

# Ultravation®

Professional Indoor Air Quality Products

## Photronic Complete Whole House Air Cleaning System OWNERS GUIDE



**Models: 92-019, 92-020, 92-021 650 CFM**

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**LEAVE FOR HOMEOWNER**

## Shipping and Packaging List:

- Filter Housing including Access Door
- Merv 11 Media Air Filter
- HEPA Filter
- 1- Door Handle w/ hardware
- PCO Filter
- Electrical Enclosure
- 2- 12" T3 UVC Lamps
- \*2- UVC Lamps Part:
  - 12" T3 UVC lamp option
  - OR
  - 17" T3 UVC lamp option
- \*4- 1 inch UVC lamp mounting screws
- \*8- 1/2 inch 5/16 self tapping screws
- \*2- UVC Lamp Mounting Plates

\* Included when Remote UVC option is purchased

## Introduction and Applications:

This Ultravation Photronic HEPA Media Air Cleaner is a complete whole house air cleaning system. This high efficiency air filtration unit is designed to remove dirt, dust, pollen, and microscopic particles: reduce unpleasant odors, VOC gases and the microbial population from the air that circulates through it. By adding this device to your HVAC system, you are helping to create a cleaner indoor living environment for your whole household.

The system works in 2-3 steps (depending on model purchased, some models do not include the germicidal protection in step 3)

STEP 1: Trapping particles in the pleats of the MERV 11 media filter. With an extra large surface area, the filter allows for maximum dirt holding capacity and a long, useful filter life with minimum air flow restriction.

STEP 2: VOC's and gases such as the fumes from new carpets, paints, nail polish, cigar and cigarette smoke are drastically reduced photo chemically via a patented process known as photo catalytic conversion or photo catalytic oxidation.

(Option)STEP 3: Germicidal UVC light is applied to the Air to drastically reduce or eliminate unwanted virus, bacteria and mold.

This air cleaner is to be installed in a forced air heating, cooling and ventilation system. It should be installed so that all the system's air is circulated through the filter first and VOC Section second. The air cleaner will only filter the air that is circulated through it. For maximum filtration effect, set your blower to operate continuously. (Lower speeds allow for higher efficiency)

## Safety Precautions:

It is recommended that this unit be installed and maintained by a trained technician:

**WARNING: UV Hazard. Always protect eyes from ultraviolet light. NEVER look at UV lamps in operation. Unplug or disconnect power before re-lamping or servicing.**

**WARNING: Severe eye damage or temporary blinding may occur.**

**WARNING: DO NOT operate UVC lamps outside of Air Handler. Mount lamp base to duct first.**

**WARNING: No openings in duct are allowed which would give direct line-of-sight to the UV light.**

In the event of accidental breakage or replacement of the ultraviolet lamp, please ensure that the lamp is disposed of in accordance with local and state environmental laws regarding fluorescent lamps containing mercury.

### Notice:

All wiring inside of the duct or air handling system in direct line of site of the UV lamp must be shielded with aluminum foil tape or equivalent non-combustible material. When installing this unit, select a mounting location that prevents ultraviolet light exposure to plastic flexible duct liner or other plastic components with unknown resistance to ultraviolet light. Ultraviolet light may cause color shift or structural degradation of plastic HVAC components

## Power Consumption UV-A, UV-C lamps

<u>Lamp Type</u>	<u>Quantity Required</u>
12-inch UVC lamp is 12 watts each	2
12-inch UVC lamp is 12 watts each	2
17-inch UVC lamp is 22 watts each	2

## Installation requirements:

**This unit is designed to be powered up constantly and should not cycle on and off with a blower motor.**

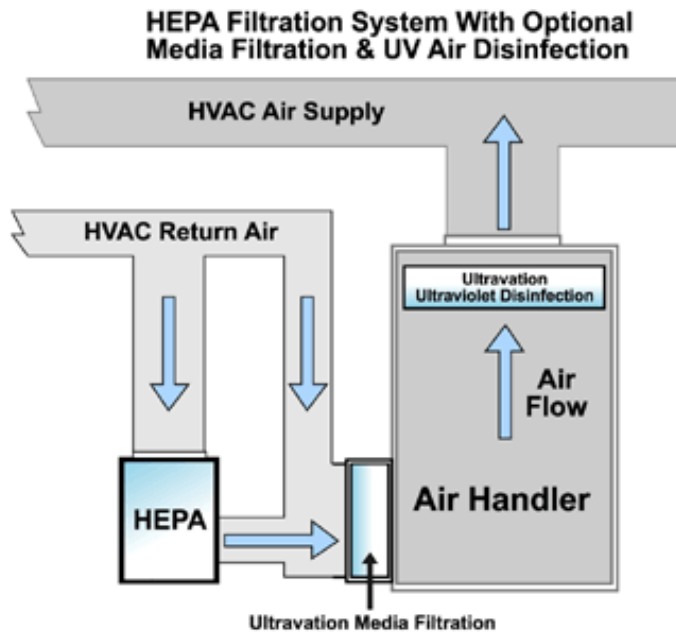
Unit must be installed either within 6 feet of a 120 power outlet, or hardwired per local and state electrical code.

