

## 50x50mm UV LED Array with Air Cooling for UV LED Conveyors



**SKU: 511048-365**

**UV LED Array with Air Cooling**

**User Manual**

**Please read this user manual carefully before using the product**

## 1. UV LED Curing equipment features

### 1.1 UV LED light source characteristics

- Cold light source, low temperature, no warm-up required, instant on/off;
- Compared with traditional mercury lamps, UV LEDs are more efficient, low-consumption, longer life, energy-saving, environmentally friendly, and more stable;
- Compared to the 1000-hour lifetime of conventional lamps, UV LEDs have a lifetime of 20,000 hours, use less electricity, save 80% of energy, and have an energy decay of only 1%, saving up to 70% of operating costs.
- Since LED is a UV "cold light source" and does not emit ultra-short-wave ultraviolet light, it does not produce "ozone" and can realize zero emission of VOCs.
- Adopting South Korea Seoul brand LED lamp beads, strict implementation of international standards in the industry, the use of the best thermal conductivity material AlN, pure gold wire all inorganic quartz encapsulation, exclusive supply, energy efficiency increased by 20%.

### 1.2 Main controller characteristics

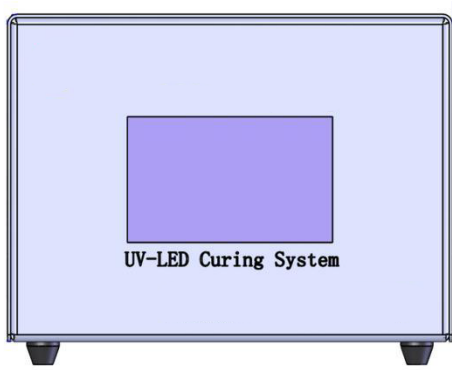
- Touch screen display, simple and intuitive operation.
- Supports external dry contact control of UVLED switch and alarm output (dry contact).
- Support standard RS485 communication protocol, convenient for peripheral equipment communication.
- Temperature real-time monitoring, effective protection of LED stable work, and with over-temperature protection alarm function.
- Supports automatic irradiation function, can countdown irradiation, also can record the total irradiation time.

## 2 Main performance and parameters of the product

Controller dimensions	320mm*206mm*153mm (L*W*H)
Lamp dimensions	570*450*99mm (L*W*H)
Power supply	Single phase AC220V 50HZ
Equipment power consumption	1000W(Current 10.5A)Max, Not Lamp Current
Emitting window	50x50mm
wavelength	365nm
Optical power (10mm)	1200mW/cm <sup>2</sup>
Cooling method	Air cooling
Net weight of equipment	Approx. 15KGS
Operating Temperature	-10°C - 50°C (non-corrosive, no dust)
Working environment humidity	10% - 80% RH without condensation

### 3. Equipment installation and connection

#### 3.1 Product composition



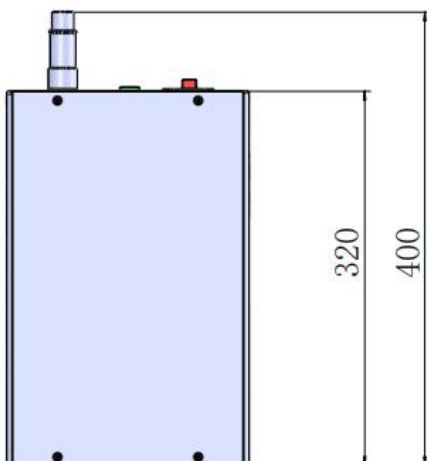
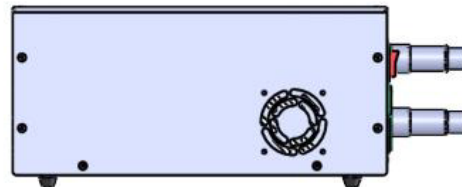
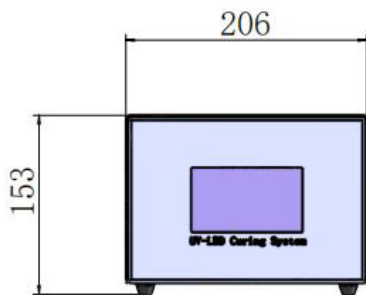
**UV LED controller**



