



ENVIRONMENTAL SIMULATION CHAMBERS

Serving Your Testing Needs for Over 70 Years

CSZ
Cincinnati Sub-Zero

www.cszindustrial.com

The Experience You Need

Cincinnati Sub-Zero (CSZ) Products, Inc. has been helping make our customers' products more reliable for over 70 years by providing a broad selection of products and services. We are an ISO-9001:2008 certified company designing and manufacturing environmental chambers and temperature-controlled products of the highest quality, with a commitment to total customer satisfaction. Our years of experience combined with our knowledgeable Engineering, Sales and Service staff enable us to provide you with solutions designed to meet your needs.

CSZ provides chambers for a wide range of test applications across a variety of industries including:



Alternative Energy
Electronics
Automotive
Solar
Telecommunications
Computer
Medical
Pharmaceutical
Life Science
Military/Defense
Aerospace
Consumer Products
Chemical
Packaging
Test Labs
Industrial Equipment
Metalworking
Tooling

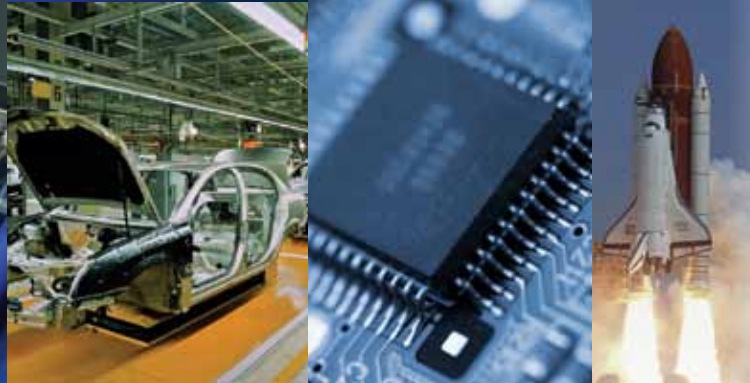
Why use environmental test chambers?

Design Verification & Validation
Manufacturing Test
Production Sample Test
Accelerated Stress Testing
QA/QC Reliability
Failure Analysis
Life Testing

Testing your product in a CSZ chamber can provide the following benefits

Reduce Product Development Time
Increase Customer Confidence
Ensure Product Quality & Reliability
Forecast Life Expectancy
Reduce Costs
Increase Profitability






CSZ is your one-stop solution for environmental chambers, chillers, industrial freezers, system upgrades/retrofits, preventive maintenance, and calibration services. CSZ can also perform testing for you through CSZ Testing Services, our A2LA Accredited test laboratory.



CSZ understands the pressures faced by equipment manufacturers and laboratories to develop better quality products that outperform the competition and the need to bring these new products to market quickly. This is why we offer a broad range of standard and custom-designed chambers tailored to meet your design requirements. Chamber sizes range from small benchtop units to full walk-in/drive-in rooms with a full range of environmental conditions designed to test or store your products.



Simulating a full range of environmental conditions

 Polar Cold	Mechanical refrigeration systems achieve temperatures as low as -84°C (-120°F). Optional LN2 available for temperatures as low as -184°C (-300°F) and for fast temperature change rates.
 Extreme Heat	High temperatures achieve +190°C (+375°F). Higher temperatures are available in custom equipment.
 Humidity	Relative humidity ranges from 10% to 98% - even lower with our low humidity option.
 Altitude	Chambers can simulate conditions up to 100,000 ft (30,480 meters) and higher with standard options.
 Vibration	Combined test environments available with temperature, humidity, and vibration while interfacing to an electrodynamic or mechanical vibration shaker of your choice.

Reach-In Chambers

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. The MC-3-1-1-HAC model now has cooling transition rates of 5°C/min for faster cycling in a small footprint.

Contemporary design combined with a small footprint, simple installation and economical price make these units the ideal choice for any laboratory.

- Small footprint saves valuable floor space in your laboratory
- Benchtop chamber incorporates a stackable design saves floor space and allows users to perform manual thermal shock tests
- 115V models provide easy installation with no special electrical connections needed.
- The MC-3 model is available in 115V or 230V with a selection of performance packages for faster ramp rates.
- Standard features include programmable controller, RS-232 computer interface, access port, and humidity water demineralizer on humidity models
- Economical



MC-3 Model



Benchtop Model

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	-70°C to +190°C (-94°F to +375°F)	
Optional Humidity	10% to 98% RH	

Stable temperature/humidity conditioned environment for worry-free operation. StableClimate stability chambers are ideal for stability, shelf life, package testing and more.



