

### SAFETY

Due to system pressure and risk of electric shock, the service and installation of air-conditioning equipment can be hazardous and should only be performed by a trained professional. All safety codes must be followed, safety glasses and work gloves must be worn. Observe precautions stated in the literature, tags, and labels attached to the unit and peripheral equipment. Other safety precautions may apply.

### GENERAL

This purifier is simple to install in existing HVAC units and has an easy release Mechanism for performing general lamp maintenance. Odor causing bacteria, mold, fungus, viruses may be transmitted through heating ventilation and air conditioning ducts. When installed, the UV purifier is designed to use UV rays to treat the coil of the HVAC unit to eliminate these elements. Install the purifier on either the supply section inside the HVAC evaporator "A" coil facing into the coil, or above the coil, focused onto the coil.

### WARRANTY INFORMATION



### REGISTER YOUR PRODUCT



Register your product online and view warranty information at [www.universalsolutions.com](http://www.universalsolutions.com)

### INSTALLATION

Recommended installation location for the purifier is inside of the HVAC evaporator coil or on top of the HVAC evaporator coil. Certain plastics, wires, and drain pans, can be damaged by exposure to ultraviolet, C-Band light (UV-C) if they are not protected. Exposed areas can be covered with a reflective material, metal tape or aluminum foil, for protection. Exposed wiring and plastic should be wrapped. Verify that the location of installation can be supplied with the appropriate power receptacle and that there is adequate space for service. Multiple units can be used if required and the purifier can be mounted in a vertical or horizontal position.

**After the Clear Blue is mounted, perform the following procedure for installation:**

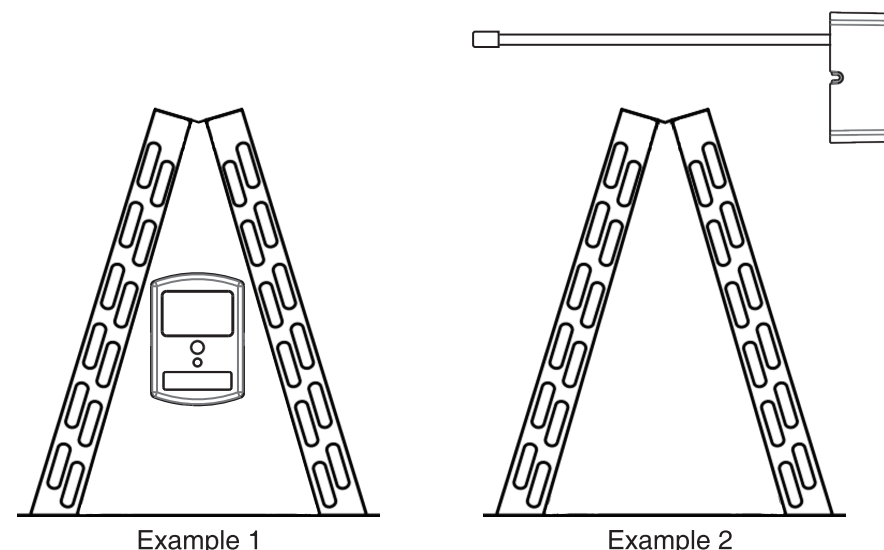
1. DO NOT plug in the purifier
2. Internal space required for installation is estimated to be fifteen inches. Assess the optimal area for locating and installing the purifier and check that the purifier fits into the plenum. If plastic, protect the drain pan with reflective material.
3. UV-C (ultraviolet, C-Band) will damage certain plastics, wires, and drain pans. Any exposed plastic should be wrapped.
4. Unpack the control box and remove the control box cover from the metal base.
5. Using the metal base as a guide, mark off the screw holes and center of the lamp access hole to be cut into the plenum.
6. Drill the corner holes 1/8" in diameter and a 1" hole for the lamp.

