


Cincinnati Sub-Zero

ENVIRONMENTAL CHAMBERS FOR THE DEFENSE INDUSTRY

The Testing Standard.

www.cszproducts.com

Aerospace and Defense Testing

We help you test and validate your products so you can deliver them to the people who need them the most.

For the right testing solution, with the right team behind it—turn to CSZ. We have over 80 years' of experience providing environmental test chamber solutions designed with the features you need, to deliver the value you've come to expect along with our commitment to customer satisfaction.

We build test chambers to help manufacturers save lives. Environmental test chambers are used in the aerospace and defense industries to test that components and products making them more robust & reliable because people rely on these products every day to keep them safe. From guidance systems, aviation electronics, cables & harnesses to satellites & more, we supply a wide range of products to meet these testing needs.

Chambers are designed to meet a variety of Mil-Std test specifications as well as RTCA DO-160 for testing environmental conditions for airborne equipment. We also provide custom-designed test chambers to meet your specific application needs.

ITAR Compliant

MADE IN U. S. A.

Z-Plus
Temperature/Humidity Chambers

From basic to accelerated stress testing

Whether you need to perform basic temperature cycling or rapid cycling, the Z-Plus offers a variety of sizes, temperature ranges and performance packages that meet your testing needs with over 150 different models to select from with and without humidity. Designed for ease-of-use, reliability and performance, this line of temperature and/or humidity chambers incorporates customer-requested features with extended performance packages up to 30°C/min for accelerated stress screening and for faster temperature change rates.

Workspace Volume	8 cu. ft. to 96 cu. ft. (230L to 2718L)
Temperature Ranges	Single Stage: -34°C to +190°C (-30°F to +375°F) Tundra®: -45°C to +190°C (-49°F to +375°F) Cascade: -70°C to +190°C (-94°F to +375°F)
Optional Humidity Range	10% to 98% RH Optional Low 5% RH

Reach-In Chambers

ZPB Stackable Benchtop Chambers

Flexible to meet your test space and requirements

Our new 8 cu. ft. benchtop test chamber is ideal for the most common testing applications, available as temperature only unit or temperature and humidity chamber. This particular model is designed for multiple use cases, offering flexbility and the ability to test more product in the same workspace. The chamber may be used in a variety of configurations:

1. Standard benchtop model, placed on existing table top.
2. Single chamber with optional cart provides storage for test equipment on the supplied shelf, saving space.
3. Stacked chamber configuration with the optional cart, saves floors space, **doubling test capacity in the same footprint. Run two different tests in separate chambers without taking up additional space in your lab.**

Workspace Volume	8 cu. ft. (230L)
Temperature Range	Tundra®: -45°C to +190°C (-49°F to 375°F)
Humidity Range **Optional Range**	10% to 98% RH 5% to 98% RH

MicroClimate® Temperature/Humidity Chambers

Compact chamber takes minimal floor space

MicroClimate chambers simulate a full range of temperature and/or humidity conditions. These chambers are designed to provide users with a compact chamber for testing small components and products. Two sizes are available which include a 1.2 cu. ft. (33 L) benchtop model and a 3 cubic ft. (84 L) floor models with casters. The floor model is available in three different models for faster heating & cooling performance.

Workspace Volume	1.2 cu. ft. (34 L)	3 cu. ft. (85 L)
Temperature Range	Single Stage: -30°C to +190°C (-22°F to +375°F)	-
	Cascade: -68°C to +190°C (-90°F to +375°F)	
Optional Humidity	10% to 98% RH	

Benchtop Model

MC-3 Model

Thermal Shock/ESS Chambers

Detect product defects before they get to your customer

Thermal shock / ESS chambers are capable of producing optimum stress levels for detecting product flaws by stimulating defects at the lowest level of assembly, before they get to your customer. The return on investment in both actual savings and customer confidence adds significant value.

Vertical Thermal Shock, Air-To-Air Chambers

Superior performance in a smaller footprint

Vertical Thermal Shock (VTS) chambers consist of separately controlled hot and cold zones. Product is transferred between these zones for rapid product temperature change. The refrigerated zone of the VTS Chamber will also perform as a fully functional, independent environmental test chamber.

Workspace Volume	1 to 11 cu. ft. (28 L to 311 L)
Temperature Range	*Hot Chamber: +50°C to +210°C (+122°F to +410°F) Hot/Cold Chamber: -75°C to +190°C (-103°F to +375°F)

*VTS-9 Hot Chamber +115°C (+239°F)
Custom Sizes Available

Our unique chamber design passes equal volumes of high velocity conditioned air over the product, resulting in rapid product temperature changes.

