

SPECIAL APPLICATION

AR-22L Arabidopsis Growth Chamber



AR-22

Chamber shown with optional humidifiers

Applications This chamber was specifically designed for growth of the Arabidopsis plant. It provides adequate space for growing the plant to maturity under controlled temperature, humidity and light conditions. This unique design incorporates two individually controlled environments in one compact footprint.

Please compare your requirements to the specifications.

Controller Percival's Intellus Ultra controller is capable of controlling temperature, humidity, CO₂ and lighting. The Intellus Ultra Control System is a single-board electronic solid-state design which includes a 10 key membrane keypad with LED indicators and a vacuum fluorescent display. Programs may be configured to run in real time or count-down (circadian) mode. Ramping and non-ramping program methods are available for each programming mode. Multiple programs can be linked to create complex environmental profiles. The Intellus Web Server (optional) allows for monitoring and controlling of the chamber via a web browser (requires Internet Explorer 6.0 +). This option allows for remote monitoring and programming of your chamber including alerts and current condition updates for up to five e-mail addresses. Please refer to www.percival-scientific.com for additional information regarding the control system.

Lighting System Each tier of shelves is lighted by (8) 17W cool white fluorescent lamps and (2) 25W incandescent lamps properly spaced for uniform light intensity over entire shelf. Intensity is adjustable up to 250 $\mu\text{moles/m}^2/\text{s}$ of light irradiance measured @ 6" from the lamps. Programming and control of the lighting is done via Intellus real time controller. There are two levels of programming of fluorescent lighting and one level of programming of incandescent lighting.

Air Flow The conditioned air circulates through a rear wall plenum, and travels horizontally across each shelf. The air then flows vertically upward through the space between the door and shelves back to the unit cooler.

Temp Range (with all lights on)	Interior Space (volume)		Work Area		Maximum Growing Height		Exterior Dimensions in. (cm)			Light Intensity (6" from lamps unless otherwise noted) $\mu\text{moles/m}^2/\text{s}$	# of Tiers
	° C	ft ³	m ³	ft ²	m ²	in.	cm	(W)	(D)		
10-44±0.7	29.4	.84	10.9	1.02	20 5/8	52.4	33.5(85.1)	33.6(92.89)	77.9(197.8)	250	2

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Cabinet Construction 22-gauge interior and 18-gauge exterior electro-zinc plated steel construction with a stainless steel floor. All seams and joints on the outer and inner shells are welded. Inner shell is supported by a non-compressing and non-thermal conducting material to lock the inner liner in place without a metal-to-metal bond to the outer case. The chamber is completely self-contained. Overall wall thickness is 2" (5.1cm). Two 1 1/4" diameter access ports are provided on the R.H. wall. Chamber floor is equipped with a floor drain and hose assembly. The chamber also contains caster assembly and adjustable leveling legs compensating for floor unevenness in the lab.

Insulation Woodless construction using CFC free insulation. Overall wall thickness is 2" (5.1cm), ample insulation for maintenance of stated temperature range.

Doors Each door opening 29 3/16" x 27 1/2" (74 cm x 70 cm) provides full access to the chamber interior. A magnetic gasket provides a tight seal to door frame.

Interior Space 29.4 ft³ (0.84 m³) with a work area 10.9 ft² (1m²) provided on two shelves.

Shelving One tier per compartment of white epoxy coated steel wire shelving. Each shelf is 27" D x 28 3/4" W (68.6 cm x 73.0 cm). Shelves rest on clips, and are easily adjustable in 1/2" increments up to a maximum growing height of 20 5/8" (52.4 cm).

Finish Interior and exterior painted with highly reflective, environmentally friendly, high temperature baked white powder coating.

Refrigeration Continuous running, twin condensing unit ensure precise temperature control by alternately cycling refrigerant and hot gas to the coil; this also prolongs the life of the compressor, helps maintain tighter temperature control, and eliminates the risk of ice build up in the coil. Solenoid valves have an extended stem for quiet and long life operation. Evaporator coils are ceiling mounted and each incorporate dual air circulation fans in an aluminum housings. Heat rejection to ambient (standard chamber) =6000 BTU/hr.

Temperature Range 10° - 44° C lights on ($\pm 0.5^\circ$ C) and 2° - 44° C lights off ($\pm 0.5^\circ$ C).

Temperature Safety Limit Controls

(Experiment Protection) Adjustable high and low temperature controls, audible alarms and visual indicators are incorporated into each Intellus controller. The controls shutdown all the power to the chamber, and activates alarms. When the temperature returns to the normal range the system will automatically reset.

Humidity Control (Optional)

Additive humidity control of higher than ambient to 65% ($\pm 10\%$) lights on for set temperatures between 20° to 30° C. Humidity control of higher than ambient to 90% ($\pm 10\%$) lights off for temperatures between 15° to 30° C. Extended humidity ranges available. See other catalog sheets or consult factory for additional information.

Options (most popular)

Advanced Intellus Control System (C9), Communications Software (C9+), Advanced Intellus with Touchscreen and Internet capabilities (C10), Ultrasonic Humidifier with advanced RH Sensor (H11), Dehumidification via independent dehumidifying coil with reheat heaters and Ultrasonic Humidifier (H12), Ultrasonic Humidifier with Electronic RH sensor (H14), CO₂ enrichment package, door with observation window and cover (Q2), door with fresh air ports (Q1), self-contained water-cooled condensing unit, dry alarm contacts (S2), dimmable lighting (closed loop with PAR light sensor)(Q22), dimmable lighting (open loop control)(Q23), extended temperature ranges available. See other catalog sheets or consult factory for additional accessories.

Convenience Receptacles

One 115/1/60 convenience receptacles provided inside each chamber.

Electrical Service Requirements

115/1/60 - 23 amps. This load is split between two power cords. One power cord and grounded plug provided for each chamber section - 2 total. Consult factory for electrical services when adding accessories to the chamber.



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