

UVI / UVF

Capture Jet canopy with integrated
UV technology & Touchscreen Mini Control

Operation and Maintenance



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1 - Product description and components

1.1 - General description

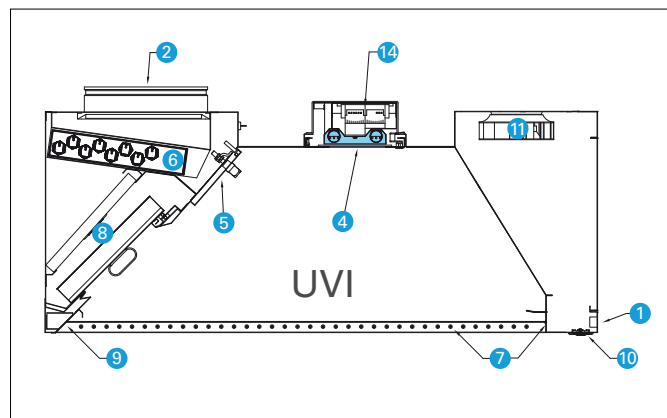
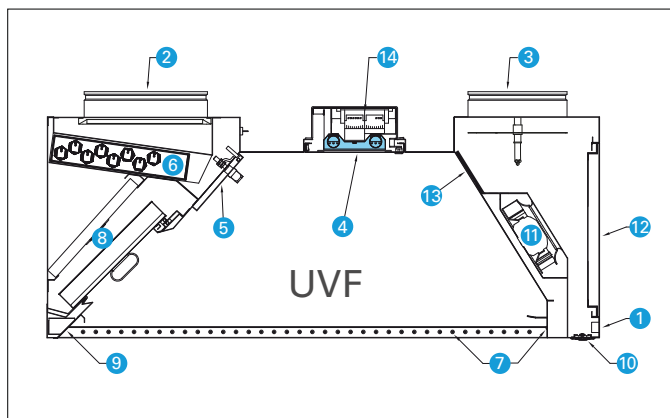
UVF and UVI canopies are particularly suitable for LEED(1) projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc...), especially those located in dense urban areas or whose ducts are difficult to access.

Both canopies are equipped with the UV Capture Ray™ technology that neutralises the grease carried by the exhaust air. By carefully selecting the number of UV lamps, airborne cooking odours will be so minimal that it can negate the need to discharge the vitiated air at high level from the building. Eliminate neighbourhood and safety concerns, establish your restaurant wherever you choose, and save a great deal on your energy bill and cleaning costs.

They are also both equipped with the Capture Jet™ technology that reduces the exhaust airflow rates by 30 to 40% thus providing considerable energy savings.

UVF canopies provide an even better smoke capture and a better comfort due to a low-velocity diffuser built into the front face for the makeup air.

Each Halton UVI and UVF canopy section includes an integral UV rack controlled by a UV module located in the light fitting. The system is controlled by a user interface, that links up to 12 canopy sections in the case of a console, or up to 24 in the case of a TouchScreen.



Code	DESCRIPTION
1	Outer casing – visible parts in stainless steel AISI 304
2	Exhaust air connection and adjustment damper
3	Supply air connection and adjustment damper (type MSM)
4	Light fixture with electrical junction box
5	Access hatch with proximity safety switch
6	UV rack with up to 8 UV-C lamps
7	Capture Jet™ nozzles
8	Double stage filtration: KSA (with proximity safety switch) + MFA
9	Grease collection tray or drain tap

10	Personal supply air nozzles (UVF) or closing plates (UVI)
11	Capture Jet™ fan
12	Perforated front face
13	Thermal insulation
14	UV module with:
	- Eurolux lighting
	- Main control unit

1.2 - Warnings



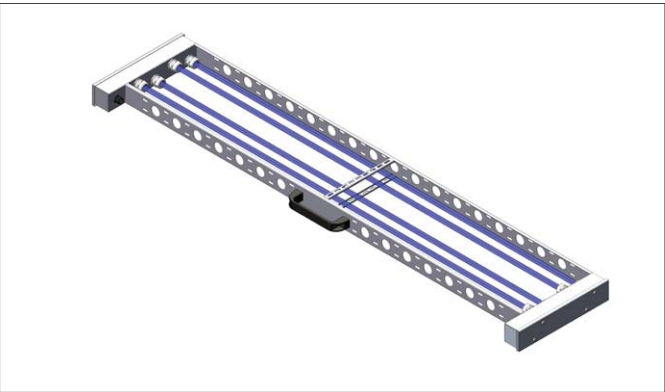
Ultraviolet C radiation is harmful to the skin and the eyes, and can cause skin burns and eye injury.

The UV control system is equipped with several reliable safety systems to switch off the lamps under any authorised or unauthorised access to the lamps. However, the UV system must be switched off for any cleaning or maintenance intervention or any other intervention that could need access

to the UV plenum. It is the responsibility of the user to bring knowledge of this user manual to all people likely to use or maintain the UV control system and the UV-C lamps controlled.

Please refer to the maintenance chapter for more information about the UV-C lamps and use cautions.

1.3 - UV racks

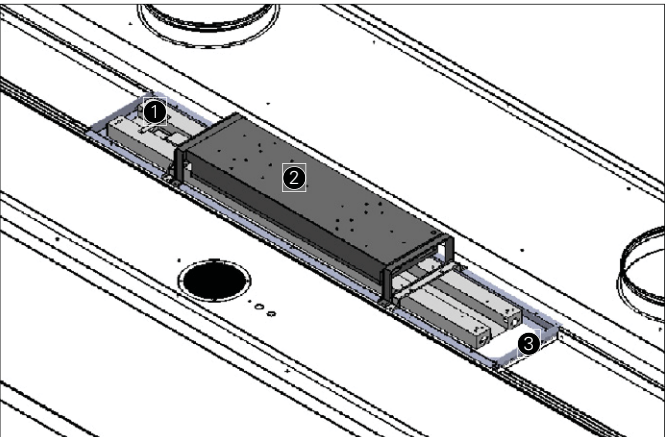


The integrated UV racks have been developed to be light weight for ease of handling. They are equipped with water tight glands. The UV racks are available in 6 configurations:

Lamp Type	Power [W]	Int. [A]
UVR4S - 4 short lamp rack	156	0.71
UVR4L - 4 long lamp rack	300	1.36
UVR6S - 6 short lamp rack	234	1.06
UVR6L - 6 long lamp rack	450	2.04
UVR8S - 8 short lamp rack	312	1.42
UVR8L - 8 long lamp rack	600	2.73

UV lamps lifetime: 13000 hours.

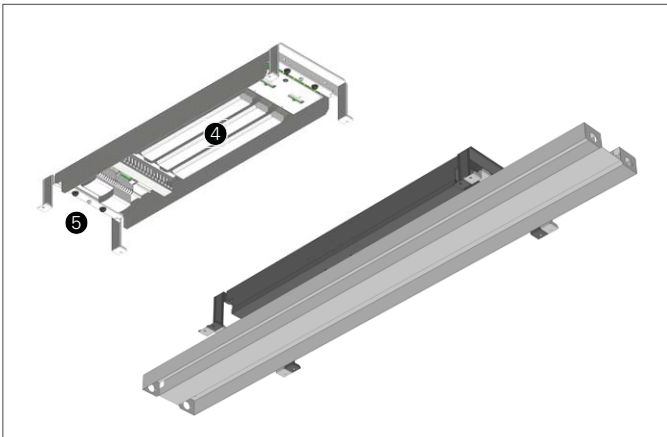
1.4 - LED Light module



LED lighting incorporates the light fitting (1) and the UV module (2) in a single "ready to install" assembly. The light fitting is available with strip light tubes. It is available in 2 different lengths (900 and 1200 mm) and is installed on the top of the canopy, right above the light fitting access hatch (3).

The UV module (2) is typically composed of:

- The ballasts (4) for the UV lamps (1 ballast for 2 lamps);
- A controller (5) which drives the UV lamps of every canopy section.



The ballasts of the strip light tubes (when applicable) are installed in the same module.

1.5 – LED downlight

An option is to have LED downlights fitted in the canopy.

