

Power to change the world®

**FCvelocity® – 9SSL**

Ballard Power Systems offers a proton exchange membrane (PEM) fuel cell stack based on our proven, fourth generation transportation stack technology.

Available now to customers with fuel cell stack integration capabilities, the FCvelocity-9SSL is designed to perform in rugged conditions and is scalable depending upon customer requirements. Stacks are available in power increments from approximately 4 to 21 kilowatts.

The FCvelocity-9SSL provides stable electrical power to a system over a wide range of operating and environmental conditions. A liquid-cooled, hydrogen-fueled product, the FCvelocity-9SSL uses Ballard’s standard fuel cell components.

Suitable for motive applications, the FCvelocity- 9SSL features fast, dynamic response, robust and reliable operation and durable packaging.

The FCvelocity-9SSL establishes a new standard of performance by optimizing reliability, power density and compatibility with customer system requirements.

Please contact us for product availability and pricing.



**PRODUCT SPECIFICATIONS**

|                                   |      |      |      |      |      |      |
|-----------------------------------|------|------|------|------|------|------|
| Rated Power [kW] <sup>1</sup>     | 3.8  | 4.8  | 10.6 | 14.4 | 17.3 | 21.2 |
| DC voltage (at 300A) <sup>1</sup> | 12.9 | 16.1 | 35.4 | 48.2 | 57.9 | 70.7 |
| Mass (with no coolant) [kg]       | 6.2  | 6.8  | 10.2 | 12.1 | 14.3 | 16.6 |
| Stack core length [mm]            | 92   | 104  | 174  | 220  | 255  | 302  |
| Stack core width [mm]             | 760  |      |      |      |      |      |
| Stack core height [mm]            | 60   |      |      |      |      |      |

|                    |  |  |
|--------------------|--|--|
| Type               | PEM (Proton Exchange Membrane) fuel cell stack |  |
| Performance        | Maximum current                                | 300A   |
|                    | Shock and vibration                            | Automotive <sup>2</sup>                              |
| Fuel:              | Fuel composition (pre-humidification)          | SAE J2719  |
| Oxidant            | Oxidant composition (pre-humidification)       | Compressed ambient (filtered to remove particulates) |
| Stack Temperatures | Storage temperature <sup>3</sup>               | -40 to 60° C (-40 to 140° F)                         |
|                    | Start-up temperature                           | > 2° C (> 36° F)                                     |
|                    | Fluid inlet temperature (operating)            | 2 to 68° C (36 to 154° F) <sup>1</sup>               |

**Additional information available upon request.**

<sup>1</sup> Values achieved at Ballard-specified conditions at the beginning of operational life.

<sup>2</sup> Vibration 5g, meets USABC/SNL CRADA No. SC961447 USABC 10. Shock: 5g sections of IEC 60068-2-27 Ea and IEC 60068-2-29 Eb.

<sup>3</sup> Allowable temperature following approved Ballard dry out procedure only, without dry out procedure +2 ~60° C.