



Environmental Specialties

PROFILE OF ENVIRONMENTAL SPECIALTIES

• Corporate Description

Bahnson Environmental Specialties, LLC (ES) designs and manufactures a diverse product line of controlled environment chambers that create a precise environment for clients' research, development and manufacturing processes. ES has rapidly expanded from a respected regional company to a national leader in chamber design, on-site construction, and performance qualifications. ES is composed of five corporate departments: Sales and Marketing, Operations and Projects, Product Service and Validation, Financial/Administrative Services, Quality Control and Production.

Markets Served and History

ES products and services are used throughout the entire pharmaceutical industry, including ethical, OTC, and generic product applications. Since 1990, our market focus on stability chambers has allowed ES to become the recognized leader in chamber design, construction, and stringent performance qualification in support of our clients' validation. ES is a leader in the design of HEPA filtered, clean cold rooms and incubator chambers for facilities designed for biotechnology and drug discovery. ES supplies high volume low temperature (-80°C) storage chambers to the pharmaceutical market for vaccines, reference samples or any other application requiring critical storage temperatures and fail-safe designs. ES continues to serve universities and medical schools with constant temperature chambers for research studies that rely on dependable equipment.

ES specializes in Walk-In Controlled Environmental Rooms for stability, R&D, storage and production as well as custom industrial applications. We manufacture to the client's specifications, i.e., room size, temperature range, humidity range, and/or light requirements. Each job is individually designed and engineered and the highest quality subcomponents are used in our turnkey assemblies.

ES was founded as a partnership in 1972 and now staffs a facility with employees dedicated to the design and installation of our products. We have an established proven track record with large multi-room projects with uniform temperature and/or humidity requirements. ES is now the largest supplier of multi-room walk-in stability chambers to pharmaceutical clients. Our steady growth in the domestic market has been due mainly to an increased marketing effort, product quality and by offering a turnkey project approach.

We have the financial strength, manufacturing capacity, insurance and Class A bonding capability to handle multiple projects during the same time period. ES has grown steadily showing balanced growth with sales volumes over the past four years ranging from 19 to 24 million per year in walkins, standard products and validation/service contracts. This stability and growth has been an important consideration for manufacturing or research institutions purchasing our product.

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In order to assure that ES has the resources and stability necessary to support future growth, ES through acquisition joined forces with an international company that shares the same desire to offer high quality products and services in the pharmaceutical sector. Effective June 30, 2001, Luwa Bahnson, Inc. became the exclusive owner of Environmental Specialties. Our Raleigh, NC office has become the Pharma business center for Luwa, Inc. Effective January 1, 2009, our parent company changed its name from "Luwa, Inc." to "Bahnson, Inc.", and our company name changed from "Luwa Environmental Specialties, LLC" to "Bahnson Environmental Specialties, LLC".

Technologies

ES is an engineering based company with personnel capable of handling projects requiring close tolerance temperature and humidity uniformities, particulate reduction for clean room classification, low temperature refrigeration, depressed and elevated humidity, and special electrical classification for flammable material storage. Ongoing developmental work on chamber lighting systems, control and automation will support a growing demand for repeatable photostability studies. ES is continuing to support our clients with versatile PLC interface capabilities, as well as multi chamber monitoring hardware and software. Ongoing investment in our testing equipment, metrology lab, and quality control procedures will insure our clients the data they require in validation.

• Product Expansion

To complement our walk-in and step-in rooms, in 1994 ES developed the ES2000 33 cubic ft. Reach-In Environmental Chamber. This compact version of our walk-in product offers customers a wide variety of testing capabilities from seven standard temperature and humidity models and four photostability chamber models. Product diversification occurred in 1997 with the benchtop ES2000 photostability chamber and new benchtop versions of the ES2000. Double door, 74 cu. ft. and triple-door, 114 cu.ft. models also are offered for large volume testing. In 1999, ES completed research and development on the ES ultra-low temperature chamber line. This product introduced in the year 2000, is designed for high volume storage for -70°C to -85°C, and units are currently in production.