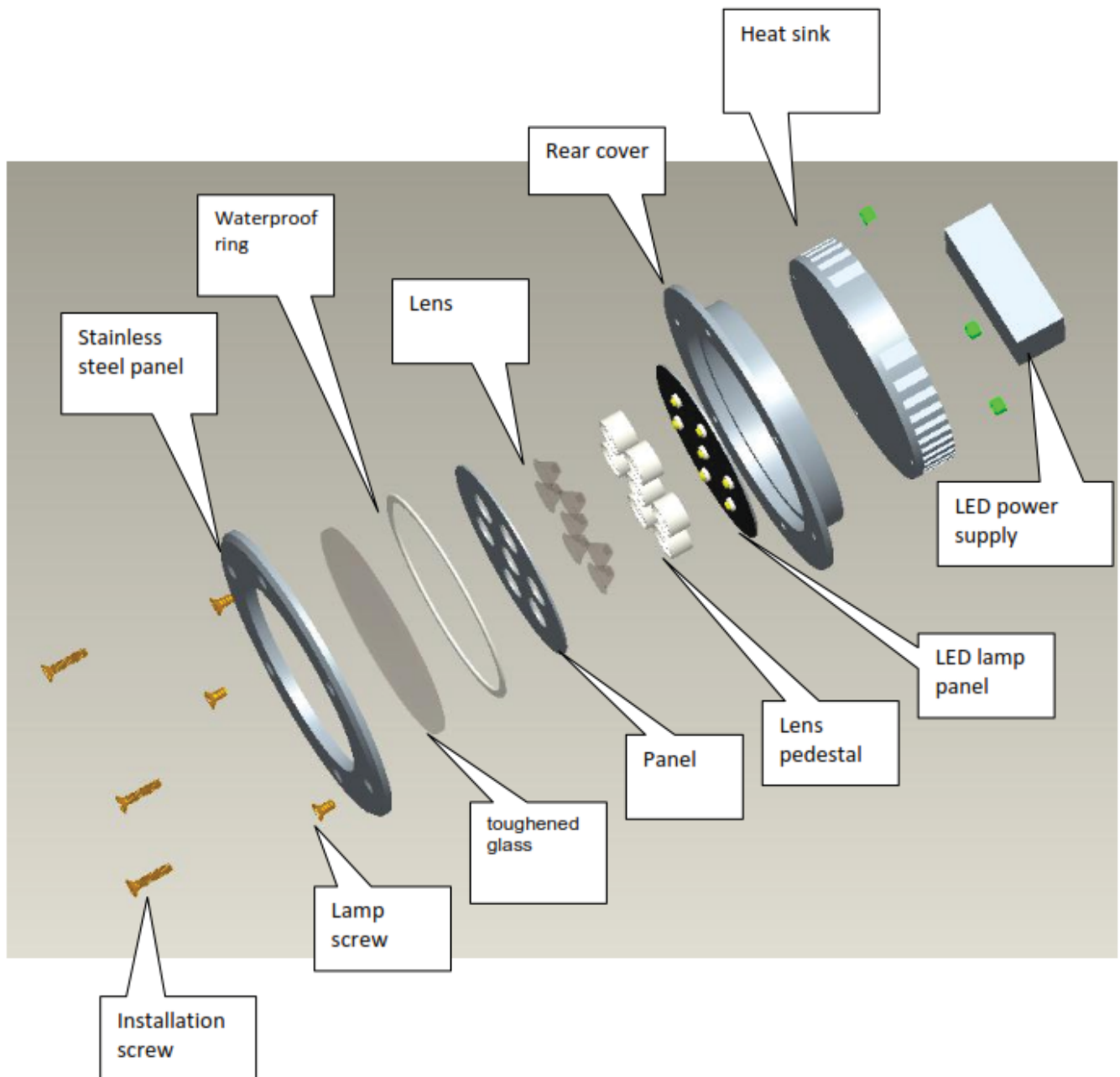
These are stainless steel downlights, designed for using in wet or with higher temperatures. Also designed for simple and rapid replacement of faulty components.

Type:	BBM LEDPRODUCTS. Model BBM-7x2-SS-230, Stainless Steel Down Lighter (1050LM)
Power Supply:	100-230V AC 50/60Hz 13A (AD-A7x3W included)
Power consumption:	14W
Colours available:	Warm white 3000-4000k; pure white 4500-5500K; cool white 6000-7000K.
IP Rating:	IP65
Lens Angle:	60°
Lens Type:	Toughened glass, fine frosted.
Max. Working Hours:	50,000 hour
Construction:	Aluminium housing, stainless steel mounting plate.
LEDs:	7 x 2 Watt Bridgelux LED's
Luminous Flux:	900-950Lm

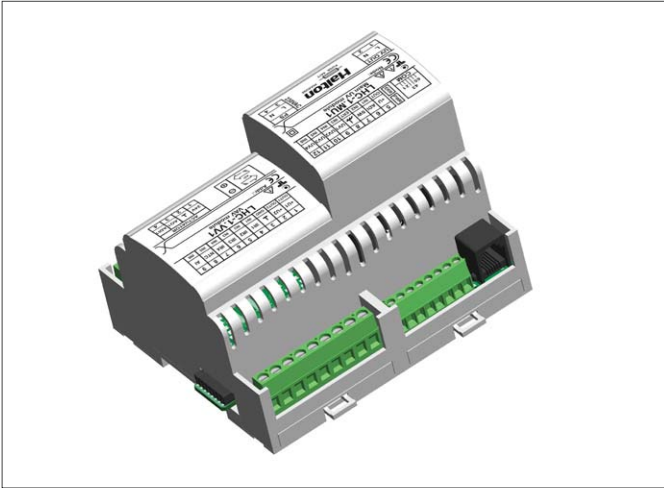


Dismantle the LED downlight

The LED light unit can be removed by unscrewing the 3 long screws fitted into the front surface ring of the lamp (see diagram below). The lamp unit can be gently pulled out of its mounting hole and clear of the canopy. This will provide access to the cable connection unit on the rear of the lamp unit. This can be pulled off.



1.6 - Canopy controller



Each canopy controller manages the entire UV system of the single canopy section in which it is installed. It calculates the run hours of the lamps, the status of the system and any possible alarm or communication issue.

The canopy controller sits within its own chassis along with the UV ballasts. Every canopy controller is pre-programmed with the information it needs to operate and is given a unique numeric address (up to 12 addresses for the console and 24 for Halton's Touch Screen) so it understands its location within the system and how it communicates.

1.7 - Access safety to the UV-C lamps / Filters safety switches



The presence of every KSA filter or closing plate is controlled on every canopy section equipped by means of maintenance free magnetic switches.

Each filter has a magnetic block attached that acts - or not - on magnetic switches. The UV lamps are automatically turned off as soon as one or several filters are removed. A warning signal is then displayed on the console.

1.8 - Access safety to the UV-C lamps / Access door safety switch



The positive closing of the UV rack door is controlled with a maintenance free magnetic switch. UV lamps are automatically turned off as soon as the UV door is open. A warning message is then displayed on the console.

2 - Halton Touch Screen Mini main functions

2.1 - Main Screen

General Status

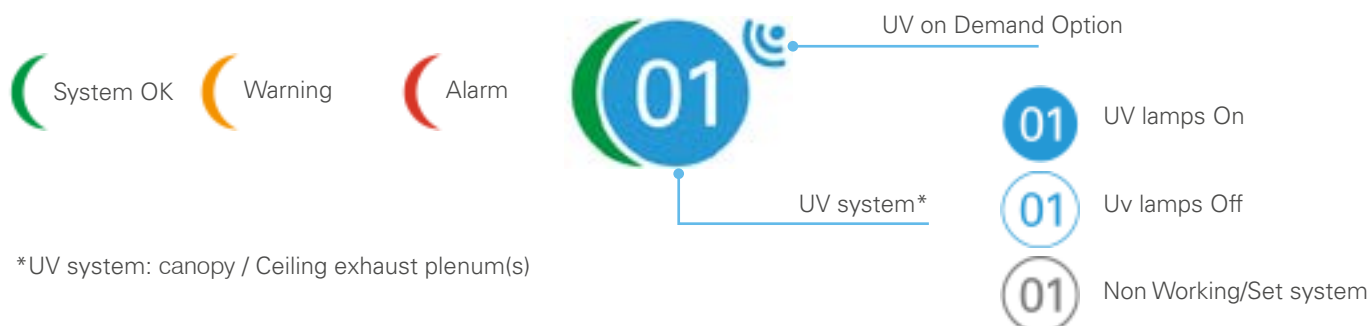
-  All Uv systems Ok
-  One or several systems on Warning status
-  One or several systems on Alarm status

Warnings and Alarms

Help screen

Back to main screen

UV systems

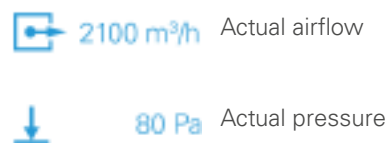
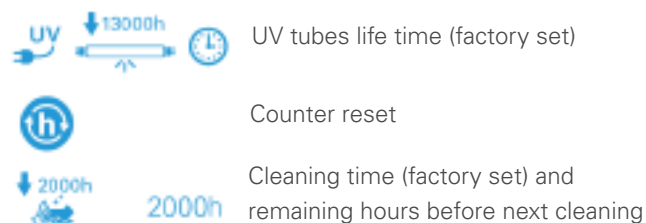
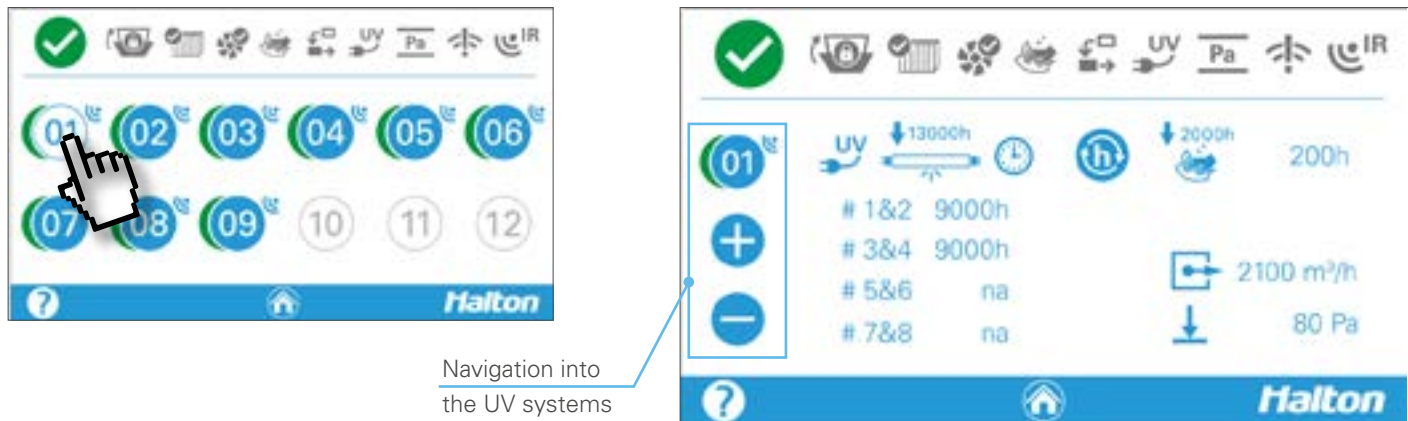


