BALLARD™

FCveloCity®-HD

Fuel Cell Power Module for Heavy Duty Motive Applications

Ballard's FCveloCity®-HD is the next-generation heavy duty fuel cell power module for use in zero-emission heavy duty motive applications. The hydrogen fuelled power module off ers a low risk, versatile and easy installation solution for system integrators, backed by Ballard's unmatched expertise and experience.

Features

High Performance

Robust PEM fuel cells deliver the route flexibility, range, gradeability and top speeds demanded by transit operators.

Flexible Integration

Modular design with separate air and coolant sub-systems enables flexible integration of components into the vehicle drive train and easy access for enhanced serviceability.

High Temperature Operation

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

Climate Protection

IP-rated enclosure and freeze protection system to guard 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

Wireless or direct connection provides access to performance data anytime on the road as well as in the service bay, enabling anticipation of required maintenance.

Proven Reliability & Durability

Demonstrated through exceptional bus availability and fuel cell module lifetime, with >30,000 hours of operation of a fuel cell power module in the field without failure.

Safety Features

Integrated safety system with ventilation fans, H2 sensors, and smoke detectors built into the module to ensure highest safety and ease of installation.

System Integration Flexibility

Collaborating closely with the system integrator, Ballard supports the integration of a variety of drive systems to optimize the transit application.

Zero-emission

PEM fuel cell power module to meet the mandates set by policy makers to reduce transportation emissions.

Humidification

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

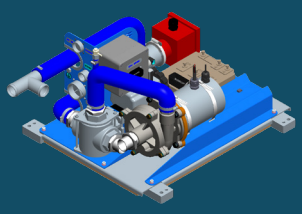
Product Specifications

	HD85	HD100
Performance		
Net power	85 kW	100 kW
Operating voltage range	260 - 419 V	357 - 577 V
Operating current range	10 - 284 A	10 - 257 A
Idle power	4 kW	6 kW
Physical		
Fuel cell module		
Dimensions (l x w x h) mm	1130 x 869 x 487	1200 x 869 x 487
Weight	256 kg	280w kg
Coolant Subsystem		
Dimensions (l x w x h) mm	737 x 529 x 379	
Weight	44 kg	
Air Subsystem		
Dimensions (l x w x h) mm	676 x 418 x 352	
Weight	61 kg	
Reactants and Coolant		
Type	Gaseous hydrogen	
Composition	As per SAE specifi cation J2719	
Supply pressure	8 barg nominal	
Oxidant	Air	
Coolant	50/50 pure ethylene glycol and deionized water WEG 60° to 70°C	
Safety Compliance		
Certifications	ISO 6469-2:2009[1] ISO 6469-3:201[1] ISO 23273:2013[1]	
Enclosure	IP55	
Monitoring		
Control interface	CANbus	
Emissions		
Exhaust	Zero-emissions (no PM, NOx, SOx, CO or CO2)	

[1] Specific clauses within each standards

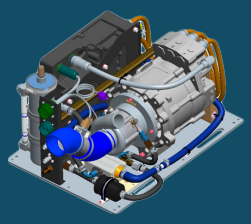
Sub-system

The FCveloCity®-HD includes separate air and coolant systems for simplifi ed and fl exible integration into the electric drive system. These two discrete modules have been designed, tested and validated for transit bus and light rail applications.



Coolant sub-system

Delivers a water/ethylene glycol (WEG) mixture at a prescribed flow rate to the fuel cell module. Sub-system includes coolant pump, piping, control valve and freeze protection.



Air sub-system

Delivers air at a prescribed flow rate to the fuel cell stack to support the electrochemical reaction. Sub-system includes motor, controller, air compressor and a mass flow sensor.

Here for life™

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