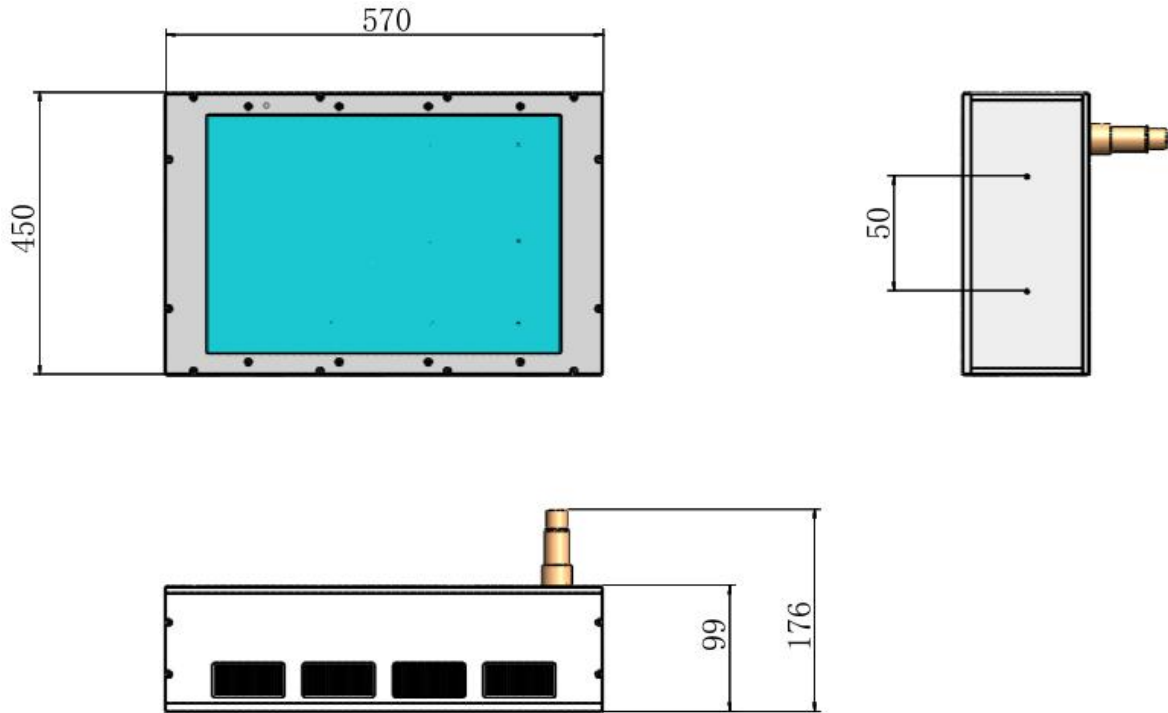
**UV LED LAMP**

#### 3.2 Product Dimension Drawing

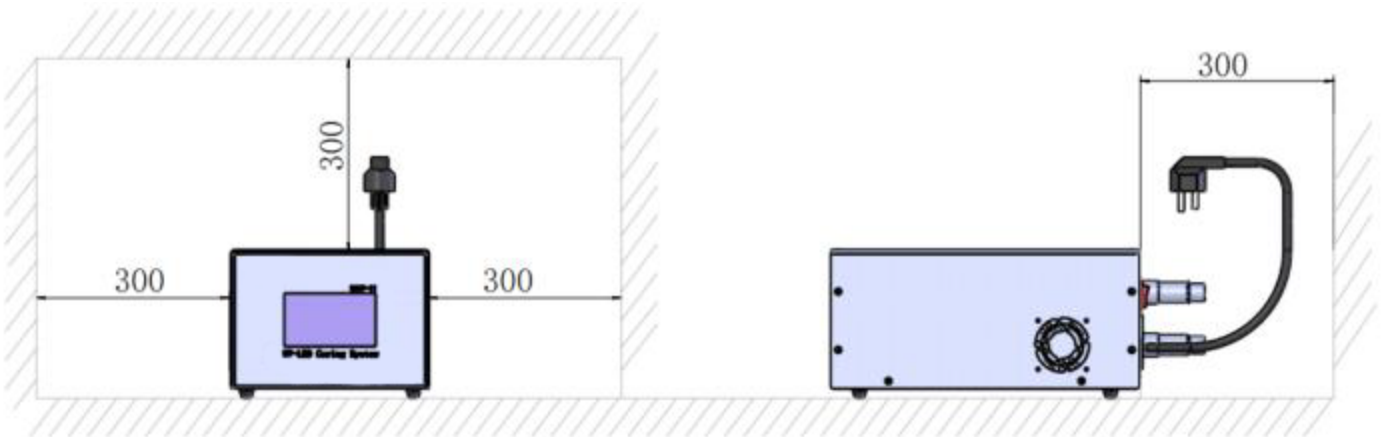
##### 3.2.1 Mainframe dimensions



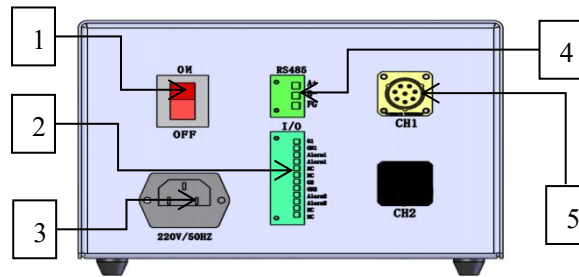
### 3.2.2 Lamp dimensions



### 3.3 Product Installation Schematic



### 3.4 UV LED controller part name and function



Serial number	Name	Function
1	Boat Switch	Main power switch for mainframe
2	Input and output I/O terminals	<ol style="list-style-type: none"> <li>1. Connect the foot switch or relay shorting for UV irradiation switch, the alarm output signal is relay shorting signal.</li> <li>2. port numbering: from top to bottom G1, ON1 a group, short on the light signal; Alarm1, Alarm1 a group, alarm output.</li> </ol>
3	power cable (of an appliance etc)	External power input
4	RS485 communication port	Port numbering, from top to bottom A+ B- FG, for external parameter reading and writing
