



Drying and Curing Chambers

www.darwinchambers.com

St. Louis, MO



2945 Washington Ave. St. Louis, MO 63103
877-783-6774 | sales@darwinchambers.com
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Reach-in DRYING CHAMBER: MJ034 SERIES

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.

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: data loggers, chart recorders, shelving and curing racks.

Cabinet Construction: Standard model features powder-coated door, front, and sides. Interior has 304 stainless steel on door liner, top, bottom, back and sides. Back-wall plenum is included to ensure airflow uniformity.

High- Density polyurethane insulation: Entire cabinet structure structure and doors insulated using foamed-in-place CFC free polyurethane foam.

Doors: Positive seal, self-closing doors (gravity cam-lift) with 120 stay open feature. Door gasket removal and installation is tool-less. Glass door models feature double pane, "Low-E" glass.

Controls: Standard controllers for the MJ034 Series are manufactured by Fuji and are ideal for drying chambers.

Refrigeration System: Unsurpassed temperature control through continuous refrigeration bypass system with top-mounted condensing unit. The evaporator is epoxy coated at the time of manufacture to eliminate the potential of corrosion.

Dessicant Dehumidifiers: Dehumidifiers are required wherever there is a need to lower the humidity level to prevent corrosion, mold growth and condensation. Their operation is simplistic yet extremely effective and reliable, and extremely ideal for cannabis drying via moisture extraction rate.

Moisture Removal Rate: The MJ034 model is equipped with a moisture removal rate of 22ppd with optional increased custom rates available.

Filtration: Multiple filters are included. All intake air is filtered. Filters are also used inside the chamber to prevent plant debris accumulation on fans and evaporator coil. Additional filtration options are available.

Ultrasonic Humidifier: Our systems add humidity through an ultrasonic vapor generator. The customer can turn it off and on in mere seconds. It doesn't generate any heat and doesn't overshoot or continue to add humidity past the set point. It also doesn't collect mineral scale.

FDA/ICH/GMP Guidelines: Our chambers are routinely used for GMP studies and conform to the international guidance documents. They are also NSF, food grade safe.

North American Warranty: 2 Year Parts; 1 Year Labor; 3 Year Compressor

International Warranty: 2 Year Parts; 1 Year Labor; 2 Year Compressor





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Performance	Standard	Optional
Temperature Range	12° C to 27° C	-5° C to 70° C with Optional Defrost
Ambient Temperature	21° C ± 3° C	Available
Temperature Control	± 1° C	Available
Control Resolution	0.1° C	Available
Temperature Sensor	NIST Traceable PT100 Class A RTD	Available
Humidity Range	45% to 65% RH	2 to 95% @ 22° C
Humidity Control	± 3%	Available
Control Resolution	0.1%	Available
Humidity Sensor	NIST Traceable Rotronic HC2A-S	Other or Custom

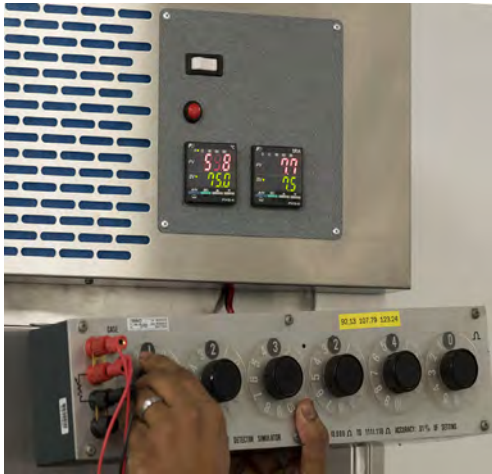
Control System	Standard	Optional
Controller	Fuji	West EC-44, Future Design Touchpad + More
Control Readout	Actual and Set-Point Values	Trending, Duty Cycle
Calibration Correction Capability	Standard 0.1 Resolution	Available
Alarm	Audible and Visual	Text, Email, Web Server, Remote Access
Alarm Type	Deviation in 0.1° C or 0.1% RH with Delay	Absolute 0.1 Resolution with Delay
Remote Monitoring	N/A	Ethernet, Dry Alarm Contact, RS 485 & Analog Output
Password Protection	Hexadecimal	Numeric, Alpha Numeric
Audit Trail	N/A	Available
Moisture Removal Rate	22ppd	Custom moisture removal rate

Construction	Standard	Customized Option
Exterior	18 gauge powder-coated galvanized steel door, front, and sides	Stainless Steel
Interior	20 gauge 304 grade Stainless Steel door liner, top, bottom, back, sides and aluminum door	Stainless Steel
Shelving	3 Stainless Steel Shelves, Supports Up to 1 50 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	29.58 ft ³	837.6 liters
External Dimensions	34"W x 35"D x 78"H	86.36cm W x 88.9cm D x 198.12cm
Internal Dimensions	29.5"W x 30"D x 63.375"H	74.93cm W x 76.2cm D x 160.973cm H
Shelf Dimensions	28.75" W x 26" D	54.61 cm W x 66.68 cm D
Crated Weight	420 lbs	191 kg

Electrical	North America	International
Voltage	115 / 60 x2	230 / 50 / 1
RLA	7amps chamber - 10amps dryer	2.6 With Step Down Transformer
Cord Length	9 ft	2.74m

SERVICES - QUALIFICATIONS - PROCESS VALIDATIONS



We understand the critical role that IQ/OQ/PQ will soon have in your regulated industry, which is why we use extremely precise calibration standards. The use of these standards will ensure that your instruments are calibrated to a standard (NIST National Institute of Standards and Technology), in order to meet or exceed manufacturer's specifications. All Darwin personnel performing instrument calibrations will be trained on the most recent revision of company calibration Standard Operating Procedures (SOPs).

What Services Does Darwin Chambers Offer?

The Installation Qualification (IQ) is utilized for providing documented verification that all key aspects of the design, procurement, and installation adhere to the design intention.

The Operational Qualification (OQ) is utilized for providing documented verification that the systems and subsystems perform as intended at all anticipated operating ranges (normally performed with an unloaded and simulated load chamber).

The Performance Qualification (PQ) is utilized for providing documented verification that the process does what it is intended to do, in the correct and anticipated manner (normally performed with either a simulated or actual product load in the chamber). The PQ is subsequently tested for the duration specified, and includes a door opening recovery demonstration. After completion, the thermocouples and RH sensors receive 3-point calibration verifications. The data (max. and min.) are collected and presented using the Kaye Qualification Report and Qualification Summary Report. Any deviations encountered during testing are documented in the protocol with an approved deviation report and mentioned again in an executor's summary report.

The Process Validation (PV) is utilized for providing documented verification that testing was performed several times to find out the constant rate of the process being validated. This entails a loaded chamber with repetitive testing involving both moisture content and relative humidity sensors.

A Kaye Validator is used exclusively for execution of our qualification testing and demonstrations. Prior to the execution, all thermocouples receive a 2-point calibration and a mid-point verification, and all Relative Humidity sensors used for data collection receive 2-point calibration and customer set-point verification. The chamber is then tested for the duration specified in the OQ (24-Hours, standard).

Validation/Qualification deliverables include: The completed protocol and executor's summary report. Qualification data is reported in both table and graphical form in the executor's summary, in order to visually display all results.

Free Technical Support: In addition to the Operations Manuals, Darwin Chambers offers free technical support on its products. Please use our support service prior to requesting an RMA or contacting a third party service provider. Darwin Chambers' free technical support is available by phone, video call, fax, or email.