Maintenance Strategy – Kitchen Extract
Caravan, Manchester Goods Yard,
Enterprise City

Introduction

This Maintenance Strategy has been prepared to support Caravan's operation from the premises at ground floor at The Goods Yard Building, Goods Yard Street, Manchester, M3 3BG.

The strategy will provide details of the maintenance requirements for the kitchen extraction equipment:

- Means of extraction
- Fans, filters, ductwork and fume and odour abatement equipment
- Daily, weekly , monthly and annual cleaning requirements
- Maintenance and replacement intervals / frequencies listing for the filters and UVO systems
- Who is responsible

Introduction

Caravan is an established restaurant business, currently operating eight restaurants across London, alongside a coffee roasting facility in Islington. Caravan Manchester Goods Yard is the proposed ninth location and the first within Manchester.

Often credited with pioneering London's 'All Day' dining scene, Caravan serves its signature well-travelled menus from breakfast and brunch, through to lunch and dinner. Caravan creates spaces, to serve the local community and surroundings, where everyone is welcome, all day, every day.

Means of extraction

The unit will be connected through the riser supplied by the Landlord, that exhausts at roof level in accordance with Environmental Health guidance. The method of extraction will comply with Planning Permission, and the installation will be carried out in accordance with relevant lease and planning conditions. Plan and section drawings illustrating the ducting routes are attached along with details of extraction equipment and filtration. A full cleaning regime will be implemented in line with manufacturer's guidelines.

The Ventilation strategy is based upon a dedicated kitchen extract system of 3.54m3/s. The duct is fire rated from the kitchen void to the open roof level structurally and the riser to roof level also rated thermally.
Odour control for the kitchen extraction has been assessed using EMAQ

guidance and the point of discharge classed as low risk with 0.1 - 0.2 of odour control dwell time required. To achieve this UVO injection has been selected, using UV technology by producing ozone to neutralise the cooking odours & grease.

Equipment

- Canopy fitted with baffle and mesh filters - HE75
- 2 No. UV-O 1000 Units – Purified Air
- Fire rated extract duct – FireMac / Clean Seal
- Extract fan at roof level – Estoc Targe 50-355-3

Cleaning Requirements

A frequent physical inspection of the ventilation system should be done. To achieve this, there should be at least a one a week inspection of the ventilation system. Accumulation of dirt and grease on the metallic surface should be checked more regularly.

A daily cleaning of cooker hood and grease filters should be observed.

Cleaning of baffles together with the collection drawers must be done at least once weekly. Mesh filters should be cleaned at least twice a week.

UVO-1000 lamps should be cleaned and the inside of the units cleaned regularly, at intervals not exceeding 3 months.

Inspection and cleaning of ductwork in line with Clean Seal report, every 6 months is recommended.

Fans do not require active cleaning, but regular maintenance as set out below. By design the silicone line raiser should allow grease to run to the base and this base area should be cleaned every 6 months.

A specialist contractor should be called to carry out periodic deep hygiene.

Maintenance and replacement intervals

2x UVO1000 require a 12 monthly re-lamp recorded in line with their Annual PMV schedule as dictated by the business.

GF and Roof (fan) level maintained every 6 monthly for with the silicone lined raiser being tested and reviewed after the first 12 months.

Who is responsible

PMV Contact - Karolina (maintenance@caravanrestaurants.co.uk)

Kitchen Extract

RZ-Clean-Seal Report

Completed by

HEY Safe Cleaning Solution Ltd
Unit 3 Ripley Close
Normanton
WF6 1TB

For

Caravan bar
No address available

Dated

23/04/2024

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1. Introduction

The reasons for the Kitchen Grease Extract Clean Report is to establish the before and after condition of the system and to ensure that our obligations have been met in accordance with BESA TR19 Grease (July 2019) Specification.

This ensures that you have taken adequate precautions in reducing the Fire Risk as set out in The Regulatory Reform (Fire Safety) Order 2005, which states:

The Regulatory Reform (Fire Safety) Order 2005 places a duty of care on the building owner/occupier to take such general fire precautions as will ensure, so far as reasonably practical the safety of the building and safety of the people within it.

Section 17 of this Order deals with maintenance of systems to control the fire risk and that they are subject to a suitable system of maintenance and are maintained in an efficient state, in efficient working order and in good repair.

By removing the combustion load fire safety is greatly enhanced. This is why the insurers' Loss Prevention Council recommends regular cleaning by specialists.

When a Kitchen Grease Extract System is properly cleaned and maintained you will drastically reduce the levels of grease and combustibles within the system thus reducing the risk of fire rapidly spreading within the ductwork.

We thank you for your valued custom and look forward to working with you in the future.

2. <u>The System(s) Cleaned, Post Clean Summary & Sign-Off:</u>

Site: Manchester

System(s) Cleaned:

Date of Clean: 23/04/2024

Post Clean Summary	
Has the System Cleaned in its Entirety:	**Yes**
Is this a first clean or repeat clean?	**First Clean**
Pre-Agreement *(Pre agreement with a client of a specific section or area that is not to be cleaned, BESA TR19 (2019) Section 7.4)*	

Sign-Off

BESA TR19 Grease (July 2019) Specification, Section 7.3 states: The maintenance contractor's nominated responsible person on site shall be deemed to be the 'signing off' engineer and therefore holds the responsibility for clarifying the extent of the clean carried out. These individuals shall be qualified to a minimum of BESA GHT standard or equivalent.

Our 'Supervisors' are deemed the nominated 'responsible person' on-site on behalf of RZ-Clean-Seal.

'I the below signed can confirm that this system has been cleaned and reported on, as specified in BESA TR19 Grease (July 2019)'

Print: R cook **Sign:**  **Date:** 23/04/2024 02:57:44

9th floor looking down



Pre-clean



Post-Seal

6th floor looking down



Pre-clean



Post-Seal

6th floor looking up



Pre-clean



Post-Seal

5th floor looking down



Pre-clean



Post-Seal

3rd floor looking down to base



Pre-clean

Post-Clean



Post-Seal

8. Recommendations for Future Cleaning Requirements

Recommended Cleaning Frequency: (Currently open from 1100-2200hrs and delivery only)	3-monthly

BESA TR19 Grease (July 2019) Specification 'Section 5' states:
The frequency of cleaning should be sufficient to ensure that grease deposit limits of 200µm, as a mean across the system, are not exceeded.

In the absence of data for historic grease deposit levels, such as a newly installed systems, time-and usage-based methods can be used to estimate required initial cleaning frequency (see Table 4). Precleaning micron readings and time periods between cleaning should be taken to accurately determine ongoing cleaning frequency so that grease levels are maintained below 200 microns as a mean across the system.

Table 4 Initial Clean Frequency Calculator

PERCEIVED LEVEL OF GREASE PRODUCTION	TYPICAL EXAMPLE	CLEANING INTERVALS (MONTHS) DAILY USAGE			
		up to 6 hours	6-12 hours	12-16 hours	16+ hours
Low	No significant production of grease laden aerosols during normal daily food production operations	12	12	6	6
Medium	Moderate production of grease laden aerosols during normal daily food production operations	12	6	4	3
High	Heavy, significant or continual production of grease laden aerosols during normal daily food production operations	6	3	3	2

Notes to Table 4

1. The canopy and extract plenum are areas with a high risk of fire. Consideration should be given to more frequent cleaning in accordance with insurers' requirements

2. In addition to the scheduled specialist cleaning, a daily or weekly cleaning regime should be implemented on canopies, separators and associated drains and traps in accordance with manufacturers' recommendations. Typically, these are be carried out by the kitchen operator to comply with the property insurers' requirements.

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Table 5 Frequency of grease control clean vs average daily grease accumulation

FREQUENCY OF CONTROL CLEAN	DAILY MICRON AVERAGE ACCUMULATION RANGE

Twice weekly	28.7 upwards
Weekly cleaning	14.4 to 28.6
Every 2 weeks	9.6 to 14.3
Every 3 weeks	6.7 to 9.5
Monthly	4.8 to 6.6
Every 6 weeks	3.3 to 4.7
Every 2 months	2.2 to 3.2
Quarterly	1.7 to 2.1
Every 4 months	1.1 to 1.6
Every 6 months	0.6 to 1.0
Annually	0.5 or LESS
Average Daily Micron Reading Before Clean	**#DIV/0!**

Notes to Table 5

1.. The frequency guidance table requires a simple calculation to define daily rate of accumulation in microns.

2. To calculate daily rate take mean pre-clean system micron levels and divide by number of days since previous clean or opening of site and grease production.

3. Select appropriate range to define the frequency of the risk control clean required to ensure micron levels do not exceed 200 as a mean between each cleaning visit.

4. It should be noted that cleaning frequencies shown in Table 5 are indicative only and are based on historic usage of the system. They should not be seen as substitutes to an actual cleanliness risk assessment undertaken by a competent person.

   When calculating the cleaning frequency seasonal type and frequency of cooking should be taken into consideration. An additional risk assessment may be required as a result.

SAFE CLEANING SOLUTION LTD.

Certificate of Conformity

We certify a clean of the Kitchen Extract System for:

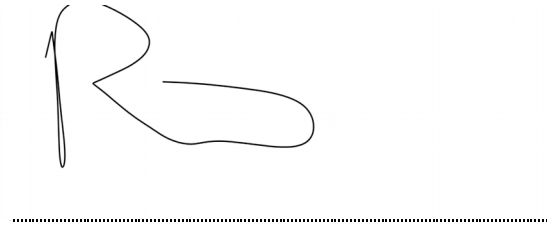
Caravan bar
Manchester

Has been completed on: 23/04/2024

Issued By

HEY Safe Cleaning Solution Ltd.
Unit 3, Ripley Close, Normanton, WF6 1TB

Signed:



Dated:

23/04/2024 02:57:44

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purified air®
since 1984

UV-O Odour Control Units





Technical and Operations Manual

Models Covered: UV-O 500
UV-O 1000

Using this Manual

This manual is intended to be used as a work of reference by professional, well trained and authorised users to assist them in safely installing, using, maintaining and repairing the Units mentioned on the cover of this document.

Please note that it is strongly recommended that training is given by Purified Air Limited prior to operatives attempting to carry out maintenance or repair work on these Units.

Copyright Statement

All rights reserved

No part of this publication may be copied or published by means of printing, photocopying, microfilm or otherwise without prior written consent of the manufacturer. This restriction also applies to the corresponding drawings and diagrams.

The information given in this manual has been collected for the general convenience of our clients. It has been based on general data pertaining to construction material properties and working methods known to us at the time of issue of the document and is therefore subject, at any time, to change or amendment and the right to change or amend is hereby expressly reserved. The instructions in this publication only serve as a guideline for installation, use, maintenance and repair of the models mentioned on the cover page of this document.

This manual is to be used for the standard models of the Units of the type given on the cover page. Thus the manufacturer cannot be held responsible for any damage resulting from the application of this manual to the version actually delivered to you.

