

# UV Ozone Cleaner



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## Features

<b>Materials</b>	stainless steel, Acid and alkali resistance
<b>Structure</b>	Benchtop
<b>Air</b>	Inlet and outlet
<b>Protection</b>	Drawer opening and closing are interlocked with UV light work to avoid UV damage
<b>Timer</b>	Button timer, digital display countdown, convenient and intuitive
<b>Operation</b>	The cleaning process can be terminated manually at any time
<b>Optional</b>	Ozone neutralization

## Parameters

<b>Wave band</b>	185nm&254nm
<b>Average light intensity distance 3-5mm of UV lamp</b>	28~32mW/cm <sup>2</sup>
<b>Lamp</b>	Dual Wave Low Pressure Mercury Lamp
<b>Lamp power</b>	150W
<b>Irradiation area</b>	150mm×200mm(Plate dimension: 175×225mm)
<b>Adjustable irra-diation distance</b>	5~40mm
<b>Timer</b>	0~99min99s automatic countdown function
<b>Temperature range (only for SC-UV-I+model)</b>	room temperature - 200°C(only for SC-UV-I+model)
<b>Air inlet &amp; outlet</b>	inlet: φ8mm, outlet: φ25mm
<b>Device dimension</b>	250mm(w)×300mm(D)×260mm(H)
<b>Plate dimension</b>	160mm(w)×200mm(D) ×5~40mm(H)
<b>Weight</b>	8 KG

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## Packing List

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Packing Boxes				
NO.	Name	Packing List		
		NO.	Name	Amount
1	SC-UV-I	1	UVO <sub>3</sub> -Cleaner	1
		2	Power Cord	1
		3	Hose	1
		4	Ozone Killer (option)	1
		5	Blower (option)	1
		6	User Manual	1
		7	Qualification Certificate	1
		8	Warranty Card	1
		9	Company Product Brochure	1



## Attentions

- The device is equipped with UV lamps that are fragile. Please handle it with care
- High voltage is present in the machine. Disconnect the power before servicing.
- This device produces ozone gas, which can be toxic and is a strong irritant, please do the exhaust gas treatment well.
- This device emits intense UV light, don't expose your skin to the light source.
- Always wear the proper personal protective equipment (PPE) for the job, including safety glasses, gloves, and other equipment as needed to protect from mechanical and chemical hazards.;
- Never use with flammable materials;
- The UV lamp contains mercury, please properly dispose of exhaust lamps;
- The product is intended for use in a clean and low- humidity room environment. temperature: 0-40°C; humidity: <85%.



## Services and Maintenance

- 2-year full warranty on parts and labor;
- Free remote technical support (phone, email, fax) for the life of the product;
- Application process assistance for the life of the product;
- Maintain on-site or in the factory.



## Feedback

If you have any comments and suggestions, please let us know.

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## Optional Accessories

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- UV lamps;
- Ozone killer;
- Blower;

## Product Feature

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- The whole body is made of stainless steel, acid and alkali resistant, corrosion resistant and beautiful appearance;
- Drawer type Sample table, convenient to load and unload the substrate;
- Media inlet port design, a media supply can be connected to save the cleaning time and improve the cleaning effect;
- Interlock of the drawer operation and UV lamp, avoids the ozone damage;
- The ozone killer is designed to neutralize ozone as an optional accessories, that can avoid unnecessary ozone damage;
- Equipped with timer, digital countdown, intuitive and convenient;
- The cleaning process can be manually terminated at any time;

## Performance parameters

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- Media inlet port and exhaust port, media inlet port:  $\phi 8\text{mm}$ , exhaust port:  $\phi 25\text{mm}$ ;
- Grid lamp, wavelength: 185nm and 254nm; Average intensity (the distance measured away from lamp is 3-5 mm): 28~32mW/cm<sup>2</sup>;
- UVO<sub>3</sub> cleaner power: 150W;
- UV Lamp Dimensions: 150mm×200mm, Height Adjustment Range: 10~25mm;
- Timer range: 0~99min 99s, with automatic countdown function;
- Voltage: 100-250VAC, single phase;
- Device Dimensions: 250mm (W) ×300mm (D) ×260mm (H);
- Tray Dimensions: 160mm (W) ×200mm (D) ×5~30mm (H)
- Weight: 12.5 KG.

