

Clean Your Every Drop Of Water

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DISMART

UVC Disinfection Machine

FARMNET

FARMNET | 智棚



UV Disinfection Machine



Water recycling and reuse



Improve fertilizer utilization, save the production cost



Disinfection efficiency reach to 99%



With Internet of Things function, remote control



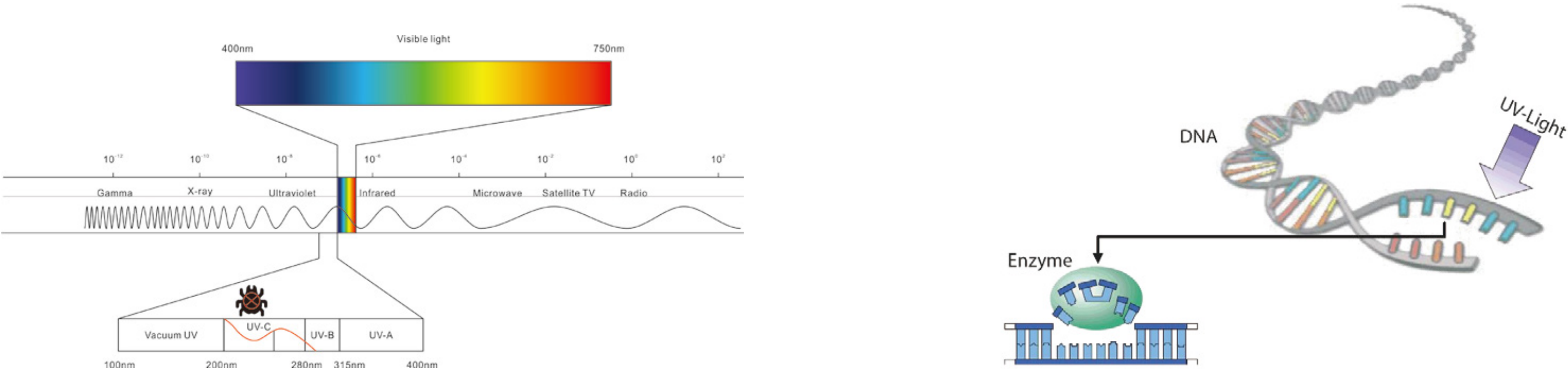
The low-pressure ultraviolet disinfection machine is designed and developed by FARMNET for the efficient disinfection of horticultural irrigation water, directly destroys virus DNA, disinfection efficiency can reach 99%, protects crops from pathogens. The system can not only disinfect the irrigation water, but also thoroughly disinfect the recycled backwater, which can save expensive fertilizers and fully reduce production costs. A large number of applications prove that the Lntel-UV-C is an extremely stable and efficient disinfection system.



