UV Safe™

Installation and Adjustment

UV Safe is our patented filtration system for eliminating grease and reducing odors from large kitchens. The system meets the highest possible safety standards. Air-cooled electronics and LED indicators ensure optimal function. Easy installation and smooth maintenance. An effective and safe combination of cyclone filters and UV light with ozone.

Acticon

Safety information

This device can be used by children aged 8 and older and by persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge if they have been given supervision or instruction on how to use the device safely and understand the risks involved. Children should not play with the device. Cleaning and user maintenance should not be performed by children without supervision.

If the power cord is damaged, it must be replaced by the manufacturer, its service agent, or a similarly qualified person to avoid danger.

The UV system produces UV light which is harmful to skin and eyes upon exposure. The system also produces ozone which is carried in the exhaust air flow. Ozone is particularly harmful to the respiratory tract/lungs even in small concentrations.

If malfunctions or damages to the system occur that are not described in these instructions, contact Acticon for further guidance. Installation, commissioning, repair, and maintenance of the UV unit should only be performed by qualified personnel instructed by Acticon.

Inspection hatches on the exhaust duct must be marked with a warning label about ozone.

If ozone sensors are installed, they must be labeled with a ”OZONE SENSOR” tag.

Complete Filtration System

UV Safe includes the following components:

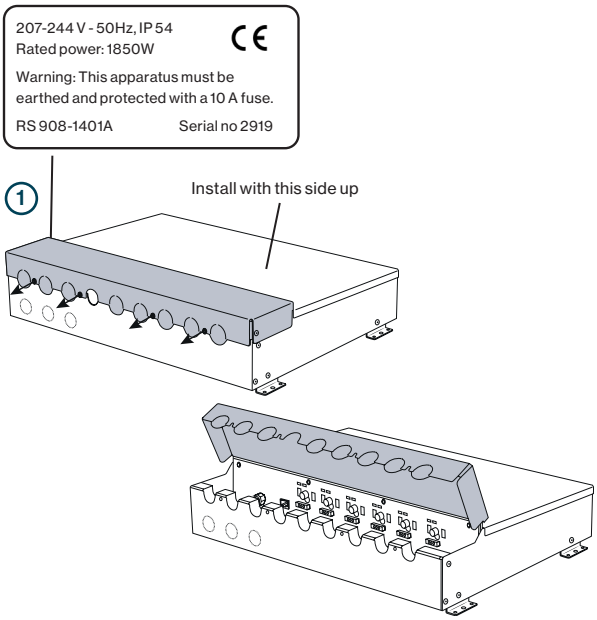
- Filter housing with UV tubes, damper, and measuring port
- Wire mesh filter
- Filtercassettes (cyklone filter Cyklotec)
- Power unit
- Control panel

Figure 1 - Filter housing with lockable inspection hatch and LEDs indicating which UV lamps are lit

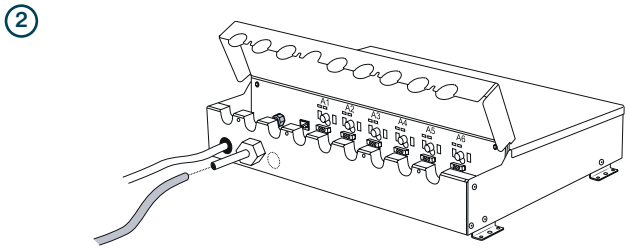
Simple Installation
The only parts that need assembly are the power unit and control panel. The filter housing with UV lamp, wire mesh filter, damper, and wiring are factory-installed.

