



Drying and Curing Rooms

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St. Louis, Mo



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CANNABIS DRYING ROOMS

The rapidly expanding industry of cannabis cultivation has led to inquiries regarding controlled environment chambers for processes in this field. Darwin Chambers provides chambers designed for the replicable drying of cannabis. The drying process is critical to maintaining proper levels of cannabinoids and preventing mold and mildew.

Darwin Chambers manufactures and installs drying chambers that can control temperature, air flow, additive humidity, and dehumidification at programmed (ramped) levels. This enables lot to lot consistency whether the drying happens in humid, coastal areas or dry, high altitude areas. Product can also be stored long term with precise levels of humidity to prevent mold or brittleness.

Benefits of Controlled and Stable Drying

Generally, it is recommended to keep the drying temperature between 16 and 21°C because many terpenoids (molecules that are partially responsible for the psychoactive effects but also largely responsible for the odor of the plant) evaporate at temperatures beyond 21°C. Non-programmed drying humidity levels should generally be between 45-55%. Higher humidity levels are associated with mold. Lower humidity levels tend to dry the products too quickly. If the plant material dries too quickly, some of the chlorophyll will fail to be converted which will result in a sub-optimal taste and a harsher smoke when combusted and inhaled.

While some customers will follow the above guidelines, others will want to program increased drying at some times and/or more humidity toward the end of drying using the microprocessor's programming features.

Darwin Chambers utilizes a proprietary method of cooling, the PFTCU, (precision fluid temperature control unit) to precisely control temperature. Unlike typical refrigeration units, the PFTCU enables fast replacement (30 minutes) of all cooling components as well as redundancy when ordered as such. Our rooms that include an optional redundant refrigeration system allow uninterrupted operation upon a refrigeration failure. The room does not need to be taken out of service during repair, as the failed system can be isolated and serviced with no impact upon the chamber operation.

Our chambers have an exclusive Antimicrobial Coating on door handle to reduce the spread of bacteria and pathogens.

Stable temperature preserves cannabinoids well. Low light levels are also important for proper drying of grown plants. Darwin Chambers offers options to control light levels along with many other chamber options including: Black out strip curtains (to prevent unwanted light infiltration when people must enter the chamber), data loggers, chart recorders, shelving and curing racks.



Tech support available via video call!~

Standard Cannabis Drying Features

- 4" to 6" Polyurethane Foam Insulated Panels, R- Value 31+ or higher, in custom sizes
- Touchscreen Control Interface with customer programmed automation
- Exceptional Temperature And Humidity Uniformity
- High / Low Alarms
- Kickplates on door
- Non-proprietary Controls
- Corrosive Resistant Equipment
- Complies With NSF Standards
- Pre-tested, Pre-charged Refrigeration Systems
- Dehumidification - Humidification - Ventilation
- Air Filtration
- Energy Efficient Offering Lowered Maintenance Costs

Optional Features

- Black Out Strip Curtains (to prevent light infiltration)
- Insulated Viewing Windows in Doors or Walls
- Shelving and Curing Racks
- Extended Temperature And Humidity Ranges
- Stainless Steel / Special Surfaces
- Ethernet / Remote Monitoring / Alarming
- Added Redundancy in Controls and/or Conditioning system
- Water-Cooled Or Air-Cooled Condensers
- Custom Lighting Systems
- Unlimited Door / View Window Sizing
- High Weight Capacity Flooring
- Preventative Maintenance Services



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Chamber Operation

- Chamber temperature: 15°C to 27°C.
- Chamber temperature control at sensor/set-point: $\pm 0.3^{\circ}\text{C}$.
- Chamber humidity: 45%RH to 65%RH.
- Chamber humidity control at sensor: $\pm 2.0\%\text{RH}$.
- Note: Temperature and relative humidity specifications assume standard operation in a controlled ambient condition of 72°F $\pm 8^{\circ}\text{F}$ and a dew-point at or below 50°F.

Chamber Construction

- Chamber size, exterior (actual): 10'0"W x 10'0"L x 10'2"H
- Modular panels are 100% poured-in-place polyurethane construction, R-Value 31+.
- 4" urethane insulated ceiling and walls. All panels incorporate Ecomate, or similar, polyurethane insulation. (This foam has zero Global Warming Potential and zero VOC's, without sacrificing thermal efficiency.)
- Panel surface finish: Interior, embossed white aluminum. Exterior, embossed white galvanized steel.
- Door 36" with keyed entry
- Floorless on customer provided level concrete slab. Epoxy floor covering or otherwise sealed solution to be provided by others.

Chamber Controls

- Controls to be mounted in an automation control panel located per customer instruction.
- Touchscreen microprocessor control of temperature, humidity, and ventilation rate. Ventilation rate to be microprocessor controlled and user adjustable.
- NIST-traceable 100 OHM Platinum RTD temperature sensor with calibration certificate.
- Dual display of actual and set point temperature.
- Solid state control relays wherever possible.
- High/Low Temperature/Humidity alarms with dry contact remote output, settable in 0.1°C and 0.1%RH increments.

