





THE GREENHOUSES

State-of-the-art technology for your plants

GreenTech agricultural greenhouses are modern greenhouses, equipped with state-of-the-art technology to offer you an integral solution for the production of quality products by increasing your yield and ensuring robust growth of your plants.

Greentech agricultural greenhouses have been designed by experienced engineers who have learned to adjust each element to obtain maximum efficiency specifically for the cultivation of cannabis plants. Our greenhouses allow excellent quality production, meeting the demands of the most exacting producers.

Our greenhouses are the key to your success. We have a green thumb and work with you to make your vision a reality.

GreenTech agricultural greenhouses are high-tech hot-dip galvanized greenhouses that meet international standards TS-EN-TS-EN 13031-1. They have a shade screen system which is automatically activated using sensors. This blackout screen system reduces temperature and creates total blackout to block UV rays by up to 70%. This allows significant energy savings.

GreenTech agricultural greenhouses have high pressure HPF ventilation and misting systems to maintain humidity and prevent wetting of foliage. They are also equipped with an exhaust fan to promote air circulation and ensure even distribution in the greenhouse.

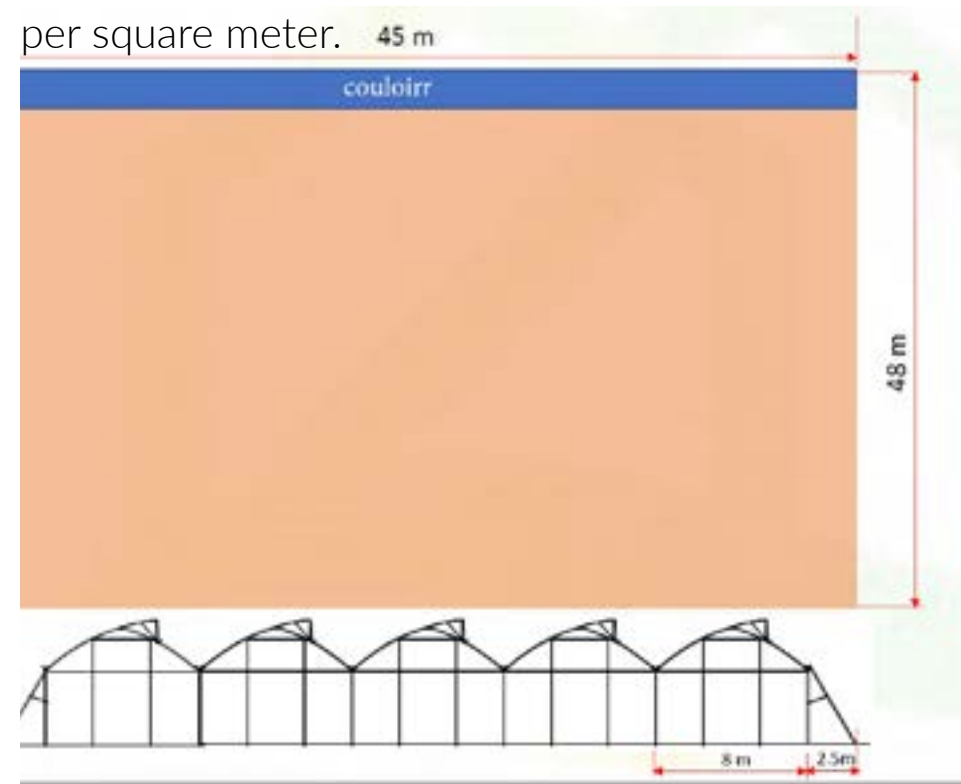
GreenTech agricultural greenhouses are also equipped with dehumidification systems, carbon dioxide, hot air heating, photo-periodic artificial lighting, gutter to support the plans, power supply and electricity, an air conditioning system as well as irrigation, fertilization and climate control systems.