Warnings and Alarms

		Door Alarm			Ballast Alarm
		Filter Alarm			Low Pressure Warning
		Fan Alarm			High Pressure Alarm
		Tube cleaning Warning			Communication Alarm
		UV lamps replacement Alarm			InfraRed Alarm (UV on Demand only)
					Auxiliary controller Communication Alarm (if present)

2.2 - UV systems detailed information screen

2.2.1 - Detailed information when UV systems are fully operational



4 tubes UV frame 2 Ballasts

1&2 13000h
3&4 13000h
5&6 na
7&8 na

6 tubes UV frame 3 Ballasts

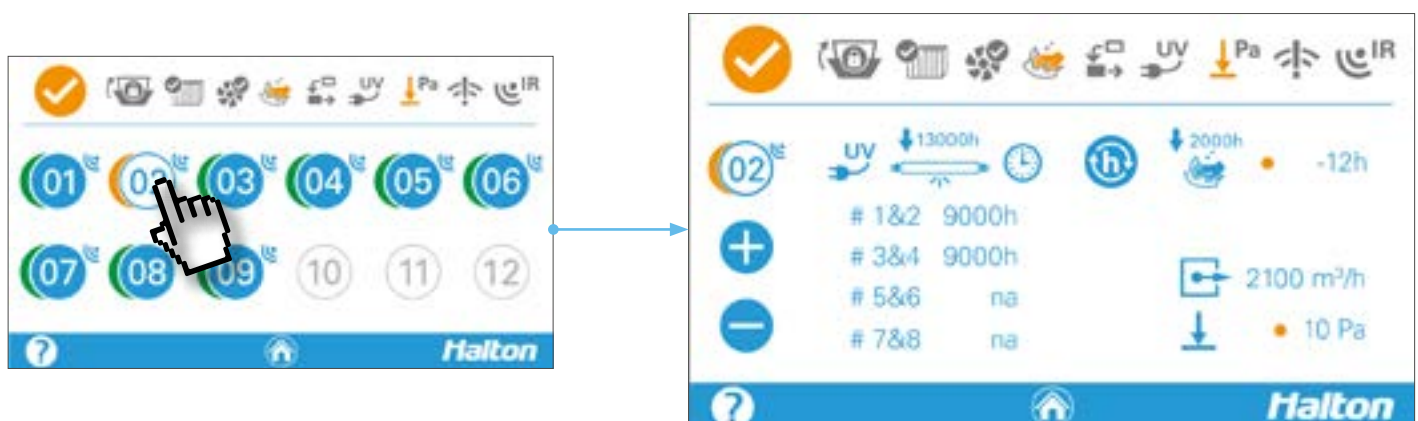
1&2 13000h
3&4 13000h
5&6 13000h
7&8 na

8 tubes UV frame 4 Ballasts

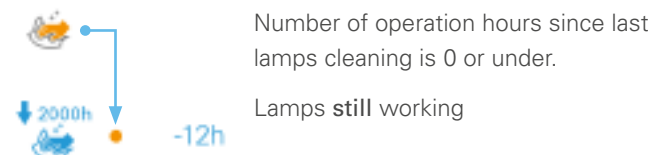
1&2 13000h
3&4 13000h
5&6 13000h
7&8 13000h

Remaining hours before tubes changing operation.
2 tubes per ballast

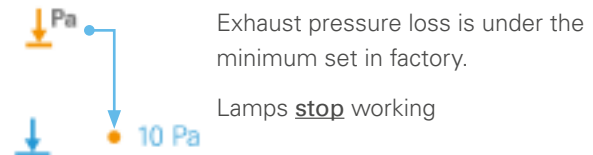
2.2.2 - Detailed information when there are warnings



UV tubes cleaning required



Low pressure

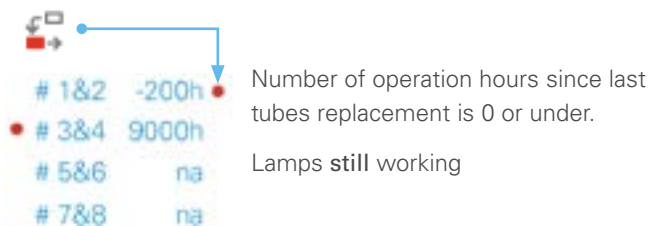


Note: Explanations and solutions for warnings available in Trouble shooting chapter.

2.2.3 - Detailed information when there are alarms

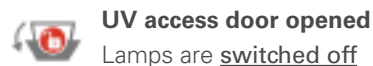


UV tubes replacement required



Number of operation hours since last tubes replacement is 0 or under.

Lamps still working



Lamps are switched off



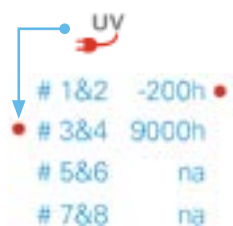
Lamps are switched off



Lamps still working

UV on demand only

Faulty ballast



No feedback from ballast to controller or tube(s) broken

Lamps of the faulty ballast switched off



Lamps are switched off



Lamps are switched off



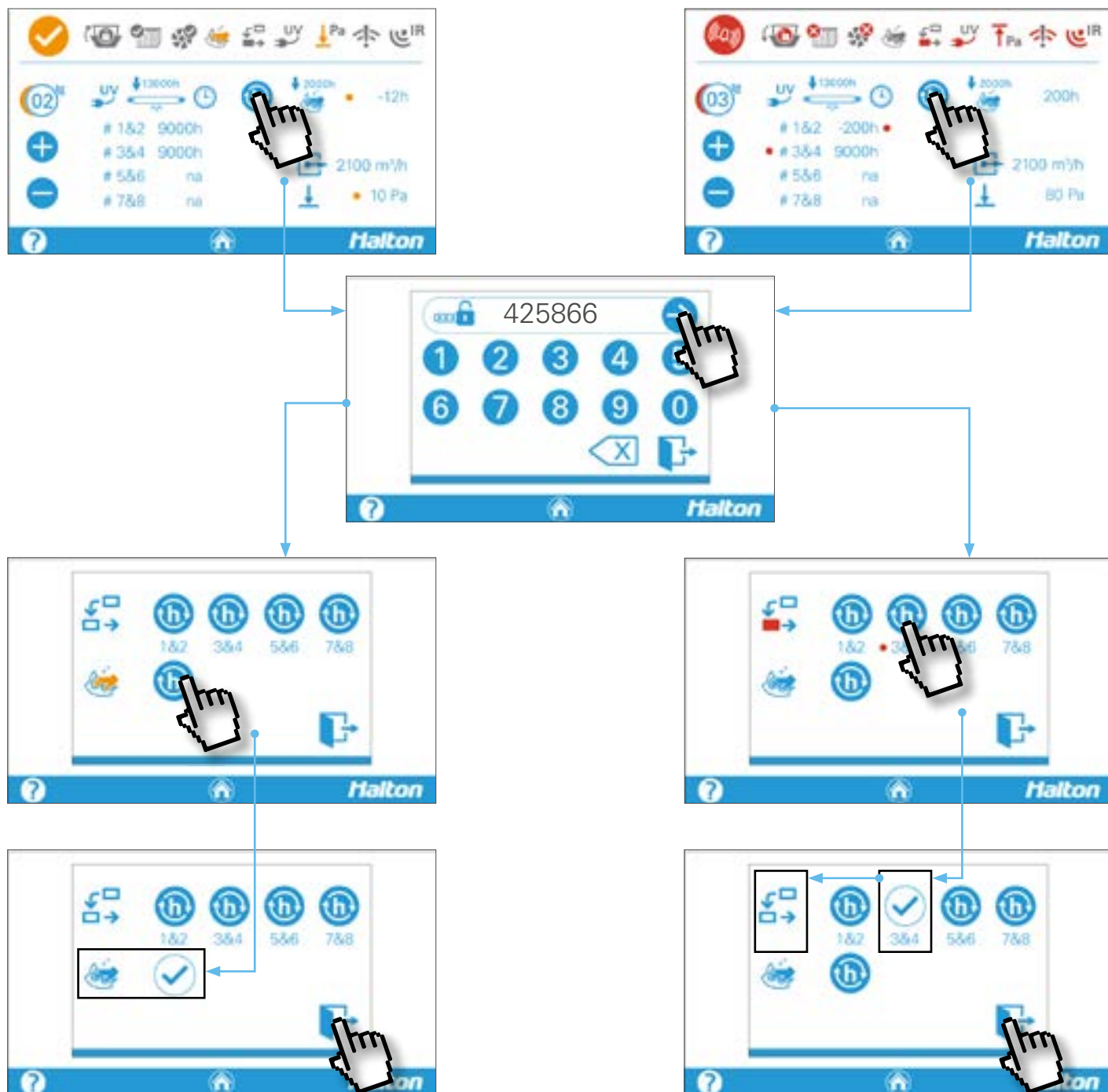
Lamps still working



Lamps are switched off

Note: Explanations and solutions for alarms available in Trouble shooting chapter.

