

# Open-Cathode PEM Fuel Cells

Better fuel efficiency, higher reliability, very easy to set up  
...And even smaller, lighter than before!



Semi-integrated 12W fuel cell system  
Includes: • Integrated fan and casing  
• 12W stack with blower



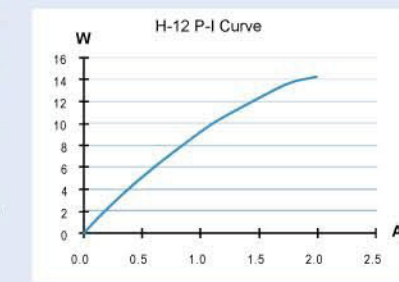
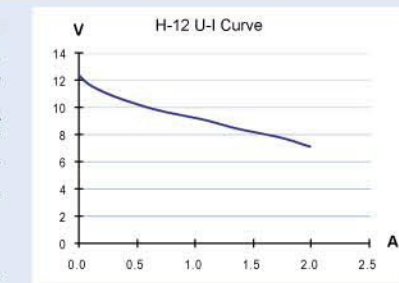
Semi-integrated 20W fuel cell system  
Includes: • Miniature electronic valve  
• Control electronics  
• Integrated fan and casing  
• Low voltage protection  
• 20W stack with blower



Semi-integrated 30W fuel cell system  
Includes: • Miniature electronic valve  
• Control electronics  
• Integrated fan and casing  
• Low voltage protection  
• 30W stack with blower

**H-12**  
FCS-B12  
**12W**

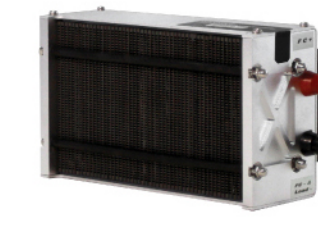
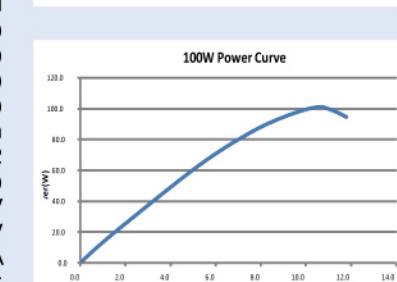
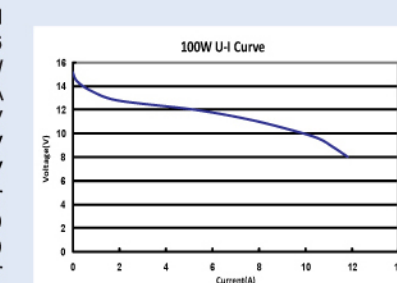
Type of fuel cell	PEM
Number of cells	13
Rated power	12W
Rated Performance	7.8V@1.5A
Purging valve voltage	6V
Blower voltage	5V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	55°C(131°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	275g(±30g)
Stack size	75x47x70mm(3x1.8x2.8in)
Flow rate at max output	0.18L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% at full power



Semi-integrated 100W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 100W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch

**H-100**  
FCS-C100  
**100W**

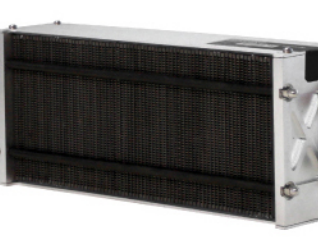
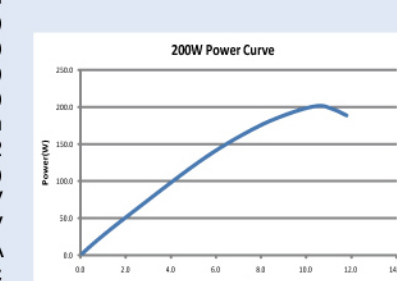
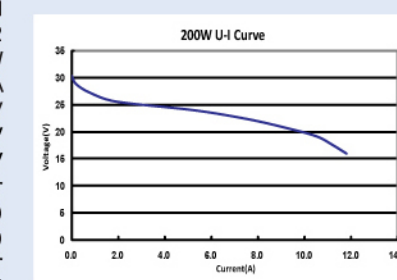
Type of fuel cell	PEM
Number of cells	16
Rated power	100W
Rated Performance	9.6V@10.4A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	865g(±50g)
Controller weight	400g(±30g)
Stack size	116x90x93.5mm(4.5x3.5x3.7in)
Flow rate at max output	1.3L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @9.6V
Low voltage protection	8V
Over current protection	12A
Over temperature protection	65°C
External power supply	13V(±1V), 5A



Semi-integrated 200W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 200W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch

