

# BOLT

## User Guide BOLT Clean Air System

Designed in Berkley, MI

Made in USA



Manufactured by:  
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## **Table of Contents**









Safety Alerts.....	3
Safety Symbols.....	3
Caution.....	4
Safety Instructions.....	4
Product Application.....	5
Principal of Operation.....	5
Included.....	6
Tools Needed.....	7
Unpacking.....	7
Before you Install.....	7
BOLT Clean Air System Placement.....	8
BOLT Clean Air System Installation.....	8
Precautions.....	14
Maintenance.....	14
BOLT Fixture Cleaning and UV-C Light Installation or Replacement .....	15
Disposal of UV-C Lightbulb.....	15
Reorder UV-C Lightbulb.....	15
Contact Us.....	15
Warranty.....	15

## SAFETY ALERTS

- The BOLT Clean Air System prevents the DIRECT exposure to UV-C light by means of a louver mechanism and thus is safe for use with humans, animals and plants present.
- Should it be necessary to service or replace a BOLT unit or to occupy the area within 3 feet of the ceiling where the unit has been installed, the BOLT unit should be disconnected from its power source prior to entry into the 3-foot ceiling area. If the louver system is damaged in any way, the BOLT unit should be immediately turned off and disengaged from the power source. Under no circumstances should any person look into a damaged operating BOLT unit without first turning the unit off, or otherwise wearing appropriate eye and skin protection. Looking into or exposing skin to UV direct light can cause serious eye and skin injury.

## SAFETY SYMBOLS

The following conventions are used to indicate and classify precautions in this manual and on product safety labeling. Failure to observe precautions could result in injury to people or damage to property.

-  **CAUTION!** This is a safety alert symbol. Indicates a potentially hazardous situation, which, if not avoided, may result in property damage.
-  **WARNING!** This is a safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
-  This symbol is used to identify an **ULTRAVIOLET LIGHT** hazard.
-  This symbol is used to identify an **ELECTRICAL SHOCK** or **ELECTROCUTION** hazard.
-  The symbol is used to identify the need to wear approved ultraviolet resistant eyewear.
-  This symbol is used to identify the need to wear protective gloves.
-  This symbol is used to identify the need to wear protective face shield.
-  This symbol is used to identify components which must not be disposed of in the trash.

## CAUTION

Product safety labels should be periodically inspected and cleaned, as necessary, to maintain good legibility. Always replace illegible safety labels. Contact the manufacturer to obtain replacement safety labels.

It is the user's responsibility to determine and validate the suitability of this equipment for use in the user's system or process.


No warranty or representation is made by the manufacturer with respect to suitability or performance of this equipment or to the results that may be expected from its use.

## SAFETY INSTRUCTIONS

While operating the BOLT unit, do not service, modify or otherwise adjust the unit unless the unit is powered off. If the unit is damaged, it may allow direct exposure to UV-C rays, which can cause serious injury to exposed, unshielded eyes and skin. Turn unit off immediately if it shows any sign of damage.

To guard against injury, basic safety precautions should be observed, including the following:

- Read and follow **ALL** safety instructions.
- Intended for indoor use only.
- Do not alter design or construction.
- Do not use this fixture for other than its intended purpose, as described in this manual.
- Do not mount under any source of moisture or condensation, such as humidifiers, cooling coils, etc.
- Do not remove any labels or devices.

 **CAUTION:** Germicidal ultraviolet rays may break down plastic, rubber, or other non-metallic materials, can fade colors, and can be damaging to plant life. Shield all plastic, rubber, or other non-metallic parts, plant life, etc. which may be exposed to direct or reflected germicidal ultraviolet rays for a prolonged period of time.

 **WARNING:** Do not operate without proper electrical ground.

- Do not operate the unit if there is visible or suspected damage to the unit or, if applicable, there is damage to power and/or plug.
- Utility power supplied to the fixture **MUST** match power requirements listed on the fixture label.

 **WARNING:** Always disconnect power to the unit before performing any service or maintenance.

- UV-C Light must always be contained within louvers.
- Read and follow all notices and warnings on the unit.
- BOLT Clean Air System must never be placed near stairs or open second stories or in stairways where direct UV-C light is visible.
- Do not use equipment for other than its intended purpose, as described in the user guide manual.