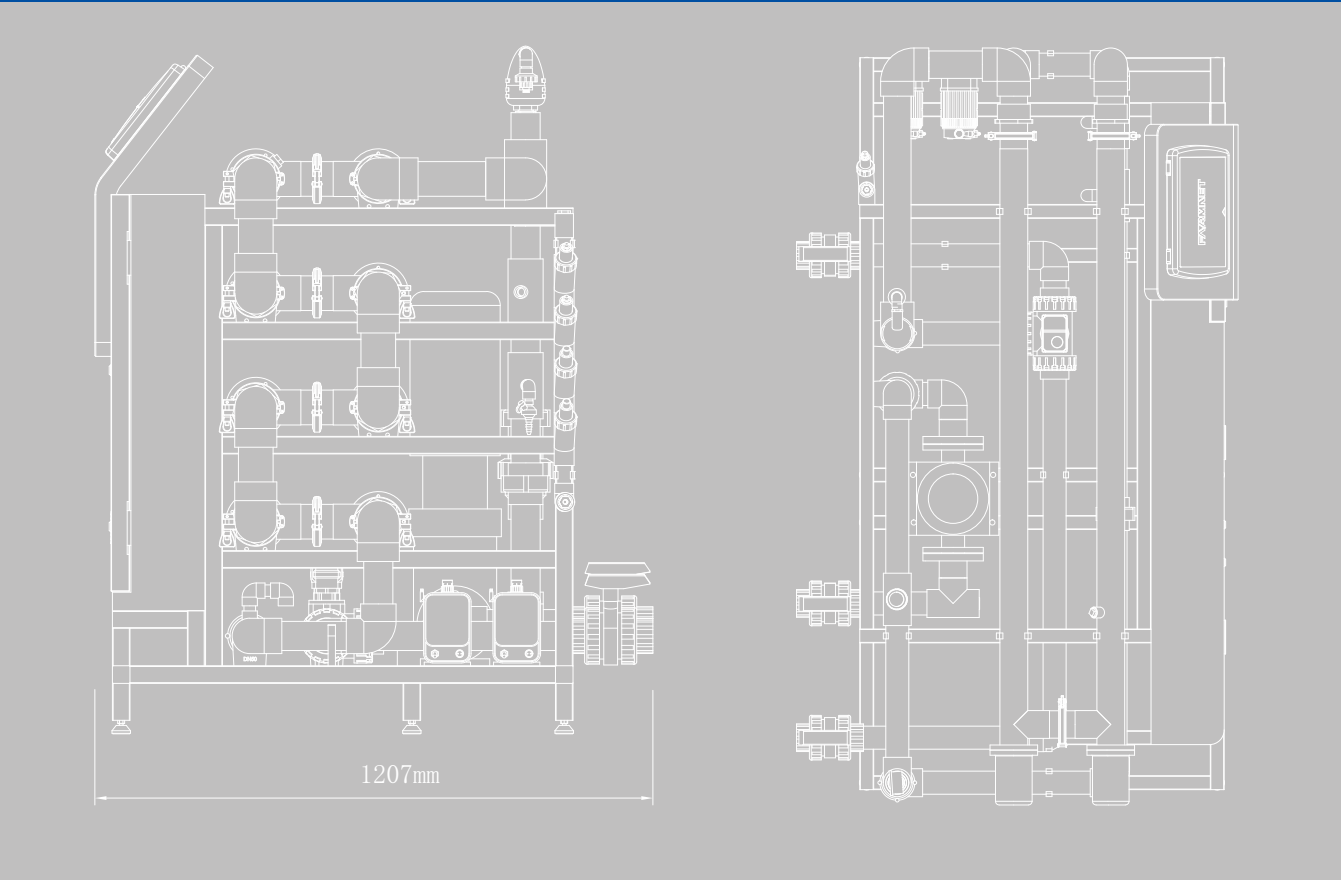
