



• Product

- A graphene electric radiator
- An electric warmer
- Agricultural electric heating wire
- Smart farm
- LED for plant cultivation
- Floating sun
- CCTV
- A facility house
- A positive liquid feeder
- Multi-layer thermal curtain

Environmentally friendly smart agricultural and livestock facilities and materials specialized company

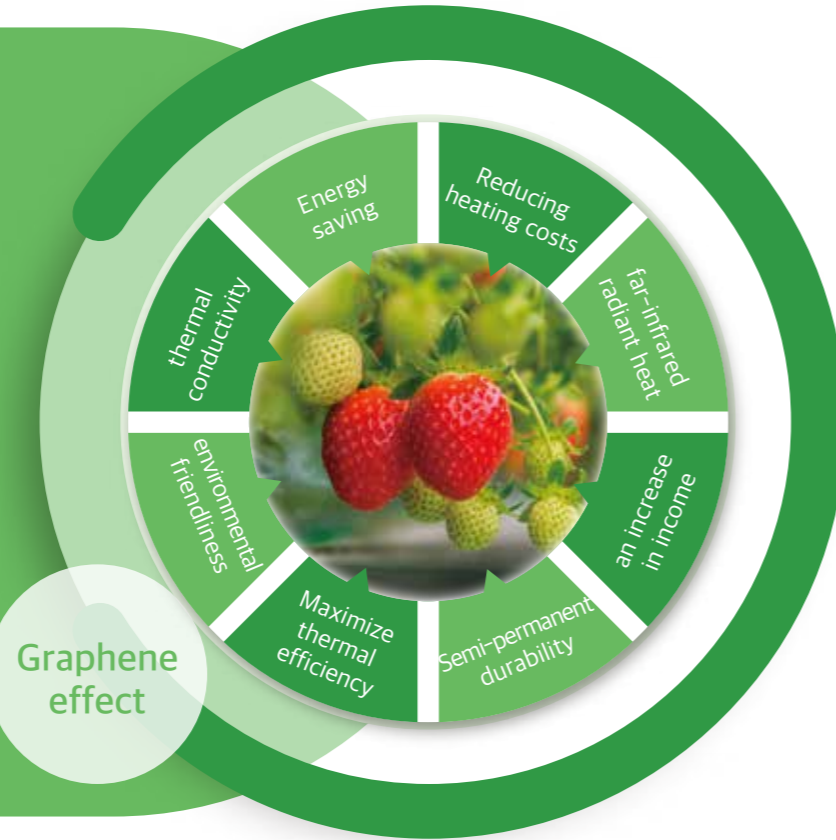
Good energy and technology enriches the living and environment.



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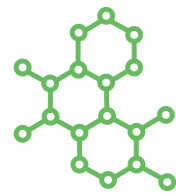
A graphene electric radiator

It is an electric radiator using graphene from The Farm Korea. It can be used for facility horticulture such as strawberries, tomatoes, and cucumbers, as well as for livestock such as pigs, cows, and chickens, thereby increasing efficiency.

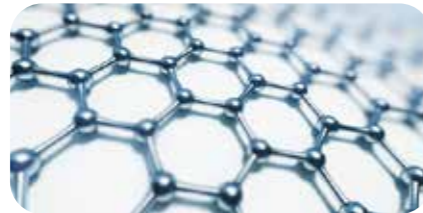


Graphene

Graphite, which is used in pencil lead and is familiar to us, is a layer of planes in which carbon is arranged like a honeycomb hexagonal net



Graphene



그래핀의 특징



x200

The strength is stronger than 200 times than steel.



x100

Electricity is better than 100 times better than copper.



x2

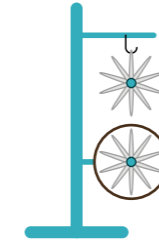
More than two times higher heat conductivity than diamond.



1+1

far infrared ray generation, radiant heat generation

A graphene electric radiator



Facility Horticulture

Product Name: graphene electric radiator

Purpose: Facility Horticulture and Special Use
Strawberries, tomatoes, cucumbers, zucchini etc

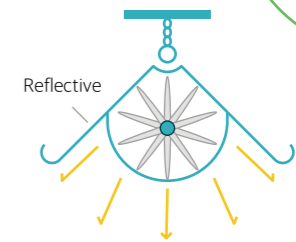
Voltage: single phase 220 V/60 HZ

Power consumption: 1kw/h

Product Material: Graphene coating
/ Aluminum (99%)

Product specification: 100 mm diameter
W / 2.5 m length

Exposure temperature: 80-100°C



For livestock purposes

Product Name: graphene electric radiator

Purpose: For livestock purposes
pigs, cows, chickens, ducks, insects, fish farms, etc

Voltage: single phase 220 V/60 HZ

Power consumption: 2kw/h

Product Material: Graphene coating
/ Aluminum (99%)

Product specification: 100 mm diameter
W / 2.5 m length

Exposure temperature: 180-200°C



Function

01 Comparative Table

Sortation	Gas	Diesel	LPG	Electricity (general, industrial, educational, agricultural use)
thermal efficiency	~Max 90%	~Max 85%	~Max 90%	98%
economic growth costs (1day)	110%	195(227)%	203%	100%
Installation	Equipment and piping facilities according to gas use	Large volume, oil tank and plumbing system	Filling tank and gas piping facilities	Easy installation of slim volume, no need for separate piping
Stability	Addiction, explosion, gas	gas, fire	Addiction, explosion, gas	eco-friendly, safety
Convenience	Inconvenience that must be operated by a separate operator			Fully automated system requires no operator
Fuel Non-fluidity	liquidity such as fuel costs due to changes in international oil prices			Safe and affordable
Safety Devices	Complex safety systems due to risks of gas, explosion, fire, etc., frequent A/s occurrence and periodic replacement of parts			Long replacement cycle due to durability of parts, reduced maintenance costs

