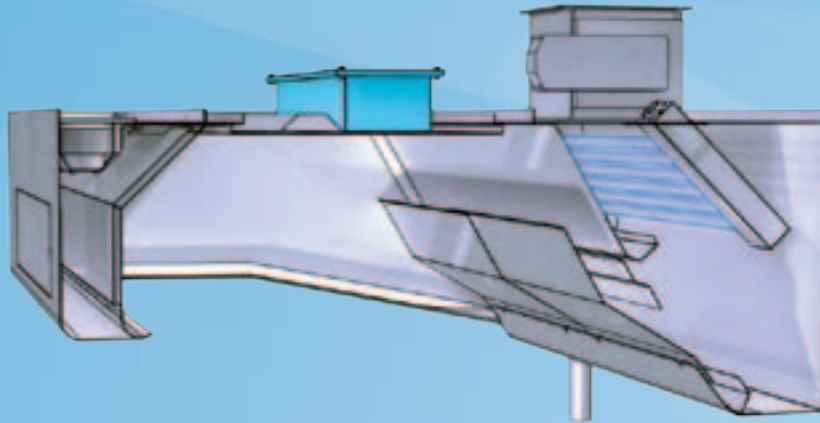


## UV-Light Technology

For Halton Marine Galley Hoods



Halton's UV-light technology is the most efficient solution for hoods with medium to high utilization rate, and for cooking processes producing all sizes of grease particles. Halton's UV-light technology breaks small grease particles into smaller molecular units. Ozone generated by the UVC lamps reacts with the solid and vaporized greases. The resulting substance will not stick to the ductwork or fans. This helps to reduce a serious fire risk and expensive cleaning of the ducts. The UV-light technology is an excellent choice for hoods in new-builds but also for refurbishments as the equipment does not change hood's outer dimensions. UV-light technology offers:

- Clean exhaust ducts and hood interior for improved hygiene
- Reduced risk of fire
- Reduced duct cleaning costs
- Comfortable working conditions
- Scientifically proven results with world-wide references

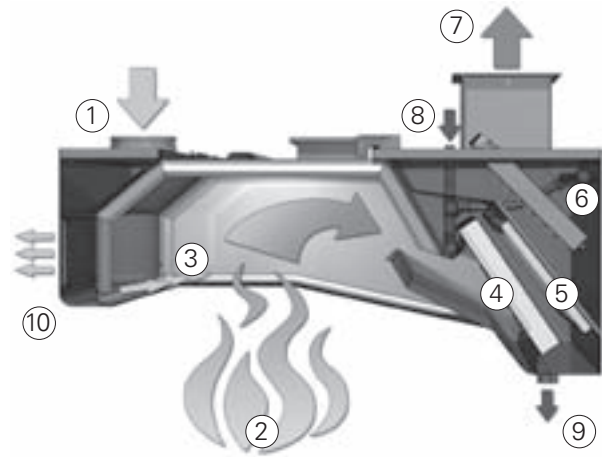
Halton is the world-leading suppliers in UV-light technology for commercial kitchens and galleys. The second generation Halton Marine UV-system offers new technical features without altering the general operation principle.

### Benefits

- Easy maintenance through large service hatch that enables easy access e.g. to light fixture, hood control box, fire damper
- Easy access to UV-lamps. Lamps can be changed individually. Service life of UV-lamps appr. 13 000 hours
- Easy parameter setting and adjustment with PDA using Bluetooth connection
- Faster and easier commissioning. Prefabricated cables connected with fast connectors. Hood control box with fast connections
- Hood control box and UV-light rack as IP65
- In case of malfunction situation, GSM-SMS module sends a message to a specified mobile phone. Available as an option.
- Several safety features. UV operation shuts-down automatically in case pressure is too low or the deflector plates are opened
- New compact, user-friendly control panel can be connected up to 12 hoods

