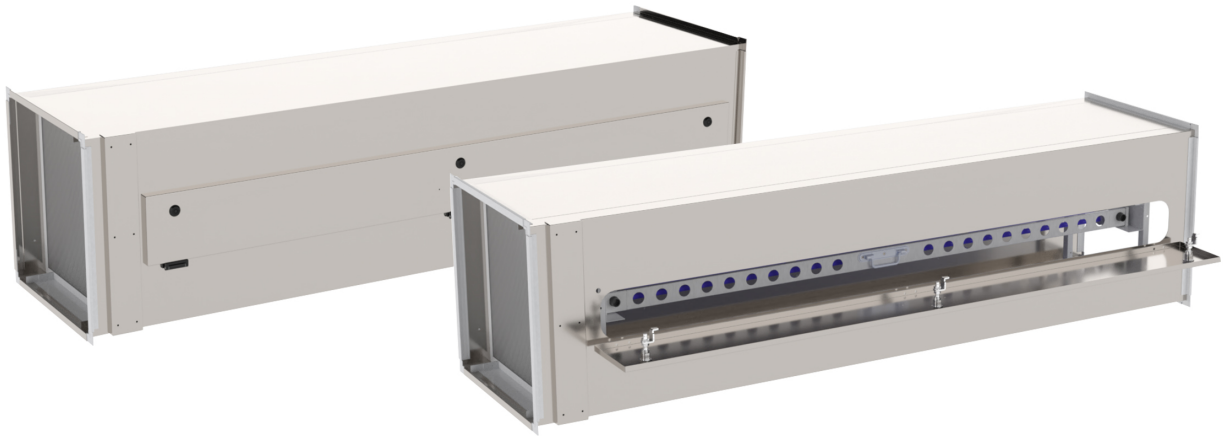


# RCT

## ReactAway - Duct Capture Ray™ UV-C unit

◦ For commercial kitchens ◦ Ideal for retrofit projects ◦ Advanced pollution control based on UV-C Capture Ray™ technology



### Main technologies and options



**Optional High Efficiency Prefiltration**  
Increases the final efficiency or grease and VOCs neutralization



**UV-C Capture Ray™**  
Neutralises grease vapors and particles



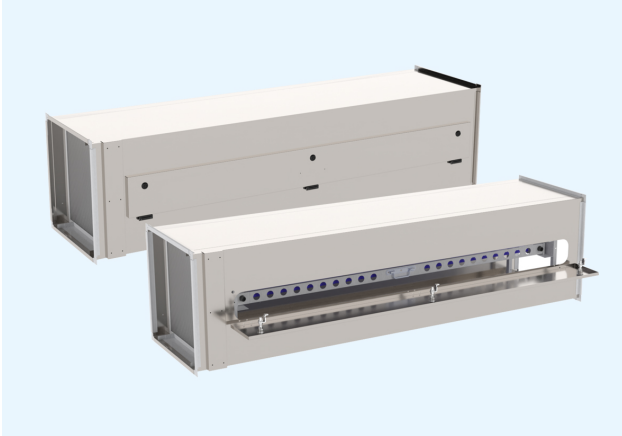
**Halton Mini Touch Screen**  
Intuitive LCD user interface



**Halton Connect™ (Option)**  
Cloud-based control platform with distant monitoring capabilities (1)

(1) The access to Halton Connect™ web portal is included in the 1-year warranty period. After this period, it is subjected to one of the Halton Care service offer.

## Description and main technologies



- Enables sustainable heat recovery to preheat makeup air or water, generating substantial energy savings in HVAC operation and/or domestic hot water production.

### Improved safety, maintenance savings and respect for the neighborhood

- The **Capture Ray™** technology keeps the exhaust plenums and downstream ductwork virtually free of grease deposits. The ductwork cleaning operations are cut down to the minimum legal frequency (if applicable) or to the strict minimum.
- Combines significant savings on ductwork cleaning costs with optimized hygiene and fire safety

## Applications

Halton **ReactAway** is a treatment unit equipped with **Capture Ray™** technology and designed to be installed on extract ducts from commercial kitchens.

**Capture Ray™** technology is used to reduce ductwork cleaning costs, enhance fire safety, and prevent the risk of legal actions from neighboring residents due to cooking odors discharged by commercial kitchens located in densely populated areas. It becomes essential when ductwork is difficult to access for cleaning or in heritage or classified buildings with strict fire safety requirements. It is commonly integrated into Halton's hoods and ventilated ceilings.

The Halton **ReactAway** unit was specifically designed to retrofit existing kitchens with **Capture Ray™** technology, without major modifications to existing hoods or ventilated ceilings, while ensuring complete operational safety. It can also be used to complement Halton's **Capture Ray™** hoods or ventilated ceilings when additional UV capacity is needed to meet higher pollution control requirements.

