climate chamber with three-sided illumination design

Climate chamber is a widely used in scientific research, industry and production of environmental simulation equipment, specifically for plant growth, microbial cultivation, small animal rearing, etc. to provide stable light, temperature and humidity conditions.

Climate Chamber

Climate chambers are widely used in agriculture, medicine, biotechnology, environmental science and other fields of experimental research and product quality testing. Climate chamber through precise control of temperature, humidity and light conditions, can simulate a variety of environments to meet the growth needs of different biological samples.

Main Features of the Climate Chamber

1. **Durable material construction:** the studio is made of high-quality mirror stainless steel, with corrosion resistance, acid resistance, easy to clean and other characteristics, to ensure the durability and ease of cleaning in the long term use.

2. **Microcomputer intelligent control system:** the use of microcomputer PID temperature control system, temperature control is accurate and stable, with self-tuning function, real-time display of temperature, humidity status, to ensure accurate control and anti-interference capability. The system is built-in double temperature insurance device to avoid damage to the equipment or experimental samples caused by over-temperature.
3. **Temperature and humidity stability:** the box air duct design and uniform air circulation system to ensure the uniformity of temperature and humidity inside the box, to avoid air circulation and affect the results of the experiment. The wind speed is gentle, suitable for a variety of experimental needs.
4. **Light simulation:** the box is equipped with a three-sided light design, simulating the day and night environment, adjustable illumination, to provide natural light conditions to support the germination of plant seeds and bacterial culture and other experiments.
5. **Double-door structure:** double-door design, the inner door is made of high-strength tempered glass, the outer door does not affect the temperature and humidity inside the box when it is opened, which is convenient for observing the experimental process.
6. **Flexible shelf design:** the inner liner of the shelf can be freely adjusted according to the user's needs, convenient for different experiments.
7. **Safety and security features:** with an independent temperature alarm system, more than the set temperature will automatically disconnect the heating system to ensure that the experiment is safe.
8. **12-bit LED high brightness digital display,** intuitive and clear.

9. **Convection type:** with fan forced air convection.

Advantages of Climate Chamber

1. **Multifunctionality:** the climate chamber is not only suitable for plant growth and germination, microbial culture, bacterial preservation, but also for small animal rearing, environmental adaptation experiments, etc., with a wide range of adaptability.
2. **High-precision control:** through the PID temperature control system, temperature, humidity, light and other key parameters can be accurately controlled to ensure the stability and consistency of the environment during the experiment.
3. **Energy saving and environmental protection:** the use of energy efficient refrigeration and heating system, reducing energy consumption while maintaining excellent temperature and humidity control performance.
4. **Easy to operate and maintain:** LCD display and touch control interface is easy to understand, intuitive operation. The inner liner is made of stainless steel, which is easy to clean and maintain, prolonging the service life of the equipment.
5. **Flexible configuration:** support optional printer, RS-485 interface, temperature limit alarm and other functions, to facilitate data recording, remote monitoring and alarm prompts to improve the intelligence of the equipment.

Working Principle

Climate chamber through the built-in temperature and humidity sensors, intelligent PID temperature control system and three-sided lighting system, precise control of the environmental conditions inside the box. According to the set temperature, the system adjusts the heating, cooling and humidity system to ensure the stability of the experimental environment. Inside the climate chamber, the air duct design ensures smooth air circulation and uniform distribution of temperature and humidity. The three-sided lighting design provides plants with a simulated natural lighting environment to promote their healthy growth. The control system also monitors the status of the equipment in real time, and automatically alarms and records data to ensure the efficiency and safety of the experimental process.

climatic chamber with three-sided illumination design

Model	**LC10-250**	**LC10-300**	**LC10-400**
Volume	250L	300L	400L
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		

climatic chamber with three-sided illumination design

Model	**LC10-250**	**LC10-300**	**LC10-400**
Temperature Resolution	0.1°C		
Temperature Accuracy	Heating operation status ±0.5°C, Cooling operation status ±1°C		
Temperature Uniformity	±0.5°C		
Humidity Control Range	50%RH to 95%RH		
Humidity Accuracy	⩽±5%RH		
Humidification method	External ultrasonic humidifier		
Light source	Three-sided LED lighting design		
Illuminance	0 to 15,000 lux	0 to 20,000 lux	0 to 25,000 lux
Number of shelves	3 pcs		
Refrigerant	404A		
Operating Time	1 to 99 hours or continuous		

climatic chamber with three-sided illumination design

Model	**LC10-250**	**LC10-300**	**LC10-400**
Internal Dimensions	570x500x850mm	570x540x950mm	700x550x1020mm
External Dimensions	770x736x1560mm	780x780x1700mm	920x825x1800mm
Power	1400W	1750W	1850W
Power supply	220Vac, 50Hz		