

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

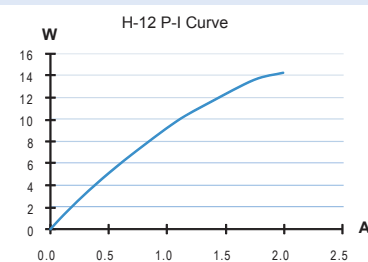
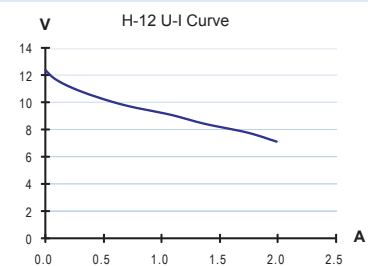
- Includes:**
- Integrated fan and casing
 - 12W stack with blower

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 |
| Flow rate at max output..... | 0.18L/min |
| Hydrogen purity..... | ≥99.995% dry H ₂ |
| Start up time..... | ≤30s (ambient temperature) |
| Efficiency of system..... | 40% at full power |



Controller



Semi-integrated 20W fuel cell system

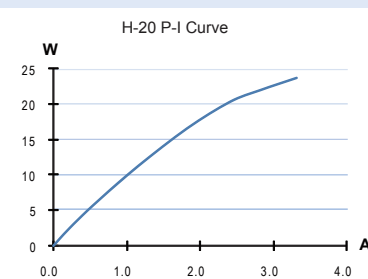
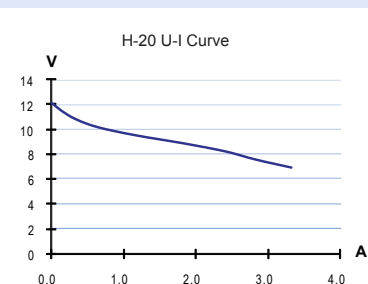
- Includes:**
- Miniature electronic valve
 - Control electronics
 - Integrated fan and casing
 - Low voltage protection
 - 20W stack with blower

H-20

FCS-B20

20W

| | |
|---------------------------------------|------------------------------|
| Type of fuel cell | PEM |
| Number of cells..... | 13 |
| Rated power..... | 20W |
| Rated Performance..... | 7.8V@2.6A |
| 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) |
| Controller weight..... | 90g(±10g) |
| Stack size..... | 75x47x70mm |
| Flow rate at max output..... | 0.28L/min |
| Hydrogen purity..... | ≥99.995% dry H ₂ |
| Start up time..... | ≤30s (ambient temperature) |
| Efficiency of system..... | 40% at full power |



Controller



Semi-integrated 30W fuel cell system

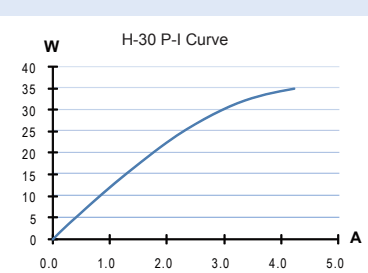
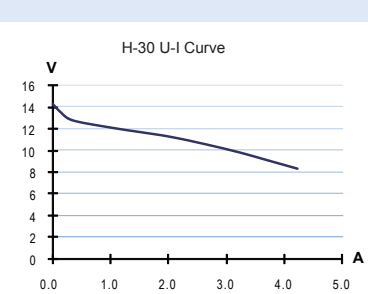
- Includes:**
- Miniature electronic valve
 - Control electronics
 - Integrated fan and casing
 - Low voltage protection
 - 30W stack with blower

H-30

FCS-B30

30W

| | |
|---------------------------------------|------------------------------|
| Type of fuel cell | PEM |
| Number of cells..... | 14 |
| Rated power..... | 30W |
| Rated Performance..... | 8.4V@3.6A |
| 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)..... | 280g(±30g) |
| Controller weight..... | 90g(±10g) |
| Stack size..... | 80x47x75mm |
| Flow rate at max output..... | 0.42L/min |
| Hydrogen purity..... | ≥99.995% dry H ₂ |
| Start up time..... | ≤30s (ambient temperature) |
| Efficiency of system..... | 40% at full power |





Controller

Semi-integrated 100W fuel cell system

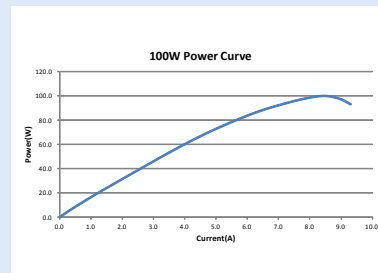
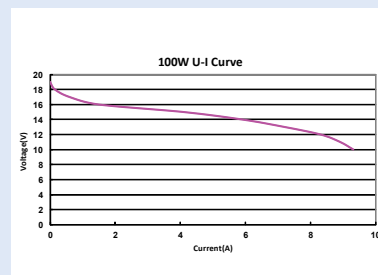
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 100W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch

