**FUJIAN JIUPO BIOTECHNOLOGY CO., LTD.**

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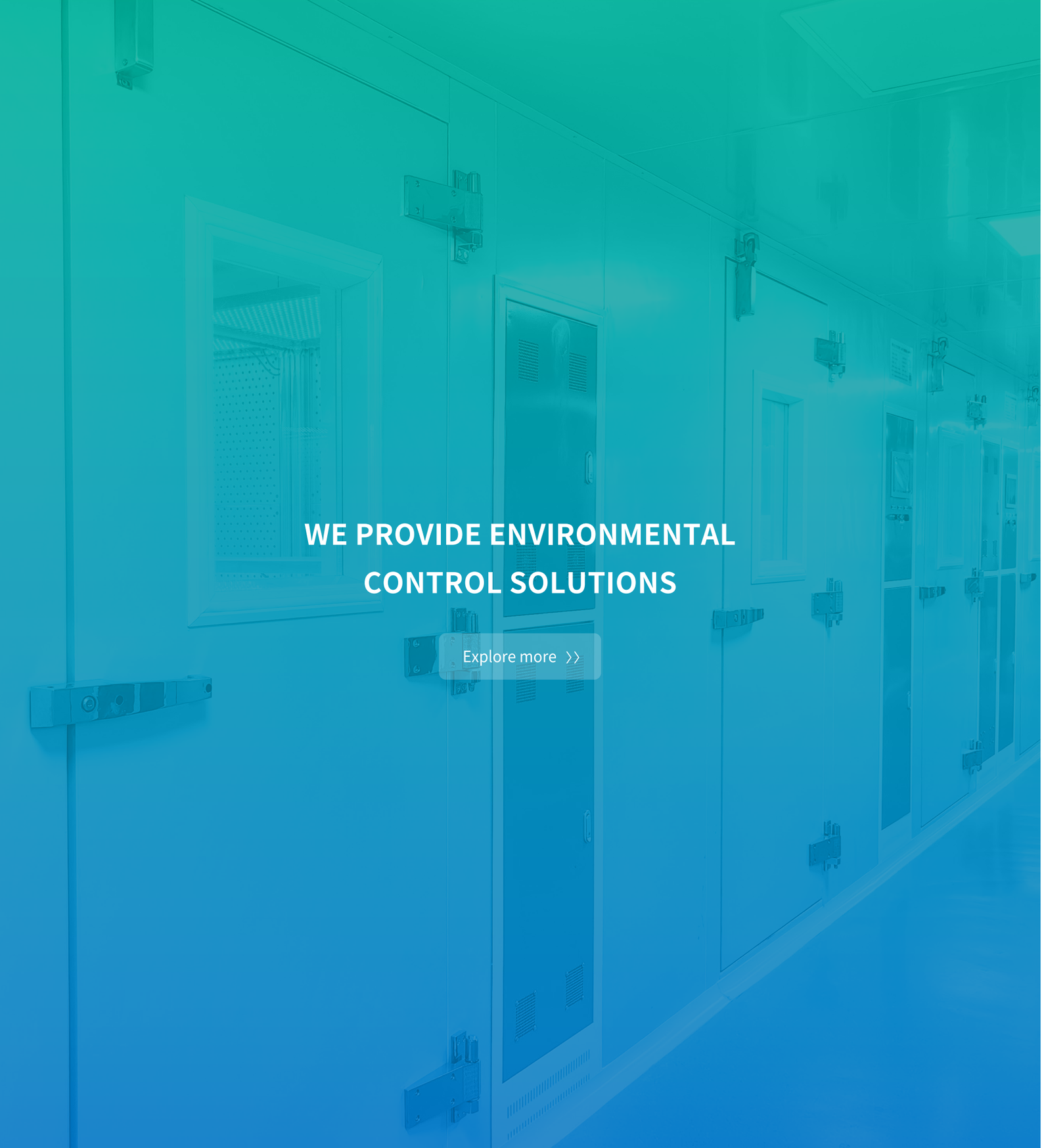
# PRODUCTS & SOLUTIONS

JIUPO Support the Agricultural Science Around the World

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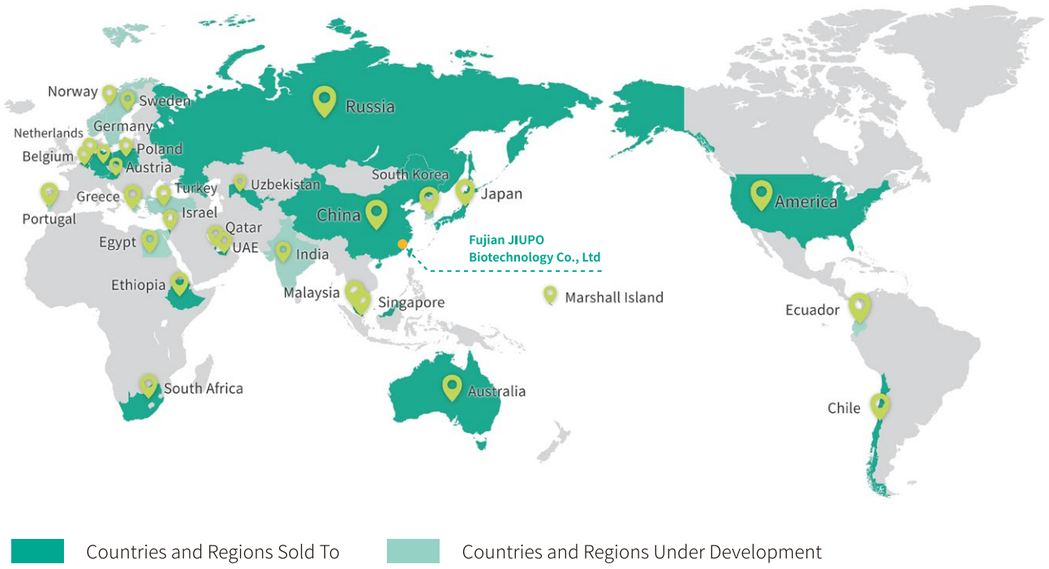
# ABOUT JIUPO

Founded in 2016, Fujian JIUPO Biotechnology Co., Ltd. is a national high-tech enterprise specializing in the research, development, production, and sales of a series of products including plant growth chamber, environmental controlled rooms, and plant growth lights. We have a strong technical research and development team, production factory, and installation team, strictly controlling product quality and fully integrating pre-sales and after-sales services. The goal is to create value for agricultural science research and agricultural production, enabling the use of Chinese-made products in agricultural science experiments worldwide!

JIUPO Biotechnology is committed to providing comprehensive solutions for artificial plant environments. The company has established in-depth cooperation with over 250 research institutions and universities, offering simple solutions for complex indoor agriculture. With its top-notch product design concepts and multiple patented technologies, our product technology and performance are consistently at the forefront of the industry, receiving unanimous recognition from users both domestically and internationally.