StableClimate® Temperature/Humidity Stability Chambers

StableClimate stability chambers are available in temperature or temperature/humidity models with four chamber sizes to select from. Chambers simulate a full range of temperature conditions.

- One, two or three solid door configurations
- Three epoxy coated wire shelves per door
- All models meet ICH pharmaceutical guidelines
- White heavy gauge, scratch-resistant exterior
- Stainless steel interior
- Eighteen month parts & labor warranty including 5 years on compressor



Workspace Volume	24 cu. ft. (680 L)	33 Cu. Ft. (935 L)	52 cu. ft. (1473 L)	80 cu. ft. (2266 L)
Temperature Range	+4°C to +70°C (+40°F to +158°F) +5°C to +60°C (+41°F to +140°F)			
Temperature Only				
Temperature/Humidity				
Optional Humidity Range	25% to 95% RH			

Reach-In Chambers

Z-Plus Temperature/Humidity Chambers

From basic to accelerated stress testing & over 80 models in which to choose from

Designed for ease-of-use, reliability and performance, this new line of temperature and/or humidity chambers incorporates customer-requested features with extended performance packages for faster temperature change rates.

FEATURES & BENEFITS

- **EZT-570i Touch Screen Controller**

Controller simplifies operations and reduces programming time. EZ-Tilt feature allows controller to be tilted up or down to accommodate users of different heights.



- **4" (10 cm) Access Ports**

Two access ports are included on the left and right side of your chamber for ease of cable routing.

- **Leveling Legs**

This feature locks unit in place and levels the chamber on uneven floors.

- **Adjustable, Slide-Out Shelf**

A product shelf is now included with your new chamber.



- **Interior Light**

The chamber light is now strategically located to better illuminate your product.

- **Lower Workspace**

The workspace for each model has been lowered to the same height for each model to allow for easy product loading.

- **Extended Performance**

Performance packages are available up to 20HP with a selection of three refrigeration systems.

- **Enhanced Air Flow**

Our high volume airflow system includes robust air circulator motors that provide better airflow to improve controllability within the chamber. Better airflow minimizes temperature gradients and accelerates temperature change rates of the device under test.

- **Contemporary Design**

The new Z-Plus chamber compliments your laboratory with its new design and smooth sides.



	ZP-8	ZP-16	ZP-32	ZP-44	ZP-64
Workspace Volume	8 cu.ft. (230 L)	16 cu. ft (450 L)	32 cu. ft. (900 L)	44 cu. ft. (1250 L)	64 cu. ft. (1810 L)
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				

Customized to meet your design requirements, these temperature chambers are high performance chambers with fast temperature change rates. Sizes may be configured to meet your requirements and nearly any performance criteria.



CT-Series Custom Designed Temperature/Humidity Chambers

Designed to your test requirements with faster change rates

Performance can be further enhanced with a wide variety of standard options including dry air purge, LN₂/CO₂ boost cooling, explosion proof, low relative humidity, and high temperature and humidity control.

Workspace Volume	Customized to your needs	
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	



RC-Series Remote Conditioners Temperature/Humidity Chambers

Two chambers for the price of one

Unlike competitive models, CSZ's remote conditioners provide two chambers in one. They deliver temperature-conditioned air to insulated enclosures through insulated ducts and also serve as independent temperature/humidity cycling test chambers.

Used for Multiple Applications:

- Temperature condition specimens during physical tests.
- Temperature condition moving devices in special fixtures that cannot be placed in conventional environmental chambers.
- Add equipment cooling air (ECA) capability to existing chambers.
- Add boost or back up heating and cooling to existing temperature test chambers.
- Use as a temperature test chamber for steady state or temperature cycling profiles.
- Options: Explosion-proof package, remote enclosures or hoods designed to meet your requirements.



ZPRC model featured above

	RC-8	RC-16	RC-32	RC-44	RC-64
Workspace Volume	8 cu. ft. (230 L)	16 cu. ft. (450 L)	32 cu. ft. (900 L)	44 cu. ft. (1250 L)	64 cu. ft. (1810 L)
Temperature Range	Single Stage:		-34° C to +190° C (-30° F to +375° F)		
			-25° C to +177° C (-13° F to +350° F)*		
	Cascade:		-70° C to +190° C (-94° F to +375° F)		
			-65° C to +177° C (-85° F to +350° F)*		
Optional Humidity Range	10% to 95% RH 20% to 80% RH* Optional Low 5% RH				

*Operated as a remote conditioner

Combined Environments

Temperature/Humidity/Vibration Chambers

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

AV/CV-Series chambers offer rapid temperature change rates with combined temperature/humidity/vibration environments. 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.