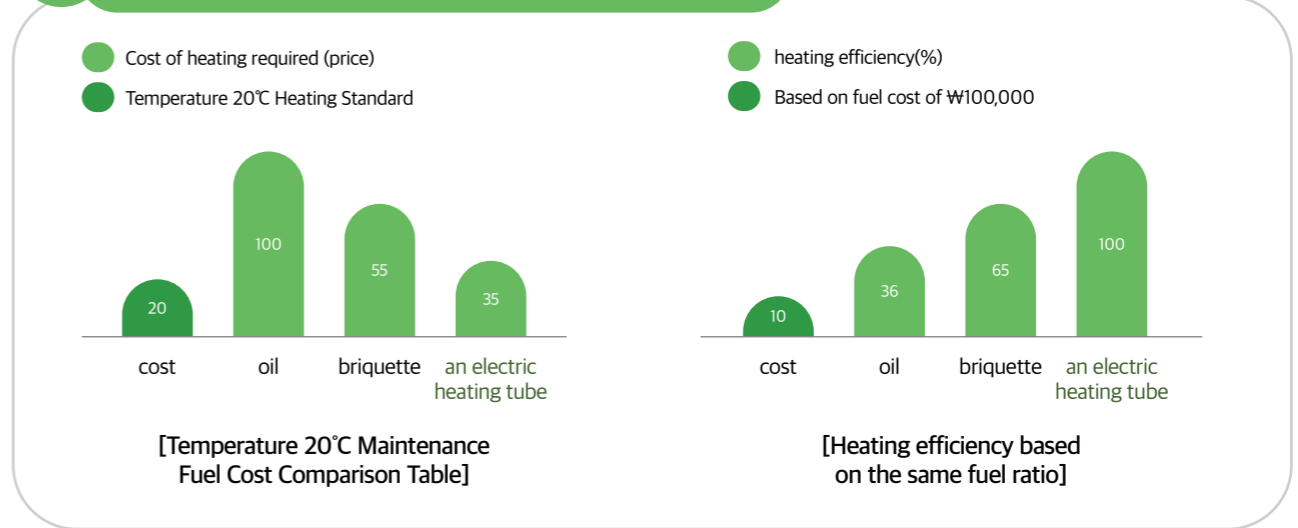
02 Comparison Table of Heating Costs by Fuel

Sortation	Price	heating bills(m/h)	kal/h	Efficiency /Fuel	efficiency /year loss	monthly heating costs	Ratio
kerosene	₩1,300/ℓ	₩2,132/1.64ℓ	8,700	85%	15%	₩383,760	195%
Diesel	₩1,600/ℓ	₩2,480/1.55ℓ	9,200	85%	15%	₩446,440	227%
LPG	₩2,000/kg	₩2,220/1.11kg	12,000	85%	15%	₩399,600	203%
Gas (일반용)	₩950/m³	₩1,206/1.27m³	10,500	85%	15%	₩217,080	110%
Electricity	use ₩39.2/kw basic ₩3.13/kw sum ₩42.33/kw	₩507/12kw	860	98%	non	₩91,260	45%

Based on 2014, heating 100 square meters 30 square meters (see Table reference 10 million kal/h standard 10 hours)

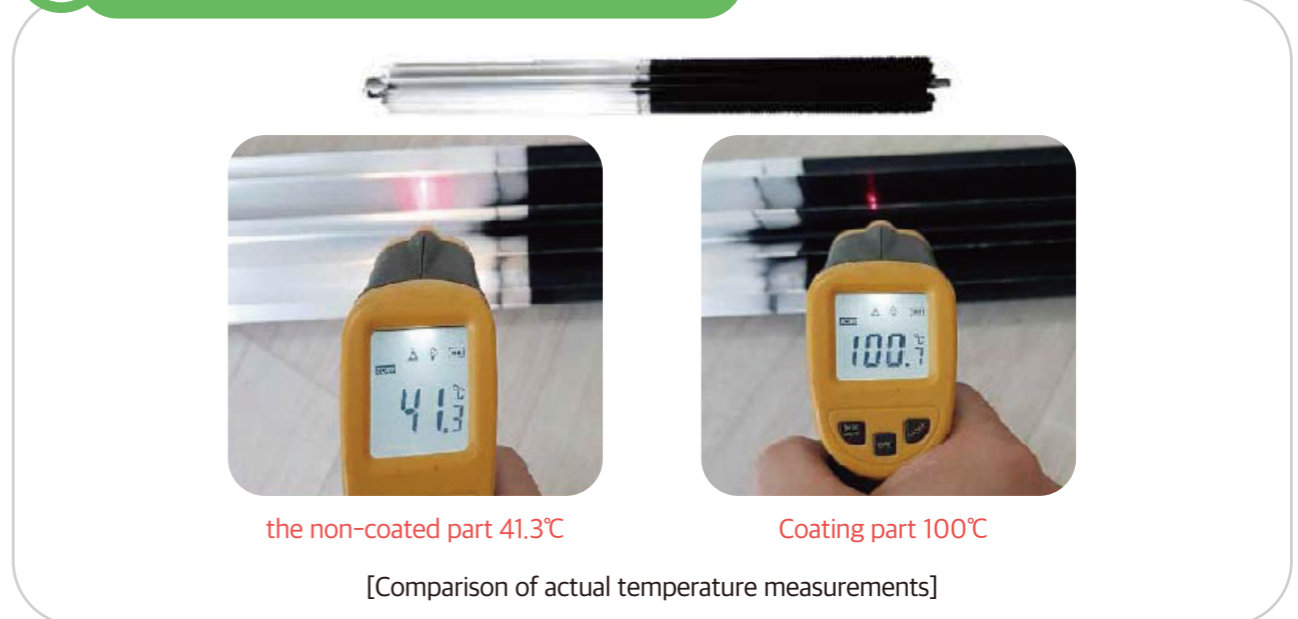
Function

03 Efficiency Comparison Table by Fuel



- ✓ Excellent **save heating cost** when maintained at 20°C compared to other fuels
- ✓ Low variation in the temperature inside the house **the temperature is uniform throughout**
- ✓ The heat source is electric and **eco-friendly**, so it is effective for growing crops
- ✓ You can **maximize heat efficiency** in the same heating costs
- ✓ The electrical heating pipe **can be reflected as aluminum material**
- ✓ **Improve convenience** of convenience in convenience

04 Actual temperature measurement



Installation

An electric radiator for facilities and horticulture

Facility horticulture and special use: strawberries, tomatoes, cucumbers, zucchini, mushrooms, etc



