# MFC 3000

## HIGH CAPACITY FUEL CELL UPS SYSTEM

Horizon Fuel Cell Technologies

**1kW / 3kW / 5kW**
**configurations available**

**MFC 3000** is as quiet as a whisper and has minimal carbon emissions. Its integrated fuel cell uses an electro-chemical process to generate electricity with few moving parts. The MFC 3000 uses a low volatility methanol-water blended fuel.

- **Uses low-volatility fuel**
- **99.999% SLA, always available**
- **Outdoor cabinet (IP54)**
- **Near-silent operation**
- **Hybrid solution for battery charging with wind or solar power**
- **Remote monitoring and control functionality (TCP/IP)**
- **Environmentally friendly, extremely efficient**
- **Light and compact, ideal for rooftop sites**

The **MFC 3000** fuel cell system can be configured to connect directly to your load to provide constant, prime power, or connect to your battery to continuously monitor and maintain its charge level. If your battery voltage drops below a predetermined threshold, the Fuel Cell automatically starts to carry the load and recharge the battery. This prevents unhealthy deep discharge and recharge cycles, thus maintaining longer battery life. After charging is complete, the MFC 3000 reverts to standby mode automatically.

## APPLICATIONS

- **Battery / GenSet replacement**
- **Off-Grid continuous power**
- **On-Grid back-up power**
- **Telecom Sites**
- **Airfield Lighting**
- **Rail Signaling**

### MFC 3000 RUN TIMES

**MFC 3000** fuel consumption is 0.9 Liters per kWh of output, across a wide range of loads. A 200 Liter drum of fuel would provide 222 kWh of electrical power, or a run time of around 74 hours at an average 3 kW load. Need more run time? Just use a larger tank!

### HYBRID SOLAR MFC 3000 CONFIGURATIONS

**MFC 3000** can be combined with a PV solar system to reduce fuel consumption and provide an even longer lasting power source. If the solar modules can produce adequate electricity, the solar system takes over and MFC 3000 goes into standby mode.

**Contact:** sales@horizonfuelcell.com

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## HIGH CAPACITY FUEL CELL UPS SYSTEM

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| SYSTEM SPECIFICATIONS | MFC 3000 |
|---|---|
| Nominal Continuous Power Output | 3000W |
| Nominal Voltage (Typical DC) | 48V DC |
| Nominal Current | 62.5A |
| Voltage Range | 43.2V DC to 57.6V DC |
| Fuel Consumption | 0.9L /kWh (63% Methanol – DI Water Mixture) |
| Power Cabinet Dimensions (WxDxH) | 600*600*1600mm |
| Total Weight | About 180 kg |
| Enclosure Material | Galvanized steel plate, powder-coated (IP54 rated) |
| **OPERATION** | |
| Power Conditioning | DC/DC converter, contact start, automatic start |
| Cold Start Time Required | About 2 hours from 20°C |
| Hot Standby Power Consumption | 48V DC, <150W |
| Hot Standby Start Time | 50% power within 4 minutes,<br>100% power within 10 minutes |
| **EMISSIONS** | |
| Reformer Exhaust | $CO_2$ |
| Noise | <65 dBA @ 1m |
| Water | About 0.38L / kWh |
| **FUEL CELL SYSTEM** | |
| Type | PEM |
| Coolant | Air |
| Efficiency | 50% |
| Fuel Type & Specification | 63% Methanol – DI Water Mixture |
| Methanol Quality Requirements | Purity 99.85%, IMPCA Industrial Grade |
| Water Quality Requirements | ASTM Type III deionized water |
| Hydrogen Purity Delivered | 99.99% pure hydrogen |
| Fuel Storage Options | Built-in ( Standard) / External (Optional) |
| **OPERATING ENVIRONMENT** | |
| Operating Temperature Range | -5°C to +45°C |
| Relative Humidity | 0 to 95 % |
| Recommended Altitude | <3000 meters |
| Shipping Freeze Exposure | Shipping exposure limit: -20°C |
| Usage | Outdoor and Indoor |
| Safety Standards | Designed EN60950 |
| **CONTROLS & COMMUNICATION** | |
| Remote Monitoring | Full remote monitoring via internet |
| Built-in User Interface | LCD & Keypad |
| Remote Communication Connectivity | Serial port RS485 / Full remote monitoring via internet |

* Specifications are subject to changes.

## 3kW / 74h Autonomy on 200L of Fuel (Optional)

- **Quiet, low-emission power**
- **Lightweight & compact**
- **Hybrid solar compatible**

The **MFC 3000** fuel cell system creates its own fuel from a unique "on demand" hydrogen generator that uses a low-volatility methanol water blended fuel solution. Autonomy is virtually unlimited, provided fuel is available to the system.

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