GreenTech greenhouses also have a complete weather station for collecting climate data and a control and communication system. In addition, you can control your GreenTech agricultural greenhouse from your iPad, tablet or even mobile phone with specially designed software to access your greenhouse system via the Internet.



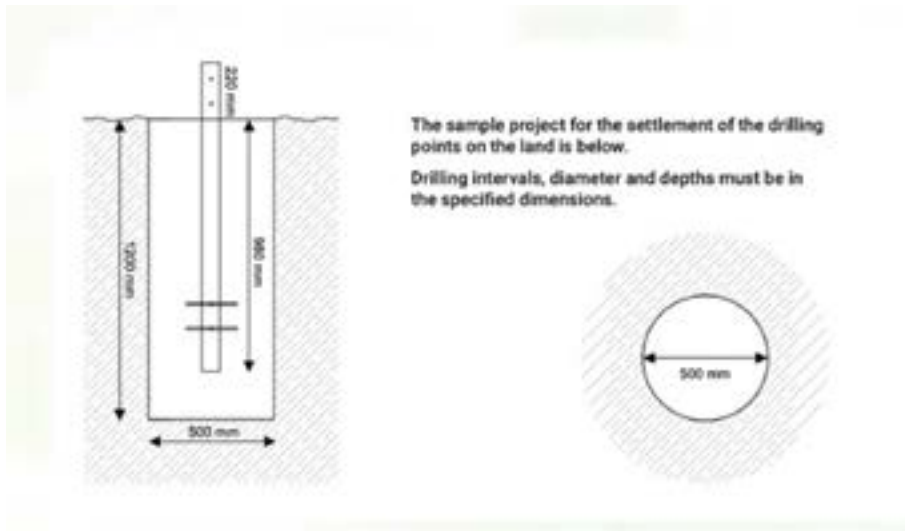
GENERAL LAYOUT OF THE GREENHOUSE

- Gutter length – 48m
- Gable length – 45m
- Gable span – 8m
- Gutter height – 4.75m
- Ridge height – 7m
- wind load of 120 km/h
- vertical load of 35 kg



STEEL STRUCTURE:

- Drilling size: depth - 120cm, width - 50cm.
- Distance between holes centers: on the gutter side - 4m, on the gable side - 8m
- All foundations are made of Square profile 70*70*3 mm and Hot Deep Galvanized..



COLUMNS

- All columns are made of square profile 80*80*3 mm and Hot Deep Galvanized.
- Applicable international standard: - TS-EN-TS EN 13031-1



REINFORCEMENTS:

- Wind reinforcement - Cross type
- Gable reinforcement - 1.25" tubes
- Square profiles all around the greenhouse for an additional reinforcement.
- Special Aluminum profiles for "clean" look of the polyethylene.
- All partition walls are made of C profiles and covered with 6mm polycarbonate.
- L profiles attached to the concrete to prevent from rainwater enter to the greenhouse.
- Arches made of 40*60 full profile.





GUTTERS

- All gutters are 2mm thick hot deep galvanized
- Steel grade A with a minimum weight of not less than 275gr/m²
- Gutter layout - 400 mm
- U shape aluminum profiles with “Z” spring
- Drainage ends 6". 45° or 90° -as required



COVERING

ROOF COVER

- The roof will be covered by 200μ polyethylene.
- The polyethylene will keep its optical traits at least 3 years.
- Light transmission up to 90%
- Anti-fog and anti-drip guaranty for 18 months
- UV OPEN.
- IR ray prevention
- For a long-life ability, a special material will be applied to the edges of the cover.



INSECTS NET

- An Insect net is used to prevent the entry of harmful insects through the windows.
- Net density is 50# with 3 years of warranty.
- A 50# hole size will be installed in passages, windows, and openings respectively.
- To extend the net's lifespan, tensioning machines are used to maintain a tensioned mesh in the greenhouse system. For this reason, the net can be used safely for many years.



