BES Environmental Chambers.

The perfect solution for your testing needs.

Whether it's a 33 cubic foot single door chamber, a 74 cubic foot dual section cam-locking unit, or a 114 cubic foot cam-locking chamber with three sections, BES has the right size to meet your reach-in requirements. Multi-door units offer a standard cam-locking feature to allow separation of sections for passage through narrow doorways and halls.

General Features Include:
- Industrial-grade cabinet construction for continuous use in research, process, or storage.
- High performance electronic and mechanical systems capable of accelerated heating, lighting, and CO2 availability. Other performance options are available (refer to Options) performance range from –20°C to 70°C, with controlled humidification, 10–96% RH, and ±5.0% RH CO2 available. Other performance options are available (refer to Options & Accessories).

Notes applicable to all models above:
- Outdoor friendly touchscreen control system
- High-performance electronic and mechanic systems capable of accelerated heating, cooling, and recovery rates
- Industrial-grade cabinet construction for continuous use in research, process, or storage
- Heavy-duty refrigeration system featuring reserve heat removal capacity for quick response to door openings, internal heat loads, or unstable ambient conditions

Overview
ICH, USP, ASTM, and TAPPI guidance documents reference the need for environmental chambers for these industrial, research, and life science applications. BES offers a range of environmental chambers designed for high demand testing, processing, or conditioning. The ES2000 product line includes six standard models. Standard temperature capabilities range from –20°C to 70°C, with controlled humidification, lighting, and CO2 available. Other performance options are available (refer to Options & Accessories).

General features include:
- User-friendly touchscreen control system
- High-performance electronic, and mechanical systems capable of accelerated heating, cooling, and recovery rates
- Industrial-grade cabinet construction for continuous use in research, process, or storage
- Heavy-duty refrigeration system featuring reserve heat removal capacity for quick response to door openings, internal heat loads, or unstable ambient conditions

Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>VOLUME</th>
<th>RANGE</th>
<th>UNIFORMITY</th>
<th>VOLTS / Ø / AMPS</th>
<th>INT. DIMENSIONS</th>
<th>EXT. DIMENSIONS</th>
<th>SHELVES</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES2000 AM</td>
<td>35–70°C</td>
<td>N/A</td>
<td>±5.0% RH</td>
<td>208–230 / 1 / 30</td>
<td>525/238</td>
<td>845/387</td>
<td>4</td>
<td>225 lbs/102 kg</td>
</tr>
<tr>
<td>ES2000 A</td>
<td>35–70°C</td>
<td>N/A</td>
<td>±5.0% RH</td>
<td>208–230 / 1 / 30</td>
<td>450/204</td>
<td>765/353</td>
<td>4</td>
<td>185 lbs/84 kg</td>
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<tr>
<td>ES2000 CDM</td>
<td>2–70°C</td>
<td>10–96%</td>
<td>±3.0% RH</td>
<td>208–230 / 1 / 30</td>
<td>745/338</td>
<td>1170/531</td>
<td>5</td>
<td>475 lbs/216 kg</td>
</tr>
<tr>
<td>ES2000 C</td>
<td>2–70°C</td>
<td>N/A</td>
<td>±3.0% RH</td>
<td>208–230 / 1 / 30</td>
<td>700/318</td>
<td>1170/531</td>
<td>5</td>
<td>375 lbs/170 kg</td>
</tr>
<tr>
<td>ES2000 CDMD</td>
<td>2–70°C</td>
<td>10–96%</td>
<td>±3.0% RH</td>
<td>208–230 / 1 / 30</td>
<td>775/352</td>
<td>1200/544</td>
<td>5</td>
<td>500 lbs/227 kg</td>
</tr>
</tbody>
</table>

Environmental Chambers
ES2000 Reach-In Series

Bahnson Environmental Specialties is a manufacturer of chambers to meet special size, voltage, or range requirements not accommodated below. Please speak with a Sales Associate to discuss your needs.
Proportional Refrigeration System

BES incorporates a proportional refrigerant gas-injected design to maintain a specified temperature range without any cycling or temperature termination. By sensing the coil temperature, the timer and control system are provided with a visual representation of the actual humidity and process input parameter. This visual display allows for an accurate assessment of the product's performance and condition.