**H-200**  
FCS-C200  
**200W**

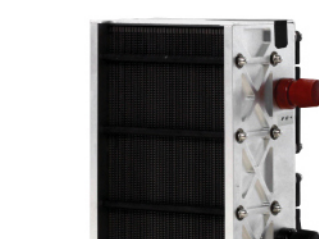
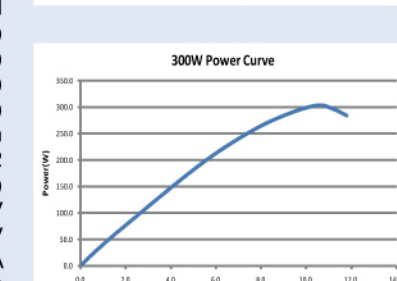
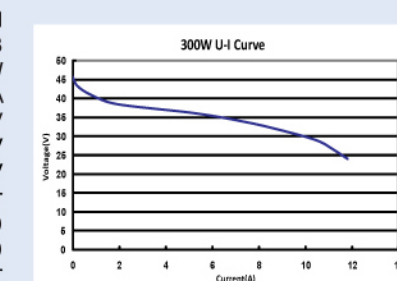
Type of fuel cell	PEM
Number of cells	32
Rated power	200W
Rated Performance	19.2V@10.4A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	1485g(±50g)
Controller weight	400g(±30g)
Stack size	116x152x93.5mm(4.5x6x3.7in)
Flow rate at max output	2.6L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @19.2V
Low voltage protection	16V
Over current protection	12A
Over temperature protection	65°C
External power supply	13V(±1V), 5A



Semi-integrated 300W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 300W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch

**H-300**  
FCS-C300  
**300W**

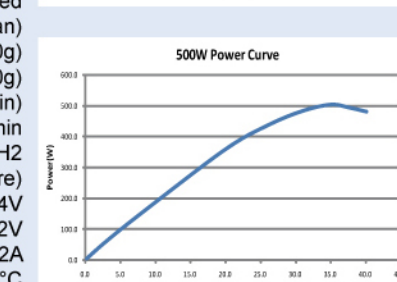
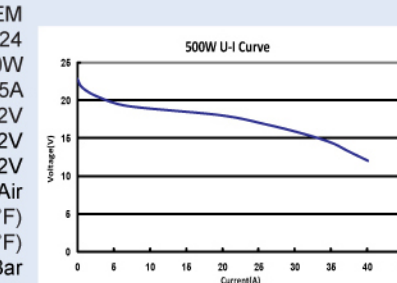
Type of fuel cell	PEM
Number of cells	48
Rated power	300W
Rated Performance	28.8V@10.4A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	2070g(±50g)
Controller weight	400g(±30g)
Stack size	116x213.5x93.5mm(4.5x8.4x3.7in)
Flow rate at max output	3.9L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @28.8V
Low voltage protection	24V
Over current protection	12A
Over temperature protection	65°C
External power supply	13V(±1V), 5A



Semi-integrated 500W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 500W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch

**H-500**  
FCS-C500  
**500W**

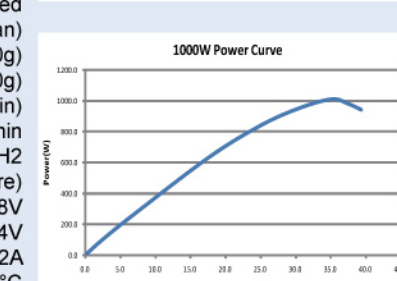
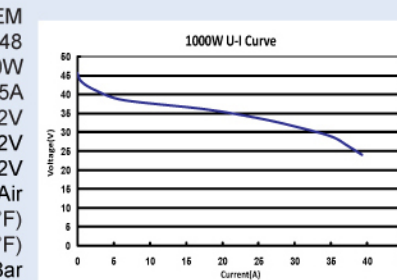
Type of fuel cell	PEM
Number of cells	24
Rated power	500W
Rated Performance	14.4V@35A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	2520g(±50g)
Controller weight	400g(±30g)
Stack size	268x130x122.5mm(10.5x5.1x4.8in)
Flow rate at max output	6.5L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @14.4V
Low voltage protection	12V
Over current protection	42A
Over temperature protection	65°C
External power supply	13V(±1V), 5A



Semi-integrated 1000W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 1000W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch

**H-1000**  
FCS-C1000  
**1000W**

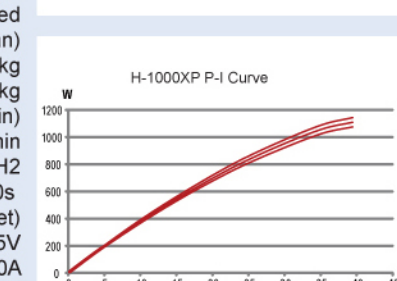
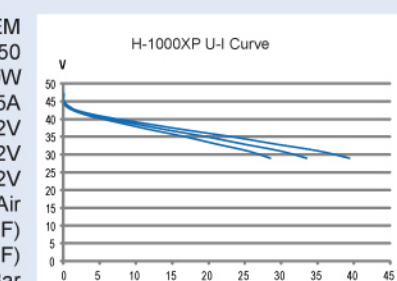
Type of fuel cell	PEM
Number of cells	48
Rated power	1000W
Rated Performance	28.8V@35A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	4kg(±100g)
Controller weight	400g(±30g)
Stack size	268x219x122.5mm(10.5x8.6x4.8in)
Flow rate at max output	13L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @28.8V
Low voltage protection	24V
Over current protection	42A
Over temperature protection	65°C
External power supply	13V(±1V), 5A-8A