Installation of Power Unit

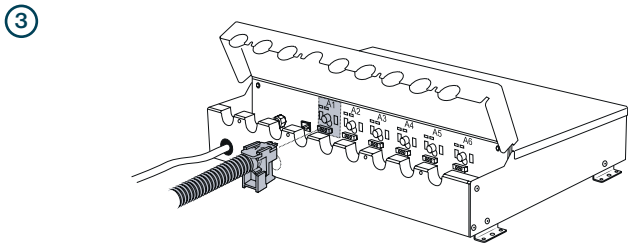
1. Install the power unit before hanging the hood on the ceiling. Place the power unit on the hood's ceiling and fasten it with rivets in the designated spots. **The power unit should be mounted with the white label facing upwards. Do not mount on the ceiling or wall.**
2. Loosen the four screws (Torx 10) and lift the front plate of the power unit (Figure 1).
3. System pressure is measured with the supplied plastic hose. Connect it to the front of the power unit (Figure 2). The other end of the hose (with nipple) is to be mounted in the exhaust duct near the kitchen hood.
4. Connect the cable (black hose) from each filter housing to the power unit. Press firmly to lock the cable securely. Note that each cable is marked A1-A6. A cable marked A1 fits only into the socket marked A1 on the power unit, etc. (Figure 3).
5. Connect the supplied data cable to the power unit.
6. Close the front panel of the power unit and tighten the screws.
7. Connect the power unit to a 10 A fused power outlet.



Open the front of the power unit by first loosening the four screws. Then lift the front and install the cable.



Install the pressure measurement hose into the exhaust duct and the other end into the power unit's measuring nipple.

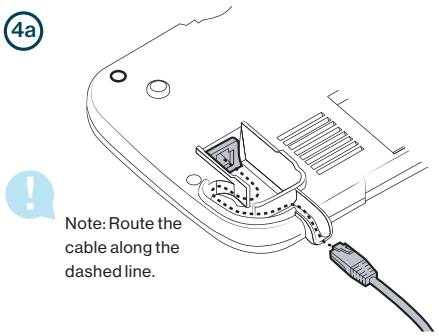


To facilitate assembly and ensure correctness, each cable is unique. This means that a cable marked A1 only fits into an A1 socket, and so on.

Installation of Control Panel

1. Ensure that the data cable from the power unit is long enough to reach the location where the control panel will be mounted. The cable length is 10 m.
2. Secure the bracket to the wall.
3. Connect the data cable according to the dashed line in Figure 4a. **It's important to route it along the dashed line to prevent moisture from entering the connection.**
4. Place the panel in the bracket (Figure 4b).

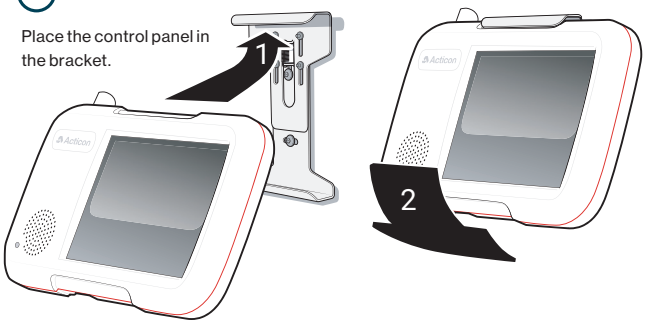
4a



Note: Route the cable along the dashed line.

4b

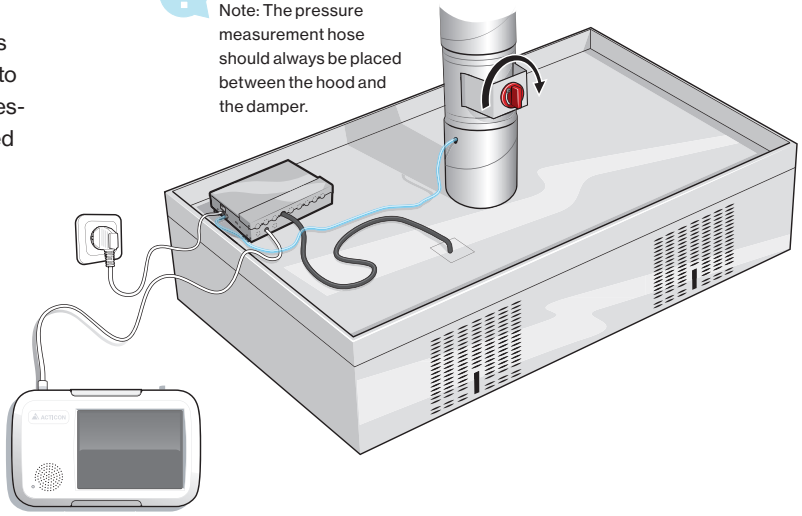
Place the control panel in the bracket.



Installation is complete.

The figure shows the power unit mounted on the kitchen hood's ceiling. Cables from the UV SAFE filter housing and data cable to the control panel are connected. A hose to measure system pressure is installed in the exhaust duct. The power unit is connected to a 10 A fused power outlet.

