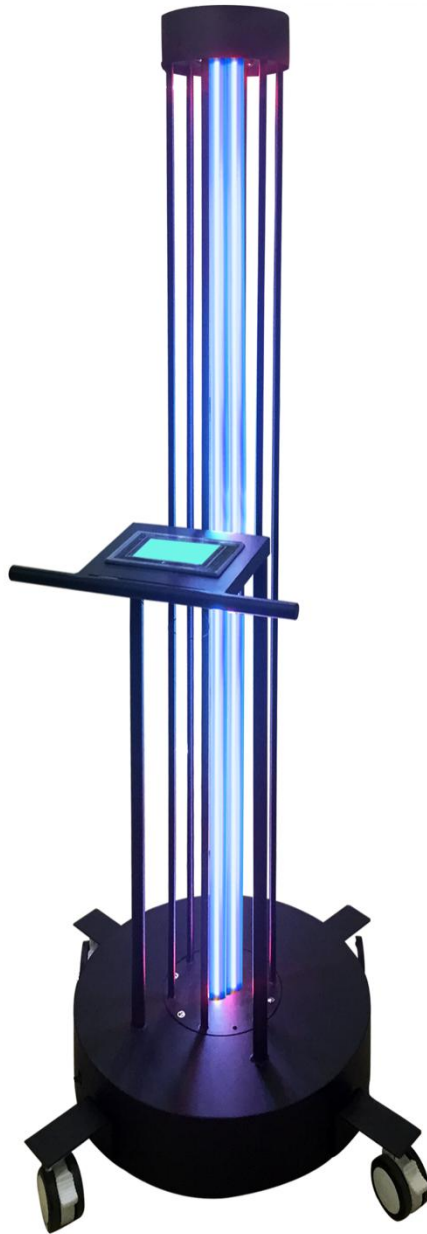


User Manual

(UV-650)

About Company



Merican (SuZhou) Photoelectric Technology Co., Ltd designs and manufactures UV-C disinfection systems. The company's mission is to help minimize infections by

developing High Energy UV technological solutions for surface disinfection. The evidence-based solutions target the reduction of pathogens and other causative agents of infectious diseases with a primary focus on the control of most dangerous viruses such as Covid-19, C. diff, CRE, MRSA, VRE, and Acinetobacter.

Chapter One: Safety Requirements and Precautions

(Please read this chapter carefully before using the instrument!)

- It is strictly forbidden to use this instrument in dangerous environments such as flammable and explosive;
- The instrument must be properly grounded before use;
- In order to extend the service life of the lamp and the instrument, please turn off the power in time when the instrument is not in use;
- After the UV lamp is turned on, the surface temperature of the UV light output part will exceed 41 ° C, so please do not touch it.

1.1 Safety Requirement

- The instrument only guarantees its safety and correctness when it is connected with the instrument provided by the company. It cannot guarantee the safety when it is connected with the equipment provided by any other company.

- To prevent electrical hazards, the instrument should only be connected to a power outlet with a protective earth. Do not use this socket if the power outlet is not connected to a ground conductor or the integrity of the protective ground conductor is uncertain.

- If the instrument is suddenly powered off during normal use, the instrument will not cause damage to the operator or patient. Please turn off the power switch first. When the power is turned on again, operate normally according to the instructions.

1.2 Precautions

● During operation, 75% alcohol should be used to keep the UV surface clean. Generally speaking, it is required to wipe with alcohol cotton ball once a week. If you find dust and oil on the surface of the lamp, you should wipe it at any time.

● When sterilizing indoor air with ultraviolet rays, keep the room clean and dry, reduce dust and water mist, keep the temperature above 20 degrees and less than 40 degrees, and ensure that the relative humidity is less than 60%. After scrubbing the floor, be sure to wait for the floor to dry UV lamp disinfection.

● Do not use the product in an environment with flammable or explosive materials such as anesthetics to prevent fire or explosion.

● Do not open the case of the instrument yourself, otherwise there may be danger of electric shock. Repair or upgrade of the instrument must be performed by service personnel trained or authorized by our company.