An electric radiator for livestock use

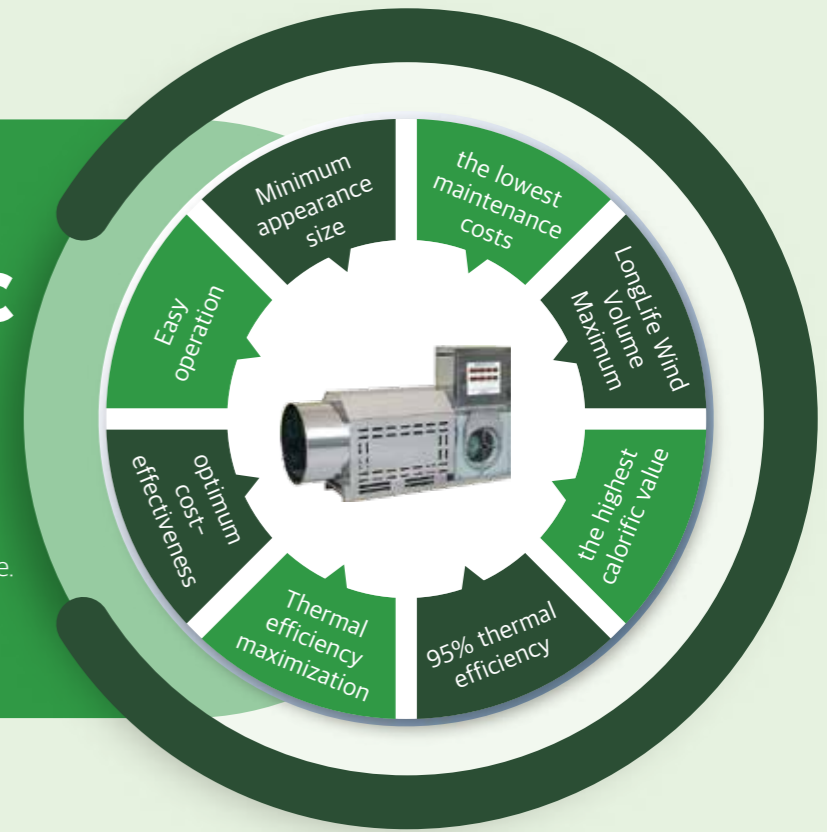
livestock: pigs, duck, duck, duck, insects, duck, insects, insects, insects, insects, insects, insects



02 An electric warmer

An electric warmer

The appearance size was minimized and the thermal efficiency was maximized. It is easy to install and operate.



Product Name: an electric warmer

Blitz voltage :

hita power AC380V / control power AC220V

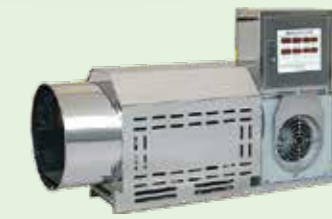
power consumption : 2, 5, 6, 9, 12kw/h

air volume : 1200m³ / Hour

wind pressure : 23mmAq

size : Φ225 x 830(L) x 345(H)

option : Wireless Monitoring



Product Name: an electric warmer

Blitz voltage :

hita power AC380V / control power AC220V

power consumption : 12, 15, 18, 21kw/h

air volume : 1660m³ / Hour

wind pressure : 29mmAq

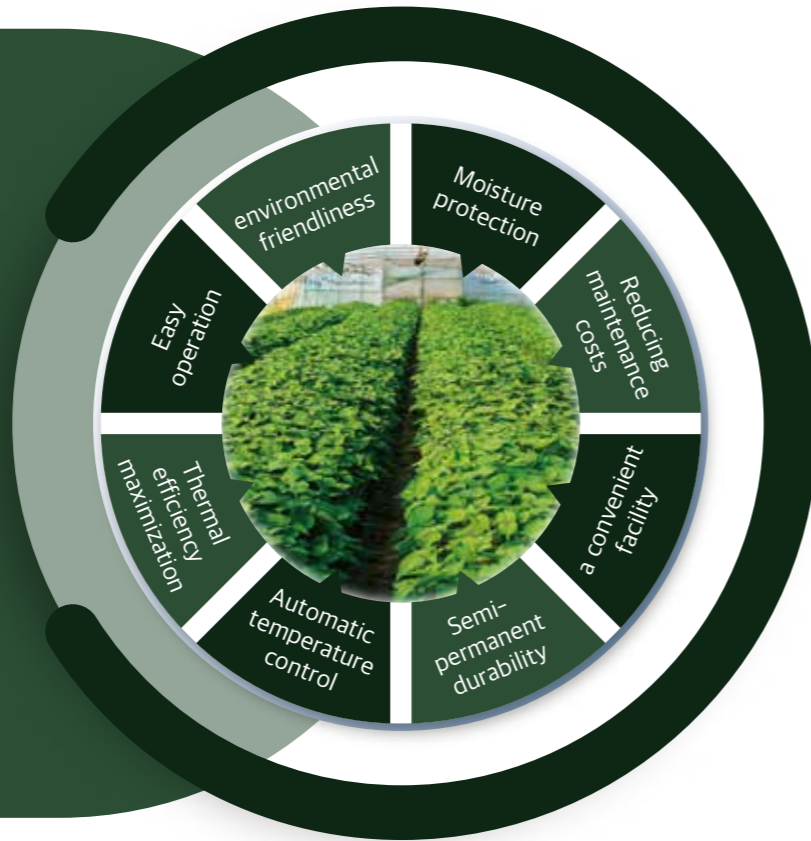
size : Φ330 x 1000(L) x 610(H)

option : Wireless Monitoring



Agricultural electric heating wire

It is a necessity of root heating in high-bed and nutrient solution cultivation. Feeding, geothermal heating, side window heating, inner tunnel heating, bad heating, and various heating are possible



Characteristics of electric heating wires for agriculture



Environmentally friendly

It is environmentally friendly using electricity.



Temperature efficiency

There is little variation in the temperature of the start and end of the heating element.