This manual has been written with great care. However, the manufacturer cannot be held responsible either for any errors occurring in this manual or their consequences.

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1. Safety

1.1 Introduction

Everyone working on or with these Units must be familiar with the contents of this manual and must strictly observe the instructions herein.

The Management should instruct personnel in accordance with this manual and observe all instructions and directions given herein.

Note: Always follow the steps for any instructions in this manual in the order given.

Always keep this manual with your Unit.

The users of the Units are always fully responsible for observing all applicable local safety instructions and regulations.

Specific working conditions or selected accessories may require additional safety instructions. Contact your supplier immediately if you detect a potential danger when using these Units.

1.2 Safety Warnings and Instructions

The following symbols and notifications are used in this manual:



WARNING!
Used to indicate where there is a risk of injury or death.



WARNING! - DANGER OF ELECTRIC SHOCK!
Used to indicate where there is a risk of injury or death from electric shock.



WARNING
Used to indicate that Ozone (O3) is produced by this Unit



WARNING
Used to indicate that the Unit contains lamps that produce UV light.



CAUTION
Used to indicate where there is a risk of damage to equipment.



INFORMATION
Important information or useful hints about usage.



RECYCLING
Recycling information.



WEEE REGULATIONS
Used to ensure that waste electrical equipment is disposed of correctly.

1.3 Pictograms, Warnings and Instructions Displayed on the Unit

The pictograms, warning and instructions attached to the Unit are, themselves, safety features.

They must not be covered or removed and must remain present and legible through the entire life of the Unit.

- Immediately replace or repair damaged or illegible pictograms, warnings and instructions.

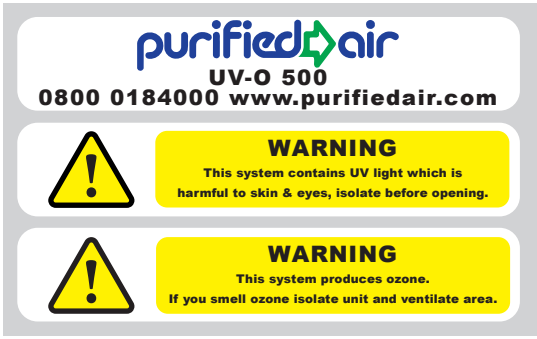


Figure 1 - UV-O 500 Unit Label

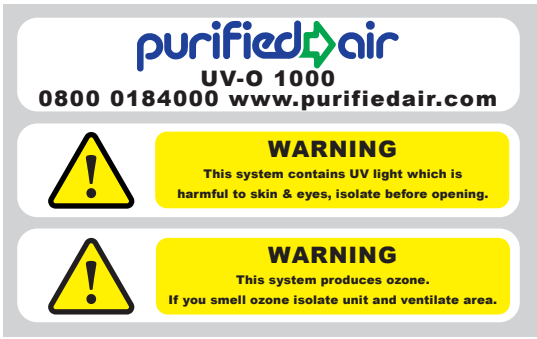


Figure 2 - UV-O 1000 Unit Label

1.4 Safety Features

To prevent inadvertent exposure to UV light, the UV-C lamps are secured behind locked panels, with the Units automatically shutting down when these panels are unlocked.



CAUTION

- **All safety features must be correctly fitted and can only be removed for maintenance and repair jobs by skilled and authorised service engineers.**
- **These Units must not be used if the safety features are not fully present or defective.**
- **The safety features should be regularly checked for their proper functioning and, if defective, should be immediately repaired.**

1.5 Safety Warnings and Cautions



WARNING! RISK OF EXPLOSION!

These Units are not explosion-proof rated. They can cause sparks and should therefore not be used in areas with an explosion risk.



WARNING!

Ozone (O_3) is produced by these Units. Ozone can be poisonous at certain levels of concentration.

Inhalation of ozone causes dryness of the mouth, coughing, and irritates the nose, throat, and chest.

It may cause difficulty in breathing, headaches and fatigue, and could aggravate existing bronchial conditions including asthma. The characteristic sharp, irritating odour is readily detectable at low concentrations (0.01 to 0.05 ppm).

UNIT MUST NOT BE OPERATED WITHOUT KITCHEN EXTRACT FAN RUNNING.



WARNING! - DANGER OF ELECTRIC SHOCK!

- **To avoid electric shock:**
- **Do not operate these Units without a proper electrical ground/earth.**
- **Always disconnect power to these Units and isolate them from the power supply before performing any service or maintenance.**
- **Do not operate these Units if their power cables are damaged, or if any other damage to them is visible or suspected.**
- **The supplied utility/mains power must match the power requirements listed on the Units' rating labels.**



WARNING!

- **These Units contain lamps that produce UV light.**
- **Avoid exposure to direct or reflected ultraviolet rays.**
- **Immediate or prolonged exposure to UV light can result in painful eye injury, skin burn, premature skin aging, or skin cancer.**

CAUTION

- **Regularly inspect your Unit and check it for damage.**
- **Verify the correct functioning of all of the safety features.**
- **Read and save all notices, warnings and safety instructions received with your Unit.**
- **Do not alter the construction or design of these Units.**
- **Do not remove safety labels or devices.**
- **Do not use these Units for other than their intended purpose; as described in this manual.**
- **Only use original spare parts.**
- **Keep the operating controls free from dirt and grease.**

CAUTION

- **Make sure the room is always sufficiently ventilated, particularly in smaller confined areas.**
- **Do not use these Units at a relative humidity exceeding 75%.**
- **Do not use these Units at temperatures below 5°C or above 56°C.**
- **Check the working environment. Do not allow unauthorised persons to enter the working environment.**
- **Use common sense. Stay alert and pay attention to your work. Do not use these Units when you are tired or under the influence of drugs, alcohol or medicine.**

1.6 Modifications

Modification of these Units is not permitted.

1.7 Users

Installation or maintenance of these Units is exclusively reserved for authorised, trained and qualified users.

Temporary personnel and trainees should only access these Units under the supervision and responsibility of authorised, trained and qualified users.

1.8 Technical Specifications

	UVO500	UVO1000
Electrical Supply:	220/240V 50Hz	220/240V 50Hz
Max Power Consumption:	140 Watts	700 Watts
Max Air Volume:	1m3/sec	2m3/sec
Weight:	10.5 Kg	50 Kg
Dimensions:	W 610mm	W 1521mm
	H 300mm	H 350mm
	D 200mm	D 404mm

1.8.1 Rating Plates



Figure 3 - UV-O 500 Unit Rating Plate



Figure 4 - UV-O 1000 Unit Rating Plate

2. Product Overview



Figure 5 - UV-O 500 Unit



Figure 6 - UV-O 1000 Unit Installed

2.1 Intended Use

UV-O Odour Control Units are designed to efficiently remove odorous compounds from the fumes extracted from commercial kitchens.

Simple to install, the Units are designed to be located on the outside of the ducting. The fact that they are externally located makes these Units ideal for retrospective installations and, as the UV lamps are outside of the airstream, maintenance requirements are minimal.

To maximise the Units' efficiency, they should be installed into the extraction ducting of a commercial kitchen, down stream of the extraction hood on the negetive side of the fan.



CAUTION

Using these Units for other purposes is considered contrary to their intended use. The manufacturer accepts no liability for any damage or injury resulting from such use.

These Units have been built in accordance with state-of-the-art standards and recognised safety regulations.



CAUTION

Only use these Units

- **If they are not damaged in any way.**
- **After following the instructions laid down in this manual.**

2.2 Features

When installed correctly, Purified Air's UV-O Odour Control Units have the following features and benefits:

- Use highly efficient UV-C technology.
- Robust, compact construction.
- Twelve month effective lamp life.
- Minimum maintenance requirements.
- Enhanced safety - UV-C lamps are locked behind panels.
- Optional self-diagnostic system.
- Designed to complement our Electrostatic Precipitator (ESP) system.
- Reduce the need for duct cleaning.
- Can reduce cooking odours by up to 90%*.
- Grease is broken down in to more easily managed compounds.
- Virtually no pressure increase within the duct.

* In particularly odourous environments, high levels of odour control will only be achieved by also using good quality particulate control systems (particularly ESPs) and supplementary odour control systems in conjunction with this Unit.

2.3 Operating Principles

Purified Air's UV-O Odour Control Units contain either two (UV-O 500) or ten (UV-O 1000) high output UV-C (short-wavelength ultraviolet radiation) lamps and are designed to be located outside the extraction duct.

2.3.1 Ozone and Free Radical Production

The UV light produced by the UV-C lamps converts oxygen present in the air into ozone.

Ozone is a highly reactive oxidant which interacts with most contaminants, allergens and odour producing compounds it comes into contact with, oxidising them and rendering them harmless.

The UV light produced by the lamps can also further convert the ozone to hydroxyl free radicals in the presence of water or water vapour.
Free radicals are highly reactive oxidants which makes them effective natural air cleansing agents.

The mixture of ozone and hydroxyl free radicals produced in this way creates a much more powerful oxidising action (Ozonolysis) than the use of ozone alone.

2.3.2 Location

It is widely accepted that the best way to apply UV-C is in the airstream itself. However, in such a situation, the lamps can quickly become dirty, greatly reducing their effectiveness.

Unlike other UV-C systems, the UV-O Odour Control Units are designed to be located outside of the kitchen extract duct, connected via a spigot.

Negative pressure forms as the extract fume is drawn down the duct across the spigots opening, thus drawing ambient air into the Unit and across the UV lamps producing Ozone which is then introduced into the duct.

As the ambient air is relatively contaminant free the lamps stay cleaner allowing a more constant production of Ozone.

2.4 Components

2.4.1 UV-O 500 Components

The UV-O 500 Unit consists of a Main Chassis which contains the UV lighting source behind a lockable, hinged, access panel.

A green Power Light and blue Safety Light are located on the lower Panel of the Unit.

An Airflow Sensor (See Figure 8 - Air Flow Sensor on page 10) is mounted on the right hand side of the Main Chassis below the Duct Connection Spigot.

The Air Inlet is located on the left hand side of the Unit (See Figure 9 - Air Inlet on page 10).

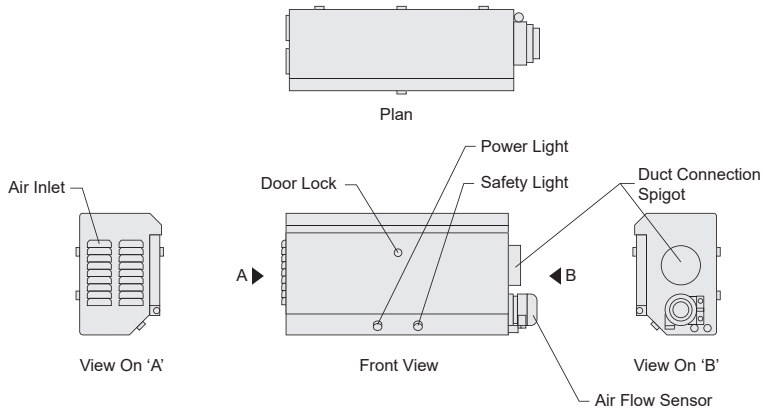


Figure 7 - UV-O 500 - Views



Figure 8 - Air Flow Sensor



Figure 9 - Air Inlet

2.4.2 UV-O 1000 Components

The UV-O 1000 Unit consists of a Main Chassis which contains the UV lighting source behind a lockable hinged access panel also secured with four star knobs. A Control Panel, on the right hand side of the Main Chassis, contains the Rotary Mains Isolation Switch green Power Light and blue Safety Light.

