



## LARGE CELL AND SHORT STACK TESTING

- Up to 1,000 A current and 1,100 °C temperature range
- For endurance and accelerated testing of large SOFC/SOEC cell areas and short stacks
- Fully automated for safe, reliable, unattended operation
- Various clamshell furnace designs
- Automatic compression load control
- Excellent reliability by included hardware PLC
- Maximum safety according to latest directives
- Optionally embedded impedance analyzer
- High reproducibility with TrueXessory cell adaptation devices and cell housings

**HORIBA**FuelCon

Evaluator C1000-HT



## GENERAL FACTS

Standard fuel flow range [Nl/min]	0.2 to 20
Standard air flow range [Nl/min]	1 to 100
Footprint L x W x H, [meter] (inches)	1.6 - 2.4 x 1.2 x 2.2 (63" - 95" x 47" x 87")
Maximum gas temperature	900 °C (1,652 °F)
Gas humidity range	Saturator: Dry (by-pass) to TDP = 95 °C corresponding to 0...85 % steam in humidified gas stream; Steam generator: 0.01 to 50 g/min steam
Clamshell furnace	Ø 250 - 350 mm x 250-450 mm height (10" - 14" x 10"-18")
Electronic load	Up to 35 V / 1,000 A / 2,000 W True-0-Volt-Mode (option)
Active test item temperature setting	Up to 1,100 °C (2,012 °F) by clamshell furnace
Safety gas purge	Programmable, separate and independent nitrogen / protection gas purge function for anode and cathode
Safety features	4-level alarming system, emergency stop, hydrogen LEL detector, optional CO detector, cabin ventilation, furnace atmosphere sampling
Data logging	SQL data base

The Evaluator C1000-HT is tailored to the needs of complex high temperature single cell and short stack testing and evaluation. The system contains all necessary features for reversible SOFC and SOEC testing including anode humidification, flow and temperature control, protection gas purge and electronic load management.

Combined with HORIBA FuelCon's sophisticated TestWork software, this system provides full adaptability. Using either hydrogen, methane or reformat fuels, the C1000-HT is ideally designed for stack and system developers performing initial application studies, duty cycle tests for stationary and APU applications as well as for performance evaluation.

Please feel free to download the latest information available at [www.horiba-fuelcon.com](http://www.horiba-fuelcon.com). If you have any questions, please do not hesitate to contact us. We will be happy to support you and discuss your testing requirements!

HORIBA FuelCon reserves the right to make changes at any time without notice.

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## OPTIONS

Reformer and desulfurizer for NG, CH<sub>4</sub> and biogas operation  
Reformate and biogas simulation  
Cell voltage monitoring (CVM)  
TrueData-EIS (impedance analysis)  
TrueXessory-HT (cell fixtures and housings)  
Reversible load operation (electrolysis and fuel cell mode)  
Compression load control  
Automated leakage test  
UPS

## SAFETY

CE conformity marking according to  
EMC directive 2014/30/EC  
Low voltage directive 2014/35/EC  
ATEX directive 2014/34/EC  
General product safety directive 2001/95/EC  
Machinery directive 2006/42/EC  
Pressure equipment directive 2014/68/EC

Risk assessment  
DIN EN ISO 13849  
DIN EN ISO 12100

Equipped with various types of electrically heated clamshell furnaces, cell housings and push rod systems to apply controlled compression forces, this test station is ideal for benchmarking cell and stack designs, optimizing production processes and running endurance tests on SOFCs/SOECs.

The integration of several devices from our TrueData line of diagnostic products such as our impedance analyzer allows operators to perform detailed studies of material behavior under real application conditions up to operating temperatures of 1,100 °C. All variants can be equipped with our TrueXessory fixtures allowing reproducible and rapid cell adaptation.