5	UVLED Connectors	UVLED Connection Port (Female)

### 3.5 Connection of UV LED light source

Align the connection port for the UV LED light source (female) on the back of the main controller with the dimpled side of the connector for the UV LED light source (male), and push the back half of the connector to insert. After insertion, it is necessary to turn the rotatable part counterclockwise until it is tightened.

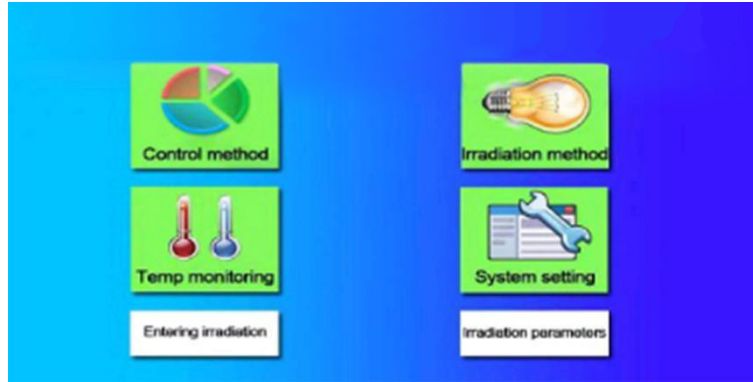
## 4 The basic operation and setting of equipment

### 4.1 Startup and shutdown

Before startup, please check whether you have connected the UV LED light source connection cable and power cable, then turn on the power, turn on the main power switch of the host, then you

can operate and apply the main controller. When shutting down, please turn off the UV LED light source first, then turn off the main power switch of the host, and finally unplug the power cord.