POLYCARBONATE BOARDS

- A 6 mm thick transparent polycarbonate panel around the perimeter of the greenhouse up to a height of 1 meter from Concrete barrier level.
- 8 mm thick opaque to light polycarbonate panels in the walls between the flowering units from the concrete floor up to a height of 3m and above them, black/white plastic sheets
- Connectors and seal accessories will be applied.



DOORS AND ENTRANCES (ALUMINUM)

- Each greenhouse will have a common cell measuring 8 x 4 m, where each growth cell will have a separate partition with its own doors and its own sterile area.
- Each cell will have 3 m double doors and another 1-meterwide door for a person to enter.
- During the harvest the 3 m doors will be used.
- The doors will be opaque to light.



GROUND COVER

To prevent the growth of grass under the tables and water evaporation from the ground, black/white plastic will be installed on the floor of the greenhouses.

- For each gable, an independent covering will be installed in the width of the gable with an overlap of 30 cm between gable and gable.
- The color of the plastic: one side is black (face to the ground) and one side is white (face to the greenhouse space).
- Weight: 100 g/m².
- Aluminum bars for connecting the sheets to the ground and a concrete path will be installed.
- The white color reflects the light to increase the amount of light in the greenhouse.



THE GREENHOUSE

INCLUDES

- Full metal structure
- Polyethylene roof and gable cover
- Anti insects net 50# both gutter sides and gable sides
- Polyethylene curtains
- Aluminum doors
- Black and white floor cover





SHADING AND BLACKOUT SYSTEMS

- The screens movement are on the gutter span (4 meters wide).
- The screen moves independently and separately from the wall curtains, and enables autonomous control of each growing unit.
- The movement of the screen is carried out by a system of shielded steel cables with a thickness of 3 mm that are wound on drums to prevent entanglement of one cable into the other.
- The screen is supported by 2.0 mm transparent nylon cable -every 40 cm and a top black cable every 0.8 m to prevent lifting of the screen fabric.
- The edges of the screen will be protected by PVC clips.
- With regards to engines, each growing unit will have its own engine.
- A driving shaft made of a 2" OD 2.65 mm pipe which will be supported by the structure.
- Poly every 2.4 m to create a straight line. The small clearance will keep the drive pipe straight.

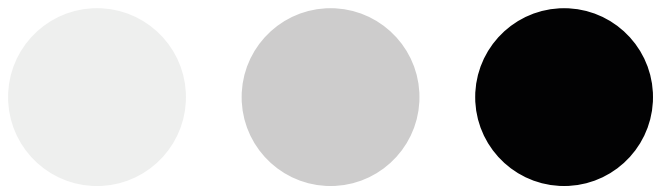
SHADING SCREEN SYSTEM

- The horizontal screen system provides better control of the greenhouse climate, providing energy savings in winter and shading in summer. Especially in summer, the indoor temperature rises to high levels.
- For this reason, the screen system automatically activates through sensors and provides a shading system.
- In winter, it turns off automatically to prevent heat loss.
- The reason why we prefer the "push-pull" horizontal screen system as a system is because it works better and, in a possible case, it is faster and easier to intervene and repair.



BLACKOUT SCREENS SYSTEM

- EUC made blackout sheet that blocks 99.9% of light.
- A two-layer sheet consisting of two sheets B&W and B&B (for maximum folding) to reduce temperature.
- Energy savings of minimum 70%.
- Warranty for blocking UV rays - 5 years
- The curtain sheets are provided with the manufacturer's warranty, accordingly the warranty conditions provided to the customer by the company are in accordance with the manufacturer's warranty.