Maintenance of maintenance

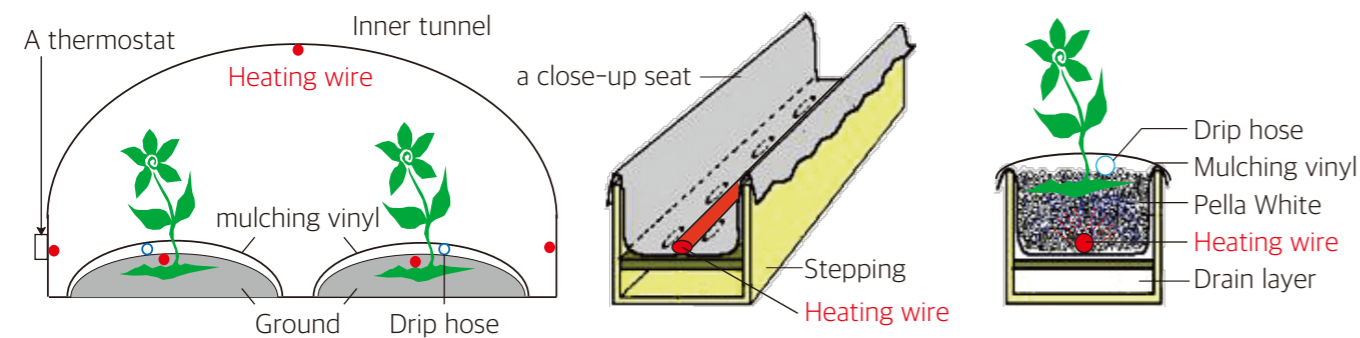
The maintenance cost is less than 30% of oil prices.



Management of convenient facilities

You can install a lot of humidity. It is easy to manipulate the automatic (or temperature) temperature system.

Electric heat-line use for agriculture



An electric fever for agricultural ship



Product Name: Agricultural Electric Heat Wires

Product length: 60, 70, 80, 90, 100, 120 m

Voltage: single phase 220 V/60 HZ

(Product length can be produced according to order volume)

Power consumption: 1.3kW/h to 2kW/h (100 m, 1 roll)

Exposure temperature: 13W/h (1m): 20~35°C (for nearby heating)

Product thickness: 6 mm, 10 mm

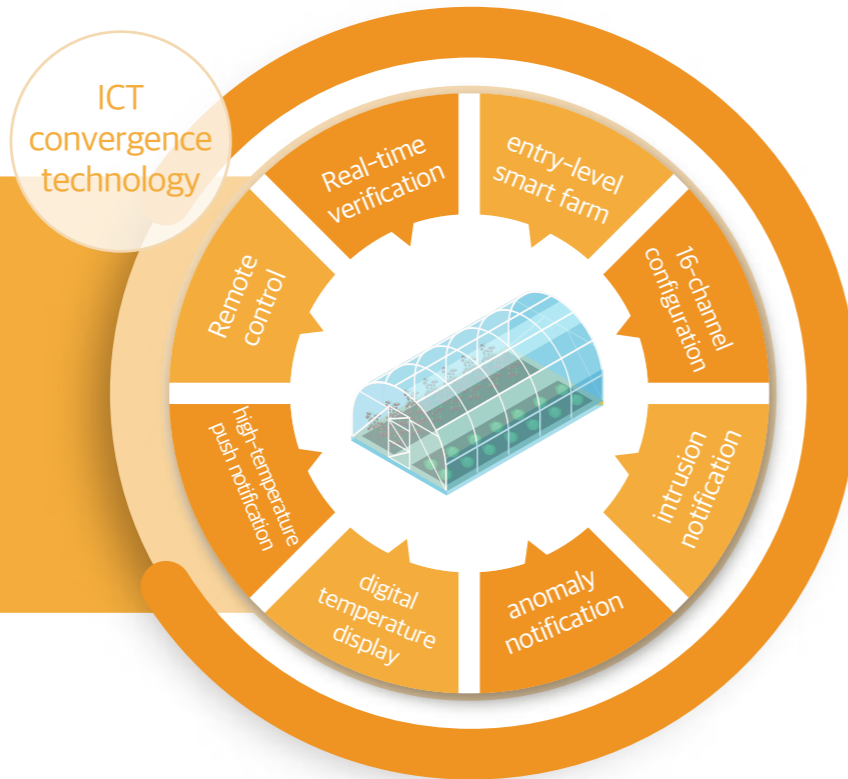
20W/h (1m): 50~65°C (fast tunnel, side window, nursery)



Installation







Smart farm



What is a complex environment control system?

It is an environmental control system that controls automatically control system (temperature, humidity, moisture, moisture, moisture, moisture, moisture, moisture, moisture, moisture, water, and light volume).

Characteristics of Smart Farm

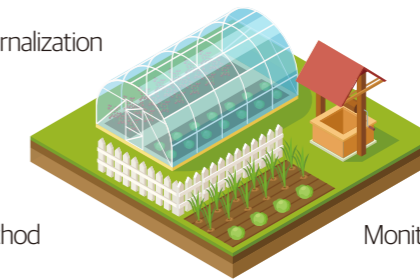
- 
Remote control and monitoring are possible.
 Maximize convenience by using intuitive icons and provide a screen suitable for the user's environment by being produced as a responsive web app. It can be controlled and monitored from any device, including PC, tablet, smartphone, etc
- 
I'll deliver the greenhouse situation in real time.
 It provides the last 24 hours of graphs, best/low, day/night averages, as well as sunrise, sunset, and sunrise time and weather data. A real smart alarm that fits the situation, such as an alarm outside the greenhouse, and an alarm that sends a notification through the sound of rain when it rains.
- 
Create data storage storage storage storage for more than 10 years
 Data is stored for at least 10 years and is managed by a cloud system. More analytical and practical data can be used by providing charts, tables, and graphs based on accumulated data for the use of data
- 
Reduce working hours, increase production
 TFKorea's remote automatic control function can be registered indefinitely, and complex control is possible by priority. Provides a complex automatic control solution using various sensors to support detailed complex control such as schedule control and condition control

Smart farm



Check Point

- High-Performance Small PC Internalization
- IP65 rated outdoor panel
- Use industrial products
- Adopting the customization method



- 15 inches high. Touch
- IP65-grade waterproof room
- remote business data
- Monitoring real-time greenhouse environment

