



Cincinnati Sub-Zero

Z-PLUS

Temperature / Humidity Chambers



Performance You Specify, Reliability You Expect, Features You Want, Value You Need

Designed for ease-of-use, reliability and performance, this line of chambers incorporates customer-requested features with extended performance for faster ramp rates. Whether you need to do basic temperature cycling or accelerated stress testing, the Z-Plus offers a variety of sizes, temperature ranges and performance packages that meet your testing needs.





Z-Plus Cabinet Features

The contemporary and smooth cabinet design is aesthetically pleasing to fit the style of your laboratory. Stainless steel interior with oven-baked, powder-coated exterior for added durability.

- Two, 102mm access ports centered on the left-hand and right hand sides for ease of cable routing. Ports are fully welded to eliminate leaks and increase chamber life.
- Compact size and casters allow you to move the chamber throughout your lab with leveling legs to secure and level your chamber.
- One adjustable product shelf slides out to provide easier access to your product. The shelf design is non tipping and supports large product loads.



- Single-handed, lockable latch operation for ease of use.
- Fog-free viewing window provides product viewing.
- Interior light illuminates chamber workspace and product.
- Removable side panels allow for easy access to all systems.
- Lower workspace allows for easy product loading.
- Double gasketing assures a vapor tight seal and insulation minimizes heat loss.
- Each chamber is fully pressure tested along with fully welded ports to eliminate potential leaks and prolong chamber life.

Z-Plus Temperature/Humidity Chambers

Refrigeration Features

- Extended performance with a selection of three refrigeration systems and multiple performance packages are available to meet your product testing requirements.
- Environmentally safe refrigerants are non-flammable, and have a zero Ozone Depletion Potential (ODP).
- Refrigeration service taps and refrigeration pressure gauges are included for easy maintenance.
- Refrigeration system saves energy costs and prevents coil frost up for efficient operation.

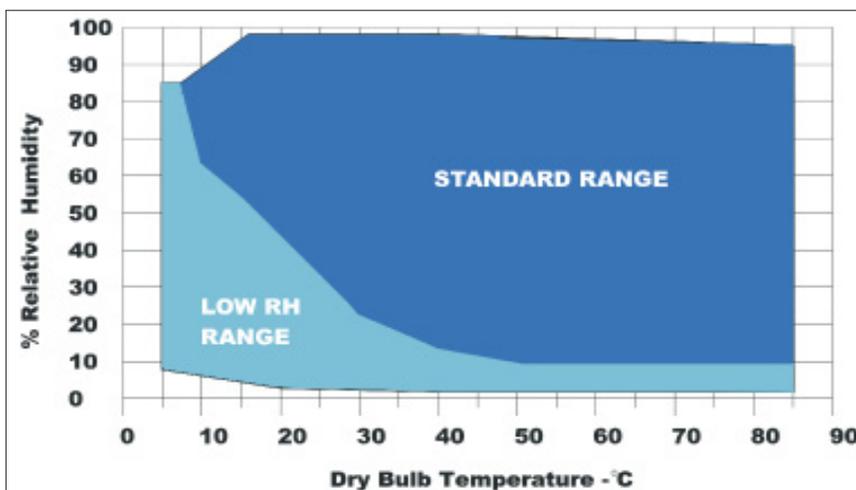
Our patented Tundra® system offers increased performance, reduces maintenance and energy usage, saving up to 54% on operational costs. Available in temperature ranges as low as -45°C. See pg. 10 for details.

Electrical & Safety Features

- All wiring between the electrical panel and the various components pass through terminal strips for easy maintenance. Wiring is color coded and identified with numbers that correspond to system schematics.
- Multiple safety devices include a primary over-temperature limit to protect your product and an over-temperature safety limit to protect the chamber. All branch power and control circuits are individually fused.
- UL-508A listed electrical panel.

Communications

- Z-Plus models come equipped with EIA-232, EIA-485 communications, ethernet connectivity for monitoring & control, and optional IEEE-488 GPIB.
- Safety relay connection is provided to protect your device under test by removing power to it when the chamber is not running.