Note: The pressure measurement hose should always be placed between the hood and the damper.



Actions Before Start

1. Unlock the filter housing door. The key is included in the delivery. Open the door and check that the wire mesh filters are in place in the filter housing (Figure 5).
2. When the door is open, insert the filter cassettes into the guide system of the filter housing. If a blind plate (replacing a filter cassette) is supplied, install it/them in the same way (Figure 6).
3. Close the door and lock it with the key. For added safety, the system cannot start if the door is not locked (Figure 7).
4. Ensure that the exhaust air is in operation.

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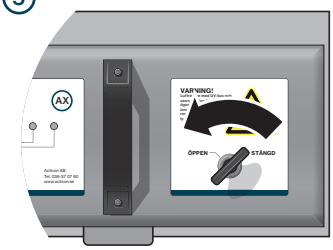

Unlock

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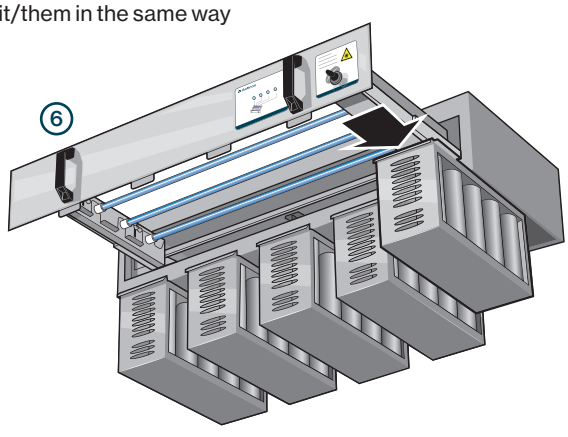


All filter cassettes and any blind plates must be installed before closing the door.

7

Lock. The system cannot start if the door is not locked.

Start the System

The first time the system is started, a calibration must be done to measure the installed power and negative pressure in each filter housing. This takes approximately 20-90 minutes.
Read the information on the control panel and press OK to start the calibration (Figure 8).
Once the system has detected how many filter housings are connected, it will turn on the UV lamps and begin calibration.
Check that all LEDs on the filter housings are lit. If they are not, stop the calibration and address the issue.
When calibration is complete, you will choose whether the system should turn off the UV lamps at half speed (reduced flow) or if the UV lamps should remain on (this can later be changed in the service menu). Then press OK (Figure 9). When calibration is complete and approved, start the system by pressing the ”on/off button” (Figure 10).

Operation

Operating UV SAFE is very simple. Once the initial setup is done, you start and stop the system by pressing the ”on/off button” on the control panel. It’s advisable to leave UV Safe in operating mode. The system will turn on and off when you start or stop the airflow/fan. The system will also turn off when you switch to half speed (reduced flow) if you have selected that option, and will turn on when you return to normal flow (forced flow).
Make sure to have the system running during cooking. The UV tubes have an operating time of up to 12,000 hours. The system counts down the time during operation. The control panel displays how many operating hours remain until the lamps need to be replaced.

Cleaning - How Often?

All filters and UV lamps should be cleaned regularly.
In restaurant kitchens, cleaning should be done 1-2 times per week. If cleaning is forgotten, the system will remind you with a sound signal after 200 hours.

Alarms and Interlocks

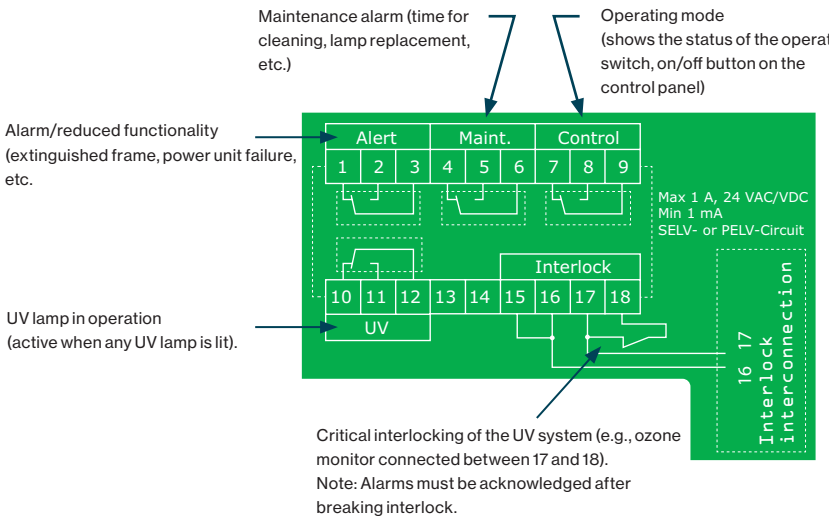
Signal Outputs	
1 och 3	No alarm.
2 och 3	Alarm
4 och 6	No maintenance alarm
5 och 6	Maintenance alarm
7 och 9	UV not in operating mode
8 och 9	UV in operating mode
10 och 12	UV not in operation
11 och 12	UV in operation