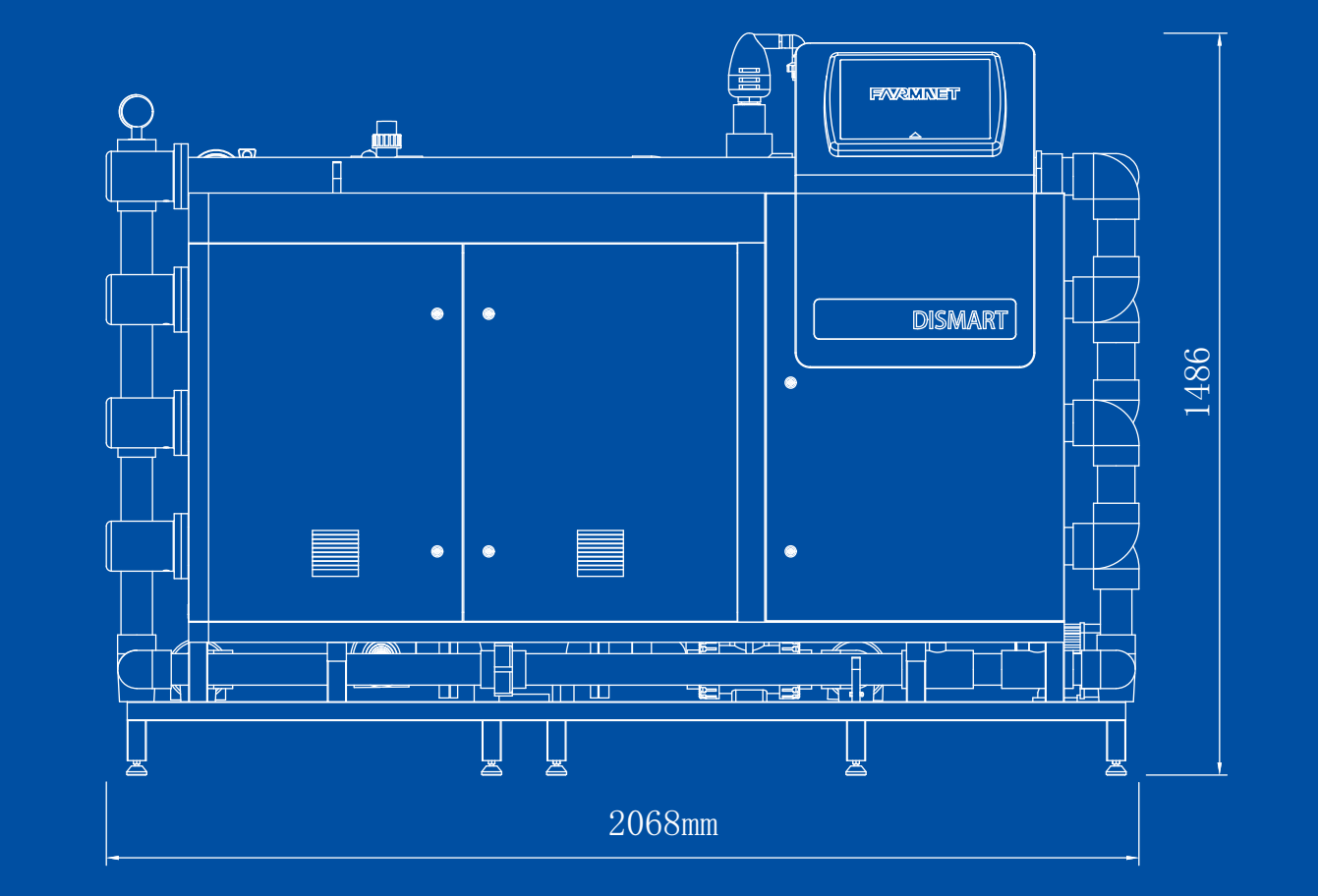
• DISMART