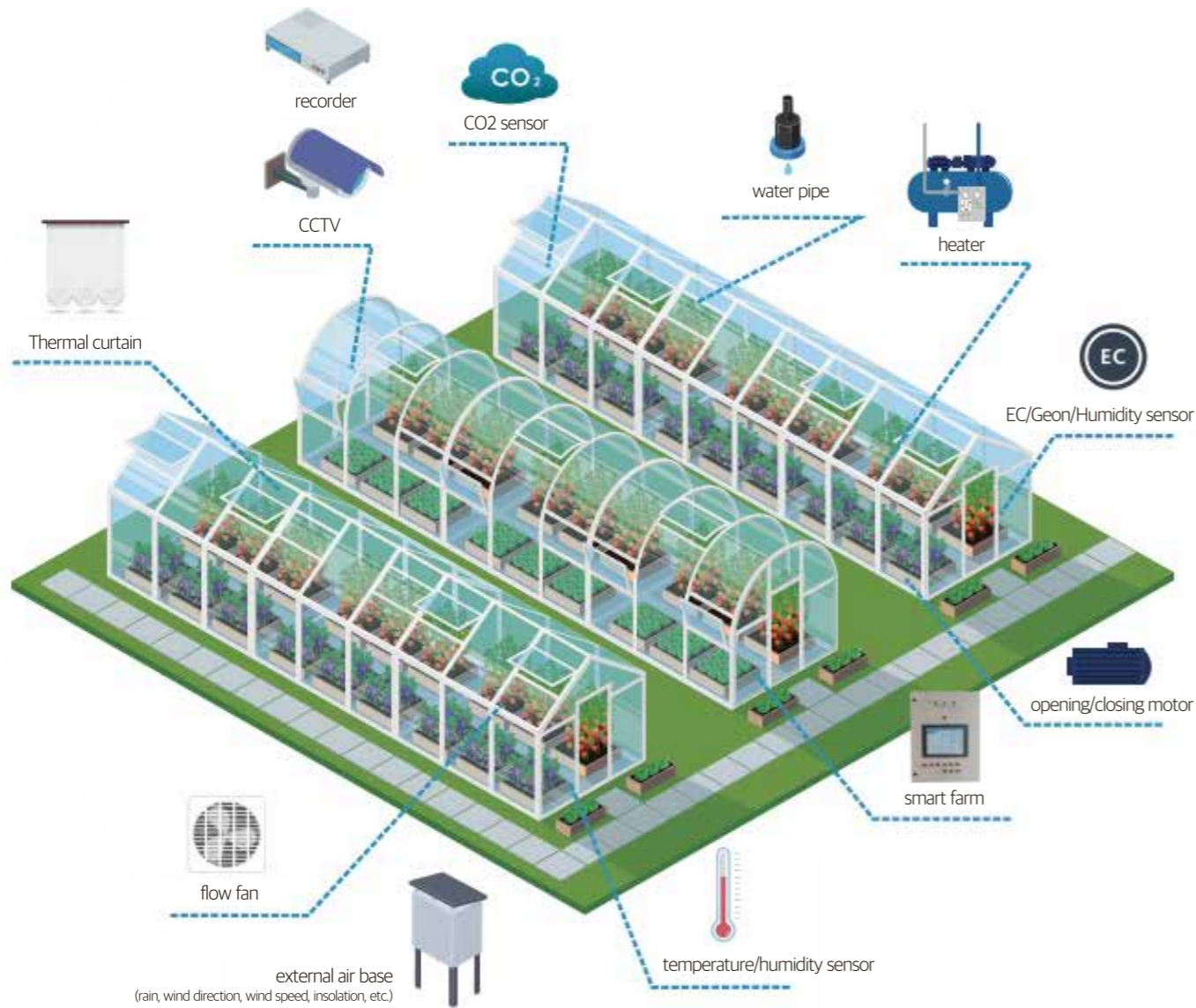
Sensor device



Smart farm



01 System Configuration Chart



Product Information

Switch control box

*With an enemy sensor, a high temperature sensor

Automatic



Manual



Product name: Switchgear control box (for measurement, ceiling)

*With an enemy sensor, a high temperature sensor

*Woojeok function: Automatically closing the switch by detecting it with a sensor when it rains

High-temperature function: Automatic opening function according to the set temperature in case of high-temperature development inside the house ON/OFF switch can be operated depending on whether or not high temperature sensor is used

Input voltage: AC220V

Output voltage: DC24V (10±)-Individual fuse used

Operation method: Automatic or manual operation

Temperature control: Opening/closing function automatically opens/closes when setting the opening temperature and closing temperature

Floating fan



Product name: Flow fan control box
RS 485 smartphones

horizontal curtain



Product name: Horizontal Content Control Box
Temperature, timer settings
Automatic mode / Manual mode / Manual mode

Agricultural and Industrial Automation Control Equipment



Product name: Large Automation Control Box
From industrial main control box
Large automation control box

LED for plant cultivation

It is an LED light that affects the photosynthesis of plants depending on the wavelength and helps them grow plants.



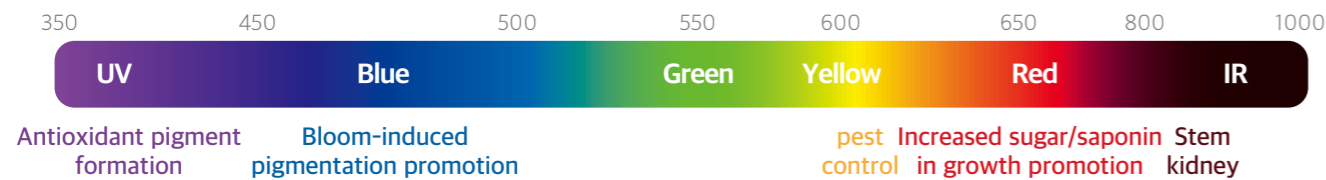
What is an LED for plant growth?

Humans detect light in the range of 380 to 780 nm to distinguish between light and shade, but plants respond physiologically according to the wavelength of light. Using blue with a wavelength of 400 to 500 nm and red light with a wavelength of 640 to 700 nm to help plant photosynthesis, plant growth It is a helpful light.

Unlike the LED semiconductor characteristics, the LED semiconductor characteristics, which helps you help the light synthesis of 500 to 640 nm, except light synthesis. It is lighting that can be used for sunlight substances in the plant factory park for sunlight, and food is not harmful to human and food.

Effect by wavelength band

*Application Range: Multicultural plants, fruits, fruits, fruit species of vegetables, fruit species



Red 660nm
It helps promote photosynthesis, control flowering, and promote growth.

Yellow 590nm
It helps prevent pests.

