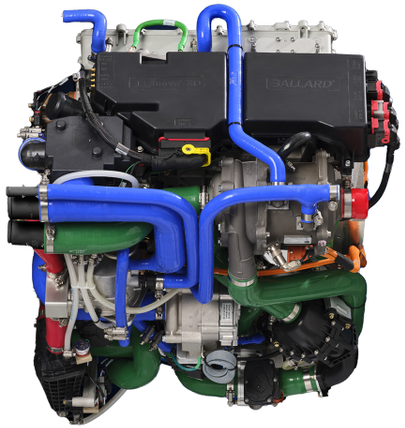
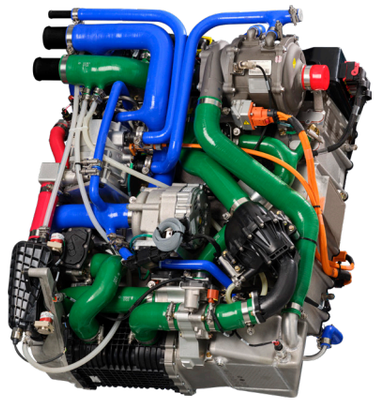
BALLARD™

Fuel Cell Power for Heavy Duty Applications

The FCmove®-XD is the latest development in Ballard's proven FCmove platform of high-performance fuel cell engines for zero-emission heavy-duty vehicles. With a compact, powerful modular design, the FCmove®-XD modules are scalable from 120kW to 360kW as one engine and feature a single interface offering an easy integration solution for vehicle OEMs and integrators, backed by Ballard's proven experience, product performance and service quality promise.

FCmove®-XD





Features

Low Total Cost of Ownership

High efficiency engine enabling long driving range.

Scalable By Design

Easily incorporates up to 3 parallel connections for power output of 240kW or 360kW utilizing all the original connections.

Proven Reliability & Durability

Demonstrated exceptional fuel cell stack lifetime, with >20,000 hours of operation and 98% in service module power availability.

High Performance Stack

FCgen®-HPS stack is a high power density, high performance stack designed to meet stringent automotive standards.

Freeze-Start Capability

Rapid freeze start from -30°C eliminates vehicle plug in or special start procedures.

Compact Design

Integrated with a DC/DC converter and BOP components, this module easily connects to the architecture of the integrator with a 17% reduction in volume from previous models.

Humidification

Integrated maintenance free system that provides maximum system performance and durability through a wide range of environmental conditions.

High Temperature and Altitude Operation

Operation up to 90°C system outlet temperature and up to 1,500m with no power derate at beginning of life (BOL).

Climate Protection

IP6K9K-rated enclosure guards against and protects key module components in extreme climates.

High Pressure System

Offers better performance, fuel efficiency and durability by preventing degradation .

Remote Diagnostics

Monitors performance data remotely to anticipate preventative maintenance.

