PEM FUEL CELL
Single Cell Test Station

- G20 power range: 0 - 100 Watts
- Manual and automated operation
- Emerald™ control software
- Automated scripting capability
- Safety systems for unattended operation
- Computer and monitor included
- Bench top design
- Cost effective
- Optional configuration for high temperature PEM research
- Optional fuel cell hardware available
- Available CE certificate of conformity
The G20 is an economical complement to our fuel cell test station product line with expanded capability in low power fuel cell characterization. The G20 test station has been designed for small active area, single cell R&D testing. It uses the same sophisticated control software as our larger stations.

Emerald™: Our control and automation software offers exceptional functionality with a user-friendly graphical interface. Enhanced with our proprietary Emerald™ automation language and load following technology, Emerald™ comprehensively manages the full range of test station parameters with a simple user-friendly interface that permits even novices to assemble automation scripts in minutes. Emerald™ is exponentially more powerful than look-up table automation systems, and computer programming skills are not required to create even complex automation scripts. Greenlight even offers optional pre-written scripts to help you start testing right away.

### G20 Features

- Small footprint, bench top design
- Safety system with N₂ purge
- 2 PID controllers for cell endplate heaters
- Computer and LCD monitor included
- Manual humidifier by-pass (automated valves optional)
- H₂ sensor
- Zero volt load bank
- Greenlight sparger humidifier technology
- Manual pressure control (automated control optional)
- Options include: EIS instrument, high current load bank, fuel cell hardware
- Additional CVM or I/O available
- DMFC versions available

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### Specifications

<table>
<thead>
<tr>
<th>APPROXIMATE POWER RANGE</th>
<th>0 - 100 W</th>
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<tbody>
<tr>
<td>GAS FLOWS</td>
<td>100:1 turndown MFC's</td>
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<tr>
<td>Standard anode flow range</td>
<td>0.01 - 1 nlpm</td>
</tr>
<tr>
<td>Standard cathode flow range</td>
<td>0.025 - 2.5 nlpm</td>
</tr>
<tr>
<td>GAS HUMIDIFICATION TECHNOLOGY</td>
<td>gas immersion with sparger</td>
</tr>
<tr>
<td>Dew point control</td>
<td>up to 90°C (194°F)</td>
</tr>
<tr>
<td>Gas temperature</td>
<td>up to 110°C (230°F)</td>
</tr>
<tr>
<td>Dry gas by-pass</td>
<td>manual control standard (optional automated control)</td>
</tr>
<tr>
<td>ELECTRICAL END PLATE HEATER CONTROL</td>
<td>individual anode and cathode PID heater controls</td>
</tr>
<tr>
<td>CELL PRESSURE CONTROL</td>
<td>manually controlled regulators (optional automated control)</td>
</tr>
<tr>
<td>Pressure control range</td>
<td>up to 300 kPa† (45psi)</td>
</tr>
<tr>
<td>LOAD BANK</td>
<td>300 Watts, 80 Amps, 50 Volts</td>
</tr>
<tr>
<td>CELL VOLTAGE MONITORING</td>
<td>1 (average accuracy +/- 1mV)</td>
</tr>
<tr>
<td>Standard number of channels</td>
<td></td>
</tr>
<tr>
<td>DIMENSIONS (L x W x H) (approximate)</td>
<td>635 x 546 x 788 mm (25 x 21.5 x 31 in)</td>
</tr>
</tbody>
</table>

† Dependent on actual operating conditions - higher temperature, pressure options available

- Includes 3 levels of safety:
  1. Hard-wired interlocks
  2. Factory software interlocks
  3. User-configurable software interlocks (warning high/low alarms and shut-down high/low alarms)
     - N₂ purge
     - H₂ sensor
     - Manual emergency stop

PERFORMANCE COMMITMENT:
At Greenlight, we pride ourselves on making the world’s best fuel cell testing equipment. We are committed to your satisfaction and we will do whatever it takes to meet or exceed your expectations.

greenlightinnovation.com