



CHINA GREEN AGRO

**Global Solution Provider Of Modern
Agriculture And Environmental Tourism**

VISION:

CGA • Make Better World.

CORE VALUES:

- Possess a sound personality and the ability to think independently;
- Experience the meaning of life;
- Explore the unknown and use technology for benefit of whole human beings with a spirit of fairness, kindness, bravery and innovation.

Plant factory concept

Plant factory is an efficient agricultural system that realizes annual continuous production of crops through high-precision environmental control in the facility. It is a labor-saving production that uses computers to automatically control environmental conditions such as temperature, humidity, light, CO₂ concentration, and nutrient solution of plant growth, so that plant growth in the facility is not subject to or rarely subject to natural conditions.



Multistory plant factory



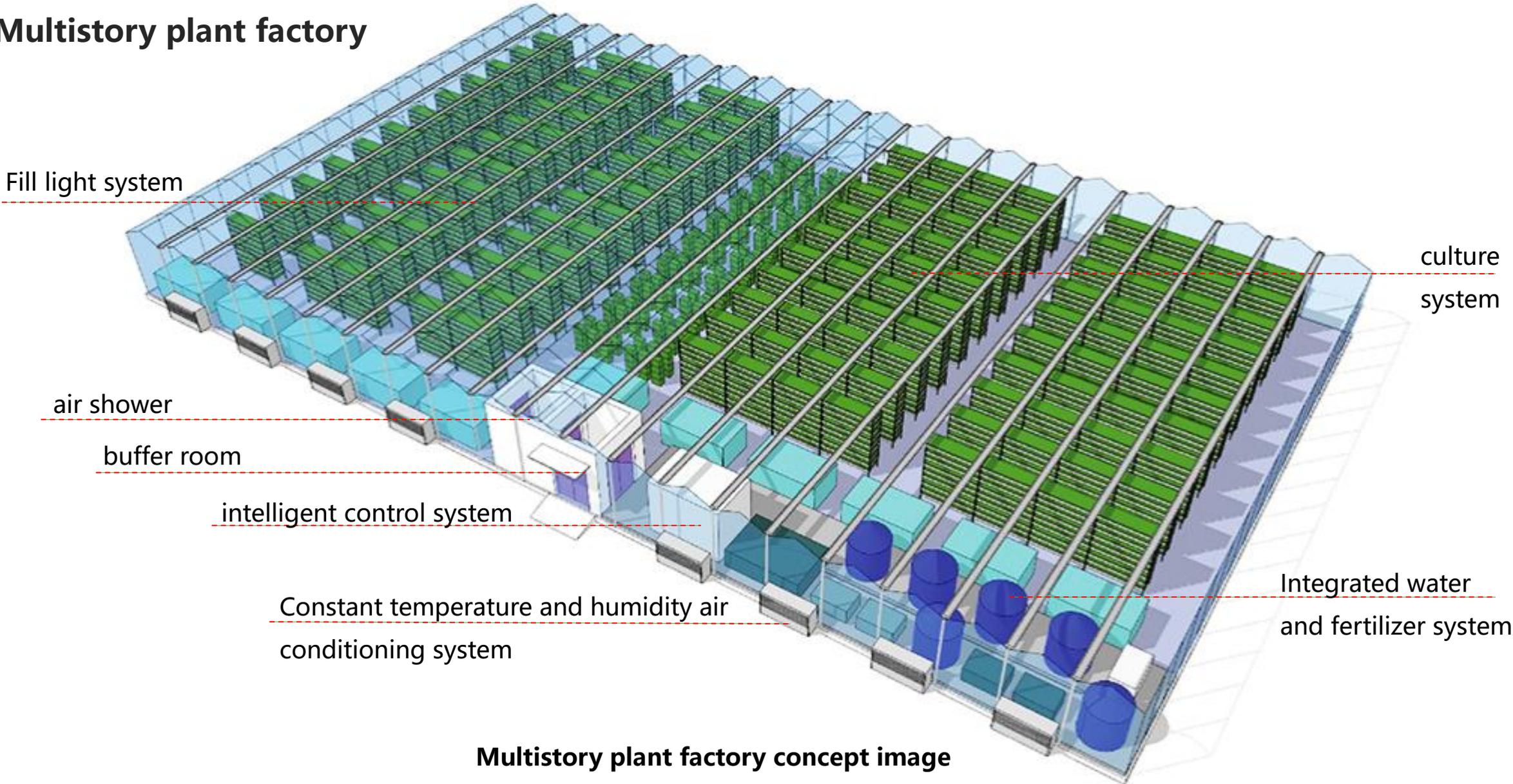
Multistory plant factory



Item	Outside planting	Greenhouse planting	Plant factory
Growth cycle (standard 80g/plant)	70days	40-50days	20days
Yield per square meter (plant/crop)	18	25	280-320
cultivated area	seasonal	seasonal	Annual production
Water recycling rate	< 0.1%	< 1%	> 90%
Pesticide hormone	more	more	no

