HoTbox™

General Description

The HoTbox™ integrates all high temperature components of a solid oxide fuel cell (SOFC) system into one unit, providing a complete high temperature solution for SOFC system developers. The HoTbox™ has been designed to facilitate system integration, allowing the integrators to focus on their core competence. It includes a 500 W SOFC stack with a heat exchanger, a catalytic partial oxidation (CPOx) reformer for natural gas, high temperature insulation, electric heater for start-up, smart temperature control and voltage conditioning for a lead acid battery compatible output.

The HoTbox™ is a product development platform that uses all industrial components. It is perfect for system integrators, any organization that does not wish to develop all the high temperature fuel cell related equipment and organizations developing reformers who want to test a SOFC system with their reformer.

Benefits

- Quick start for system development
- Simple integration
- Complete high temperature solution
- Ambient gas and air inlet
- Based on HTc's patented SOFConnex™ stack technology
- Clear system boundaries
- Clear IP advantage (client is free to build a system around the HoTbox™ without infringing on existing patents)
- Small footprint
- Low weight
- Integration of other CPOx reformers possible
- Integrated control electronics HBC for temperature control

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HoTbox™

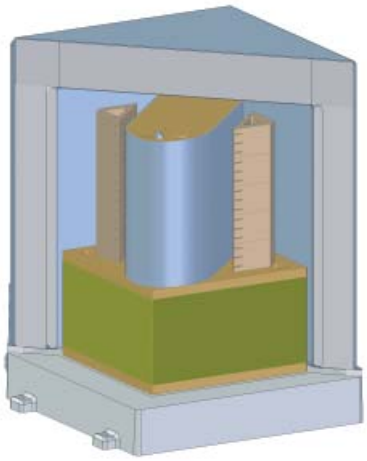
Specifications* of 0.5 kW HoTbox™

Nominal Voltage: 24 VDC
Minimum Voltage: 20 VDC
Maximum Voltage : 27.6 VDC
Maximum Current: 30 ADC

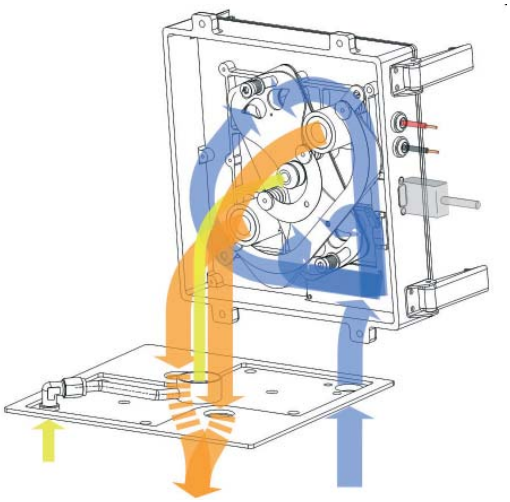
SOFC Stack Operating Temperature: 750ºC
Exhaust Temperature: 200-500ºC
Footprint: 220 mm x 220 mm
Fuel: natural gas
Weight: 17.5 kg

Items included in the HoTbox™ System

- 0.5 - 1 kW SOFConnex™ S-design stack
- Heat exchanger
- CPOx reformer for naturel gas
- High temperature insulation
- Temperature control by a 3 way control valve
- Electric heaters for start-up
- Compression system
- Control electronics with
  (1) standard RS232 interface (modbus RTU)
  (2) Temperature, voltage and current measurement
  (3) Additional digital and analog I/O for customers' system



HoTbox™ Cross Section



HoTbox™ Gas Flow Schematic

*specifications subject to change without notice

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