After treatment, it is possible to recover heat from the extracted air, making ReactAway particularly suitable for projects targeting [LEED](#) (1), [BREEAM](#) (2), [DGNB](#) (3), [RE2020](#) (4), or other similar programs or certifications.

## Description

The **Capture Ray™** technology neutralizes fine grease particles, grease vapors and a significant portion of the VOCs that cannot be removed by any primary mechanical filtration.

It offers a unique combination of benefits, including reduced cleaning costs, enhanced hygiene, improved fire safety, and a lower environmental impact on the surrounding neighborhood.

### Substantial energy savings

### Other benefits and features

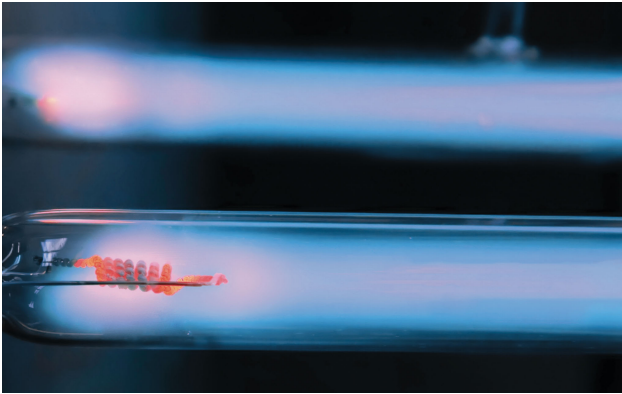
- Construction from stainless steel, 1.2 mm thick. Fully welded casing for improved robustness.
- Installation in ceiling voids or in a technical plant room. Vertical or horizontal position is supported.
- Optional outdoor horizontal installation includes covers for the ballast boxes and a cap above the UV lamp access door.
- Optional prefiltration to improve the UV-C neutralization process which achieves optimal efficiency on medium to small grease particles, grease vapors, and VOCs.
- Capacity from 1440 to 17280 m<sup>3</sup> h (400 to 4800 l/s). Higher capacities upon request.
- [option] Advanced 24/7 distant monitoring capabilities thanks to **Halton Connect** IoT (Internet of Things) platform.
- Highest value of ownership thanks to **Halton Connect & Care** smart services available as an option from kitchens commissioning.
- Total access security to UV-C lamps. Includes a verification of the correct closing of the access hatch to the UV lamps.
- Lamps lifetime: up to 20 months or 13,000 hours.
- The ballasts and controllers boxes can be mounted on the most suitable side of the unit or up to 1.5m away.
- The unit is delivered with the 5" Halton Mini Touch Screen as user interface. It can be installed up to 100m from the unit.
- When combined with other Halton connected technologies, the unit becomes part of the full Halton Connect™ platform that includes the Halton Touch Screen.

(1) LEED - Leadership in Energy and Environmental Design (2) BREEAM - Building Research Establishment Environmental Assessment Method (3) DGNB - German Sustainable Building Council (4) RE2020 - French Environmental Regulation 2020 (5) EN 16282-2 Equipment for commercial kitchens - Components for ventilation in commercial kitchens - Part 2 : kitchen ventilation hoods - Design and safety requirements (6) HACCP - Hazard Analysis Critical Control Point



## Capture Ray™ technology

• UV-C grease and odors neutralization



The Capture Ray™ technology neutralizes fine grease particles, grease vapors and a significant portion of the VOCs that cannot be removed by any primary mechanical filtration.

It offers a unique combination of benefits, including reduced cleaning costs, enhanced hygiene, improved fire safety, and a lower environmental impact on the surrounding neighborhood.

### Benefits

- The Capture Ray™ technology keeps the exhaust plenums and downstream ductwork virtually free of grease deposits. The ductwork cleaning operations are cut down to the minimum legal frequency (if applicable) or to the strict minimum.
- The hygiene and fire safety levels of the extract circuit are optimized to their highest standards.
- The Capture Ray™ technology also significantly reduces the odors discharged outdoor and thus lowers the kitchens' environmental impact on the neighborhood and the risk of complaints or legal action.
- An asset to establish a restaurant in dense urban sites i.e. in previously unfeasible locations or where they represent the highest turnover potential.
- When combined with PolluStop, airborne cooking odours will be minimized to a point that the ductwork can then follow the most direct and cost-effective route to outside, even at street level.
- It allows for the elimination of unsightly external or bulky internal vertical duct risers. It reduces the installation costs and increases the leasable space and corresponding revenues.
- The Capture Ray™ technology also allows for efficient heat recovery, sustainable over time.

