

Plant Growth

Percival® model E-41VL

Standard SciWhite® LED lighting for plant growth
SciBrite® LED lighting (optional)

Applications

- Designed for seed germination, seedling development, growth of algae in flasks, plant production, plant pathology research, growth of Arabidopsis and many more applications

IntellusUltra Controller

The IntellusUltra (C8T) control system adapts to nearly any programming style with a large range of options for optimal control over experiments.

- Robust and reliable, industrial-grade integrated hardware design
- Highly flexible programming capabilities for customized configurations and expansion
- Precise, simultaneous control of up to 7 environmental parameters
- Industry-leading experiment protection and system diagnostics

IntellusUltra Touchscreen Interface

This high-resolution touchscreen displays advanced settings and data for fine-tuning experiments, including graphs and charts.

- 10.1" IPS, high resolution display with 10-point multi-touch sensitivity
- Tabular and graphical presentation of chamber programs and parameters
- Highly visible process values and alarm notifications
- Enhanced user feedback menus

Please visit www.percival-scientific.com for more information on our control systems.

SciWhite LED Lighting System

- Externally-mounted SciWhite LEDs with enhanced red for plant growth separated from chamber growth space by glass side wall
- Glass is evenly heated over its entire surface, eliminating condensation
- Intensity programmable up to 515 $\mu\text{moles}/\text{m}^2/\text{s}$ of light irradiance measured @ 6" from LEDs
- Programmable through the IntellusUltra real-time touchscreen
- Dimmable output from 10-100% in one-percent increments



Airflow/Circulation

- Direction: horizontal
- Airspeed fpm (feet per minute): 30

Cabinet Construction

- Interior constructed of 18-gauge electro-zinc plated steel
- Exterior constructed of 18-gauge exterior electro-zinc plated steel
- Interior floor constructed of 22-gauge polished stainless steel
- Welded seams and joints on outer and inner shells
- Inner shell supported by non-compressing/non-thermal conducting material locking inner liner in place without a metal-to-metal bond to outer case
- Overall wall thickness is 2" (5.1 cm)
- Side walls constructed with dual-pane, tempered, argon-filled glass inserts which let light through, yet keep lamp heat out of the chamber environment
- Integrated floor drain
- Contains casters assembly and adjustable leveling legs

E-41VL 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
							width	depth		height				
°C	ft³	m³	ft²	m²	in	cm	in	cm	in	cm	in	cm	µmoles/m²/s	
7-44±0.5	37.2	1.1	34	3.2	9.5	24.1	47.4	120.5	33.6	85.4	77.2	196.1	515	5

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Insulation

- Construction using 2" high-grade materials, such as closed-cell and non-CFC Urethane insulation

Door

- One door opening of 36.8" x 57.5" (93.3 cm x 146.1 cm) provides full access to chamber interior
- Magnetic gasket provides a tight seal to door frame
- Lift-off hinge design allows for simple removal of door

Interior Space

- 31.2 ft³ (1.1 m³) with work area of 34 ft² (3.2 m²) provided on five tiers

Shelving

- Five tiers of white epoxy coated steel wire shelving (each shelf is 36.3"W x 27"D [92.1 cm x 68.6 cm])
- Each shelf is supported by shelf clips allowing ½" vertical adjustments
- Maximum clearance between shelves is 9.5" (24.1 cm) per tier with all five shelves installed

Refrigeration

- Self-contained air-cooled condensing unit with hot gas bypass system (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 buildup in coil)
- Top-mounted refrigeration system allows easy access for maintenance and cleaning
- As heat is rejected, it rises and is dissipated into room without having any effect on inside temperature of cabinet
- Extended stem solenoid valves for quiet and long life operation
- Ceiling-mounted evaporator coil
- Heat rejection to ambient (standard chamber) = 2,887 BTU/hr

Temperature Range

- 7°-44°C (±0.5°C) lights on and 2°-44°C (±0.5°C) lights off

Temperature Safety Limit Controls

- Experiment protection (adjustable high/low temperature control, audible alarms and visual indicators)
- Controls shut down all power to the chamber, activating alarms
- System automatically resets when temperature returns to normal range

Humidity Control (optional)

- Ultrasonic humidifier with advanced RH sensor (H11)
- Ultrasonic humidifier and dehumidifier with advanced RH sensor (H12)
- Ultrasonic humidifier with electronic RH sensor (H14)
- Ultrasonic humidifier and dehumidifier with electronic RH sensor (H15)

See other specification sheets or contact Percival Scientific for additional information.

Options (most popular)

- IntellusUltra Connect (C9)
 - Additive CO₂ control
 - CO₂ removal system
 - Self-contained water-cooled condensing unit
 - Dry alarm contacts
 - Closed loop dimmable lighting with PAR light sensor (Q22)
 - Extended temperature ranges available
- Contact info@percival-scientific.com for additional information.*

Electrical Service Requirements

- 120/1/60: two grounded cords each with NEMA 5-15P plug provided (with standard chamber)
- Cord #1 RLA=7.2
Cord #2 RLA=5.4 (combined MCA=15.8)

Regulatory Standards

- Electrical Safety: UL-508A, certified and labelled by Percival Scientific under UL file number E340161
- Quality System: ISO 9001:2015, certified under DQS, Inc. under certification number 10017261

Helping You Create Better Science

Percival Scientific controlled environment systems are the culmination of over 60 years of design and manufacturing experience. We developed our high-quality products through direct partnerships within the scientific community. Our controlled environments are known for their customizable designs and superior, long-lasting performance. Creativity, passion, technical expertise and attention to detail drive our scientific innovation, and we are proud to help you create better science.



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