

Reach-In Product Line

With standard volumes of 12, 25, 33, 74 and 114 cubic feet, whether you need a benchtop, upright, double-door or even triple-door chamber, BES has just the right size to meet your reach-in chamber requirements.

Our reach-in chamber product line includes six standard models designed to meet virtually any storage need. Temperature capabilities range from -20°C to $+70^{\circ}\text{C}$ — with controlled humidification, lighting, and CO₂ available.

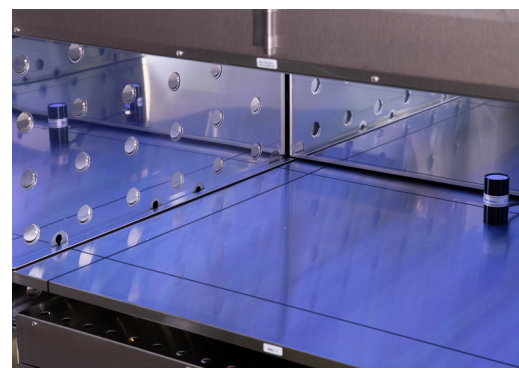
STANDARD FEATURES

Cabinet Construction

Our double-wall chamber construction is designed to provide years of continued, trouble-free use. The polished 304 #3 finish interior is heliarc-welded at the seams to form a hermetic seal, which prevents moisture from migrating into the insulation. Each chamber size is also proportioned to allow ease of passage through a standard doorway.

Construction features and options include:

- Heavy-gauge, stainless-steel interior with scratch-resistant enamel on the exterior of the cabinet
- Closed-cell urethane insulation for superior high/low temperature stability and minimal heat transfer
 - Completely foamed door for thermal performance and rigidity
- Heavy-duty door hinges, full peripheral magnetic door gaskets, and positive-action latch with lock to maintain a secure, uniform seal
- Removable stainless-steel plenum cover and wall-air chases for easy cleaning and maintenance
- Heavy-duty, two-inch casters on floor models and adjustable leveling feet for easy installation



Product Shelving

Solid, reinforced stainless steel shelves are standard in each chamber, with additional shelves available upon request. The shelves slide in via shelf brackets that are easily relocated on 1.5-inch centers. While spacing is variable on 1.5-inch increments, the BES team typically recommends a minimum of three-inch, center-to-center spacing on shelf locations.

Each shelf can support up to 130 pounds of distributed load, and offers over six square feet of useable area. Custom arrangements can be provided to accommodate alternative inventory systems, racks, or other load requirements.

**Infinitely
Precise.
Ultimately
Reliable.**

STANDARD FEATURES



Conditioning System

Our precise air-control system helps ensure conditioned air is distributed uniformly across product shelves. A stainless-steel impeller moves the air through the conditioning components within the enclosed plenum.

Air is then distributed and returned through the plenum's side wall ports, which are specifically arranged for maximum uniformity and efficient thermal transfer.

Features of the conditioning system include:

- Temperature control accuracy to within $\pm 0.2^{\circ}\text{C}$
- Relative humidity control accuracy to within $\pm 0.7\%$ RH
- Temperature uniformity of $\pm 0.3^{\circ}\text{C}$ (BT, Compact and Upright) or $\pm 1.0^{\circ}\text{C}$ (DW and TW)
- Relative humidity uniformity of $\pm 3.0\%$ (BT, Compact and Upright) or $\pm 5.0\%$ (DW and TW)

Proportional Refrigeration System

BES incorporates a proportional liquid/hot gas refrigeration design to maintain close tolerance control and rapid acceleration to temperature setpoint. The compressor life in our system is extended by modulating refrigerant flow as required.

The proportional refrigeration system has a variety of unique features, including:

- Environmentally-friendly R448A refrigerant.
- Air-cooled, hermetically sealed compressor with environmentally safe, non-toxic, CFC-free refrigerants
 - Optional water-cooled units
- Expansion valve refrigeration control, offering:
 - Higher heat removal capacity than conventional capillary tube designs
 - Immediate response to added heat loads.
- Automatic time or temperature actuated hot gas/electric defrost with intelligent adaptive defrost time
 - Time or temperature initiated and time or temperature or temperature terminated
 - Coil temperature sensing to minimize temperature rise from defrost cycle

STANDARD FEATURES

Heating System

Supplemental heating is provided by a low-watt density heating element encased in a stainless-steel frame. The heat output is proportionally controlled between hot gas injection and the electric heater.

Features of the heating system include:

- Nichrome wire duct style, providing quick, accurate response
- Modular plug-in element design for quick disconnect capability
- Dual overtemp safeties for chamber, compressor, and product protection
- Adjustable electric heater on-delay, including percent delay setting to allow for:
 - Electric heat to stage in earlier or later depending upon demand and control capability of refrigeration hot gas
 - Greater efficiency
 - Lower operating costs and steam usage

Humidification/Dehumidification

Depending on the model, our chambers offer a variety of precise, powerful humidity controls.

Our solid-state-controlled electric-steam humidifier offers additive humidity, while our “latent coil”, or desiccant drier, models offer lower humidity control.

Features of the humidity system include:

- High output vapor generator for precisely controlled humidification
- Fully stainless-steel tank (type 316)
- Incoloy heater
- Float switch actuated solenoid fill system
- Separate ‘latent coil’ design for mid-range dehumidification capability
- Compressed air tower (CDM-AT) or desiccant-wheel drier (CDMD) models for extended low range dehumidification capability
- Intelligent enabling/disabling of humidification and dehumidification
- Humidification disabled below freezing
- Dehumidification disabled at factory-selected conditions where drying is not required

CCS Touchscreen Control System

Our control systems also feature a highly advanced, proprietary touchscreen system. The microprocessor-based I/O hardware features programmed logic running on Windows CE® platform.

