

# PEMFC Single Cell Specification

Product Model	FC-H2-251C	FC-H2-051C	FC-H2-251REF	FC-H2-051REF	FC-H2-501C
<b>Description</b>	<b>Cell 25 cm<sup>2</sup>, H<sub>2</sub>/Air</b>	<b>Cell 5 cm<sup>2</sup>, H<sub>2</sub>/Air</b>	<b>Cell 25 cm<sup>2</sup>-Ref., H<sub>2</sub>/Air</b>	<b>Cell 5 cm<sup>2</sup>-Ref., H<sub>2</sub>/Air</b>	<b>Cell 50 cm<sup>2</sup>, H<sub>2</sub>/Air</b>
<i>Performance</i>					
DC Voltage	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V
Current	15 A	3 A	15 A	3 A	25 A
Nominal current density	600 mA/cm <sup>2</sup> @ 0.7V(cell)	600 mA/cm <sup>2</sup> @ 0.7V(cell)	600 mA/cm <sup>2</sup> @ 0.7V(cell)	600 mA/cm <sup>2</sup> @ 0.7V(cell)	500 mA/cm <sup>2</sup> @ 0.7V(cell)
Nominal power rating	10 W	2 W	10 W	2 W	18 W
Output operation range	0 ~ 12 W	0 ~ 2.5 W	0 ~ 12 W	0 ~ 2.5 W	0 ~ 20 W
Cell efficiency	~45% @ 10 W	~45% @ 2 W	~45% @ 10W	~45% @2W	~45% @18 W
Effective area of cell	25 cm <sup>2</sup>	5 cm <sup>2</sup>	25 cm <sup>2</sup>	5 cm <sup>2</sup>	50 cm <sup>2</sup>
<i>Physical</i>					
Height	8 cm	8 cm	8 cm	8 cm	9 cm
Width	12 cm	12 cm	12 cm	12 cm	15 cm
Depth	12cm	12 cm	12cm	12cm	15cm
Weight	1 kg	1 kg	1 kg	1 kg	2 kg
<i>Air requirement</i>					
Nominal flow	625 SCCM	125 SCCM	625 SCCM	125 SCCM	1250 SCCM
Use efficiency	40% @ 10 W	40% @ 2 W	40% @ 10 W	40% @ 2 W	40% @ 18 W
Humidity	70 - 90% RH				
Inlet pressure (nominal)	15 - 30 psig				
<i>Hydrogen fuel requirement</i>					
H2 nominal flow (commercial grade CO<1ppm)	125 SCCM	25 SCCM	125 SCCM	25 SCCM	250 SCCM
Humidity	70 - 95% RH				
Inlet pressure (nominal)	15 - 30 psig				
Reformate H2, CO<50 ppm	CO tolerant MEA available upon request				
<i>Operating conditions</i>					
Temperature	70 - 80 °C				
Max. temperature	120 °C				
Pressure (nominal)	15 - 30 psig				
Cartridge heater	120 W @ 220V				
<i>Environmental</i>					
Storage Temperature	5 - 60 °C				
Humidity range	0 - 99% RH				
<i>Warranty</i>					
90 days limited on parts and workmanship					
<i>Connections</i>					
Air tubing, Swagelok compress connector	1/4" tubing				
H2 tubing, Swagelok compress connector	1/4" tubing				
Cell Electrode connection	Studs for cell voltage monitoring	Studs for cell voltage & reference potential monitoring			Studs for fuel cell voltage monitoring
Current connector	Brass plate with hole 1/4", 1/16" thick				Brass plate with hole 3/32" thick

Specifications are subject to change without prior notice.

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# DMFC Single Cell Specification

Product Model	FC-DM-251C	FC-DM-051C	FC-DM-251REF	FC-DM-051REF
<b>Description</b>	Cell 25 cm <sup>2</sup> , MeOH/Air	Cell 5 cm <sup>2</sup> , MeOH/Air	Cell 25 cm <sup>2</sup> -,Ref., MeOH/Air	Cell 5 cm <sup>2</sup> -,Ref., MeOH/Air
<i>Performance</i>				
DC Voltage	0.7 V	0.7 V	0.7 V	0.7 V
Current	15 A	3 A	15 A	3 A
Nominal current density	600 mA/cm <sup>2</sup> @ 0.7V(cell)	600 mA/cm <sup>2</sup> @ 0.7V(cell)	600 mA/cm <sup>2</sup> @ 0.7V(cell)	600 mA/cm <sup>2</sup> @ 0.7V(cell)
Nominal power rating	10 W	2 W	10 W	2 W
Output operation range	0 ~ 12 W	0 ~ 2.5 W	0 ~ 12 W	0 ~ 2.5 W
Cell efficiency	~45% @ 10 W	~45% @ 2 W	~45% @ 2 W	~45% @ 2W
Effective area of cell	25 cm <sup>2</sup>	5 cm <sup>2</sup>	25 cm <sup>2</sup>	5 cm <sup>2</sup>
<i>Physical</i>				
Height	8 cm			
Width	12 cm			
Depth	12 cm			
Weight	1 kg			
<i>Air requirement</i>				
Nominal flow	625 SCCM	125 SCCM	625 SCCM	125 SCCM
Use efficiency	40% @ 10 W	40% @ 2 W	40% @ 10 W	40% @ 2 W
Humidity	0 - 90% RH			
Inlet pressure (nominal)	10 - 20 psig			
<i>Liquid MeOH fuel requirement</i>				
MeOHnominal flow (at 1 molar concentrate)	12.5 SCCM	2.5 SCCM	12.5 SCCM	2.5 SCCM
Inlet pressure (nominal)	10 - 20 psig			
<i>Operating conditions</i>				
Temperature	60 - 80 °C			
Max. temperature	90 °C			
Pressure (nominal)	10 - 20 psig			
Cartridge heater	120 W at 220V			
<i>Environmental</i>				
Storage Temperature	5 - 60 °C			
Humidity range	0 - 99% RH			
<i>Warranty</i>	90 days limited on parts and workmanship			
<i>Connections</i>				
Air tubing, Swagelok compress connector	1/4" tubing			
H2 tubing, Swagelok compress connector	1/4" tubing			
Cell Electrode connection	Studs for cell voltage monitoring		Studs for cell voltage & reference potential monitoring	
Current connector	Brass plate with hole 1/4", 1/16" thick			

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