## 4.2 Functional operation



main interface	Display content
control method	Manual control, automatic control
exposure method	Power, fan delay and time settings for irradiation, total irradiation time query and zeroing
temperature monitoring	Set alarm temperature, real-time display of light source temperature
System Settings	Restore Factory Settings
Access to irradiation	Click on the button to enter the irradiation interface
View irradiation parameters	View parameters such as irradiation power, irradiation time, alarm temperature, etc.

### 4.2.1 Control methods



control	Click <b>Automatic irradiation</b> to switch to <b>Manual control</b> and work with the clock, not timed control.
mode	Click <b>Manual control</b> to switch to <b>Automatic irradiation</b> for countdown work with timed control.

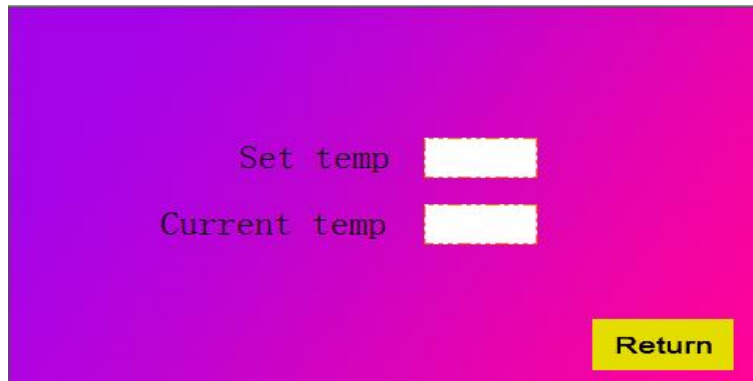
### 4.2.2 Irradiation methods



irradiating power	Click the number in the space for irradiation power to bring up the input keyboard, type in the desired value and click Enter to confirm. The input range of irradiation power is 1-100%.
exposure time	Click the number in the space of irradiation time to pop up the input keyboard, type in the desired value and click Enter to confirm. Irradiation time input range 0-9999 seconds
latency	Time setting for delayed fan shutdown after UVLED off
total duration of exposure	Record the total exposure time of the UV lamp, you can click zero to clear the total exposure time, zero requires an administrator password.