Humidification System (ZPH Models)

- The Z-Plus features our fast response, tight control, humidity system. Humidification systems allow for humidity and moisture resistance testing meeting a variety of commercial and military standards.
- These systems include an electronic, solid-state humidity sensor for accuracy and minimal maintenance.



Windows Software for your chamber controller...

Using our optional EZ-View windows software, from one central PC you are able to monitor, control, datalog, create profiles, and receive alarm notifications. This software package allows you to control up to 31 chambers.



Choose from a complete selection of options for flexibility and increased performance such as LN2 Boost for faster transitions

Optional Accessories

- Dry Air Purge
- Recirculating Water Supply
- Humidity Water Filtration
- Demineralizer Cartridge Filters
- LN2 Boost Cooling
- Low RH
- CO2 Boost Cooling
- CO2 Cooling Only
- LN2 Cooling Only
- GN2 Purge
- Water Pressure Regulator
- 10" Controller Screen
- Running Time Meter
- IEEE-488 Computer Interface
- Windows-Based Software
- Chart Recorder
- Additional Shelves
- Refrigeration Monitor Package
- Customer Event Digital Outputs
- Digital Inputs
- Heat Only
- Extra Heat for Faster Transitions
- Blank Door without window
- Temperature Limited Sheathed Heaters
- Extended Temperature Range up to 250°C (non-humidity)
- Temperature-Controlled Door Lock
- Main Power Cord
- Main Power Disconnect
- Redundant Product Hi/Low Limit
- Glove Ports
- Reinforced Chamber Floor
- Reinforced Shelf



EZT-570S Touchscreen Controller

The Next Generation Controller with Smartphone Technology

All features are built into the controller interface so no additional software or internet is required for access to all the features the controller has to offer.

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, EIA-232, EIA-485 communications.



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



Profiling

- Profiling includes up to 99 steps and 1000 cycles.
- Program ramp steps entering time or °C/min.
- Programs may be written using product control function.
- 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).

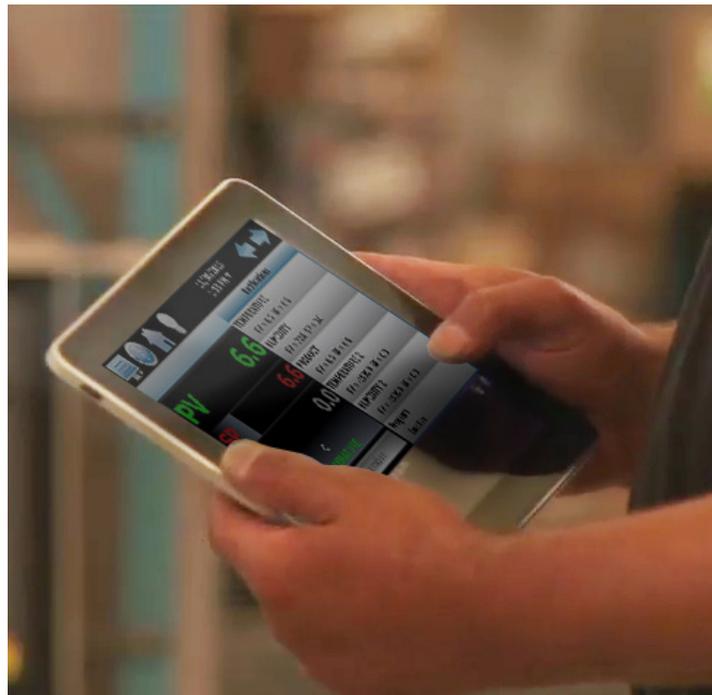
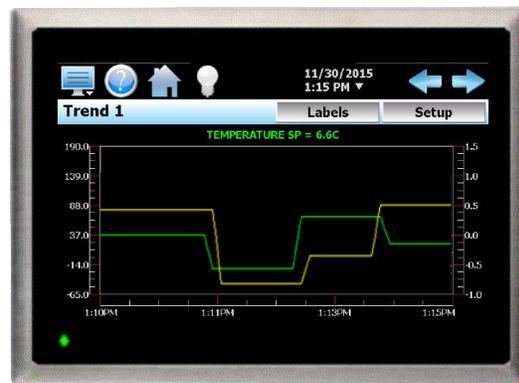


User Convenience & Flexibility

- Controller may be configured in 28 languages.
- 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.
- Configure alarm setting and maintenance alerts.