2.2.4 - Resetting of the UV lamps counters



Important:

Each ballast drives 2 Uv tubes. Halton cannot be held responsible for any efficiency or safety problem if the counters are reset in sole aim to suppress the alarms i.e. without having carried out the appropriate maintenance operations.

2.3 - Access to the Help section



2.4 - Trouble shooting

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Alarm	Level	Explanation	Causes	Solutions
 Communication Alarm	Critical	PLC loose the connection to the controller (MU1)	- No power supply on controller (MU1) - Problem on communication wiring (RS485) - Wrong configuration of the controllers quantity / numbers	- Check the power supply - Check communication wires plugged and not damaged - Check the overall system configuration settings (Halton/Partner)
 Low pressure warning	Advisory	Airflow under the minimum set to activate the UV lights (usually 30Pa)	- Exhaust fan low or stopped (All sections trigger the same warning) - Linked to UV_Filter removed alarm or UV_Door open alarm - Minimum airflow set is too high	- Check Exhaust fan is working / contact (Halton/Partner) for investigation - Check filters/door alarms explanations - Check the configuration settings (Halton/Partner)
 High pressure Alarm	Critical	Airflow above the maximum set to activate the UV lights	- MFA filter(s) clogged - Fan works too high - Maximum airflow set is too low	- Check the filters and clean if dirty - Check Exhaust fan/speed variator setting - Check the configuration settings (Halton/Partner)
 Filter removed Alarm	Critical	One or several filters not detected by the controller (MU1) UV lights are shutting down	- One or several filters missing - One or several filters badly positioned - Detection line damaged or not well plugged	- Check all filters are fitted in the exhaust plenum - Check all filters are correctly fit in position - After checking previous points, contact (Halton/Partner) for investigation
 Door open Alarm	Critical	UV frame access door not detected by the controller (MU1) UV lights are shutting down	- The door is still open or badly closed - Detection line damaged or not well plugged	- Check the door is correctly closed and locked - After checking previous point, contact (Halton/Partner) for investigation
 Clean Lamps Alarm	Advisory	UV tubes need to be cleaned	- Time counter for tubes cleaning is equal or higher than time counter	- Clean the tube and reset the counter
 Replace lamps Alarm	Critical	UV tubes/frame need to be replaced	- UV tubes/frame lifetime counter is equal or higher than time counter	- Replace the tubes/frame and reset counter
 Ballast Alarm	Critical	No feedback from the designated ballast <i>Ballast 1 = tubes 1&2</i> <i>Ballast 2 = tubes 3&4</i> <i>Ballast 3 = tubes 5&6</i> <i>Ballast 4 = tubes 7&8</i>	- Ballast is down - One or all tubes supplied by ballast down or damaged - Connection between ballasts and UV frame not plugged or damaged - Connection between controller (MU1) and ballast not plugged or damaged	- Contact (Halton/Partner) for investigation and/or replacement
 InfraRed Alarm	Critical	Controller dont get any feedback from InfraRed sensor(s)	- Wiring between controller and InfraRed sensor - Wrong configuration of the InfraRed sensor - InfraRed sensor out of order	- Check the wiring not damaged and correctly plugged - Check the configuration settings (Halton/Partner) - After checking previous points, contact (Halton/Partner) for replacement
 Fan Alarm	Critical	Controller dont get any feedback from exhaust fan	- Wiring between controller and exhaust fan - Wrong configuration - Exhaust Fan down or out of order	- Check the wiring not damaged and correctly plugged - Check the configuration settings (Halton/Partner) - After checking previous points, contact (Halton/Partner) for replacement
 Auxiliary controller communication Alarm	Critical	Controller dont get any feedback from Auxiliary controller (MU5)	- Wiring between controller and Auxiliary controller - Wrong configuration of the Auxiliary controller - Auxiliary controller out of order	- Check the wiring not damaged and correctly plugged - Check the configuration settings (Halton/Partner) - After checking previous points, contact (Halton/Partner) for replacement

3 - Maintenance

3.1 - Generalities about canopy cleaning

3.1.1 - Precautions to take with stainless steel and detergents

Stainless steel is not an indestructible material. There are numerous false ideas about it and a number of users know little of **the precautions to take to keep it looking new.**

A guide created by Arcelor Mittal is appended at the end of this document. It contains good advice relating to stainless steel in the catering sector. It is the responsibility of the user to bring knowledge of this guide to all people likely to maintain Halton stainless steel based products.



One or several stainless steel-specific detergents or cleaning product have to be carefully selected with a specialist to prevent the corrosion or deterioration of this material and depending on the cleaning methods used to clean all parts of Halton's canopies, ventilated ceilings or any other Halton product made of stainless steel. The product used to wash these parts manually, in a dishwashing machine, with a steamer or a high pressure cleaner etc are indeed necessarily not the same and mustn't be switched. Before proceeding to a full cleaning, carry out a trial for every part with the recommended detergent and on a small surface. Any warranty will be rendered void if a inappropriate detergent is used. It is normally not a problem but the selected detergents have to be also compatible with the cleaning of galvanised steel that can be used on hidden parts and combined with stainless steel.



Detergents are all classified as corrosive. Precautions for use have to be strictly observed to prevent any injury of the personnel.

Summary of the precautions:

- Rule n°1 : Respect the recommended dosage.
- Rule n°2 : Respect temperatures.
- Rule n°3 : Respect contact time.
- Rule n°4 : Rinse well.
- Rule n°5 : Dry well.

But also...

Clean regularly. It is easier to eliminate dirt before it has dried or burnt on several times.

The products never to use or put in contact with stainless steel:

- Concentrated or hot bleach.
- Concentrated or hot disinfectant products.
- Hydrochloric acid (tile cleaners) even diluted and cold.
- **Metallic brushes or sponges, particularly steel.**

Finishing products:

They can be used as far as - just like the detergent - they are stainless steel-specific and food-grade. A trial must also be carried out on a small surface.

3.1.2 - Precautions to take with aluminium and detergents



The Capture Ray canopies are equipped with a double stage filtration, one stage being the MFA filters. They are made of aluminium. **A specific detergent must be selected, following the same rules as above.** The detergent selected for stainless steel should not be used for the MFA filters.

3.2 - General cleaning of the canopy

3.2.1 - Grease collection trays or drain taps

The grease collection trays have to be regularly checked and emptied. They can be cleaned by hand, in a dishwasher or with a steam generator.

When exhaust plenums are equipped with a drain tap, they must be opened regularly to remove any collected condensates.

3.2.2 - Daily cleaning of the outer surfaces of the canopy

Ensure that all items of cooking equipment are turned off and have sufficiently cooled down before starting any cleaning operation.

All surfaces of the canopy should be cleaned with mild soap and water or the detergent selected for a manual cleaning of the stainless steel with a soft cloth. Wipe all interior and exterior surfaces of the canopy including the light fitting.

3.2.3 - Periodic cleaning of the exhaust plenum of the canopy

The exhaust plenum of the Capture Ray™ canopies or ventilated ceilings have to be fully cleaned once or twice a year, depending on the use intensity and type of the cooking appliances.



It is highly recommended to entrust this periodic cleaning to a specialised company. In all cases, UV racks have to be removed from the

Carefully rinse away all surplus cleaning products, as the combination of it with the high temperature found in the kitchen is not recommended.

exhaust plenums to prevent breaking any UV tube. After the cleaning operation, it is important to check that the pressure port of every canopy section is not blocked or full of water. Otherwise a pressure alarm will be triggered when switching on the UV systems.

3.3 - Cleaning of the filters

3.3.1 - General instructions

- 1) Ensure that the hood power supply has been turned off and ensure that all cooking equipment is also turned off and have sufficiently cooled down before starting any maintenance on KSA and MFA filters.
- 2) Follow the instructions provided at the beginning of this guide to remove the filters from the exhaust plenum.

- 3) The filters can be cleaned, with no other component or equipment than filters, in a dishwashing machine.
- 4) Place the filters back in the exhaust plenum following the instructions provided at the beginning of this guide.

3.3.2 - Cleaning of the KSA filters

The cleaning frequency of the KSA filters depends on the duty level of the cooking appliances. Halton recommends to clean them every day and in any case according to the national or local regulations that may specify a minimum frequency.

KSA Filters can be cleaned manually using a brush and water with the addition of a carefully selected detergent, adapted to grease removal. **Do not use chlorinated water or bleach.** Carefully rinse away all surplus of cleaning products as they do not work well with the high temperature of the exhaust air.



When cleaned with a steam cleaner or in a dishwasher. **Never use acidic based detergents as this will damage the filters. Any warranties will be rendered void if such detergent is used.**

Whatever the cleaning method used, the detergent has to be carefully selected following the instructions provided before.

3.3.3 - Cleaning of the MFA filters



The meshe of MFA filters is made of aluminium. **It is not recommended to clean them in a dishwasher or to use a steam cleaner.** MFA

filters can then be cleaned manually using a brush and water with the addition of a carefully selected detergent (following the instructions provided before). **Do not use chlorinated water or bleach.** Carefully rinse away all surplus of cleaning

products as they do not work well with the high temperature of the exhaust air.

In order to increase the lifetime of MFA filters, they should be reversed in the exhaust plenum and then allow the UV lamps to clean the facing surface.

