

V Stack

PowerCell Group products and services create electric power based on fuel cells using hydrogen. All solutions based on this system will have minimal environmental impact through a zero-emission hydrogen electric system.

The V Stack is a versatile fuel cell stack, with an output of up to 35 kW. It is based on state-of-the-art Polymer Electrolyte Membrane (PEM) technology and is designed to operate at high current densities, in turn reducing operational costs. Built upon robust metallic bipolar plates that are made to meet the rugged conditions of different applications.

The V Stack is a proven product that has been in production for several years.

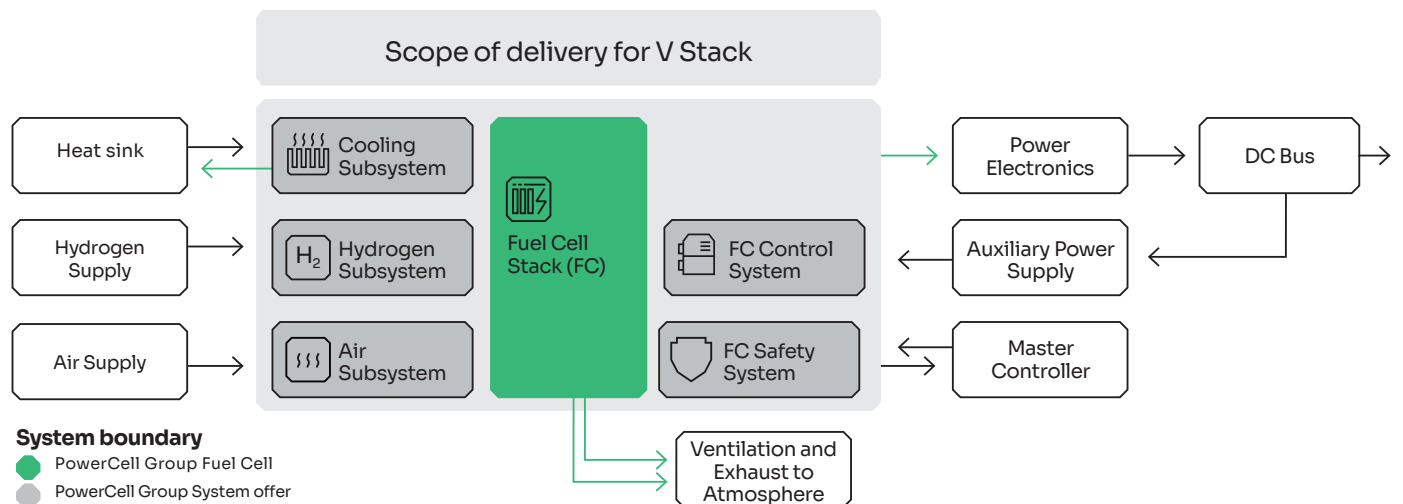


Easy Integration

Owing to its low pressure drop, V Stack avoids placing high energy demands on surrounding components.

Gas Tolerance

Versatile gas feed possibilities as systems can run on either pure hydrogen or reformat gas.



Physical data

Configurations/Specification

Standard stack configuration

Max power	3 kW	6.5 kW	10 kW	26 kW	35.5 kW
Cell count	24	48	72	192	264
Dimensions ⁱ	155 x 490 x 125 mm	155 x 490 x 158 mm	155 x 490 x 192 mm	155 x 490 x 358 mm	155 x 490 x 459 mm
Weight	11.2 kg	13.7 kg	16.2 kg	28.5 kg	35.9 kg

Performance

Coolant outlet temperature	< 85°C
Fuel pressure	≤ 1.2 bar (g)
Air pressure (inlet)	≤ 1.0 bar (g)
Coolant pressure	≤ 1.5 bar (g)
Ambient temperature	-30–70°C
Humidity	0 to 100% relative humidity; non-condensing at inlet
Fuel composition (dry basis)	40–100% vol H ₂ ⁱⁱ
Fuel quality	Reformate ⁱⁱⁱ or pure hydrogen ^{iv}
Operational lifetime	10 000 h

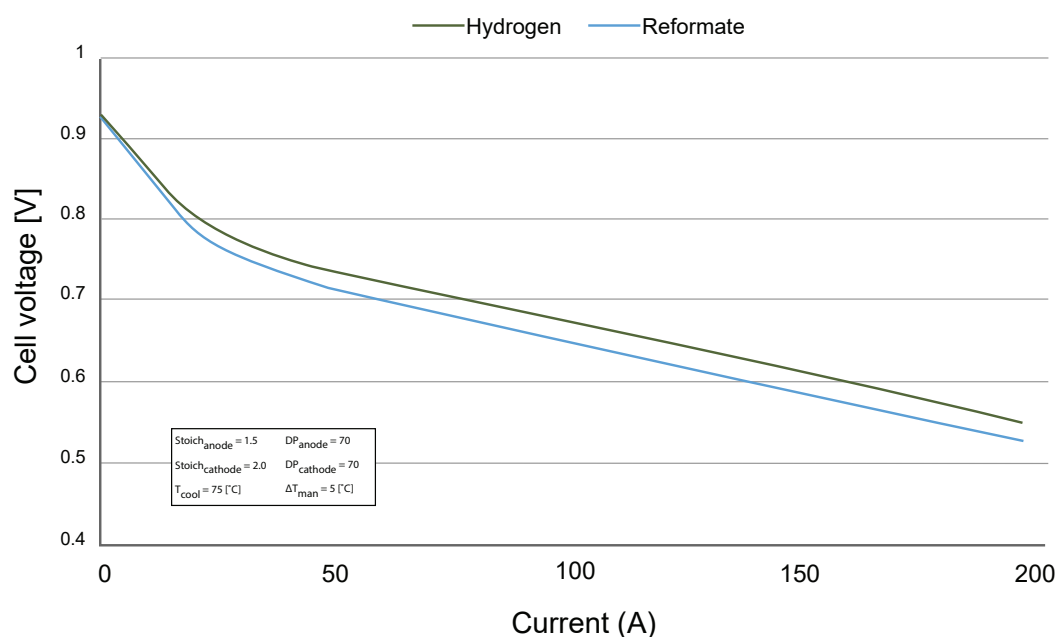


Figure: Typical characteristics of a single cell (average, BOL) at different fuel composition, i.e. hydrogen and reformate. Hydrogen: 85% H₂ and 15% N₂. Reformate: 44% H₂, 21.5% CO₂, 10 ppm, 0.5 % air and 34% N₂. Performance measured at reference conditions

ⁱ Dimensions vary within certain tolerances depending on stack size.

ⁱⁱ 0–60% inert diluents, i.e. He + N₂ + Ar. For reformate CO₂ is also considered as inert component since air bleed is required.

ⁱⁱⁱ Max CO concentration 25 ppm. Please contact PowerCell for more info.

^{iv} Fuel quality according to ISO 14687-2 except for water and inert diluting components.