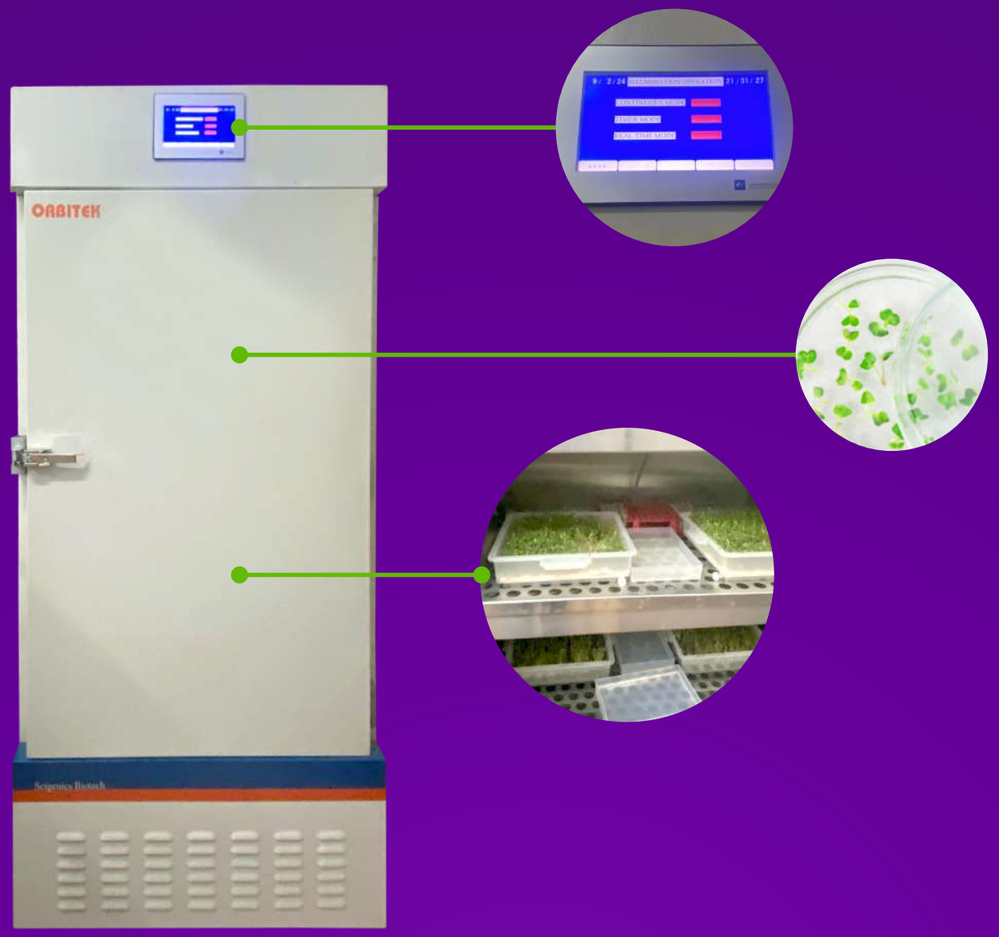
ORBITEK®
Range of Bio-equipment



GROWTH CHAMBER

Meticulously crafted to establish optimal conditions.

SCIGENICS BIOTECH
PRIVATE LIMITED

#2/605, East Coast Road, Neelangarai
Chenna 600 115. India
www.scigenicsbiotech.com

Sales
97909 39608 / 02

Service
97909 39603 / 14

ORBITEK®
Range of Bio-equipment

GROWTH CHAMBER

Introducing ORBITEK®, state-of-the-art Growth Chamber, meticulously crafted to establish optimal conditions for plant cultivation and cutting-edge research. The Growth Chamber is a sophisticated closed cabinet featuring control over crucial environmental variables, including temperature, humidity and light intensity. This capability provides researchers with a controlled platform to conduct experiments and studies with precision and reproducibility.

We specialize in both standard and customized models, specially designed to meet the challenging demands of scientists for individual and specialized research applications. Apart from that, these growth chambers have usages in tissue culture applications, enzyme reaction studies, growth observation studies and other general and specialized application in laboratories.

Trust in our growth chambers to empower your research, drive innovation, and contribute to advancements in agriculture, plant sciences etc. Elevate your experiments with precision and reliability.

APPLICATIONS

Arabidopsis cultivation:

Tailored to the specific requirements of Arabidopsis, this chamber offers customizable features such as moderate light levels and modest growth height for cultivation.

Algae growth:

Tailored to the specific requirements of algae cultivation, this chamber offers customizable features such as wide range of light intensity (ranging 100μmols/m2S to 1200μmols/m2S) and wave length including Red, Blue, Green cool/warm white light, CO_2 purging facility, etc.

Plant Tissue Culture:

Achieving perfection for plant tissue culture, the chamber offers an ideal environment for cultivating plant tissue cultures in petri dishes, small glass jars. Characterized by a low shelf height and precisely calibrated light levels.

Insect Rearing:

Growth chambers can be used to rear and maintain insect colonies by creating an isolated environment with highly precise temperature control with different lighting sets that serve different purposes.

Other applications include seed germination, crop genetics engineering etc., in which growth chamber plays a vital role.