## Service and Support >>

# COMPREHENSIVE SERVICES FROM CUSTOMIZATION TO IMPLEMENTATION

### In-depth Research

We engage in thorough communication with customers in the preliminary stage to deeply understand their needs and provide one-stop solutions based on their requirements.

### Custom Product Design

We have a strong technical R&D team, production factory, and installation team, offering comprehensive customized designs based on customer needs.

### Comprehensive After-sales

We provide 24/7 after-sales service hotline support, with numerous service points to promptly address any issues customers may encounter.

**250+**
Partner Institution

**600+**
Climate Rooms Cases

**40+**
Patent certificate

**50+**
Intellectual Properties

Full Mesh Stainless Steel Airflow Wall

Intelligent Environmental Control System

LED Supplemental Lighting Control System


LED Stainless Steel Cultivation Rack

Polyurethane Insulation Layer

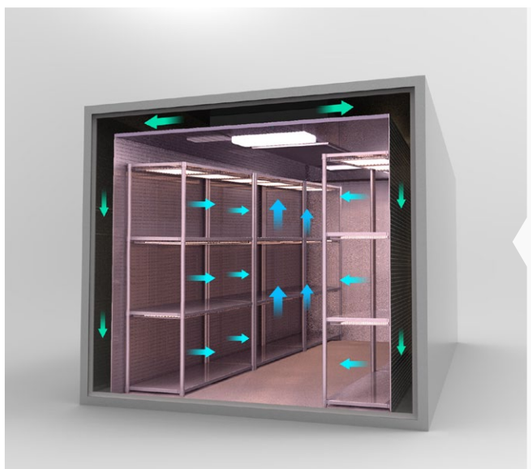
## Environmental Controlled Rooms

Capable of simulating various natural climate conditions, the system can be effectively regulated to meet different needs, such as controlling the temperature, humidity, light, and $CO_2$ concentration inside the chamber. The equipment offers high stability, adopting a rational cooling system and air duct circulation design to maintain and ensure the precision control of temperature, humidity, and other environmental simulation factors within the chamber, thereby meeting the continuity of the plant growth process.

# JIUPO Creates an Artificial Growth Environment for Plants ”

### Remote Control, Intelligent and precise

Featuring a human-machine interactive control system and a self-developed microcomputer environmental control system with PID automatic adjustment, it precisely controls indoor temperature, humidity, light, fresh air, and $CO_2$ concentration. It intelligently simulates natural environmental elements and can also be remotely controlled via a smartphone app.

### Patented Circulation Structure

With full mesh airflow walls on both sides and a long strip return air filter on the top, it ensures the uniformity of various environmental elements throughout the environmental controlled rooms. Cooling, heating, humidifying, and dehumidifying systems are all located in the top cavity, significantly enhancing the space utilization of the environmental controlled rooms.

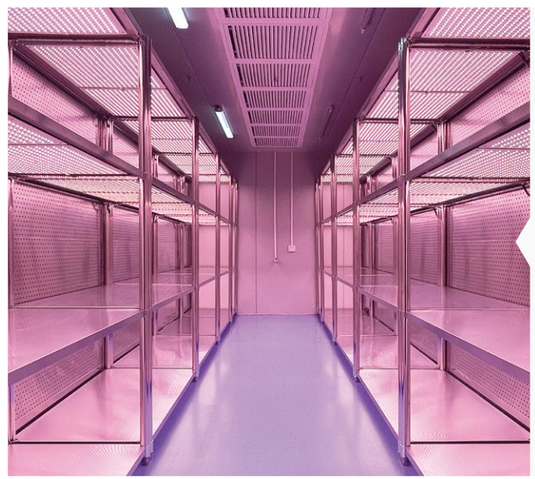


### Plant-Specific LED Light Source

JIUPO has independently developed a variety of LED plant growth lights with rich spectrum that can be customized to meet the characteristic spectrum required for different light experiments. The light intensity can be adjusted from 0-100%, simulating the natural sunlight changes over time with automatic intensity adjustments.

### Beautiful and Durable Materials

Using high-quality polyurethane insulation panels; all components are selected from well-known and reliable industrial brands; modular 304# stainless steel airflow walls and modular 304# stainless steel cultivation racks, providing an aesthetic, sturdy, and durable solution.



### Heat Recycles System for Energy Conservation

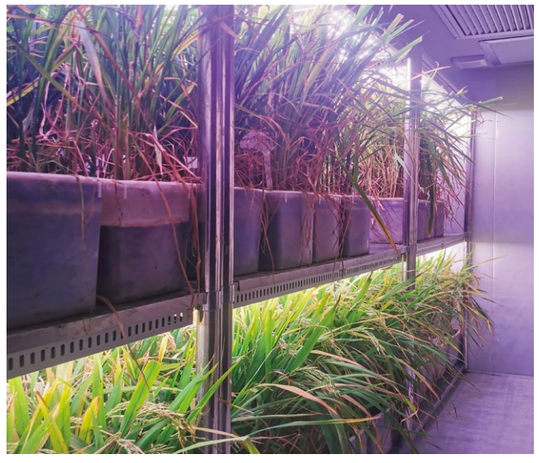
Compressor refrigeration system adopts the heat recovery technology. With cold water cooling, heat pump heating, and stepless variable frequency, without requiring electric heating or dehumidifier, significantly saving energy consumption of environmental controlled rooms.

# CLIMATE ROOMS SOLUTIONS

## Arabidopsis Plant Growth Room

Application: For Arabidopsis and other low-light type plant growth and tissue culture, seed germination and seedling raising.

Functions: Precise control of temperature, humidity and light intensity in the growth room; Adoption of special light source for Arabidopsis growth, no stress phenomenon; Multi-layer cultivation space, high space utilization.



## Rice Plant Growth Room

Application: For rice and other strong light type plants.

Functions: Ensure the indoor full-cycle growth of rice and short growth cycle, high fruiting rate; low heat of supplemental light, do not burn seedlings, can realize multi-layer planting.

## Cotton Plant Growth Room

Application: For artificially simulating a suitable environment for cotton growth with intelligent regulation.

Functions: Artificially simulate sufficient light conditions. Cotton is a light-loving crop, the light compensation point and light saturation point is high, in the light intensity range of 8000-70,000 lux, the photosynthetic intensity increases with the light intensity.

## Melon and Fruit Growth Room

Application: For studies on germination, seedling and cultivation of squash, watermelon, cucumber and other experimental crops of melons and fruits.