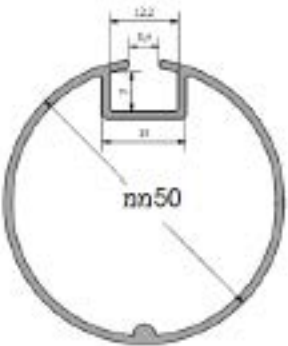
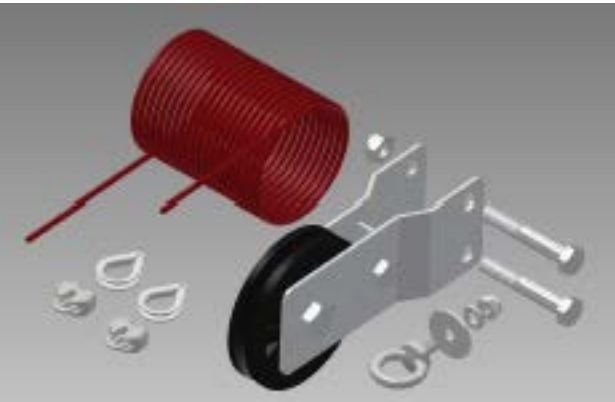


G R E E N T E C H - M C . C O M



BLACKOUT CURTAINS SYSTEM

- The blackout sheet blocks the passage of approx. 99.9% of light.
- The climbing motor (Motor with dumbbell) is made in Holland.
- Black and white plastic overlaps.
- Curtain guards every 4 m along the gutter and every 3.2 m along the gable facade.
- Black and white skirt with overlaps for total blackout.
- The curtain will be placed above the exhaust fan on both gable facades.
- An additional curtain will be placed in the gutter façade in the partitions of the flowering area and will start from the blackout screen to the polycarbonate wall.
- A total of three motorized curtain systems for the flowering unit. (The north side will be opaque to all light)



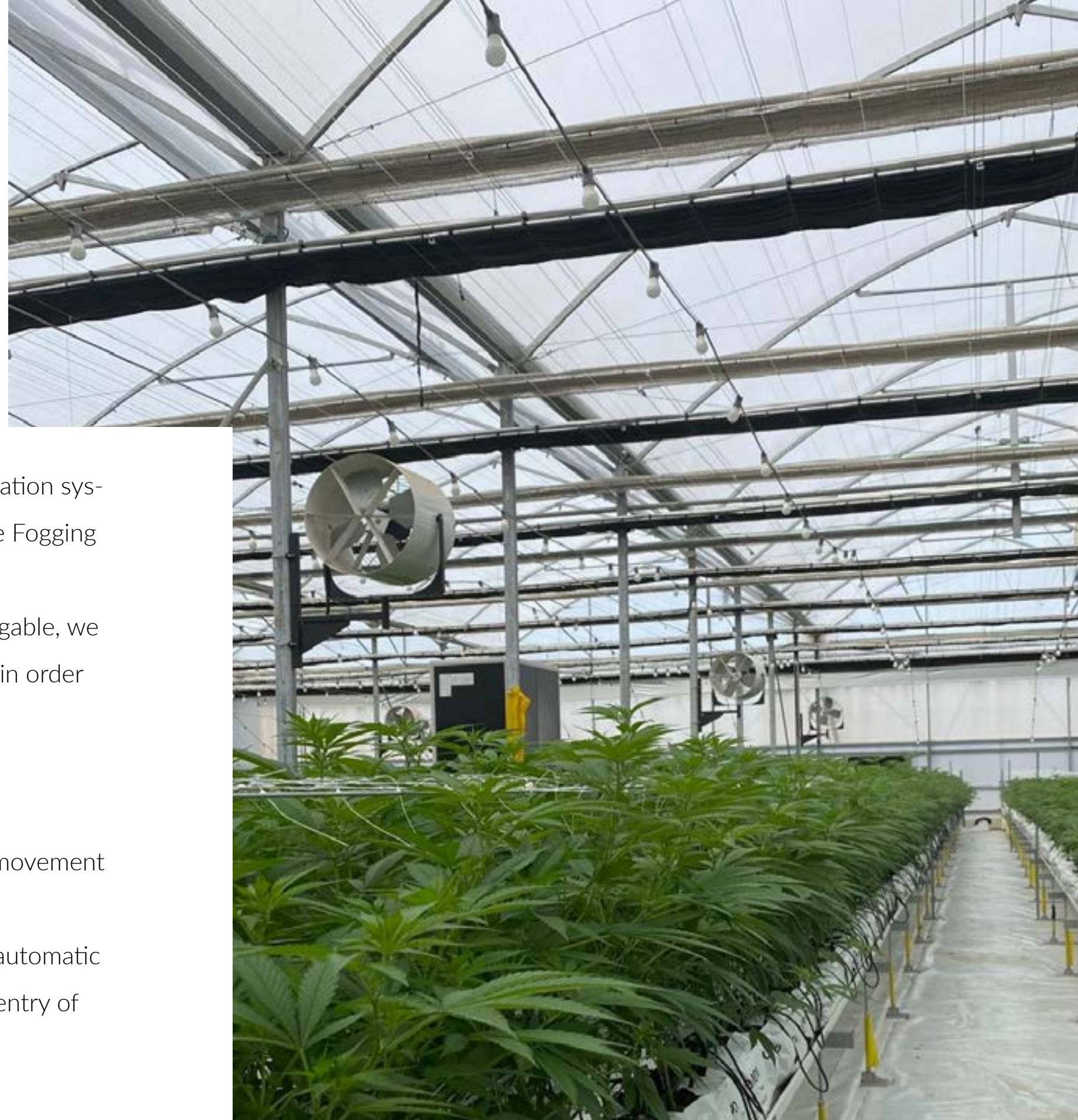
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CLIMATE CONTROL