Signal Inputs	
15 och 16	The unit is master
17 och 18	Interlocking of the UV system

Service - Calibration
Follow the instructions and press OK.

Service - Calibration
Check that all LEDs are lit. Press OK.

System Status: Off
Press the ”on/off button.”



Adjustment Options

If you wish to adapt the system to your specific installation due to special operating conditions, several parameters in the service menu can be adjusted. Enter the PIN code 1992 to access the service menu.

Cleaning Interval

The cleaning interval can be adjusted between 50–500 hours depending on grease load. The default value is 200 hours.

Calibration

If operating conditions have changed with altered airflows or grease filters, the system needs to be recalibrated. Recalibration is started from the service menu.

Start Level	Action
The level can be adjusted based on calibrated airflow. The level is 0% if you choose to have the UV on at half speed and 80% (default value) if you choose to turn it off at half speed. Adjustable between 0–90%.	When the airflow is set to half speed, the UV system does not turn off – **Increase the start level** Sometimes the UV system turns off but then turns on again without alarm (variable airflow) – **Decrease the start level**

Alarm Level for Low Pressure in the Filter Housing	Action
Provides an alarm if the airflow and thus the pressure are too low in the filter housing. The alarm is delayed according to the setting below. The default value is 80% of the start level's airflow (note: not of the calibrated airflow). The value is adjustable between 0–100%.	The system is set to turn off at half speed. When the flow is reduced to half speed, the UV system turns off but alarms for low pressure after 2 minutes. After resetting, the alarm returns after 2 minutes. – **Increase the start level**

Delay to Low Pressure Alarm in the Filter Housing	Action
The delay allows the airflow to be regulated by the fan or damper to the intended level before the UV system alarms. The default value is 120 s. The value is adjustable between 40–300 s.	The system is set to turn off at half speed. When the flow is reduced to half speed, the UV system turns off but alarms for low pressure after 2 minutes. After resetting, the alarm does not return – **Increase the delay to the low pressure alarm.**

Alarm Level for High Pressure in the Filter Housing	Action
The system alarms if the negative pressure is too high due to contamination, improperly installed filter cartridges, or changed operating conditions. The default value is 125% of the calibrated airflow. The level is adjustable between 110%-150%.	After 3 days of operation, the system alarms for high pressure. An inspection shows that the filter cartridges are very dirty with a thick layer of grease on the surface – **Clean the filter cassettes** When the airflow to one of two hoods is shut off, the system alarms for high pressure in the hood that is still running – **Increase the alarm level for high pressure**

Delay to External Alarm	Action
On the power unit, there is a terminal block with alarm outputs among other things. By default, there is a delay for these alarms of 30 minutes. The value is adjustable between 0–1440 minutes.	You are trying to test if the alarm output works by unlocking a filter housing during operation but do not get an alarm on the alarm terminal – **Set the delay to 0 minutes (do not forget to reset the time if you want a delay)**

Adjustment of Exhaust Air

The filter housing connection on the exhaust air is equipped with a lockable measurement damper. At delivery, all measurement dampers are fully open. To move the damper blade to another position, first loosen the screw on the blade (Figure 11).

All filter cassettes, wire mesh filters, and any blind plates should be installed in the filter housing before starting the adjustment. The filter housing door should be closed and locked with a key. The current adjustment pressure is measured at the measurement port on the filter housing.