Safety Features

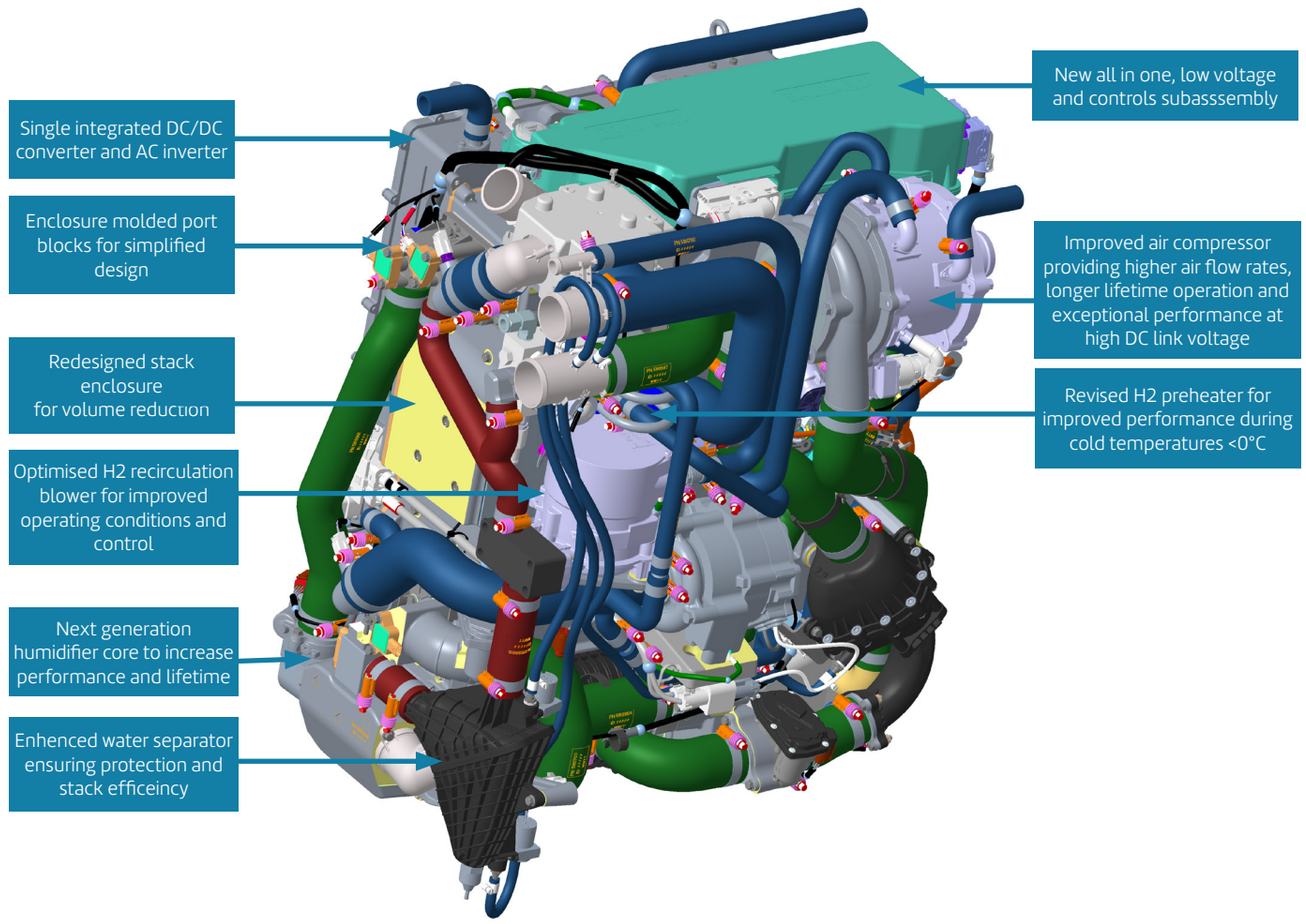
Fuel shut off, fuel pressure relief, touchsafe high voltage rated connectors, optional high voltage interlock configuration, H2 leak and fire detection, and an integrated redundant hardware safety system.

FCmove®-XD

Product Specifications[1]

Performance with integrated DC/DC convertor	
Net system power	BOL 120kW EOL 100kW
Operating system current[2]	10 – 230 A
Operating system voltage	520 – 750 V
Idle power	5kW
Physical	
Dimensions (L x W x H) mm	737 x 565 x 902
Weight	238 kg
Environmental protection	IP6K9K
Environmental operating temperature	-30°C – +40°C
Minimum start-up temperature	-30°C
Short-term storage temp	-40°C – +80°C
Reactants and Coolant	
Fuel type	Gaseous hydrogen
Composition	H2 quality as per SAE J2719_201511, ISO 14687:2019 grade D
Fuel supply pressure	5 – 8 barg nominal
Peak fuel efficiency	60%
Oxidant	Air
Coolant	Ethylene glycol concentrate 0% to 50% by volume, balance DI water
Nominal radiator coolant outlet temperature	70°C
Safety Compliance	
Certifications	ISO23273:2013, ISO6469-2:2018, ISO6469-2:2018, SAE J2578:2014, UN ECE Reg 10, ECE/TRANS/180/Add.13, REACH, ISO/IATF 16949:2016, SAE J1939:2013, ISO 6469-4:2015
Monitoring	
Control interface	CANbus
Emissions	
Exhaust	Zero-emissions (no PM, NOx, SOx, CO or CO_2)

[1] Specifications are subject to change without notice
[2] Current range is calculated for a DC/DC high side system voltage of 520V



Here for life™

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