● When the UV lamp is working, people, livestock and so on cannot be present, and some items that are not suitable for UV irradiation need to be effectively covered.

● The UV light should not be irradiated on the human body or people should not look directly at the light source, so as not to cause damage to the body and glasses.

● After using the UV light to sterilize the room, pay attention to opening windows immediately for ventilation.

● In order to prevent electric shock and reduce instrument failure, the instrument must have no water entering. If the instrument accidentally has water entering, please stop using it immediately and return it to professional technicians for repair before using it once again.

● Before using the instrument, it is required to carefully check the instrument and its connecting cables and accessories to ensure that they can work normally and safely.

● After using the instrument, do not touch the light with your hands to prevent burns.

● Please operate the instrument according to the parameters specified by our company.

- If the lamp is damaged, please recycle it in time to avoid personal injury caused by debris.

- To ensure the safe operation of the instrument, please use the products provided or designated by our company for various replaceable parts, accessories and various consumables equipped with the instrument.

● **Accessory and instrument treatment**

Packaging materials should be disposed of in accordance with local waste disposal regulations and protected from children.

The service life and storage life of the instrument are five years. After the end of its life, the instrument and its accessories should be disposed of in accordance with the relevant regulations for the disposal of such products. If you have any questions about handling, please contact our company or agency.

● **Instruction manual**

To ensure continuous and safe use of this instrument, the listed instructions must be followed.

Please keep this manual near the instrument so that it can be easily and timely obtained when needed.

Chapter Two: Product Profile

2.1 Function overview

Instrument characteristics:

- Special high-power ultraviolet lamp produced by Philips of the Netherlands as a germicidal light source, which has the characteristics of high stability and long life;

- The microcomputer automatically controls the disinfection time, and the product adopts the traditional time control method, which is more convenient for various personnel to master;

- The bottom is equipped with pulley to facilitate the user to move.

2.3 Instrument parameters

Instrument type

- Classified according to the type of anti-shock: Class I.
- The device has no application part.
- The equipment does not have signal input and signal output parts.
- Classified by operating mode: intermittent loading and continuous operation.
- Ordinary equipment.

The device must not be used in the presence of flammable anesthetic gas mixed with air or with oxygen or nitrous oxide.

Main technical indexes of the instrument

Technical parameter

Technical parameter	
Model	UV-650
Tube power	2*325W
Disinfection irradiation intensity	1350uw
Power	220V/380V 50Hz/60Hz
Current	3.5A
Total power	650W
Size	600x600x1900MM
Weight	37KG

- Power supply: AC220V \pm 10%, 50Hz \pm 2%
- Input power: 650VA
- Overcurrent release specifications and ratings: DZ47LE-25A
- Working environment:

Temperature: 20 ~ 40 °C

Relative humidity: \leq 60%

Atmospheric pressure: 700hPa ~ 1060pha

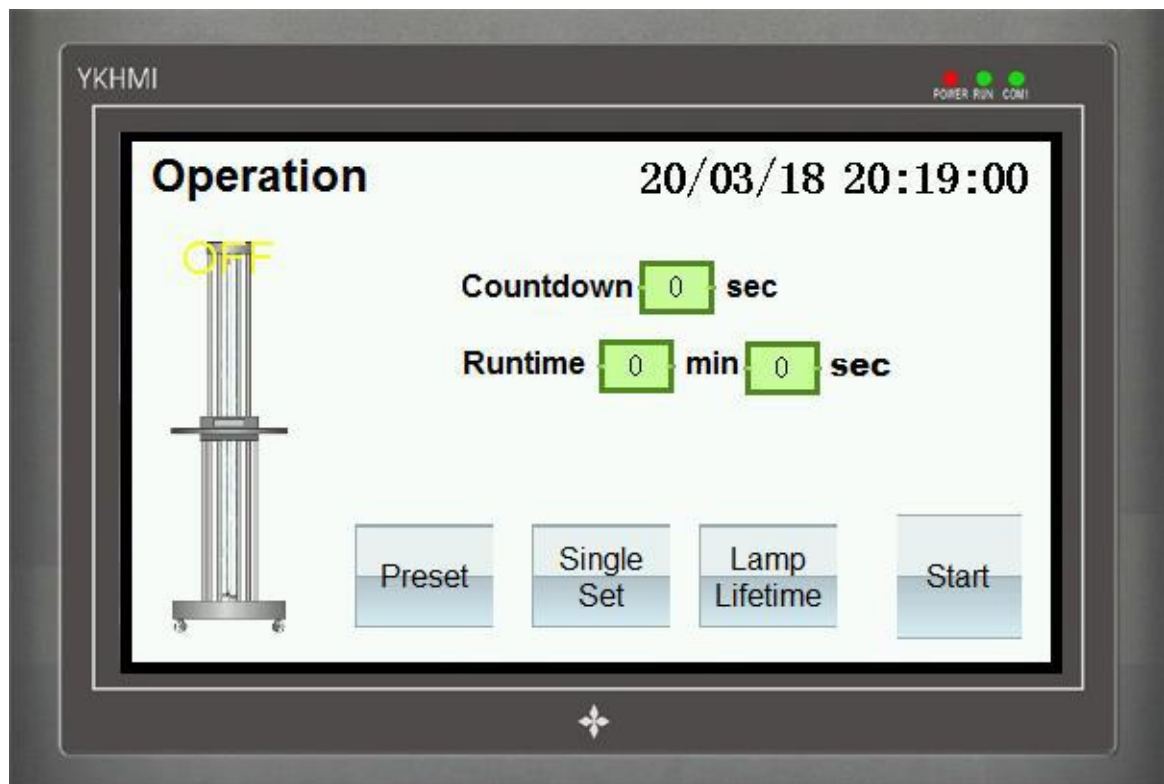
- Structure format: vertical machine
- Display mode: LCD display
- Irradiation intensity: The error from the nominal value is within $\pm 20\%$;
- Timing: The device has a timer, and the timing error is within the range of 2%

First, initial starting interface

Start the vehicle, enter the welcome interface, and then wait for 5 seconds to enter the operation interface automatically.

Operation Interface