- Stable, reliable and efficient
- Water recycling and reuse
- Disinfection efficiency reach to 99%
- Improve fertilizer utilization, save the production cost
- With Internet of Things function, remote control

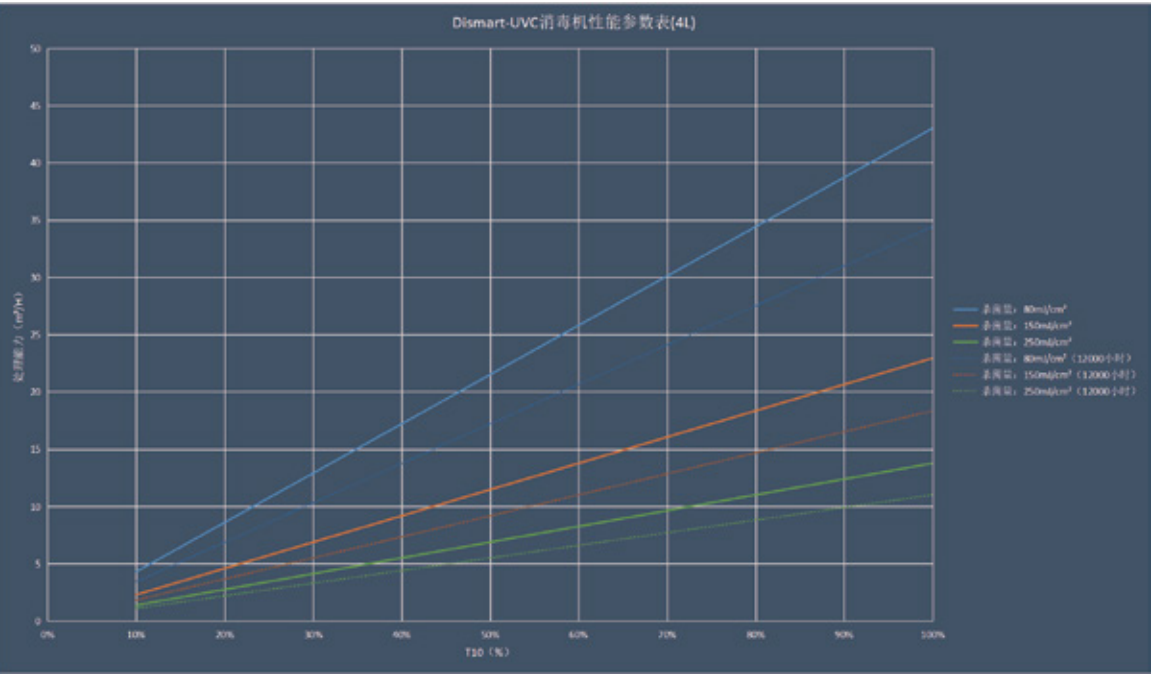
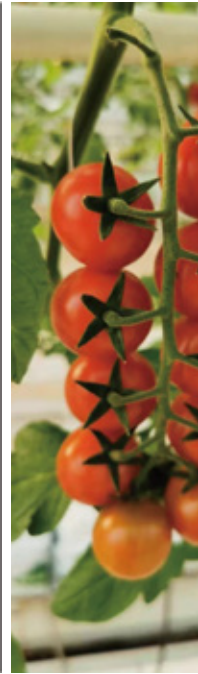
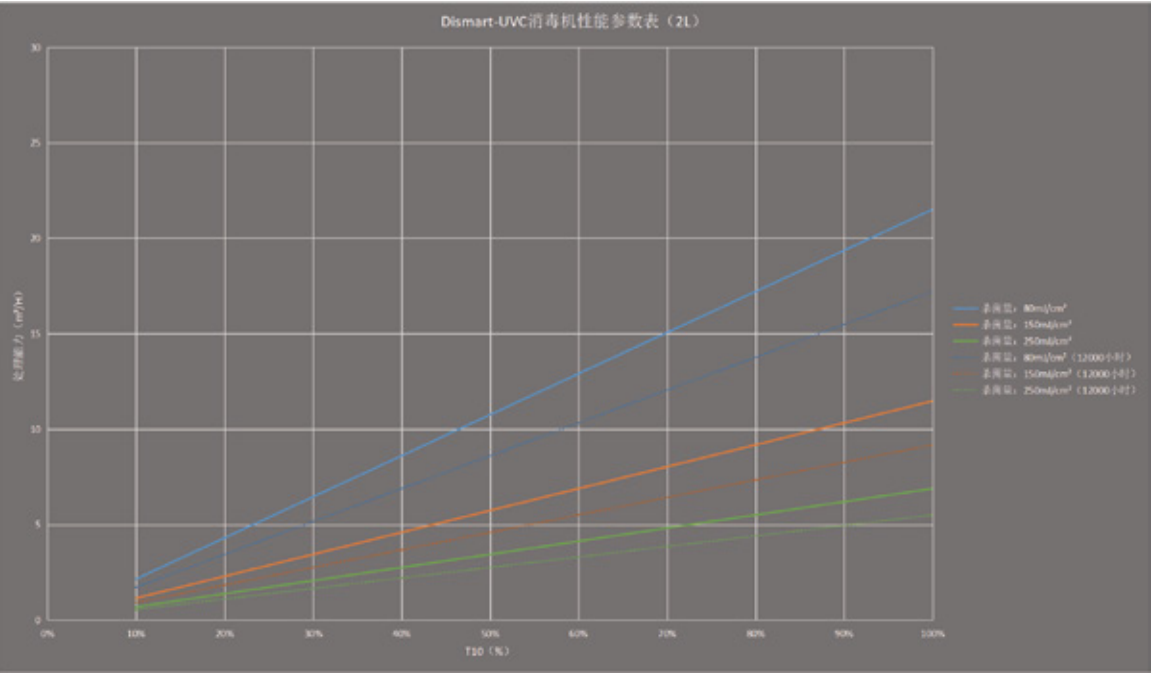
The broad spectrum of ultraviolet sterilization is the highest. It can effectively kill almost all bacteria and viruses, including bacterial propagules, spores, mycobacteria, coronaviruses, fungi, rickettsiae, and chlamydia. The Intel-UV-C uses an ultraviolet lamp as the light source, and uses the ultraviolet light (253.7nm) emitted by the lamp tube to irradiate the virus or bacteria to achieve the purpose of killing. According to the difference of its biological effects, ultraviolet rays can be divided into UV-A (320-400nm), UV-B (275-320nm), UV-C (200-275nm) and vacuum ultraviolet. In water treatment, the UV-C part of ultraviolet rays is actually used, because the C-band ultraviolet rays are easily absorbed by biological DNA, especially the ultraviolet rays around 253.7nm are the best. The sterilization of bacteria and viruses can generally achieve a sterilization rate of 99%-99.9% in one to two seconds. Ultraviolet sterilization does not add any chemical agents, so it will not cause secondary pollution to the water body and the surrounding environment, does not change any components in the water, and does not affect the irrigation formula. The Intel-UV-C is the most advanced UV lamp imported from Europe in the world. The service life of the lamp tube is up to 12000-18000 hours.