FEATURES

Construction:

- Matt-finished stainless-steel interior 720x500x1140mm (W x D x H) and MS powder coated exterior.
- High grade 50mm thick insulation ensures that these chambers perform well under extreme climatic conditions.
- 30 mm port is available for cable entry.

Door:

The door is provided with high performance latch for air tight protection, ensuring minimal leakage from the inner chamber.

Shelving:

- Total number of shelves will be 3
- Growth area per shelf - 0.3 sq.m
- Tall plants can be grown inside the chamber by adjustment of shelf level.

Temperature control:

Temperature is controlled through PID controller with excellent accuracy. High Quality heaters are used for temperature maintenance. PT-100 temperature sensor is used to measure the temperature inside the chamber.

Humidity:

Ultrasonic humidifier with water reservoir ensures minimal water consumption and heat generation. These humidifiers rely on a highly efficient technology that expel mist of water into the Chamber. The air circulation within the chamber facilitates uniform distribution of the mist across the chamber, ensuring efficient and effective humidification.

Heating:

The direct heating system is provided using finned heaters of 750/1500 Watts.

Lighting Solutions:

Illumination plays important role in effective growth condition; therefore, we use high quality growth lights inside the chamber. These lights have long life and should it warrant, can easily be replaced.

Superior Uniformity:

The air circulation system is designed for maximizing temperature uniformity and humidity at all shelf levels. Paired with an ergonomic design, the slim profile cabinet offers sophisticated performance with minimal space uptake.

Controller:

ORBITEK® growth chambers are equipped with advance features such as PLC based HMI controller. It features color touch screen having display and control of temperature and humidity with data monitoring and storage. USB interface to transfer data into pen drive, is also built-in. Control of carbon dioxide levels to study its impact on photosynthesis and overall plant health, are also available as option.

Safety:

- Automatic shut off in the event of runaway heating from heater.
- Over current protection.
- Open door alarm.

Optional:

- CO_2 Regulation - Control carbon dioxide levels to study its impact on photosynthesis
- UV lamp for both sterilization and for Plant growth
- The lighting system offers a range of color options such as red, blue, green, white etc. This feature provides users with the flexibility to customize and adjust the lighting ambiance according to their specific application needs.

SPECIFICATIONS

SPECIFICATIONS		GC 350	GC 1000
Temperature	Temperature Range (Humidity ON)	15°C to 40°C (lights on/off)	
	Temperature Range (Humidity OFF)	5°C to 60°C (lights on/off)	
	Accuracy	± 0.5°C	
	Uniformity	± 1.0°C	
	Sensor	PT100	
	Control	PLC, PID	
	Temperature range changed via	HMI	
	Heater power (Watts)	750W	1500W
	Heater	Finned tube air heater	
	Permissible Ambient Conditions (°C)	Permissible Ambient Conditions (°C) : 23°C ±3.0°C	
	Temperature Deviation alarm	Audible/Visual	
Humidity control	Range	50 to 85% RH (lights on/off) @ ambient 21 Deg C, 50% RH	
	Accuracy	±5% RH	
	Method	Ultrasonic humidifier with automatic water refilling facility through OH tank	
	Control	PLC, PID	
	Humidity range changed via	HMI	
Illumination	Range @ 6 inch height	7500 Lux (140 micro moles/m2/s)	22000Lux (500 micro moles/m2/s)
	Color Temperature	6500K	
	Method	LED array (Removable height adjustable)	
Air Circulation	Direction	Uniformly Upwards	
	MOC Interior	Stainless steel (SS 304)	
	MOC exterior	Mild Steel powder coated	
	Interior Dimension (W x D x H)	720 x 50 x 1140 mm	940 x 660 x 1260 mm
	Exterior Dimension (W x D x H)	830x 740x 1970 mm	1045 x 905 x 2090 mm
	MOC Shelves	Stainless steel (SS 304)	
	Shelves Size (W x D)	660 x 420 mm	870 x 600 mm
	No. of shelves	3	
	Max load	10kgs/shelf	15kgs/shelf
	Insulation Material	50 mm thick fiber glass wool/PUF/mineral wool	
	Door	Double Layered metal door with EPDM gasket and cam latch with key	
	Equipment noise Level (db)	Less than 55 db (A)	
	Tank capacity (Litre/Cft)	350L/ 12cft	1000L/35cft
	Growth Area/Shelf	0.3 m.sq	0.5 m.sq
	Total Growth Area	0.9 m.sq	1.5 m.sq
	Max. Growing height (cm)	20 per shelf	26 per shelf
	Foot print (m2)	0.6	0.9
Construction	Net weight (kg) Approx	350 kg	450 kg
	Grow Weight (kg)	450 kg	550 kg
Heating	Heater	Finned tube air heater	
Refrigeration	Refrigerant	R134a	
	Defrosting	Every 6 hours Once	
Others	Data logging	Default	
	Timer Mode	Clock mode: 00.00 to 23 .59hr/ timer mode : 00.01 to 99.59 hr	
	Mobility	Castor wheel	
Electricals	Power supply requirement (Amps)	16 Amps, 230V, 50 Hz, 1	
	Power cable length (m)	3m	
	Power consumption (max)	2000watts, 230V AC, 50Hz	3000watts, 230V AC, 50Hz
Safety Standard	Over Current protector	MCB	
	Non Volatile memory	Yes	