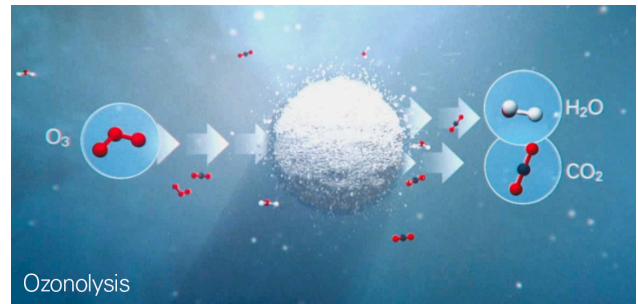
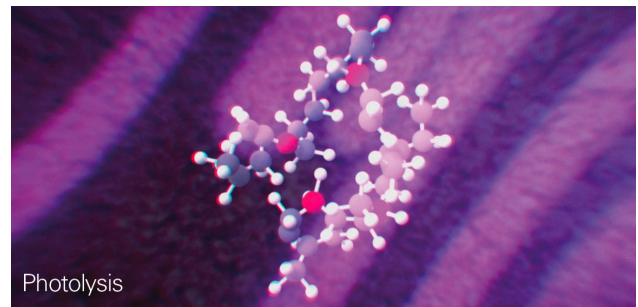
### How does it work?

Capture Ray™ technology is based on the use of UV-C lamps. The Neutralisation of grease particles and vapors depend on two simultaneous reactions.

Photolysis is the direct effect of UV-C radiation. It works by photodecomposition whereby grease molecules are broken down by photons.

Ozonolysis is the oxidation of the molecule fragments by the ozone generated by the lamps. The final products of this reaction are water, carbon dioxide, and an inert residue from a polymerization-like reaction. Since ozone is a gas, it is carried with the airflow, allowing oxidation to continue in the extract ductwork.

The UV-C lamps also neutralizes a portion of the VOCs, the second odor propagation vehicle with grease.



View inside an exhaust plenum fitted with UV-C lamps after several weeks of use



## Halton Connect™ (option)

◦ Advanced IoT platform for commercial kitchens



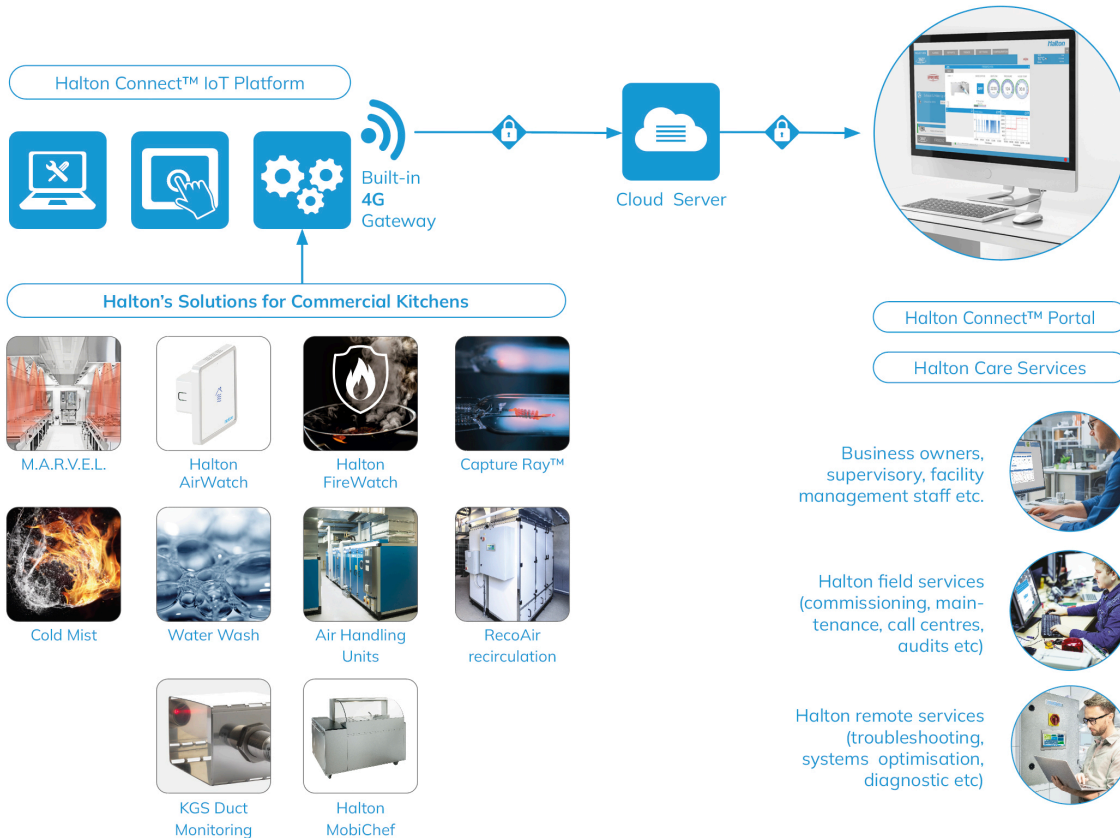
Halton Connect™ is a state-of-the-art IoT (Internet of Things) platform whose core is an advanced cloud-based portal. It enables 24/7 remote monitoring of the solutions designed by Halton, allowing access to useful information along with powerful data analytics.