Reach-In Chambers

Horizontal Thermal Shock Chambers

HTS Series

Our horizontal thermal shock chambers are the ideal choice for batch testing and larger test loads. The carrier basket transfers the load between the hot and cold zones. In the horizontal three zone, the products travel via a carrier basket between the cold and ambient zones, and the hot zone travels to envelop the carrier basket.

Model	HTS-16 Inches (mm)	HTS-27 Inches (mm)	HTS-45 Inches (mm)
Workspace Volume	16 cu. ft. (453L)	27 cu. ft. (765L)	45 cu. ft. (1274L)
Product Carrier Dimensions	30"W x 30"D x 30"H (762 x 762 x 762)	36"W x 36"D x 36"H (914 x 914 x 914)	60"W x 36"D x 36"H (1524 x 914 x 914)
Exterior Dimensions	155"W x 80"D x 106"H (3937 x 2032 x 2692)	171"W x 86"D x 114"H (4343 x 2184 x 2895)	234"W x 90"D x 108"H (5943 x 2286 x 2743)
Temperature Range	-73°C to +200°C		

Thermally Shock twice as much product in one chamber.

Altitude Chambers with Temperature/Humidity

Simulating altitude and temperature for combined environmental testing

Our CA-Series Commercial Altitude Chambers combine temperature with vacuum to test basic components and sub-assemblies in a variety of industries. Your products can be tested simultaneously with temperature and altitude or may be used as a temperature/humidity cycling chamber with multiple uses. Chambers may be designed to meet RTCA/DO-160 test specifications for airborne equipment.

Workspace Volume	18 to 55 cu. Ft. (510 L to 1557 L)
Temperature Range	Single Stage: -34°C to +190°C (-30°F to +375°F) Tundra®: -45°C to +190°C (-49°F to +375°F) Tundra® II: -50°C to +190°C (-58°F to +375°F) Cascade: -68°C to +190°C (-90°F to +375°F)
Optional Humidity Range	10% to 98% RH Optional Low 5% RH
Altitude	100,000 Ft. (8.2 Torr) Standard 175,000 Ft. (.37 Torr) Optional

Custom sizes available

Combined Environments

Temperature/Humidity/Vibration Chambers

Combined environmental testing environments with flexibility for use with new or existing vibration systems

Systems are designed for compatibility with your choice of electrodynamic or mechanical vibration systems. This provides you with the flexibility to use your existing vibration shaker. Each model is manufactured to standard designs, but may be custom engineered to meet a wide range of stringent test requirements.

CV(H)-Series

AV(H)L & CV(H) Workspace Volume	32 cu. Ft. to 81 cu. Ft. (906 L to 2293 L)
Temperature Range	Single Stage: -34°C to +190°C (-30°F to +375°F) Tundra®: -45°C to +190°C (-49°F to +375°F) Tundra® II: -50°C to +190°C (-58°F to +375°F) Cascade: -70°C to +190°C (-94°F to +375°F)
Optional Humidity Range	10% to 98% RH Optional Low 5% RH

Custom sizes available

Our AV(H)L-Series AGREE (Advisory Group on Reliability of Electronic Equipment) chambers combine temperature/humidity and vibration for commercial and military testing. The AV(H)L-Series models have the optional capability to interface with both horizontal and vertical electrodynamic vibration systems with rear or vertical sliding doors.

AV(H)L-Series

AV(H)
Gantry Vertical Lift

WM-Series Modular Walk-In Chambers

Offers flexibility for testing larger volumes

Modular Walk-In chambers use pre-fabricated panels and offer flexibility to meet virtually any size or configuration. These chambers are easily assembled, installed and may also be expanded for future applications. Select from stainless steel, aluminum, or galvanized construction to fit your specific needs.

Size	200 to 8,000 cu. ft. and larger
Temperature Range	Single Stage: -30°C to +85°C (-22°F to +185°F) Tundra®: -45°C to +85°C (-49°F to +185°F) Tundra® II: -50°C to +85°C (-58°F to +185°F) Cascade: -70°C to +85°C (-94°F to +185°F)
Humidity Range	10% to 95% RH

WW-Series
Solid Welded Walk-In Chambers

Rugged construction with higher temperatures and faster cycling

WW-Series Welded Walk-In chambers are fabricated to allow wider temperature and humidity ranges with fast temperature change rates. These welded walk-in chambers consist of one solid piece that is constructed using a zinc coated exterior and a Type 304 stainless steel interior.

