

REACH IN PLANT GROWTH

PGC-105HID Reach in Plant Growth Chamber



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 The lighting module is housed in a fixture at the top of the chamber and is separated from the environmental area by a thermal barrier. Optimum lighting conditions are maintained by controlled air circulation over the light source to remove excess heat. A lamp heat exchanger (refrigerant cooled) independent from the main chamber heat exchanger is provided to dissipate lamp heat. The light fixture yields up to 1250 $\mu\text{moles}/\text{m}^2/\text{sec}$ @ 36" from the barrier. The lamp provides a balanced spectrum for plant growth using a mix of HID lamps consisting of 50% MH (Metal Halide) lamps and 50% HPS (high pressure sodium) lamps. There are five 400W Metal halide lamps and five 400W High pressure sodium. There are four levels programming of MH lamps and four levels of programming of HPS lamps. Please note that the refrigerant cooled lamp bank allows for the plants to grow up to the barrier with out being exposed to the heat stress from the lamps caused in non refrigerant type of lamp canopies.

Air Flow Conditioned air moves in a uniform upward direction through the entire work bench through perforations in the aluminum channels. Fresh air inlet and outlet are adjustable.

Applications This chamber product is frequently used for research applications such as lighting for vascular plants to facilitate standard plant production, plant pathology research and seedling germination and development.

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

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±0.5	76.1	2.15	16.2	1.51	56.5	143.5	105.5(268)	37.2(94.3)*	81.5(207)	1250**	1

* 35 1/2" (90.2 cm) with doors removed

** 36" from lamps

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Cabinet Construction Interior and exterior are constructed of 22-gauge electro-zinc plated steel with the exception of the interior floor, which is stainless steel, and the work bench which is perforated aluminum channel. Inner shell is supported by a thermal conducting insulator that locks the inner liner in place without a metal-to-metal bond to the outer case. Chamber floor is equipped with a floor drain with attached 3/4" plastic tubing. 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 26" x 48 1/2" (66 cm x 123.2 cm). A magnetic gasket provides tight seal to door frame. One door has a 12" x 12" (30.5 cm x 30.5 cm) observation window with a light tight cover.

Interior Space 76.1 ft³ (2.15 m³) with a work area of 16.2 ft² (1.51 m²) provided on one tier.

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

Refrigeration Self-contained water-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. Solenoid valves have an extended stem for quiet and long life operation. Heat rejection to the ambient by standard refrigeration system with a water-cooled self-contained condensing unit is 3500 BTU/hr. Heat rejection to the ambient with a standard refrigeration system with an air-cooled self contained condensing unit is 20000 BTU/hr.

Temperature Range 4° - 44° C with all lights off and 10° - 44° C with all lights on (full fresh air) ± 0.5° C within the work area on a horizontal plane with all lights on.

Temperature Safety Limit Controls

(Experiment Protection) Adjustable high and low temperature controls, audible alarms, and visual indicators are provided. The controls shut down 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 control of humidity in %RH through use of ultrasonic humidifiers or spray nozzles will maintain humidity levels of up to 95% RH lights OFF and 75% lights ON, between 15° and 30° C. Humidifier requires distilled or de-mineralized water. Optional dehumidification via independent coiling coil and reheat heaters will maintain humidity levels down to 40% RH between 15°C and 30° C.

Options (most popular)

Advanced Intellus Control System (C9), Communications Software (C9+), Advanced Intellus with Touchscreen and Internet capabilities (C10), Spray nozzle humidifier with advanced RH sensor and some dehumidification via reheat heaters (H9), Dehumidification via independent cooling coil with reheat heaters and spray nozzle humidifier (H8), Ultrasonic Humidifier with advanced RH Sensor (H11), Dehumidification via dehumidifying coil with reheat heaters and Ultrasonic Humidifier (H12), Ultrasonic Humidifier with Electronic RH sensor (H14), CO₂ enrichment package, Self-contained air-cooled condensing unit, Remote air-cooled condensing unit, Dry alarm contacts, Adjustable wire shelves, Closed loop dimmable lighting (Q22), Open loop dimmable lighting (Q23). Extended temperature ranges available. See other catalog sheets or consult factory for additional accessories.

Convenience Receptacles

Two convenience receptacles provided inside chamber.

Electrical Service Requirements

120 - 208 VAC/3 phase/60 Hz, 4 wires plus ground - total amp draw for standard chambers without any options is 25 amps/leg. Consult factory for electrical services when adding accessories to the chamber.

Specifications are subject to change



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