

# AR030 ARCHIVAL STORAGE CHAMBER

## AR Series Overview

The AR series chambers are a top selling archival storage chamber. It is quiet, easy to clean, highly reliable and ideal for archivist's use. It offers hot gas bypass control of refrigeration and resistive heat to facilitate reliable, critical temperature and humidity control.

### AR09

The AR09 is a bench top archival storage chamber designed to fit on 24" benchtops or stacked with optional racking.

### AR030

The AR030 is a single-door archival storage chamber.

### AR055

The AR055 is a 2-door archival storage chamber.

### AR084

The AR084 is a 3-door archival storage chamber.



Featured photo is the AR030 single-door archival storage chamber, open door view to show adjustable internal racks.



Featured photo is the AR030 single-door archival storage chamber, closed door view.



## AR SERIES: ARCHIVAL STORAGE CHAMBER

The AR series chambers feature hot gas by-pass technology which controls the temperature of the epoxy coated evaporator for greater uniformity. All of these models run with 0.25 - 0.67hp compressors making them efficient enough to run on 15 amp, 115 volt circuits.

### Why Choose The AR Series

The Darwin Chambers AR series is designed specifically for the needs of archival preservation. This series is capable of providing long-term controlled storage of photographs, film, rare books, papers, and paintings. Utilizing a simple, precisely controlled refrigeration system and advanced desiccant-based dehumidification, temperatures are maintained to within  $\pm 0.2^{\circ}\text{C}$  (at the sensor) and relative humidity to within  $\pm 1\%$  (at the sensor).

Not only is this series of chambers perhaps the most precise, but they are also exceptionally energy efficient for the high performance they offer. Typical uses and temperature ranges the AR series is capable of providing a solution for are as follows:

Books, papers, and paintings:  $10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ ), 30% RH  
Film, photographs, microfilm:  $1.7^{\circ}\text{C}$  ( $35^{\circ}\text{F}$ ), 35% RH

*(The above settings are somewhat typical, but there are many different desired set-points, depending upon the nature of the preserved media.)*

### Options Available

- Extended Temperature Range
- Chart Recorders
- Data Loggers
- Online System Monitoring
- Tracelock
- Touch Screen Control

The AR series chambers allow exceptional temperature control anywhere within the range of  $0^{\circ}\text{C}$  to  $25^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ - $77^{\circ}\text{F}$ ). Temperatures below  $4^{\circ}\text{C}$  will require defrost. Relative humidity can be controlled at any percentage from 10% to 60%, within an allowed dew-point range of  $-12^{\circ}\text{C}$  to ambient.

The standard chambers do not include humidification (they can be added as an option for unusual applications), as they are normally not needed to maintain lowered dew-points.

### The Darwin Solution

These chambers incorporate an innovative dryer control system that maximizes performance while lowering energy requirements and increasing reliability. In contrast to existing control systems that cycle dehumidification systems on and off, decreasing life span and causing erratic control, the Darwin solution accurately modulates the dryer output, maximizing reliability and producing tight control.

### Widely Proven, Non-Proprietary Controllers

Standard controllers for the AR Series are manufactured by Fuji Electric and are ideal for archival storage chambers. Unlike many proprietary controllers, this controller is commercially available and proven in tens of thousands of installations. Standard functions include: autotuning, fuzzy logic, PID control, programmable alarms, calibration capability, ramp/soak, offset capability, etc. A touchscreen control interface is optional. Other controller manufacturers are also supported (Watlow, Allen Bradley etc.)

### Services and Warranties

We offer technical support throughout the lifetime of your chamber. In addition to standard warranties, we also offer extended warranties for cooling components, parts and labor. We also provide preventive maintenance services at an additional cost. Please ask for a quote.