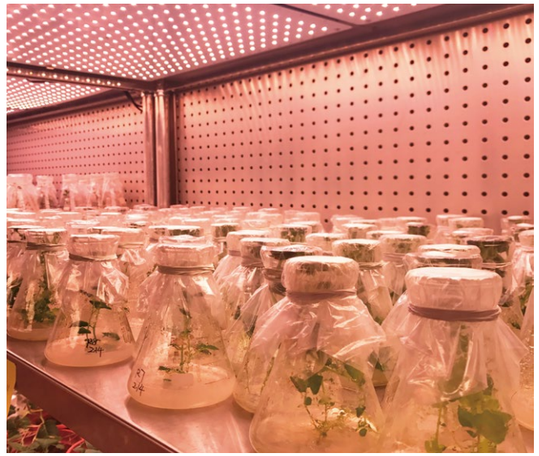
Functions: Simulate natural meteorological conditions, control the indoor temperature, humidity, light and other environmental elements; Provide different supplemental lighting solutions based on plant characteristics; adjustable floor height, high utilization rate.

# CLIMATE ROOMS SOLUTIONS

## Insect Culture Room

Application: For used to research the influence of different environmental conditions on insect life activities, to scientifically manage the occurrence and damage of pests, and to fully explore and protect the beneficial insect resources.

Functions: Simulate the natural meteorological conditions,control indoor environmental factors, and provide light suitable for the characteristics of insects and their vectors according to laboratory needs.



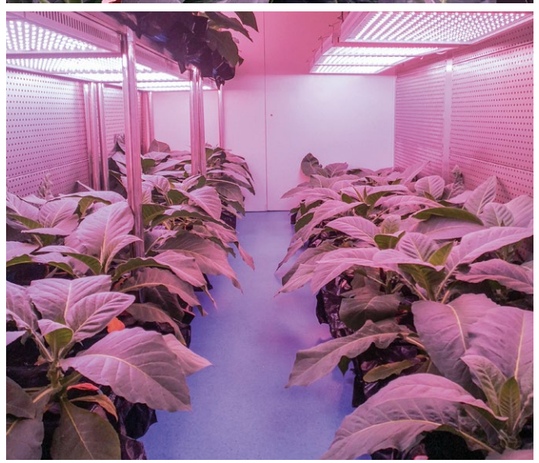
## Tissue Culture Room

Application: Mainly applied to the cultivation and domestication of plant tissues, available for plant tissue culture, protoplast fusion and other three-dimensional culture research. Consisting of preparation area, sterilization area, aseptic operation area, cultivation area, domestication temperature area and other parts, which is a comprehensive laboratory integrating teaching, scientific research, production and technical training.

## Tobacco Plant Growth Room

Application: For studies on molecular biology of simulated plants ( tobacco ) such as transgenic plants, gene mutation etc.

Functions: Precise control of temperature, humidity, light, carbon dioxide and other environmental factors in climate rooms , personalized to meet the characteristics of the spectrum of different light experiments.



## Pepper Plant Growth Room

Application: For studies on molecular biology of simulated plants ( pepper ) such as transgenic plants, gene mutation etc.

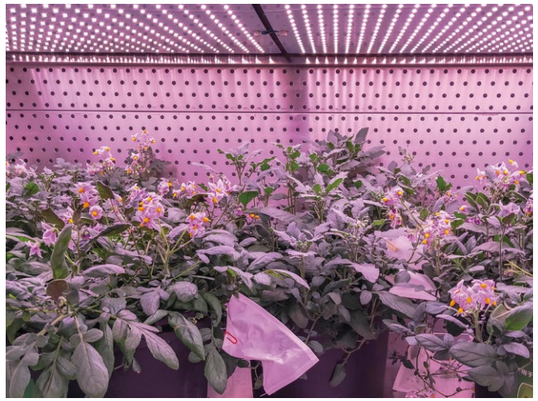
Functions: Precise control of temperature, humidity, light, carbon dioxide and other environmental factors in climate rooms , personalized to meet the characteristics of the spectrum of different light experiments.