An Airflow Sensor (See Figure 11 - UV-O 1000 Air Flow Sensor and Air Outlet on page

11) is mounted on the right hand side of the Main Chassis below the Airflow Outlet/Duct Connection Spigot.

The Air Inlet, containing the Unit's filter, is located on the left hand side of the Unit (See Figure 12 - Air Inlet on page 12).

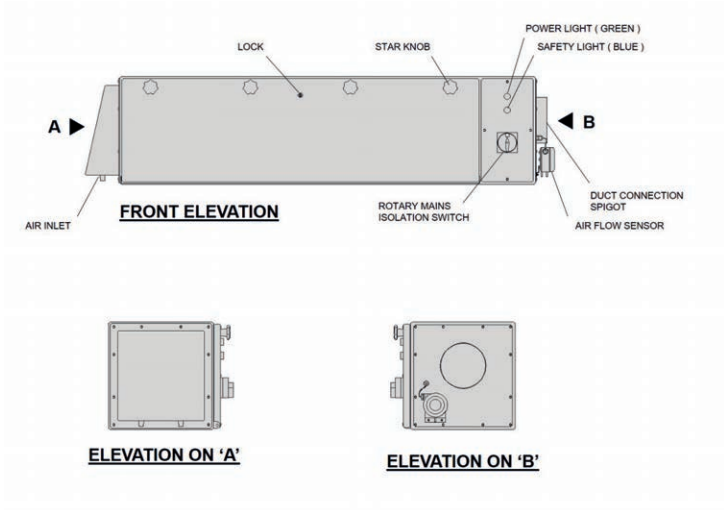


Figure 10 - UV-O 1000 - Front and Side Views



Figure 11 - UV-O 1000 Air Flow Sensor and Air Outlet



Figure 12 - Air Inlet

3. Storage, Unpacking and Handling

3.1 Storage

Prior to installation, a UV-O Unit must be stored in its original packaging in a dry environment.

3.2 Shipping List

Each Unit is shipped with the following:

- Main Unit.
- Airflow Sensor Probe Assembly.
- This Technical and Operations Manual.

It is strongly recommended that Purified Air commission the UV-O Unit. However, should the customer decide to complete these tasks (See 4.3.3 Commissioning the UV-O 500 Unit on page 20 and 4.4.3 Commissioning the UV-O 1000 Unit on page 27) and following the signing of a waiver indemnifying Purified Air against any negative consequences, the following additional items will also be provided:

- Keys to the Main Unit's Front Panel.
- Two or Ten UV-C Lamps depending on the model.

3.3 Unpacking and Handling

Strip away all packaging, wrapping and strapping (this must only be done by trained, professional installers).



WARNING!

- **These Units are heavy and the appropriate lifting and handling practices must be observed, for both unpacking and installation, to avoid personal injury or damage to the equipment.**
- **Consult the Technical Specifications (See Paragraphs 1.8 Technical Specifications on page 6 and for the Units' weights.**



CAUTION

Inspect the Unit and check it for damage. Ensure all safety features are present and functioning correctly.

4. Installation Guidance

4.1 Overview

Installation of the Units should only be carried out by trained, professional installers.

Installations vary widely depending on the specific site requirements, therefore, this section only provides general guidance for the installers.

Note: It is strongly recommended that UV-O Units are commissioned by Purified Air Ltd to ensure that they are installed correctly and safely.

If in any doubt regarding the installation of the UV-O Units, contact Purified Air Ltd.

4.2 Unit Dimensions

The dimensions of the UV-O Units are detailed below.

4.2.1 UV-O 500 Unit Dimensions

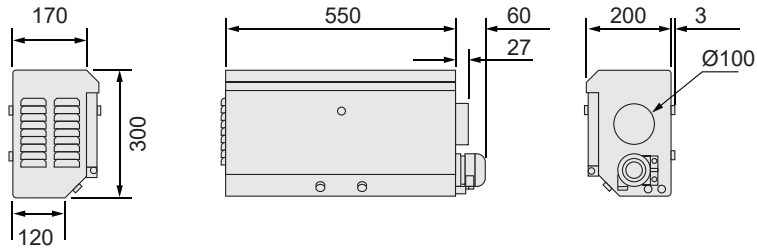


Figure 13 - UV-O 500 - Dimensions
(All Dimensions in Millimetres)

4.2.2 UV-1000 Unit Dimensions

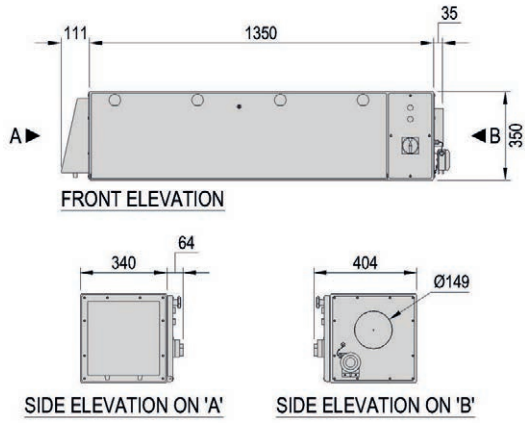


Figure 14 - UV-O 1000 - Dimensions
(All Dimensions in Millimetres)

4.3 Installing the UV-O 500 Unit

4.3.1 Installing the UV-O 500 Main Chassis

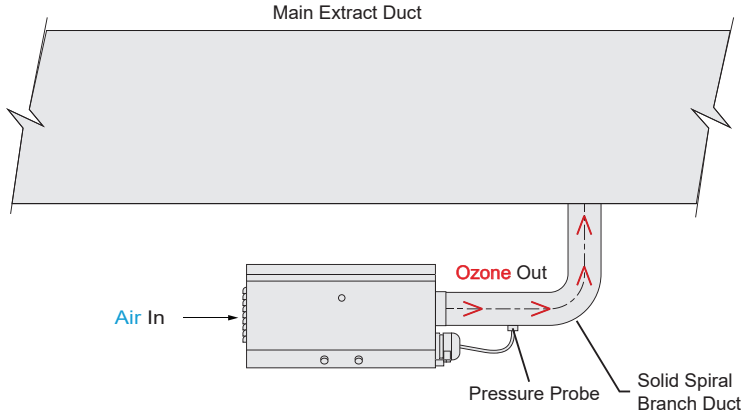


Figure 15 - UV-O 500 Installation Schematic

Before installation, the following points should be considered:

- The UV-O 500 Unit should be located in close proximity to the kitchen extract ducting.

- The Unit should be positioned with good access to allow for future servicing and maintenance.
- It is recommended that the Unit be mounted onto a wall using the pre-drilled holes in the rear of the casing.

WARNING!

If an alternative method of mounting the Unit is employed it is important that these holes are totally blocked/closed to prevent the escape of UV light.

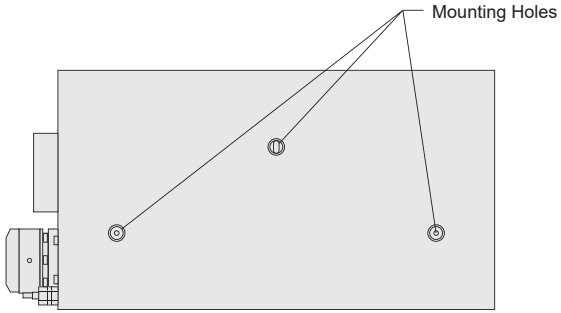


Figure 16 - UV-O 500 Mounting Holes

Rigid 100mm diameter galvanised metal ducting should be used to connect the UV-O 500 Unit to the kitchen extraction ducting (See Figure 15 - UV-O 500 Installation Schematic on page 15).

The 100mm galvanised metal ducting should connect securely to the spigot on the side of the Unit and be connected to the kitchen extraction ducting via a spigot.

WARNING!

The Unit must be installed on the suction (negative pressure) side of the extraction fan.

WARNING

- **The UV-O 500 will produce ozone which is a poisonous gas with a distinctive smell.**
- **The kitchen extract system into which the UV-O 500 system is installed must be sound with no holes that will allow ozone to escape.**
- **If ozone is smelt within the premises, the UV-O 500 must be switched off immediately.**
- **Care must be taken that the kitchen extract point is not close to air inlets, windows etc. where elevated ozone levels will cause a problem.**

CAUTION

- **Never install the Unit in front of entrances and exits which could be used by the emergency services.**
- **Check that any intended supporting structure is adequate for the weight of the Unit. See Technical Specifications for the Unit weight.**

4.3.2 Installing the UV-O 500 Air Flow Sensor Pressure Probe

The UV-O 500 must only be allowed to operate when the kitchen's extraction system is running.

To this end, an Air Flow Sensor and Pressure Probe, measuring air pressure in the extraction ducting, are fitted to the UV-O 500 and only allow the Unit to operate when a sufficient volume of air is flowing through the extraction ducting.

The Air Flow Sensor will switch on power to the Unit if the air pressure in the duct is between 20 and 300Pa, (less than the pressure outside the duct or "at the sensor").



Figure 17 - Air Flow Sensor

Install the Air Flow Sensor's Pressure Probe into the Branch Duct which connects the UV-O 500 to the Main Extract Duct (See Figure 15 - UV-O 500 Installation Schematic on page 15) as follows:

1. Drill one 7mm and two 2mm holes into the Branch Duct corresponding to the holes in the Airflow Sensor's Pressure Probe mounting flange.
2. Insert the Airflow Sensor's Pressure Probe into the 7mm hole drilled in the Branch Duct and secure with screws through the flange into the two 2mm holes drilled in the Branch Duct
   (See Figure 18 - Installing the Air Flow Sensor's Pressure Probe on page 18).