The initial state of operation is waiting. Click the start button in the bottom right corner of the screen to turn on the sterilization lamp.



After the sterilization lamp is turned on, the touch product interface is as shown in the figure above. The time of irradiation of the lamp tube will be automatically updated

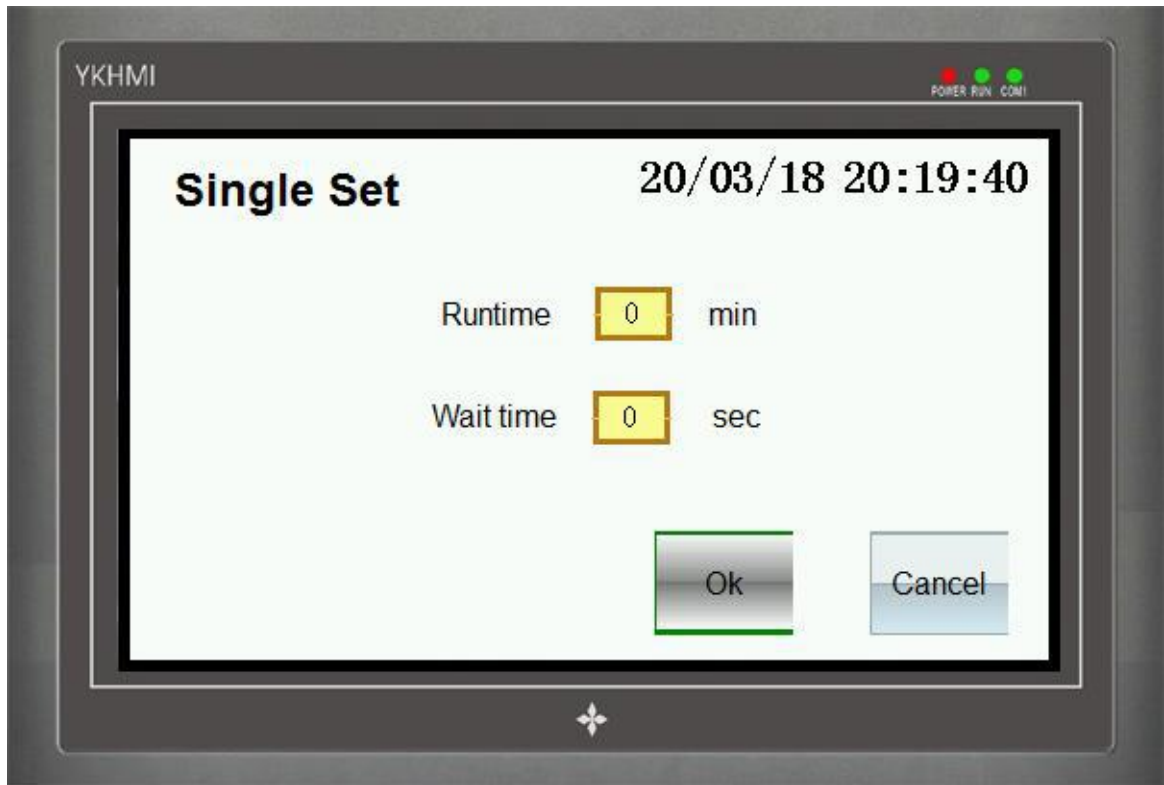
during the sterilization time to facilitate users to maintain the equipment. The scrolling marquee below prompts the user to stay away from the device that is already open.