Our CV-Series temperature/humidity and vibration chambers are designed for commercial testing to integrate with electrodynamic or mechanical vibration systems in only the vertical mode of operation.



CV-Series



AV-Series

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

AV Workspace Volume	14 cu. Ft. to 144 cu. Ft. (396 L to 4078 L)	
CV Workspace Volume	8 to 64 cu. Ft. (227 L to 1812 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	

CSZ's HALT & HASS Time Compressor chambers incorporate the highest level of technology and quality for the optimum in reliability testing.



HALT/HASS Chambers

Quickly Discover Design Weakness

The chamber design of CSZ and the vibration table design by Dr. Greg Hobbs, inventor of HALT & HASS technology, combine to provide the broadest range of temperature and vibration capabilities in the industry which are key to both precipitation and detection of product defects. CSZ Time Compressor Chambers are state-of-the-art HALT and HASS systems for simultaneously subjecting products to all-axis broadband vibration and rapid thermal cycling.

- Superior reliability and thermal performance
- Significantly better high and low vibration limits (required for detection)
- Quiet operation
- Efficient LN2 and utility usage for greater ROI

	TC-1.5	TC-2.0	TC-2.5	TC-4.0
Temperature Range	-100°C to +200°C (-148°F to +392°F)			
Temperature Ramp Ranges	> 80°C per minute	> 80°C per minute	> 90°C per minute	> 80°C per minute
Vibration Levels	<3 - 90 GRMS			<3 - 80 GRMS
Table Size (cm)	18" x 18" (46cm x 46cm)	24" x 24" (61cm x 61cm)	30" x 30" (76cm x 76cm)	48" x 48" (122cm x 122cm)



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 designed for use in the aeronautical, space engineering, and meteorological fields. Your products can be tested simultaneously with temperature and altitude or may be used as a temperature/humidity cycling chamber with multiple uses.

Workspace Volume	8 to 64 cu. Ft. (230 L to 1810 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	
Altitude	100,000 Ft. (30,480 m) Standard 200,000 Ft. (60,960 m) Optional	



Walk-In/Drive-In Chambers

Large capacity walk-in / drive-in chambers customized to meet your needs

Walk-In chambers are used for cold storage or testing products that require a large capacity chamber. Applications include full vehicle testing, automotive components, electronic components, packaging, stability testing, biological research and more. Chambers may be designed with options such as remote instrument consoles, custom-size doors, ramps and heavy-duty floors. Additional environments such as altitude, solar simulation, and vibration may also be included to meet your test requirements.



WM-ST Series Stability Temperature/Humidity Rooms Controlled environments for stability testing/storage

Stability rooms are available in temperature and/or humidity with a temperature range of -20°C to +60°C (-4°F to +140°F) and optional humidity from 10% to 95%. These rooms are designed with ceiling mounted conditioning systems and modular panel construction. All rooms have stainless steel interior and white embossed or optional aluminum embossed exterior. All CSZ stability chambers meet ICH Q1A guidelines.

WM-Series Modular Panel Walk-In Chambers Offers flexibility for testing larger volumes at an economical price

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. Modular chambers are constructed of 4" thick polyurethane-foamed panels that lock together to form a tightly sealed chamber. 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 +93°C (-22°F to +200°F)
	Tundra®:	-45°C to +93°C (-49°F to +200°F)
	Tundra® II:	-50°C to +93°C (-58°F to +200°F)
	Cascade:	-70°C to +93°C (-94°F to +200°F)
Humidity Range	10% to 98% RH	

CSZ drive-in environmental test chambers are ideal for full vehicle testing.

© General Motors Corporation

Drive-In Series Chambers

Designed for full vehicle testing - from small cars to full semi-trucks

Testing procedures include noise, vibration, climate conditions, suspension systems, shocks, squeaks and rattles. Every chamber can be tailor-designed to meet different requirements and specifications and can integrate with vibration systems.



Four post road simulator with temperature, humidity, vibration and solar simulation.