There must be minimum 26 inches in front of the door for filter and lamp replacement.

**Note:** Handle fits either door. A Phillips screw driver will be required to install the handle. Handle holes are behind the label on either door, depending on the orientation of the installation.

## Installation – Filter Housing Cabinet

Ultravation Photronic Air Cleaning Systems is typically installed as shown in the picture below. The air cleaner is also designed to have the air flow in only a single direction. They must be installed in an area of the duct that precedes the blower compartment. In this location, the blower motor and internal components will be kept clean. This increases air handler component life, improves system efficiency, and reduces maintenance costs.



The Ultravation Photronic HEPA Air Cleaner has been designed for use in conjunction with virtually any HVAC system.

Do not install this unit in the supply duct.

Be sure to plan adequate space for filter replacement.

Before installation is complete, seal all joints and seams with duct tape or caulking.

## Installation of Electronic Power Supply:

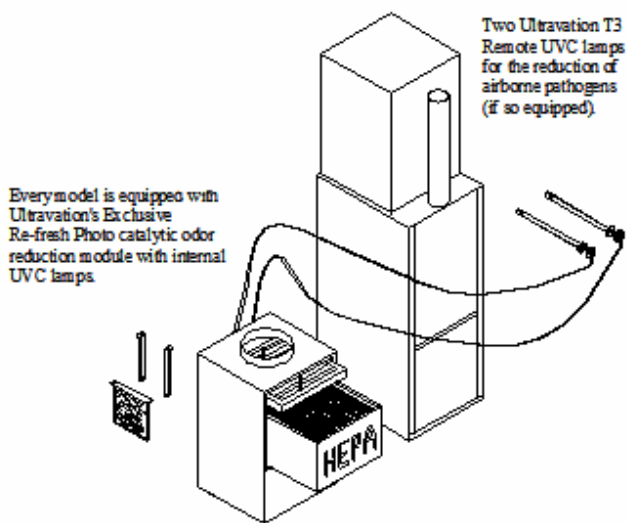
There is no external power supply for the Photronic HEPA, remote lamp leads are wired through the back of the unit.

## UV-C Germicidal Lamp, Stage 3, Installation steps for Models with UVC option.

UV-C Germicidal Stage 3 is designed for installation in the HVAC (heating, ventilation, and air conditioning) system.

The optimum installation location for UV-C Germicidal Stage 3 lamp is in the supply side ductwork exiting the HVAC system before the ductwork branches.

The electronics housing should already be installed in the previous step; the UVC lamps should be centrally located within the air handler and positioned to achieve maximum reduction of airborne pathogens.



### Note:

This Photronic System and the UV-C lamps are designed to operate constantly and should not cycle on and off with a blower motor. Installation in a return air duct is acceptable but not recommended in a high dust environment.

Do not allow the UVC light to shine on the MERV 11 filter. The UVC energy will decompose the filter within 120 days.

It is recommended a trained technician install this unit. Never look at the UV lights without proper eye protection.

## Installation steps:

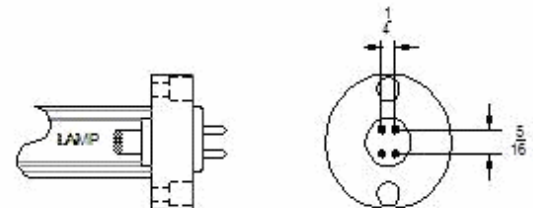
1. Determine a suitable location to install the UV-C Lamps.
2. Select a location for the remote UV lamp module assembly. Drill a 1" diameter hole for each lamp assembly. Attach lamp module assembly with 2 screws at the chosen location, or an optional lamp mounting plate, which has been supplied to mount the lamp assembly.