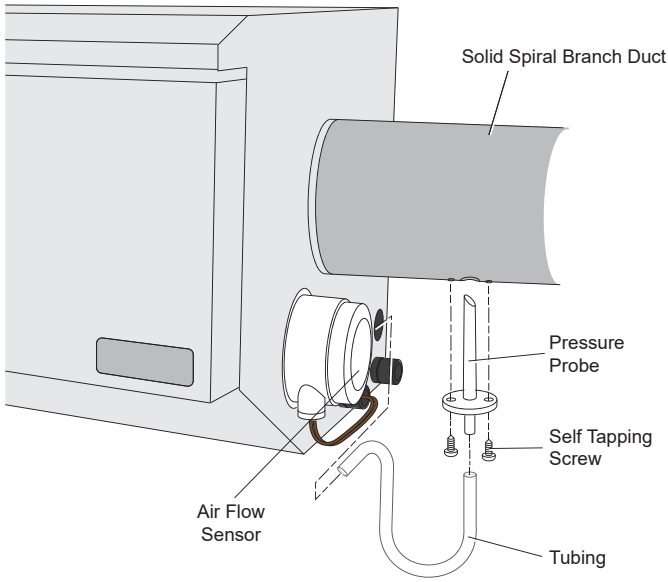


Figure 18 - Installing the Air Flow Sensor's Pressure Probe

3. Connect the Pressure Probe via the PVC tube to Port P1 on the Air Flow Sensor, leaving Port P2 unused and open to the atmosphere (see Figure 19 below):

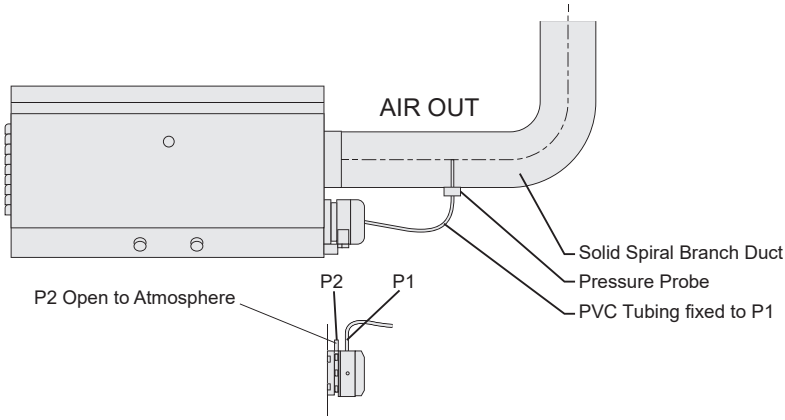


Figure 19 - Connecting the Air Flow Sensor's Pressure Probe

4. Link the extraction fan and UV-O 500 power supplies.

5. Turn on the extraction fan and confirm that air is passing through the Unit's air inlet and passing into the extraction ducting.



WARNING

Under no circumstances should the Unit be used if the direction of the airflow is reversed and air is exiting from the Unit's air inlet.



CAUTION

The Unit's air inlet must be kept clear to allow airflow through the system.

4.3.3 Commissioning the UV-O 500 Unit by Others

As the Unit is owned by your company, you may wish to commission it yourselves. If this is the case, one of your Directors must sign the UVC Disclaimer acknowledging that you fully understand the dangers associated with the installation procedure. On receipt of the signed UVC Disclaimer, Purified Air will supply the correct number and type of lamps required for the UV-O unit ordered along with a set of keys.

Final commissioning of the Unit to be carried out as follows:

1. Unlock and open the Front Panel which hinges down once the lock has been undone.

   Note: The lamp holder can be released from its fixings to simplify installation of the lamps.(See Figure 23. Electrical Connections on page 22)

2. Insert the UV lamps into their clips.
3. Slide the lamps to the Left to engage them with their plugs (See Figure 36 - UV-O 500 UV Lamp Plugs on page 35).



Figure 20 - UV-O 500 UV Lamp

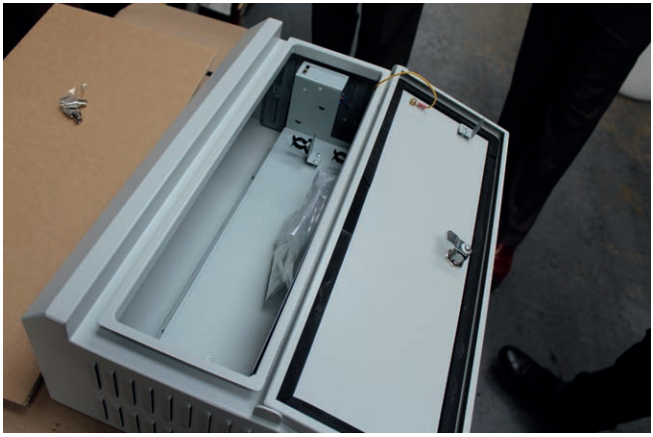


Figure 21 - UV-O 500 UV Lamp Location

4. Wire the UV-O 500 Unit into the mains via an isolating switch (not supplied) mounted not more than 1 meter from the Unit, in an easily accessible location:

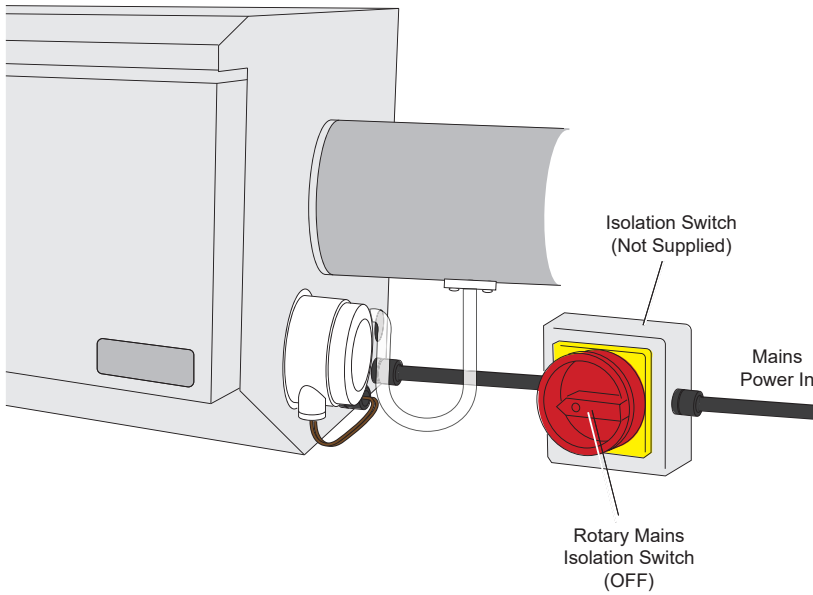


Figure 22 - Installation of Rotary Mains Isolation Switch

- The Unit's mains connection terminals are located on the end of the lamp holder section (See Figure 23 - Electrical Connections on page 22)

- The mains cable should be run through the cable gland located in the bottom right hand corner of the Unit, behind the Air Flow Sensor (See Figure 17 - Air Flow Sensor on page 17).



Figure 23 - Electrical Connections

Note: To check that all UV lamps are working it is necessary to bypass the micro-switches on the inside top front of the UV-O 500 to enable the Front Panel to be open when the Unit is in operation. This procedure should only be undertaken by a qualified Purified Air engineer.

CAUTION
Appropriate PPE equipment should be worn during this check.

5. Once the lamps have been fitted and the electrical connection completed, the Front Panel can be closed and locked.

4.4 Installing the UV-O 1000 Unit

4.4.1 Installing the UV-O 1000 Main Chassis

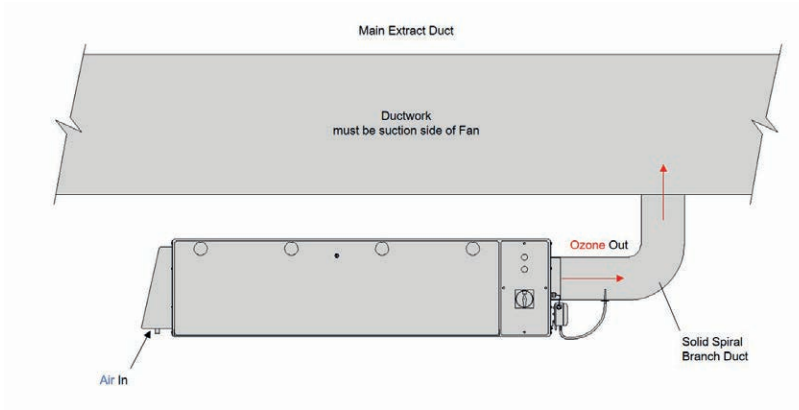


Figure 24 - UV-O 1000 Installation Schematic

Before installation, the following points should be considered:

- The UV-O 1000 Unit should be located in close proximity to the kitchen extract ducting.
- The Unit should be positioned with good access to allow for future servicing and maintenance.
- If the Unit is to be mounted onto a wall, the casing can be drilled to allow this.

WARNING!
If you drill the case to mount the Unit onto a wall, it is important to make sure that the fixings used will not allow any UV light to escape.

- Alternatively, mounting brackets are supplied that can be fixed to the spigot and inlet plates via the bolts already in place, as shown below:

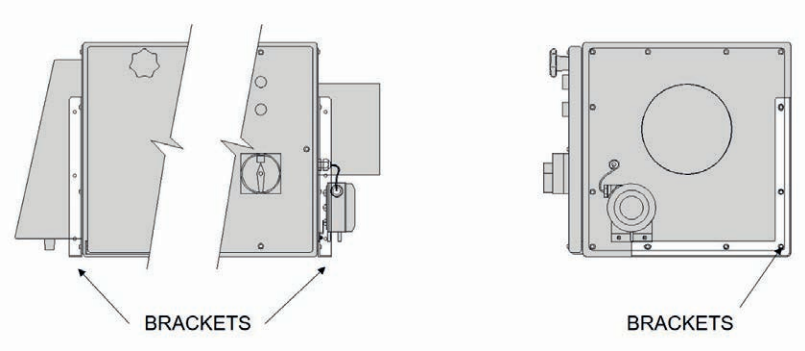


Figure 25 - UV-O 1000 Mounting Bracket Installation

Rigid 100mm diameter galvanised metal Branch Duct should be used to connect the UV-O 1000 Unit to the kitchen extraction ducting (See Figure 24 - UV-O 1000 Main Chassis Installation Schematic on page 23).

The 100mm galvanised Branch Duct should connect securely to the spigot on the side of the Unit and should be connected to the kitchen extraction ducting via a spigot.

WARNING!

The Unit must be installed on the suction (negative pressure) side of the extraction fan.

WARNING

- **The UV-O 1000 will produce ozone which is a poisonous gas with a distinctive smell.**
- **The kitchen extract system into which the UV-O 1000 system is installed must be sound with no holes that will allow ozone to escape.**
- **If ozone is smelt within the premises the UV-O 1000 must be switched off immediately.**
- **Care must be taken that the kitchen extract point is not close to air inlets, windows etc., where elevated ozone levels will cause a problem.**

CAUTION

- **Never install the Unit in front of entrances and exits which could be used by the emergency services.**
- **Check that any intended supporting structure is adequate for the weight of the Unit. See Technical Specifications for the Unit weight.**

4.4.2 Installing the UV-O 1000 Pressure Probe

The UV-O 1000 must only be allowed to operate when the kitchen's fume extraction system is running.