3.4 - Cleaning of the ductwork



All UV racks must be removed from the exhaust plenums of the canopy prior any cleaning of the ductwork by a specialised company. Halton can't

be held responsible if some UV lamps are broken during the cleaning if this provision is not observed.

It is the responsibility of the user or the building maintenance manager to bring knowledge of this ICM to all people likely to clean the kitchen exhaust ductwork.

3.5 - Maintenance or replacement of the Capture Jet fan

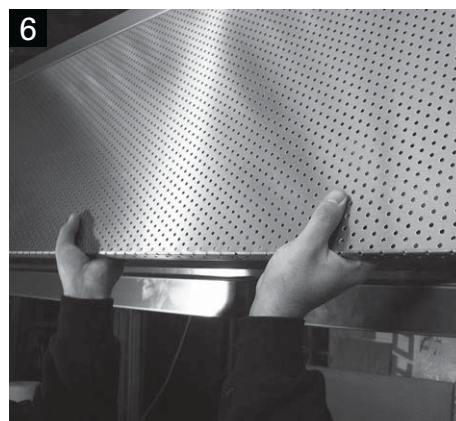
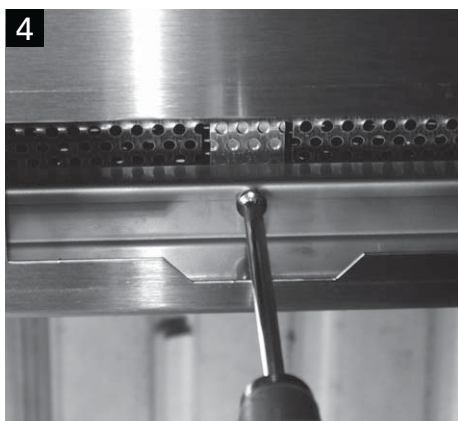
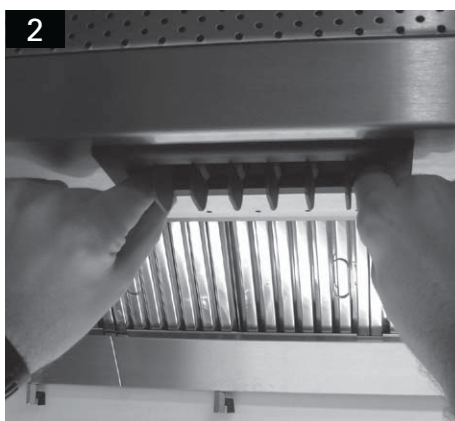
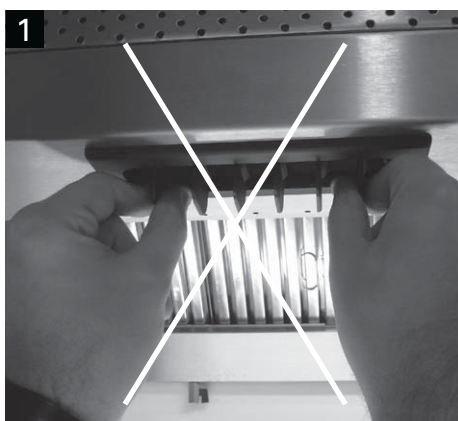
Ensure that the canopy power supply has been turned off and ensure that all cooking equipment is also turned off and sufficiently cooled down before starting any maintenance operation on the Capture Jet™ fan. Follow the instructions below to remove the canopy front face and to gain access to the Capture Jet™ Fan.

3.5.1 - canopy with integrated makeup air

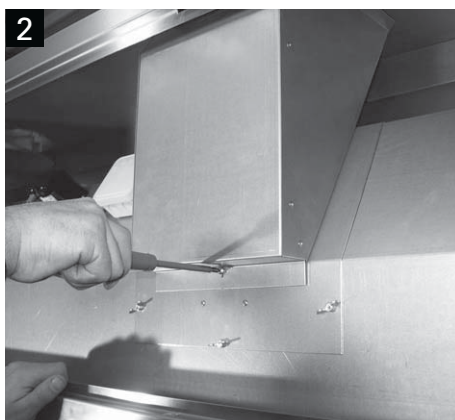
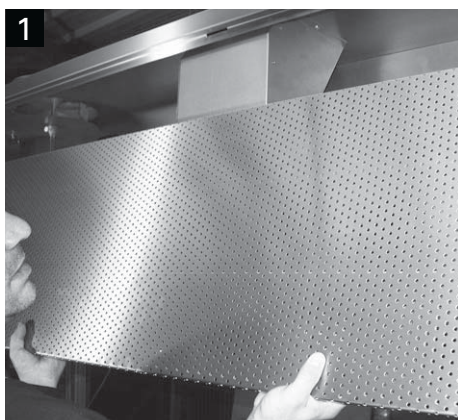
Applicable to:



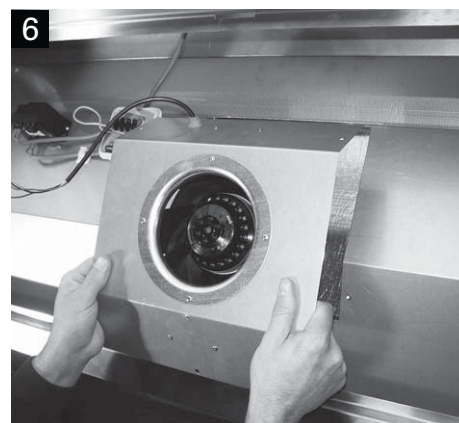
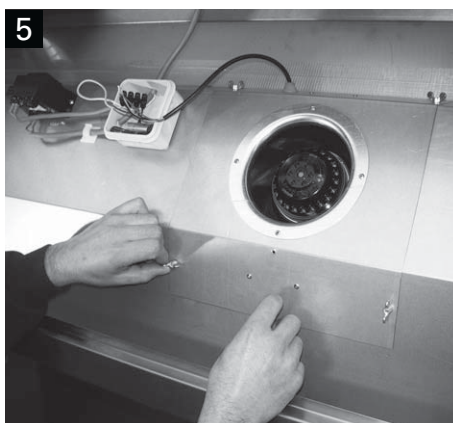
Removal of the canopy front



Removal of the optional Capture Jet™ fan air inlet plenum



Removal of the Capture Jet™ fan plate



3.5.2 - Canopy without integrated makeup air

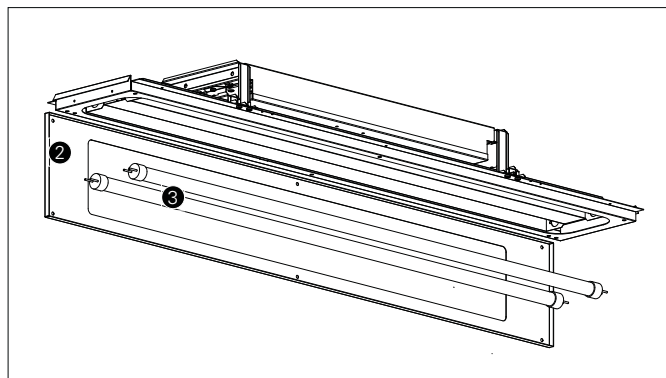
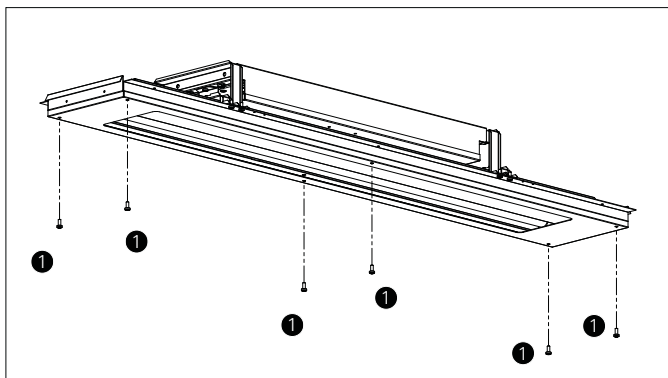
Applicable to: KVI UVI KWI UWI CMW-I



3.6 - Maintenance of UV light module

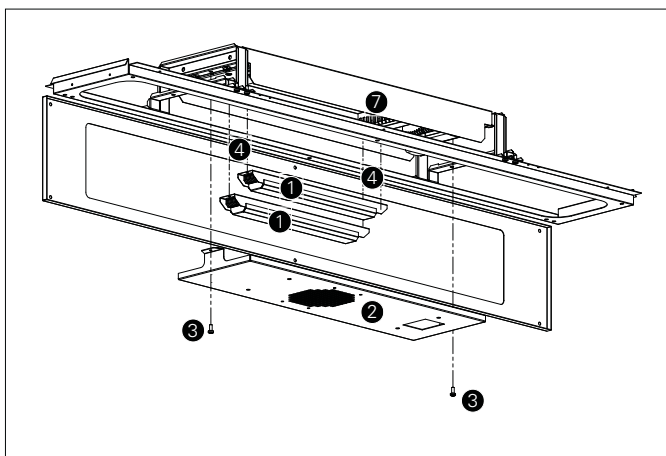
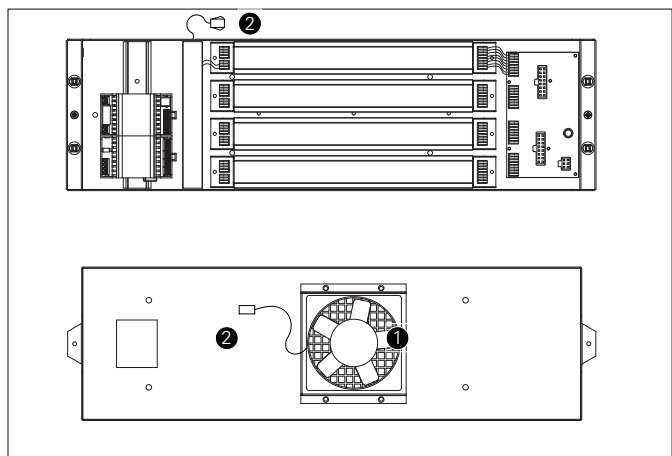
Before any operation, ensure that the canopy power supply has been turned off and ensure that all cooking equipment is also turned off and has sufficiently cooled down before starting any maintenance.