It has automatic three-dimensional cultivation system, automatic nutrient solution supply system, artificial light source control system, temperature and humidity, wind speed, carbon dioxide and other growth factors monitoring system, power distribution system, AI intelligent control system and video surveillance image wireless transmission system.
 Varieties recommended: leafy vegetables, herbs, mushroom, etc.

Multistory plant factory



Multistory plant factory concept image

Multistory plant factory

superiority

- 1) The planning of crop production, the balance of annual production, the stability of yield and quality
- 2) Short crop growth cycle, high facility utilization rate, high yield per unit area, high output value
- 3) High degree of mechanization and automation, low labor intensity, less labor, easy working environment
- 4) No pesticides, no pollution
- 5) Multi-layer, three-dimensional cultivation, greatly saving land space
- 6) Not affected by natural conditions such as geography and climate, agricultural production can even be carried out in extreme climate zones, outer space and other planets
- 7) Closely integrated with modern biotechnology to produce rare, high-priced, nutrient-rich plant products

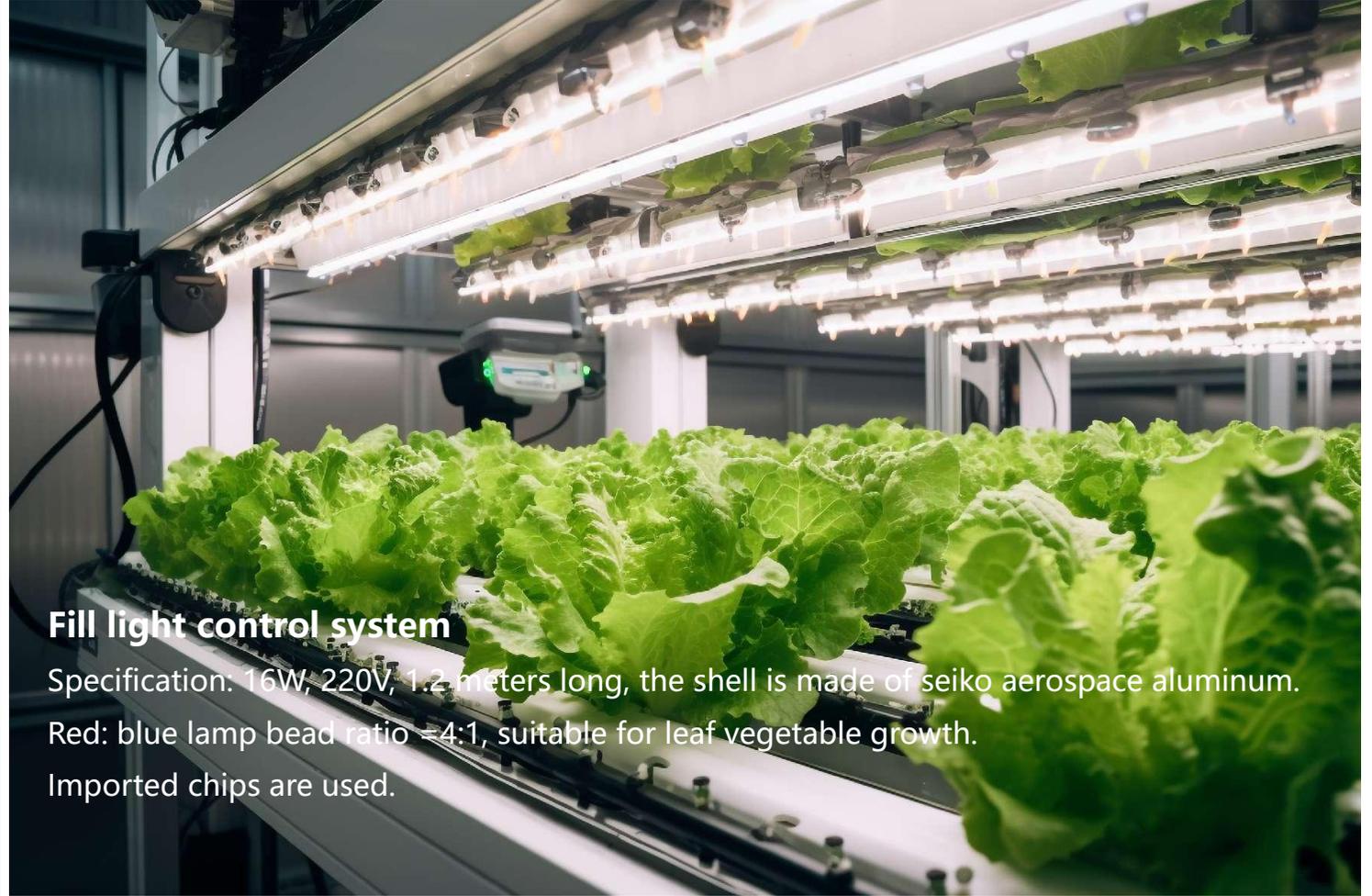


Multistory plant factory



Ultraviolet disinfection system

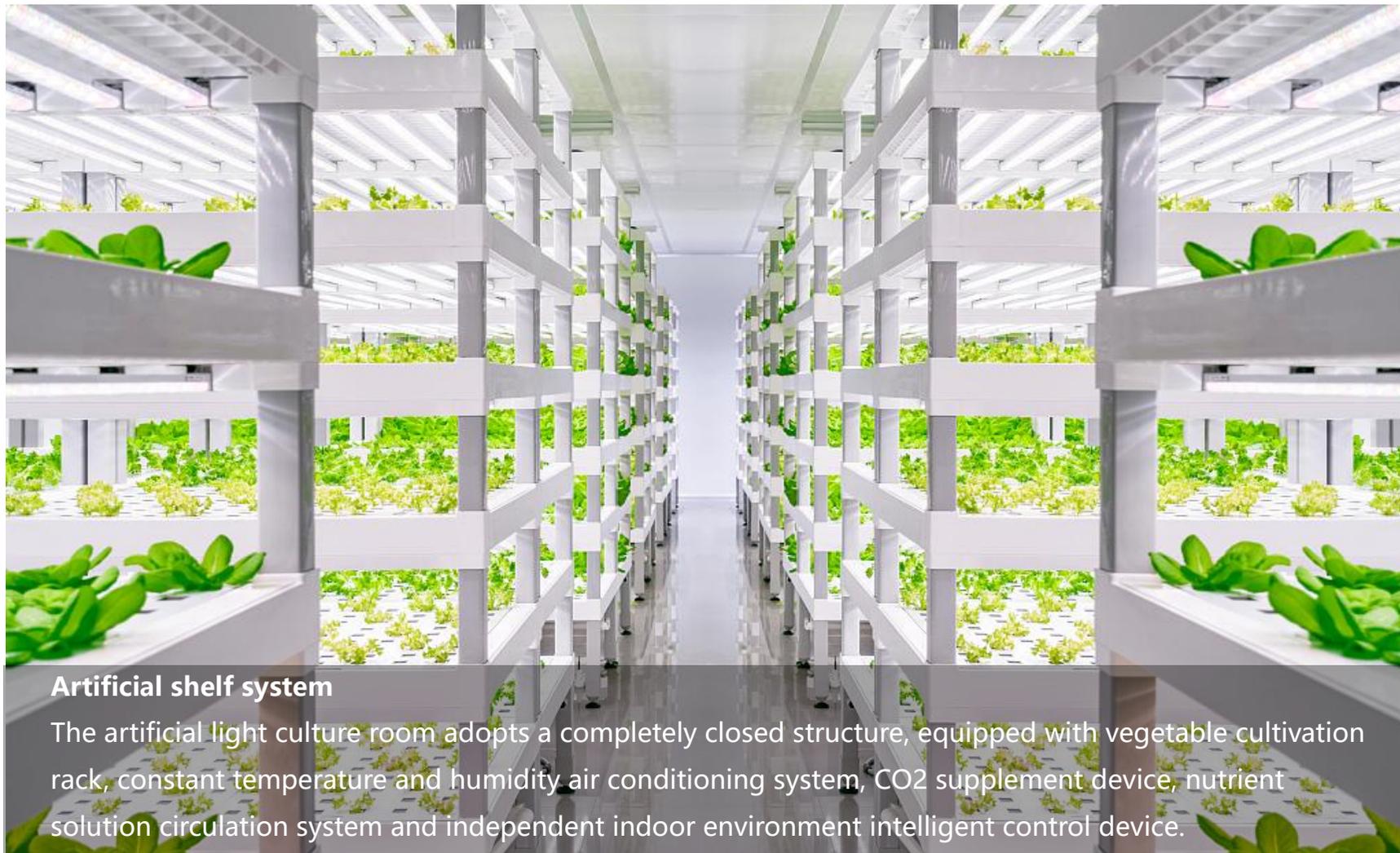
Ultraviolet sterilizer is to kill microorganisms in raw water by using the strong killing effect of ultraviolet light with a wavelength of 225nm-275nm.