Graphing Technology

- Real-time trend display graph with adjustable time and min/max values.
- Up to eight configurable trend graphs with left & right axis
- Graph historical data files.
- Zoom in/out of graphs for a closer look.



Enhanced Communications & Control Options

- Digital input option provides 8 inputs that can be configured for various control functions including starting, stopping and pausing a profile. "Wait for" function allows the user to pause a profile during a particular step of the profile until a specific digital input is turned on or off.
- Digital output "customer event" feature provides 15 programmable outputs. Each output can be configured to perform other operations including alarm or profile status indicators for more control over your testing.
- Optional refrigeration monitor package displays and data logs temperatures and refrigeration system compressor suction/discharge pressures.
- Condensation control option helps prevent condensation from collecting on the part by automatically managing the air dewpoint.
- Bar code option allows user to scan barcode to start profile and to add notes to current data file when datalogging.

Z-Plus Performance Specifications

	ZP(H) - 8	ZP(H) - 16	ZP(H) - 32	ZP(H) - 44	ZP(H) - 64	ZP(H) - 80	ZP(H) - 96
Workspace Volume	230 L	450 L	900 L	1,250 L	1,810 L	2,265L	2,718 L
Exterior Dimensions (cm) W x D x H	93 x 143.5 x 193	108 x 159 x 208	128 x 179 x 232	143.5 x 179 x 253 ¹	154 x 204 x 258	154 x 235 x 258	154 x 265 x 258
Workspace Dimensions (cm) W x D x H	61 x 61 x 61	76 x 76 x 76	97 x 97 x 97	112 x 97 x 117 ²	122 x 122 x 122	122 x 152 x 122	122 x 183 x 122
Temperature Ranges	Single Stage: -34°C to +190°C Tundra®: -45°C to +190°C Cascade: -70°C to +190°C ³						
Temperature Control Tolerance*	±0.5°C at steady state condition after stabilization						
Humidity Range Optional Range	10% to 98% RH 5% to 98% RH						
Humidity Control Tolerance*	±3% RH at steady state conditions after stabilization						
Distributed Shelf Load Capacity	50 kg			45 kg			

* Tolerances are based upon the full temperature range of the chamber. Better control will be achieved across a limited range.

¹ Exterior dimensions for ZP-44-30-30 changes to 154cm x 236cm x 258cm

² Interior dimensions for ZP-44-30-30 changes to 122cm x 84cm x 122cm

³ Temperature range for 30-30 HP models is -65°C to +190°C

Single Stage Models (-34°C)

Model	Cooling Rate in °C / min ¹	Heating Rate in °C / min ¹	Electrical Power Requirements Full Load Amps ²	
			208-230V, 3Ph	380-415V, 3Ph
ZP-8-2-H/AC	8.0	4.5	30	18
ZP-16-2-H/AC	7.0	2.5	30	18
ZP-32-2-H/AC	4.0	1.9	30	18
ZP-44-2-H/AC	3.0	2.0	38	22
ZP-64-2-H/AC	2.5	1.8	38	22

¹ Based on IEC 60068-3-5 and full temperature range.

² Electrical requirements based 50 Hz operation. Amperage may increase on humidity models along with the additional of certain options. See quotation for actual values.

Specifications subject to change

Go Green with our Tundra® Cooling System



Tundra is a patented refrigeration system design that uses one compressor and is available in temperature ranges as low as -45°C. This system provides additional performance for fast transition rates, increased live load capacity and can save up to 54% on energy costs.