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. 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. Fiberglass insulated walls are 6" thick with seams that are continuously welded to form a hermetically sealed unit.



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 98% RH	

Modular Plenum Conditioning System

Walk-In chambers feature our standard conditioning systems that include the refrigeration, air circulation, electrical components, instrumentation and optional humidification needed to control your chamber environment. Each conditioning system interfaces with an assembled Walk-In box **for easy installation without taking up valuable workspace in your chamber**. These conditioning systems may be ordered from CSZ with or without walk-in box.

Recommended Configuration

Benefit	Modular Panel	Solid Welded
Economical	X	
Easy Move-In & Assembly	X	
Easy Installation	X	X
Choice of Interior and Exterior Finishes	X	
Extended Temperature Range		X
Extended Humidity Range		X
Fast Change Rate		X
Altitude Simulation		X

Thermal Shock/ESS Chambers

Detect product defects before they get to your customer

Cincinnati Sub-Zero 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 greatly to the value of electronic assemblies screened in a thermal shock system.

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 9 cu. ft. (28 L to 255 L)
Temperature Range	Hot Chamber: +70°C to +210°C (+158°F to +410°F) Hot/Cold Chamber: -75°C to +190°C (-103°F to +375°F)

Custom Sizes Available



Double Duty Thermal Shock (Air-To-Air) Chambers

Thermally shock twice as much product with one chamber

Double Duty Thermal Shock (DTS) chambers consist of three zones: a hot chamber on each end with a cold chamber in the middle. This design allows product to be moved between the zones simultaneously with two product baskets exposing twice as much product in one system.

Workspace Volume	16 & 27 cu. ft. (453 L & 765 L)
Temperature Range	Hot Chamber: +70°C to +210°C (+158°F to +410°F) Hot/Cold Chamber: -75°C to +190°C (-103°F to +375°F)

Custom Sizes Available



TSB Thermal Shock Bath, Liquid-To-Liquid

Immediate temperature shock for faster testing

TSB-Series Liquid Baths provide immediate product exposure to thermal stresses. Vapor-tight construction and design minimizes expensive test liquid vapors from evaporating when the unit is opened for loading or unloading product.

Workspace Volume	2 lbs. & 5 lbs. (.9kg & 2.3kg)
Temperature Range	Hot Bath: +35°C to +160°C (+95°F to +320°F) Cold Bath: -75°C to +25°C (-103°F to +77°F)

Custom Sizes Available

Industrial Freezers

Production Chilling chambers are ultra-low industrial freezers designed with heavy-duty construction and are built-to-last. These freezers are available in front or top loading configurations.

V-Series Freezers

Industrial freezers for light-duty applications

V-Series are top-loading freezers designed for use as storage freezers for a variety of applications.

- Ideal for light storage
- Heavy-duty construction with thick foam insulation lowers operating costs
- Trouble-free operation
- Casters for mobility
- Uses ozone friendly refrigerants

Workspace Volume	6 to 11 cu. ft. (170 L to 312 L)
Temperature Range	-84°C to -40°C (-120°F to -40°F) -184°C (-300°F) with LN2 Boost



T-Series Freezers

Heavy-duty freezers built to last for decades

T-Series are top-loading freezers designed for high capacity and heavy-duty loads. Applications include use in the heat-treating industry for chilling steel to -84°C (-120°F) for transforming retained austenite to martensite, which relieves internal stress, increases hardness and durability of metal. Use the T-Series for age-hardening, stress-relieving, expansion assembly, and other heavy-duty industrial cooling applications.

- Heavy-duty construction with thick foam insulation lowers operating costs
- Trouble-free operation
- High-volume cold air circulation
- Fast and efficient cooling
- Uses ozone friendly refrigerants



Workspace Volume	13 to 96 cu. ft. (368 L to 2718 L)
Temperature Range	-84°C to -40°C (-120°F to -40°F) -184°C (-300°F) with LN2 Boost

Custom Sizes Available



TF-Series Front-Loading Freezers

Heavy-duty freezers with easy loading for industrial applications

TF-Series front-loading freezers offer side-by-side operation with batch-type heat-treating furnaces, heavy-duty rollers and guides to interface directly with most charge car load/unload mechanisms. It is also compatible with part baskets and trays used in other heat-treating mechanisms.

