# MCH-3-.33-.33-H/AC
# MicroClimate with Humidity

# FEATURES

## Cabinet Items:

- One (1) 3" access port centered in right hand side
- One (1) shelf Included (additional shelves optional)
- Stainless steel interior and BLUE/BEIGE powder-coated exterior
- Casters & leveling legs

## Refrigeration Items:

- .33HP R-404A, .33HP R-508B Cascade Refrigeration System
- Hermetic Compressor, Integral Air-Cooled Condenser
- Humidity water demineralizer system
- Refrigeration service taps

## Instrument Items:

- EZT-430S 4" Touch Screen Controller with Ethernet TCP/IP & RS-232 Computer Interface
- Solid state humidity sensor

## Other:

- Installation, Operation, & Maintenance Manuals on disk (includes printed test documents, parts list & diagrams)
- NIST Traceable Instrumentation Calibration Report

# DIMENSIONAL DATA

**Test Space Volume**

3 Cubic Ft. (85 L)

**Test Space Dimensions**
*(clear usable workspace)*

17"W x 17"D x 18"H (432mm x 432mm x 457mm)

**Shelving Information**

Maximum shelf load capacity is 50 lbs (23 kg); maximum number of shelves is six (6)

**Floor Rating**

Maximum floor load is 25 lbs (11 kg)

**Overall Exterior Dimensions**
*(approximate)*

MCH-3

**Shipping Weight**
*(Approximate. Certain options can increase these values)*

Approximately 650 lbs (295 kg)

## PERFORMANCE DATA – TEMPERATURE

| | |
|---|---|
| **Temperature Range:** | -65°C to +190°C (-85°F to +375°F) |
| **Control & Stability:** | ±0.5°C, ±4% RH at steady state conditions after stabilization |
| **Chamber Airflow:** | 120 CFM |

**Temperature Performance**
*60 Hertz:*
*Performance is based on 230V, 60 hertz operation, measured at air control sensor*

**Pull-Down Performance:**
+24°C (+75°F) to -40°C (-40°F) in 35 minutes
+24°C (+75°F) to -54°C (-65°F) in 65 minutes
+24°C (+75°F) to -65°C (-85°F) in 110 minutes
+85°C (+185°F) to -40°C (-40°F) in 75 minutes

**Heat-Up Performance:**
+24°C (+75°F) to +93°C (+200°F) in 20 minutes
+24°C (+75°F) to +190°C (+375°F) in 75 minutes
-34°C (-30°F) to +24°C (+75°F) in 20 minutes
-65°C (-85°F) to +24°C (+75°F) In 25 minutes

**Live Load Capacity:**
100 watts at -54°C (-65°F)
175 watts at -40°C (-40°F)

Notes: These chambers are designed to operate in a commercial environment with a temperature of +24°C ± 6°C (+75°F ±10°F), maximum dew point of +12.8°C (+55°F) and a maximum altitude of 7,000ft (2,133.6 M). Performance at average (non-linear) transition rates, non-humidity operation and empty chamber. This product is intended for indoor use only. If you are planning to place this in a location which does not meet these criteria, please consult factory so the proper product can be quoted. Note: Condensation on exterior surfaces is normal when operating at cold temperatures for an extended period of time. Certain options will affect performance.

## PERFORMANCE DATA – HUMIDITY

**Humidity Range:** 10% to 95% relative humidity as limited by a +85°C (+185°F) maximum dry bulb and a +10°C (+50°F) minimum dewpoint. Approximate humidity consumption: .25 gallons of water per hour.

**Control & Stability:** ±4% relative humidity at steady state conditions after stabilization
*Note: Humidity control will be affected by the addition of live load*



MicroClimate® Humidity Performance Chart
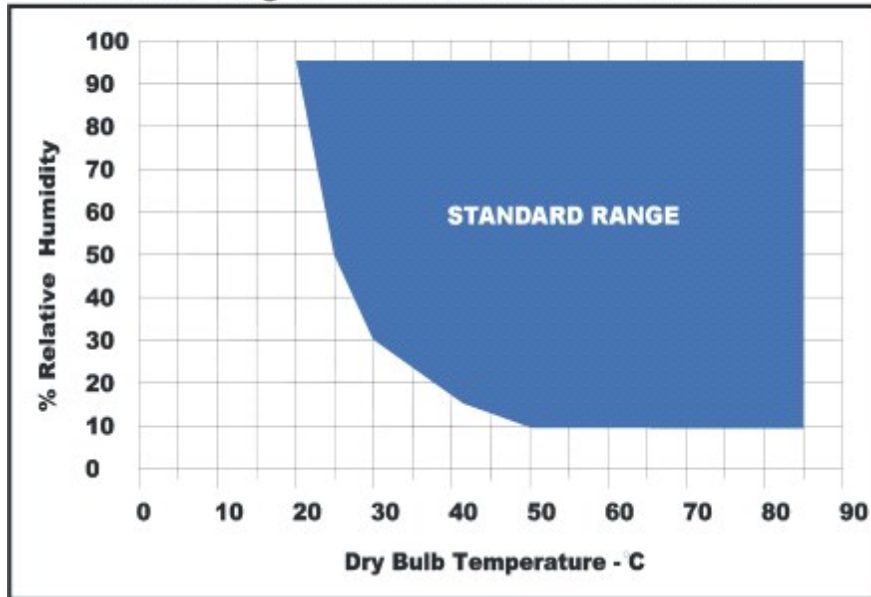
# FACILITIES & UTILITIES DATA

