FIDELS SCIENCE

Tissue Culture FIDELS model FS-41L4

Applications

- This chamber is specifically designed for tissue culture on plates/dishes or in flasks
- Many other applications exist for this product

Please compare your own requirements to the specifications listed below.

Controllers

The control system was purpose-built for controlled environments and is standard on all Fidels 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

LED Lighting System

- Four tiers of lighted shelving lit LEDs
- Intensity programmable up to 200 µmoles/m2/s of light irradiance measured @ 6" from LEDs
- Programming and control of the lighting is done real time controller
- Dimmable between 10-100% output
- New FiWhite + Infrared technology lighting system designed to prevent condensation from forming on petri dishes
- Two channel tile design with white and infrared LEDs. Infrared LEDs provide warmth to the lid of the petri dishes to keep it above the dew point.
- Reduced condensation compared to fluorescent lighting
- The infrared lighting will not be visible when energized
- More efficient when compared to fluorescent lighting and white LEDs alone

Airflow/Circulation

- Conditioned air circulates through a rear wall duct and is picked up by a specially designed fixed air diffuser located at the bottom of each tier (air is then delivered vertically upward at a slow speed through each shelf)
- Air diffuser insulates shelf level experiments from heat generated by underlying light fixture (this design minimizes condensation on petri dish lids)

Temp Range with all lights on	Interior Space volume		Total Shelving Floor Area		Maximum Growing Height		Exterior Dimensions width		depth		height		Light Intensity 6" from lamps unless otherwise noted	Tiers
°C	ft^3	m^3	ft^2	m^2	in	cm	in	cm	in	cm	in	cm	µmoles/m^2/s	
10-44±0.5	37.2	1.1	27.2	2.5	9.5	24.1	41	104.1	33.6	85.4	77.2	196.1	350	4

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Cabinet Construction

- Interior constructed of 26-gauge galvanized steel
- Interior floor constructed of 24-gauge polished stainless steel
- Exterior constructed of 24-gauge Galvannealed extra-smooth steel
- NSF-compliant seam design
- Overall wall thickness is 2" (5.1 cm)
- Integrated floor drain
- Contains casters assembly and adjustable leveling legs
- One 1.25" access port with air-tight plug
- Highly durable and reflective coating

Insulation

- Woodless construction using 2" thick foamed-in-place non-CFC Urethane insulation with 97% closed cell-structure density of 2.2 lbs/ft^3

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

- 37.2 ft^3 (1.1 m^3) with shelf area of 27.2 ft^2 (2.5 m^2) provided on four tiers

Shelving

- Four tiers of white epoxy coated steel wire shelving (each shelf is 36.3"W x 27"D [92.1 cm x 68.6 cm])
- Shelves slide in and out easily on stainless steel rail assemblies
- Maximum growing height is 9.5" (24.1 cm)

Refrigeration

- Top mounted 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
- Ceiling mounted evaporator coil incorporates twin air circulation fans in aluminum housing (heat rejection to ambient)

Temperature Range

- 10°-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

Options

- Additive CO_2 control
- CO_2 removal system
- Self-contained water-cooled condensing unit
- Dry alarm contacts
- Open loop dimmable lighting per tier
- Extended temperature ranges available
- Convenience receptacles

Electrical Service Requirements

- 120/1/60 - two grounded cords each with NEMA 5-15P plug provided for standard chamber

Regulatory Standards

- Electrical Safety: UL-508A, certified and labelled by

Relative Humidity Control

- Controller- programmable PID controller specifications.
- Humidifier- consists of a stainless steel water reservoir with water level control device and heater. The water is heated and evaporates into the chamber air stream.
- Dehumidifier- non provided. A set of access ports provides air exchange for lowering R.H. levels. Expect R.H. levels inside the chamber to be higher than ambient.
- Electronic R.H. sensor and signal conditioner- consists of Vaisala HUMICHIP 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 controller uses PID calculations with set point values to determine activation and deactivation of the water-pan heater for optimum control. Additionally, the user has the option of selectively enabling and disabling humidification.
- The RH control range depends on the chamber model. The control accuracy in a horizontal plane is +/- 10%.

M-1 Basement, M Block Lajpat Nagar-3, New Delhi-10024
Contact 7042040439,9319272252
Mail fieldsscience2022@gmail.com **Web** https://fidelsscs.com/