

# SPECIAL APPLICATION

## AR-75L3 Arabidopsis Growth Chamber



AR-75

### AR-75L2 chamber shown

**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 and light conditions.

Many other applications exist for this product. Please compare your requirements to the specifications.

**Controller** Percival's Intellus Ultra controller is capable of controlling temperature, humidity, CO<sub>2</sub> 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 countdown (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](http://www.percival-scientific.com) for additional information regarding the control system.

**Lighting System** Each tier of shelves is lit by (10) F32T8 fluorescent lamps and (8) 25W incandescent lamps properly spaced for uniform light intensity over entire shelf. Intensity is adjustable up to 300  $\mu\text{moles}/\text{m}^2/\text{s}$  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** Uniform air circulation across each shelf via air diffusers on the rear wall. Air circulation inside the chamber is from a specifically designed air diffuser. Air travels along the entire back wall, over the shelves and returns to the ceiling fans through an opening between the light fixture and the doors.

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) $\mu\text{moles}/\text{m}^2/\text{s}$	# of Tiers
	° C	ft <sup>3</sup>	m <sup>3</sup>	ft <sup>2</sup>	m <sup>2</sup>	in.	cm	(W)	(D)		
10-44±1.0	59.3	1.7	32.3	3.0	15.5	39.4	76.8 (195.1)	*35.5(90.17)	77(195.58)	300	3

\* Chamber depth excludes door thickness 1 5/8"

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**Cabinet Construction** All chambers are built in panel sections. Each section consists of 2" thick urethane insulation, metal interior and exterior surfaces, cam-type fasteners and vinyl gaskets. Interior and exterior are constructed of 22 gauge electro-zinc plated steel with the exception of the interior floor, which is stainless steel. Chamber floor is equipped with a floor drain. The chamber cabinet is attached to an angle frame base which contains heavy duty swivel casters.

**Insulation** Woodless construction using foam in place 2" thick CFC free urethane insulation foam. This is an environmentally friendly foam with global warming potential (GWP) of 0.0 and ozone depletion potential (ODP) of 0.0.

**Doors** Two door openings each 22 3/4" x 57 3/4" (57.8 cm x 146.7 cm) provides full access to the chamber interior. A magnetic gasket provides tight seal to door frame.

**Interior Space** 59.3 ft<sup>3</sup> (1.7 m<sup>3</sup>) with a work area 32.3 ft<sup>2</sup> (3 m<sup>2</sup>) provided on three tiers.

**Shelving** Three tiers constructed of 22-gauge stainless steel with no perforations. Six shelves (three tiers) constructed of stainless steel with no perforations or wires. Each shelf is 27 1/4" (W) x 28 3/8" (D) (69.2 cm x 72 cm). Shelves are vertically adjustable in 1/2" increments. The maximum growing height is 15.5" (39.4 cm) per tier.

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

**Refrigeration** Self-contained air-cooled condensing unit with hot gas bypass system for continuous compressor operation, extended life and close temperature control. This continuous running condensing unit ensures precise temperature control by alternately cycling refrigerant and hot gas to the coil; this also prolongs the life of the compressor, and eliminates the risk of ice build up in the coil. Optional outdoor all weather air-cooled condensing unit or self contained water-cooled condensing unit available upon request. Solenoid valves have an extended stem for quiet and long life operation. Heat rejection to ambient (standard chamber) = 8700 BTU/hr.

**Temperature Range** 10° - 44° C lights on ( $\pm 1.0^\circ$  C) and 4° - 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 provided. 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)** Relative humidity range 40%-75% ( $\pm 5\%$ ) lights on & 40%-95% ( $\pm 5\%$ ) light off for set temperatures between 15° to 30° C. There are several humidity options available. Consult factory for additional information.

**Options (most popular)** Advanced Intellus Control System (C9), Communications Software (C9+), Advanced Intellus with Touchscreen and Internet capabilities (C10), Pan type Humidifier with Electronic RH Sensor (H1), Pan-type Humidifier and Dehumidifier with Electronic RH Sensor (H3), Pan-type Humidifier and Dehumidifier with Advanced RH Sensor (H6), 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), CO<sub>2</sub> 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** Two unswitched outlets provided.

**Electrical Service Requirements** 120 VAC/208 VAC/1-phase/60Hz, 3 wires plus ground, R.L.A.17/leg, minimum circuit ampacity: 21/leg. Convenience outlet amperage draw not included. Consult factory for electrical services when adding accessories to the chamber.



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