Intelligent Energy delivers clean energy solutions for the distributed energy, diesel replacement, automotive and aerial drone markets. Working with international companies, Intelligent Energy aims to embed its fuel cell stack technology into applications across its target market sectors. With its principal facility and headquarters in Loughborough, UK, the company also operates in Japan, India, China, Singapore, France and the US.

The 4kW air cooled (AC) fuel cell power unit is a compact, lightweight package designed to meet automotive requirements, standards and safety criteria. An advantage to air cooled technology is a simplified overall system, hence minimised cost, making the technology particularly suitable for low power automotive applications.

The power unit is based on Intelligent Energy’s class-leading AC64 stack technology with proven manufacturing processes for high-volume production. The air cooled nature of the power unit means that the balance-of-plant complexity, hence cost, has been minimised, making the technology particularly suitable for low-power automotive applications.

Please contact us for availability and pricing.

Features:
- Based on Intelligent Energy’s class-leading AC64 fuel cell stack technology with robust metal cell construction
- World class stack power density for air cooled PEM technology
- Simple balance-of-plant
- Zero emissions
- Rapid start-up
- Sub-zero operability
- Proven durability and reliability for application environments
- Self-contained unit incorporating key sub-systems
- Designed for ease of integration into automotive applications

System includes:
- Fuel cell stack featuring Intelligent Energy’s proprietary AC technology
- Air management system
- Stack thermal management system
- Control module

Applications:
- Motive power for two- and four-wheel vehicle motive power
- Range extenders for battery electric vehicles
- Auxiliary power / APU’s
- Airport ground support equipment
### 4kW Fuel Cell Power Unit Specification

**System architecture** | Fuel cell system | Complete system including fuel cell stacks, air management, fuel management, thermal and exhaust management and control sub-systems.  
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**Fuel cell stack** | Intelligent Energy’s air cooled AC64 fuel cell stack technology with 630 W/kg and 640 W/l power density  
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**System electrical output** | Rated continuous net power output | 3.9kWe  
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| Maximum net power output | 4.3kWe peak (90s)  
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| Maximum voltage | 150V DC  
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| Minimum voltage | 70V DC  
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**Physical system** | Mass | 22kg  
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| Dimensions | 447 (W) × 425 (D, inlet to exhaust) × 258 (H) mm  
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**Environment** | Operating ambient temperature range | 0°C to 30°C nominal  
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| -10°C to 45°C derated  
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| Storage / shipment | -40°C to 85°C  
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| Start-up | <10s above 0°C, <60s below 0°C  
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**Fuel** | Type | Gaseous hydrogen, ISO 14687:2 Grade D  
---|---|---  
| Efficiency at rated power | 53%  
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| Consumption at rated power | 0.227 kg/h [1]  
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| Hydrogen supply | 0.4 bar.g to 0.6 bar.g  
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**Interfaces** | Electrical | Single high voltage power output with integral interlock  Low voltage vehicle interfaces (12V, CAN, HVIL)  
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| Control | CAN 2.0B bus  
---|---|---  

[1] 4kW net output under standard conditions. Specifications subject to change without notice.