

# Arabidopsis

## Percival® model AR-66L2

Standard SciWhite® lighting



### Applications

- This chamber is frequently used for *Arabidopsis thaliana*, *Brassica* sp., lettuce, spinach and other plants with lower light intensity requirements
- 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.*

### AR-66L2 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	ft <sup>3</sup>	m <sup>3</sup>	ft <sup>2</sup>	m <sup>2</sup>	in	cm	in	cm	in	cm	μmoles/m <sup>2</sup> /s		
7-44±0.5	62.4	1.8	20.3	1.9	23.1	58.7	66	167.6	33.6	85.4	77.2	196.1	360

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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 reach-in doors each with an opening of 29.1" x 57.5" (73.9 cm x 146.1 cm) providing full access to chamber interior
- Magnetic gasket provides a tight seal to door frame

## Interior Space

- 62.4 ft<sup>3</sup> (1.8 m<sup>3</sup>) with work area of 20.3 ft<sup>2</sup> (1.9 m<sup>2</sup>) provided on two tiers

## Shelving

- Two tiers of solid stainless steel shelving (each shelf is 24"W x 30.4"D [61 cm x 77.2 cm])
- Each shelf is supported by shelf clips allowing 1/2" vertical adjustments
- Maximum growing height is 23.1" (58.7 cm) per tier

## Refrigeration

- Self-contained air-cooled condensing unit with hot gas bypass system for continuous compressor operation, extended life and tight temperature control. Continuous running condensing unit ensures precise temperature control by alternately cycling refrigerant and hot gas to coil; also prolongs compressor life, and eliminates risk of ice build up in coil.
- Extended stem solenoid valves for quiet and long life operation
- Heat rejection to the ambient (standard refrigeration system) = 3,875 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)
- Open loop dimmable lighting per tier (Q23<sup>+</sup>)
- Extended temperature ranges available
- Convenience receptacles

*Contact [info@percival-scientific.com](mailto:info@percival-scientific.com) with questions or for additional information.*

## Electrical Service Requirements

- 115/1/60 - two grounded cords (NEMA 5-15P) provided for standard chamber
- Cord #1 RLA=9.5 & cord #2 RLA=9.8 (combined MCA=24.1)

## 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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## Relative Humidity Control Option: H15

The R.H. control system consists of:

- Controller- See Intellus programmable PID controller specifications.
- Humidifier- consists of an ultrasonic humidifier. Each humidifier has a small water reservoir which maintains a specific water level with a float switch. Located inside the reservoir are a series of transducers which vibrate at very high frequencies. The specific frequency and vibration amplitude cause the water in the reservoir to atomize into very tiny droplets. Air flow through each humidifier expel the water vapor rich air through flexible tubing into the chamber environment
- Dehumidifier- consists of electrical heater and one dehumidifying evaporator. When dehumidifying is required, the temperature of the evaporator will drop to the point where the chamber moisture will condense on the coil. The heater acts to reheat the dried air back to the programmed temperature.
- Electronic R.H. sensor and signal conditioner- consists of Vaisala HUMICCHIP sensor. This is a capacitive humidity sensor designed to operate in non-condensing environments. Measurement range is 1 ...99%RH, with an accuracy of +/- 4%RH.

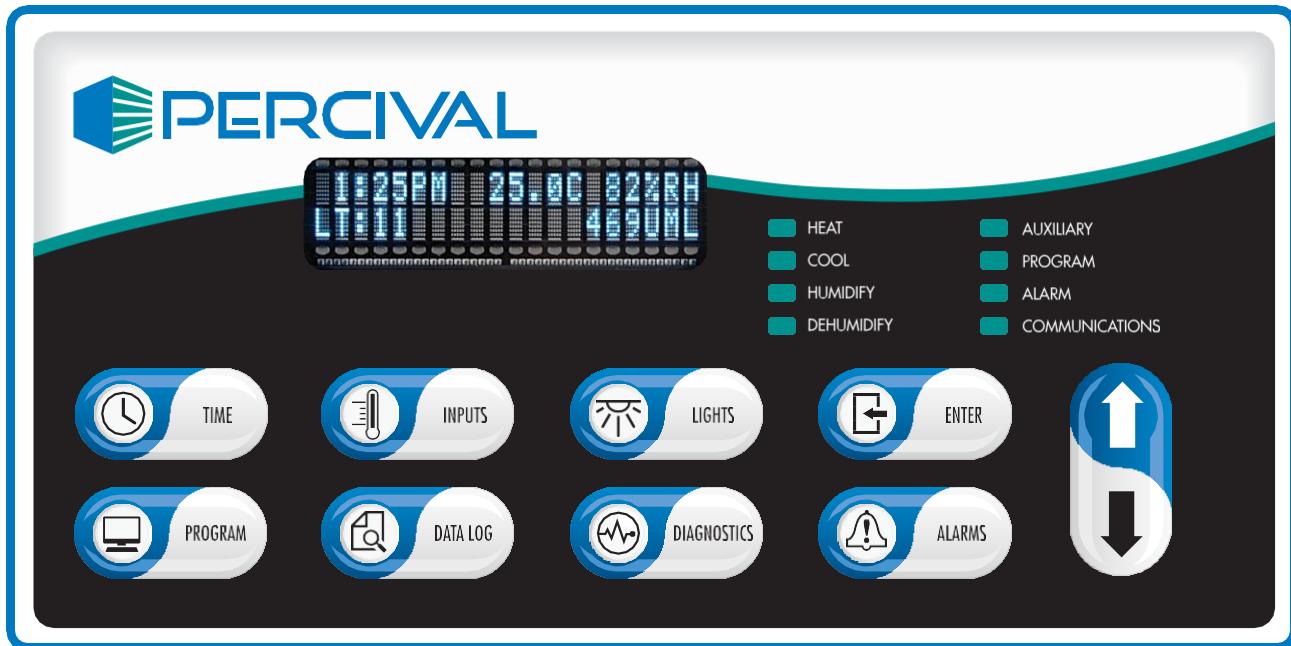
The Intellus controller uses PID calculations with set point values to determine activation and deactivation of the ultrasonic humidifier, reheat heater, and dehumidifying coil for optimum control. Additionally, the user has the option of selectively enabling and disabling both humidification and dehumidification.