Because of the characteristic of ultraviolet ray, antiseptic lamp cannot illuminate human body directly, especially eyes; therefore, it will spare some time for operator to leave. In addition, the sterilization time is also set internally, and the irradiation will automatically stop after a fixed period of time. A complete ultraviolet lamp operation process is listed as follows:

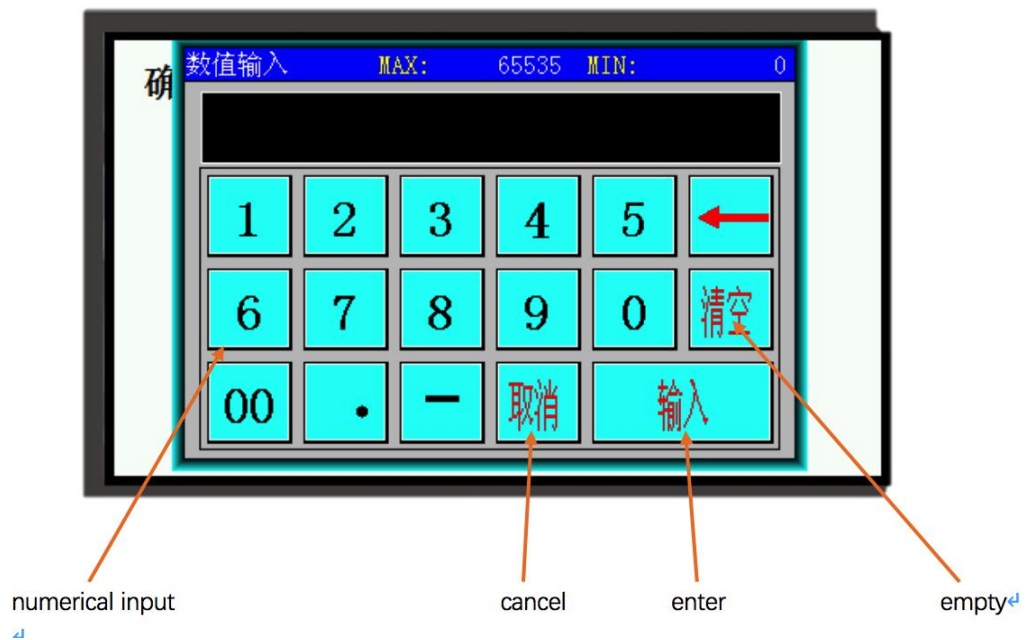


Time Setting Interface

The previous section mentions that the waiting time and sterilization time need to and can be set. Click the single set button on the right of the initial operation interface to jump to the time setting interface, as shown in the figure below.