To this end, an Air Flow Sensor and Pressure Probe, measuring air pressure in the extraction ducting, are fitted to the UV-O 1000 and only allow the Unit to operate when a sufficient volume of air is flowing through the extraction ducting:

The Air Flow Sensor will switch on power to the Unit if the air pressure in the duct is between 20 and 300Pa, (less than the pressure outside the duct or "at the sensor").



Figure 26 - Air Flow Sensor

Install the Air Flow Sensor's Pressure Probe into the Branch Duct which connects the UV-O 1000 to the Main Extract Duct (See Figure 27 - Installing the Air Flow Sensor's Pressure Probe on page 26) as follows:

1. Drill one 7mm and two 2mm holes into the Branch Duct, corresponding to the holes in the Airflow Sensor's Pressure Probe mounting flange.
2. Insert the Airflow Sensor's Pressure Probe into the 7mm hole drilled in the Branch Duct and secure with screws through the flange into the two 2mm holes drilled in the Branch Duct (See Figure 27 - Installing the Air Flow Sensor's Pressure Probe on page 26).

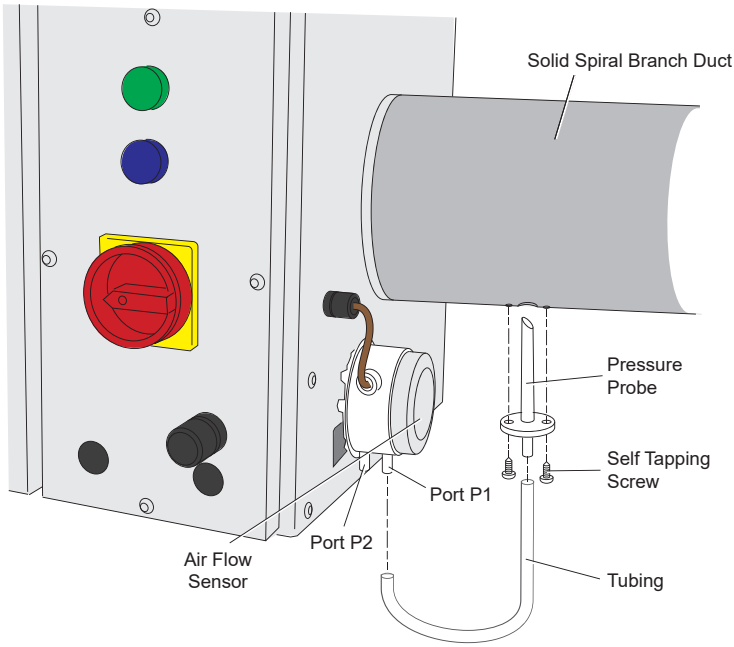


Figure 27 - Installing the Air Flow Sensor's Pressure Probe

3. Connect the Pressure Probe via the PVC tube to Port P1 on the Air Flow Sensor, leaving Port P2 unused and open to the atmosphere (see Figure 27 above).
4. Link the extraction fan and UV-O 1000 power supplies.
5. Turn on the extraction fan and confirm that air is passing through the Unit's air inlet and passing into the extraction ducting.



WARNING

Under no circumstances should the Unit be used if the direction of the airflow is reversed and air is exiting from the Unit's air inlet.

CAUTION

The Unit's air inlet must be kept clear to allow airflow through the system.

4.4.3 Commissioning the UV-O 1000 Unit by Others

As the Unit is owned by your company, you may wish to commission it yourselves. If this is the case, one of your Directors must sign the UVC Disclaimer acknowledging that you fully understand the dangers associated with the installation procedure. On receipt of the signed UVC Disclaimer, Purified Air will supply the correct number and type of lamps required for the UV-O unit ordered along with a set of keys.

Final commissioning of the Unit to be carried out as follows:

1. Undo the Front Panel's lock and four Star Knobs.
2. Lower down the Front Panel.
3. Slide the Lamp Holder out of the Unit on its Runner System:

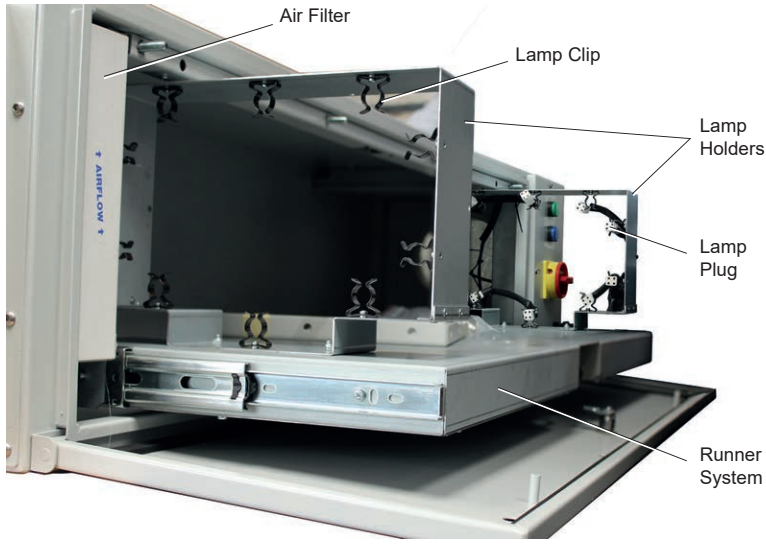


Figure 28 - Lamp Holder and Runner System

4. Clip the lamps into position (see Figure 28 above).
5. Connect the plugs to the ends of the UV lamps (see Figure 28 above).



Figure 29 - Lamp Clips



Figure 30 - Lamp Plugs



Figure 31 - UV-O 1000 UV Lamp

6. The UV-O 1000 should now be wired into the mains via the Rotary Mains Isolation Switch on the front of the Unit as follows

- The Unit's mains connection terminals are located behind a control panel on the right hand side of the main chassis. This is held in place by 4No. screws. There is an internal cover, with 1No. screw, which needs to be taken off to access the connection terminal. (See Figure 28 - Lamp Holder and Runner System on page 27).
- The mains cable should be run through the cable gland located in the bottom right hand corner of the front of the Unit (See Figure 33 - UV-O 1000 Control Panel on page 30)

Note: To check that all UV lamps are working it is necessary to bypass the micro-switches on the inside top front of the UV-O 1000 to enable the Front Panel to be open when the Unit is in operation. This procedure should only be undertaken by a qualified Purified Air engineer.



CAUTION

Appropriate PPE equipment should be worn during this check.



WARNING!

- **These Units contain lamps that produce UV light.**
- **Avoid exposure to direct or reflected ultraviolet rays.**
- **Immediate or prolonged exposure to UV light can result in painful eye injury, skin burn, premature skin aging, or skin cancer.**

7. Once the lamps have been fitted and the electrical connection completed, push the assembled Runner System back into position, replace electrical control panel covers,close up the Front Panel, secure the four Star Knobs and fasten the lock.

4.4.4 Building Management System

The ability to connect a Building Management System (BMS) to the UVO range of units is an optional extra. If required this can be ordered with the unit and fitted by Purified Air before dispatch at an additional cost, alternaitvely it can be retro fitted once installed on site, again by an experienced Purified Air engineer, but this does incur a higher additional cost.

5. Operation and Control

5.1 UV-O 500 Control Panel

The lower, angled section of the front of the Unit's main case contains a green Power Light and blue Safety Switch Light.



Figure 32 - UV-O 500 Control Panel

5.2 UV-O 1000 Control Panel

A Control Panel is situated on the right hand side of the Main Chassis which contains the Rotary Mains Isolation Switch, Green Power Light and Blue Safety Switch Light.

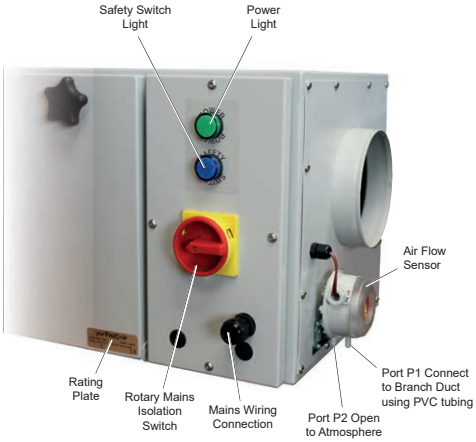


Figure 33 - UV-O 1000 Control Panel

5.3 Before Use

5.3.1 UV-O 500 and UV-O 1000

Before use, ensure that all safety precautions have been taken and that environmental conditions are suitable for operation of the Unit (See 1.5 Safety Warnings and Cautions on page 4).

5.4 Switching the UV-O 500 Unit On

1. Ensure that the kitchen extractor fan is running.
2. Turn on the Rotary Mains Isolation Switch (On/Off) to the 'On' position.

   Note: The green Power Light will illuminate, indicating that power is being supplied to the Unit.

   The blue Safety Switch Light will illuminate (See Figure 32 - UV-O 500 Control Panel on page 30), indicating that the various safety switches are engaged and that sufficient airflow is passing through the Unit.



WARNING

Please contact your service agent if either the green Power Light or blue Safety Switch Light don't illuminate when the Rotary Mains Isolation Switch is in the 'On' position.



WARNING

- **If ozone can be smelt in the area where the UV-O 500 Unit is installed, the Unit has been incorrectly installed**
- **It should be isolated via the Mains Isolator Switch and Purified Air contacted for further information.**

5.4.1 Switching the UV-O 500 Unit Off

To switch the Unit off, turn the Rotary Mains Isolation Switch

(See figure 22 - Installation of Rotary Mains Isolation Switch on page 21)

to the 'Off' position.

Note: Both the green Power Light and blue Safety Switch Light will extinguish.



WARNING

Please contact your service agent if either the green Power Light or blue Safety Switch Light do not extinguish when the Rotary Mains Isolation Switch is in the 'Off' position.

5.5 Switching the UV-O 1000 Unit On

To start the Unit from the Control Panel:

1. Ensure that the kitchen extractor fan is running.
2. Turn on the Rotary Mains Isolation Switch (On/Off) to the 'On' position. **Note:** The green Power Light (See Figure 33 - UV-O 1000 Control Panel on page 30) will illuminate, indicating that power is being supplied to the Unit. The blue Safety Switch Light will illuminate (See Figure 33 - UV-O 1000 Control Panel on page 30), indicating that the various safety switches are engaged and that sufficient airflow is passing through the Unit.



WARNING

Please contact your service agent if either the green Power Light or blue Safety Switch Light do not illuminate when the Rotary Mains Isolation Switch is in the 'On' position.



WARNING

- **If ozone can be smelt in the area where the UV-O 1000 Unit is installed, the Unit has been incorrectly installed**
- **It should be isolated via the Rotary Mains Isolation Switch and Purified Air contacted for further information.**

5.5.1 Switching the UV-O 1000 Unit Off

To switch the Unit off from the Control Panel:

Turn the Rotary Mains Isolation Switch (On/Off) to the 'Off' position.

Note: Both the green Power Light and blue Safety Switch Light will extinguish.