Drying Capabilities

- Equipped with 2 dryers capable of removing moisture at an approximate rate of up to 72lbs per day, assuming adequate airflow (Ex: Drying 650lbs of product in 7 days)

Chamber Mechanical/Components

- Condensing unit: One top-mounted unit, capable of cooling room to required conditions. Condenser is designed to run at all times to eliminate poor temperature control and uniformity inherent in cycling-type systems.
- Evaporator/Air Handler: Low profile.
- Lighting: Vapor-proof LED lighting
- Humidifier: Darwin Chambers' proprietary ultrasonic humidification system.
- Two (2) REDUNDANT Electric heat regenerated desiccant wheel dryer
- MERV 13 air filtration on all air inlets and exhausts

Chamber Inclusions:

- All materials and freight to jobsite (within the contiguous USA), installation, startup, and documentation by Darwin Chambers Company.
- Customer responsible for: Taxes, licenses, fees, permits, third party labor, bonds, possible hoisting and/or egress to installation site; site preparation; final electrical connections to customer-supplied fused disconnects; final water and drain connections.

Chamber Quote Conditions:

*Price based upon typical installation within 750 miles of factory (further distances may alter price), factory installation, unconditional jobsite access, and other details as listed within offer. Darwin Chambers Company reserves the right to adjust prices/offer at any point prior to sale. This offer assumes acceptance of Darwin Chambers standard Terms of Sale.

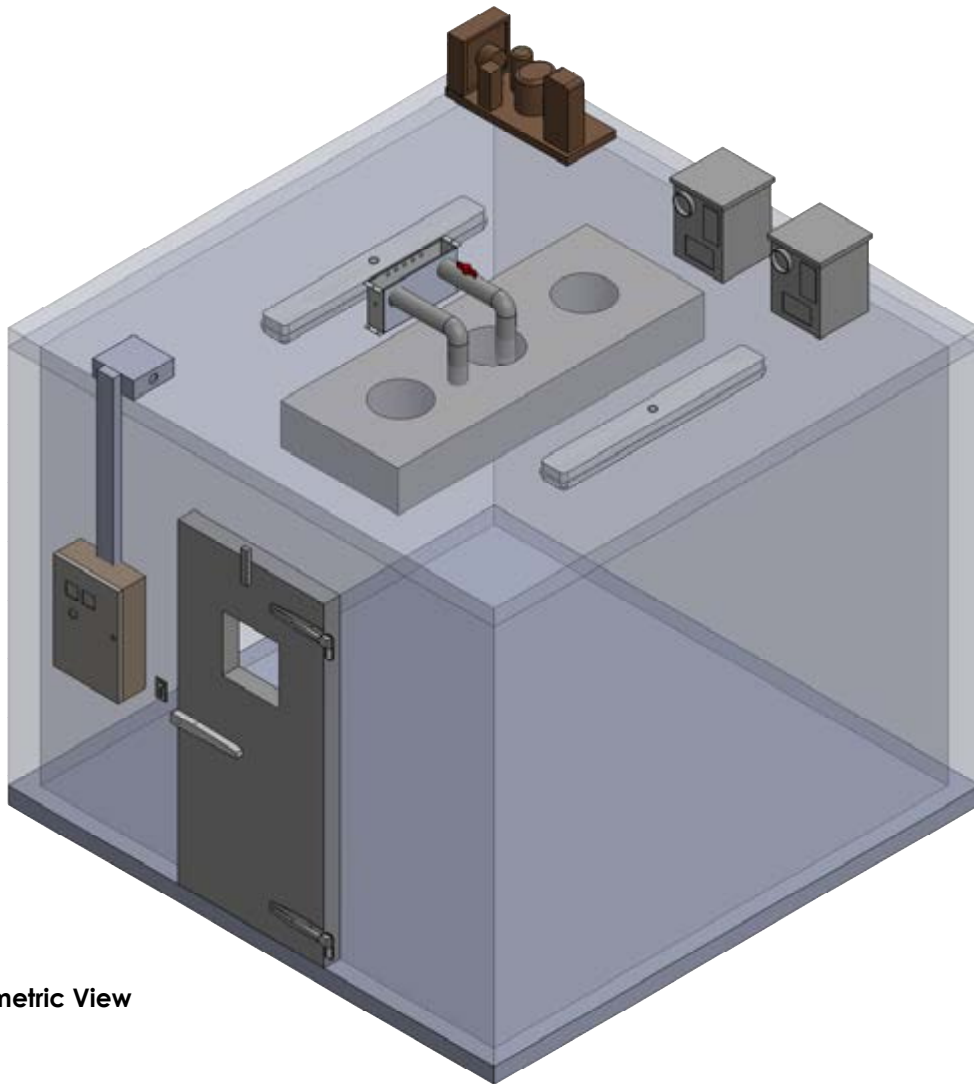
CANNABIS ROOM
SPECIAL PRICE: \$44,490*

Temperature Range	15° C to 27° C	Exterior Dimensions	10'0"W x 10'0"L x 10'2"H
Temperature Control (at 23° C)	$\pm 0.3^{\circ}\text{C}$	Interior Dimensions	9'4"W x 9' 4" L x 9' 10"H
Control Sensitivity	0.1° C	Interior Volume	879 cubic feet
Humidity Range	45% RH to 65% RH	Recommended Clearance	2" to 4" all sides, total min. clear ht., 120" AFF
Control of Humidity (at 23° C)	$\pm 2.0\%\text{RH}$	Utilities	Electrical, each on a dedicated circuit, with customer-supplied unit disconnects
Control Readout	Actual and Set-Point Values	Calibration Capability	Actual and Set-Point Values
Sensors	NIST-Traceable Platinum RTD; Rotronic RH sensor	Controller	Touchscreen microprocessor based PID



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Isometric View

WALK IN ROOM - TEMP AND
 RH WITH DRYER

Item	Details
Exterior Material	Embossed White Galv.
Interior Material	Embossed White Alum.
Door Details	Door Dimension 36" x 80"
View Port Details	14" x 14"
Ramp Details	No Ramp
Other Notes	