Then click the yellow number input box in the figure above. After clicking, the following number input menu pops up as shown in the figure below.. After inputting the time, click the input button in the lower right corner.

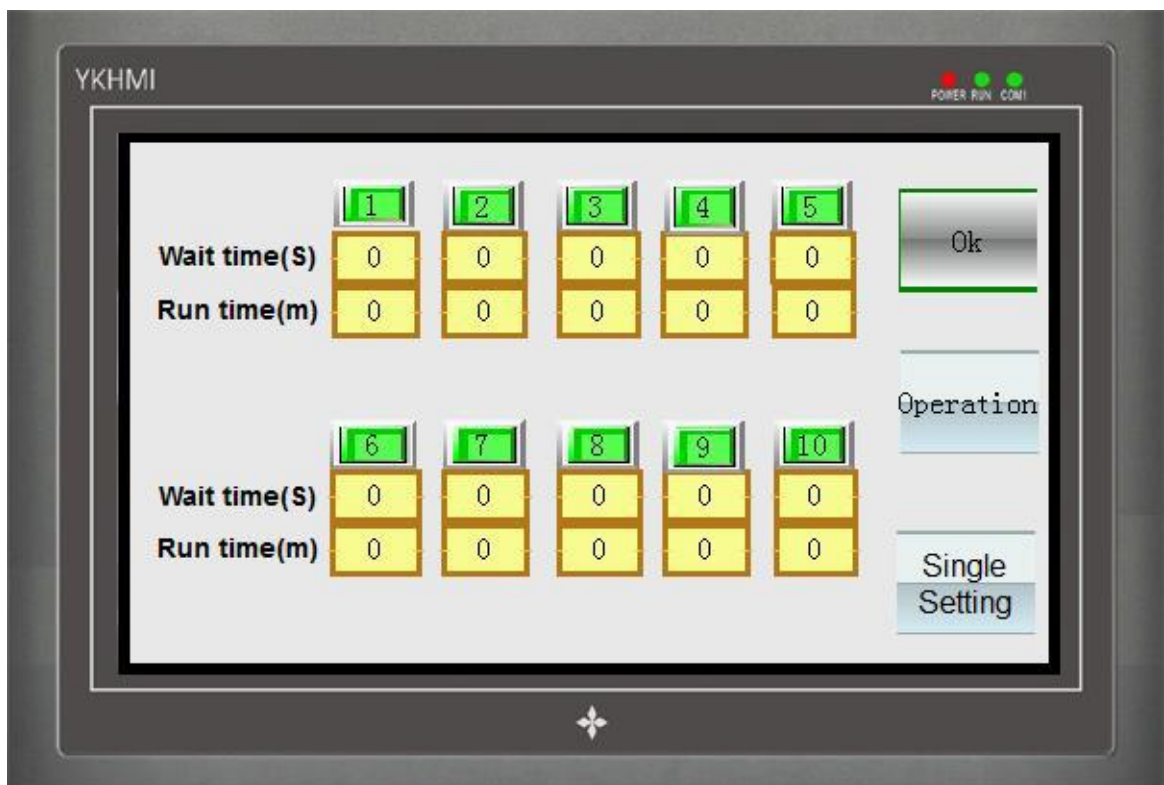
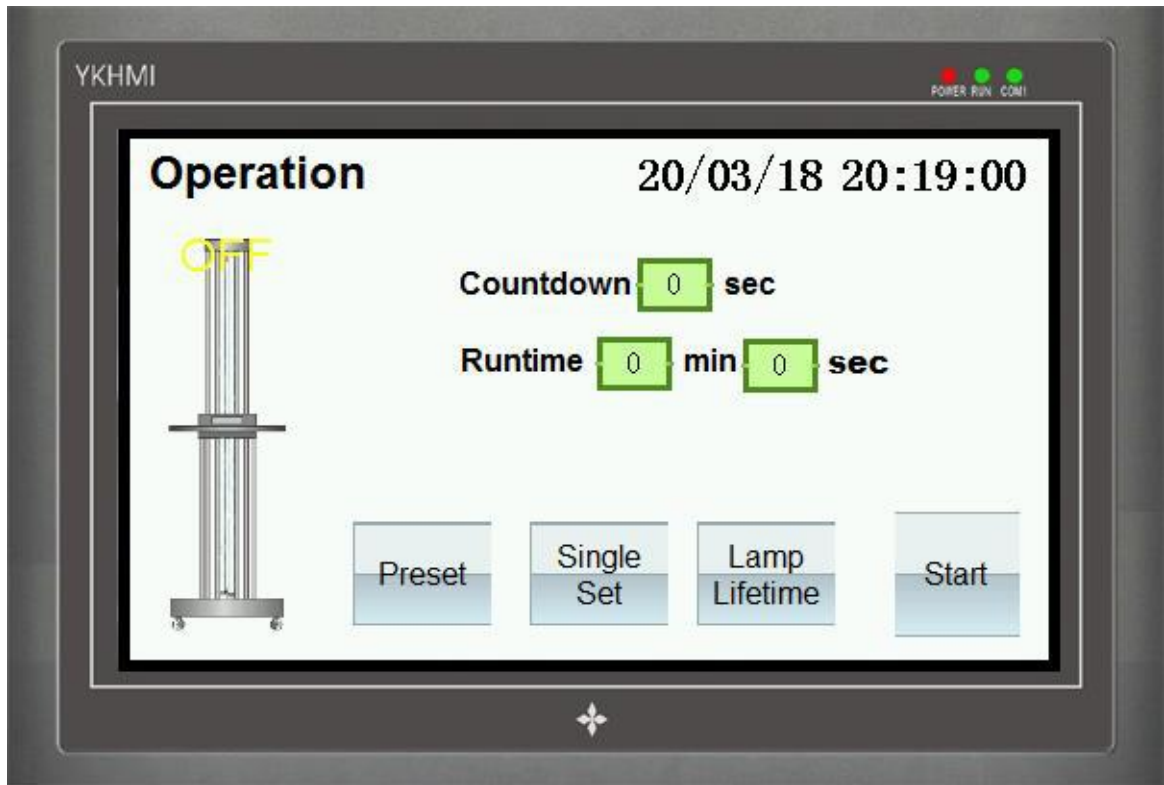