Blue 460nm
Adjust the application speed, and help preventing laughter, and light synthesis.

Product Information

LED for plant cultivation



LED for plant cultivation

Rated voltage: AC100~240V, 60HZ
rated current: 15W, 30W/70mA
light speed retention: 90%
 PPFD
 *Measurement distance: 30cm 80umol/m²/s



LED for plant cultivation

Rated voltage: AC100~240V(Free voltage),60HZ
rated current: 150W
light speed retention : 90%
 PPFD
 *Measurement distance: 2m 50umol/m²/s

Installation



Floating fan

The speed of the flow fan and the amount of wind can be automatically adjusted according to the temperature



Floating Fan Features

The microcomputer control method allows temperature, time, manual, and automatic operation control. The flow fan operation can be separated from 3 lines to 3 lines.

Product information

Power : AC220V 60HZ

Capacity : Small 60W, 70W
Large 180W, 200W



Floating Effect

Temperature drop
Resolve the temperature deviation in the house.

photosynthesis promotion
It uniformly promotes growth by promoting photosynthesis.

maximum efficiency
It produces maximum effect with minimal quantity.

convenient control system
Temperature deviation control is possible through a temperature sensor. Temperature, time, speed, and communication control are possible.

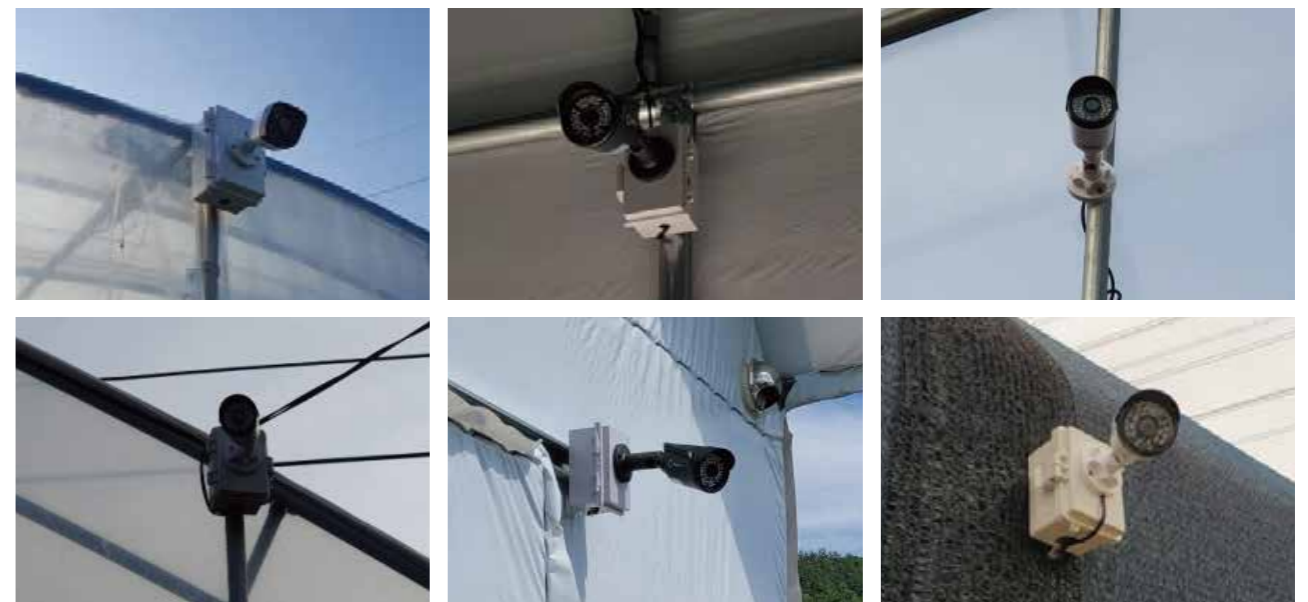
for gardening and livestock purposes CCTV



720P HD
1080P Full HD
4K ULTRAHD

It is an artificial intelligence solution CCTV optimized for artificial intelligence video security. It provides 4 times more precise and sharp images than Full HD.

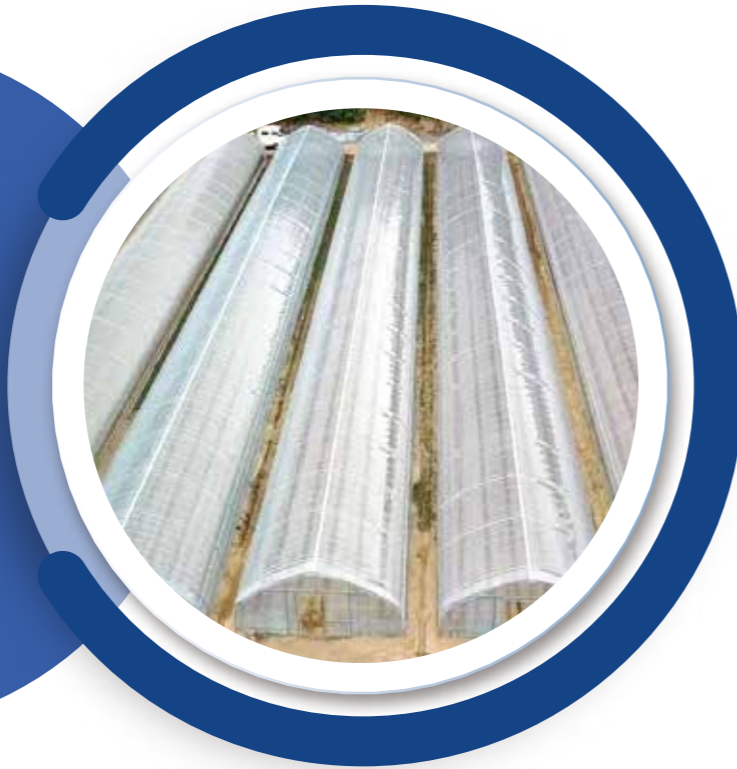
Installation



a greenhouse for gardening

We are working on new construction and cladding replacement of gardening greenhouses.

Types include single-acting, peristaltic, and glass greenhouses.