The RH control range 40-90%.

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# controllers

IntellusUltra C8 (standard) and  
IntellusUltra C8T (android-based technology)



IntellusUltra C8 (standard)



IntellusUltra C8T (android-based technology)

more choices. more control. more data.  
all available in the power of your hand!

Percival Scientific has built a legacy of providing the life science market with the industry's best control system platforms. Through the years we've listened, tested and refined to now introduce the most advanced controller yet - the IntellusUltra!

The IntellusUltra delivers four choices of control systems letting you choose the options of what data to collect and how it is collected. Information on two of those choices, the **IntellusUltra C8** (standard) and the **IntellusUltra C8T** (android-based technology), is listed on the following page, allowing you to pick the one that fits your research needs and budget.



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# controllers IntellusUltra C8 and IntellusUltra C8T

## IntellusUltra C8 (standard)

- Single-board electronic solid state design
- Programmable controller via any of the following programing Styles:
  - Modify and run manual settings
  - Configure modify and run diurnal program
  - Configure modify and run 24 hour multi-steps program in ramping mode
  - Configure modify and run 24 hour multi-steps program in non-ramping mode
  - Configure modify and run non-24 hours program in elapsed time
  - Sequence multi-step programs (multiple programs can be linked together to simulate natural conditions)
- Dual experiment protection via integrated yet independent temperature limit shutdown
- Two calibration offsets per input channel (one for lights on and one for lights off)
- Simple field firmware upgrades
- Light lifetime maintenance:
  - The controller maintains the accumulated hours each light output has been activated
  - The accumulated hours can be reset for each output
- Three wires RTD sensor inputs.
- Highly visible alarm display with audible buzzer
- Configure defrost settings (if applicable)

- Power failure event logging
- Ambient temperature monitoring
- Durable 10 keys industrial keypad with VFD display and LED indicators
- Available programmable outputs allow for user specific control requests (i.e. programmable electrical outlets)
- Controller can be secured with four-level password protection
- View current set-points and process values, alarm status, alarm settings, program operation mode, program steps and controller time
- Digital lighting control
- Field-upgradable I/O expansion
- Backwards compatibility with Intellus series controller
- Improve troubleshooting with upfront Diagnostics Menu

## IntellusUltra C8T (android-based technology)

- High definition IPS (1280 x 800) touch screen interface
- Graphing of data (last 6 hours)
  - Trend graphs viewed directly on screen for both Set-point and Actual conditions
- Android-based app allows for user friendly programming interface
- Graphical interface for convenient, EASY programming and viewing of data
- Highly visible alarm display



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# SciWhite LED Plant Growth

## Versatile Chambers for Growing Many Plant Varieties

Our large line of plant growth chambers with SciWhite® lighting are ideal for tall, medium and short plant production requiring low- to high- intensity light. The versatility and dependability of these chambers guarantee consistently high production from nearly any kind of plant, ranging from cereals, citrus, grasses and soybean to tomato, cotton, peanut and potato. Enhanced with red for optimal plant growth,\* the SciWhite spectrum provides superior uniformity and light absorption.



Light intensity up to 1,700  $\mu$ moles/m<sup>2</sup>/s at 6 inches from LEDs

Dimmable light output

Easy to program with the IntellusUltra control system

Durable, long-lasting construction and sleek design

Optional SciBrite® lighting

Added red for better absorption in indoor setting

\*SciWhite spectrum with enhanced red not available in algae chambers

[FREE CONSULTATION](#)



## Additional Points

- RCA duly powder coated double walled chamber made of stainless steel 304 grade C
- Temperature, RH and Lights are controlled by microprocessor PID controller
- Automatic Reach in chamber
- Prefabricated molecular panels with PUF insulation
- Air flow can be regulated through air flow regulator adjustable from 50% to 100% depending on the plant growths, forced air circulation for uniform temperature
- Lockable & Movable PU wheels for easy movement, Portable, Chamber shall be mounted on castors wheels
- 2 minute compressor on delay timer to safeguard the compressor
- ISO 9001:2015 Certified Co & CE mark product



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