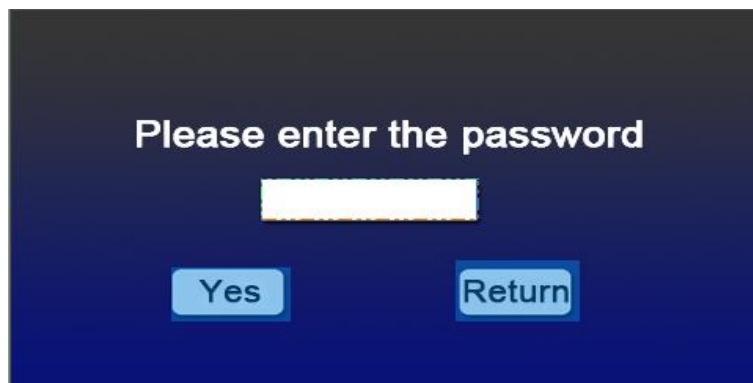
### 4.2.3 Temperature monitoring



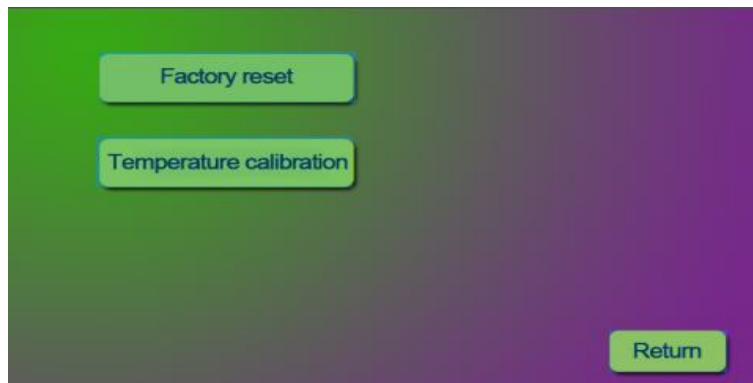
Set temperature	Click on the number in the set temperature space to pop up the input keyboard, type in the user's own desired value and click Enter to confirm. The range of setting value is between 0°C and 65°C.
Current temperature	The current temperature is the real-time display of the UV LED light source temperature, the current temperature exceeds the set temperature UV LED light source will stop working and send an alarm signal.

### 4.2.4 System settings

Clicking System Settings requires you to enter the administrator password to access the System Settings screen.



**Administrator password: 123456, non-professionals please do not modify parameters**



Restore Factory Settings	Clicking 'Restore Factory Settings' will restore the factory original data: irradiation power is 80%, irradiation time is 60S, temperature monitoring is set to 65°C.
Temperature calibration	Manufacturer's parameters, do not operate!

### 4.2.5 Access to irradiation



irradiation button	Start and stop buttons.
Back button	Click the Start button to return to the main screen and turn off the irradiation at the same time.

### 4.2.6 Viewing irradiation parameters

When the "Main Page" is displayed, click the "View Irradiation Parameters" button to view the irradiation power, time, alarm temperature and other parameters.





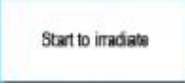


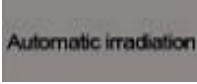






### 4.2.7 High temperature fault alarm

When the UV LED light source is running, if the temperature of the UV LED light source is higher than the set temperature, the UV LED light source will be automatically turned off and an alarm signal will be issued, and the alarm signal will be automatically lifted when the current temperature of the U-LED light source is lower than the set temperature.



### 4.2.8 Examples of operations

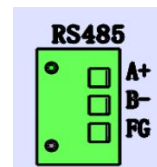
<p>Automatic control mode</p>	<p>1, click  , click manual control <b>Manual control</b> to switch to automatic control <b>Automatic irradiation</b> , and then click "Back" to return to the main interface.</p>
<p>Modification of irradiation parameters</p>	<p>2. Click, enter the parameters</p> <p> Irradiation power <b>60</b> % Irradiation time <b>10</b> s Fan Delay <b>60</b> s</p> <p>,and click "Back" to return to the main interface after setting.</p>

<p>Access to irradiation</p>	<p>3, click  , click  , start irradiation. UVLED light, countdown 10 seconds after the automatic shutdown, you can also click  manual shutdown.</p>
<p>Manual control mode</p>	<p>1、 Click, click the automatic control  to switch to the manual control  , and then click "Back" to return to the main interface.</p>
<p>Modification of irradiation parameters</p>	<p>2、 Click, enter the parameters   ,and click "Back" to return to the main interface after setting.</p>
<p>Access to irradiation</p>	<p>3、 Click, click  , click  to start irradiation. UVLED lights up, clockwise timing, click  to turn off manually.</p>

## 5. Peripheral device connections



I/O signal port



RS485 communication

IO signal port	functionality	
G1 NO1	Shorting the light on signal, the external relay shorting controls the light on and off.	<p>The diagram shows a terminal block with the following connections from top to bottom: G1 (terminal 1) connected to K1; ON1 (terminal 2) connected to K1; Alarm1 (terminal 3) connected to K2; Alarm1 (terminal 4) connected to K2; NC (terminal 5); NC (terminal 6); G2 (terminal 7) connected to k3; ON2 (terminal 8) connected to k3; Alarm2 (terminal 9) connected to k4; Alarm2 (terminal 10) connected to k4; NC (terminal 11); and NC (terminal 12).</p>
Alarm1, Alarm1	Alarm output signal, relay dry contact signal.	
RS485 communication	Top to bottom A+ B- FG for external parameter read/write.	