**Humidity Water Requirements & Information:**

- De-ionized (DI) water is recommended for use with our humidity systems
- Water should be provided within 0.05 to 2 megaohms resistivity
- Distilled water or reverse osmosis (RO) water outside of these limits may cause corrosion
- Tap water may be used with our optional *Demineralizer Filtration System
- A Recirculating Humidity Water Supply System is also available (see options)
- Inlet water pressure should be 25 PSI, use Water Pressure Regulator (see options)
- Connection Size:  0.25" (6.35mm) N.P.T.
- Drain Size:  0.5" (12.7mm)
- Water Consumption:  Approximately 0.5 GPH (1.9 LPH) of water (dependent upon live load)

*Note:  When operating at high temperature and humidity etching of the glass may occur and is a normal occurrence*

**Heat Rejection:**
*(into your building's room)*

Approximately 1,610 watts (5,500 BTU/hr) maximum during cooling operation

**Heat Rejection Note:**

Integral air-cooled models require an ambient temperature range between +21.1°C (+70°F) TO +26.7°C (+80°F) for proper operation and performance.

**Operational Sound Level (Front):**

≤ 65 dba

**Operational Sound Level (Rear):**

≤ 68 dba

**Electrical Information:**
*(±5%)*

120 volts (±5%), 1 phase, 60 hertz, with dedicated 20 amp service required (power cord included for 60 hertz models. Not to be utilized with GFI breaker.
 **Refer to option list other available standard input  voltages*

*Notes:*
 *- Customer to provide power cord and plug*
 *- All values are approximate (if provided)*
 *- Please contact factory for final values when determining your required utilities or refer to chamber's layout/approval drawing*
 *- 50 hertz also available, contact factory for details*