3.6.1 - Replacement of the fluorescent tubes



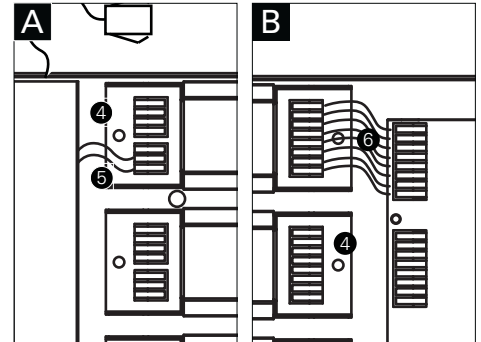
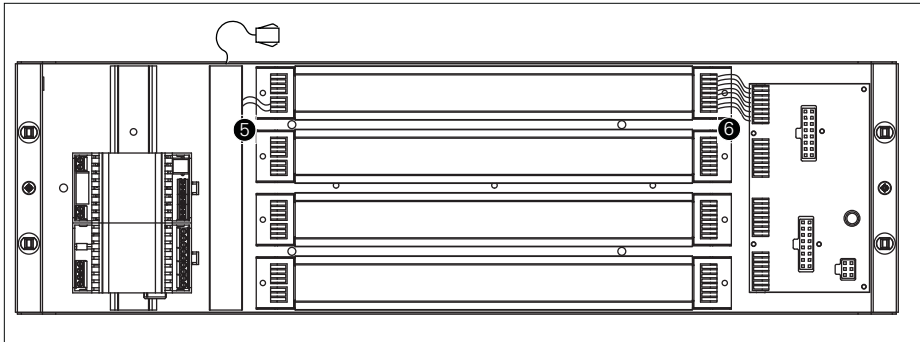
- Remove the 6 fixing screws (1) and carefully help the light lens frame to rotate down.
- The light lens will not fall due to the safety restraining wires fitted to the roof of the canopy and the light fitting door.(2)
- Remove the tubes (3) by rotating them by 1/4 turn and slide down to remove from the connectors.
- Reverse the procedure to install the new lamp and close the light fitting. The old lamp must be disposed-of according to the local regulations.

3.6.2 - Replacement of the UV ballasts

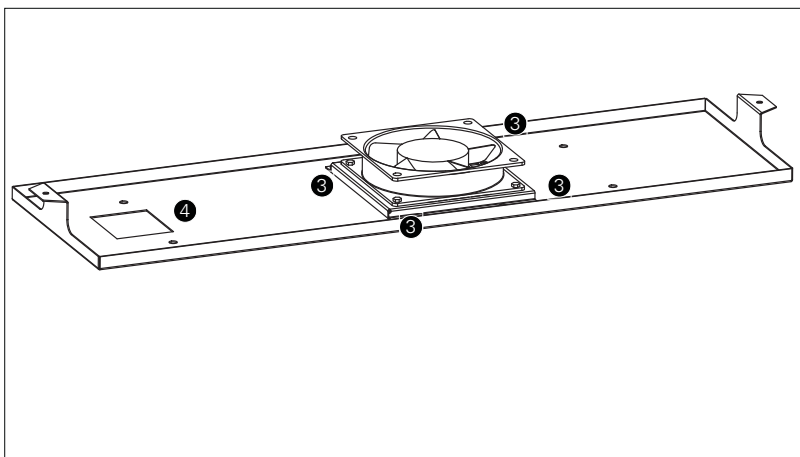


- Follow the previous instructions to access the control box.
- Disconnect the plug located on the cover. Remove the 2 fixing screws (3) and pull the cover down.
- Each ballast (1) is fixed on the controller plate by 2 screws (4) and is connected to PC board (5) (6).
- First disconnect and remove carefully the wires (2 white wires on the left of the ballast and 8 white wires on its right) as shown on (A) and (B).

- Then remove the ballast's screws to remove it from the control box (7).
- Reverse the procedure to replace the ballast and close the control box and the light fitting. The old ballast must be disposed-of according to the local regulations.



3.6.3 - Replacement of the control box cooling fan



- Follow the previous instructions to access the control box and remove its cover.
- The cooling fan is located on the back of the cover and fixed with 4 nuts. Remove them to replace the cooling fan.
- Reverse the previous instructions to reconnect the fan, close the control box and reassemble all parts of the light fitting. The old fan must be disposed-of according to the local regulations.

5.6.4 LED Downlight

An option is to have LED downlights fitted in the canopy.

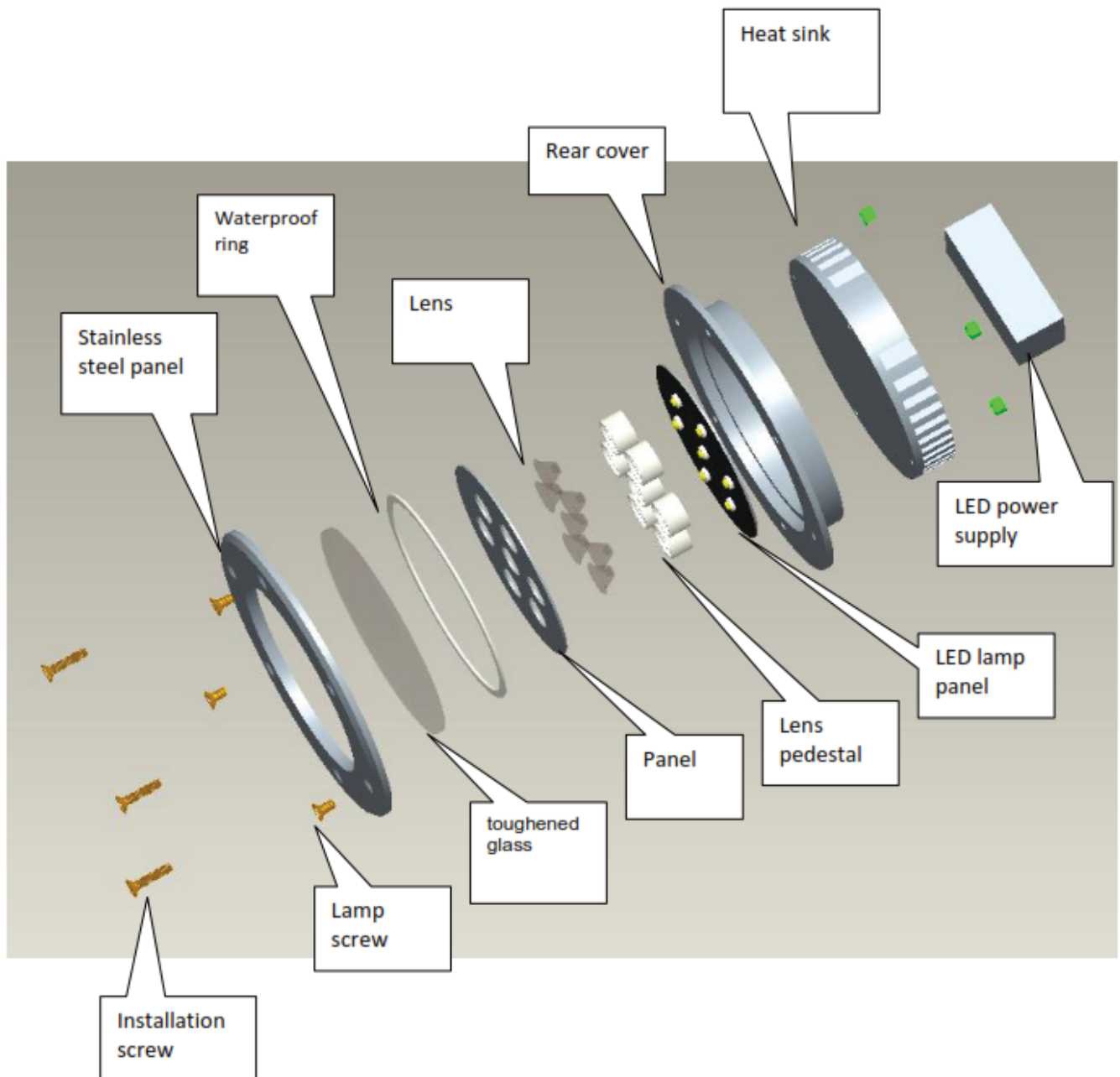
These are stainless steel downlights, designed for using in wet or with higher temperatures. Also designed for simple and rapid replacement of faulty components.