**Note: The T3 UV lamp assembly can be removed independently, simply by removing the 2 screws in the lamp holder.**

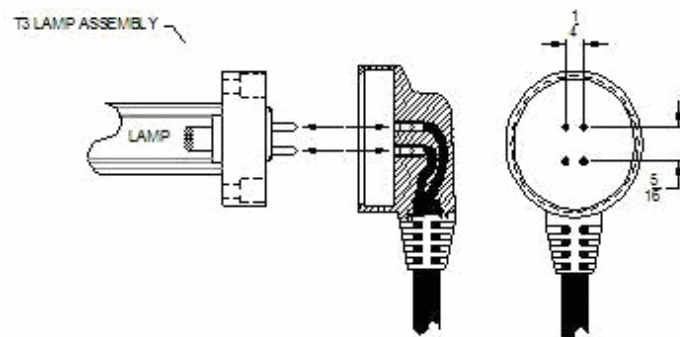
3. Plug the rubber lamp connector fully onto the installed UV lamp assembly. Be sure the 4 pinholes are orientated properly to the 4 mating pins of the lamp.

**Note: the pins are in a rectangular patent and can only be mated in 2 positions. Pulling the lamp boot back will help with the visual alignment of the pins and connections. After making the connection, be sure to push lamp boot over lamp base.**

See the illustration of the T3 lamp 4-pin connector.



TYPICAL T3 LAMP 4 PIN CELL BASE



TYPICAL T3 LAMP 4 PIN CONNECTOR BASE

## Maintenance:

The filter media in your air cleaner must be changed periodically. The frequency of filter replacement is best determined by visual examination. However, a 60 day replacement of the 2" filter and 5 years for the HEPA filter is strongly recommended. Replacement filters obtained through your installing contractor or local dealer. - Actual replacement may vary depending on the severity of dust and dirt particles.

**If the Photocatalytic aluminum filter should become dirty, it may be cleaned with low velocity compressed air or vacuum only, no solvents or water should be used.** If the Photocatalytic section becomes wet, allow the section to air dry before reinstallation.

The aluminum mesh screen on the Photocatalytic filter is coated using a patented process known to photochemically breakdown VOC's and Odors as well as reduce airborne pathogens on contact. Under normal operating conditions this filter should last up to 10 years.

The Air cleaner should never be run with less than a MERV-11\* Filter.

Using less than a MERV-11\* Filter rating will reduce the effectiveness of this product. It is recommended that this product be serviced and maintained by an HVAC professional.

\*MERV or Minimum efficiency rating value is a number assigned to filters indicating their ability to capture particles and dust, the higher the number the better the filter. A MERV 11 filter is 40% more effective than a MERV-8. Be sure that an Ultraviolet MERV-11 filter is requested for replacements in this product.

## Steps for replacing filters:

### Pleated Media Filter:

1. Open the access door by lifting up and pulling toward you, removing door completely.
2. Pull out media filter and discard.
3. Slide new media filter into cabinet with "airflow label pointing in the direction of the airflow. Be sure to seat new filter into left and right guide rails to assure a good seal.
4. Replace access door.

**Note:** a gasket is provided to seal between the opening on the side of the filtration cabinet and the side of the air handler.

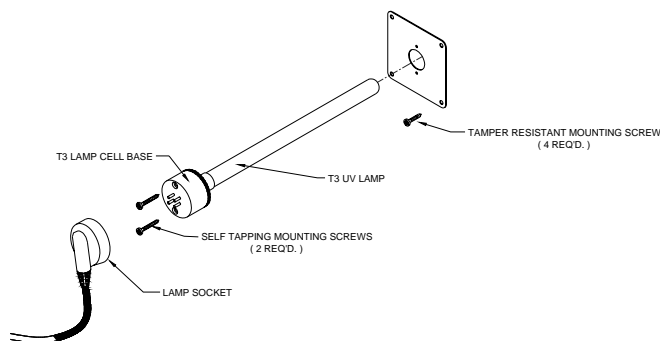
### Aluminum PCO Filter:

Follow steps 1

2. Remove the HEPA filter completely from the cabinet.
3. The PCO filter is located underneath the electronics tray. Remove the tray from the cabinet half way, slide electronics tray back leaving PCO screen sticking out of cabinet. Remove screen completely.
4. Replace or clean filter, then reverse and repeat last two steps.
5. Replace access door.

## Steps for replacing UVC lamps

1. Turn the systems power off.
2. Locate the remote lamp assembly, and remove the rubber boot.
3. Remove the 2 screws from the ceramic lamp base.
4. Withdraw the UVC lamp assembly from the mounting location.
5. Reverse the process with new lamps. **(New lamps should be cleaned with a damp cloth or with rubbing alcohol to remove any fingerprints and debris prior to installation.)**



Be sure to recycle the used lamps in accordance with your local codes for fluorescent lamps. If you are not sure on how to recycle the lamps please call the Ultravation customer service line at 866-468-8247.