### LAMP INSTALLATION

7. In order for the unit to function the safety switch in the top right corner must be secured. Use the supplied four sheet metal screws to secure the metal base to the plenum.
8. Unpack the lamp and remove the foam cover.
9. Loosen the three screws securing the retaining lamp ring.
10. Rotate the ring left and remove from the metal base.
11. Insert the end of the lamp that has the four contact pins into the lamp ring on the side possessing the rubber grommet.
12. Insert lamp firmly into the lamp ring.
13. Insert lamp through the hole in the metal base and into the plenum.
14. Set the lamp ring onto the three screws and rotate right to lock into position.
15. Tighten the three screws being careful not to over tighten.
16. Connect the white socket with the lamp pins. The lamp is polarized. If the pins are not correctly lined up, rotate the socket 90°.
17. Attach the cover to the metal base by lining up the three guides on the control box cover and slide into position. Tighten the screws to finish securing the control box.

**WARNING:** Applying excessive force during assembly may damage the contact pins.

### Installation Examples



**WARNING**  
UV exposure is dangerous to eyes, skin, rubber and plastics

### WARNING

**DO NOT CONNECT THE TWO CONDUCTOR WIRE SET TO 110VAC**

The Clear Blue® is intended to operate on 24VAC. In the scenario that a 24VAC source is not available or error code EC3 or EC4 is displayed a 110/24VAC step down transformer is provided.

### WIRING INSTRUCTIONS

The Clear Blue® system should be wired to unswitched (continuous) power.

For 24VAC:

- Connect the two wires from the Clear Blue® to a 24VAC connection on the equipment.
- Turn on the purifier by pressing the "ON" button.

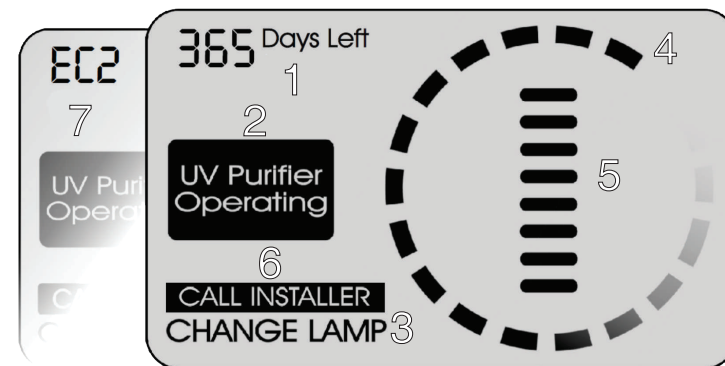
For 110V (Optional 220V):

- Connect the two conductors from the Clear Blue® to the outer, AC terminals on the transformer.
- Plug the transformer into any standard 110V, unswitched receptacle.
- Turn on the purifier by pressing the "ON" button.



AC AC

## OPERATION



**Error Codes:**  
 EC1: Lamp failure  
 EC2: Ballast failure  
 EC3: 24V Power supply voltage too low  
 EC4: 24V Power supply voltage too high

## STATUS OF LAMP OPERATION:

- DAYS LEFT** - Signifies, in days, lamp usage
- UV Lamp Status** - 'UV Purifier Operating' will display except when:
  - Lamp use has exceeded 365 day life-span
  - Failed lamp
  - Failed ballast
  - Unit is off
- CHANGE LAMP** will display:
  - After 325 days of operation. This signals that the lamp is approaching its end of life.
  - 'CHANGE LAMP' will flash after 365 days to alert that the lamp needs to be replaced.
  - If the lamp fails before the timer expires, 'CHANGE LAMP' will be displayed.
- Timer Indication:**  
 The rotating, circular graphic indicates that the purifier is counting time. The animation will stop when 'DAYS LEFT' reaches zero.
- Day Counter:**  
 The day counter is displayed in bars representing 45 days each, representing remaining lamp life.  
 When 'DAYS LEFT' reaches zero, no bars will be displayed to indicate that the lamp should be changed.
- CALL INSTALLER** will display when:
  - An error code is displayed
  - The lamp has reached its end of life

Press the 'ON' button to start the purifier. The LCD screen will illuminate, followed by ignition of the UV lamp.