• Major Products

ES provides the highest quality Reach-In, Step-In and Walk-In controlled environmental chambers. All products can be provided with complete protocols for the most stringent field performance testing. Model designations include:

ES 2000 Series - Temperature/Humidity and Photostability Reach-In Chambers

ES WRST Series – Stability Chambers

ES WRS Series - Warm Rooms and Wide Range Test Chambers

ES CRS Series - Cold Rooms and Freezers

ES FAS Series - Class 100 to 100,000 Incubators and Cold Rooms

ES DRS Series - Dry Rooms for Pharmaceutical and Industrial Applications

ES LTCR Series - Low Temperature Cascade High Volume Freezers

ES PS Series - Step-In and Walk-In Photostability Chambers ES GC Series - Plant Growth and Tissue Culture Chambers

Design-build custom units are provided with unique applications. All products carry a minimum of one-year parts and labor. Special extended warranty programs, preventive maintenance contracts and calibration programs are examples of areas ES can serve our clients after installation.

Customer References

ES has available a complete Customer List of references for reviewing the types of products previously provided and volume. Our customer list represents Environmental Chambers with a varied degree of sophistication but a consistent level of quality. We feel our previous projects and references are our biggest asset because they are proof of our ability to provide the quality and performance required. We welcome and encourage potential customers to research our customer list to verify our capabilities.

• Technical Services

Walk-in environmental chamber projects at ES are accomplished with a "project team" concept. Project managers complete their projects with professional assistance from CAD, engineering, installation crews, and service technicians. Our Quality Control group in close cooperation with Service is responsible for our metrology lab and maintains the accurate documentation required as we closely assist in our clients' validation. ES provides technical assistance to architects, engineering companies, and clients in planning, load calculations, facility service requirements, and budgetary cost estimates.

Personnel

ES' projects are completed by our individual teams who originally designed and estimated the project. Installation of our product can be provided by our factory-trained personnel, local union teams, or a group selected by the owner. In addition, we offer owner instruction at the completion of the job as well as calibration services, chamber testing and validation for compliance data required by regulatory agencies. It is important to note that as a Bahnson Holding, Inc. group company, the ES talent pool has increased dramatically with our depth chart now including structural engineers, seismic experience, additional field crews and project managers.

Facilities

ES completed our most recent expansion in our corporate office building in November 2004. This gave us the additional office space to support expanded engineering, validation and service staff and combined all manufacturing, warehouse and office requirements into one expanded facility All refrigeration packages including condensing units, evaporators, plenums, and large mechanical skids are fabricated and tested and the ES 2000 standard equipment production as well as quality control is also housed in our expanded main building. We have two remote sites where custom stainless steel and ductwork fabrication occur.

Testing/Validation

Our interaction with the client's personnel is important during the testing/validation of the chambers. ES has complete bench calibration services with working standards and instrument calibration certified traceable to NIST, or controls can be calibrated and audited in the field. All procedures are NIST traceable using the Kaye Digistrip IV sixteen or thirty-two point recorder for accumulation of horizontal or vertical temperature and humidity data for the client's presentation to FDA or in-house calibration specialists. Control panels are tested and tagged when meeting quality control standards. Pressure testing is performed on all fabricated refrigeration equipment with pressure tags accompanying all items to the field. Complete validation packages can be presented as an option on all ES products.

• Preventive Maintenance Contracts

ES offers a complete Preventive Maintenance (PM) Program designed to keep the mechanical equipment running to manufacturers' standards and all the controls within calibration standards. These are offered through the ES Service Department and utilize trained ES personnel to perform the PM tasks. Preventive maintenance contracts are offered to fit your internal maintenance schedule.

Sales/Service Network

Chambers are sold and serviced through a network of manufacturers' representatives and service representatives in defined geographical territories. Service from ES trained personnel is available for many areas of the country. Regional service offices have been set up in the Northeast and California. In areas where ES technicians are not available, emergency service is provided by a designated and approved company that receives full support from the ES service department.