performance parameter



Size (excluding package)	2068x1486x1207mm	system voltage	3-phase, 380-415VAC-50Hz
weight	300 kg	Pump power	2.2kw
Ultraviolet lamp	4/8 Philips, single power: 320W	UV intensity of tube wall	15mW/cm ²
Operation terminal	10.1 Inch Touch Screen	Flow range	1-20 m3 / h
Lamp Lifetime	12000 h	Lamp protection	If the system does not detect the flow rate, the UV lamp power will be forced to turn off
Liquid level detection	The liquid level sensor can be equipped for both the UN sterilized water tank and the sterilized water pipe	Flow monitoring	Standard 304 stainless steel flowmeter, accuracy class 0.5
Maximum pipe pressure	6 bar, over this pressure, there is a risk of damage to the lamp	Pipe material	Taiwan Sanli PVC material, inlet and outlet pipe diameter are 2 inches
Pump model	Nanfeng pump 20 m3 / h	Disinfection capacity	See the table below



Control system

The Control system is responsible for the automatic operation of the whole disinfection machine, including the control units such as control center, ballast, inverter, etc. The control center is the core of the whole system, it contains the control board and core board, the core board takes charge of the collecting sensor signal, sending control instruction, etc., and can also be connected to an external liquid level sensor to detect the liquid level status in the disinfection water tank, which is convenient for low water level or overflow protection. The control board is the entrance for the grower to set the parameter and operate the disinfection. The ballast is the control unit of the ultraviolet lamp. It has real-time ultraviolet dose control function, built-in self-diagnosis, automatic fault alarm and shutdown with lamp start protection function, and provides lamp status alarm.

The frequency converter is used to control the speed of the water flowing through the disinfection chamber to ensure sufficient irradiation measurement and kill germs.



