

CCL-H Series Climate Chamber with Light & Humidity Control

With light: 10~50°C | Without light: 0~50°C | 50% to 90% RH

LAB1ST CCL-H Series Climate Chamber with Light & Humidity Control is the advanced solution for research requiring complete environmental simulation. It offers precise, independent control of temperature, humidity, light, and timing in one reliable chamber.

Ideal for plant tissue culture, transpiration studies, or simulating specific climates, it features a dual-compressor system to ensure stable humidity control during long-term experiments.



Features

> Complete Environmental Simulation & Control

- **Integrated Humidity Control:** Precisely regulates relative humidity from 50% to 90% RH ($\pm 5\sim 7\%$ deviation), a critical parameter for tissue culture, transpiration studies, and research on tropical or humidity-sensitive species.
- **Multi-Parameter Independence:** Enables simultaneous, independent programming and control of temperature, humidity, light intensity, and photoperiod. This allows for true simulation of diurnal cycles, seasonal variations, or specific geographic climate conditions within a single, automated protocol.

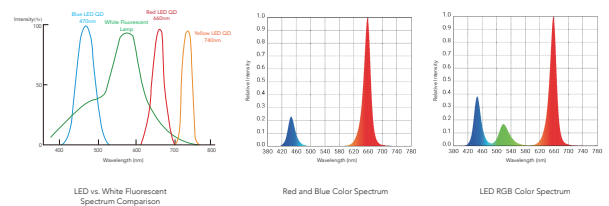
> User-Centered & Intelligent Operation

- **Intuitive Touchscreen Interface:** Features a large LCD screen that displays multiple parameters simultaneously with a clear, menu-driven interface for straightforward setup, monitoring, and operation.
- **30-Stage Programmable Control:** Simplifies complex experimental protocols. Each program supports flexible timing from **1** minute to **99** hours and **59** minutes, enabling true walk-away automation.
- **Versatile Simulation Capabilities:** Can simulate natural day/night temperature variations and multi-directional light sources.

> Hygienic & Flexible Chamber Design

- **Easy-Clean Construction:** Features a mirror-finish stainless steel interior with smooth rounded corners. Internal shelves or partitions can be removed without tools, facilitating thorough chamber disinfection and cleaning.
- **Gentle Airflow Design:** The optimized air circulation system provides uniform conditions without excessive wind speed that could disturb or damage delicate plant seedlings.

>LED Spectrum Diagram



> Advanced, Energy-Efficient LED Lighting System

- **Precision Spectrum & Cool Operation:** Utilizes energy-saving LED lighting that provides stable, full-spectrum illumination ideal for photosynthesis without generating excess heat, ensuring consistent chamber temperature and optimal plant growth.
- **Superior Performance:** Compared to traditional lighting, our LED system offers precise wavelength control, an extended lifespan exceeding **30,000** hours, and reduces energy consumption by approximately **80%**.
- **Rapid Response & Uniformity:** Optional planar lighting configuration ensures even light distribution for consistent absorption by specimens, maintaining experimental reproducibility.

> **Unmatched Reliability for Continuous Research**

- **Dual Redundant Compressor System:** A key differentiating feature. Two imported compressors operate in an automatic, alternating cycle to ensure uninterrupted, long-term operation—overcoming a common limitation in standard growth chambers.
- **Power Failure Protection:** User-defined parameters are automatically saved in non-volatile memory, ensuring programs resume automatically after a power outage.

> **Comprehensive Safety & Protection**

- **Independent Over-Temperature Alarm:** Automatically cuts off power and triggers alerts if temperature limits are exceeded, safeguarding both your experiments and the equipment.
- **Built-In Diagnostics:** The system performs self-checks and displays clear fault messages on the screen for immediate identification and troubleshooting of operational issues.
- **Audible & Visual Alarms:** Includes alerts for high temperature and over-temperature conditions.

> **Eco-Friendly Design**

- **Fluorine-Free Construction:** Manufactured with environmentally friendly materials, supporting a greener and healthier approach to research.

Options

RS485/232 Interface and Communication Software

Embedded Printer

USB Data Storage

CO₂ Inlet Port (for promoting plant growth)

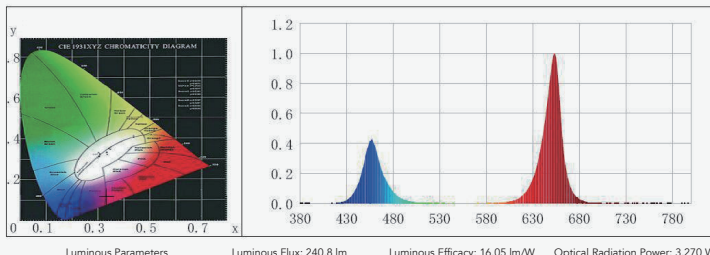
CO₂ Controller (with Infrared CO₂ Sensor)

Illumination Control System (Stepless Dimming)

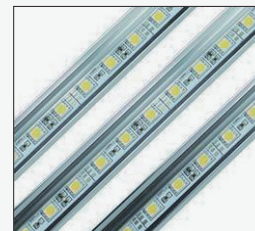
Note:

CO₂ Control System (Optional)

- For advanced plant physiology studies, an optional infrared CO₂ sensor and control system is available. It provides rapid, accurate response to concentration changes (range:0-5000ppm or 0-20%) unaffected by temperature or humidity, ensuring precise atmospheric control.



Professional Spectral Detection Data



High-quality LED Plant Growth Lamp Bead

Model	CCL-150H	CCL-250H	CCL-300H	CCL-450H	CCL-800H	CCL-1000H	CCL-1500H
Temperature Control Range	With light: 10~50°C Without light: 0~50°C						
Temperature Resolution	0.1°C						
Temperature Fluctuation	±1°C						
Humidity Control Range	50~90%RH						
Humidity Deviation	±5~7%RH						
Light Intensity Range	0 ~ 18,000 Lux	0 ~ 18,000 Lux	0 ~ 28,000 Lux	0 ~ 35,000 Lux	0 ~ 42,000 Lux	0 ~ 50,000 Lux	0 ~ 55,000 Lux
Light Intensity	6-level adjustable						
Light Source / Illumination Method	LED, door-mounted lighting		LED / Three-side lighting		Fluorescent lamp, partition-type lighting		
Power Supply	AC220V 50HZ						
Input Power (W)	1500	1750	1700	2050	2800	2900	4500
Chamber Volume (L)	150	250	300	450	800	1000	1500
Interior Dimensions (WxDxH mm)	550×400×670	600×610×830	520×550×1140	700×550×1140	800×590×1650	1050×590×1650	1550×590×1650
Exterior Dimensions (WxDxH mm)	690×800×1410	760×815×1550	830×850×1850	950×850×1850	1475×890×1780	1410×890×1950	1570×1475×2050
Program Control Function	Independent setting of temperature, humidity, and light intensity. Capable of setting 30 program segments, with each segment's time range adjustable from 1~99 hours 59 minutes.						
Operating Environment Temperature	+5~30°C						
Continuous Operation Time	Capable of long-term continuous operation (two sets of international fully sealed compressors automatically switch in rotation).						

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