

reach in plant growth

Percival® model PGC-105HID

applications

- This chamber is frequently used for cereals, citrus, grapes, grasses and other plants that require high light intensity and higher growth height
 - *HID lighting is not recommended for rice*
 - Many other applications exist for this product
- Please compare your own requirements to the specifications listed below.*

percival's IntellusUltra controller

Percival Scientific has built a reputation of providing flexible, customized options for research scientists around the world. We've taken that philosophy to the next level with our improved IntellusUltra Controller. Now choose from the levels of functionality that meet your research needs.

Please refer to www.percival-scientific.com for additional information regarding the control system.

lighting system

- Lighting module housed in fixture at top of chamber is separated from environmental area by thermal barrier
- Optimum lighting conditions maintained by controlled air circulation over light source removing excess heat
- Lamp heat exchanger (refrigerant cooled) independent from main chamber heat exchanger is provided to dissipate lamp heat
- Light fixture yields up to 1250 $\mu\text{moles}/\text{m}^2/\text{s}$ @ 24" from barrier
- Lamp provides balanced spectrum for plant growth using mix of HID lamps consisting of MH (Metal Halide) lamps and HPS (high pressure sodium) lamps
- 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.



PGC-105 chamber shown

airflow/circulation

- Conditioned air moves in uniform upward direction through entire work bench through perforations in aluminum channels
- Fresh air inlet and outlet are adjustable

cabinet construction

- Interior and exterior constructed of 22-gauge electro-zinc plated steel
- Stainless steel floor
- Perforated aluminum channel work bench
- Inner shell supported by thermal conducting insulator locking inner liner in place without a metal-to-metal bond to outer case
- Chamber floor equipped with floor drain with attached $\frac{3}{4}$ " plastic tubing
- Chamber cabinet is attached to angle frame base containing heavy duty swivel casters

PGC-105HID specifications (subject to change without notice)

Temp Range with all lights on	Interior Space volume		Total Shelving Floor Area		Maximum Growing Height		Exterior Dimensions						Light Intensity 6" from lamps unless otherwise noted	Tiers
	°C	ft ³	m ³	ft ²	m ²	in	cm	width		depth		height		
10-44±0.5	112.9	3.2	16.2	1.5	56.3	142.9	106.6	270.8	38.5*	97.8	81.5	207	1250 @ 24"	1

*35.5" with door removed

reach in plant growth Percival model PGC-105HID

insulation

- Woodless construction using foam-in-place 2" [5.1 cm] 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 reach-in doors each with an opening of 26" x 48.5" (66 cm x 123.2 cm) (magnetic gasket provides a 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

- 112.9 ft³ (3.2 m³) with work area of 16.2 ft² (1.5 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 coil; this also prolongs life of compressor, and eliminates risk of ice build up in coil)
- Solenoid valves have extended stem for quiet and long life operation
- Heat rejection to the ambient (standard refrigeration system) with water-cooled self-contained condensing unit = 3500 BTU/hr.
- Heat rejection to the ambient (standard refrigeration system) with air-cooled self contained condensing unit = 20000 BTU/hr.

temperature range

- 2°-44°C (±0.5°C) lights off and 10°-44°C (±0.5°C) lights on (full fresh air) within work area on horizontal plane with lights on

temperature safety limit controls

- (Experiment Protection) Adjustable high and low temperature controls, audible alarms, and visual indicators provided
- Controls shut down all power to the chamber, activating 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 cooling coil and reheat heaters will maintain humidity levels down to 40% RH between 15°C and 30°C

options (most popular)

- IntellusUltra Connect (C9)
 - IntellusUltra Connect and Android-based Touchscreen (C9T)
 - IntellusUltra (standard) and Android-based Touchscreen (C8T)
 - 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 independent dehumidifying coil with reheat heaters and Ultrasonic Humidifier (H12)
 - Ultrasonic Humidifier with Electronic RH sensor (H14)
 - CO₂ enrichment package
 - Self-contained water-cooled condensing unit
 - Remote air-cooled condensing unit
 - Dry alarm contacts
 - 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 convenience receptacles provided inside chamber

electrical service requirements

- 120-208/3/60, RLA=31.5, MCA=39.4

Chamber must be direct-wired to a terminal block inside of the mechanical section.



Percival Scientific, Inc.
505 Research Drive • Perry, IA 50220 USA
800.695.2743 • 515.465.9363 • Fax: 515.465.9464
www.percival-scientific.com