WARNING

Please contact your service agent if either the green Power Light or blue Safety Switch Light don't extinguish when the Rotary Mains Isolation Switch is in the 'Off' position.

5.6 BMS Connections

Please note:

Any **BMS** connection to this unit should be **24V 0.5A max**.

The BMS relay has volt free contacts.

When the unit is isolated the BMS connection could still be LIVE.

If you have any queries regarding this please contact Purified Air Limited.

6. Maintenance

6.1 Introduction

If you carry out the simple maintenance and cleaning described below at the regular intervals, paying attention to the associated Warnings and Cautions, then any problems will mostly be detected and corrected before they result in a total breakdown of the Unit.

The indicated maintenance intervals can vary depending on specific working and local environmental conditions. It is therefore recommended that the Units are thoroughly inspected annually, in addition to the indicated periodic maintenance. Please contact your supplier for this purpose.



WARNING!

- **Overdue maintenance can cause fire.**
- **Always switch OFF the Unit and isolate the electric supply before carrying out the activities below.**
- **Do not carry out any service, maintenance or repairs on the Unit before it has been protected against unintended starting.**

6.1.1 Maintenance Schedule UV-O 500 and UV-O 1000

Basic maintenance activities can be carried out by the user. Please see the table below for the optimum frequencies for such activities.

Note: Other activities are strictly reserved for qualified personnel.

	Frequency	
Basic Maintenance Activities	**UV-O 500**	**UV-O 1000**
Clean UV Lamps See paragraph 6.2.1. Cleaning the UV-O 500 lamps on page 34 and paragraph 6.3.1. Cleaning the UV-O 1000 Lamps on page 37	Every 2 months (depending on degree of pollution)	
Replace UV Lamps paragraph 6.2.2. Replacing the UV-O 500 Lamps on page 35 and paragraph 6.3.2. Replacing the UV-O 1000 Lamps on page 37	Every 12 months	

	Frequency	
Basic Maintenance Activities	**UV-O 500**	**UV-O 1000**
Replace Filter See paragraph 6.3.3. Replacing the UV-O 1000 Filter on page 38	Not Applicable	Every 2 months (Depending on degree of pollution)
Clean the inside of the Unit and remove dust/ grease See paragraph 6.2.4. Cleaning the Inside of the UV-O 500 on page 36 and paragraph 6.3.4. Cleaning the Inside of the UV-O 1000 on page 39	Every 3 months	



CAUTION

Observe the maintenance intervals given in this manual.

Overdue maintenance can lead to high repair costs and modifications can render the warranty null and void.

Always use tools, parts and service techniques that have been approved by the manufacturer.

6.2 Cleaning and Maintenance Tasks - UV-O 500

It is a matter of experience to determine when your UV-O 500 Unit needs to be cleaned as the nature and degree of any pollution depends strongly on factors such as the particular location, humidity and the intensity of use etc. Nevertheless, the UV lamps should be cleaned and the inside of the Units cleaned regularly, at intervals not exceeding 3 months, using the procedures outlined in the sections below:

6.2.1 Cleaning the UV-O 500 lamps



WARNING

Appropriate PPE equipment should be worn at anytime when there is a possibility that the light emitted from the UV lamps can be viewed or come into contact with skin.

To clean the UV-O 500 lamps:

1. Isolate the Unit from the mains power supply by turning the Rotary Mains Isolation Switch to the ‘Off’ position.
2. Double check that the mains power supply has been isolated and that the Power Light is ‘Off’.

3. Undo the lock on the Front Panel and open it.
4. Slide the lamps to the right to disengage them from their plugs (See Figure 34 - UV-O 500 UV Lamp Plugs below).
5. Remove the lamps from their clips (See Figure 35 - UV-O 500 Lamp Clips on page 36).
6. Clean the lamps by wiping them with alcohol wipes or a lint free cloth soaked in isopropyl alcohol and dry with a lint free cloth.

   Note: Natural oily deposits left by fingers and palms create an opaque mark on the lamp thereby reducing the UV transmission. These marks also cause the quartz to break down, causing premature lamp failure. Use caution when cleaning near the ends of the lamps excessive pressure may remove or smear the coating protecting the lamp electrodes.

It is a matter of experience to determine when the UV lamps need to be cleaned, since the nature and the degree of pollution depend strongly on factors such as the particular location, environmental conditions and intensity of use, etc.

Note: Whatever the situation, however, the UV lamps should be cleaned regularly according to the schedule (See 6.1.1 Maintenance Schedule UV-O 500 and UV-O 1000 on page 33).

6.2.2 Replacing the UV-O 500 Lamps

1. Replace the lamps in their clips (See Figure 35 - UV-O 500 Lamp Clips on page 36).
2. Slide the lamps to the left to engage them with their plugs (See Figure 34 - UV-O 500 UV Lamp Plugs on page 35).
3. Close the Front Panel and fasten the lock.
4. Switch on the mains power supply to the Unit by turning the Rotary Mains Isolation Switch to the ‘On’ position.



Figure 34 - UV-O 500 UV Lamp Plugs

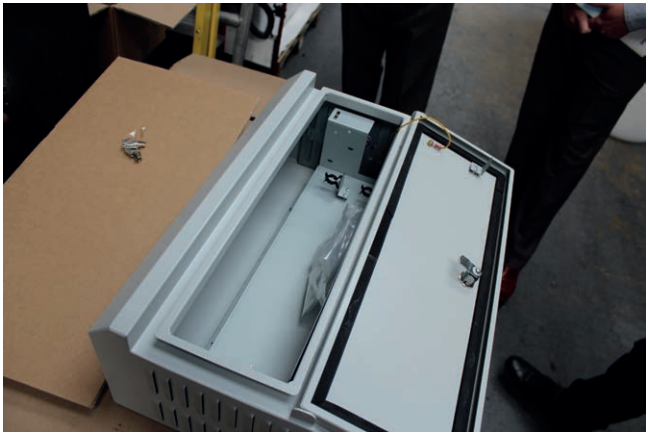


Figure 35 - UV-O 500 Lamp Clips

6.2.3 Replacing the UV-O 500 Filter

Not Applicable.

6.2.4 Cleaning the Inside of the UV-O 500

Having disconnected the mains power supply to the Unit, opened its Front Panel and removed the UV Lamps (See 6.2.1 Cleaning the UV-O 500 lamps on page 34):

Spray a suitable cloth or paper towel with a high quality degreaser and wipe over the Unit's internal surfaces.

- Ensure that the lamp holders and plugs are free from contaminants/grease.
- Ensure that the rubber door seal is undamaged and free from contaminants/grease, cleaning it with warm soapy water if necessary.

CAUTION

Ensure that all internal surfaces and the UV lamp plugs are completely dry before replacing the lamps, closing the Front Panel and turning the Rotary Mains Isolation Switch to 'ON'.

6.3 Cleaning and Maintenance Tasks - UV-O 1000

It is a matter of experience to determine when your UV-O 1000 Unit needs to be cleaned as the nature and degree of any pollution depends strongly on factors such as the particular location, humidity and the intensity of use etc. Nevertheless, the UV lamps should be cleaned and the inside of the Units cleaned regularly, at intervals not exceeding 3 months, using the procedures outlined in the sections below:

6.3.1 Cleaning the UV-O 1000 Lamps

To clean the UV-O 1000 lamps:

1. Isolate the Unit from the mains power supply by turning the Rotary Mains Isolator Switch to the 'Off' position.
2. Double check that the mains power supply has been isolated.
3. Undo the lock, unscrew the four Star Knobs anti-clockwise on the Front Panel and open it.
4. Slide out the UV Lamp Holder on the Runner System (See Figure 28- Lamp Holder and Runner System on page 27).
5. Carefully remove plugs from the end of the lamps (See Figure 28 - Lamp Holder and Runner System on page 27).
6. Remove the lamps from their clips (See Figure 28 - Lamp Holder and Runner System on page 27).
7. Clean the lamps by wiping them with alcohol wipes or a lint free cloth soaked in isopropyl alcohol and dried with a lint free cloth.

   Note: Natural oily deposits left by fingers and palms create an opaque mark on the lamp thereby reducing the UV transmission. These marks also cause the quartz to break down, causing premature lamp failure. Use caution when cleaning near the ends of the lamps excessive pressure may remove or smear the coating protecting the lamp electrodes.

It is a matter of experience to determine when the UV lamps need to be cleaned, since the nature and the degree of pollution depend strongly on factors such as the particular location, environmental conditions and intensity of use, etc.

Note: Whatever the situation, however, the UV lamps should be cleaned regularly according to the schedule outlined in (See 6.1.1 Maintenance Schedule UV-O 500 and UV-O 1000 on page 33).

6.3.2 Replacing the UV-O 1000 Lamps

1. Replace the lamps in their clips (See Figure 29 - Lamp Clips on page 28).
2. Replace the plugs on the end of the lamps (See Figure 30 - Lamp Plugs on page 28).
3. Slide in the UV Lamp Holder on the Runner System (See Figure 28 - Lamp Holder and Runner System on page 27).
4. Close the Front Panel, screw the four Star Knobs clockwise to tighten them and fasten the lock.
5. Switch on the mains power supply to the Unit by turning the Rotary Mains Isolator

Switch to the ‘On’ position.

6.3.3 Replacing the UV-O 1000 Filter

1. Isolate the Unit from the mains power supply by turning the Rotary Mains Isolator Switch to the ‘Off’ position.
2. Double check that the mains power supply has been isolated.
3. Undo the lock, unscrew the four Star Knobs anti-clockwise on the Front Panel and open it.
4. Remove the old filter element by sliding it out of its housing inside the Unit’s main body, on the left-hand side.
5. Spray the filter housing and mounting with a high quality degreaser and wipe down with a suitable cloth or paper towel.
6. Insert the new filter element by sliding it into the housing inside the Unit’s main body.

Note: Ensure that the filter element is inserted in the correct orientation, with the arrows printed on the end of the filter’s frame pointing in the direction of the airflow through the Unit.

CAUTION

Ensure that the filter housing and mounting are completely dry before inserting the new filter, closing the Front Panel and reconnecting the mains power supply.

7. Close the Front Panel, screw the four Star Knobs clockwise to tighten them and then fasten the lock.
8. Switch on the mains power supply to the Unit by turning the Rotary Mains Isolator Switch to the ‘On’ position.



Figure 36 - UV-O 1000 Air Filter

6.3.4 Cleaning the Inside of the UV-O 1000

1. Isolate the Unit from the mains power supply by turning the Rotary Mains Isolator Switch to the 'Off' position.
2. Double check that the mains power supply has been isolated.
3. Undo the lock, unscrew the four Star Knobs anti-clockwise on the Front Panel and open it.
4. Remove the UV lamps (See 6.3.1 Cleaning the UV-O 1000 Lamps on page 37) and filter (See 6.3.3 Replacing the UV-O 1000 Filter on page 38).
5. Spray a suitable cloth or paper towel with a high quality degreaser and wipe over the Unit's internal surfaces.
   - Ensure that the lamp holders and plugs are free from contaminants/grease.
   - Ensure that the rubber door seal is undamaged and free from contaminants/ grease, cleaning it with warm soapy water if necessary.
6. Replace the UV lamps (See 6.3.2 Replacing the UV-O 1000 Lamps on page 37) and filter (See 6.3.3 Replacing the UV-O 1000 Filter on page 38).
7. Close the Front Panel, screw the four Star Knobs clockwise to tighten them and fasten the lock.
8. Switch on the mains power supply to the Unit by turning the Rotary Mains Isolator Switch to the 'On' position.