## GENERAL ARRANGEMENT
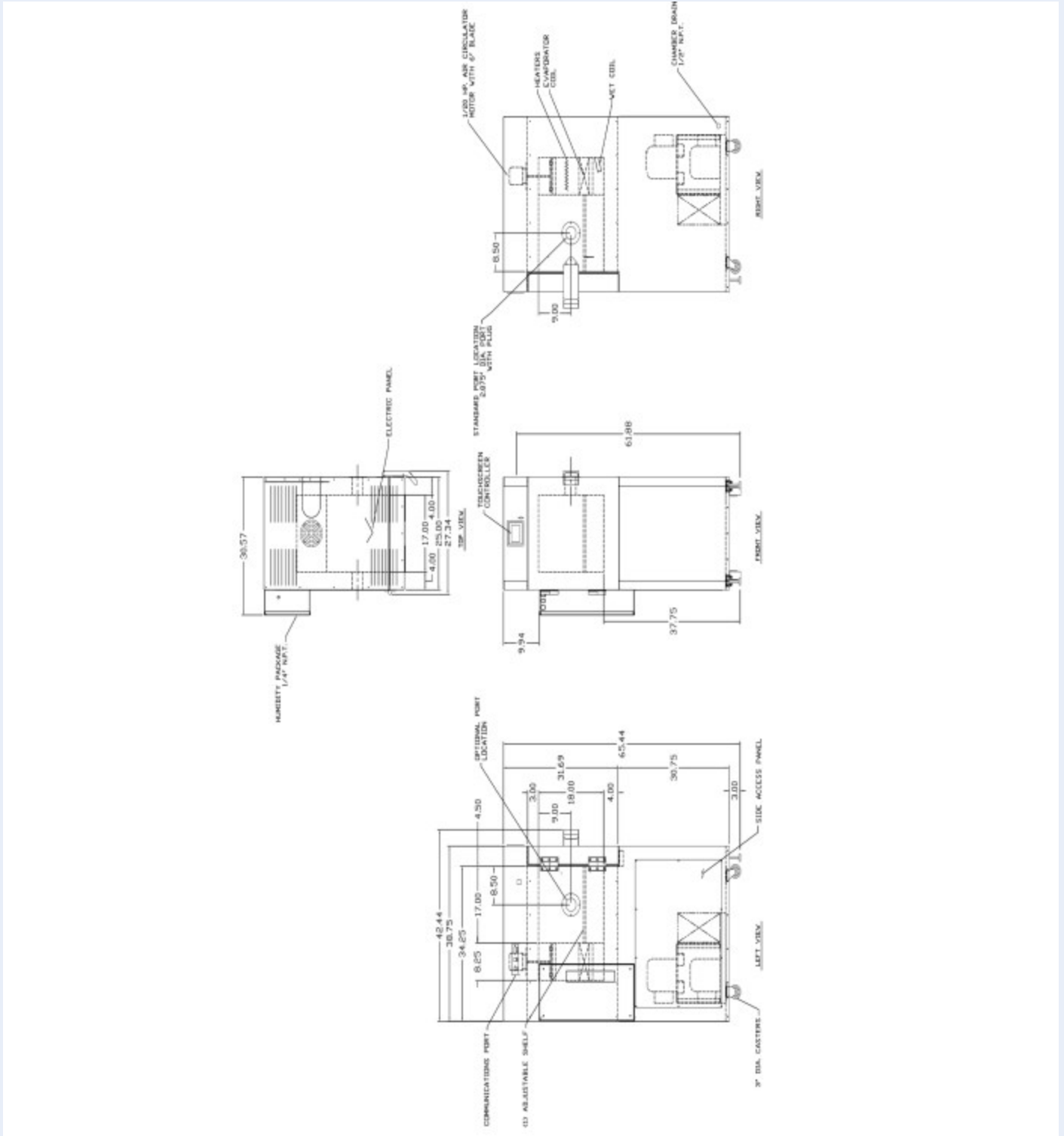
## CONTROLLER



**The Next Generation Controller with Smartphone Technology**

Includes trend graphing, data logging, data file access with USB, Ethernet control and monitoring, email alarm notifications and/or text message, data file backup system, full system security, audit trail, digital signatures, power recovery options & more.

| | |
|---|---|
| **Touch Panel** | 4" (102mm) Ergonomic height, 21 CFR Part 11 Compliant. |
| **Program Controller** | Start parameters for programs: start, stop, pause, delayed autostart, 64 steps up to 3 events per loop maximum. Profile status view. |
| **PID controller** | Special control algorithms, define/change per output demands. |
| **Data-Logging** | Custom file names, batch/lot numbers, operator notes & digital signatures. |
| **File Management/Email** | Easily download profiles, alarm files, audit trail files and data files to USB stick. Also import profiles for easy transfer among multiple chambers. Email data, alarm history & audit trail files directly from the controller with a touch of a button. |
| **Switch Inputs (Digital)** | (Optional) 8 inputs for configuring controller functions. |
| **Switch Outputs (Digital)** | (Optional) 15 event outputs with connection panel & plug connectors. |
| **Product Control** | Accelerates temperature cycling of the device under test. |
| **Password Protection** | 3 levels of security. |
| **Diagnostic System** | Fully configurable alarm settings and maintenance alerts. |
| **Communication** | Control by Ethernet TCP/IP, EIA-232 Modbus communication. |
| **Ethernet Interface** | Remotely monitor and control with VNC Server. |
| **Multi-Language Display** | Configurable for 11 different languages. |

## VOLTAGE OPTIONS  AVAILABLE
MUST SELECT OPTION FOR YOUR ORDER

☐  120 volts (±5%), 1 phase, 60 hertz, with dedicated 20 amp service required (power cord included for 60 hertz models. Not to be utilized with GFI breaker.

## CHAMBER OPTIONS

| | | |
|---|---|---|
| ☐ |  | 3" (76mm)  additional circular feed-through port with plug (if port intersects with the standard port additional charges may occur) |
| ☐ |  | 4" (102mm)  additional circular feed-through port with plug (if port intersects with the standard port additional charges may occur) |
| ☐ |  | 6" (152mm) additional circular feed-through port with plug (if port intersects with the standard port additional charges may occur) |
| ☐ |  | Honeywell DR-4500 Truline 2-Channel Recorder (draws own chart) (Note: Standard  location is on the lower front panel, optional side mount box available for additional charge) |

# CHAMBER OPTIONS

| | | |
|---|---|---|
| ☐ |  | Spare Humidity Demineralizer Cartridge |
| ☐ |  | Water Regulator to regulate incoming water to 25 psig (not required with Recirculating Water Option). Note: This is not required with recirculating water option. |
| ☐ |  | Digital High/Low Temperature Limit and Alarm  (Model L-91) both Independent from chamber's controller.  Designed to shut down chamber if temperature exceeds customer limit set points |
| ☐ |  | IEEE-488 (GPIB) Interface (Note that serial communications can not be used at same time with GPIB interface) |
| ☐ |  | CSZ EZ-View Software (for use with customer provided computer with RS-232 port).  Designed to allow you to monitor, control and create profiles through the chamber RS-232 port. One copy can be used with multiple CSZ EZT controllers when using an RS-485 connection with converter. A PC-E converter at the computer is needed to use Ethernet. |
| ☐ |  | Stainless Steel Shelves (each) |