Vinyl greenhouse: Single-acting

1 middle plastic room

The most representative Korean non-visible vinyl greenhouse. It is a vinyl greenhouse with the lowest construction cost among regular types

2 middle plastic room

Single-acting general + insulation cover
Double vinyl greenhouse with thermal insulation added to the general type

3 middle plastic room

Single-dong general type + insulation cover + light-shielding screen, triple vinyl greenhouse with insulation and light-shielding net added to the general type
Controlling the amount of sunlight transmission with the addition of a thermal curtain and a shield net

Vinyl greenhouse: interlocking

interlocking normal type

Typical interlocking vinyl greenhouse
Robust durability with 60×60mm each pipe and PO film
Specifications: 7m X 3.5m

interlocking benro type

Type with increased width and measurement in basic peristaltic vinyl greenhouse
75X75 each pipe, durable with PO film
Type of two roofs in one greenhouse building
High skylight and ventilation efficiency
Specifications: 8m X 4.5m

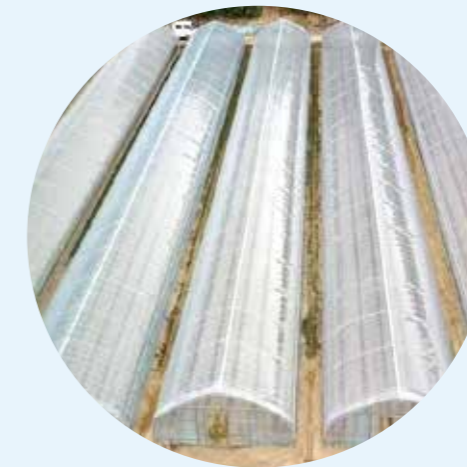
Glass greenhouse

150×75mm each pipe and glass for semi-permanent use
Designed to be 8m wide to arrange crops at appropriate intervals, increasing productivity. Designed with a high observation shaft, it is easy to control the internal environment of the greenhouse to create optimal cultivation conditions
Specifications: 8m X 6m

a greenhouse for gardening



interlocking



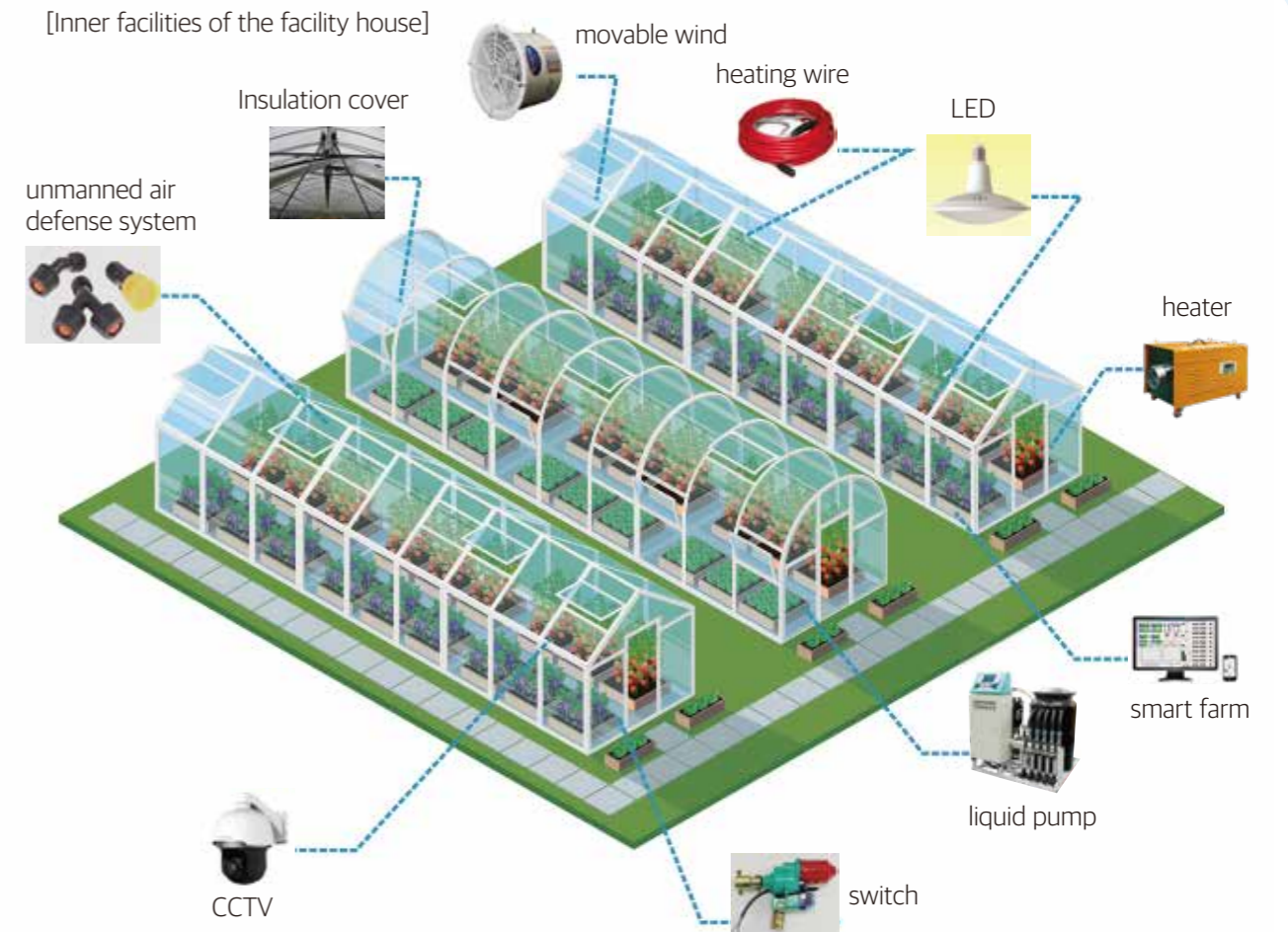
single-acting



glass greenhouse

Check Point

[Inner facilities of the facility house]



A positive liquid feeder



Is it automatic supply?

It is a mechanical device that supplies water and nutrients necessary for crop growth together, and it can properly supply nutrients necessary for the growth process, increasing the efficiency of nutrients, improving the quality of harvests, and reducing labor.

It is a precise mechanical device that mixes water and nutrients directly related to crop growth in real time, and malfunctions due to various causes such as inexperience in use, insufficient inspection, aging of sensors and parts, and unstable electricity supply, which will have a significant impact on crops.