CAUTION

Ensure that all internal surfaces and the UV lamp plugs are completely dry before replacing the UV lamps and filter, closing the Front Panel and turning the Rotary Mains Isolator Switch to 'ON'.

7. Troubleshooting

If your UV-O Unit does not function correctly, consult the checklist below to see if you can correct the error yourself.

INFORMATION

A number of problems in the checklist below can also be caused by defects in equipment connected to the Unit. This manual only deals with problems and solutions directly related to the Unit itself.

Problem	Possible Cause	Solution
If either of the indicator lights go out		Contact Purified Air
If both of the indicator lights go out	Loss of Electric Power	Check that power is going to the Unit. If not, turn on the power.
		If there is power to the Unit contact Purified Air.

CAUTION

Should it not be possible to correct the error, consult a qualified service engineer.

8. Commissioning Waiver

Due to the danger of exposure to UV light in unprotected conditions, commissioning is normally carried out by Purified Air engineers. These engineers are fully trained and carry protective equipment to ensure that they and others are not harmed when working on the Unit.

Should the customer decide to carry out the final commissioning of the Unit, a Commissioning Waiver will have to be signed and returned to Purified Air.

Special safety locks are fitted to this equipment.

The customer owns the Unit and is entitled to have keys to it. However, before releasing keys to the customer Purified Air require a Director of the company to sign a Commissioning Waiver acknowledging that it is fully understood about the dangers associated with this Unit and will take every precaution to ensure that no person comes to harm when accessing the Unit. Furthermore the customer takes full responsibility for any injury caused due to the Unit being incorrectly accessed or been left unattended or accessible.

Once the Commissioning Waiver has been signed and returned to Purified Air a set of keys for the Unit will be supplied.

9. Wiring Diagrams

9.1 UV-O 500

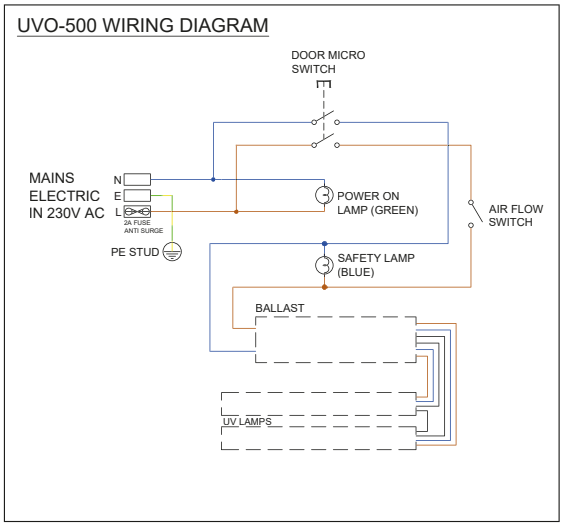


Figure 37 - UV-500 Unit Wiring Diagram

9.2 UVO 500 BMS

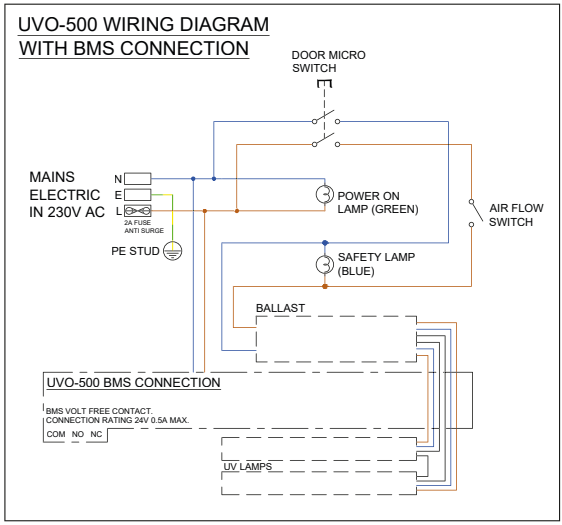


Figure 38 - UV-500 BMS Unit Wiring Diagram

9.3 UV-O 1000

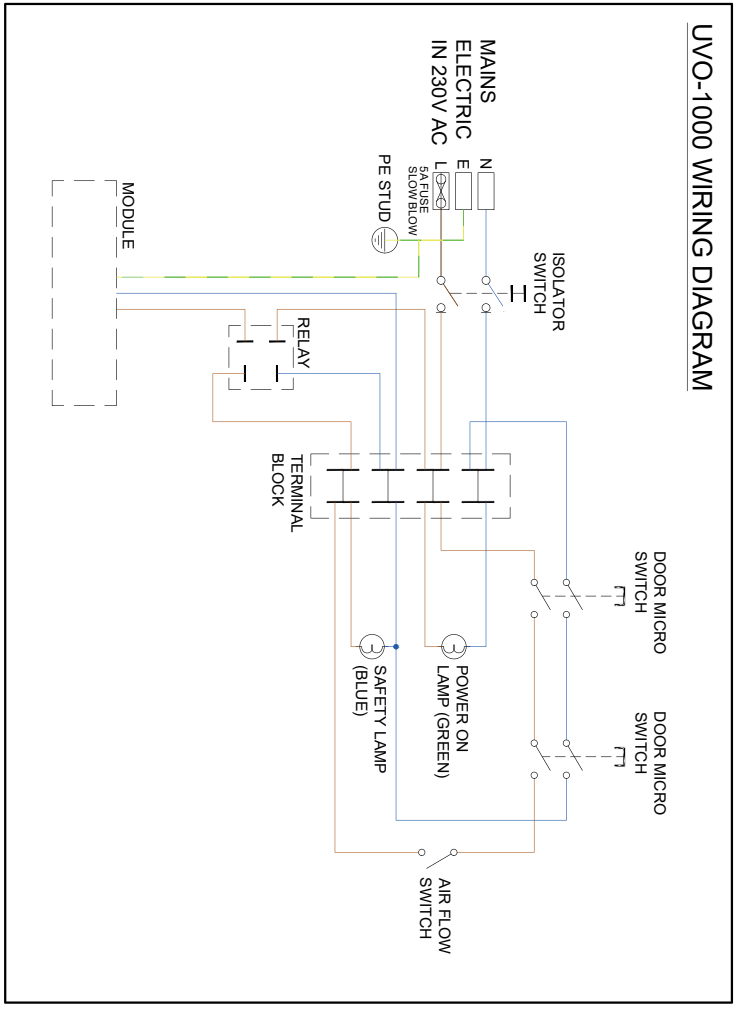


Figure 39 - UV-O 1000 Unit Wiring Diagram

9.4 UV-O 1000 BMS

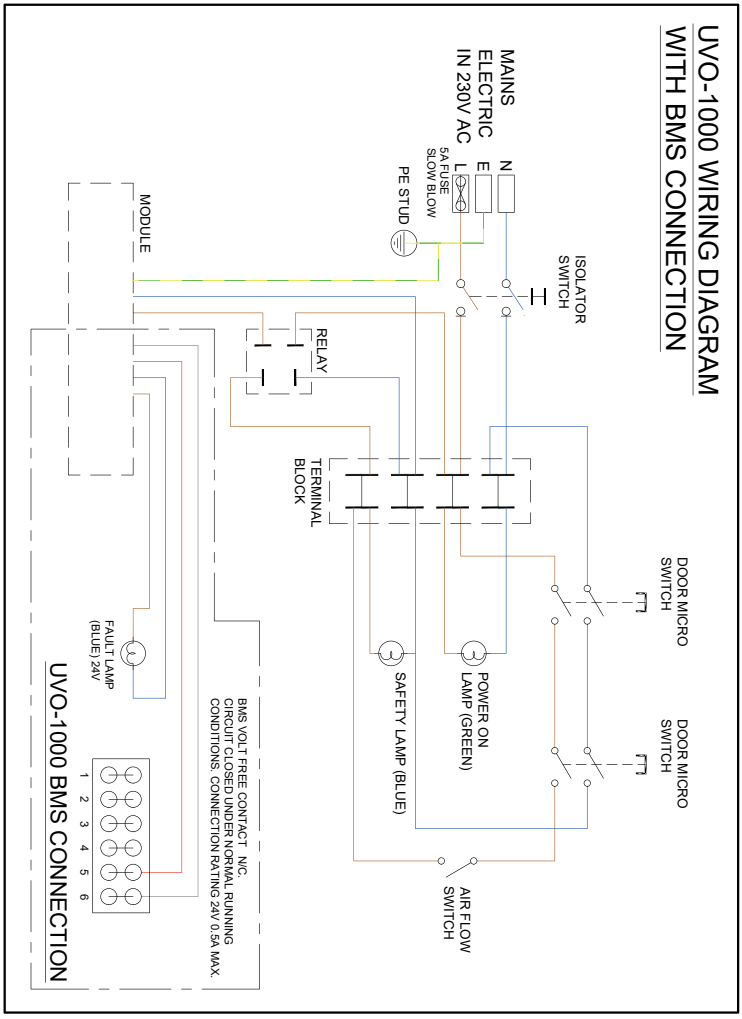


Figure 40 - UV-O 1000 BMS Unit Wiring Diagram

10. Equipment Disposal



10.1 Packaging Material Disposal

INFORMATION

The Unit's packaging materials are manufactured from recyclable materials in accordance with applicable local regulations.

The purpose of the packaging is to protect the Unit during transport. It consists of the following substances that can be reused:

- Cardboard (corrugated)
- Wood (untreated) if palletized

Do not dispose of the packaging material in the industrial waste.

10.2 Used Unit Disposal

Units to be disposed of may still contain valuable substances and materials.

Do not dispose of the Unit in the industrial waste.

WARNING

LAMPS CONTAIN MERCURY (Hg), dispose of in accordance with local disposal laws

11. Contact Details

At Purified Air, we pride ourselves on our excellent levels of customer service and maintenance.

11.1 Nationwide Coverage

We have hubs in both Manchester and London and can offer nationwide coverage with teams of directly employed service engineers.

For all Service and Maintenance enquiries, please contact via:

service@purifiedair.com

0800 018 4000

11.2 Service and Maintenance Contracts

With every installation, we offer the opportunity to sign up for one of our service and maintenance contracts. These are structured to suit individual needs, on a post pay basis with the customer only being invoiced after each service, saving them both time and money against ad hoc servicing requests.

11.3 Dependability

So, whether you have our commercial kitchen exhaust filtration equipment in your restaurant, cafe or take away, you can rest assured that we will always be there when you need us.