Semi-integrated 1kW fuel cell system  
Includes: • LCD display  
• Hydrogen sensor(optional)  
• Ambient temperature sensor  
• DC-DC converter  
• Ultra capacitor bank  
• Electronic control box  
• Electronic valves  
• RS232 connector  
• Blower controller  
• Start up battery connector  
• Software(optional)  
• ON/OFF switch  
• Emergency stop switch  
• PU tubing

**H-1000XP**  
**1000W**  
Extra Performance

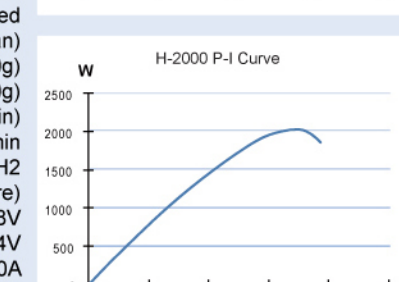
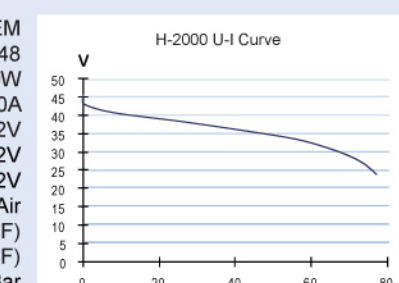
Type of fuel cell	PEM
Number of cells	50
Rated power	1000W
Rated Performance	30V@33.5A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-35°C(41-95°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	Approx. 5kg
Controller weight	Approx. 1.9kg
Stack size	264x203x104mm(10.4x8.0x4.1in)
Flow rate at max output	12.5L/min
Hydrogen purity	≥99.99% dry H2
Start up time	≤30s
Efficiency of system	48% @ 30V LHV (net)
Low voltage protection	25V
Over current protection	50A
Over temperature protection	68°C
Start up battery	12V



Semi-integrated 2000W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 2000W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch  
• LCD display

**H-2000**  
FCS-C2000  
**2000W**

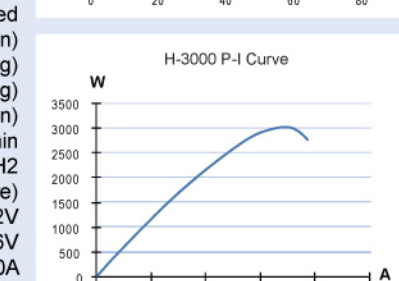
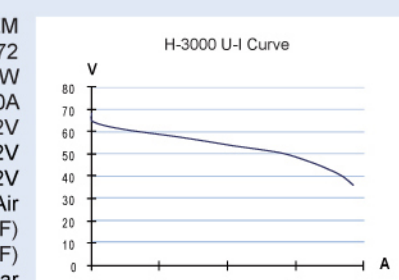
Type of fuel cell	PEM
Number of cells	48
Rated power	2000W
Rated Performance	28.8V@70A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	10kg(±200g)
Controller weight	2500g(±100g)
Stack size	350x183x303mm(13.8x7.2x11.9in)
Flow rate at max output	26L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @28.8V
Low voltage protection	24V
Over current protection	90A
Over temperature protection	65°C
External power supply	13V(±1V), 5A-8A



Semi-integrated 3000W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 3000W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch  
• LCD display

**H-3000**  
FCS-C3000  
**3000W**

Type of fuel cell	PEM
Number of cells	72
Rated power	3000W
Rated Performance	43.2V@70A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	15kg(±200g)
Controller weight	2500g(±100g)
Stack size	350x183x418mm(13.8x7.2x16.4in)
Flow rate at max output	39L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @43.2V
Low voltage protection	36V
Over current protection	90A
Over temperature protection	65°C
External power supply	13V(±1V), 5A-8A



Semi-integrated 5000W fuel cell system  
Includes: • Connections/Tubing  
• Electronic valves  
• Electronic control box  
• 5000W stack with blower  
• Fuel cell ON/OFF switch  
• SCU ON/OFF switch  
• LCD display

**H-5000**  
FCS-C5000  
**5000W**

Type of fuel cell	PEM
Number of cells	120
Rated power	5000W
Rated Performance	72V@70A
Hydrogen supply valve voltage	12V
Purging valve voltage	12V
Blower voltage	12V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C(41-86°F)
Max stack temperature	65°C(149°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	30kg(±200g)
Controller weight	2500g(±100g)
Stack size	350x212x630mm(13.8x8.3x24.8in)
Flow rate at max output	65L/min
Hydrogen purity	≥99.995% dry H2
Start up time	≤30s (ambient temperature)
Efficiency of system	40% @72V
Low voltage protection	60V
Over current protection	90A
Over temperature protection	65°C
External power supply	24V(±1V), 8A-12A

