low temperature

Percival® model LT-105

Constant Defrost Temperature

applications

- This chamber is frequently used to measure cold hardiness, freeze tolerance, heat stress and exposure to a series of temperatures
- 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

- Counter-balanced lamp bank is height adjustable for optimizing light intensities
- Light fixtures yield up to 1100 µmoles/m²/s of light @ 6" from lamps
- Lamp provides balanced spectrum for plant growth using twin T-5 fluorescent lamps and extended life tungsten incandescent lamps on 3 on/off light events
- Two levels of programming of fluorescent lighting and one level of programming of incandescent lighting done via IntellusUltra real time controller

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 ¾" plastic tubing
- Chamber cabinet is attached to angle frame base containing heavy duty swivel casters

LT-105 specifications (subject to change without notice)

Temp Range with all lights on	Interior Space volume		Total Shelving Floor Area		Maximum Growing Height		Exterior Dimensions width		depth		height		Light Intensity 6" from lamps unless otherwise noted	Tiers
°C	ft³	m³	ft²	m²	in	cm	in	cm	in	cm	in	cm	µmoles/m²/s	
0-44±0.5	121.2	3.4	15.9	1.5	54	137.2	117	297.2	38.5	97.8	77.6	197	1100 @ 25°C	1

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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 door openings each 26" x 48.5" (66 cm x 123.2 cm) (magnetic gasket provides a tight seal to door frame)

interior space

- 121.2 ft^3 (3.4 m^3) with work area of 15.9 ft^2 (1.5 m^2) provided on one tier

finish

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

refrigeration

- Refrigerant: R-407c
- Constant temperature defrost allows chamber to operate at low temperature under full lighting without temperature defrost spikes (typically, low temperature systems are defrosted by the diversion of hot gas through the coil or via electric heaters, causing a significant temperature spike during the defrost period)
- Dual coil system has been utilized in order to maintain a constant low temperature within chamber
- Coils work in tandem with a damper system (as one coil is cooling, the other coil is defrosted via hot gas)
- An air flow damper switches with coils preventing the coil being defrosted from putting its heat into system (coil being defrosted is essentially closed off from rest of the system)
- Self-contained water-cooled condensing unit with hot gas bypass system for continuous compressor operation, extended life and close temperature control (this continous running condensing unit ensures precise temperature control and provides defrost of cooling coils via hot gas with out the need of electric heaters)
- Optional outdoor all weather air-cooled condensing unit or self contained air-cooled condensing unit available upon request

temperature range

- -12°-44°C (±0.5°C) lights off and 0°-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)

options (most popular)

- IntellusUltra Connect (C9)
- IntellusUltra Connect and Android-based Touchscreen (C9T)
- IntellusUltra (standard) and Android-based Touchscreen (C8T)
- CO_2 enrichment package
- Self-contained water-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 115/1/60 convenience receptacles provided inside chamber

electrical service requirements

- 120-208/3/60, RLA = 17.2, MCA = 21.5

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

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