# CHAMBER OPTIONS

| | | |
|---|---|---|
| ☐ |  | LN2 Boost Cooling System for rapid cooling transitions. For ultimate low temperature range, please refer to the quoted temperature range for your chamber. Option includes automatic demand control from chamber instrument with delay timer, solenoid and vent port. LN2 must be ducted to outdoors to prevent asphyxiation. The LN2 tank should have a maximum supply pressure of 25 psi. Note: Customer is responsible for supply & exhaust piping. Vacuum jacket piping is recommended.  Note: Guaranteed Soak/Hold Back is not available on humidity chambers if this option is purchased. It will be available on temperature only chambers. |
| ☐ |  | Door with one (1) 13" wide x 13" high (33cm x 33cm) heated viewing window with internal light in lieu of standard door. Note: The ultimate low temperature for .33-.33 HP models is to -60C and -65C for .50-.50 HP models. This option will affect cooling rates for these models. No change for 1-1 HP models. |
| ☐ |  | Dry Air Purge System 3 CFM with flow meter (20 to 200 SCFH). Customer must provide >=5SCFM compressed air at 90 psig (+10C/+50F dew point) that is free of oil and entrained water. This options adds approximately 6" (15 cm) to the chamber width. Note: Guaranteed Soak/Hold Back is not available on humidity chambers if this option is purchased.<br><br>It will be available on temperature only chambers. |
| ☐ |  | MicroClimate Recirculating Humidity Water Supply Reservoir, 5 gallons (18.9 L)<br><br>This option adds approximately 8" (20cm) to the chamber's width. |
| ☐ |  | Start-up and Training by CSZ factory technician or ISO (Independent Service Organization), non-union. Sales tax is not included. Customer must have all required utilities connected to the chamber prior to start-up and training session. Note: please complete the"Start-up Training Survey" and send to CSZ Service Department to request described service. |

## CHAMBER OPTIONS

| | | |
|---|---|---|
| ☐ |  | Estimated Shipping Cost<br><br>-Customer must have loading dock & fork lift to properly receive chamber<br><br>-Shipping terms are F.O.B. Origin, Cincinnati, OH<br><br>-Freight prepaid and add or (Air-Ride Equipped, LTL Service)<br><br>-Sales tax is not included<br><br>Note: Note: Customer is responsible to check the condition of the shipment and make written notation on the transport document before accepting the shipment. Failure to make notations on the carrier's Bill of Lading will limit your claim. The title to this equipment has been transfer to you from the CSZ Products and the shipper (CSZ Products) is not responsible for filing of damage claims with the carrier. |
| ☐ | | Chamber built to pass on-site CSA inspection (inspection not included)<br><br>-Adds "S" to the end of the model prefix (i.e. ZPHS)<br><br>-Please add two (2) weeks to lead time<br><br>Note: CSZ models are not CSA, UL-C or Ontario Hydro marked. Please budget appropriately and obtain local inspection if required. Add appropriate electrical devices and disconnects if required. If planning on a local CSA Inspection, CSZ recommends that QPS Evaluation Services, Inc. performs the CSA Inspection. To schedule an inspection, please contact QPS Evaluation Services, Inc. at customerservice@qps.ca; customer responsible for any additional charges to pass on-site CSA inspection. |
| ☐ |  | MC-3, IPPC closed crate |

# QUALITY

The quality design and engineering of our products are known throughout the industry. We ensure the quality and reliability of every product we manufacture with design review meetings, incoming and in-process inspections, vendor auditing, and validation testing. Our ISO-9001:2015 certification, combined with our quality processes ensures you are purchasing the most reliable chamber in the industry.



## Certificate of Registration

This certifies that the Quality Management System of

**Weiss Technik North America, Inc.**

12011 Mosteller Road
Cincinnati, Ohio, 45241, United States

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

### ISO 9001:2015

**Scope of Registration:**
The design, manufacture, distribution and service of mechanically refrigerated production chilling chambers, calibration baths, thermal shock, temperature cycling units and environmental stress screening systems as well as customized production, test equipment, fabricated products, and OEM replacement parts.

Certificate Number: C0554509-IS1
Certificate Issue Date: 29-JUN-2020
Registration Date: 17-DEC-2019
Expiration Date *: 06-DEC-2022

Tom Chestnut,
Sr Vice President - ISR,
NSF-ISR, Ltd.

**NSF International Strategic Registrations**
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