

HORIBA



C05-LT

Revolutionising PEM Fuel Cell Testing
100W PEM Benchtop Test Station



Revolutionising PEM Fuel Cell Testing

The C05-LT is the next-generation fuel cell test station, specifically designed for researchers and engineers striving for repeatability, precision and accuracy in PEM (Polymer Electrolyte Membrane) fuel cell research.

With advanced temperature and pressure control systems, high-accuracy mass flow controllers and robust real-time monitoring, the C05-LT ensures repeatable and reliable results across all testing scenarios. Its integrated safety features, including independent safety control and automatic purging, affords users with the confidence and trust to incorporate the C05-LT into a stable, semi-autonomous testing environment.

Building on the foundation of proven HORIBA expertise, the system offers best-in-class performance for 100W PEM fuel cell testing with a comprehensive feature set, catering to the evolving needs of single-cell MEA / catalyst research. The all-in-one C05-LT is compact, robust, and versatile, and can become your cornerstone for fuel cell research and innovation.

C05-LT: Your Fuel Cell Research Partner

Accelerate your Research & Development with the best-in-class 100W Fuel Cell Test Stand

Catalyst and Membrane Development

Test new catalyst materials and membrane electrode assemblies (MEAs). Evaluate material composition against performance metrics.

Durability and Longevity Studies

Use the C05-LT to simulate long-term operation of PEM fuel cells and assess degradation. Identify failure mechanisms and improve fuel cell system reliability.

Gas and Water Management

Study gas flow dynamics and water management within fuel cells. Optimise humidification and analyse moisture impact on performance.

Performance Testing of PEM Fuel Cells

Evaluate fuel cell performance under controlled conditions. Analyse power density, current-voltage characteristics and efficiency at variable temperature, humidity, flow and pressure.

System Optimisation

Optimise system parameters maximise efficiency and performance. Create test programs & sequences and automate fuel cell testing.

Electrochemical Characterisation

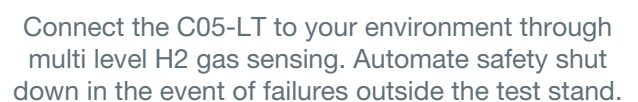
Unlock cyclic voltammetry and EIS along with pre-built scripting templates & graphing to drive powerful data collection and analysis of fuel cell performance and electrochemical characterisation.

Best-in-Class Feature Set

- Market Leading Dew Point Control
Ambient - $90^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- Gas Temperature Control
Ambient - $130^{\circ}\text{C} \pm 2^{\circ}\text{C}$

- Yearly HORIBA Servicing and Calibration
- Robust Safety & Reliability through Independent Control
- CE Certified, RoHS & REACH Compliant



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C05-LT	Features
Power Rating	100 W
Test Item	Recommended for PEM single cells from 5 cm ² to 25 cm ² active area Fuel cell fixture Connection cables provided
Size	Fully integrated test stand system Dimensions: 570 x 570 x 845 mm high
Weight	Ca. 110 kg
Safety	Inbuilt PILZ safety PLC and independent safety control Automatic fail-safe nitrogen purge, initiated in alarm condition. Layered safety features & alarms External LEL Alarm connectivity
Regulatory Compliance	CE Certified RoHS Compliance
Humidification	2-stage heating for optimised gas saturation performance Water auto-fill & auto-levelling
Trace Heating	Heating hoses from test stand to item for precise and continuous gas control
Back Pressure	Manual adjustment back-pressure control atmospheric to 3.4barg Back pressure real-time monitoring via PLC & TestWork
Exhaust	Automatic condensate & gas exhaust
Test Capability	Nitrogen cross-over capability inbuilt Manual or automatic control via TestWork Complete flexibility in test sequence creation
Electronic Load	Current Range: 0 – 100 A Voltage Range: 0 – 6 V Minimum Voltage: 0.0 V (zero-volt functionality included)
Software	TestWork Enterprise software & license included Test Sequence templates included: Test Initialisation, LSV, CI, Break-In, Recovery, Polarisation Curve
PC	PC, monitor & peripherals with TestWork pre-installed
C05-LT	Optional Features
Potentiostat	CYV Potentiostat with HORIBA Enclosure (no additional floorspace required)
EIS	Electrochemical impedance spectroscopy (EIS) testing capability
Automatic Back Pressure	Automatic BPR with control & monitoring through TestWork
Independent Fuel Cell Heater Control Loops	Anode & Cathode independent fuel cell fixture control
Heated Line Transitional Heaters	Additional heated jackets between heated line outlet and fixture inlet
Fuel Cell Fixture	5-25 cm ² Fuel Cell Fixture

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