## AR030 Archival Storage Chamber Specification (ambient 21° C)

Performance	Standard	Optional
Temperature Range	0° C to 25° C (4° C and below require deforst)	Available
Ambient Temperature	21° C ± 3° C	Available
Temperature Control	± 0.2° C	Available
Temperature Uniformity	± 0.7° C	Available
Control Resolution	0.1° C	Available
Temperature Sensor	NIST Traceable PT100 Class A RTD	Available
Humidity Range	10% to Ambient at 21°C setpoint	Available
Humidity Control	± 1%	Available
Humidity Uniformity	± 2%	Available
Control Resolution	0.1%	Available
Humidity Sensor	NIST Traceable Rotronic HC2A-S	Other or Custom

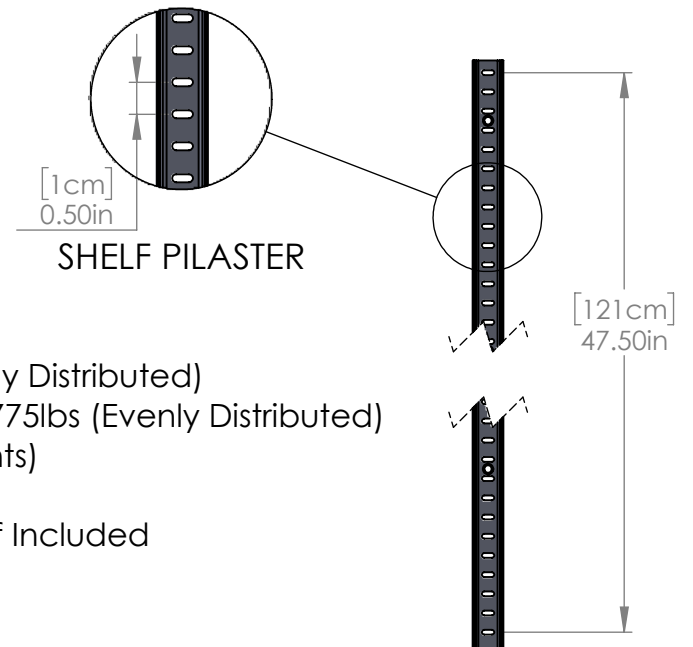
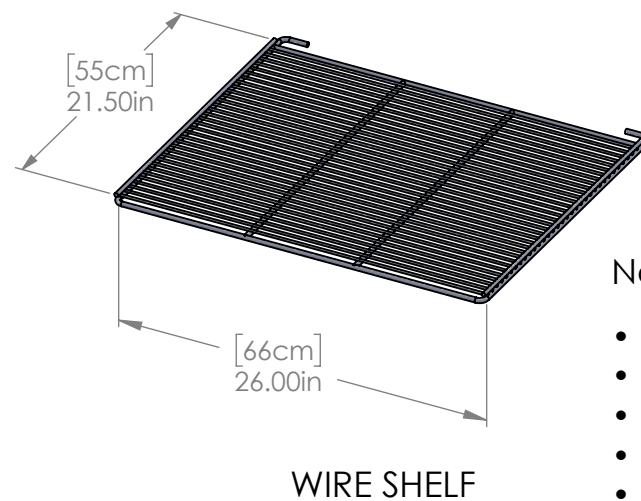
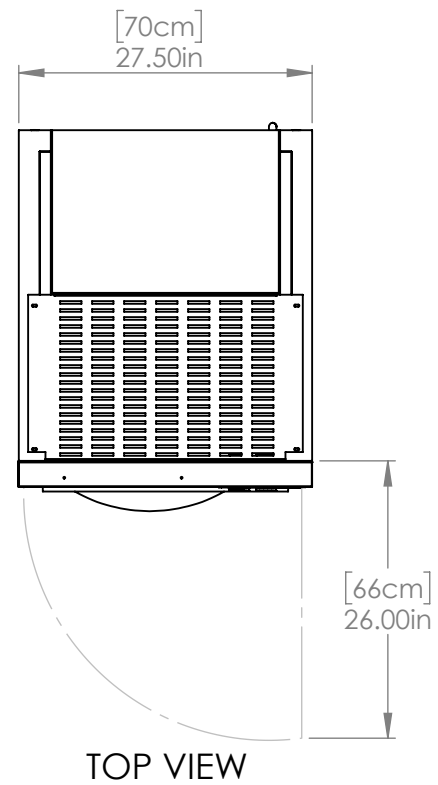
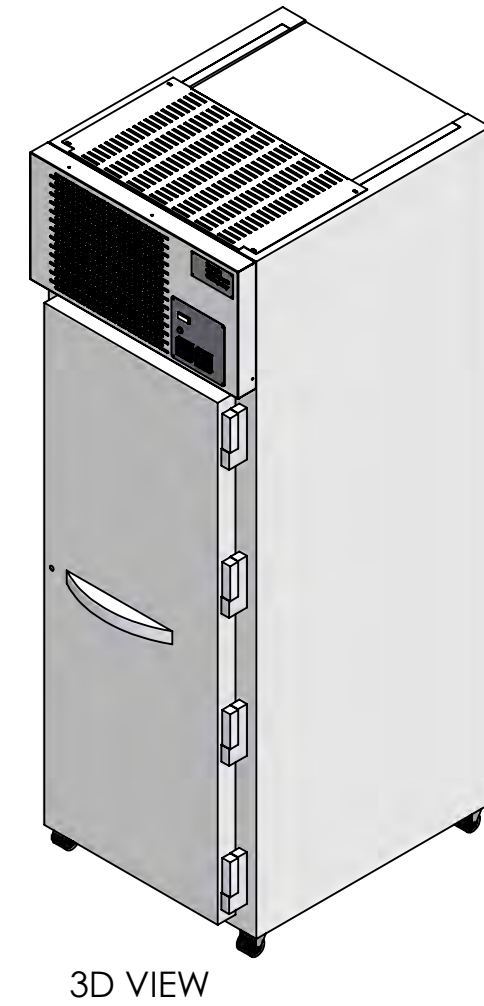
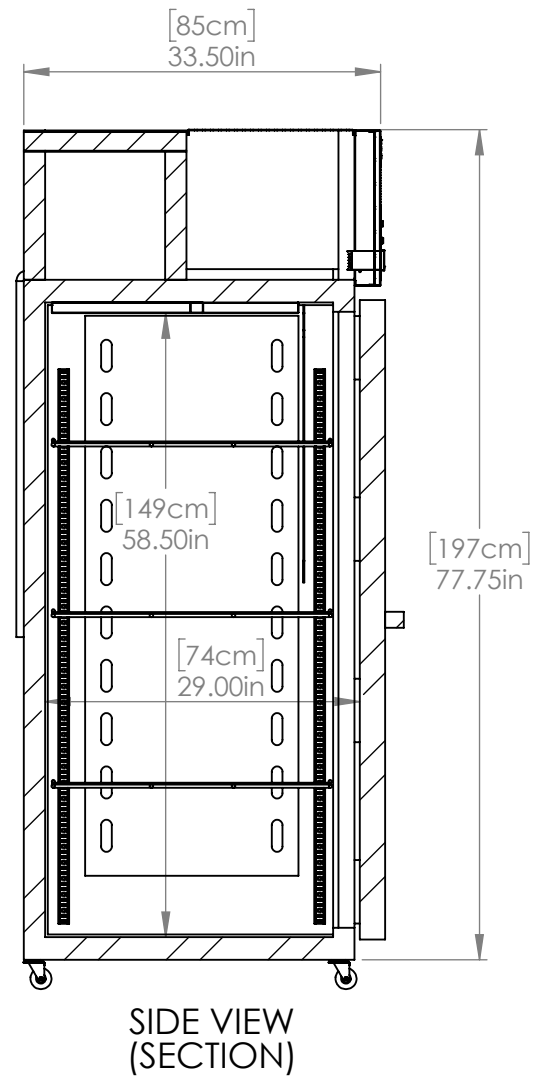
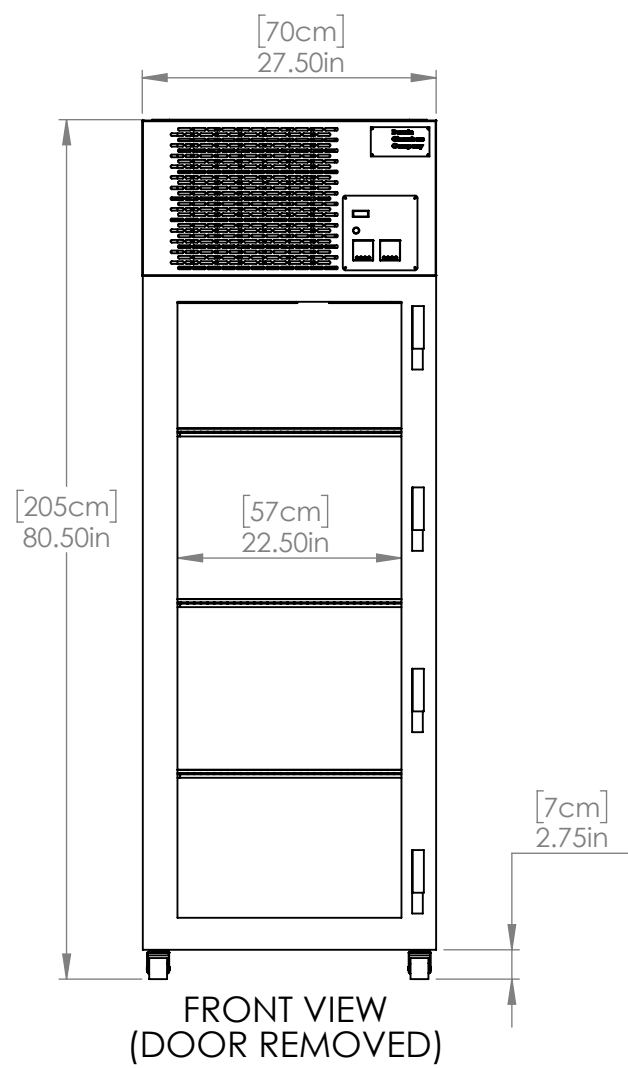
Control System	Standard	Customized Option