# CLIMATE ROOMS SOLUTIONS

## Citrus Plant Growth Room

## Tomato Plant Growth Room

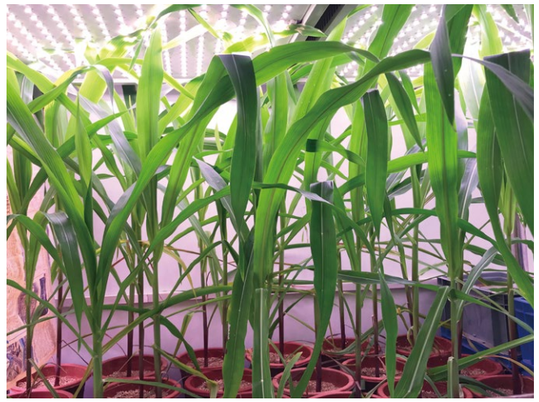
## Soybean Plant Growth Room

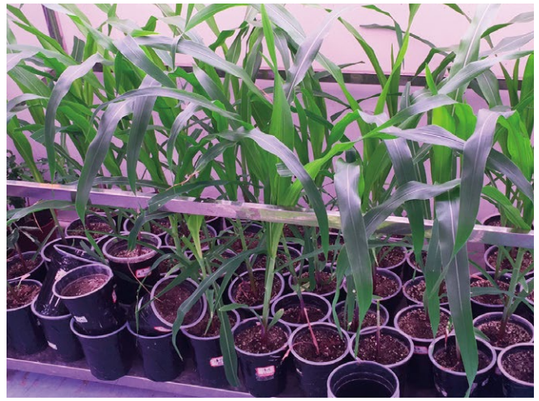


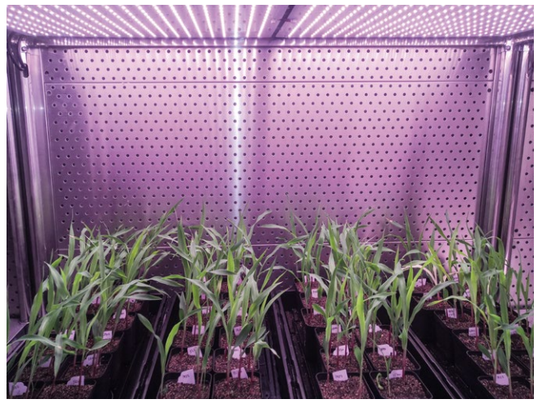
## Potato Plant Growth Room

# CLIMATE ROOMS SOLUTIONS

## Rape Plant Growth Room

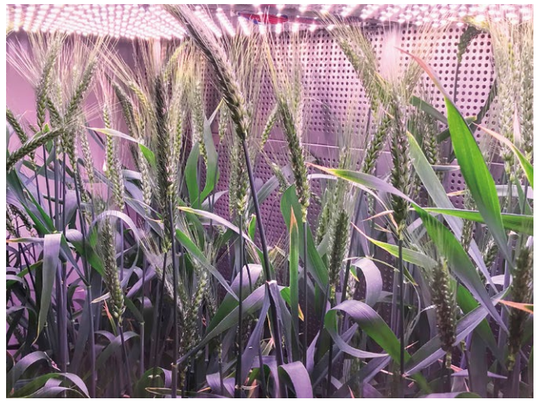


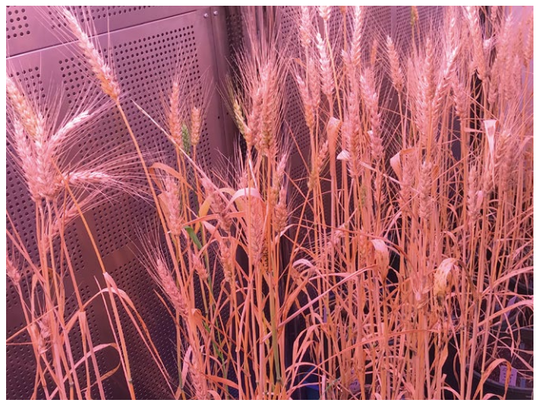




## Corn Plant Growth Room

## Wheat Plant Growth Room





## Lettuce Plant Growth Room

# CLIMATE ROOMS SOLUTIONS

## Constant TEMP & HUM Rooms

Application: Used to test the results and performance of plant, animal, microorganism and other experimental samples in high temperature, low temperature, or constant temperature environment changes.

Functions: Precise temperature and humidity control, simulate the natural environment, the cultivation frame can be flexibly adjusted; Use energy saving technology, environmentally friendly and durable.


## OTC Climate Rooms

Application: Used for outdoor artificial plant cultivation, mainly for plant protection, variety cultivation, disease resistance research and other botanical scientific research.

Functions: Stable and beautiful structure; Self-development OTC intelligent control system, LED outdoor plant lighting panel.

## Glass Greenhouse

Application: Protect plants from the external environment, such as wind, rain, snow, cold, heat, etc., to provide a good living environment for plants, make plants can grow in different seasons.

Functions: In summer, used natural sunlight sources and block excess sunlight, and in winter, weaker sunlight is supplemented by light sources. Temperature and humidity in the room can be control.

## Plant Factory

Application: Used to plant anti-season vegetables, flowers, fruits and edible fungi in scientific research institutes, urban buildings, border posts, islands and reefs, ships, deserts, oil exploration platforms and other places.

Functions: By controlling environmental factors like temperature, humidity, light, $CO_2$ concentration and nutrient solution in the facility, intelligent production of plants can be achieved without soil and natural light.

# MODEL SELECTION



| Product Models | WIPGC-AP44 | WIPGC-AP64 | WIPGC-AP84 | WIPGC-BP43 | WIPGC-BP63 | WIPGC-BP83 | WIPGC-B2P43 | WIPGC-B2P63 | WIPGC-B2P83 | WIPGC-CP41 | WIPGC-CP42 | WIPGC-CP61 | WIPGC-CP62 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| External Dimensions [cm] | 231*291*300 | 231*420*300 | 231*550*300 | 231*291*300 | 231*420*300 | 231*550*300 | 231*291*300 | 231*420*300 | 231*550*300 | 231*291*300 | 231*291*300 | 231*420*300 | 231*420*300 |
| Internal Dimensions [cm] | 204*259*240 | 204*388*240 | 204*518*240 | 204*259*240 | 204*388*240 | 204*518*240 | 204*259*240 | 204*388*240 | 204*518*240 | 204*259*240 | 204*259*240 | 204*388*240 | 204*388*240 |
| Number of Shelves | 4 | 6 | 8 | 4 | 6 | 8 | 4 | 6 | 8 | 4/Lifting | 4 | 6/Lifting | 6 |
| Default Lighting Layers | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 1 | 2 |
| Shelf Height [cm] | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Floor Height [cm] | 43.5 | 43.5 | 43.5 | 59 | 59 | 59 | 59 | 59 | 59 | 180 | 90 | 180 | 90 |
| Cultivation Area [$m^2$] | 11 | 16.5 | 22 | 8.3 | 12.4 | 16.5 | 8.3 | 12.4 | 16.5 | 2.8 | 5.5 | 4.1 | 8.3 |
| Temperature Range | 18 ～ 35℃ | | | | | | | | | | | | |
| Temperature Accuracy | 0.1℃ | | | | | | | | | | | | |
| Temperature Fluctuation | ⩽0.5℃ | | | | | | | | | | | | |
| Low Temperature Module [Optional] | 5 ~ 35℃ / -10 ~ 35℃ | | | | | | | | | | | | |
| Humidity Range | 50 ~ 90%RH | | | | | | | | | | | | |
| Humidity Accuracy | 1%RH | | | | | | | | | | | | |
| Humidity Fluctuation | ⩽3%RH | | | | | | | | | | | | |
| Low Humidity Module [Optional] | 30 ~ 90%RH | | | | | | | | | | | | |
| Default Lighting | LED Lighting Panel | | | | | | | | | | | | |
| Default Light Intensity [$\mu mol/m^2 \cdot s$] | 350 | 350 | 350 | 700 | 700 | 700 | 1000 | 1000 | 1000 | 1600 | 1600 | 1600 | 1600 |
| Optional Lighting | Blue（450nm±5nm）、Red（660nm±5nm）、Far Red（735nm±5nm）、Three Colors BRIR（450nm±5nm，660n±5nmm，735nm±5nm）、Four Colors RBIRW（450nm±5nm，660nm±5nm，735nm±5nm，white light）、Four Colors RGBIR（450nm±5nm，525nm±5nm，660nm±5nm，735nm±5nm）、Seven Colors（450nm±5nm，660nm±5nm，735nm±5nm，UVA，UVB，UVC，white light）、Eighteen Colors（365-375nm，385-395nm，395-405nm，410-420nm，435-445nm，450-455nm，460-465nm，500-510nm，520-530nm，550-560nm，585-595nm，600-610nm，620-630nm，660-665nm，735-745nm，810-820nm，840-850nm，940-950nm） | | | | | | | | | | | | |
| $CO_2$ Control Module [Optional] | Environmental Concentrations ～ 2000PPM / 5000PPM | | | | | | | | | | | | |
| Video Monitor [Optional] | Configure two cameras | | | | | | | | | | | | |

Note: The above specifications are standard configurations, customization orders are acceptable according to the user accurate requirements.

# Plant Growth Chamber

A high-quality plant growth chamber can provide researchers with precise control over environmental factors such as temperature, humidity, light, and carbon dioxide concentration, ensuring long-term and reproducible experiments.