## UV-OPERATION PRINCIPLE

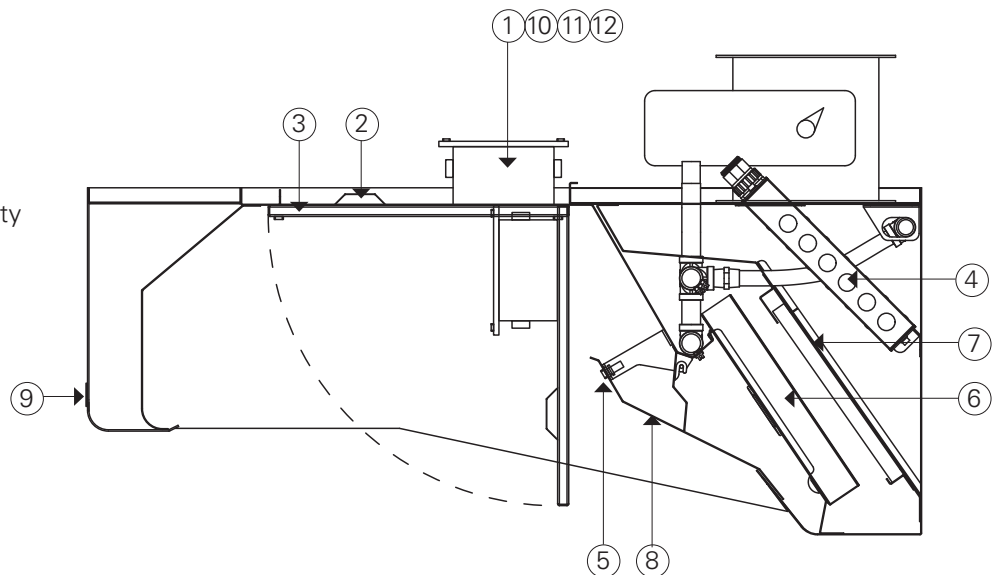
1. Supply air enters the capture jet plenum.
2. Contaminated air and heat rises from the cooking appliances.
3. Contaminated air is directed into the hood by Halton patented Capture Jet technology.
4. KSA multi-cyclone filters remove grease and contaminants from the air stream with the aid of centrifugal effect. According to independent laboratory tests KSA is the most efficient mechanical grease filter on the market.
5. Mesh filter balances the airflow inside exhaust plenum and apply more filtration to the air. Together with KSA filter this doubles filtration efficiency.
6. UV-light filtration: Most grease particles are first filtered with two-stage mechanical filtration. Remaining grease is then eliminated with Halton's ultraviolet light technology.
7. Cleaned exhaust air contains small amounts of Ozone which further cleans the ducts downstream. All excess Ozone converts back into Oxygen.
8. At scheduled times the washing control cabinet stops the hood operation and begins a washing



- cycle. Hot water with mild detergent is pumped into the hood spray nozzles, washing the essential parts of the exhaust plenum including UV-lights and filters.
9. The waste from the washing cycle is drained from the hood via the drain connection.
10. Supply air is distributed to the workspace at low velocity through the front panels (available on model KWT)

## UV HOOD DESCRIPTION

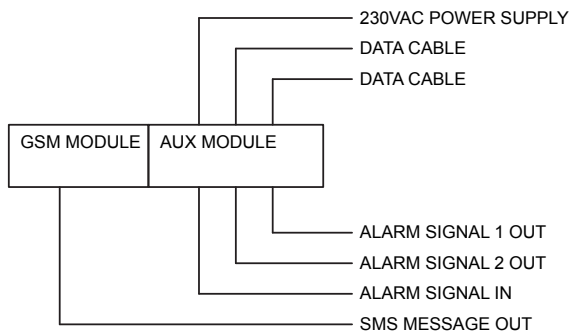
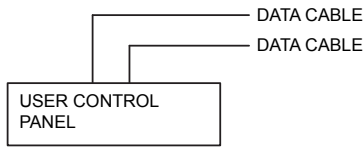
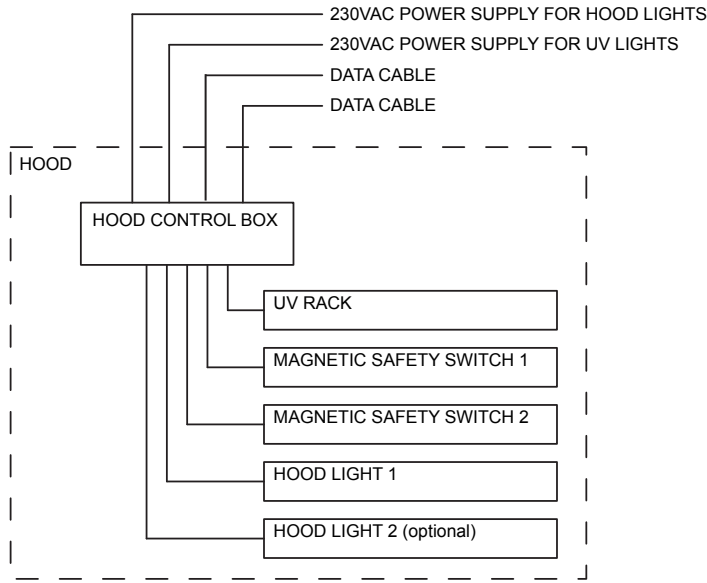
1. Hood control box
2. Hood light fixture
3. Maintenance hatch
4. UV rack and lamps
5. Magnetic proximity safety switches
6. KSA filters
7. Mesh filters
8. Deflector plates
9. User control panel
10. Hood controller unit
11. UV light ballasts (3pcs)
12. Hood light ballast



Note: Automated washing system is not required, but it is recommended for use in hoods with UV-light technology.