H-100

FCS-C100

100W

| | |
|--------------------------------------|------------------------------|
| Type of fuel cell | PEM |
| Number of cells..... | 20 |
| Rated power..... | 100W |
| Rated Performance..... | 12V@8.3A |
| 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).... | 1290g(±50g) |
| Controller weight..... | 400g(±30g) |
| Stack size..... | 118x104x94mm |
| Flow rate at max output..... | 1.3L/min |
| Hydrogen purity..... | ≥ 99.995% dry H2 |
| Start up time..... | ≤30s (ambient temperature) |
| Efficiency of system..... | 40% @12V |
| Low voltage protection..... | 10V |
| Over current protection..... | 12A |
| Over temperature protection..... | 65°C |
| External power supply..... | 13V(±1V), 5A |



Controller

Semi-integrated 200W fuel cell system

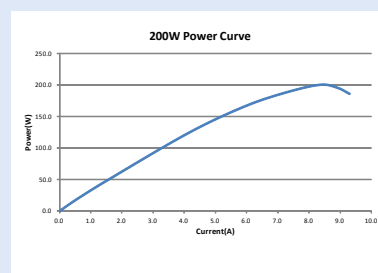
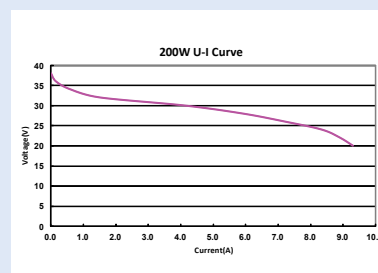
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 200W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch

H-200

FCS-C200

200W

| | |
|--------------------------------------|------------------------------|
| Type of fuel cell | PEM |
| Number of cells..... | 40 |
| Rated power..... | 200W |
| Rated Performance..... | 24V@8.3A |
| 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).... | 2230g(±50g) |
| Controller weight..... | 400g(±30g) |
| Stack size..... | 118x183x94mm |
| Flow rate at max output..... | 2.6L/min |
| Hydrogen purity..... | ≥99.995% dry H2 |
| Start up time..... | ≤30s (ambient temperature) |
| Efficiency of system..... | 40% @24V |
| Low voltage protection..... | 20V |
| Over current protection..... | 12A |
| Over temperature protection..... | 65°C |
| External power supply..... | 13V(±1V), 5A |



Controller

Semi-integrated 300W fuel cell system

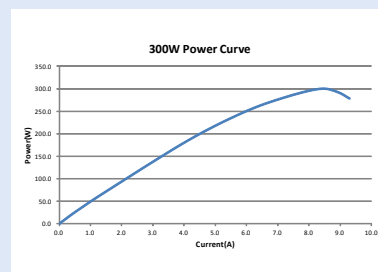
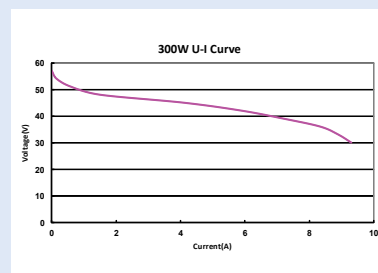
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 300W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch

H-300

FCS-C300

300W

| | |
|--------------------------------------|------------------------------|
| Type of fuel cell | PEM |
| Number of cells..... | 60 |
| Rated power..... | 300W |
| Rated Performance..... | 36V@8.3A |
| 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).... | 2790g(±50g) |
| Controller weight..... | 400g(±30g) |
| Stack size..... | 118x262x94mm |
| Flow rate at max output..... | 3.9L/min |
| Hydrogen purity..... | ≥99.995% dry H2 |
| Start up time..... | ≤30s (ambient temperature) |
| Efficiency of system..... | 40% @36V |
| Low voltage protection..... | 30V |
| Over current protection..... | 12A |
| Over temperature protection..... | 65°C |
| External power supply..... | 13V(±1V), 5A |





Semi-integrated 500W fuel cell system

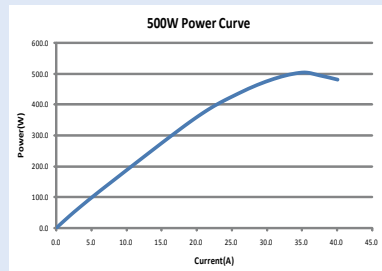
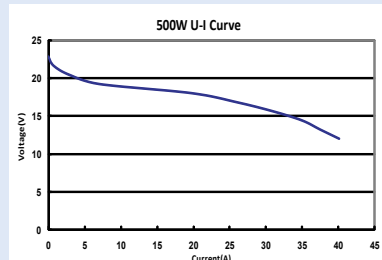
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 500W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch

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 | 130x268x123mm |
| 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