Fill light control system

Specification: 16W, 220V, 1.2 meters long, the shell is made of seiko aerospace aluminum. Red: blue lamp bead ratio =4:1, suitable for leaf vegetable growth. Imported chips are used.

Multistory plant factory



Automated vertical plant factory



Automated vertical plant factory



- Relying on robots, shuttles, artificial intelligence lifting equipment, etc., to achieve multi-task scheduling, real-time inspection and other collaborative work capabilities.
- Independent data storage and analytical computing capabilities to help growers achieve environmental control and regulation, collection and analysis of growth data, etc.
- Improve the accuracy of plant cultivation, enhance the scientific management of the cultivation workshop, and realize the unmanned

Automated vertical plant factory



- Group modular monitoring of crop temperature, humidity, monitoring of crop growth, automatic identification and positioning. Wireless transmission of data collection, ensuring that each vegetable is a growth record library.
- It has broken through the key technologies such as the fine coupling automatic regulation of light-nutrition-environment parameters of leaf vegetable seedlings, intelligent transportation of leaf vegetable production logistics in hydroponics, intelligent transplantation of leaf vegetable seedlings, and realized the three-dimensional cultivation equipment of leaf vegetable seedlings logistics transportation and intelligent light-nutrition-environment fine control
- Relying on the imported expert database, growers can provide task time for the whole planting cycle from sowing to harvesting, and carry out cultivation management throughout the process.

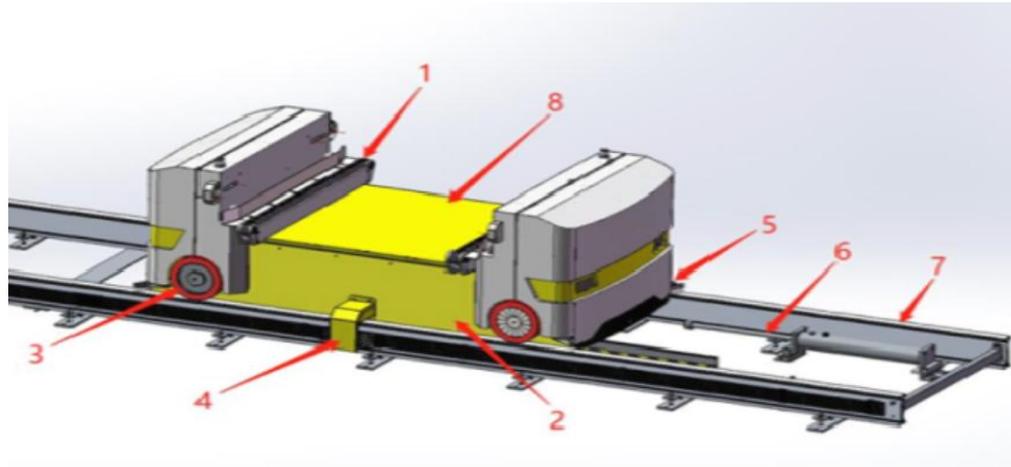
Automated vertical plant factory

- The high-speed intelligent shuttle has variable size processing technology, automatic detection and correction of planting slot position information, walking vibration and noise reduction technology, multistage fork transmission technology, walking acceleration and deceleration intelligent matching technology, modular design technology, embedded control system technology.
- Pallet shuttle robot
- main parameters :
 - 1, Maximum operating speed: 160 m/min;
 - 2, Acceleration: 1m/s²;
 - 3, Load transfer speed: 18 m/min
 - 4, Mode of movement: Straight line



Component

- 1, Load transfer platform
- 2, Chassis component
- 3, Travelling wheel component
- 4, power supply system
- 5, motionlink
- 6, Anti-collision buffer component
- 7, track system
- 8, shield