Halton Connect™ enables Halton Care smart services. They directly contribute to the Highest value of ownership and peace of mind for the business owners.

### Benefits

- 24/7 monitoring of Halton's technologies and solutions.

- Access to Halton Connect™ cloud-based and intuitive web portal included during the warranty period. It provides detailed information about all Halton's connected technologies and solutions.
- Automatic systems' faults notification and editing of simplified automated analytics reports.
- Option for advanced automated data analytics reports (energy savings, water savings, cooking appliances usage depending on the connected technologies etc.).
- Allows deeper analysis by our engineers in order to optimize set points or adjust the equipment utilization. The systems' efficiency can then be kept at design level or even improved during the entire kitchen(s) life cycle.
- Secure as designed to operate as a fully independent system in your building.
- Enables a predictive maintenance based on the data analytics of the systems. Visits are planned depending on the real needs and replacement parts use is optimized.
- Lowest risk of ventilation down time due to a wrong manipulation or equipment fault.
- Option for Software maintenance and update of Halton Connect™.







## Halton Care (option)

◦ Smart services for commercial kitchens



Halton Care is a Premium Services offer, supported by our qualified field service teams and partners, and whose core is Halton Connect™. They directly contribute to the lowest total cost of ownership and peace of mind.

### Halton Care Smart services for which benefits?

Services are often viewed as an expense. And yet, when ventilation and Indoor Environment Quality (IEQ) technologies are neglected, operating issues are sure to increase, costing even more, especially for commercial kitchens.

With Halton Care smart services, Halton solutions are maintained properly with savings on many aspects of kitchens operating, thus reducing the cost overall!

- Reduced energy and spare parts use.
- Reduced cleaning costs.
- Prevent hidden and irreversible damage of equipment.
- Reduce sick leaves of the staff.
- Eliminate complaints from the neighbourhood.
- No lost revenue due to down time.
- Increase hygiene and reduce fire risks etc.

Halton Connect™ web portal provides our service teams and engineers vital information enabling smart predictive maintenance. They can even optimize the operation of your systems by adjusting setting points or providing

recommendations to the kitchen staff such as equipment utilisation for even more benefits:

- Additional reduction of the energy and spare parts use.
- Visits are planned depending on the real needs and replacement parts use is optimized.
- Better view on the competitiveness through predictive costing.

### Who better than Halton for Halton products?

Our service teams have close relationships with the end users, our R&D engineers as well as our manufacturing and installation teams. This intimacy enables Halton to continually improve our solutions and technologies to make them more efficient but also user and maintenance-friendly.

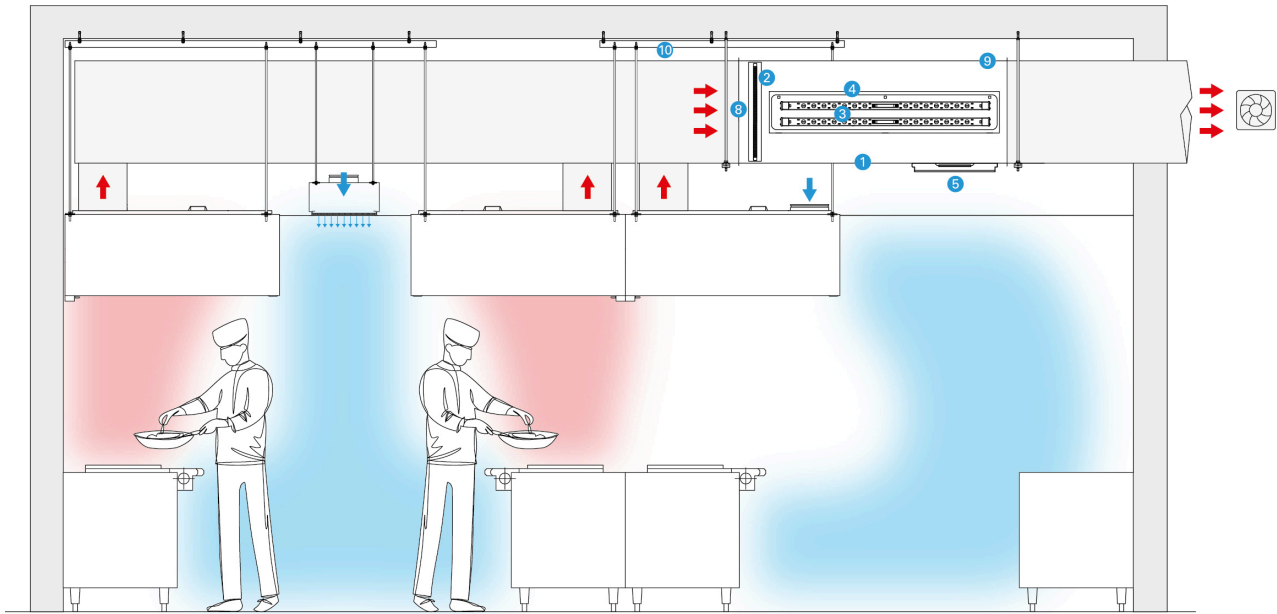
### Less onsite interventions also means less human contact on site