## Installation

### ➤ Front panel

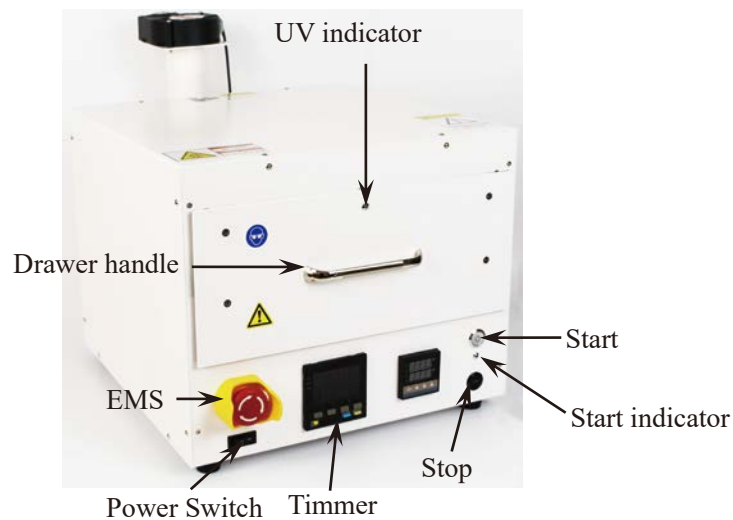


Fig.1 Front panel instruction

- 1、 **Drawer handle:** Used for opening and closing the drawer to complete the substrate's taking and placing operations;
- 2、 **EMS:** you can press the EMS to disconnect the power supply in a emergency. Turn it clockwise to reset the EMS;
- 3、 **Power switch:** switch on the power switch, the device is powered on, and the timer display panel lights up;
- 4、 **Start:** with the power switch turned on, press the start button and the device enters the cleaning process.

**Notice:** The drawer and UV lamp operation interloc. Ensure the drawer is fully closed when you press the start button, only in this condition the UV lamp can be turned on and the cleaning process can be start.

- 5、 **Start Indicator:** the Start Indicator illuminate when you press the Start button;
- 6、 **Stop:** you can press the Stop button to stop the cleaning process at any time;
- 7、 **UV Indicator:** the UV indicator illuminates during the whole cleaning process;
- 8、 **Timer:** used for the clean time setting, shown as fig.4;



➤ **Rear panel**

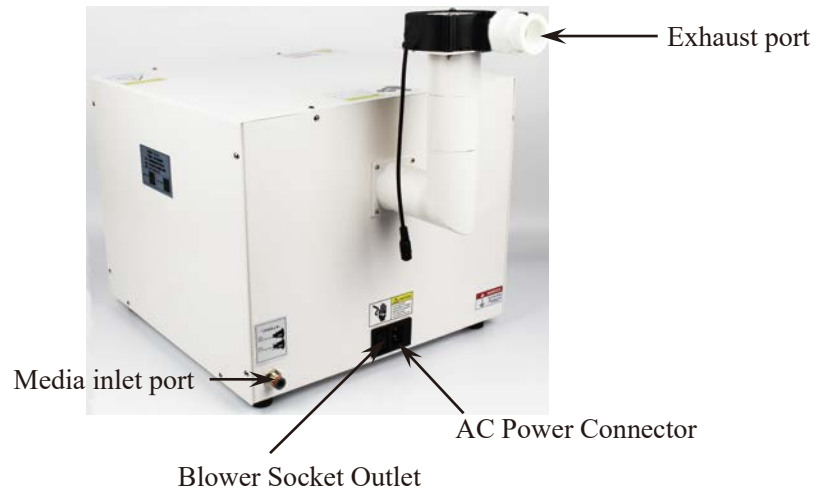


Fig.2 Rear panel instruction

- 1、 **AC Power Connector:** connect the power cord to it to provide the power supply for the device;
- 2、 **Blower Socket Outlet:** plug the blower power cord into it to provide the power supply for the blower;
- 3、 **Media Inlet Port:** used for connecting the media supply;
- 4、 **Exhaust Port:** used for connecting the exhaust pipe.

**Notice:** The flow rate of the media should be equal to or less than that of the exhaust in order to maintain a positive flow of the media through the system. Using a greater flow rate of the input media will cause a backpressure in the system forcing the exhaust gases to leak into the operating environment.