Workspace Volume	23 to 84 cu. ft. (651 L to 2379 L)
Temperature Range	-84°C to -40°C (-120°F to -40°F) -184°C (-300°F) with LN2 Boost

Custom Sizes Available

Custom-Designed Chambers

Do your test applications require special mechanical interface, modification of a standard chamber, or unique testing requirements?

Consider a customized unit from CSZ. CSZ leads the market in custom-designed environmental chambers. Our experienced engineering and design team can create custom solutions for your highly specialized requirements. CSZ has designed thousands of test chambers for special applications and has the expertise to custom-design virtually any type of environment simulation system.

Examples of custom-designed chambers include:

Accelerated Stress Test Chambers

Chambers are designed for fast product temperature change rates up to 30°C per minute.

Solar Panel Testing Chamber

Test chambers for testing various size photovoltaic modules and panels. These Chambers are designed for temperature and humidity cycling along with the ability to meet IEC 61646, 61215, and 61208 climatic tests for temperature cycling, damp heat and humidity freeze tests. Chambers also designed to meet UL and ASTM test specifications for photovoltaic panel testing.

Cold Storage Chambers

BioStore Freezer Rooms address cold storage concerns of reliably storing material at consistently low temperatures. Ideal for the storage of genetic material (DNA), donor tissues, and allografts for surgical transplantation, these life science cold storage facilities contain individual freezer compartments with temperatures from -75°C up to -40°C (-103°F to -40°F).

These Freezer Rooms consist of hallways with multiple freezer compartments on both sides. Ideal for large capacity storage to replace upright freezers with a single unit.

Rain / Ice Chambers

Provides an environment to test insulating values and weight support of a product that may be used in an outdoor environment with rain and ice.

Sand and Dust Chambers

Provides an environment to test the exposure of automotive and electronic components to concentrated levels of dust in order to validate the seal integrity of a product.



Accelerated Stress Test Chamber



Solar Panel Test Chamber



BioStore Freezer Rooms





Tensile Test Chambers

These chambers expose materials to temperature and/or humidity environments while interfacing with a variety of destructive and non-destructive test equipment.

Wire Benders

These chambers are used for stressing materials used in the manufacturing of wire coatings and hoses. Cold bend specifications require sub-zero exposure and bending material.

Liquid Chillers / Conditioners

Conditions heat transfer fluids at a wide range of temperatures.

Other Custom-Designed Chambers

Temperature cycling units may be designed to interface with your equipment such as automated conveyors for use in the manufacturing process, or combined with testing systems for electronics or disk drives. Explosion proof chambers are also available.



Tensile Test Chamber



Multi-Liquid Bath

Custom product test stands/fixtures are available such as product racks and slide-out shelves are designed for optimum airflow around your product.

Options for flexibility and performance

All units have optional features that offer flexibility and enhanced performance requirements. Below is a partial list of these options:

- Stainless Steel Exterior
- Windows-Based Software
- Access Ports
- Chart Recorder
- Additional Product Shelves
- Dry Air Purge
- Liquid Nitrogen Boost
- Recirculating Water System
- Low Humidity



Tundra®

Energy Saving Refrigeration System

Environmental chambers utilizing CSZ's patented Tundra® refrigeration systems offer more performance and can save up to 54% in operating costs!

How can CSZ test chambers with the Tundra save operating costs?

Operating costs are reduced compared to a chamber with a cascade refrigeration system since there is only one compressor now needed to run temperatures as cold as -45°C and -50°C. This can provide your company with substantial costs savings.

What is the Tundra refrigeration System?

- Conventional single-stage systems can reliably test product to -34°C (-30°F).
- The patented Tundra and new Tundra II systems can efficiently test product to -45°C (-49°F) or -50°C (-58°F) with a single compressor.

Tundra®

Tundra is a patented refrigeration system design that uses one compressor and can be used in any CSZ chamber from 3.5 to 15 HP. The Tundra is ideal for testing products down to -45°C. The Tundra is a proven and reliable system that has been in production for over 7 years.

Tundra® II

Built off of the original Tundra platform, the Tundra II is a unique refrigeration system design that also uses one compressor, available from 12 to 30 HP. The Tundra II is ideal for larger systems and accelerated testing down to -50°C (-58°F).

The Tundra system offers the following benefits:

- **Increased Performance Capacity** - The system offers even greater capacity with rapid temperature change rates and increased live load capability.
- **High Reliability** - Utilizing proven refrigeration system design that has a single compressor with fewer parts than a cascade system adds to the reliability of the Tundra system. CSZ provides a 3 year part & labor warranty on Tundra chamber compressors.
- **Reduced Maintenance Costs** - With few parts to service, maintenance cost will be lower.