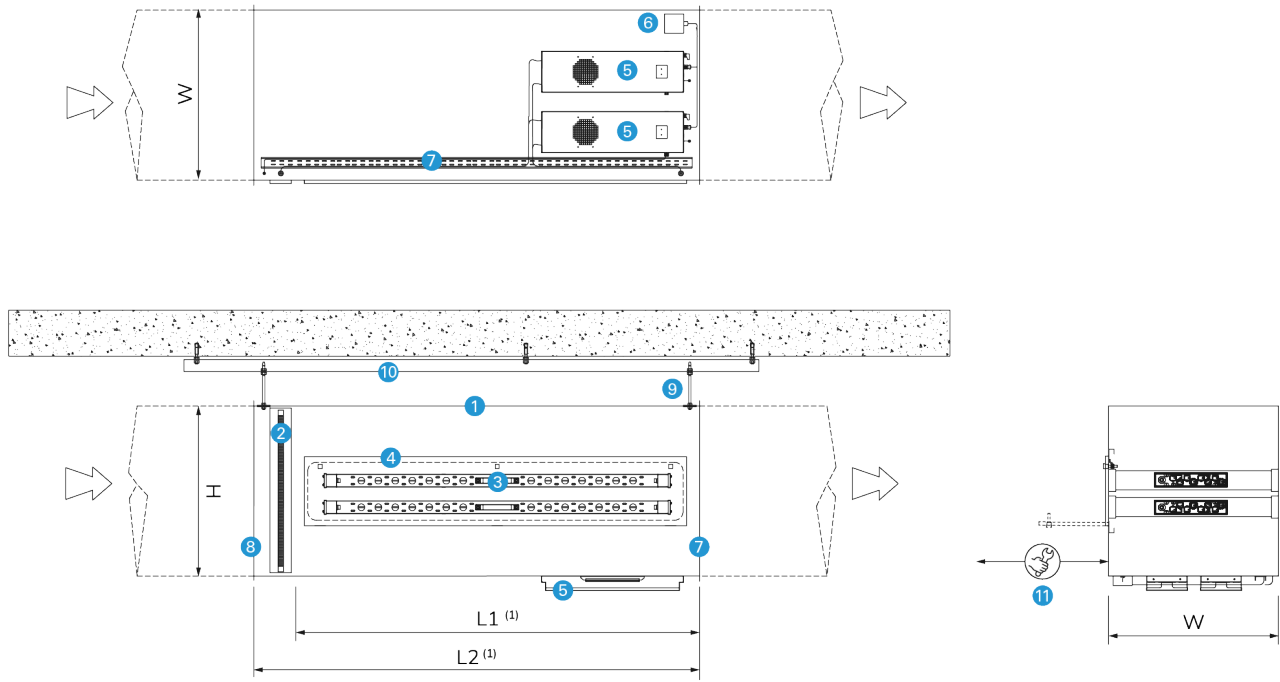
Halton Care smart services enables fixing most of the system faults reported remotely, by a simple call to advise the kitchen team what actions to take or by upgrading the controllers' settings or software.

All that remains are interventions for consumables and other spares replacement and general maintenance. Peace of mind at all respects.

## Construction and dimensions



- |  |  |  |
|--|--|--|
| 1. ReactAway casing constructed from stainless steel 1mm thick.                | 5. UV box with controllers and ballasts. | 10. Supporting ceiling profile.  |
| 2. Optional mesh filters.  | 6. Power supply junction box.            | 11. Minimum clearance required for unit maintenance (see manufacturing drawing). |
| 3. UV racks. Number of racks and lamps per rack according to customer service. | 7. Cable tray.                           | 12. Minimum clearance required for unit maintenance (see manufacturing drawing). |
| 4. Access hatch to the UV racks.   | 8. Rectangular connection with flange.   |  |
|  | 9. Suspension threaded rods.             |  |



