

# MC030

## MATERIAL TEST/CURE CHAMBER

### MC Series Overview

Available in a variety of sizes, the Darwin MC Series Materials Test Chambers are ideal for the rigors of precision temperature and humidity control in concrete, asphalt, and related industries. Unlike the vast majority of "testing" apparatus available to control temperature / humidity for engineering demands, these chambers provide reliable operation, durable construction and accurate results. The MC Series offers serious performance to engineers and researchers looking for serious results.

To set the MC Series apart from typical "environmental chambers" or "home built units," we have incorporated a number of features to produce the best chamber to meet ASTM, ACI, AASHTO, and other standards. Some ASTM standards we conform to are C309-06, C156-05, C511-13, C666, C31, C192.



### Features

#### STANDARD FEATURES:

- Painted Galvanized Steel Construction
- Industrial P.I.D, Non-Proprietary Controls
- Epoxy Coated Cooling Coils
- High Accuracy Platinum RTD Sensor
- Waterproof Interior Fan Motors
- Built-in Drain
- Stainless Steel Shelving
- 2.5 in Minimum Foamed In Placed Polyurethane Insulation
- Alarms and Cut-Outs
- Ramp / Soak Programming
- Exceptional Sample Storage Weight Capability
- Unmatched Temperature Control and Uniformity
- Conformity with ASTM Standards
- Pre-Tested and Pre-Charged Refrigeration Systems
- Remote Alarm Dry Contacts
- Pad-Lockable
- 1/3 HP Refrigeration System
- Ultrasonic Humidification

#### OPTIONAL FEATURES:

- Back-up Control / Conditioning
- Ethernet / Remote Monitoring / Alarming
- Multi-Point Digital Recording
- Water-Cooled Condensers
- Freeze / Thaw Operation
- Available Service Agreements
- Calibration / Maintenance Services
- Touchscreen Control Interface

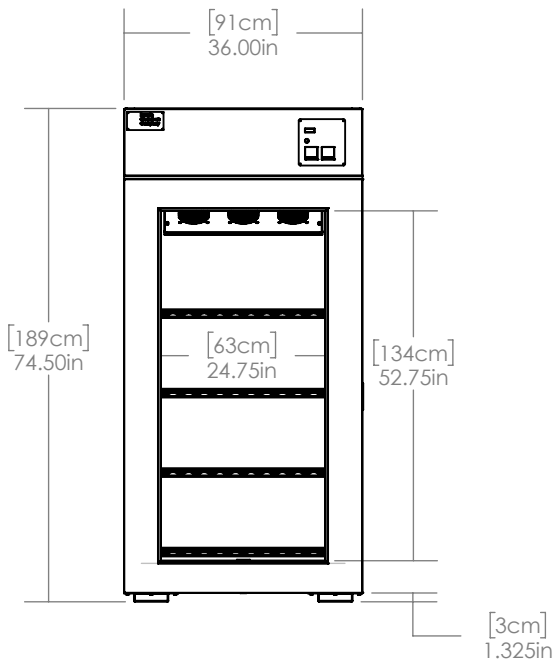
## MC030 Material Test/Cure Chamber Specifications (ambient 21° C)

Performance	Standard	Customized Option
Temperature Range	2° C to 50° C (Defrost Set-Up at or Below 4° C)	2°C to -20° C
Ambient Temperature	21° C ± 3° C	Available
Temperature Control at Sensor	± 0.5° C	Available
Temperature Uniformity	NA	NA
Control Resolution	± 0.1° C	Available
Temperature Sensor	NIST Traceable PT100RTD Class A	Available
Humidity Range	Ambient to 95% RH (No Humidity Function Below 5°C) No active dehumidification. Temperature and humidity is regulated by a maximum dew point of 40deg C.	N/A
Humidity Control at Sensor	±2% RH	N/A
Humidity Uniformity	N/A	N/A
Control Resolution	±0.1% RH	Available
Humidity Sensor	NIST Traceable Rotronics HC2A-S	Other or Custom