Sterilization port high quality 316L stainless steel

FARMNET designed with high-quality 316L stainless steel sterilization port of the anti-fouling series for the disinfection machine. After the high-quality welding process, the unit was leak tested, pickled and passivated, which greatly improved the corrosion resistance and service life.

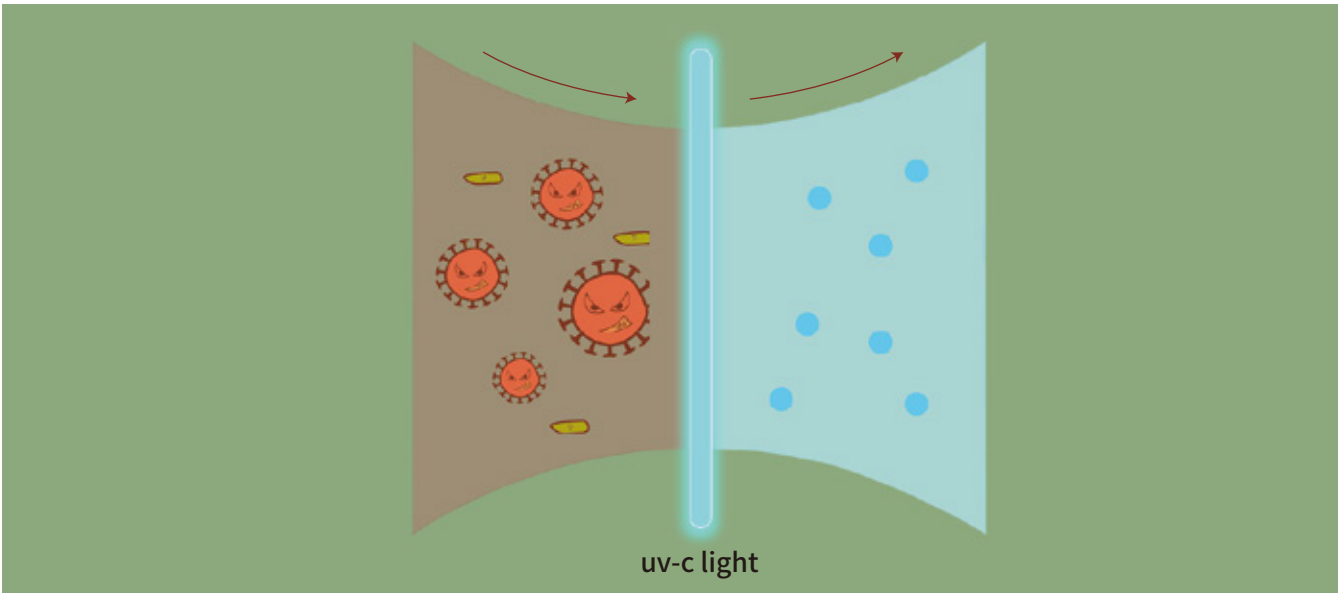


Light intensity sensor

The Light intensity sensor is installed on the stainless steel sterilization port, it can detect the intensity of the ultraviolet light emitted by the ultraviolet lamp when it reaches the wall of the disinfection cavity through the disinfection water. The control system will according to the measured light intensity and the set light intensity, could adjust the water flow speed in the sterilization port, To ensure that the viruses and bacteria passing through the sterilizer have been exposed to a sufficient amount of radiation to kill them.

The ultraviolet lamp tube is made by Philips.

The ultraviolet lamp uses the 253.7nm ultraviolet rays radiated by the mercury vapor in the lamp as the main spectral line to sterilize the water. The power density is 40~80W/cm, and the service life is more than 1000h. The end of the life of the UV lamp does not mean that it cannot continue to be used. It just means that the available ultraviolet intensity generated by the UV lamp under the same energy input is not enough, that is to say, the output power of the ultraviolet is low, causing energy loss. In actual applications, whether the virus can be killed is the standard, but the overall cost must be considered. After all, if the water flow rate is reduced and the time is prolonged, the efficiency will be reduced.