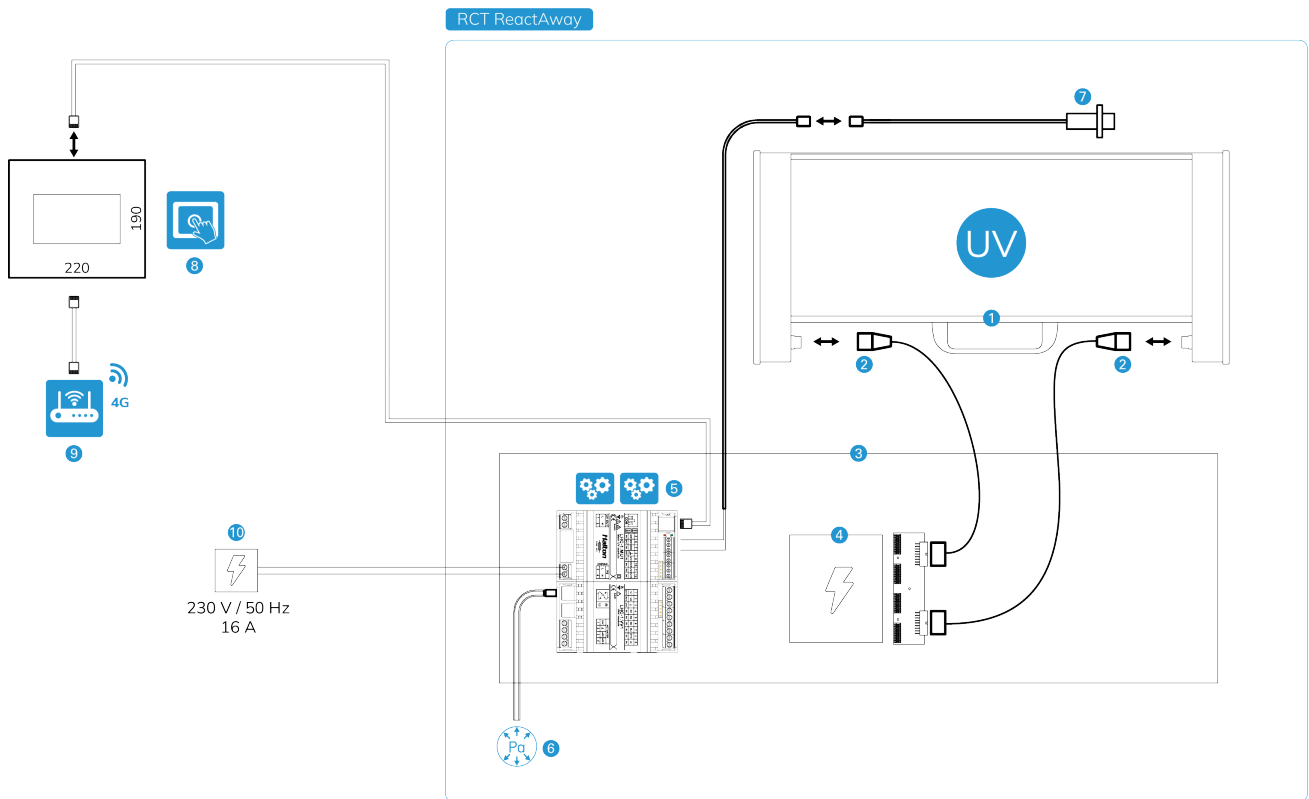
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	L1 <sup>(1)</sup> [mm]	L2 <sup>(1)</sup> [mm]	W [mm]	H [mm]	Q [m³/h]	Q [m³/s]	UV	I (A)	P [W]	[kg]
RCT-4S	1200	1400	400	400	1440	0.4	UVR4S 4x	0.85	205	34
RCT-6S	1200	1400	400	400	2160	0.6	UVR6S 6x	1.21	293	35
RCT-8S	1200	1400	450	450	2880	0.8	UVR8S 8x	1.56	377	38
RCT-4L	1900	2100	450	450	2880	0.8	UVR4L 4x	1.51	364	50
RCT-6L	1900	2100	550	550	4320	1.2	UVR6L 6x	2.15	519	56
RCT-8L	1900	2100	650	650	5760	1.6	UVR8L 8x	2.78	670	64
RCT-6L2	1900	2100	800	800	8640	2.4	2x UVR6L 12x	4.3	1038	92
RCT-8L2	1900	2100	900	900	11520	3.2	2x UVR8L 16x	5.56	1340	99
RCT-6L3	1900	2100	950	950	12960	3.6	3x UVR6L 18x	6.45	1557	111
RCT-8L3	1900	2100	1100	1100	17280	4.8	3x UVR8L 24x	8.34	2010	123

(1) L1 is the unit length without the optional mesh filters; L2 includes them.

