

SPECIAL APPLICATION

CU-22L Tissue Culture Chamber



The CU-22L offers you the ability to have *TWO* separately controlled environments in *ONE* footprint.

Applications The CU-22L provides the capability to have simultaneous experiments conducted with different photoperiods, temperature or other environmental parameters. This chamber was specifically designed for plant cell culture, and its unique design of air diffuser with slow vertical airflow, fixed lampbank and slide-out shelves helps to eliminate condensation on Petri dish lids.

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

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 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 for additional information regarding the control system.

Lighting System Each tier of shelves per compartment is lighted by (4) F17T8, 17W cool white fluorescent lamps properly spaced for uniform light intensity over entire shelf. Intensity is adjustable up to 150 $\mu\text{moles}/\text{m}^2/\text{s}$ 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.

Air Flow The conditioned air circulates through a rear wall duct and is picked up by a specially designed fixed air diffuser located at the bottom of each tier. The air is then delivered vertically upward at a slow speed through each shelf. The air diffuser insulates shelf level experiments from the heat generated by the underlying light fixture. This design minimizes condensation on dish lids.

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)	# of Tiers
	°C	ft ³	m ³	ft ²	m ²	in.	cm	(W)	(D)		
10-44±0.7	29.4	0.84	22	2.4	6 1/4	15.87	33.5(85.1)	36.6(92.89)	77.9(197.8)	150	4

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Construction 22-gauge interior and 18-gauge exterior electro-zinc plated steel construction. 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 to compensate 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 29.6 ft.³ (0.84 m³) with a work area 22 ft.² (2.4 m²) provided on four shelves.

Shelving Two tiers per compartment of white epoxy coated steel wire shelving. Each shelf is 27" x 28 3/4" (68.6 x 73.0 cm). Shelves slide in and out easily on stainless steel rail assemblies. The maximum growing height is 6 1/4" (15.8 cm).

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

Refrigeration Twin air-cooled condensing units, each 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. 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 housing. Heat rejection to the ambient (standard chamber) = 5000 BTU/hr.

Temperature Range 10° - 44° C ($\pm 0.7^\circ$ C lights on) or 2° - 44° C ($\pm 0.5^\circ$ C lights off).

Temperature Safety Limit Controls (Experiment Protection) Adjustable high and low temperature controls, audible alarms and visual indicators are provided. The controls shutdown all power to the chamber, and activates alarms. When the temperature returns to the normal range the system will automatically reset.

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 compartment.

Electrical Service Requirements 115/1/60 - 12 amps. One power cord and grounded plug provided for each compartment. Consult factory for electrical services when adding accessories to the chamber.



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