Type:	BBM LEDPRODUCTS. Model BBM-7x2-SS-230, Stainless Steel Down Lighter (1050LM)
Power Supply:	100-230V AC 50/60Hz 13A (AD-A7x3W included)
Power consumption:	14W
Light Colour:	Pure white 5500K
Colours available:	Warm white 3000-4000k; pure white 4500-5500K; cool white 6000-7000K.
IP Rating:	IP65
Lens Angle:	60°
Lens Type:	Toughened glass, fine frosted.
Max. Working Hours:	50,000 hour
Construction:	Aluminium housing, stainless steel mounting plate.
LEDs:	7 x 2 Watt Bridgelux LED's
Luminous Flux:	900-950Lm



Dismantle the LED downlight

The LED light unit can be removed by unscrewing the 3 long screws fitted into the front surface ring of the lamp (see diagram below). The lamp unit can be gently pulled out of its mounting hole and clear of the canopy. This will provide access to the cable connection unit on the rear of the lamp unit. This can be pulled off.



3.7 - Maintenance of the UV lamps - Warnings

Halton's Capture Ray™ UV-C technology neutralizes the grease particles and vapours, and therefore reduces the odours contained in the exhausted air and coming from the cooking processes of the kitchens (see the product description in the present document). This result is achieved by the use of UV-C lamps and the combined effect of both the lamps radiation and the associated production of ozone.

The UV-C radiation, the production of ozone and the nature of the lamps require strict precautions in the daily use, the cleaning and the maintenance of the Capture Ray™ systems. It is the responsibility of the holder of the present document and, in any event, the contractor and user, to bring knowledge of the following precautions to all people likely to use, clean or maintain the Capture Ray™ system, the associated products (canopy, ventilated ceilings or exhaust units) and the exhaust ductwork.



The Capture Ray™ technology is equipped with several safety devices used to both secure the access to the lamps by an authorized or unauthorised personnel and switch off the lamps under any abnormal working conditions. In addition, every Capture Ray™ system is designed and considered separately, based on the information provided to Halton. Halton cannot be considered responsible if the design of the HVAC installation has been modified so that the working of the Capture Ray™ technology, its efficiency, the access safety to the UV-C lamps or the ozone concentration at the discharge point are impaired.



Start-up, commissioning and maintenance of the Capture Ray™ systems has to be carried out by Halton directly or an authorised and duly trained Halton partner. It mustn't be carried out, under any circumstances, by another stakeholder. Any warranties will be rendered void if these stipulations are not complied with.

3.7.1 - Radiation of the UV-C lamps



UV-C radiation is harmful to the skin and the eyes and, even within a short period of time, causes skin burns and eye injury.

The Capture Ray™ technology is equipped with several safety devices to switch off the lamps under any authorised or unauthorised access. However, the control system must be systematically switched off for any cleaning, maintenance intervention or any other intervention which could need access to the UV plenum.

If ever the UV blue light is visible when accessing the UV plenum, for whatever technical concern, the control system must be immediately switch off as it should be anyway for any intervention. If the problem persists, seek immediate assistance.

3.7.2 - Ozone emissions of the UV-C lamps

UV-C lamps generate ozone. Ozone is classified as oxidizing agent and is irritant for the eyes and airways.



Excess ozone, generated by the Halton Capture Ray™ system, may be present in the extract air prior discharge to atmosphere. World Health

Organization guidelines state that the maximum amount of ozone that can be discharged to atmosphere is 0.06 ppm.

Under normal circumstances, the UV-C lights will automatically switch off to coincide with the shut down of the extraction fan. However if the lights continue to operate after the extraction fan has shut down, the control system must be immediately switched off.

At no time should staff use the kitchen area if the UV-C lamps are illuminated without the exhaust fan in operation. A build up of ozone in a confined area can be harmful. More generally, at no time should staff use the cooking appliances without the exhaust fan in operation.

If it is not possible to restart the fan, windows - if applicable - and doors have to be fully opened to ventilate the kitchen or technical room. If the problem persists, seek immediate assistance.

3.7.3 - Disposal and handling of the UV lamps

The UV-C lamps used for Halton's Capture Ray™ technology contain a very small quantity of mercury. Classification in accordance with directives 67/548/EEC, 2001/59/EC and 2006/102/EC:



T+

N

T+: Very toxic

N: Substances or preparations that are dangerous for the environment

R phrases:

R23: Toxic by inhalation

R26: Very toxic by inhalation.

R61: May cause harm to the unborn child.

R48: Danger of serious damage to health by prolonged exposure.

R50: Very toxic to aquatic organisms.

R53: May cause long-term adverse effects in the aquatic environment.

S phrases:

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

S53: Avoid exposure - obtain special instructions before use.

S60: This material and its container must be disposed of as hazardous waste.

S61: Avoid release to the environment. Refer to special instructions/safety data sheet.

Handling of the lamps

The lamps are manufactured using quartz glass and are therefore fragile. Care **MUST** be taken when carrying out routine cleaning maintenance or tube replacement. Lamps as well as filters cleaning should only be undertaken by trained kitchen staff, in accordance with the instructions contained in the present document.

Disposal of UV lamps

Old lamps (defective or lamps that have exceeded their lifetime) , after maintenance intervention, have to be handled carefully, without breaking the quartz tubes. They have to be disposed of through appropriate channels or sent to specialised and authorised companies.

In case of broken UV lamp

Wash immediately your hands, arms and any other body parts which have been in contact with the tube splinters. Slip on protections (at least protection gloves, if contrary to our maintenance instructions they were not used during the tube replacement). Carefully collect the tube pieces while trying to limit air drafts which can whip up the dust. Place them in an hermetic packaging which mustn't be trashed. Any broken tube has to be disposed of the same way as intact tubes (see above). The quantity of mercury used in the UV-C lamps is very small. However, if you feel unwell, seek medical advice immediately.

3.8 - Cleaning and Maintenance of the UV lamps

Optimum performance of the UV-C lights will only be achieved when the lamps are clean and free from deposits. Subject to usage, it is recommended that the lamps should be cleaned on a regular basis.



It is the responsibility of the holder of the present document and, in any event, the contractor and user, to bring knowledge of the following precautions and the ones described earlier to all people likely to clean the UV-C tubes.

Access to the UV-C lights for cleaning purposes, by authorized personnel only:

- A) Turn off the power supply of the UV system. Turn and release the two rotary locks on the safety access hatch. Swing the hatch away from the filters (1). Note : Opening the safety hatch automatically turns off the UV-C lamp units.

IF THE UV-C LAMPS UNIT CONTINUE TO OPERATE WHEN THE SAFETY ACCESS HATCH IS OPENED, CLOSE THE HATCH IMMEDIATELY AND SEEK ASSISTANCE – DO NOT ATTEMPT TO CLEAN THE LAMPS AND/OR GREASE FILTERS IF THE UV-C LAMPS ARE ILLUMINATED

- B) Disconnect the UV rack by turning the left and right connector rings a quarter turn. Slide the connectors above the UV rack slides (3)..(8).

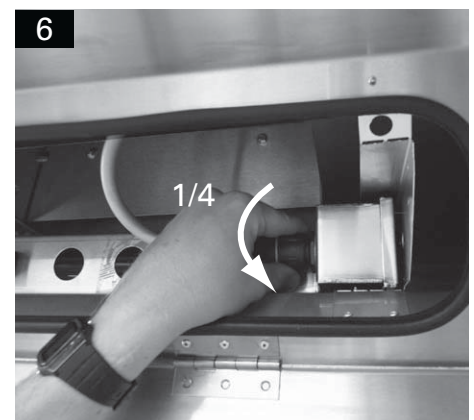
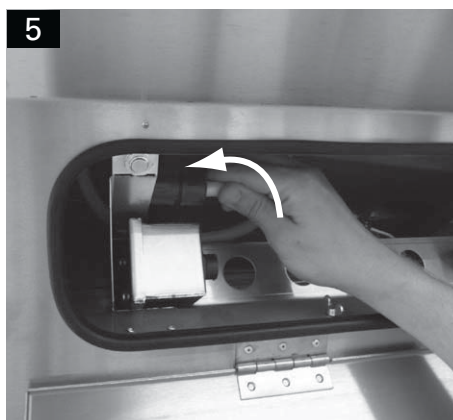
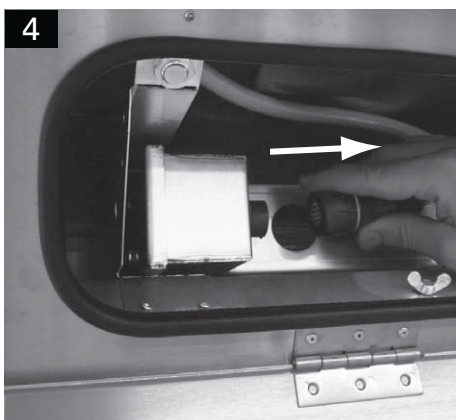
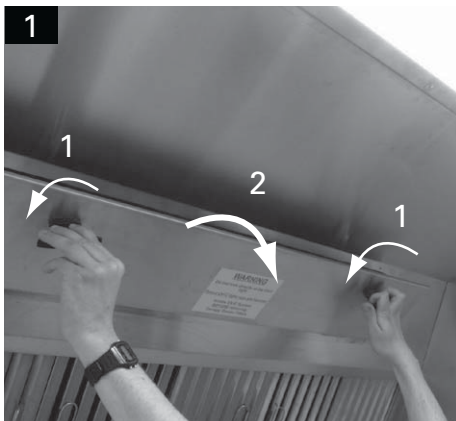
- C) Remove the UV rack carefully (9).