**Note:** Other duct sizes and flow rates upon request.

## RCT standard wiring principles



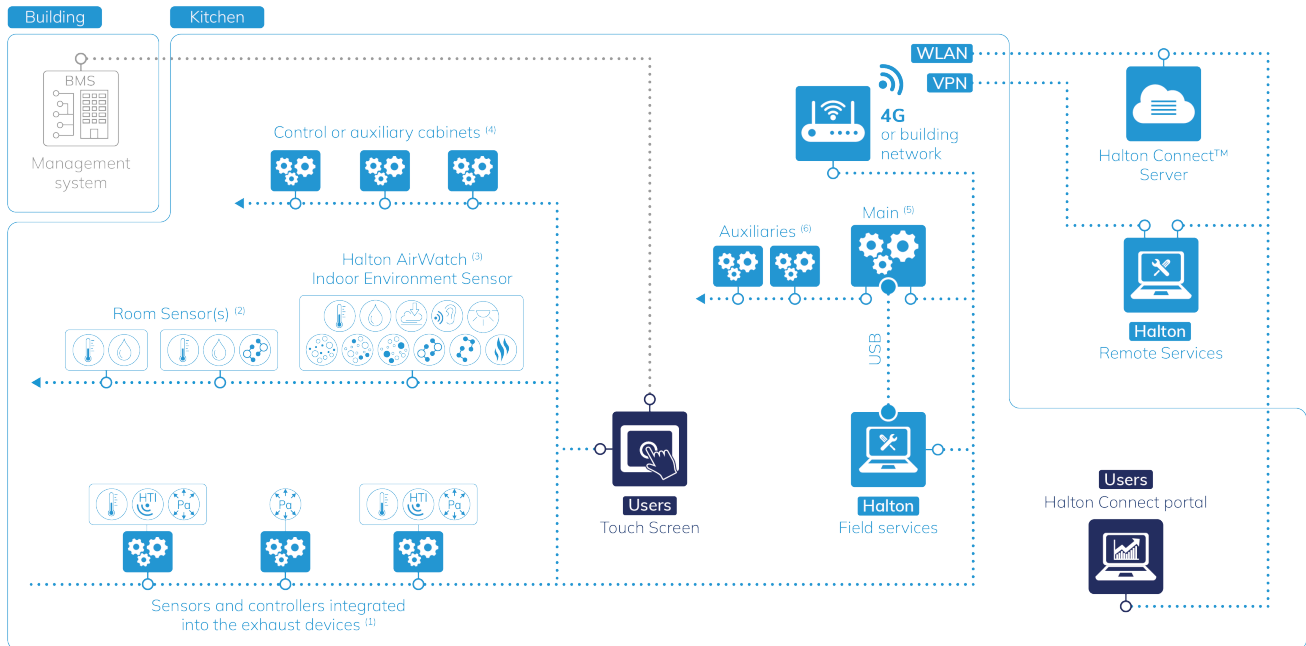
- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. UV racks.</li> <li>2. Quick release connectors.</li> <li>3. Control box (typically fixed on the unit).</li> <li>4. UV ballasts.</li> <li>5. UV Controllers. Auxiliary controllers for digital or analog outputs available upon request.</li> <li>6. Pressure measurement in the unit.</li> <li>7. Door switch (Utility Voltage Powered Magnetic Switch).</li> </ol> | <ol style="list-style-type: none"> <li>8. Halton Mini LCD Touch Screen (5" diagonal). Optional 10" screen available when additional Halton technologies.</li> <li>9. Halton Connect™ optional 4G gateway for remote monitoring capabilities.</li> <li>10. Junction box for the power supply.</li> </ol> <p>Note: Wiring diagram applicable to a standalone RCT unit with optional remote monitoring capabilities. When combined with other Halton connected technologies, the unit becomes part of the full Halton Connect™ platform.</p> |
|---|---|

Note: Wiring diagram applicable to a standalone RCT unit with optional remote monitoring capabilities. When combined with other Halton connected technologies, the unit becomes part of the full Halton Connect™ platform.



# Halton Connect™ wiring and network principles

(When RCT unit is combined with connected Halton technologies)



Depending on the integrated technologies, the exhaust plenums of Halton's exhaust devices are equipped with modular controllers connected to various sensors (typically temperature, pressure, and Halton Thermal Imaging sensors).

(2) Room temperature and humidity sensors, with optional CO<sub>2</sub> measurement, are used to

assess staff thermal comfort and the heat loads generated by cooking appliances.

(3) The Halton AirWatch extends thermal comfort monitoring to overall Indoor Environmental Quality, thanks to its multisensor technology (measuring temperature, humidity, atmospheric pressure, particulate matter, VOCs, O<sub>3</sub>, CO<sub>2</sub>, and

indicative sound and light levels).

(4) Control cabinets housing controllers external to the exhaust devices.

(5) (6) Main and auxiliary controllers are used depending on the number and type of technologies involved.

## The Halton Touch Screen as user interface



The Halton Touch Screen provides end users with a quick overview of the operation of all installed Halton technologies. It is available in two screen sizes (10" and 5", the latter being suited for a smaller number of technologies). This information is also available through the Halton Connect® web portal.

## Connected Securely



The Halton Connect™ private network, along with its built-in 4G gateway, is designed to operate as a fully independent system within your building. Data traffic to the cloud is secured via a VPN (Virtual Private Network) and SSL (Secure Sockets Layer) encryption.

## Suggested specifications

### RCT ReactAway

The kitchen air treatment unit shall be the Halton Brand - RCT ReactAway range. It shall be equipped with UV-C based neutralization technology to treat grease, steam, smoke and odours carried by the extract air.

The unit shall be supplied ready for installation. All technologies and systems shall be delivered fully pre-wired.

The following specifications shall be strictly observed.

