plant growth chamber for seedling and microbial cultivation

Plant growth chambers are not only used for research on seed germination and seedling cultivation of plants, but are also widely used for experimental research in the fields of bacterial and microbial cultivation, animal and plant breeding, and environmental science.

Plant Growth Chamber

The core function of the plant growth chamber is to provide controlled temperature, light and other environmental conditions to ensure the stability of various parameters required in the experimental process, thus helping researchers to obtain more accurate experimental data.

Main Features of the Plant Growth Chamber

1. **Energy-efficient light system:** the use of laminated top-mounted LED light source, with a long life and high brightness, light energy-saving effect is remarkable, can reduce 80% of the light energy consumption. Users can adjust the illumination according to the experimental needs, to achieve the simulation of day and night changes, suitable for a variety of plant growth experiments.

2. **High-quality stainless steel liner:** the liner is made of mirror stainless steel material, corrosion resistance and acid resistance, and easy to clean, to ensure long-term use of health conditions. At the same time, stainless steel never rust, extending the service life of the equipment.
3. **Microcomputer intelligent temperature control:** PID control technology, with microcomputer intelligent temperature controller, to ensure accurate and stable temperature control. Temperature controller through the liquid crystal display real-time display of the current temperature, the operating interface is simple and intuitive, the user can quickly adjust the parameters. Has a strong anti-interference ability, to ensure the stability of long-term operation.
4. **Double temperature protection:** built-in temperature controller automatic tracking system, and has an over-temperature alarm function. Once the temperature exceeds the set range, the system automatically cuts off the heating device to protect the experimental samples from high temperature damage. In addition, the equipment is equipped with an additional temperature insurance device inside to enhance safety.
5. **Air duct design:** ensures smooth air circulation and uniform temperature distribution. The wind speed is gentle and will not interfere with the experimental samples inside the box, while effectively improving the temperature uniformity.
6. **Double-door structure:** when the outer door is open, the inner door through the high-strength tempered glass can directly observe the experimental process, without affecting the stability of the temperature inside the box, to ensure that the control of the experimental environment is not destroyed.

7. **Temperature range:** 0 °C to 50 °C, to adapt to different plants and microorganisms on the temperature requirements, to meet the needs of most experiments.
8. **Convection type:** with fan forced air convection.

Advantages of Plant Growth Chamber

1. **Precise temperature control:** with the help of microcomputer intelligent temperature control and PID control technology, the equipment can realize stable and precise temperature regulation, ensuring that the temperature fluctuation in the experimental environment is small, to meet the needs of all kinds of biological experiments.
2. **High efficiency and energy saving:** LED light source and efficient thermal management design significantly reduces energy consumption, making the equipment to provide an efficient experimental environment while saving energy and operating costs.
3. **Easy to operate:** through the LCD temperature control system, making the set temperature, light intensity and other parameters more intuitive, the user can easily operate and adjust the equipment, reducing the complexity of human operation.
4. **High security:** equipment built-in double temperature insurance device and automatic over-temperature protection function to ensure the safety of the experimental process. Even if there is an abnormal situation, the heating can be cut off in time to prevent the sample from being damaged by the high temperature.

Working Principle

Plant Growth Chamber provides a growth environment for plants or other organisms through precise control of temperature, light and other conditions. The internal temperature control system accurately regulates the temperature inside the chamber through the microcomputer and PID control algorithm to ensure that the temperature stays within the set value during different experiments. The air duct design and thermostat system ensure the uniformity of the temperature inside the chamber. The built-in LED light source simulates the change of natural light and adjusts the light intensity steplessly to meet the needs of different experiments on light intensity. The whole system adjusts the parameters in real time through intelligent monitoring to ensure the stability and safety of the experimental environment.

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Model	**GC10-160**	**GC10-300**
Volume	160L	300L
Convection type	with fan forced air convection	
Heating and cooling method	stainless steel electric heating tube and fully enclosed CFC-free compressor	
Temperature control method	PID	
Temperature Control Range	5°C to 50°C with lighting, 0°C to 50°C without lighting	

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Model	**GC10-160**	**GC10-300**
Temperature Resolution	0.1°C	
Temperature Accuracy	±0.2°C	
Temperature Uniformity	±0.5°C	
Light source	Shelf-type LED light panel	
Illuminance	adjustable from 0 to 30,000 lux	
Illuminance adjustment range	0 to 100% of Emax or stepless program-controlled dimming	
Shelves and light panel layers	2 pcs, 3 pcs	3 pcs, 4 pcs
Refrigerant	404A	
Operating Time	1 to 9999 minutes or continuous	
Internal Dimensions	570x470x600mm	570x470x1080mm
External Dimensions	700x660x1320mm	700x660x1800mm

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Model	**GC10-160**	**GC10-300**
Power	900W	1500W
Power supply	220Vac, 50Hz	