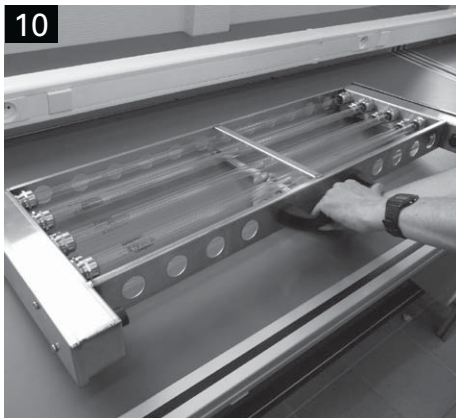
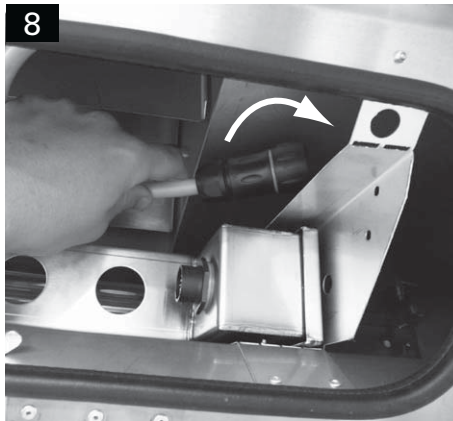
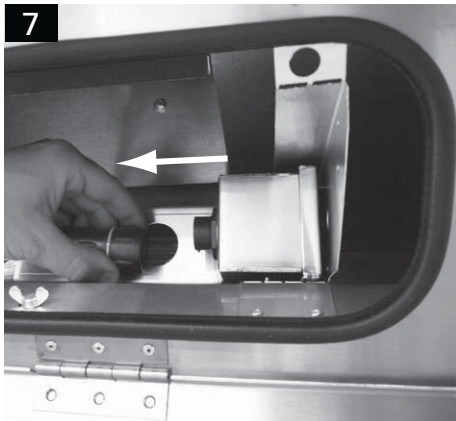
FOR SAFETY REASONS AND ALSO FOR A BETTER EASE OF CLEANING IT IS INADVISABLE TO LEAVE IN PLACE THE UV RACK INSIDE THE CANOPY EXHAUST PLENUM OR EXTRACT IT PARTLY TO CLEAN IT.

- D) Lay the UV rack it on a flat surface so that the maintenance personnel should have the UV racks at hands height (10). Maintenance personnel mustn't be in position to have the UV tubes at eyes height for the cleaning.

- E) Wipe the UV-C tubes with a damp cloth, using a de-greasing detergent if necessary (11). If detergent is used, with a clean damp cloth, rinse the cleaning fluid from the tubes – preferably with soft water so as to prevent the build up of lime-scale on the glass tube. Wipe the tubes dry.

- F) Place the UV rack back inside the exhaust plenum (12). Reconnect it and close the exhaust plenum by carrying out the steps 1 to 8 in the opposite order.





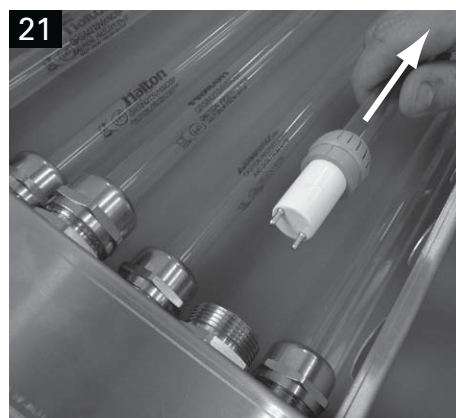
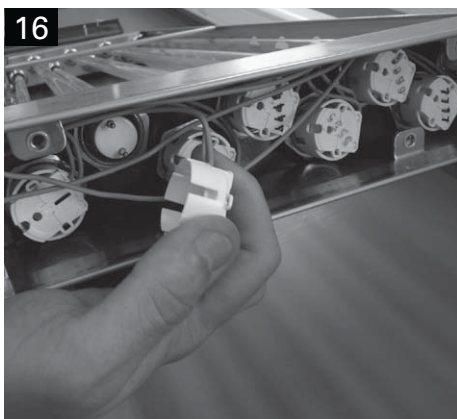
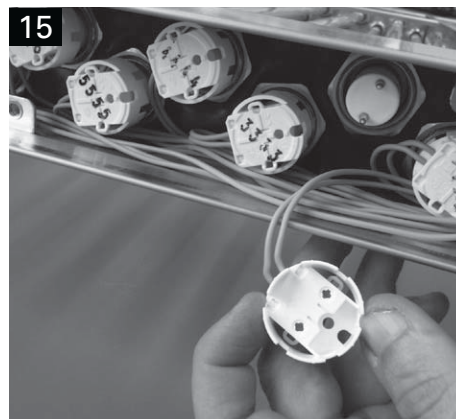
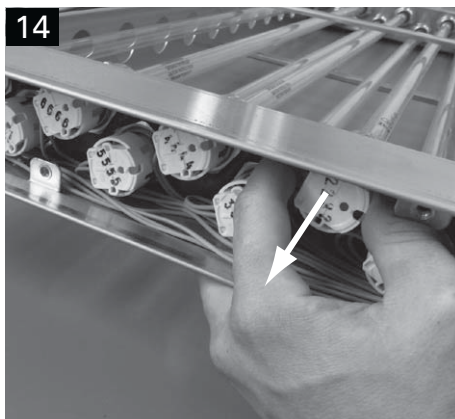
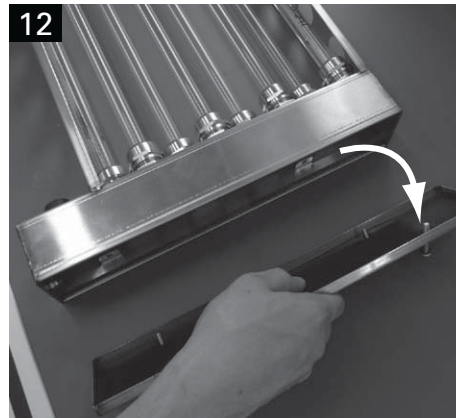
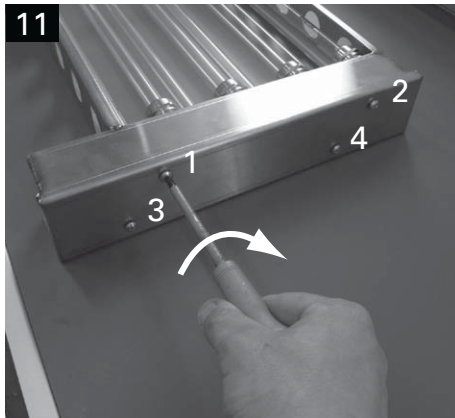
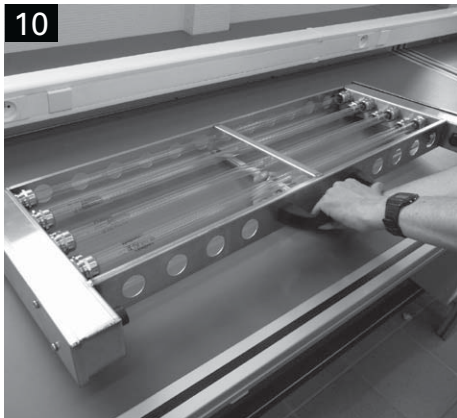
3.9 - Replacement of part of the tubes of one UV rack

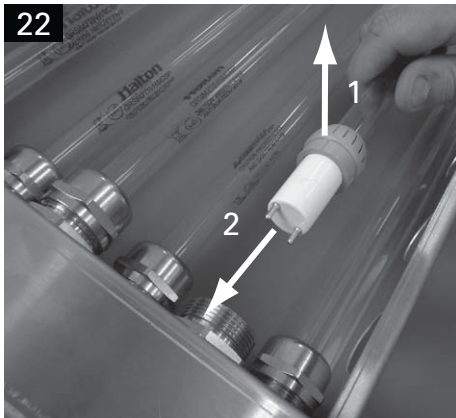


Read carefully the warnings of the previous chapters. To access the UV rack, follow the procedure described in the previous chapter.

- A) Lay the UV rack on a flat surface so that the maintenance personnel should have the UV racks at hands height (10). Maintenance personnel mustn't be in position to have the UV tubes at eyes height for the cleaning.
- B) Remove the 4 screws of the rack right connection block cover (11). Remove the cover (12). Proceed the same way for the left connection block cover (13).
- C) Remove the left and right connectors of the tube(s) which have to be replaced (14..16). Unscrew the right and left stainless steel glands and slide it away along the tube (17..19).
- D) Carefully pull on the tube toward the interior of the rack (20). Insist gently at each end if the tube is stuck to the gasket. If the tube resists, use a cutter to cut the plastic compression ring around the tube, at the limit of the stainless steel gland thread, on both sides. Carefully pull again the tube toward the interior of the rack.
- E) Lift the lamp slightly upwards and pull the tube in the opposite direction to free the other side of the tube from its gasket.

- F) Store the UV tube(s) in a safe place waiting for their collection by appropriate channels or dispatch to specialised and authorised companies.
- G) Prepare a the replacement tube and slip on a new compression ring and then a new gasket at every end. Put the new tube in place and reverse procedure to fix it, replace the other tubes, close the connection blocks and re-install the rack inside the canopy.





3.10 - Replacement of all the lamps of one UV rack

When all the tubes have to be replaced at the same time (typically when their lifetime has been reached), Halton maintenance department or any authorized and duly trained Halton partner purely and simply proceed to the replacement of the complete rack.

If the maintenance site is managed by a company not known by Halton, please contact your Halton Customer Service.



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