The various models of plant growth chambers from JIUPO can be adjusted for temperature, humidity, and light intensity to suit the growth needs of a wide range of plants, including rice, corn, soybeans, rapeseed, tobacco, tomatoes, pumpkins, watermelons, strawberries, Arabidopsis, and more. Regarding light sources, custom spectra can be designed to meet the specific needs of special plants. Additionally, high and low temperature and humidity stress experiments can be conducted.



## PRODUCT ADVANTAGES

### Customizable Supplemental Lighting Solutions

Spectral Ratio : Proprietary continuous visible spectrum developed to meet the needs of most plants at different growth stages, making one unit versatile for multiple uses;
Light Intensity : Infinitely adjustable from 0-100%, allowing for different light intensities at different times of the day to simulate gradual sunlight changes;
Rich Spectrum : Single spectrum at 450nm, 660nm, 735nm, three-spectrum, four-spectrum, and eighteen-spectrum options;
Eye Protection : Uses composite LEDs to avoid separate red, green, and blue spectra, reducing harm to human eyes.

### Heat Recovery Patent Technology

Adjust light intensity according to the needs of different plants and growth stages to save energy. Proprietary environmental control system and heat recovery technology patents save more than 50% energy compared to similar products.

### Horizontal Circulation for Even Airflow

JIUPO's patented circulation design uses horizontal airflow from both sides with return air in the middle, ensuring more uniform temperature, humidity, and gas concentration across all levels of the chamber.

### Smart Environmental Control for Precision and Efficiency

Environmental Simulation : Any time period can be set for temperature, humidity, light intensity, and CO2 concentration;
Precise Control : PID system adjustment allows temperature and humidity to reach set values quickly;
User Programming : Various protection measures and energy-saving measures can be set, as well as independent operating units;
Remote APP : Standard mobile app allows for convenient remote control and management.

### Meticulous Craftsmanship, Aesthetic and Durable

Piano paint exterior, all stainless steel internal structure, and polyurethane foam one-piece molding ensure good insulation and sturdy structure;
Meticulous workmanship with minimal dimensional error and exquisite craftsmanship; built-in insulated door, aesthetic and elegant;
Reliable quality, capable of continuous operation for ten years after one start-up, with a one-year warranty and lifetime periodic on-site maintenance.

## MODEL SELECTION

300L
Standard
Model

500L
Standard
Model

500L
Dual
Cabinets

1000L
Standard
Model

1600L
Standard
Model

500L
Quadruple
Cabinets

600L
Standard
Model

800L
Standard
Model

2000L
Standard
Model

2000L
Observation
Window

## TECHNICAL SPECIFICATIONS

| Product Models | BPC300H | BPC500H | BPC500DH | BPC500FH | BPC600H | BPC800H | BPC1000H | BPC1600H | BPC2000H |
|---|---|---|---|---|---|---|---|---|---|
| External dimensions W*D*H[mm] | 770*720*1760 | 900*800*1940 | 900*800*1940 | 1070*720*1940 | 900*800*1940 | 1165*800*1940 | 1920*753*2010 | 2255*820*2010 | 2400*1000*2010 |
| Internal dimensions W*D*H[mm] | 623*498*1009 | 743*590*1163 | (753*580*560)*2 | (686*503*402)*4 | 744*567*1474 | 761*656*1550 | 1240*485*1820 | 1568*576*1818 | 1715*720*1818 |
| Volume[L] | 313 | 510 | 489 | 554 | 621 | 773 | 1094 | 1642 | 2244 |
| Default lighting layers | 4 | 4 | 2*2 | 1*4 | 4 | 4 | 5 | 5 | 5 |
| Shelf height[cm] | 23 | 26 | 26 | 36 | 34 | 35 | 34 | 34 | 34 |
| Cultivation area [$m^2$] | 1.2 | 1.6 | 0.8*2 | 0.3*4 | 1.6 | 1.8 | 2.8 | 4.1 | 6 |
| Temperature | Temperature range：3 ~ 45℃，Low temperature option：-10～45℃，Temperature accuracy：0.1℃，Temperature fluctuation：≤0.5℃，Temperature uniformity：±2℃ | | | | | | | | |
| Humidity | Humidity range：50 ~ 90%RH，Low humidity option：30～90%RH，Humidity accuracy：1%RH，Humidity fluctuation：≤3%RH，Humidity uniformity：±5%RH | | | | | | | | |
| Default lighting | LED Cool White（380~780nm）& 300μmol/$m^2$·S（@10cm from the lights） | | | | | | | | |
| Upgrade lighting | Blue (450nm±5nm)、Red (660nm±5nm)、Far Red (735nm±5nm)、Three colors RBIR (450nm±5nm，660nm±5nm，735nm±5nm)、Four colors RBIRW (450nm±5nm，660nm±5nm，735nm±5nm，white light)、Eighteen colors/UVA/UVB/UVC | | | | | | | | |
| Peak Power (220V) [KW] | 1.6 | 1.9 | 2.7 | 1.8 | 1.8 | 2.3 | 2.6 | 4.1 | 5.4 |
| Working voltage | 220VAC / 50HZ | | | | | | | | |
| Working environment temperature | 5 ～ 35℃ | | | | | | | | |
| Other options | $CO_2$ Control module：Ambient concentration ～2000ppm/5000ppm，Accuracy：70ppm，Observation window | | | | | | | | |

# MOVEABLE GROWTH CHAMBER

## Tissue Culture Chamber

| Product Models | TCC300 | TCC500 | TCC500D | TCC500F | TCC600 | TCC800 | TCC1000 | TCC1600 | TCC2000 |
|---|---|---|---|---|---|---|---|---|---|
| External dimensions W*D*H[mm] | 770*720*1760 | 900*800*1940 | 900*800*1940 | 1070*720*1940 | 900*800*1940 | 1165*800*1940 | 1920*753*2010 | 2255*820*2010 | 2400*1000*2010 |
| Internal dimensions W*D*H[mm] | 623*498*1009 | 743*590*1163 | (753*580*560)*2 | (686*503*402)*4 | 744*567*1474 | 761*656*1550 | 1240*485*1820 | 1568*576*1818 | 1715*720*1818 |
| Volume[L] | 313 | 510 | 489 | 554 | 621 | 773 | 1094 | 1642 | 2244 |
| Default lighting layers | 4 | 4 | 2*2 | 1*4 | 5 | 5 | 6 | 6 | 6 |
| Shelf height[cm] | 23 | 26 | 26 | 36 | 27 | 28 | 28 | 28 | 28 |
| Cultivation area [$m^2$] | 1.2 | 1.6 | 0.8*2 | 0.3*4 | 2 | 2.2 | 3.4 | 5 | 7.2 |
| Temperature | Temperature range：3 ~ 45℃，Low temperature option：-10～45℃，Temperature accuracy：0.1℃，Temperature fluctuation：≤0.5℃，Temperature uniformity：±2℃ | | | | | | | | |
| Default lighting | LED Cool White（380~780nm）& 300μmol/$m^2$·S（@10cm from the lights） | | | | | | | | |
| Upgrade lighting | Blue (450nm±5nm)、Red (660nm±5nm)、Far Red (735nm±5nm)、Three colors RBIR (450nm±5nm，660nm±5nm，735nm±5nm)、<br>Four colors RBIRW (450nm±5nm，660nm±5nm，735nm±5nm，white light)、Eighteen colors/UVA/UVB/UVC | | | | | | | | |
| Peak Power (220V) [KW] | 1.6 | 1.9 | 2.7 | 1.8 | 1.8 | 2.3 | 2.6 | 4.1 | 5.4 |
| Working voltage | 220VAC / 50HZ | | | | | | | | |
| Working environment temperature | 5 ～ 35℃ | | | | | | | | |
| Other options | Observation window，Bottom air outlet | | | | | | | | |