Temperature & Humidity Control

BES environmental chambers use state-of-the-art hardware and software designed to provide control of temperature and relative humidity (if applicable). The chambers feature full stainless steel liner, NIST-traceable standards, and solid-state variable capacitance humidity sensor calibrated per NIST-traceable standards. The detailed computer generated schematic provided with Operation Manual to aid in field servicing and troubleshooting.

Options & Accessories

- Humidity controls
- Single/double doors
- Stainless cabinet
- Heavy-duty stainless steel casters
- Heavy-duty stainless steel frame
- Single or double wall insulation
- Stainless steel exteriors and interiors.

Maintenance Service

BES environmental chambers will provide you with years of reliable use and minimal maintenance. A thirteen-month warranty on parts and labor is included with all BES cabinets to provide you with assurance of our commitment to quality. A single-unit stand with casters is standard with most monitoring SCADA systems and test equipment used during qualifications are NIST-traceable or temperature calibrated against NIST-traceable standards.

Validation Services

BES can provide complete performance qualifications on all environmental chambers. Our full-time staff of BS, ASQ-certified Technicians and technicians perform field tests and qualification tests. BES can provide complete environmental chambers to meet any testing requirement. Please contact a member of our Sales Department for more details on how we can customize the testing envelope for your specific application.

Chamber Warranty

A manufacturer’s warranty, parts list, and labor is included with all BES cabinets to provide you with assurance of our commitment to quality.

A Clever Solution to Meet Your Chamber Volume and Mobility Requirements.

Conditioning System

BES precise air-conditioning system ensures conditioned air is distributed uniformly throughout your product chamber. A stainless steel reclaimer moves the air through the conditioning compartment within the product area. Air drawn through the drying mechanism is proportioned to the requirements for dehumidification or temperature control. The conditioned air is recirculated for dehumidification or temperature control and filtered to a specific cleanroom class (if applicable).

Humidification

The steam generator provides regulated increments. 'Common alarm' contact activates after alarm action delay (N.O. contact). Independent time delay action for each alarm parameter. Alarm action delays are each adjustable from 0 to 60 minutes in 1 minute increments. "Common alarm" contact activation after alarm action delay is configured in test cycles. Help menus provide assistance with most monitoring SCADA systems and test equipment used during qualifications are NIST-traceable.

Heated Condensate Pan:

- Programmable/Ramping Control:
- Single Chamber Water System:
- Reagent/Chemical Storage System:
- Condensate Pump:
- Stainless Cabinet Exterior:
- Glass Door/View Window:
- Programmable Component Controls:
- Programmable Component Displays:
- Programmable Component Accessories:
- Programmable Component Control Systems:
- Programmable Component Relays:
- Programmable Component Switchgear:
- Programmable Component Recorders:
- Programmable Component Storage Systems:
- Programmable Component Monitoring Systems:
- Programmable Component Data Acquisition Systems:
- Programmable Component System Controls:
- Programmable Component System Displays:
- Programmable Component System Accessories:
- Programmable Component System Control Systems:
- Programmable Component System Relays:
- Programmable Component System Switchgear:
- Programmable Component System Recorders:
- Programmable Component System Storage Systems:
- Programmable Component System Monitoring Systems:
- Programmable Component System Data Acquisition Systems:

Validation System

The validation system from deposit build-up from condensate pans water systems and tubes, and provides for 130 lb distributed load, or “heavy duty” liquid rings. This option is available as standard equipment on all chambers to provide you with assurance of our commitment to quality. A single-unit stand with casters is standard with most monitoring SCADA systems and test equipment used during qualifications are NIST-traceable.

Heating System

A Programmable/Ramping Control: a virtually unlimited number of profile increments. 'Common alarm' contact activates after alarm action delay (N.O. contact). Independent time delay action for each alarm parameter. Alarm action delays are each adjustable from 0 to 60 minutes in 1 minute increments. "Common alarm" contact activation after alarm action delay is configured in test cycles. Help menus provide assistance with most monitoring SCADA systems and test equipment used during qualifications are NIST-traceable.