BALLARD™

FCmove®-HD+



Fuel Cell Power for Medium Duty Applications

Ballard's FCmove™-HD+ is the next-generation medium heavy duty fuel cell power module for use in zero-emission motive applications. The FCmove™-HD+, offers a durable, compact, and easy installation solution for system integrators and vehicle OEMs-backed by Ballard's proven experience, unmatched product performance, and service quality promise.

Features

Lower Life Cycle Cost

With better fuel economy and fewer maintenance requirements, total cost of ownership is 40% 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

Available either in a low-profile or small footprint form factor to enable greater flexibility in commercial truck and bus vehicle designs.

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 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

IP6K9K-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 (WiFi or cellular) 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.

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Product Specifications*

Performance	Engine Bay	Rooftop
Net system power	100 kW	100 kW
Operating system current	20 - 360 A	20 - 360 A
Operating system voltage	280 - 560 V	280 - 560 V
Idle power	10kW	
Physical		
Dimensions (l x w x h) mm, excluding air filter	1081 x 633 x 650	1705 x 772 x 359
Dimensions (l x w x h) mm, including air filter	N/A	1996 x 802 x 440
Weight	249[2] kg	288[2] kg
Environmental protection	IP6K9K	
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	Gaseous hydrogen	
Fuel purity	As per SAE J2719 or ISO 14687:2019 grade D	
Fuel supply pressure	8 barg nominal	
Peak fuel efficiency	57%	
Oxidant	Air	
Coolant	Ethylene glycol min 0% to a max 60% by volume, balance DI water	
Radiator coolant outlet temperature	60°C nominal	
Safety Compliance		
Certifications[1]	ISO 6469-2:2009, ISO 6469-3:2011, ISO 23273:2013, SAE J2578, UN ECE Reg 10, ECE/Trans/180/Add.13, REACH	
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
[2] Excluding air and DI-filter

Here for life™

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