

# Plant Growth

## Percival® model E-41VL

Standard SciWhite® lighting

### Applications

- This chamber is frequently used for seed germination, seedling development, growth of algae in flasks, plant production, plant pathology research and growth of Arabidopsis
- Many other applications exist for this product

*Please compare your own requirements to the specifications listed below.*

### Percival's IntellusUltra Controller

The IntellusUltra control system (C8) was purpose-built for controlled environments and is standard on all Percival chambers.

- Robust and reliable, industrial-grade integrated hardware design
- Highly flexible architecture facilitates configuration, expansion and customization
- Precise, simultaneous control of up to 7 environmental parameters
- Industry-leading experiment protection and system diagnostics

### IntellusUltra Control Graphical User Interface

A touchscreen user interface is provided as standard on all Percival Scientific plant growth chambers and allows users to interact with their controlled environment in new and intuitive ways.

- 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 refer to [www.percival-scientific.com](http://www.percival-scientific.com) for additional information regarding the control systems.*

### SciWhite LED Lighting System

- Externally mounted SciWhite LEDs with enhanced red 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



### SciWhite LED Lighting System, continued

- Programming and control of the lighting is done via IntellusUltra real time controller
- Dimmable between 10-100% output

### 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
- Chamber floor equipped with floor drain and hose assembly
- Contains caster assembly and adjustable leveling legs to compensate for floor unevenness in the lab

### 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
	ft <sup>3</sup>	m <sup>3</sup>	ft <sup>2</sup>	m <sup>2</sup>	in	cm	in	cm	in	cm	in	cm		
7-44±0.5	37.2	1.1	34	3.2	9.5	24.1	46.3	117.5	33.6	85.4	77.2	196.1	515	5

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## Insulation

- Woodless construction using CFC free insulation (overall wall thickness is 2" [5.1 cm], ample insulation for maintenance of stated temperature range)

## Door

- One door opening 36.8" x 57.5" (93.3 cm x 146.1 cm) provides full access to the 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 ft<sup>3</sup> (1.1 m<sup>3</sup>) with work area of 34 ft<sup>2</sup> (3.2 m<sup>2</sup>) 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

- Air-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)
- Top mounted refrigeration system allows easy access for maintenance (e.g. cleaning)
- As heat is rejected, it rises and is dissipated into room without having any effect on inside temperature of cabinet
- Solenoid valves have extended stem 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 and low temperature controls, audible alarms, and visual indicators provided
- 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 consult factory for additional information.*

## Options (most popular)

- IntellusUltra Connect (C9)
- Additive CO<sub>2</sub> control
- CO<sub>2</sub> 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](mailto:info@percival-scientific.com) with questions or for additional information.*

## Electrical Service Requirements

- 120/1/60 - two grounded cords each with NEMA 5-15P plug provided for 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. Our high quality products have been developed through direct partnerships with the scientific community and offer platforms that are highly customizable and provide superior performance. We understand that scientific innovation is bred through creativity, passion, technical expertise and attention to detail, and we are proud to help you create better science.



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