

Seed Germination

Percival® model GR-41L

Standard IncuWhite® LED lighting

Applications

- Designed for seed germination and development of cold and hot weather plants, as well as many more applications

IntellusUltra Controller

The IntellusUltra (C8) 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

IncuWhite LED Lighting System

- Linear LEDs vertically mounted
- Intensity programmable up to 120 $\mu\text{moles/m}^2/\text{s}$ of light irradiance measured @ 6" from LEDs
- Programmable through the IntellusUltra real-time controller
- Dimmable output from 5-100% in one-percent increments

Airflow/Circulation

- Conditioned air circulates horizontally through the chamber; air then flows vertically upward back to the unit cooler
- Direction: horizontal
- Airspeed fpm (feet per minute): 30

Cabinet Construction

- 26-gauge smooth galvanized white side walls and top reinforced with 24-gauge backer plates
- Interior floor constructed of 24-gauge #304-4 stainless steel
- Exterior constructed of 24-gauge Galvannealed extra-smooth steel
- NSF-compliant seam design
- Overall wall thickness is 2" (5.1 cm)

GR-41L 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	
5-44±0.5	37.2	1.1	96.4	9	2.6	6.7	41	104.1	33.6	85.4	77.2	196.1	120	15



Cabinet Construction, continued

- Integrated floor drain
- Contains casters assembly and adjustable leveling legs

Insulation

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

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

Interior Space

- 37.2 ft³ (1.1 m³) with work area of 96.4 ft² (9 m²) provided on fifteen tiers

Shelving

- Fifteen tiers of white epoxy coated steel wire shelving (each shelf is 25.5"D x 36.3"W [64.8 cm x 92.2 cm])
- Shelves slide in and out easily on stainless steel rail assemblies
- Clearance between shelves is 2.6" (6.7 cm)

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Finish

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

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 coils incorporate dual air circulation fans in aluminum housing
- Heat rejection to ambient (standard chamber) = 2,856 BTU/hr

Temperature Range

- 5°-44°C ($\pm 0.5^\circ\text{C}$) lights on and 2°-44°C ($\pm 0.5^\circ\text{C}$) 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)

- Additive humidity control of higher than ambient to 85% ($\pm 10\%$) lights on for set temperatures between 15° to 30°C
- Humidity control of higher than ambient to 90% ($\pm 10\%$) lights off for set temperatures between 15° to 30°C
- Extended humidity ranges available
- Pan-type humidifier with electronic RH sensor (H1)
- Pan-type humidifier and dehumidifier with electronic RH Sensor (H3)
- Ultrasonic humidifier with advanced RH sensor (H11)
- 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. If humidity system is selected as an option, a de-mineralized water supply is required, which terminates to a 1/2" MPT connector.

Options (most popular)

- Coated coil (required for Drosophila research) (Q9)
 - IntellusUltra Connect (C9)
 - IntellusUltra Connect and Android-based touchscreen (C9T)
 - IntellusUltra (standard) and Android-based touchscreen (C8T)
 - CO₂ enrichment package
 - Door with observation window and cover (Q2)
 - Door with fresh air ports (Q1)
 - Self-contained water-cooled condensing unit
 - Dry alarm contacts
 - Dimmable lighting (closed loop with PAR light sensor) (Q22)
 - Extended temperature ranges available
 - Convenience receptacle
- 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=5.1
Cord #2 RLA=6.4 (combined MCA=14.4)

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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