**(1) RS485 communication protocol:**

The UV LED host uses a standard RS485 Modbus-RTU interface with baud rate 115200, no parity bit, 8 data bits and 1 stop bit (115200 N 8 1).

**(2) Register description:**

00	Local address Factory default '0' (range: 0-255) Read/write support
01	UVLED output power setting address (range: 1-100%) Read/write support
02	Manual/Auto Mode Setting Address (0: Manual 1: Auto) Read/Write support
03	Exposure time setting address (range: 0-9999 seconds) Read/write support
04	Alarm Temperature Setting Address (Setting Range: 0°C-65°C) Support Read/Write
05	Current temperature address Read only
06	NC
07	Enable/disable UVLED address (0: off 1: on) Write support

**(3) UV LED host support command code:**

03	Read function code Read parameter as hexadecimal number
06	Write Function Code The parameter to be written must be a

	hexadecimal number.
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#### (4) Parameter read/write instruction format:

UV LED host address modification instruction format (hexadecimal) such as: 0 address to 1 address

**(A reboot of the host is required for the device address change to take effect)**

device address	function code	register address		data bit		CRC check	
00	06	00	00	00	01	08	0B

UV LED host output power setting instruction format (hexadecimal) such as: set 50% power output

(Decimal 50 to hexadecimal 32) If the device address is '0'

device address	function code	register address		data bit		CRC check	
00	06	00	01	00	32	59	DF

UV LED host automatic irradiation time setting instruction format (hexadecimal) such as: set irradiation 100 seconds.

That is 100 (decimal 100 is converted to hexadecimal 64) If the device address is '0', then the device address is '0'.

device address	function code	register address		data bit		CRC check	
00	06	00	03	00	64	78	21

UV LED lamp real-time temperature reading instruction format (hexadecimal) if the device address is '0'.

device address	function code	register address		Number of registers to read		CRC check	
00	03	00	05	00	01	94	0B

Return value: (00 03 00 05 22 9A CD) '22' is the real-time temperature value in hexadecimal, 34°C in decimal

## 6. Common faults and treatment methods

fault phenomenon	Reason for failure	Treatment
Temperature Alarm	overheating	Check the cooling fan for proper functioning
	Damaged temperature sensor	Enabling Backup Sensors
UV LED does not light up	connection	Check that the connectors are connected properly

No power on	Poor power cord contact	Check the power connector, power cord plug for good contact.
	Boat Switch	Is the switch on?

## 7. Maintenance of equipment

- Clean the surface dust every day to keep the body clean, and clean the dust of the cooling fan port regularly to keep the cooling channel normal (normally cleaned once a month, depending on the environment).
- Turn on the light to check whether the UV lamp is irradiated according to the set power, if it is abnormal, stop working, contact the staff for inspection, or contact the manufacturer.
- Equipment running for a month should be systematic maintenance, UVLED glass inspection, to see whether the pollution, UV lamp aging and other work.

## 8. Precautions

- Do not direct UV light to eyes or skin, as it may cause damage.
- Do not disassemble the UV-LED to irradiate it, which may cause UV light leakage.
- Be sure to disconnect the power supply when installing or removing the UV-LED irradiation head.
- When cleaning the irradiation head and controller regularly, please do not use thinner, volatile oil, acetone, kerosene, etc. You can use a soft cotton cloth dotted with a small amount of ethanol and wipe carefully.
- The machine should be used in a cool, dry, ventilated environment without high magnetic or electric fields.
- Please use the DC power supply specially provided by the factory for the power adapter.
- Do not open the controller privately to prevent the risk of electric leakage

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