

Plant growth Chamber

FIDELS/66 FL

Applications

- This chamber is frequently used for Cyanobacteria, Plant Growth, insects and simple/low cost seed germination General controlled-environment research
- Many other applications exist for this product Please compare your own requirements to the specifications listed below.

Controllers

- FIDELS Science has built a Microprocessor-based system capable of real-time programming and control of Temperature, Lighting, Fan speed & Humidity with touchscreen interface Controller.

IncuWhite LED Lighting System

- Linear LEDs horizontally mounted in pairs above each shelf
- Intensity programmable up to 120 $\mu\text{moles}/\text{m}^2/\text{s}$ of light irradiance measured @ 6" from LEDs
- Programming and control of the lighting is done real time controller
- Dimmable between 5-100% output

Cabinet Construction

- Interior constructed of 22-gauge electro-zinc plated steel with reflective/baked powder coating.
- Exterior constructed of 18-gauge exterior electro-zinc plated steel with high-durability finish.



Cabinet Construction

- Chamber is completely self-contained
- Overall wall thickness is 2" (5.1 cm)
- One 1 1/4" diameter access port on R.H. wall with a light-tight cap for sensors and cables.
- Chamber floor equipped with floor drain and hose assembly
- Contains caster assembly and adjustable leveling to compensate for floor unevenness

Insulation

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

Doors

- Two door openings 29.1" x 57.5" (73.9 cm x 146.1 cm) provide full access to the chamber interior (magnetic gasket provides a tight seal to door frame) with Observation window option

Interior Space

- 62.4 ft³ (1.8 m³) with work area of 43.1 ft² (4.0 m²) provided on four tiers

TempRange 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 ³	m ³	ft ²	m ²	in	cm	in	cm	in	cm	in	cm	μmoles/m ² /s		
4-44±0.5	62.4	1.8	43.1	4	11.25	28.6	66	167.6	33.6	85.4	77.2	196.1	120		4

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Shelving

- Four tiers (eight shelves) of white epoxy coated steel wire shelving (each shelf is 27"D x 28.8"W [68.6 cm x 73 cm]) with powder coated
- Shelves are supported by shelf clips allowing 1/2" vertical adjustments
- Maximum clearance between shelves is 11.25" (28.6 cm) per tier with all shelving installed

Caster Wheels & Leveling

- Heavy-duty caster wheels with swivel and front-locking mechanism.

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 for continuous compressor operation, extended
- life and close temperature control (this ~~continuous~~ 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
- 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 incorporates twin air circulation fans in aluminum housing (heat rejection to ambient

Temperature Range

- 4°-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 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

- Phenolic Coated Coils
- Android-based Touchscreen
- Pan-type humidifier with Electronic RH Sensor
- Pan-type humidifier and dehumidifier with Electronic RH sensor
- Humidifier with advanced RH Sensor
- Humidifier with Electronic RH sensor
- Humidifier and dehumidifier with Electronic RH Sensor
- CO₂ enrichment package, Dosing System
- Integrated CO₂ adder and remover system for precise internal CO₂ level control.
- Door with observation window and cover
- Door with fresh air ports
- Self-contained water-cooled condensing unit
- Dry alarm contacts
- Dimmable lighting (closed loop with PAR light sensor)
- Extended temperature ranges available
- Convenience receptacles
- Fan speed controller

Airflow & Fresh Air Exchange

- Adjustable fan speed control.
Internal airflow direction: vertical and horizontal.
- Manually adjustable fresh air exchange, controllable from outside the chamber.

Humidity Control (Optional)

- Additive humidity control of higher than ambient to 85% ($\pm 10\%$) lights on for set temperatures between 15° to 30°C
- Compatible with pan-type humidifiers with electronic RH sensors.

Electrical Service Requirements

- 220-240 V AC, single phase, 50 Hz.

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