Functional features

Internet of things

The low-pressure ultraviolet disinfection machine has a powerful Internet of Things function, which can be connected to the remote control cloud platform (FarmNet) through the network for remote operation. The system provides 3 networking solutions, 4G/WIFI/-network port can be selected at will, which greatly improves the adaptability of the system application scenarios. The networking function allows growers to fully control the operating status of the system without leaving home. All operating data can be uploaded to the cloud platform for effective data analysis



Flow monitoring

The system is equipped with a stainless steel flowmeter with an accuracy of 0.5, which can monitor the disinfection water volume of the disinfection machine. It can also provide flow data for the control system. The system controls the output of the inverter according to the set ultraviolet radiation measurement, adjusts the pump speed, adjusts the system flow and monitors the flow comparison, and performs PID control so that the virus passing through the disinfection machine is sufficiently irradiated , To kill it.

Liquid level detection

The system reserves the liquid level detection interface (standard industrial signal). After the liquid level detection sensor is configured, the liquid level of the unsterilized water tank and the sterilized water tank can be detected. When the return of the unsterilized water tank is lower than the lower line, the sterilizer will automatically stop running, and when it is higher than the upper limit, it will automatically start running. When the disinfected water tank reaches the upper limit of the liquid level, the disinfection machine automatically stops running to prevent overflow. When the liquid level is lower than the offline, the disinfection machine starts.



Disinfection lamp protection

The liquid level detection interface (standard industrial signal) is reserved in the system, and the liquid level of the UN disinfected water tank and the disinfected water tank can be detected after the liquid level detection sensor is configured. When the return liquid of the UN disinfected water tank is lower than the lower limit, the disinfectant will stop running automatically. When it is higher than the upper limit, it will start running automatically. When the disinfected water tank reaches the upper limit of liquid level, the disinfectant stops automatically to prevent overflow. When the liquid level is lower than the lower limit, the disinfectant starts.

Automatic pickling

In daily work, when there are more attachments on the wall of the ultraviolet lamp tube, it will affect the penetration of ultraviolet rays, weaken the anti-virus effect or reduce the disinfection flow at the same time. At this time, it is necessary to clean the quartz tube sleeve outside the lamp, and strong acid is the best choice for cleaning impurities. The disinfection machine provides pickling function. First, the acid suction pump of the system will absorb strong acid to infuse the disinfection cavity. After a period of time, it will be rinsed with clean water to remove impurities and ensure that the quartz tube is clean and bright to ensure good results. The disinfection effect.fect.



Automatic running

The low-pressure ultraviolet disinfection machine is equipped with a 10-inch large capacitive touch screen human-computer interaction interface, which greatly facilitates the on-site operation of the grower. The grower only needs to set the operating parameters of the disinfection machine (such as disinfection plan, irradiation measurement, etc.) through the human-computer interaction interface, and the system can operate automatically without human intervention, which greatly reduces the labor of the grower.

System alarm

Fault alarm is very important for any automation equipment. The disinfection machine has a self-diagnostic function, which can diagnose its own faults. If a system fault occurs, it will immediately stop and sound an alarm and record. The system will also prompt management personnel to deal with the problem according to the type of failure, which can quickly deal with the failure and resume operation.





Grower's voice

The newly developed water culture system of Platycodon grandiflorum has very strict requirements for disinfection of irrigation water. Disamrt, a disinfection machine in Zhipeng, has helped me a lot and made me plant more at ease