# SYSTEM CONNECTION

Cable hookup diagram

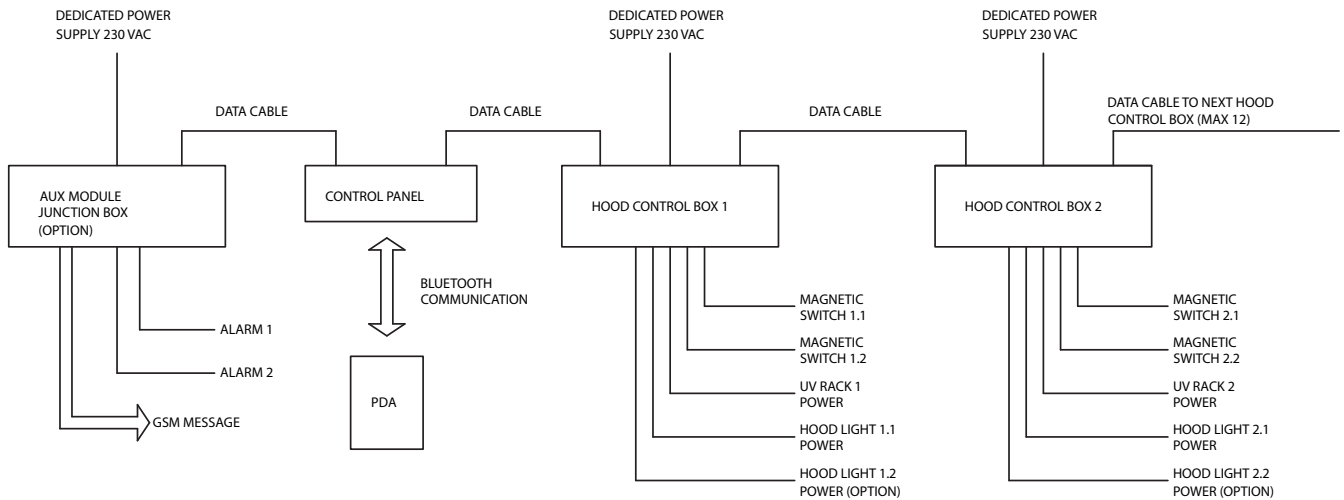


## NOTES

- 1 USER CONTROL PANEL PER HOOD GROUP
- 1 AUX. MODULE PER HOOD GROUP (OPTIONAL)
- MAX 12 UV HOODS PER HOOD GROUP

DATA CABLES CONNECTED IN DAISY CHAIN FORMATION.