11.4 Global Sales

For all instllations of our equipment outside of the UK, please refer back to your designated distributor.

12. Warranty Statement

Your new UV-O Unit is guaranteed against the cost of breakdown repairs for one year from the date of the original purchase.

The manufacturer does not accept any liability for damage to the Unit or personal injury caused by non-observance of the safety instructions in this manual or negligence during the installation, use, maintenance and repair of the models mentioned on the cover of this manual and any associated accessories.

What is covered?

- Repairs necessary as a result of faulty materials, defective components or manufacturing defect.
- The cost of functional replacement parts, but excluding consumable items.
- The labour costs of a Purified Air approved repairer to carry out the repair.

What is not covered?

- Transit, delivery or accidental damage or misuse and abuse.
- Any installation which fails to meet the installation, location and operating requirements and parameters outlined in this manual.
- Manufacturing defects only affecting the Unit's cosmetic appearance.
- Consumable items including, but not limited to, the UV lamps.
- Repairs required as a result of unauthorised repair or installation by anyone other than a Purified Air approved installer.
- Any damage caused to the Unit by its use by anyone other than authorised, trained and qualified users or personnel under the supervision and responsibility of authorised, trained and qualified users.
- Any damage caused to the Unit by incorrect servicing procedures.
- Use of the Unit in any application which is not specifically mentioned in this manual or approved, in writing, by the manufacturer.
- The guarantee is applicable only to new products and is not transferable if the product is resold.

Purified Air disclaims any liability for incidental or consequential damages.

The guarantee does not in anyway diminish your statutory or legal rights.

Please keep your purchase receipt or other proof of purchase in a safe place. you will need to have it should the product require attention under guarantee.

13. Certification

13.1 EC Declaration of Conformity - UV-O 500 and UV-O 1000

Purified Air Limited
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Essex RM12BG

Tel: +44 1708 755414
Fax: +44 1708 721488
Email: enq@purifiedair.co.uk
www.purifiedair.co.uk

EC Declaration of Conformity

Document Number: DoC UVC 1201

We; Purified Air Limited at above address, declare the products detailed below comply with the requirements of the following EU Directives,

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2004/108/EC
- RoHS Directive 2011/65/EU

Equipment description	*UV-C Odour Control*		
Make/Brand	*PurifiedAir*		
Model reference	*UVO 500*	*UVO 1000*	
	UVC 1500	*UVC 3000*	*UVC 4500*

Compliance of the equipment has been assessed with respect to the essential requirements and with reference to the following harmonised standards:

- *EN 61347-1:2008*
- *EN 61547:2009*
- *EN 55015:2006 + A2:2008*
- *EN 61000-3-2:2006 + A2:2009*
- *EN 61000-3-3:2008*

A technical file for this equipment is retained at the above address

Gareth Smith - Technical Director.
Purified Air Limited
June 2017



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Purified Air Limited. Lyon House, Lyon Road, Romford, Essex. RM1 2BG

www.purifiedair.com ¦ enq@purifiedair.com

Edition 1

LONGAR® Type 2 HE75

High Performance 75% Grease Efficiency Baffle Filter





LONGAR® TYPE 2 HE75 HIGH PERFORMANCE BAFFLE FILTER FEATURES:

- High Performance Baffle Filter 75% Grease efficiency at 8 micron
- 100% Flame barrier protection to DIN 18869-5
- Cutsafe safety edges
- Fully welded construction – all stainless steel construction
- Meets insurance requirements
- Meets HVCA DW172 requirements
- Folding handles and drain holes as standard
- Robust baffle filter construction – built to last
- Tested & certified to European standard DIN 18869-5
- Tested to American standard UL1046
- Tested & certified to ASTM 2519

APPLICATIONS

- Commercial kitchens
- Water mist separation
- Spark arrestors
- Sand filtration
- Grease filtration

LONGAR® TYPE 2 HE75 HIGH PERFORMANCE BAFFLE FILTERS

For use in commercial kitchens and ventilation to extract grease laden air and act as a fire barrier. LONGAR® Type 2 HE75 is a positive flame barrier having been tested to European DIN Standard 18869-5 & American 1046 & ASTM2519.

The LONGAR® TYPE 2 HE75 is developed for customers who wish to extract more grease from the air stream, following prolonged R&D we have designed a baffle filter with a micro screen on the exit to increase grease extraction.

The result of this is a retrofit baffle filter that removes 75% of the grease at 8 microns. Tested to ASTM2519 this product significantly reduces duct cleaning, saving customers expenditure on ongoing cleaning costs.

Conventional baffle filters extract grease in the region of 20 to 35% efficiency at 8 microns depending on the product design, the HE75 offers over twice the extraction rate.

CONSTRUCTION / MATERIAL SPECIFICATION

As standard all baffles are manufactured with Stainless Steel 430 polished finish, (other finishes and materials are available). Maximum operating temperature 400C or 750F.

FITTING INSTRUCTIONS

- Fit products, handles in direction of air in
- Product vertical in air stream

HANDLING

- Handle with care when unpacking
- Store in dry and frost protected place

MAINTENANCE

- All maintenance should be carried out in accordance with the planned maintenance set by installation contractor
- When handling any components suitable PPE should be used - gloves, eye protection and access equipment
- Filters should be cleaned by a trained operative either daily for heavy use or weekly for light use
- For more exact guide to cleaning you should contact a cleaning specialist

PACKAGING

All units are packaged in double wall boxes with separators for standard sizes, glued closed for protection whilst in transit against contamination.

FILTER CLASSIFICATION:

- Filter Class G2
- UL Class 2

TESTED TO:

- DIN 18869-5
- UL 1046
- ASTM 2519

MANUFACTURED TO:

- DW172
- ISO9001

For technical specifications, part numbers and ordering information, please see overleaf.

Longar Industries Limited, Unit 25, Glenmore Business Park, Colebrook Way Weyhill Road, Andover, Hampshire SP10 3GZ United Kingdom
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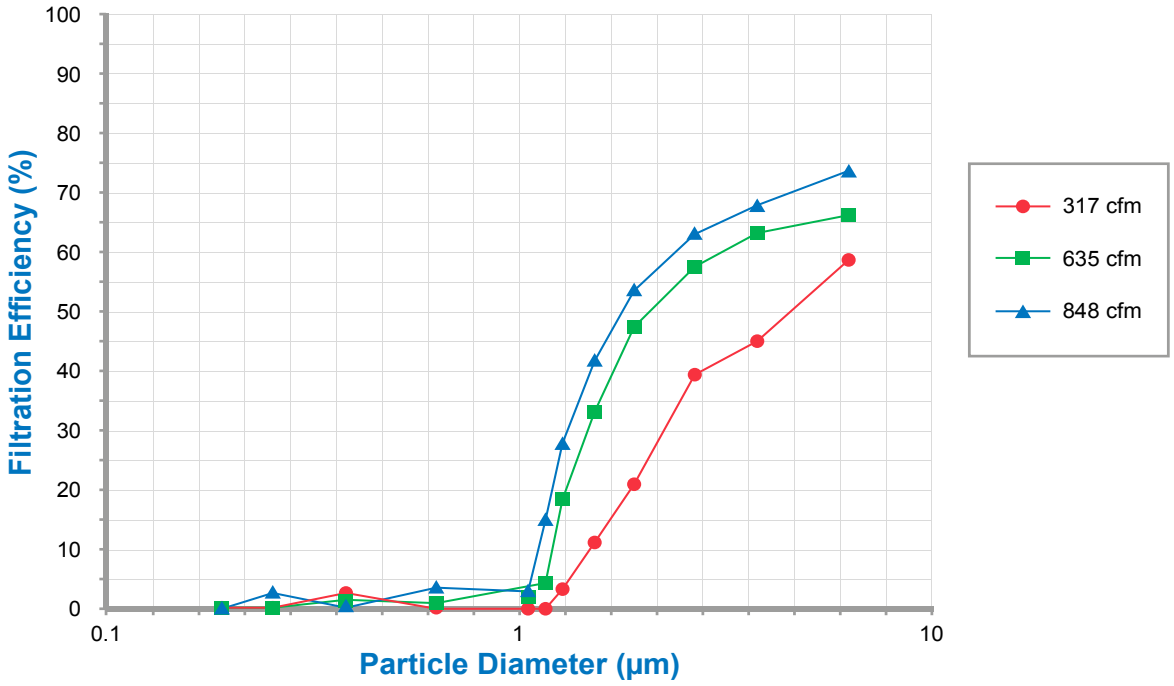
LONGAR® Type 2 HE75
High Performance 75% Grease Efficiency Baffle Filter

TECHNICAL SPECIFICATIONS

Longar specifies the baffle filter as height x width x thickness. The handles are fixed to the height and drain holes punched on the width. The length of the baffle blade is the height; please ensure correct orientation is given when ordering.

SIZE ORDERING GUIDE (TOLERANCES +/- 2mm)				
Part Number	Actual Size HxWxD	Nominal Size HxWxD	Weight	Filter Free Area
TYPE2ST16X20X2	395 x 496 x 45mm	406 x 508 x 50mm	1.96kgs	0.13m²
	15.55 x 19.53 x 1.77"	16 x 20 x 2"	4.31lbs	1.40ft²
TYPE2ST20X20X2	496 x 496 x 45mm	508 x 508 x 50mm	2.41kgs	0.16m²
	19.53 x 19.53 x 1.77"	20 x 20 x 2"	5.30lbs	1.76ft²
FINAL RECOMMENDED PRESSURE DROP: 400 PASCALS				

ASTM-2519 TEST RESULTS: LONGAR Type 2 HE75 High Performance Baffle Filter - 495x495x45



LONGAR® TYPE 2 HE75 HIGH PERFORMANCE BAFFLE FILTERS SIZE: 496(H)X496(W)X45(D)MM

Resistance to Airflow:

Airflow (m3/s)	Airflow cfm	Air Velocity (fpm)	Air Velocity (m/s)	Resistance (in. H2O)	Resistance (Pa)
0.075	159	57	0.290	0.04	9
0.112	238	86	0.435	0.09	22
0.150	317	114	0.580	0.16	41
0.150	318	114	0.581	0.16	41
0.187	396	143	0.725	0.26	64
0.200	424	153	0.775	0.30	74
0.225	476	171	0.871	0.37	93
0.300	635	229	1.161	0.68	168
0.300	636	229	1.163	0.68	168
0.375	794	286	1.452	1.07	265
0.400	848	305	1.551	1.22	304
0.500	1060	382	1.939	1.92	479

LONGAR INDUSTRIES

FILTERS AND FABRICATIONS FOR A CLEANER ENVIRONMENT

Longar Industries Limited, Unit 25, Glenmore Business Park, Colebrook Way Weyhill Road, Andover, Hampshire SP10 3GZ United Kingdom

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As part of our program for continuous improvement, Longar Ltd reserves the right to change specifications without notice. 15-01-2016.