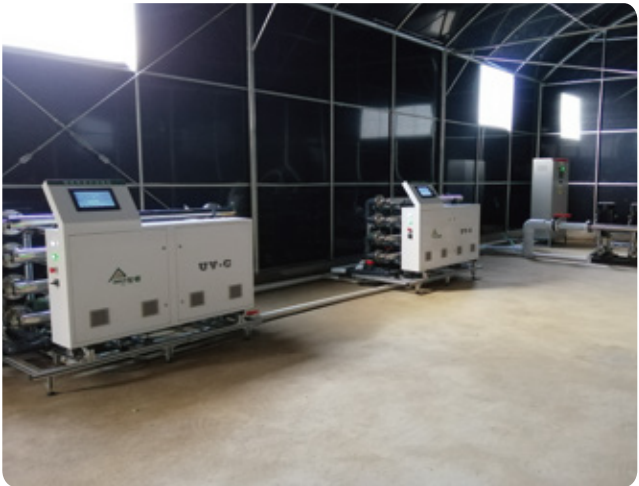
President of Nessen-----Zhang Xuechuan



Support and service

About Nessen

Since 2003, Nessen has focused on the production of Linglong (Platycodon grandiflorum) cut flowers and seedlings; At present, it has 6 hectares of seedling greenhouse and 20 hectares of cut flower greenhouse, with an annual production capacity of 160 million high-quality seedlings. Smart shed provides advanced climate control system hosmart, water and fertilizer control system fismart and backwater disinfection system dismart for Nessen, which is from 26 hectares of greenhouse for fresh cut flower and seedling production.



Conceptual Design

The technical experts of Zhipeng will customize the technical solutions for you according to your requirements. In most cases, we will go to the site for preliminary investigation to ensure that the design scheme is more appropriate to the actual needs. Our goal is to provide growers with advanced, reliable and cost-effective design solutions to maximize their automation investment.



Knowledge training

Zhipeng wholeheartedly provides constructive advice for growers, and regularly provides professional and comprehensive knowledge training for customers. It is very important for us to share with you extensive knowledge and expertise related to weather regulation, energy optimization, irrigation management and plant growth. The new system will inevitably need to master new technology personnel, our company is willing to provide appropriate training content according to your needs. Through technical training to help you establish a flexible, strong professional and technical team, strengthen the technical ability of your staff.

About FARMNET

FARMNET is a high-tech company focusing on smart agriculture research. By using the Internet of Things technology to empower agriculture, we can help growers and breeders create a favorable growth environment and effectively reduce production labor, so that enable customers to get the most benefit from intelligent investment.

Comprehensive layout

FARMNET is committed to the development of intelligent systems for the two major agricultural sectors of planting and breeding, and has established greenhouse, field, aquatic and animal husbandry departments for different professional fields. FARMNET pays special attention to the combination of scientific research and practice, and always firmly believes that practice is the only standard for testing truth. The engineers of FARMNET have been investigating and researching on agricultural production lines all year round. They are familiar with the entire process and daily work of agricultural production, so that they can perfectly combine advanced intelligent systems and agricultural production to maximize benefits.

Globalization

FARMNET is a Chinese company with a global perspective. It has a 9-year history of development. It started from greenhouse climate control systems, and then developed into greenhouse fertilizer and energy management, and then to the application of field, aquatic products and animal husbandry. , All innovative products are up to the international first-class level. It has extensive experience in international applications, and has footprints in the United States, Canada, Saudi Arabia, Egypt, Malaysia, Uzbekistan and other countries.

Sustainable development

Sustainable development is an important concept for the development of FARMNET. We are committed to providing energy-saving and environmentally-friendly solutions. At present, water, agricultural product safety, and energy are global issues. The solutions provided by FARMNET can help you solve the above problems, increase recycling, uphold the concept of sustainable development, and promote sustainable agricultural development in the most efficient way. To control production, maximize recycling, and save energy to the greatest extent.

Innovation driven

FARMNET firmly believes that the mastery of knowledge is the foundation of innovation. Therefore, Zhipeng often encourages and arranges employees to conduct in-depth education to ensure that our employees can master the latest contemporary technology and industry development trends in order to provide customers with the most professional products and services. FARMNET attaches great importance to innovation and technology investment, and 15% of its annual operating income will be used for research and development of innovative products. At the same time, FARMNET provides customers with opportunities to keep pace with the times through regular training courses and special meetings, including the theme of sustainable development technology.