Hook-up example

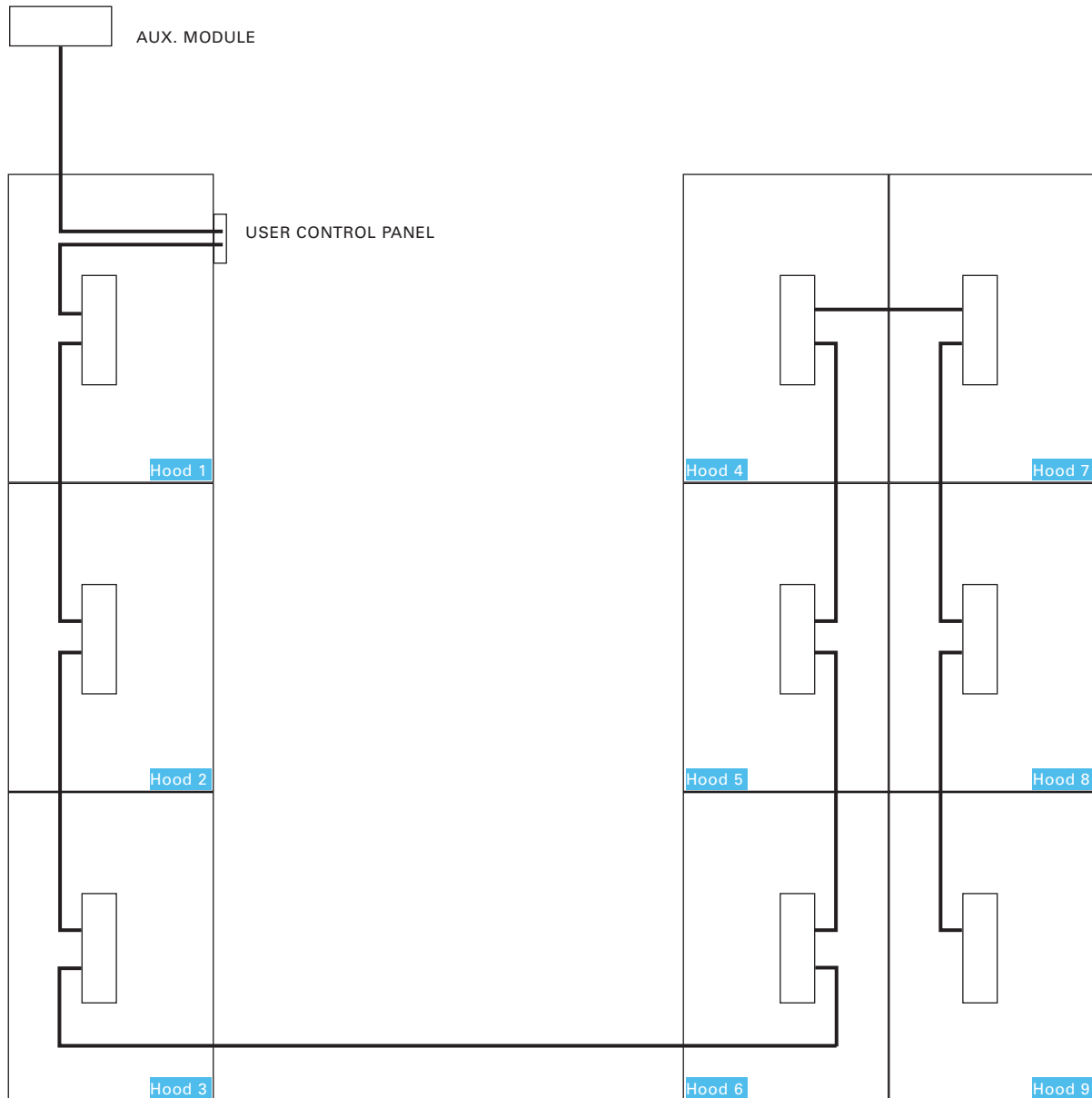


## DATA CABLING BETWEEN HOODS AND CONTROL PANEL

Connections between the hoods and the control panel are done in "daisy chain" formation. The daisy chain cabling does not need to follow the numbering order of the hoods or the location of user control panel or

AUX. module. This allows the cabling to be clear and efficient. The number of each hood is determined solely by the programming of each controller.

Example formation



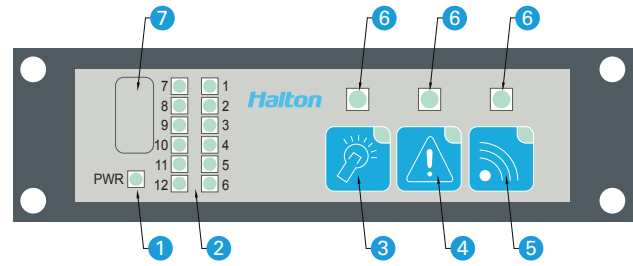
## UCS CONTROL PANEL

The Halton UCS control panel is a small, compact monitoring and controlling panel for Halton hoods equipped with UV-light technology. This compact panel can be integrated e.g. in the hood front panel, hood surface or control cabinet door which enables saving of space. The simple user-interface with visual and audible alarms is easy to use (audible alarms are available as an option).

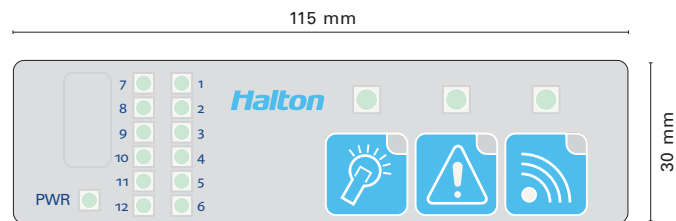
Each control panel manages up to 12 UV hood sections. By pressing push buttons and viewing indication lights, users can see the status of the hood. No commands can be issued in this mode so users can't accidentally change any parameters. When the system is on, green power LED is constantly on.

The system can be set-up, read and updated easily by using PDA with Bluetooth connection.

Halton USC control panels are available for Halton hoods in new-builds and refurbishments.



