# EVALUATOR C50-HT

## Fuel Cell Testing of SOFC/SOEC Single Cells

EMISSIONS

ELECTRIFICATION

CAV

DATA

- Power range up to 300 W
- R&D for SOFC/SOEC single cells and button-cells
- Mobile unit in streamlined design with minimized footprint
- Fully automated for safe, reliable and unattended operation in hydrogen safe area
- Various clamshell furnace designs

HORIBA Automotive

# EVALUATOR C50-HT

HORIBA FuelCon´s Evaluator C50-HT offers outstanding performance in a cleverly packaged design. The system contains all necessary features for SOFC/SOEC cell testing including anode humidification, flow and temperature control, protection gas purge and electronic load management.
Combined with our sophisticated TestWork software, this system provides fully automated operation.

With a maximum of 5 fuel gas lines, the C50-HT is ideally suited for material developers and academics conducting basic fuel cell research, or stack developers performing single cell testing. Equipped with a high temperature clam-shell furnace, a cell housing and a mechanical load to apply defined compression forces, this test station is tailored for screening materials and components, optimizing production processes and durability analysis on small SOFCs/SOECs.

HORIBA FuelCon‘s inhouse delevoped housing devices (TrueXessory) include full ceramic cell for active cell areas up to 4 x 4 $cm^2$. The test housing allows quick and easy cell assembly and provides reproducible non-destructive testing. The integration of devices from our TrueData line of diagnostic products such as the impedance analyzer or electrolysis load modules allow studying material behavior under typical conditions of your application.

| GENERAL FACTS | |
|---|---|
| STANDARD FUEL FLOW RANGE [NL/MIN] | 0.01 to 1 |
| STANDARD AIR FLOW RANGE [NL/MIN] | 0.05 to 5 |
| FOOTPRINT L X W X H, [METER] (INCHES) | 1.3 x 1.8 x 0.8 (51” x 71” x 31”) |
| GAS HUMIDITY RANGE | Dry (by-pass) to TDP = 95 °C (203 °F) corresponding to 0...85 % steam |
| CLAMSHELL FURNACE | Ø 250 mm x 375 mm height (10” x 15”) (standard) other dimesions on request |
| ELECTRONIC LOAD | Up to 6 V/100 A/300 W<br>True-0-Volt-Mode and additional power supply (SOEC mode) upon request |
| ACTIVE TEST ITEM TEMPERATURE SETTING | Up to 1,050 °C (1,922 °F) by clamshell furnace |
| SAFETY GAS PURGE | Programmable, separate and independent nitrogen / safety gas purge function for anode and cathode |
| SAFETY FEATURES | 4-level alarming system, emergency stop |
| DATA LOGGING | SQL data base |

| OPTIONS |
|---|
| Reformate simulation, reformer, desulphurization |
| Direct injection humidifier for 100 % steam |
| Impedance analysis |
| TrueXessory-HT (cell fixtures and housings) |
| Reversible load operation (electrolysis and fuel cell mode) |
| Compression load control |
| Leakage test |
| Furnace atmosphere sampling |
| UPS |

| SAFETY | |
|---|---|
| CE CONFORMITY MARKING (ACCORDING TO) | EMC directive 2014/30/EC<br>Low voltage directive 2014/35/EC<br>ATEX directive 2014/34/EC<br>General product safety directive 2001/95/EC<br>Machinery directive 2006/42/EC<br>Pressure equipment directive 2014/68/EC |
| RISK ASSESSMENT | DIN EN ISO 13849<br>DIN EN ISO 12100 |

HORIBA FuelCon GmbH
Otto-von-Guericke-Allee 20
39179 Magdeburg-Barleben
Germany

T +49 39203 964 400
F +49 39203 964 409
sales@horiba-fuelcon.com

horiba-fuelcon.com



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