➤ **Height adjustment**



Fig.3 Height adjustment of the tray

The distance between the upper surface of the substrate and the UV lamp directly affects the cleaning result of the substrate, Adjust a appropriate height will help achieve a better cleaning result. The steps are as follows:

- 1、 Loosen the screws on both sides of the drawer;
- 2、 Adjust the tray to the appropriate height;

Note: The upper surface of the sample should not exceed the side of the drawer to prevent the sample from damaging the lamp;

- 3、 Secure the screws on both sides of the drawer.

➤ **Timer Introduction**



Fig.4 Timer

The timer is used for setting the cleaning time of the  $\text{UVO}_3$  cleaner. The buttons labeled 1, 2, 3, 4 on the timer are used for the clients to set the cleaning time. The four buttons change from 0-9 successively. Press the button once, the number changes 1. The time unit of button 1 and 2 is S, and the time unit of button 3 and 4 is MIN. The other buttons on the timer are used for system setup, and only can be operated by the company technicians. The specific cleaning time should be determined according to the experiment.

## System operation

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### ➤ Cleaning procedure

After the device is properly installed and connected, the cleaning process can be performed. The specific steps are as follows:

#### 1、 Power connection

Connect the AC power cord, turn on the power switch, then the timer screen lights up.

#### 2、 Substrate placing

Open the drawer and place the substrate in the drawer. Please pre-clean the substrate before the cleaning process in the  $\text{UVO}_3$  cleaner to save the clean time.

#### 3、 Height adjustment

Adjust the distance between the substrate surface and the UV lamp to achieve an ideal cleaning effect with the adjustment screws on the side of drawer, shown as fig 3.

#### 4、 Drawer closing

Close the drawer at this step.

Notice: please make sure the drawer is closed at this step, then the step 6 can be carried out.

#### 5、 Time setting

You can set the cleaning time with the corresponding button on the timer;

#### 6、 Substrate cleaning

Press the Start button, the Start Indicator illuminates. If the drawer is close correctly, the UV Indicator illuminates, and the cleaning process will be start. Otherwise, you can't start the cleaning process.

#### 7、 Substrate lifting

##### 7.1 Lift during a cleaning process

If you want lift the substrate during a cleaning process, please press the stop button, then the Start Indicator and the UV Indicator are off. Five to ten minutes later, after the remaining ozone is removed, then you can open the drawer to unload or replace the substrate.

##### 7.2 Lift after a cleaning process

Lift (unload or replace) the substrate after a cleaning process finished, the Start Indicator and the UV Indicator are off at this time. Five to ten minutes later, after the remaining ozone is removed, then you can open the drawer to unload or replace the substrate.

#### 8、 Power disconnection

Turn off the power switch and unplug the power cord after the use of the device.

## ➤ **Cleaning Attentions**

### **1、 Pre-cleaning**

Substrates should be pre-cleaned before processing in the UVO<sub>3</sub> Cleaner. You can clean the substrates with an appropriate solvent prior, this may reduce the thickness of the contamination layer and allow the ozone to penetrate. Be sure the solvent is dissipated before the cleaning process, especially for the flammable solvent.

### **2、 Clean without media supply**

IF clean without oxygen supply, open the drawer 1 to 5 minutes followed by a 30 to 60 minutes clean to replenish the oxygen supply.

### **3、 Clean with media supply**

Clean with an oxygen supply can boost ozone level in the chamber and improve the cleaning effect.

## Routine maintenance

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- After every 100 hours of operation, Remove the lamp assembly, eliminate particles with deionized water, and dry with a clean cloth.
- After 5000-10000 hours operation, please remove lamp assembly and replace it

## Problem And Solution

Common problem	solution
1、 The equipment can not electrified	<ul style="list-style-type: none"><li>• Rotate the EMS clockwise to reset;</li><li>• Make sure the power cord is non-destructive and connected.</li><li>• Make sure the fuse is not fused.</li></ul>
2、 Timer does not work	<ul style="list-style-type: none"><li>• Make sure the drawer is fully closed;</li></ul>
3、 Ozone is detected in the environment	<ul style="list-style-type: none"><li>• Make sure the exhaust pipe is normally connected, shown as fig 2.</li><li>• The sealing rings around the drawer are in good condition and properly installed.</li></ul>
4、 Insufficient intensity and density of UV lamp	<ul style="list-style-type: none"><li>• The UV lamp is too cold, preheat for 5 minutes before using.</li><li>• The UV lamp is too hot, cool for 0.5-1h after a clean operation.</li><li>• Ensure the detector is not accurate, and the distance between the detector and the UV lamp should be 3-5 mm,</li></ul>