#### General Unit Construction

- Constructed from 1.2 mm AISI 304 (DIN EN 1.4301) stainless steel, with a 320 grit on the visible side.
- [Option] The unit's air inlet shall be equipped with mesh filters to complement the primary filtration used on the hoods/ventilated ceilings that equip the kitchen.
- The unit shall be equipped with UV-C lamps fitted in a rack.
- The rack shall be mounted on runners and be equipped with quick release electrical connectors.
- The UV-C cassette shall be easily accessible for cleaning and maintenance by the mean of an access door equipped with lock handles.
- Ballasts shall be integrated outside the exhaust plenum to prevent potential overheating - and to keep the UV cassette/assembly lightweight and easy to handle.
- Lamps lifetime shall be at least 13000 hours. Number and length of the UV-C lamps upon manufacturer recommendations.
- UV modules comprising the controllers and ballasts shall be installed under the unit or on the most suitable side.

- The unit shall be delivered with the 5" Halton LCD Mini Touch Screen as user interface.
- The unit shall be equipped with flanged inlet and outlet connection spigots.

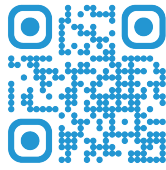
#### Security access to the UV-C lamps

- The exhaust plenum shall be equipped with a maintenance-free magnetic proximity switch to ensure the correct closing of the access hatch. Pressure switches shall not be used to that purpose.
- Any access attempt to the UV lamps, whatever the circumstances, shall automatically lead to their automatic shut-off and to an alarm.
- The control system shall include a pressure sensor to automatically switch off the lamps in case of fan shut down or unusual low pressure. A complementary interlock between the exhaust fan and the UV control system shall be set up, preventing in all cases the UV lamps to be on when the fan is off.


#### IoT Control Platform [Option]


- The IoT (Internet of things) control platform shall be Halton Brand, Halton Connect™.
- It shall have advanced distant monitoring capabilities to provide detailed information about the system(s) operation and statuses, thanks to a cloud-based and easy to use web portal.
- The IoT platform shall also include a Touch Screen providing the users simple information about the unit's operation and its maintenance, without the need to connect the web portal.

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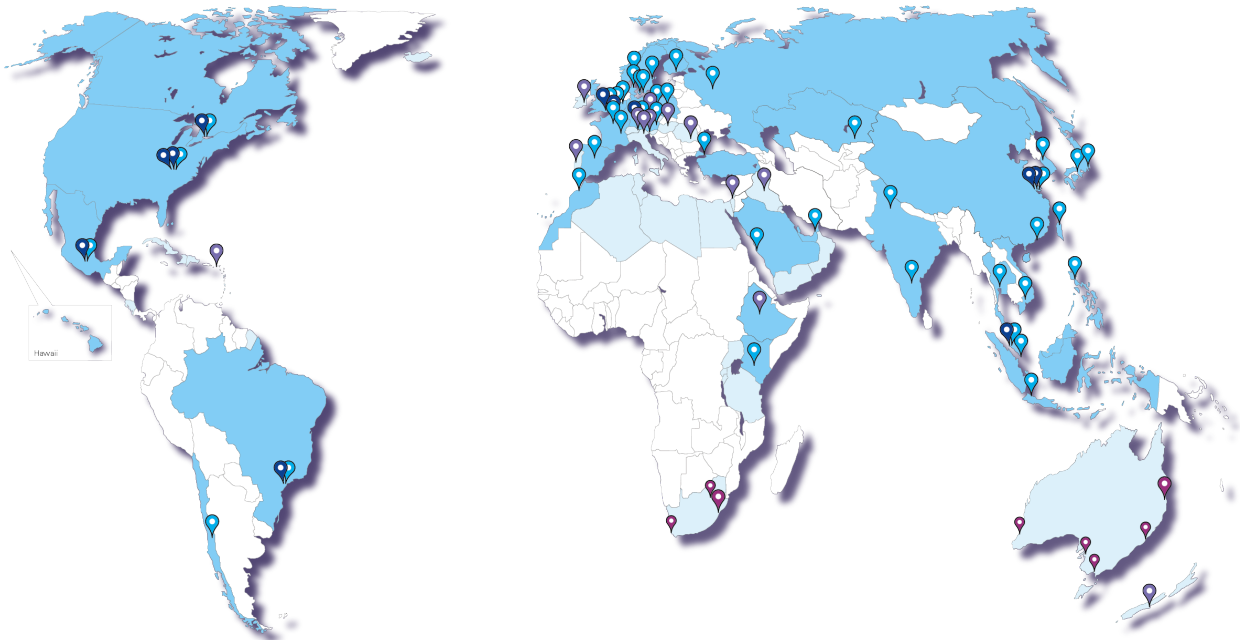
## Halton Manufacturing and Sales Facilities in the world

 Sales and service centers

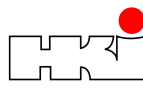
 Representatives

 Factories

 Manufacturing licences



## Halton Foodservice partnerships



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