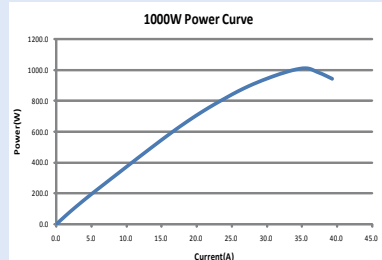
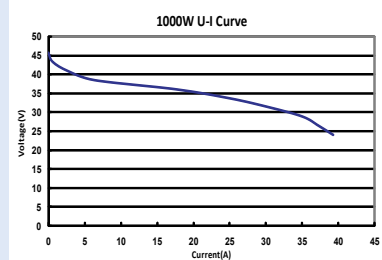
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 1000W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch

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 | 219x268x123mm |
| 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

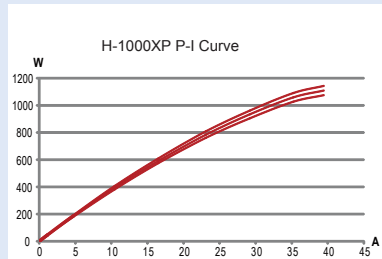
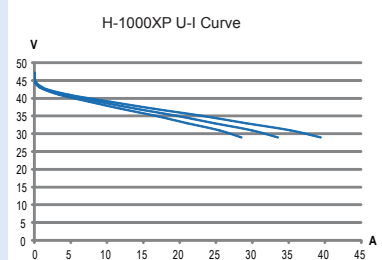
- Includes:**
- LCD display
 - Hydrogen sensor(optional)
 - Ambient temperature sensor
 - DC-DC converter
 - Ultra capacitor bank
 - Electronic control box
 - Electronic valves
 - RS232 connector
 - Blower controller
 - Start up battery connector
 - Software(optional)
 - ON/OFF switch
 - Emergency stop 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 |
| 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 |





Controller

Semi-integrated 2000W fuel cell system

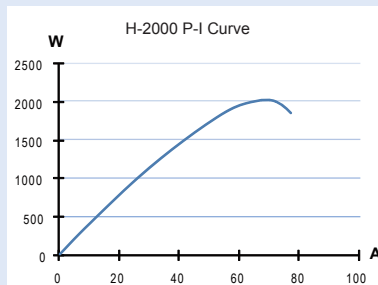
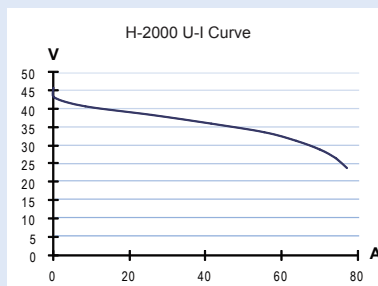
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 2000W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch
 - LCD display

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..... | 303x350x183mm |
| 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 |



Controller

Semi-integrated 3000W fuel cell system

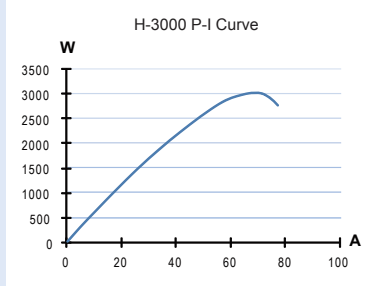
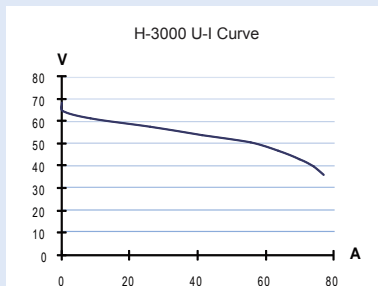
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 3000W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch
 - LCD display

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..... | 418x350x183mm |
| 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 |



Controller

Semi-integrated 5000W fuel cell system

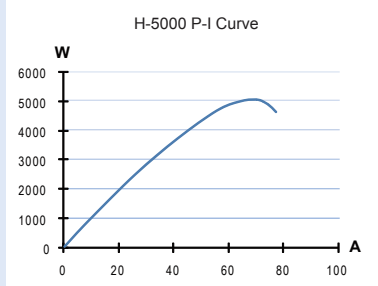
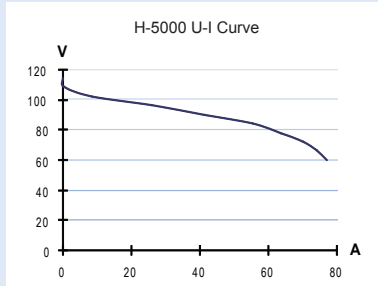
- Includes:**
- Connections/Tubing
 - Electronic valves
 - Electronic control box
 - 5000W stack with blower
 - Fuel cell ON/OFF switch
 - SCU ON/OFF switch
 - LCD display

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..... | 24V |
| 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..... | 650x350x212mm |
| 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 |



contact us: sales@horizonfuelcell.com