Interface state after completing sterilization time input.

The wait time is set by the same way.

Preset

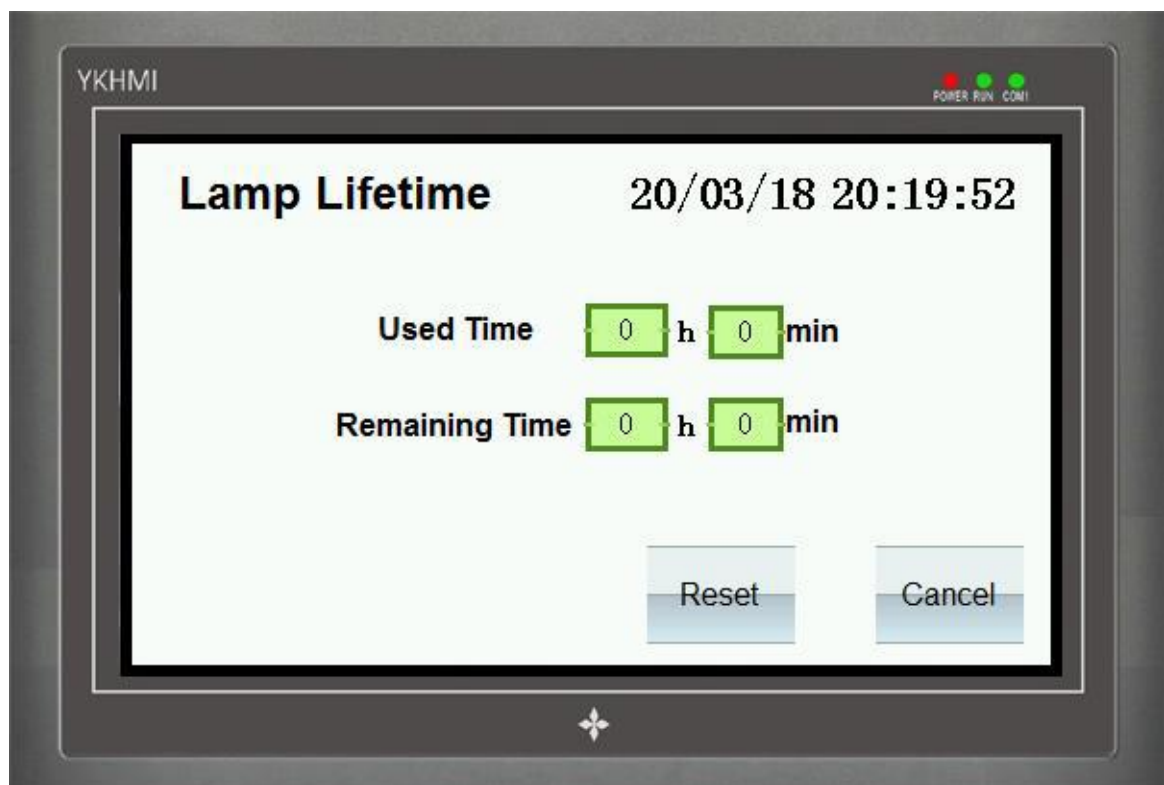
To facilitate the sterilization in different room areas, the sterilization vehicle support the pre-setting of 10 different sterilization time patterns. After clicking preset, the following interface is displayed, and then the user can set different sterilization time, which is convenient and can be adjusted at any time. The operation method is the same as it's mentioned above.