GENERAL DESCRIPTION OF THE SYSTEM

- To control the climate of the greenhouse, we offer an active ventilation system by means of a forced ventilation in combination with High Pressure Fogging (HPF) system, Air circulators and exhaust fans system
- On the gable facade of the greenhouse, in the lower part of each gable, we will install 2 fans size 50". The fans will be equipped with light trappers in order to ventilate under full darkness.
- The number of ventilators will allow 40 air changes per hour.
- On the opposite facade we will install light trappers.
- 3 air circulators will be placed in each gable in order to create air movement in the greenhouse and to reduce moisture bubbles on the leaves.
- A 20" fan will be installed in each entrance compartment with an automatic micro switch that is activated when the door is opened to prevent the entry of outside air and pests inside the greenhouse.



GEAR MOTOR FOR SIDE CURTAINS

Three-phase gear motor system for each side of the greenhouse (requires 4 motors for each greenhouse)

- The gear motors can be controlled by the air conditioning system.
- Strong ventilation



OPERATING SYSTEM OF ROOF CURTAINS

- This system is composed of a combination of 1 motor and 3 transmission units.
- The motor is three-phase which allows the curtain to be stretched up to 100 linear meters.
- The gear motors can be controlled by the air conditioning system.
- Galvanized steel structure.



EXHAUST FANS

- Our proposal is for 50" or 53" exhaust fans.
- The exhaust fans to be installed on one facade of the greenhouse under the blackout screen 55 cm above the concrete floor.
- Type of the fan - centrifugal
- Stainless steel blades.



LIGHT TRAPPERS



- Fully adjusted to 50" or 53"
- Allow air to circulate in total darkness.
- Must be ordered with standalone light trapper



AIR CIRCULATORS



- The circulation system contributes to lowering the humidity and is part of the mechanism to prevent the wetting of the foliage. The system also produces a better distribution for the heating and produces a homogeneous climate system in the structure.
- Our proposal is for 21" or 24" Air circulators.
- The fans are operated by a central control system, according to the needs and requirements of the customer.
- Including fan lining chassis/wall mount



HIGH PRESSURE FOGGING SYSTEM (HPF)

- The fogging system is designed to add moisture to the greenhouse for additional cooling of the temperature in it.
- The system will be operated together with the exhaust fan system on the gable walls that will pump the drops and the hot air out of the greenhouse.
- The system will be activated by the computerized climate control system that receives the temperature and humidity data in the greenhouse through the sensors. The parameters for activation will be provided by the grower.
- The system will provide a fine mist with a drop size of about 10 microns.



