

BALLARD™

FCmove™-HD

Fuel Cell Power Module for Heavy Duty Motive Applications



Ballard's FCmove™-HD is the next-generation heavy duty fuel cell power module for use in zero-emission motive applications. The hydrogen fuelled power module offers a durable, compact and easy installation solution for system integrators and vehicle OEMs, backed by Ballard's unmatched fuel cell expertise and experience.

Features

Lower Life Cycle Cost

With better fuel economy and fewer maintenance requirements, total cost of ownership is 35% lower than previous product generations.

Simplified Integration

This complete package, with all subsystems fully integrated, has interfaces located on one panel to provide easier access for connections as well as maintenance.

Robust Components

Designed with a new generation of more robust balance of plant components to improve reliability.

System Integration Flexibility

Reducing the volume by 40% and weight by 35% has produced a low-profile power module that enables greater flexibility in commercial vehicle design.

Freeze-Start Capability

Freeze start from -25°C, with no need to plug in the vehicle or use special start procedures.

Humidification

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

High Performance

Robust PEM fuel cells deliver the power, range, and efficiency demanded by fleet operators.

Proven Reliability & Durability

Demonstrated through exceptional fuel cell stack lifetime, with >25,000 hours of operation and 97% module availability in service.

High Temperature Operation

Permits a smaller cooling package for integration flexibility and generates HVAC heating, significantly improving overall vehicle fuel economy.

Climate Protection

IP67-rated enclosure system guards against premature deterioration of key module components in extreme climates.

High Pressure System

Offers better performance, fuel efficiency and durability by preventing degradation of the fuel cell power module.

Fuel Efficiency

Two to three times more efficient than CNG/ diesel engines, fuel cell buses reduce overall fuel consumption.

Remote Diagnostics

Direct or wireless connection allows customer to monitor performance data remotely, and anticipate preventative maintenance.

Safety Features

Integrated safety system with ventilation fans, and hydrogen sensor built into the module to ensure highest safety and ease of installation.

Product Specifications*

Performance

Net system power	70kW
Operating system current	20 – 240 A
Operating system voltage	250 – 500 V
Idle power	8kW

Physical

Dimensions (L x w x h) mm, excluding air filter	1525 x 812 x 367
Dimensions (L x w x h) mm, including air filter	1812 x 816 x 415
Weight	250 kg
Environmental protection	IP67
Operating temperature	-30°C – +50°C
Minimum start-up temperature	-25°C
Short-term storage temp	-40°C – +80°C

Reactants and Coolant

Fuel Type	Caseous hydrogen
Fuel purity	As per SAE specification J2719
Fuel supply pressure	8 barg nominal
Peak fuel efficiency	57%
Oxidant	Air
Coolant	Ethylene glycol or propylene glycol min 20% to a max 60% by volume, balance DI water
Radiator coolant outlet temperature	60°C nominal

Safety Compliance

Certifications	ISO 6469-2:2009 ¹ ISO 6469-3:2011 ¹ ISO 23273:2013 ¹
----------------	---

Monitoring

Control Interface	CANbus
-------------------	--------

Emissions

Exhaust	Zero-emissions (no PM, NOx, SOx, CO or CO ₂)
---------	--

¹ Specific clauses within each standard * Specifications are subject to change without notice