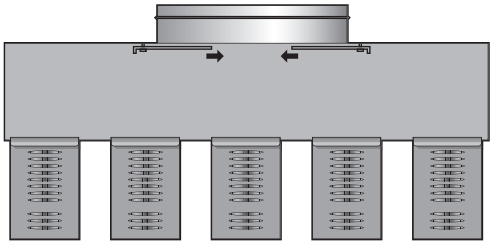
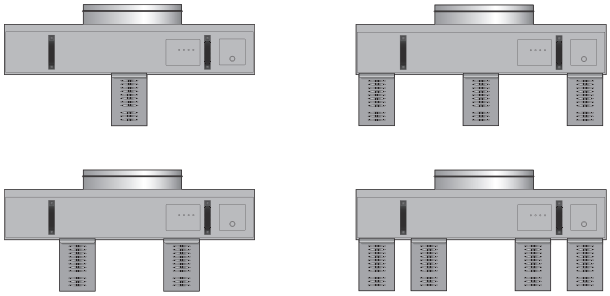


Figure 11 - The measurement damper is located in the filter housing just below the duct opening. The damper blades slide sideways

1 - 4 filter cassettes

If UV SAFE is designed for fewer than five filter cassettes, they should be placed as shown below. The missing cassettes are replaced with blind plates.



K-Factors

The adjustment pressure ΔP_{inj} (Pa) is measured in the current measurement port. Using the K-factor, the airflow q (l/s) is then calculated with the following formula.

$$q\ (l/s) = K \cdot \sqrt{\Delta P_{inj}}$$

Number of filter cassettes	K-factor
1	17,8
2	33,9
3	53,0
4	73,4
5	89,0

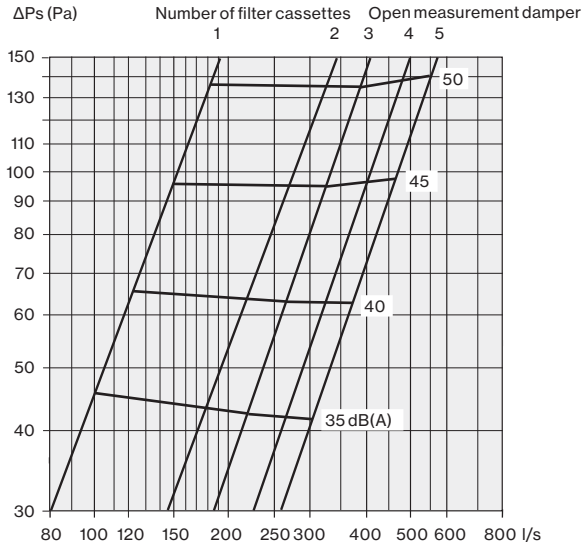
Exhaust Air

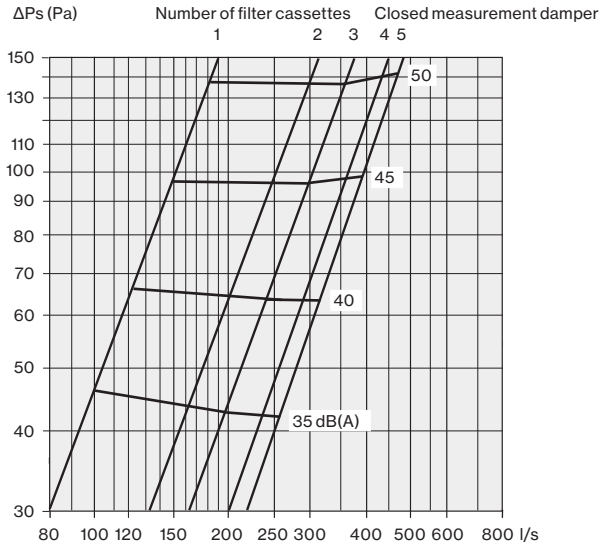
The number of filter cassettes in UV Safe is determined by the exhaust airflow according to the table below.

Exhaust air l/s	Number of filter cassettes	$ØD_c$ mm
60 - 150	1	250
120 - 250	2	250
170 - 340	3	400
215 - 430	4	400
250 - 520	5	400

Flow-Pressure Drop-Sound Level

The stated dB(A) values apply to 10 m² Sabine, corresponding to a room attenuation of 4 dB.





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