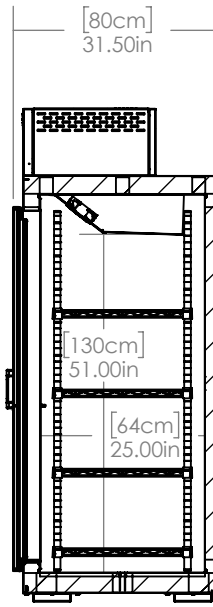
Control System	Standard	Customized Option
Controller	Fuji PXF4 (PID - Fuzzy Logic)	West EC-44, Future Design Touchscreen, Watlow, Allen Bradley
Control Readout	Actual and Set-Point Values	Trending, Duty Cycle
Calibration Correction Capability	Standard 0.1 Resolution	Available
Uniformity Off Set	N/A	Available
Alarm	Audible and Visual	Text, Email, Web Server, Remote Access
Alarm Type	Deviation in 0.1° C or 0.1% RH with Delay	Absolute 0.1 Resolution with Delay
Remote Monitoring	Dry Alarm Contact, RS 485 Modbus	Ethernet & Analog Output
Password Protection	Numeric	Numeric, Alpha Numeric
Audit Trail	N/A	Available
Uninterrupted Power Supply (Monitoring)	N/A	Available

Construction	Standard	Customized Option
Exterior	24-Gauge, Galvanized Steel, Painted	N/A
Interior	22-Gauge, 304 Grade Stainless Steel	N/A
Shelving	4 Stainless Steel Open Wire Type Shelves, Adjustable 1" Increments supports upto 800lbs of evenly distributed weight per shelf.	Additional Shelves Available
Panel Insulation	Class 1, Rigid, Foamed in Place, non-CFC Urethane with a Minimum Density of 2.2 lbs per cubic foot. Panels Exceed all Minimum Requirements of the DOE for K-Factor and R-Values and have Passed the ASTM E-84 Test for Surface Burn Characteristics.	N/A
Doors	22-Gauge, 304 Grade Stainless Steel	N/A
Access Port	N/A	Customizable Access Port Size and Location Available.

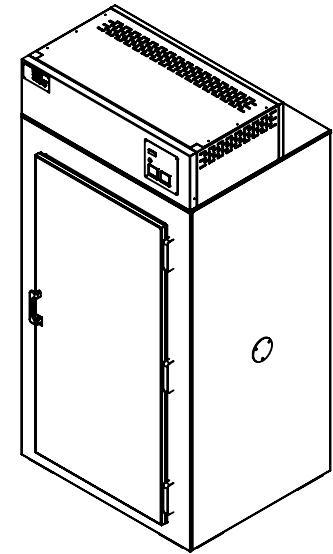
Utilities	US Standard	International
Voltage (dedicated circuit required)	115v / 60hz / 1ph	TBD/Option available.
RLA	4.2A	TBD- typically 2.6A at 230v/1ph
Cord Length	9 ft Long Cord with NEMA 5-15P Plug	2.74m (Specify Plug)
Floor Drain	Drain Located on Bottom Interior of Cabinet	N/A
Drain Line	Chambers are Equipped with 1/2" I.D. Polytube. Floor drain adjacent to chamber required.	Condensate Pump Option Available, if Floor Drain is Not Available Nearby



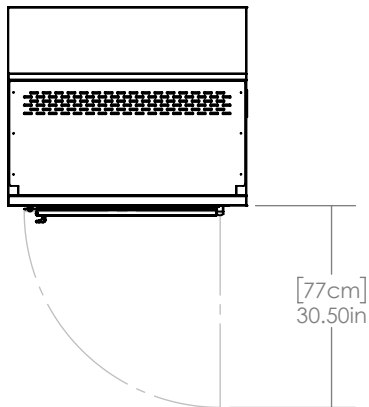
FRONT VIEW  
(DOOR REMOVED)



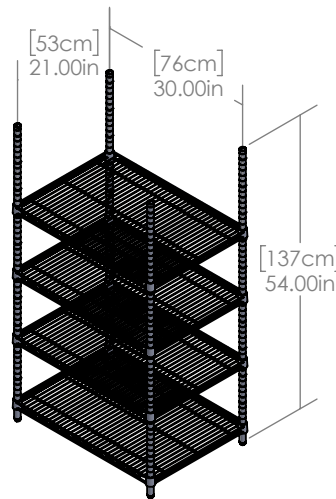
SECTIONAL VIEW



3D VIEW



TOP VIEW



WIRE SHELF

#### Notes:

- Shelf Material: 304 Stainless Steel
- Max Weight per Shelf: 800lbs (Evenly Distributed)
- Pole Height of Shelves: 54" (1" Increments)
- Minimum Shelf Spacing: 2"
- Door Opening: 24.75" W x 52.75" H
- Reinforced Floor for Heavy Loads
- Floor Drain Located on Bottom of Chamber Interior
- Interior Volume: 30ft<sup>3</sup>

**Note:** Tolerances are 0.25" unless otherwise stated

\*Dimensions and components are subject to change without notice.