Click OK to complete the preset template. Each time when the user needs to use the preset function, the user can directly click the sequence number from 1 to 10 on the preset, and then click operation. The system will automatically jump to the main interface of the operation, and the main interface will display the run time and wait time of the selected preset pattern. And then, click the start button to start the sterilization.

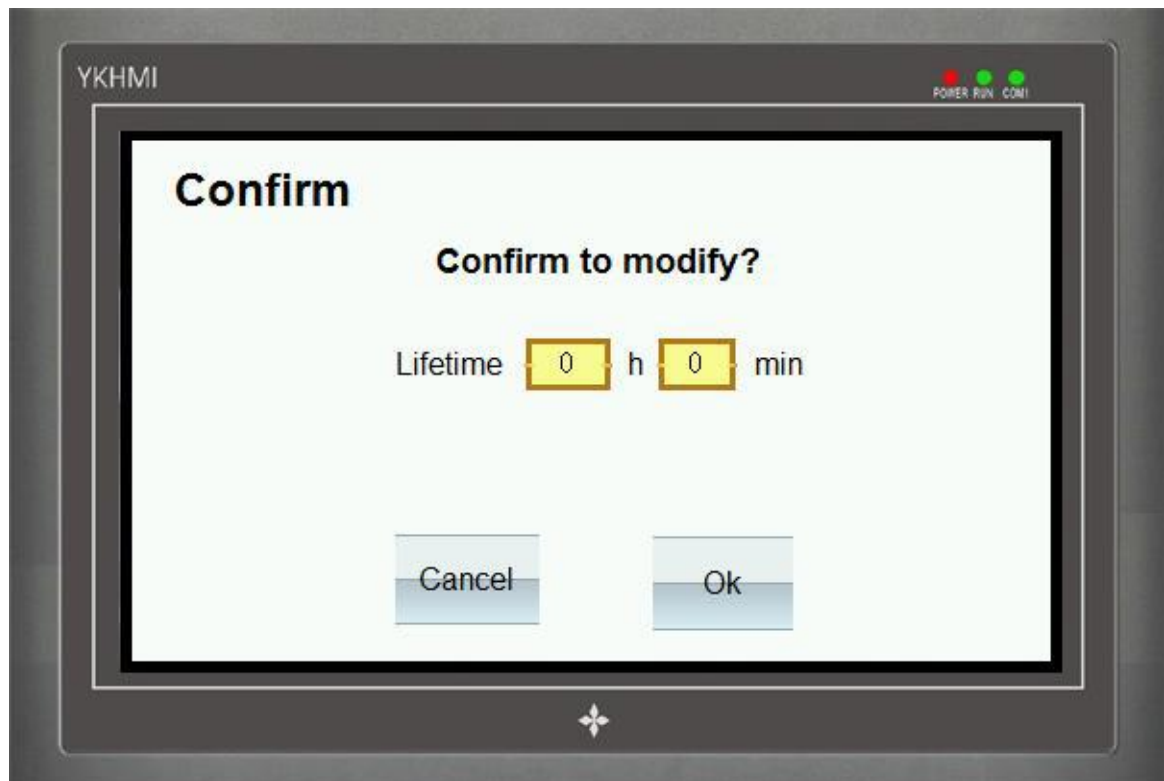
Lamp Life Time

The ultraviolet lamp tube itself has the characteristic that the energy emitted by ultraviolet light gradually attenuates with the passage of time. The national standard requires that the lamp tube needs to be replaced after being used for 3000 hours. In order to facilitate the user to reasonably estimate the lifetime of lamp tube, save the costs and avoid unnecessary replacement, the equipment has the function of recording the lamp tube's running time internally, as shown in the figure below.



If the lamp tube is replaced, the running time of the lamp tube needs to be reset, and then click the reset button to pop up the sub-interface of the reset time, as shown in the figure below.

Then the digital input method is the same with that in the time setting interface, to set the lamp tube life to 3000 hours.



Then click confirm. In order to prevent the internal lifetime information from being reset due to improper operation by the user, modification can only be made after inputting the correct password here. If the password is wrong, the setting function cannot be operated. The default password is 12345.

TIPS

Ultraviolet ray can cause damage to human skin and eyes, so please do not enter the room during the sterilization.

The lamp tube will run for 30 seconds to preheat each time. Both ends of the lamp tube will be red in this 30 seconds until it all be lit

Appendix

Disinfection Efficiency of UV-650 in Rooms of Different Sizes

Disinfection Efficiency	15m ²	20m ²	25m ²	30m ²	35m ²	40m ²	45m ²	50m ²	55m ²	60m ²
Killing Coronavirus/Minute	10	13	16	18	20	22	25	26	29	30
Limit to the length of the room/meter	5.4	6.4	7.2	7.8	8.4	9	9.4	10	10.6	11

Disinfection Efficiency	15m ²	20m ²	25m ²	30m ²	35m ²	40m ²	45m ²	50m ²	55m ²	60m ²
Killing Bacteria/Minute	3	3	4	4	5	6	6	7	7	8
Limit to the length of the room/meter	5.4	6.4	7.2	7.8	8.4	9	9.4	10	10.6	11

Product Warranty

Warranty statement

- During the warranty period, for any failure caused by the product quality, the Merican Service Center will repair or replace the parts for free. Users are not allowed to disassemble the machine for repair without permission.
- From the date of installing the instrument, warranty of one year and a half of the whole machine and one year of accessories (except for wearing parts and consumables) shall be provided. When the warranty period expires, the product shall enjoy life-long maintenance (requires maintenance fees according to regulations). In case of any regulation, the regulation shall prevail.
- If the user has special requirements for the service, the user can consult for Merican After-sales Service Center.
- The technical data related to this instrument can be provided to technical service personnel authorized by our company when necessary.

Please understand that we do not provide free services under the following circumstances:

- Malfunctions caused by unauthorized disassembly and modification of the instrument.
- Failure caused by accidental knock or drop during use and handling.
- Failure caused by lack of reasonable maintenance or fail to reach the environmental requirements.
- Failure caused by operation going against the instruction manual.
- Instrument and accessories damage caused by human reasons.
- Failure caused by self-repair without our company's permission.
- Failure caused by the unstable local voltage.
- Failure or damage caused by fire disaster or earthquake.

Model		
Sales date		
User data	User name	
	Communication address	
	Contact no.	
	E-MAIL	
Repair date	Maintenance record	Remark