DEHUMIDIFIER SYSTEM



- At night, and when the outer temperature is low, it is not possible to perform air exchange using the ventilators, therefore a drying system is mandatory.
- We will supply dehumidifiers of 40 L/h (960L/day), 1 dehumidifier each 450 square meters.

CARBON DIOXIDE GAS SYSTEM



- Trees, plants and other green life need CO₂ for their health just as much as humans and other mammals need oxygen. Plants convert carbon dioxide into energy via photosynthesis. Those CO₂-loving plants include of course Medical Cannabis.
- If we want to grow bigger and better plants, carbon dioxide can play an important role.
- We will supply 1 CO₂ generator each 450 SQM.



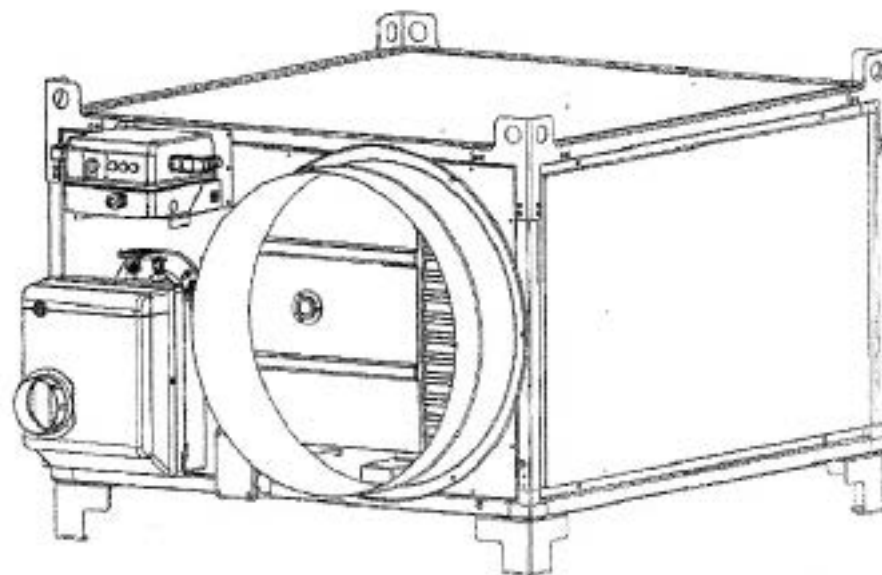
HOT AIR HEATING SYSTEM

In order to maintain the heat of the greenhouse, especially in the winter, at a temperature not lower than 20°C, we offer hot air heaters that operate on gas with main and secondary sleeves system.

To heat a greenhouse of about 2000 m² for a ΔT of 12°C , 2 hot air providing 300,000 kilocalories per hour is needed.

The main sleeves will be placed so as not to interfere with the entrance of the tables

The secondary sleeves will be placed under the tables or between the paths depending on the shape of the growth



ARTIFICIAL LIGHTING SYSTEM (PHOTOPERIODIC)

We provide an artificial lighting system for the winter months in which there is a reduction in the hours of daylight in order to obtain the necessary daylight as well as the extended days to prevent flowering of the mother plants.

- Our offer includes:
- 15-Watt white LWD bulb, 6500K
- Covering area for a single lamp is 2.4 square meters (one bulb every 1.5m x 1.6m)
- 4 rows in each gable
- An innovative lighting fixture adapted to conditions with a high humidity environment.
- LED card up to 32000 hours with a two-year warranty. The LED card can be easily and quickly replaced
- Power cable of a 2.5 mm section.
- 3 mm shielded steel cable infrastructure for hanging the lamps is also included.