It is a product that has been used for a long time, and the supply capacity, performance, function and reliability should be reviewed to select a model suitable for the cultivation site.

Managing EC and pH sensors

The EC sensor/pH sensor of the culture medium automatic feeder are consumable parts and have an expiration date. The expired sensor must be replaced, cleaned every 10 days during use and checked for sensor values every day.

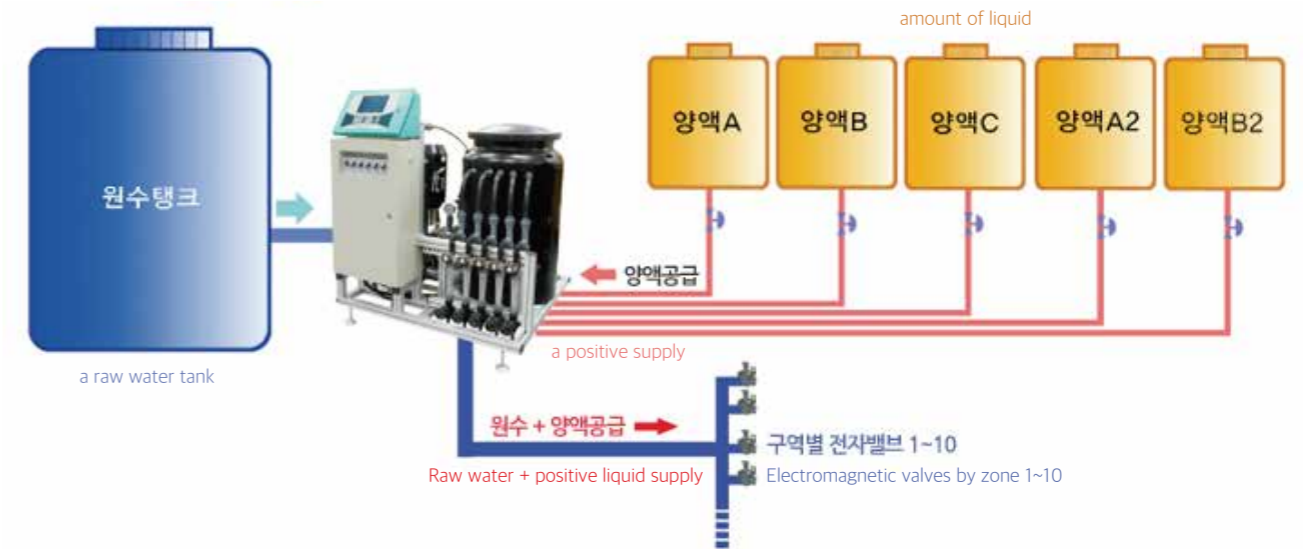
*Expiration date: EC sensor - 2 years, pH sensor - 2 months to 1 year



A positive liquid feeder



01 System installation configuration



02 Related Devices

EC Sensors	pH Sensors	EC, pH standard amount	EC, pH a measuring instrument	a positive suction solenoid valve	Venturi, an instantaneous flow meter
Growth Light Sensor	TDR medium sensor	Flow sensor	Culture Environment Sensor Node	Badge Environment Sensor Node	Indoor Environmental Sensor Node
Quantitative control valve	electromagnetic valve in divided area	a filter	a stirrer	Raw water pump unit	Raw water pump unit

Multi-layer thermal curtain



Multi-layer thermal curtain

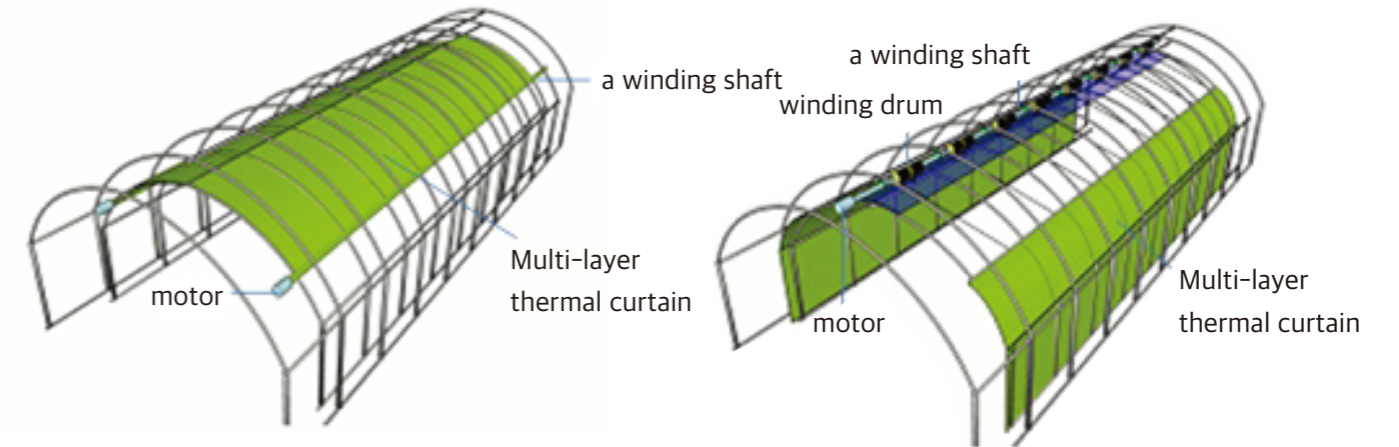


01

Winding type

02

Sliding type



Multi-layer thermal curtain?

01

A method of rolling or unwinding a multi-layered curtain composed of five or more layers by fixing it in two or three layers

02

It can be possible to cross-border light in connection

03

In order to prevent the outside temperature of the greenhouse from being transferred to the inside, the thermal curtain composed of multiple layers is installed at a thermal barrier rate of 73% or higher

04

All thermal curtains are oxidized by ultraviolet rays, and the system is wrapped with 20% black UV protection products when it is last rolled, which has a long lifespan of about seven years.

System Configuration

Opening/closing motor SET

Installation between the column and double site

multi-layer woven fabric

A product made by gilding in various ways with more than 5 layers

side curtain

In winter, the summer, there are frequently installed on the side of the summer, which occurs frequently in the summer

ceiling curtain

Install by sewing with a nuclear bomb without a medium width connection so that the ceiling can be dried consistently when it is rolled or unwound

Installation