Tundra Models (-45°C)

Model	Cooling Rate in °C / min ¹	Heating Rate in °C / min ¹	Electrical Power Requirements Full Load Amps ²
			380V-415V, 3Ph
ZP-8-2-SCT/AC	7.5	8	18
ZP-8-3.5-SCT/AC	11.5	10	24
ZP-8-6-SCT/WC	18	17	21
ZP-16-3.5-SCT/AC	8.5	6	24
ZP-16-6-SCT/WC	15	9	21
ZP-16-10-SCT/WC	18	20	41
ZP-32-3.5-SCT/AC	2.5	4	24
ZP-32-6-SCT/WC	6	7	21
ZP-32-10-SCT/WC	12	11.5	41
ZP-32-15-SCT/WC	25	18	46
ZP-44-3.5-SCT/AC	2	2	24
ZP-44-6-SCT/WC	5	4	22
ZP-44-10-SCT/WC	9.5	8	43
ZP-44-15-SCT/WC	15	12	48
ZP-64-3.5-SCT/AC	1.5	1.5	24
ZP-64-6-SCT/WC	3	3.5	22
ZP-64-10-SCT/WC	7	7	43
ZP-64-15-SCT/WC	10	10	48
ZP-80-3.5-SCT/AC	1.5	1	24
ZP-80-6-SCT/WC	2.5	3	22
ZP-80-10-SCT/WC	6.5	6	43
ZP-80-15-SCT/WC	9	9	48
ZP-96-3.5-SCT/AC	1	1	24
ZP-96-6-SCT/WC	2	2	22
ZP-96-10-SCT/WC	4	4	43
ZP-96-15-SCT/WC	7	7	48

¹ Based on IEC 60068-3-5 and full temperature range

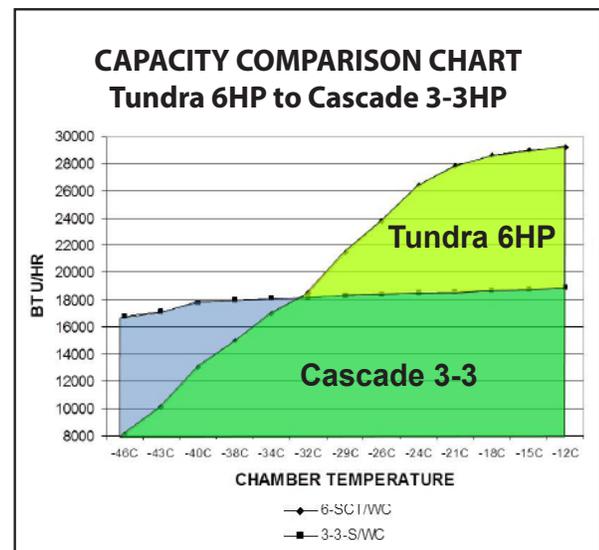
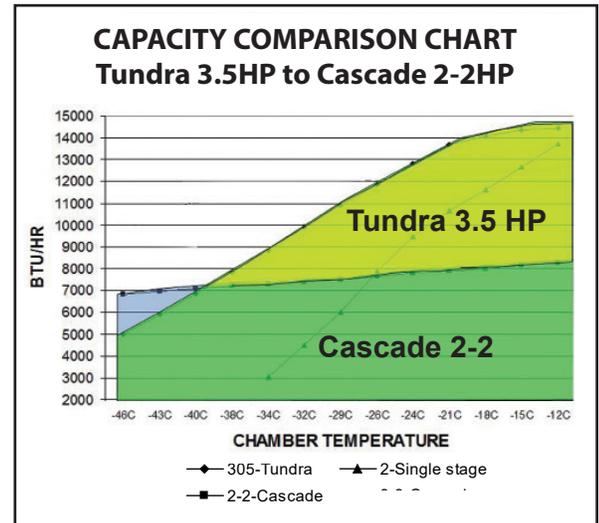
² Electrical requirements based 50 Hz operation.

Amperage may increase on humidity models along with the additional of certain options. See schematic for actual values.