1 Power indication light, 2 Maximum number of UV sections handled by the control panel, 3 UV lamps alarm and push button, 4 Maintenance alarm and push button, 5 Communication alarm and push button, 6 Default warning lights, 7 Bluetooth transmitter for PDA



## COMPONENTS

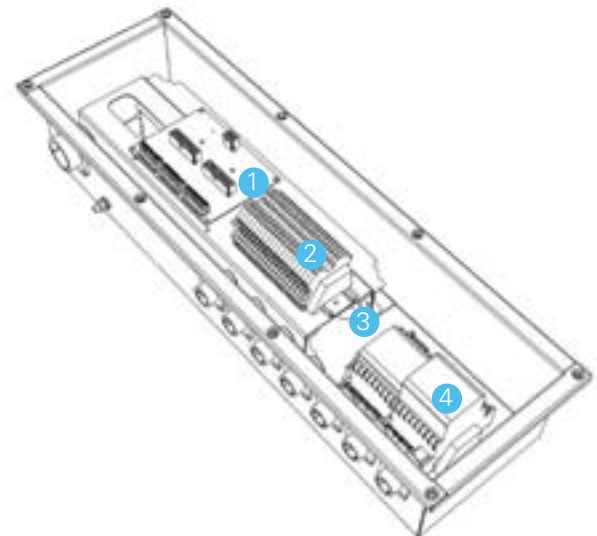
### Hood control box

The hood control box houses all the power connections, controller equipment and ballasts needed for the UV operation. The box also handles the normal lighting of the hood. Maintenance hatch provides easy access to the controller box and cables. Everything inside the control box is pre-wired and programmed to order. Customer only needs to connect supply power and pre-fabricated data cables between hood modules before UV commissioning.

### Hood controller and UV modules

The hood controller inside the hood controller box manages the entire UV system of a single hood section in which it is installed. It calculates the running hours of the lamps, the status of the system and any possible alarm or communication issues. There can be up to twelve hoods connected to each other in one hood group.

Each controller in a group of hoods is preprogrammed with the information it needs to operate and is given the appropriate numeric address [1 to 12] so it understands its location within the system regardless of the physical cabling arrangement. This essentially



### HOOD CONTROLLER PARTS

1 Ballast connectors, 2 Wiring terminal, 3 Ballasts (under the bracket), 4 Controller. Note: Arrangements of components and connectors may vary.

means that each hood is a slave that communicates on its own and the user control panel is the master that manages all hoods in the system and acts as the user interface.

### Safety magnetic switches

Two magnetic limit switches are installed to detect the removal of the deflector plates. When the contact breaks, the UV system will automatically shut down.

### The UV-light rack

The UV lamps are mounted into a UV-light rack that is integrated to the hood extract chamber. There are six UV lamps connected to the three UV light ballasts inside the control box. The UV lamps are specially manufactured for Halton.



The UV-light rack consists of six UV lamps that are connected to three UV-light ballasts

### UV-lamps

The Halton UV lamps are germicidal short wavelength low-pressure mercury vapor lamps, which produce ultraviolet radiation at wavelengths lethal to micro-organisms. The connectors of the UV lamps are specially manufactured for Halton. The length of the hood determines if short or long lamps are used. Short lamps are for hoods below 2000mm and long lamps for hoods with length 2000mm and above.

#### Short lamp

Lamp wattage: 41 W

Lamp current: 425 mA

Lamp voltage: 98 V

UV output at 253,7nm: 16 W / 150  $\mu$ W/cm<sup>2</sup>

Rated life: 13,000 h

#### Long lamp

Lamp wattage: 75 W

Lamp current: 425 mA

Lamp voltage: 179 V

UV output at 253,7nm: 33 W / 240  $\mu$ W/cm<sup>2</sup>

Rated life: 13,000 h

### Maintenance hatch

The hinged maintenance hatch enables quick and easy access to the light fixture and UV-control box.



### AUX module and GSM module

The auxiliary module is required for the external alarm signals. It conveys different UV alarms to the customer systems and also receives alarms or commands from the customer system. These alarms can be used to monitor and control the UV system remotely.

The optional GSM module adds the possibility to send SMS messages to any given mobile phone number. The use of this option is limited by the GSM network availability in the customer location.

The AUX and GSM modules are located in a separate small wall mounted cabinet. The user control panel can be also attached to the face of the cabinet.



### Cables

All internal and constant-length cables are prefabricated by Halton. Cables with varying length (between hood groups, user control panel & AUX module etc.) can be prefabricated to order if the length of each cable is known before delivery. Otherwise, Halton supplies only cable connectors.

### Cable connectors

Standard cable connectors are plastic. For more demanding conditions the cable connectors are available as metallic.