

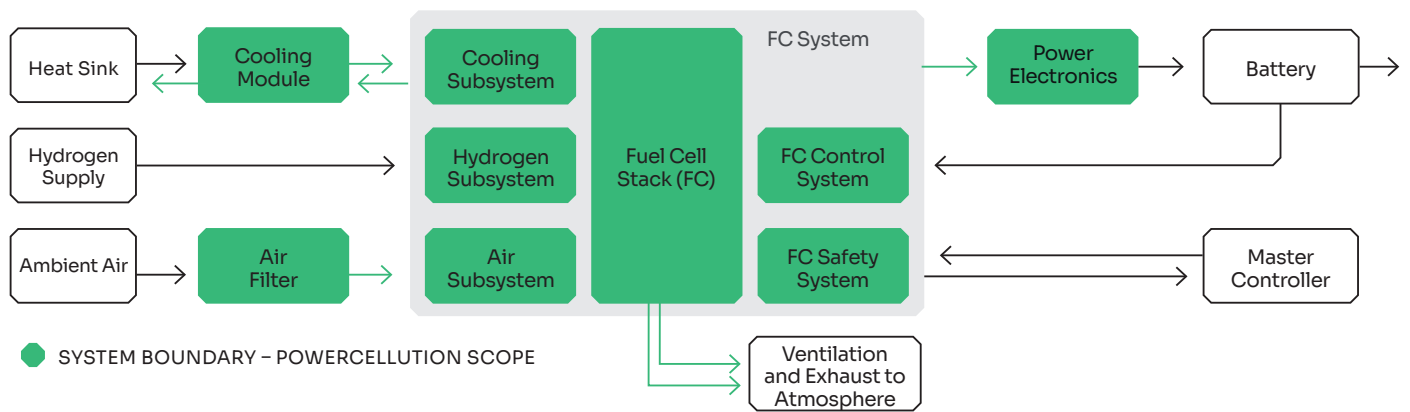
Stationary

Power Generation System 5

PowerCell Groups products create electric power based on fuel cells using hydrogen. All of our solutions have minimal environmental impact through the use of zero emission hydrogen electric technology.

Power Generation System 5 is a hydrogen fuel cell system developed to create electricity in an environmentally friendly, silent, and reliable way. This system is based on our PowerCellution V Stack and can be used as a generator for buildings and households and also as a back-up generator for telecom.

The system is designed for simple integration. It is built onto a standard 19-inch rack with multiple protective safeguards to minimize risks and consequences of any foreseeable hazards to the system.



Scope of supply for standard configuration

Fuel Cell System

Fuel Cell Stack	Converts hydrogen into electrical energy in a clean and efficient way.
Hydrogen Subsystem	Regulates incoming hydrogen to the fuel cell stack and recirculates the hydrogen to increase the fuel efficiency.
Cooling Subsystem	Manages cooling and produces heat that can be utilized for external use.
Air Subsystem	Regulates incoming air to a specific humidity, flow rate, pressure and temperature.
FC Safety System	Passive and active protections mechanisms based around continuous monitoring and control of the system.
FC Control System	Process monitoring and control within the fuel cell system.

Power Electronics Module

Converts and stabilizes voltage output from the fuel cell stack.

Air Filter

Provides chemical filtration of air feed to match the requirements of the fuel cell stack.

Power Generation System 5

Specifications

Max net power	5 kW	
Dimensions	Fuel Cell Module incl. cooling: 440 x 557 x 1218 mm	Power Electronics Module: 440 x 500 x 210 mm
Volume	298 l	46 l
Weight	125 kg	24 kg

Performance

Gross output (at rated power)	45 V / 140 A
Voltage output	25-59 VDC
Current output	Up to 80 A per two battery output connection
System heat output	0-7.5 kW ⁱ
Coolant outlet temperature	65°C
Fuel quality	Hydrogen ISO 14687:2019
Fuel inlet pressure	3-6 bar(g) ⁱⁱ
Communication and control	CAN 500 kpbs and interface display control
System efficiency (peak, BOL)	50 %
System efficiency (rated power, BOL)	42 %
Operational lifetime	10 000 h ⁱⁱⁱ

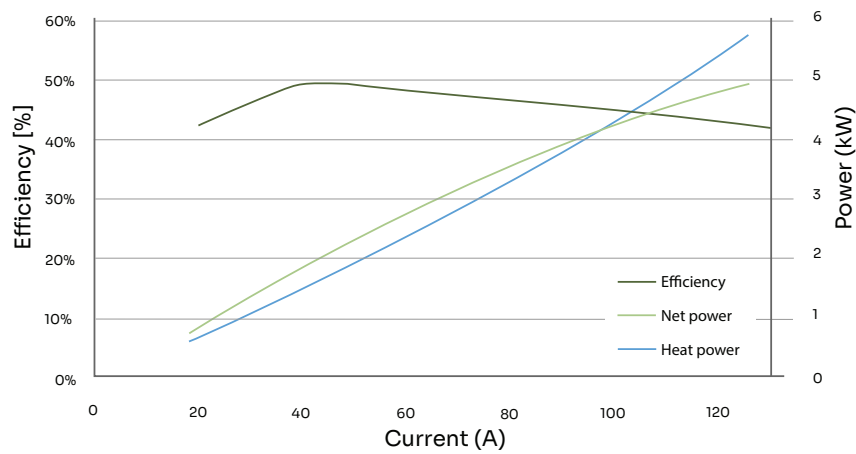


Figure: Performance measured at reference conditions and BOL

Environment

Ambient temperature	Indoors 5-45 °C ^{iv}
Humidity	5-95% relative humidity; non-condensing
Regulation and standards	EN62282-3-100, EN60950-1, RoHS Vibration: EN 300 019-2-2 V2.2.1: Careful transportation

ⁱ Estimated at end of life, heat output increases with the system life.
ⁱⁱ Pressure should be stable during operations.
ⁱⁱⁱ Expected lifetime. Actual lifetime depends on use case.
^{iv} Start-up from sub-zero degrees requires external power assistance.