Specifications subject to change

The Tundra systems offers these benefits:

- Increased Performance
- High Reliability
- Quiet Operation
- Energy Efficient
- Improved Serviceability
- Reduced Utility and Maintenance Cost
- Increased Value



Z-Plus Performance Specifications

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

Cascade Models (-70°C)

Model	Cooling Rate in °C / min ¹	Heating Rate in °C / min ¹	Electrical Power Requirements Full Load Amps ²
			380V-415V, 3Ph
ZP-8-2-2-H/AC	8	8	28
ZP-8-3.5-3.5-SC/AC	9	9	30
ZP-16-2-2-H/AC	5	5	28
ZP-16-3.5-3.5-SC/AC	6	6	30
ZP-16-6-6-SC/WC	9	9	29
ZP-32-2-2-H/AC	2	2	28
ZP-32-3.5-3.5-SC/AC	4	4	30
ZP-32-6-6-SC/WC	7	7	29
ZP-44-3.5-3.5-SC/AC	2	2	30
ZP-44-6-6-SC/WC	4	4	29
ZP-44-10-10-SC/WC	8	8	55
ZP-64-3.5-3.5-SC/AC	1.5	1.5	30
ZP-64-6-6-SC/WC	3.5	3.5	29
ZP-64-10-10-SC/WC	7	7	55
ZP-80-3.5-3.5-SC/AC	1	1	30
ZP-80-6-6-SC/WC	3	3	29
ZP-80-10-10-SC/WC	6	6	55
ZP-80-15-15-SC/WC	9	9	63
ZP-96-3.5-3.5-SC/AC	0.5	0.5	30
ZP-96-6-6-SC/WC	2.5	2.5	29
ZP-96-10-10-SC/WC	5.0	5.0	55
ZP-96-15-15-SC/WC	7.0	7.0	63





High Performance Models (Fast Transition Rates for Accelerated Stress Screening)

Model	Cooling Rate in °C / min ¹	Heating Rate in °C / min ¹	Electrical Power Requirements Full Load Amps ²
			380V-415V, 3Ph
ZP(HP)-8-6-6-SC/WC	17	17	29
ZP(HP)-16-10-10-SC/WC	20	20	55
ZP(HP)-32-10-10-SC/WC	11.5	11.5	55
ZP(HP)-32-15-15-SC/WC	18	18	63
ZP(HP)-32-20-20-S/WC	32	32	89
ZP(HP)-44-15-15-SC/WC	12	12	63
ZP(HP)-44-20-20-S/WC	20	20	89
ZP(HP)S-44-30-30-S/WC	24	24	110
ZP(HP)-64-15-15-SC/WC	10	10	63
ZP(HP)-64-20-20-S/WC	15	15	89
ZP(HP)S-64-30-30-S/WC	18	18	110
ZP(HP)-80-20-20-S/WC	13.5	13.5	89
ZP(HP)S-80-30-30-S/WC	15	15	110
ZP(HP)-96-20-20-S/WC	11	11	89
ZP(HP)S-96-30-30-S/WC	13	13	110

¹ Based on IEC 60068-3-5 and full temperature range

² Electrical requirements based 50 Hz operation. Amperage may increase on humidity models along with the additional of certain options. See quotation for actual values. Specifications subject to change





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 2,400 people in 22 group companies in 15 countries.



Testing Services

Our A2LA Accredited Test Laboratory provides environmental simulation testing utilizing the latest test technology to meet your testing needs from product qualification testing, overflow testing and /or third party product validation. Capabilities include Temperature, Humidity, and/or Vibration, Thermal Shock, Burn-in, Radiator Testing, Altitude, Vibration, HALT/HASS, Shock, Salt Spray, Cyclic Corrosion test and Drop Testing. Serving you from two locations in **Cincinnati, OH** and **Sterling Heights, MI**.

FOR MORE INFORMATION please call our Testing headquarters at **513-793-7774** or visit **www.wnatesting.com**.



CSZ
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The Testing Standard.

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