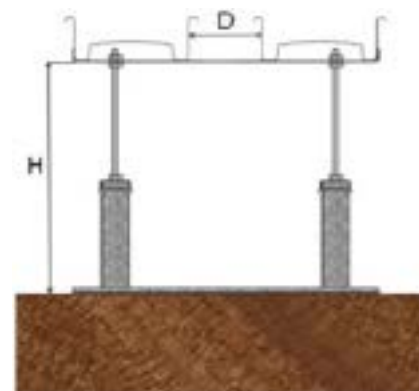
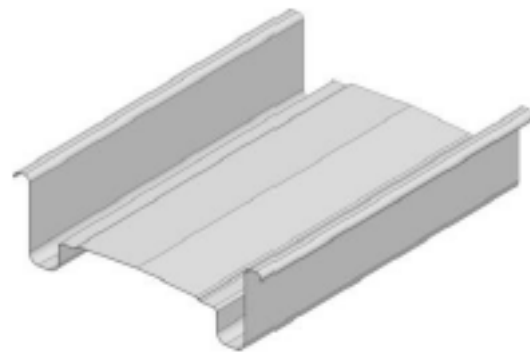




GROWING SYSTEM

For a growing method of "small pots" (up to 16 liters per pot), and an amount of 5-9 seedlings per square meter, according to our experience it is best to work with growing gutters.

- 0.6 mm thick metal gutters system Z275 standard with oven-painted and epoxy coated on both sides of the gutter to protect against rust according to the international GAP standards.
- Bases with adjustable legs for leveling the channels.
- Allowed load - up to 35 kg per square meter.
- Each gable of 8 m will have 4 systems of 3 growing gutters that will provide 12 growing rows in the gable.
- 3 pots per each lining meter of growing gutters.





COCONUT GROWING SURFACE

- 6.5 liter bag measuring 16, 18, or 20 with high quality shredded coconut ready to plant
- Coconut, grounded and treated with calcium nitrate and then washed. Therefore, it is chemically, balanced and example of heavy metals, , parcels and salmonella, all according to the international standard GAP



ELECTRICITY AND POWER SUPPLY SYSTEM

The electrical system is spread throughout the structure and provides the required electricity for all motors and supplementary equipment:

- Main power board will be installed in entrance cabin of each greenhouse
- Main emergency switch to fully shut down on the panel.
- An automatic ON-Off switch for each activity
- An emergency manual switch will be installed near the ventilators and motors
- All necessary wires and channels will be supplied.



IRRIGATION, FERTILIZATION AND CLIMATE CONTROL

- This quotation contains:
- Water and fertilization center
- Full recycling system and drainage water disinfection (chlorine+ UV)
- A separate HPF system
- Mixture and fertilization system
- 2 separate irrigation valves per each growing unit.



HANDS AND FEET DISINFECTING DEVICE



- A sanitary barrier that is a device for disinfecting hands and feet in every entrance compartment.
- The disinfection unit includes a rotary barrier that opens after hand disinfection and shoe sole disinfection bath.
- Dispenser for filling soap /disinfectant (the material is not included in the kit and must be obtained from the supplier directly)



COMMUNICATION AND CONTROL SYSTEM

- 24/32 controller in the "Water and fertilization center"
- Full meteorological station for collecting environmental climate data, with lightning protection
- Shielded cables to connect the controllers in the greenhouse to the center.
- Software to operate the system via internet.
- 16 breathing cells with temperature/humidity sensors
- 8 light sensors.
- Wires as needed

PROJECT MANAGEMENT



- If needed, we can provide a project manager with many years of experience in setting up Greentech greenhouses. The project manager will visit the project at appointed times and monitor the quality of the installation.
- Besides the project manager, we can also provide an experienced foreman that will manage the build of the project and will stay on site from beginning till delivery of installed Greentech greenhouses ready for operation.



NOTES





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