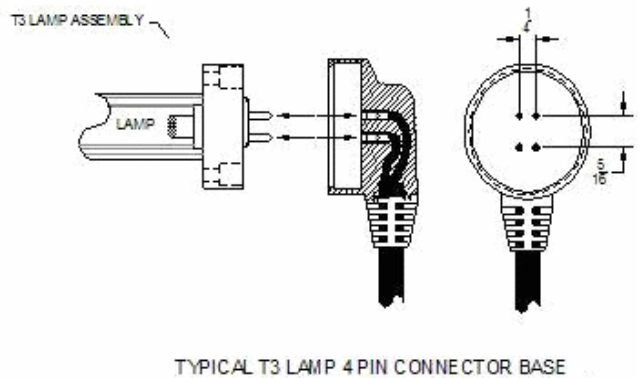
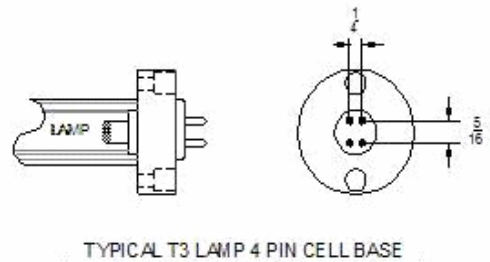
### UV Lamp replacement:

**NOTE:** When replacing lamps after 1 year or 2 years of operation disconnect power to the unit first. After the lamps are in place, complete steps 1-5 to set the service indicator to 0.

**For optimum 24/7 air stream disinfection it is recommend the UV-C lamp is replaced on an annual basis.**

## Steps for replacing Photocatalytic lamps:

1. Turn the systems power off.
2. Remove cabinet access door.
3. Locate the lamps underneath HEPA filter, remove rubber boot from lamp base.
4. Remove the 2 screws from the ceramic lamp base.
5. Remove lamps completely from electronics tray. Reverse the process with new lamps. **(New lamps should be cleaned with a damp cloth or with rubbing alcohol to remove any fingerprints and debris prior to installation.)**



## Troubleshooting:

**Important information:** It is a normal characteristic of all UV lamps to blacken around the filaments (ends) of the lamp. This does not signify the lamp is defective or not emitting Ultraviolet light.

**The only time a UV lamp is defective is if it will not light. UV Lamps that illuminate will not qualify for Warranty.**

Check for any loose or disconnected wiring

Lamps are securely plugged into their sockets

Verify the unit has power (120 or 240 volts) and the Power switch is in the ON position

The electronic circuit of a 3-lamp system only operates when both lamps are operating.

Verify 5 amp fuse is not blown by visual inspection or perform a continuity test of the fuse.

Verify if in fact the UV lamps are on or off. **Do not look at the UV light without proper eye protection.**

## Note:

In this case a service technician should be contacted.

Please contact your local dealer or HVAC contractor for replacement lamps.

There are **NO** user serviceable replacement parts other than the lamps.

Refer servicing to qualified service personnel.

## Warranty:

Ultravation warrants this product against any defects in material or workmanship for a period of 10 years after date of purchase, with the exception of the disposable media filter, the UV Lamps, the fuse, the ductwork and installation. The UV lamps are warranted for a period of 1 year.

This warranty does not include damage to the unit from accident, misuse or improper installation. If this product should become defective during the warranty period, Ultravation will repair or elect to replace the product free of charge. Ultravation will return repaired or replaced warranted products pre-paid, provided that the product was delivered pre-paid.

Ultravation shall have no responsibilities for charges incurred by the customer for installation or removal of warranted items. Liability is limited only to the replacement or repair of this product.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. All returns must be accompanied by a return authorization number, which may be obtained by contacting Ultravation, Inc.

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Phone: 802-287-9735 ~ Fax: 802-287-9203 ~ [www.ultravation.com](http://www.ultravation.com)

## Replacement Parts:

MERV 11 Filter 650 CFM p/n: **91-010**  
HEPA Filter 650 CFM p/n: **91-011**

13 1/2" x 17" x 1/2" PCO Filter p/n: **91-042**  
Photo Catalytic UVC Lamps p/n: **AS-IH-1001**  
12" UV-C Lamps (if equipped) p/n: **AS-IH-1001**  
17" UV-C Lamps (if equipped) p/n: **AS-IH-1003**  
5 Amp Fuse p/n: **EL-PP-0044**

**(See Serial Number Label on inside of equipment door for unit replacement part numbers)**