## Constant TEMP & HUM Chamber

| Product Models | THC300 | THC500 | THC500D | THC600 | THC800 | THC1000 | THC1600 | THC2000 |
|---|---|---|---|---|---|---|---|---|
| External dimensions W*D*H[mm] | 770*720*1760 | 900*800*1940 | 900*800*1940 | 900*800*1940 | 1165*800*1940 | 1920*753*2010 | 2255*820*2010 | 2400*1000*2010 |
| Internal dimensions W*D*H[mm] | 623*498*1009 | 743*590*1163 | (753*580*560)*2 | 744*567*1474 | 761*656*1550 | 1240*485*1820 | 1568*576*1818 | 1715*720*1818 |
| Volume[L] | 313 | 510 | 489 | 621 | 773 | 1094 | 1642 | 2244 |
| Default lighting layers | 4 | 5 | 2*2 | 6 | 7 | 8 | 8 | 8 |
| Shelf height[cm] | 23 | 21 | 26 | 22 | 19 | 20 | 20 | 20 |
| Cultivation area [$m^2$] | 1.2 | 2 | 0.8*2 | 2.4 | 3.1 | 4.5 | 6.6 | 9.6 |
| Temperature | Temperature range：-10 ~ 70℃，Temperature accuracy：0.1℃，Temperature fluctuation：≤0.5℃，Temperature uniformity：±2℃ | | | | | | | |
| Humidity | Humidity range：10 ~ 95%RH，Humidity accuracy：1%RH，Humidity fluctuation：≤3%RH，Humidity uniformity：±5%RH | | | | | | | |
| Peak Power (220V) [KW] | 1.6 | 1.9 | 2.7 | 1.8 | 2.3 | 2.6 | 4.1 | 5.4 |
| Working voltage | 220VAC / 50HZ | | | | | | | |
| Working environment temperature | 5 ～ 35℃ | | | | | | | |
| Other options | Optional light source ( intensity 0-100% infinitely adjustable )，Observation window | | | | | | | |

# $CO_2$ Incubator



## INNOVATION ADVANTAGES

### Patented Box Cold Break Structure

Inner chamber and incubator body are separated, the incubator door is in contact with the sealing ring when it is closed, not in direct contact with the inner chamber, and the limit block and L-shaped limit block are made of electrically insulating materials, which can maximize the reduction of heat transfer, realize the cold break, and save electric power.

### Patented Built-in Door and Window Technology

Our $CO_2$ incubators feature a patented built-in door and window technology with double-layer tempered glass windows. This unique and attractive design not only enhances the insulation performance of the incubator and avoids fluctuations in temperature, $CO_2$ concentration and external contamination, but also minimizes condensate overflow when the door is opened.

### Patented Circulating Airflow Design

Our $CO_2$ incubators feature a patented circulating airflow design. In this system, air is drawn in from the top of the front end of the internal chamber, passing through a HEPA filter, and guided by the descending airflow structure. It is then propelled by an upstream fan to the rear airflow duct and evenly distributed through the perforated rear panel. This circulation structure ensures uniform temperature, humidity, and $CO_2$ concentration across all corners of the incubator. Additionally, it continuously filters and purifies the air within the chamber, creating a controlled and clean environment for your experiments.

### CO2 Sensor Heat Insulation Device

One-touch autoclaving high-temperature sterilization can activate the $CO_2$ sensor's external thermal protection device without disassembly of the sensor. This not only protects the $CO_2$ sensor, but also prevents secondary contamination during sensor reinstallation after sterilization.

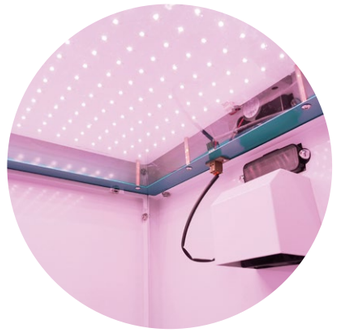
### Simplified Design Structure

The internal structure of the chamber is characterized by a simplified design, consisting of just four components: stainless steel shelves, suspended backplate, HEPA filter, and a top airflow guide structure. These components can be easily and quickly disassembled without the need for tools, and there's no requirement to disassemble any electrical components. This streamlined design simplifies maintenance and ensures efficient and hassle-free operation.

### Intelligent Precision Control System

Temperature and $CO_2$ concentration control adopts intelligent PID control with high accuracy, and an intuitive touchscreen human-machine interface, easy to operate. Additionally, an integrated independent temperature protection control circuit, and adopts high-temperature sterilizing method.

| Technical Specifications | |
|---|---|
| Outer Dimensions ( WxDxH ) | 720 x 613 x 894mm |
| Inner Dimensions ( WxDxH ) | 607 x 474 x 682mm |
| Heating Method | Gas-Jacketed |
| Internal Volume | 176L |
| Standard Number of Shelves | 6 |
| Shelf Height | 90mm |
| Water Tray Capacity | 7.5L |
| Temperature Range | Room temperature +5°C to 55°C |
| Temperature Display Resolution | 0.1°C |
| Temperature Fluctuation [±K] | ±0.3°C (@37°C) |
| Temperature Uniformity [±K] | ±0.5°C (@37°C) |
| $CO_2$ Sensing Technology | Non-Dispersive Infrared (NDIR) Principle<br>Explosion Protection Level: Exia II C T4 Ga |
| $CO_2$ Concentration Control Range | Ambient to 20% |
| $CO_2$ Accuracy | 0-1%vol: ⩽±0.06%vol；1-20%vol: ⩽±(0.05% + 5% of true value) |
| $CO_2$ Display Resolution | 0.1% |
| $CO_2$ Control Deviation | ±0.3% |
| Device Net Weight (Empty) | 90kg |
| Internal Fan Power | 120W |
| Electric Heating Power | 800W |
| Peak Power | 950W |
| Operating Environment Temperature | 5°C to 30°C |
| Operating Voltage and Current | 220VAC / 50Hz |
| Air Filtration Method | HEPA Filtration |
| Disinfection Method | Moist Heat Sterillization (120°C) |



### Plant specific spectrum

400-700nm Visible light
Soft light with eye protection

### Easy control

Adjustable lighting
time & intensity

### Simple and beautiful

Convenient assembly
Contrast color design

Top light plant growth chamber, modular design, easy assembly, can control the light intensity and air circulation, can be used as temporary plant planting equipment.