## MAINTENANCE

Before performing any maintenance to the purifier all power must be disconnected. Cleaning the UV lamp is recommended every two to three months. To access the lamp, loosen the screws on the control box and remove it from the metal base. To remove the lamp, disconnect the lamp from the socket, loosen the screws securing the lamp ring, and turn the lamp ring left. The lamp can be cleaned using a cloth and an alcohol based cleaner. To reinstall the lamp, reverse the procedure. To maintain design specifications the lamp needs to be replaced after one year of operation. To reset the lamp timer see instructions. For replacement lamps, contact your local distributor.

## TROUBLESHOOTING THE UV LAMP

Ohmmeter required. Disconnect the white socket from the lamp.

Place one probe of the ohmmeter to one of the four pins on the end of the lamp. Touch the other probe of the ohmmeter to each of the other three pins until you find the matching pin. The ohmmeter will read approximately 3 ohms. This indicates that the filament is good. Check the other two pins. If both sets of filaments test OK, the lamp is functioning. If one or both sets of filaments read an open circuit on resistance, the lamp is defective.

### The 'RESET' button is used to:

- Reset an error code without losing 'DAYS LEFT'
- Reset the unit back to the original factory condition, which includes resetting the 'Lamp Timer' feature back to 365 days.

### Soft Reset

A 'Soft Reset' is used to clear an error-code message, or used after a service call without resetting the lamp life timer.

**To perform a 'Soft Reset' quickly press and release the reset button**

### Hard Reset

A hard reset is used after a UV lamp has been replaced with a new lamp. Using the 'Hard Reset' will bring the unit back to factory condition including resetting the 'DAYS LEFT' to 365.

**To perform a 'Hard Reset' press and hold the reset button for a minimum of 3 seconds.**



### WARNING

Before installing or performing maintenance or service on the purifier, DISCONNECT from main power. Electrical shock can cause injury or death.

### WARNING

Never expose eyes or skin to ultraviolet light from any source. The Purifier MUST be DISCONNECTED from power source before performing maintenance or service. Personal injury may result.

### WARNING

Do not touch Lamp glass without gloves. Reduced performance of Lamp may result. Clean Lamp after handling.

### WARNING

The UV Lamp contains a small quantity of mercury. If a Lamp breaks, do not place in trash or use a household vacuum. Sweep debris into a plastic bag and dispose of properly. Contact your local waste authority for proper disposal guidelines.

### WARNING

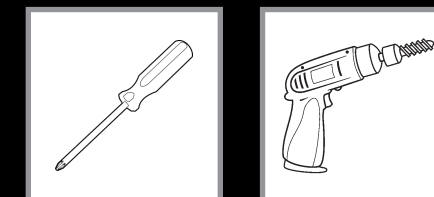
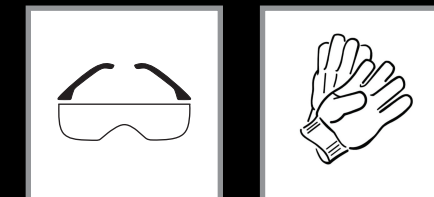
Use only specified replacement Lamps with your Purifier. Use of an incorrect Lamp can result in damage to the Purifier and/or Lamp.



# INSTALLATION MANUAL

## 24/110V UV SYSTEM

### ENGLISH



**WEAR SAFETY GLASSES AND GLOVES  
 FOLLOW ALL SAFETY CODES**

SERIAL NUMBER

DATE INSTALLED

INSTALLER'S CONTACT INFO

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Due to a program of continuous improvement  
 Universal UV Solutions reserves the right to make  
 design and or specifications changes at any time.