoichiometry = 1.25; minimum hydrogen flow = 56 NI/min; RH = 75%.

Air: stoichiometry = 2.0; minimum air flow = 105 NI/min; RH = 75%



Current (A)	0	40	80	120	160	200	230
Stack Voltage (V)	72.8	60.5	57.2	54.2	51.2	48.4	46.1
Stack Power (kW)	0.0	2.4	4.6	6.5	8.2	9.7	10.6

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