## Product parameter

**Exterior Dimension:** 660*540*800mm
**LED power:** Pmax=150W
**Input voltage:** 100-277VAC 50/60Hz
**Input current:** 1.8A
**Bulk material:** Cold rolled sheet
**Operating temperature:** 4°C-45°C
**Spectral type:** Full spectrum
**Product net weight:** 21.5kg

# SIMPLE TYPE GROWTH CHAMBER

Only need one square meter
Spread green energy at any time


# Plant Growth Lighting Solutions

## UFO Type LED Lamp

- Pure aluminum shell, lightweight heat dissipation.
- Isolated power supply, waterproof grade IP65.
- High light transmittance glass, high light transmittance.
- PCB aluminum substrate with board thickness of 2.0mm and thermal conductivity of 2W, high thermal conductivity.
- Perforated structure prevents fogging caused by internal and external pressure.
- JIUPO lamp bead innovation adopts multi-core, soft eye protection.

Customized brand for research labs. ”

## TGD Type LED Lamp

- Cast aluminum shell, lightweight heat dissipation.
- Isolated power supply, waterproof grade IP65.
- High light transmittance glass, high light transmittance.
- PCB aluminum substrate with board thickness of 2.0mm and thermal conductivity of 2W, high thermal conductivity.
- Perforated structure prevents fogging caused by internal and external pressure.
- JIUPO lamp bead innovation adopts multi-core, soft eye protection.

Provide plant culture lighting solutions. ”

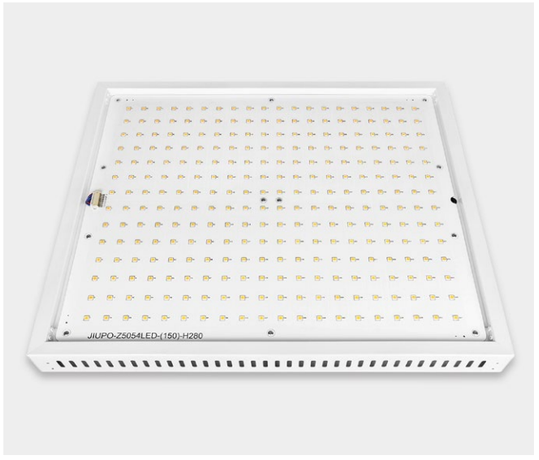
## T5 LED Lighting Tube

- All-plastic integrated form shell, safe and simple.
- Overall length of 1.2M, flexible connectors for plugging and unplugging.
- JIUPO lamp bead innovation adopts multi-core, soft eye protection.

Put a controllable sun on the plant. ”

## LED Lighting Panels

- JIUPO self-developed a diversity of special spectral LED light sources.
- Spectral intensity of each light source is individually adjustable
- Meet the special requirements of different plants for light sources
- Planar lamp plate structure with uniform and stable illumination




Suitable for all types of plant culture in environmental controlled rooms. ”

# Seed Preservation Rooms

Germplasm bank is a facility built with low temperature and low humidity storage conditions by using refrigeration, dehumidification, and heat preservation technology. According to different storage conditions, it can be divided into long-term bank, medium-term bank, and short-term bank.


### Rational distribution

Meet the management process of germplasm bank, meet fire prevention regulations.

### Energy saving and stability

Materials and noise are environmentally friendly, equipment is reliable and with high energy efficient.

### Advanced

Access and operation automation, intelligent remote monitoring.

### Large and systematic storage

Achieve different kinds germplasm preservation.




| Category of germplasm bank | Main technical indicators | Storage life | Storage feature |
|---|---|---|---|
| Short-term bank | Temperature：10~15±2°C<br>Relative humidity :≤50%RH | 3~5years | 1. Short-term storage or turnover;<br>2. Seed moisture content : 10 % ;<br>3. Seed packaging : both sealed and unsealed; |
| Medium-term bank | Temperature：-4~4±2°C<br>Relative humidity :≤50%RH | 10~20years | 1. Maintain the genetic integrity of the germplasm for more than 10 years;<br>2. Seed moisture content : 6 %±2 % ;<br>3. Seed packaging : various containers, closed or open storage ; |
| Long-term bank | Temperature：-18~2±2°C<br>Relative humidity :≤50%RH | 20~50years | 1. Long-term storage of seeds to ensure that the genetic integrity of seeds is maintained for more than 20 years;<br>2. Conserved germplasm resources are generally closed for distribution, and only seed for propagation is provided to medium-term banks and original seed supply units;<br>3. Seed moisture content : 5% ± 2%; |
| Duplicate bank | Temperature：-18~2±2°C<br>Relative humidity：≤50%RH | 20~50years | 1. Used for long-term germplasm resources for duplicate preservation, storage conditions consistent with the long-term bank;<br>2. Generally no vitality monitoring during storage, periodic registration of operation required. |

## PRODUCT FEATURES AND PRINCIPLES

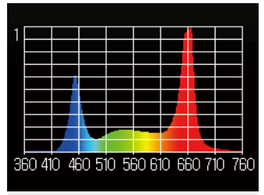
- **Safety Issues:** Considering that germplasm bank is used for long-term and indefinite protection of germplasm resources, factors such as quake-proof, water-proof, fire-proof, geologic hazards, and accidents should be considered in the design and construction process;
- **Reliability Issues:** The purpose of germplasm repository is to extend the lifespan of seeds as much as possible. Providing stable, reliable low-temperature and low-humidity storage conditions is essential for achieving this.
- **Rational Layout:** The overall layout design should fully consider the pre-storage process.
- **Operational Energy Consumption:** Given that the germplasm repository needs to operate continuously for many years, energy consumption for cooling and dehumidification should be considered to reduce carbon emissions. This includes minimizing the use of high-power dehumidifiers, using central chiller units for larger scales, and adopting heat pump methods for cooling and dehumidification.