Size	200 to 8,000 cu. ft. and larger
Temperature Range	Single Stage: -34°C to +190°C (-30°F to +375°F) Tundra®: -45°C to +190°C (-49°F to +375°F) Tundra® II: -50°C to +190°C (-58°F to +375°F) Cascade: -70°C to +190°C (-94°F to +375°F)
Humidity Range	10% to 95% RH

Custom-Designed Chambers

Below are a few examples of custom-designed chambers for defense and space applications.

Large Modular walk-in chamber, 33,750 cu. ft., for testing a semi-truck with radar system. Cooling system included (6) 30-30 horespower refrigeration system to handle cooling of the large load.

Welded walk-In chamber, 6144 cu. ft., for testing large generator with temperature range from -55°C to 71°C and altitude range from Site level to 40,000 feet

Large welded walk-in chamber, 15,000 cu. ft. for testing NASA Orion Space Capsule designed to support maximum load of 33,000 lbs with 24' doors.

EZT-570 Controller

Find out more

The Next Generation Controller with Smartphone Technology

Communications & Connectivity

- Monitor and/or Control the chamber remotely for anytime, anywhere access from any device using LAN VNC
- Alarm notification sends email and/or text messages
- Email built-in to send data, alarm, audit trail files directly from controller
- Ethernet TCP/IP, and serial communications

Profiling

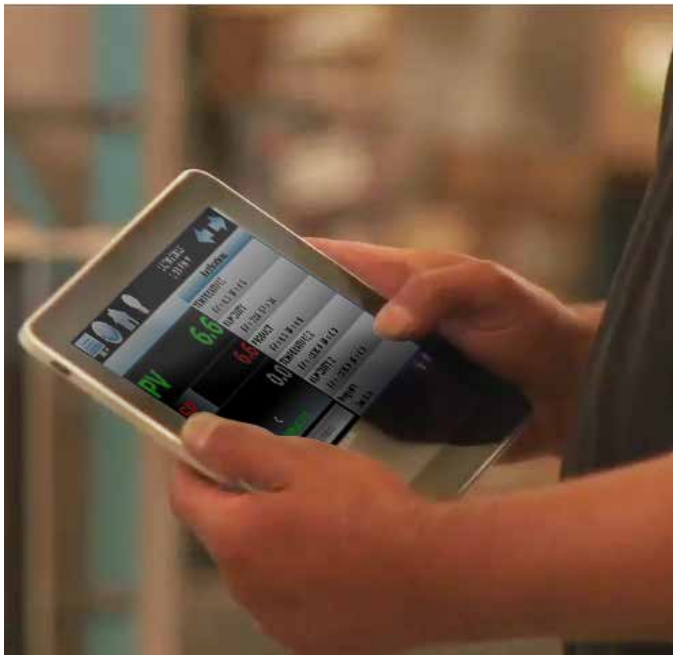
- Profiling includes up to 99 steps and 1000 cycles
- Program ramp steps entering time or °C/min
- Easily review profile using trend chart or review list of steps before running profile
- Profile status view displays current step, estimated start/stop date and time and more
- Profiles may be transferred to different chambers via USB or optional EZ-View software
- Automated delay profile start

Data Logging

- Configurable log interval, data file length, filename, operator entered batch & lot information as well as an unlimited number of operator notes saved to the data file
- Access data files directly from controller or PC
- Easily download profiles, alarm files, audit trail files and data files using USB or email from controller in a compatible .csv file format for ease of use. Also import profiles to other chambers saving valuable profile entry time
- Files may also be automatically backed up daily for hassle-free file management using FTP. FTP/FileWeb/DataWeb (LAN/WAN)

User Convenience & Flexibility

- Controller may be configured in any of one of 28 languages – one setting updates icons, menus and help screen
- Selectable power failure/recovery options
- Full system security allows up to 30 different users with four different levels of security
- Audit trail files track changes in settings by each user
- Import/export configuration settings to other controllers saving time
- Configurable alarms and maintenance alerts



Save valuable time with the ease of use of the EZT-570 featuring fewer steps to accomplish your daily testing needs while incorporating simplified operation and programming to test faster.

Cincinnati Sub-Zero is a product brand of Weiss Technik North America, Inc. Weiss Technik North America is a member of the Weiss Technik group of companies, a division of the Schunk Group with its headquarters in Heuchelheim, Germany. Weiss Technik is the world's largest manufacturer of environmental simulation systems and employs more than 2,900 people in 18 group companies in 15 countries.

Request Information

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The Testing Standard.

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