Controller	Fuji PXF4 (PID - Fuzzy Logic)	West EC-44, Future Design Touchpad, Watlow, Allen Bradley
Control Readout	Actual and Set-Point Values	Trending, Duty Cycle
Calibration Correction Capability	Actual and Set-Point Values	Available
Uniformity Off Set	N/A	N/A
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, & Analog Output	Dry Alarm Contact, RS 485 & 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	Stainless Steel Door & Front, Aluminum Sides	Stainless Steel Door, Front & Sides
Interior	Aluminum Side Walls & Back, Stainless Steel Floor & Ceiling	Stainless Steel Side Walls, Back, Floor, Door Liner & Ceiling
Shelving	3 Gray PVC Coated, Adjustable 1" Increments, Supports Up to 150 lbs of Evenly Distributed Weight	Stainless Steel, Chrome Plate or Custom
Casters	2.75" Total Weight Capacity is 300 lbs per Castor, Not Including the Weight of the Chamber	5" Casters or Seismic Legs

Capacity & Dimensions	US Standard	Metric
Interior Capacity	22.5 ft³	637.13 liters
External Dimensions	Refer to Drawing Below	Refer to Drawing Below
Internal Dimensions	Refer to Drawing Below	Refer to Drawing Below
Shelf Dimensions	Refer to Drawing Below	Refer to Drawing Below
Crated Weight	580 lbs	263.08 kg

Electrical	US Standard	International
Voltage	115 / 60 / 1	230 / 50 / 1
RLA	4.5	2.6 With Step Down Transformer
Cord Length	9 ft	2.74m





Notes:

- Shelf Finish: Gray PVC Coated
- Max Weight per Shelf: 150lbs (Evenly Distributed)
- Max Load Capacity of Chamber: 775lbs (Evenly Distributed)
- Pilaster Height: 47.5" (1/2" Increments)
- Minimum Spacing: 2"
- 4 Stainless Steel Shelf Clips per Shelf Included
- 2" I.D. Access Port Included
- Door Opening: 21" W x 58" H

**Note:** Tolerances are 0.25" unless otherwise stated  
\*Dimensions and components are subject to change without notice.