## OVERALL DESIGN PLAN

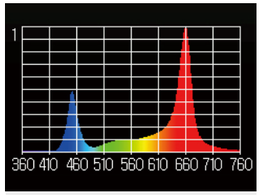
- **Storage Body:** The walls use 50~100mm polyurethane insulation panels, and the floor uses polyurethane insulation panels with embossed aluminum plates. The door frame and door seams are using moisture-proof and anti-freeze electric heating strips. Based on the actual condition, the low-temperature storage floor should consider thermal insulation, anti-freeze treatment, and vapor barrier moisture-proof treatment.
- **Refrigeration:** Using fully enclosed scroll industrial compressors, which are efficient, low-noise, and durable, with overallocation evaporator and condenser heat exchange areas. The refrigeration units are configured with one standby unit and one active unit, with the operational coefficient controlled within 50% to ensure long-term reliable operation.
- **Hot Gas Defrosting:** Hot gas from the refrigerant discharged by the compressor is directed into the evaporator coil through control valves, quickly melting the frost layer into water and draining it out.
- **Dehumidification:** Utilizing air conditioning units and coil heat exchangers working simultaneously under computer control to form a dehumidification cycle, eliminating the need for a separate dehumidifier.
- **Intelligent Environmental Control System:** A user-friendly interface allows convenient temperature setting. Through intelligent algorithms, the system can both cool to the set temperature and dehumidify with low energy consumption.
- **Seed Racks:** Mobile compact seed racks or stainless-steel shelves.
- **Pre-treatment Drying Equipment:** Using "Double 15" drying boxes and drying rooms, with temperature set at 15°C and humidity at 15%.



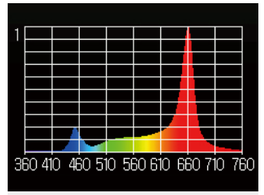
## Spectra Cases



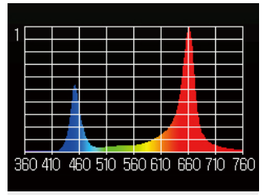

JIUPO-FULL SPECTRUM 2#A



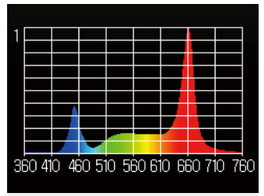

JIUPO-FULL SPECTRUM 2#B



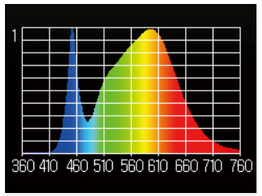

JIUPO-FULL SPECTRUM 3#A



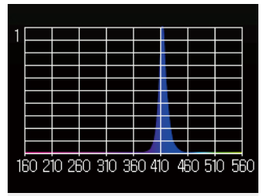

JIUPO-FULL SPECTRUM 4#A



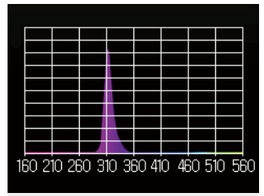

JIUPO-FULL SPECTRUM 5#



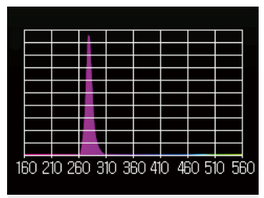

JIUPO-4000K WHITE LIGHT



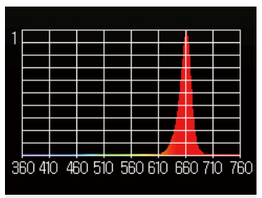

JIUPO-UVA



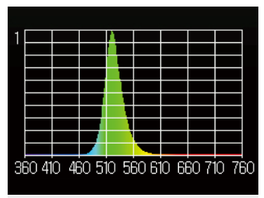

JIUPO-UVB



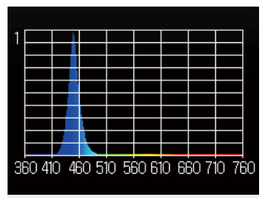

JIUPO-UVC



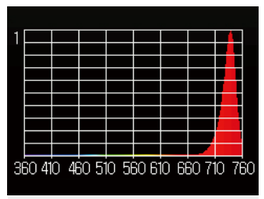

JIUPO-R



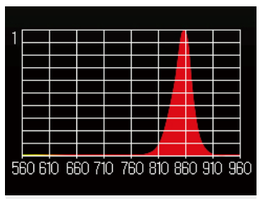

JIUPO-G



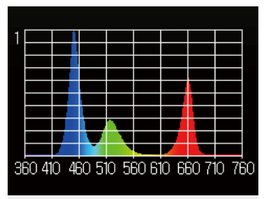

JIUPO-B



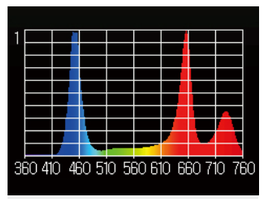

JIUPO-IR



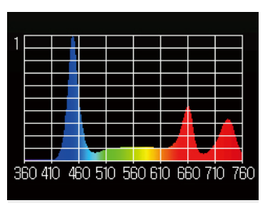

JIUPO-FAR RED



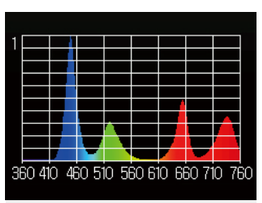

JIUPO-RGB



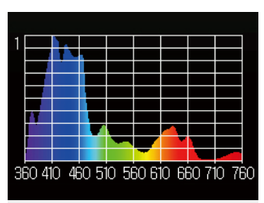

JIUPO-RBIRW (2#B)



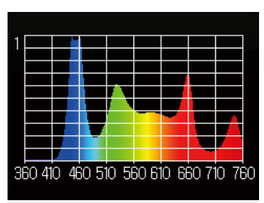

JIUPO-RBIRW
(STANDARD WHITE LIGHT)




JIUPO-RGBIR




JIUPO-EIGHTEEN COLORS




JIUPO-WRGBIR

## PLANTING CASES


Rice


Tobacco


Arabidopsis


Soybean


Citrus


Magic bean


Bamboo

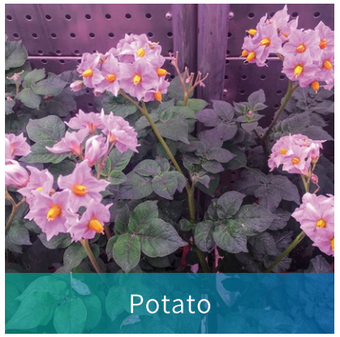

Pepper


Wheat


Water spinach


Banana


Pumpkin


Potato


Spring vegetable


Strawberry

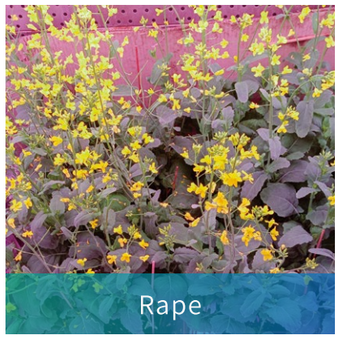

Cucumber


Cocksfoot


Morning glory


Tomato


Sweet potato


Rape


CarthamiFlos


Purple perilla


Lupine