CSZ EZT-570i Controller

Time-Saving Features to Test Faster

EZ→Programming EZ→Datalogging

EZ→To be Connected to Your Test World



CSZ's EZT-570i controller offers a 7" or 10" (18 cm or 25 cm) touch screen and the latest in test chamber programming. Flexible configurations along with a full range of user-friendly features combine to simplify programming and save valuable time for greater return on your investment. Intuitive controller includes built-in data security & safeties to protect your chamber and product under test.

Communications & Connectivity

- Ethernet capability to remotely monitor and control multiple test chambers. Wired, wireless, local area network or World Wide Web Ethernet connectivity provides anytime, anywhere access using a PC or PDA device.
- Alarm notification system sends email and/or text phone messages, saving valuable tests while reducing downtime.
- Integrated email sends data files directly from the controller with a touch of a button.

Data Logging

- Data logging with custom file names, batch & lot numbers, operator events & digital signatures.
- Automated "Ethernet" back-up of data files provides "hassle free" file management.
- Easily download profiles, alarm files, audit trail files and data files to a USB stick in a compatible .CSV file format. Import profiles to other chambers saving valuable profile entry time.
- Access data files directly from controller or PC.

User Convenience & Flexibility

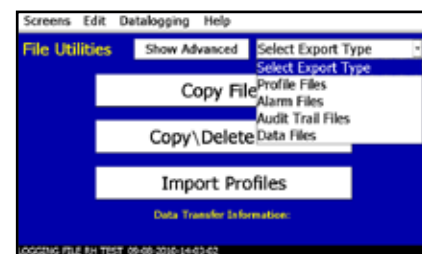
- Real time & historical trend graphs. Print graphs directly to a printer.
- Profile status view provides details on the profile with stop date and time.
- Profile autostart allows profiles to begin at a date, day and time.
- Help menu provides text and voice assistance in multiple languages (English, Spanish, French or Chinese).

Enhanced Functionality

- Adapt-a-tune technology provides the ultimate in chamber performance and control stability.
- Product control feature accelerates temperature cycling of the device under test.
- Product high/low limit protects product.
- Selectable power failure/recovery options.
- Fully configurable alarm settings.
- Full system security allows up to 30 different users with three different levels of security.



Remote control from smart phone or tablet



File utility screen

Description	Value
PROFILE STATUS:	SOAKING
START DATE:	09/08/10-14:03
ESTIMATE STOP DATE:	09/10/10-08:04
CURRENT STEP:	2
STEP TIME LEFT:	00:30:27
WAIT FOR INPUT:	NOT WAITING
WAIT SETPOINT:	NOT WAITING
TEMPERATURE SP:	42.3
HUMIDITY SP:	12.0
PRODUCT SP:	0.0

Profile status screen

The Experience you Rely on...

Cincinnati Sub-Zero (CSZ) Products, Inc. is an ISO-9001 certified company with over 70 years of industry experience designing and manufacturing temperature-controlled products of the highest quality, with a commitment to total customer satisfaction.

At CSZ, we offer a complete line of both standard and custom-designed environmental simulation chambers including:

- Temperature Cycling
- Humidity
- Stability Cabinets & Rooms
- Thermal Shock
- Stress-Screening
- Altitude
- AGREE Vibration
- HALT/HASS
- Freezers
- Liquid Chillers
- Wind & Rain
- Sand & Dust
- Other Temperature Management Solutions

Sizes range from benchtop to full walk-in/drive-in chambers.

TESTING SERVICES

CSZ Testing Services is an A2LA Accredited Test Laboratory utilizing the latest test technology. CSZ is your one stop source for all of your environmental simulation testing needs. Our testing laboratory is here to help with your product qualification testing, overflow testing and /or third party product validation. Testing capabilities include Temperature, Humidity, and/or Vibration, HALT/HASS, Thermal Shock, Burn-in, Altitude, Vibration, Shock, Salt Spray, and Cyclic Corrosion test. Serving you from two locations in Cincinnati, OH and Sterling Heights, MI. For more information please call CSZ Testing headquarters at 513-793-7774 or visit www.csztesting.com.



CSZ is your one stop solution for ...

**Environmental Chambers
Freezers
System Upgrades
Preventative Maintenance
Calibration Services
Contract Testing Services**

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