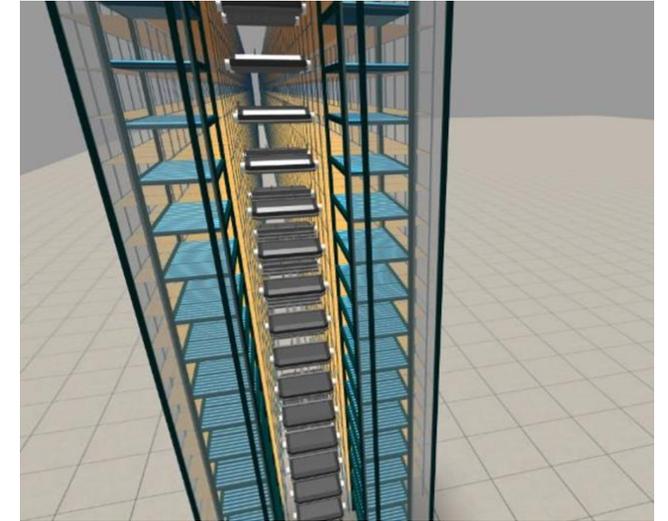
Automated vertical plant factory



- Roller conveying system: The product is modular, which is convenient for later program adjustment and maintenance, and the single roll adopts a one-to-one control scheme, which is easy to adjust and assemble on site. The roller is made of metal, electrostatic spraying on the surface, beautiful appearance.



- Chain conveying system: The conveying medium of the chain conveying machine is the tray, which can be adapted to various working conditions such as low temperature, high temperature, dusty, toxic media, corrosive media and rough loading. Its operation is carried out by the driving sprocket and the chain mesh to drive the chain.



- Multi-layer beam pallet planting frame: mainly composed of frame piece, beam, top beam, horizontal tie rod device, vertical tie rod device hanging beam, end grid, footing, sky rail, etc.

Planting varieties



lettuce + kale + mint + cabbage + oyster mushroom + mushroom + celery

National Vegetable Quality Standard Center

The greenhouse covers an area of 90,000 square meters, the main contents include: vertical three-dimensional plant factory, intelligent water and fertilizer integration, intelligent equipment and robots, agricultural Internet of things big data, tidal seedling factory, etc.

Planting varieties include: lettuce, cabbage, kale, small celery, beet, oyster mushroom, mushroom, mint, etc.

Year-round production: not subject to seasonal restrictions, to achieve uninterrupted production throughout the year.

Production cycle: 30%-50% shorter growth cycle than traditional agriculture.

Yield per unit area: The annual yield per square meter reaches 40-60 kg, which is much higher than traditional planting methods.

Water resources: water saving more than 90%, water recycling system to ensure efficient use.

Fertilizer: Save 30%-50% of fertilizer use.

Market value: high-quality pollution-free products have high competitiveness in the market, and the price can reach 2-3 times that of ordinary agricultural products.

Investment return: The expected investment return period is 3-5 years, with good economic prospects.



National Vegetable Quality Standard Center



Beijing Nongzhong IoT plant factory

The main construction area of the plant factory project is 26,000 square meters, which is a large-scale and mass-produced local plant factory, and also a three-layer vertical plant factory with full environmental control, vertical posture, standardization and large-scale mass production. In April 2016, it was designated as the "Third National Urban Modern Agriculture On-site Conference", and received more than 200 provincial and ministerial leaders from 31 provinces and cities across the country to visit and study. More than 100 mainstream news media such as CCTV2, CCTV4, CCTV7, BTV, Sina.com, Tencent, and the Economic Observer carried out full-page tracking reports for a long time, and shot a number of modern agriculture documentaries.



Beijing Fangshan LED plant factory

Beijing Fangshan LED Plant Factory is the first production-type fully enclosed artificial light plant factory in Beijing, through the scientific allocation of nutrient solution formula, red and blue LED artificial light formula and light time, as well as the control of carbon dioxide concentration, temperature and humidity environmental conditions. The growth cycle of leafy vegetables and lettuces can be shortened to 35 days, and the yield of a single plant can reach more than 100 grams.

At present, the plant has cultivated many varieties of Meiluo lettuce, elegant lettuce, Baoyulai lettuce, Jingshui cabbage, kale, etc. The cultivated vegetables have high nutritional content, good taste, and low nitrate content.