## PRODUCT APPLICATION

**CONSTRUCTION:** BOLT Clean Air System is categorized as an indirect type of germicidal ultraviolet fixture, which utilizes Germicidal Ultraviolet Light (s) with a series of louvers to direct germicidal ultraviolet rays to the upper areas of a room, thereby destroying bacteria and viruses that are carried into the ultraviolet field by convection currents or air circulation.

BOLT Clean Air System consists of a Louver Unit, UV-C Lightbulb, Porcelain Lamp Holder, and Mounting Hardware.

## PRINCIPLE OF OPERATION

BOLT Clean Air System's design has been carefully conceived to provide germicidal ultraviolet rays to disinfect the upper room air of occupied spaces in order to reduce the risk of cross infection and exposure of occupants to infectious airborne microbes.

The dosage, as it applies to ultraviolet disinfection, is a function of time, and the intensity of ultraviolet radiation, to which the air is exposed. The exposure time, in seconds, is the total time it takes the air to move through the ultraviolet field, produced by the UV-C Lightbulb. Exposure time is related to the airflow rate; the higher the airflow, the lower the exposure time or the lower the airflow, the higher the exposure time.

The operation of BOLT Clean Air System is as follows:

1. Ultraviolet rays project across the upper room air.
2. Bacteria and viruses are destroyed that are carried into the ultraviolet field by convection currents or air circulation.
3. The air in the room is continuously being sanitized.

BOLT Clean Air System requires knowledgeable planning for location, installation, and continued supervision to prevent exceeding the ultraviolet radiant exposure incident.

BOLT Clean Air System requires professional installation so all wiring complies with applicable local and national electrical codes. Installation is permanent, and relatively inflexible.

Safety and maintenance procedures **MUST** be implemented to prevent accidental exposure of personnel and other persons who might enter the irradiated space (Electricians and other trades people in particular). All work performed (painting, new ceilings, equipment or fixture installation, etc.) should only be done when the BOLT unit is turned off and the power disengaged. All work done in the irradiated space must be monitored to ensure that it does not adversely impact the safety or effectiveness of the BOLT unit.

As long as installation procedures are followed - unit installed 9 feet above ground level at minimum - the BOLT Clean Air System is safe to leave on 24/7 while people are around.

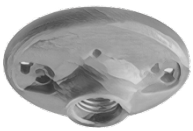
**INCLUDED:**



- 1 x BOLT Fixture



- 1 x UV-C Lightbulb (Germicidal Ultraviolet Lamp 36W Screw Socket)



- 1 x Porcelain Lampholder w/2 screws



- 4 x Bolts



- 4 x Anchors



- 1 x Mounting Template



- 1 x Operating Instructions

## TOOLS NEEDED:

- Safety glasses
- Drill with ½” drill bit
- Screwdriver
- Tape
- Stud Finder
- Hole Saw
- Non-contact voltage tester
- Pliers
- Stepladder
- Voltage tester
- Wire stripper/cutter
- Gloves

## UNPACKING

- Open shipping carton from top side.
- Remove Operating Instructions, UV-C Lightbulb, Porcelain Lampholder and Mounting Hardware from foam insert.
- Remove foam insert.
- Take out BOLT Fixture from its shipping carton. The Mounting Template will be inside the fixture.
- Manufacturer takes all possible precautions when packaging this fixture to prevent damage. Carefully inspect the fixture, lamp holder and light bulb for damage and report all damage immediately. Do not assemble or operate if there is any damage, visible or suspected.
- UV-C Lightbulb is packed separately, to ensure maximum protection for the light. Keep the lightbulb aside and in package until ready for installation.
- Carefully inspect all packing materials to prevent the loss of accessories, mounting hardware, spare parts or instructions.
- Do not discard packing materials until unit is assembled and start up is complete.

## BEFORE YOU INSTALL

### **Important**

- Consult with a licensed electrician before installing the BOLT Clean Air System.
- Using a different lamp holder will damage the UV-C 36W lightbulb.
- Installation instructions are for standard drywall ceilings with a drywall thickness between 0.24” and 0.63” inches. For all other ceilings please consult a licensed professional.
- Each BOLT Clean Air System is designed to cover 600 sq. ft. Know your room dimensions to determine how many units you will need.

 **CAUTION**

- Follow the manufacturer's instructions for installation and safety. Check to see if you need a permit. Observe applicable building and electrical codes. Comply with all state and local building regulations. Contact a local licensed electrician if you have any doubts or questions about the connections or if your building or home's wiring does not appear compatible with the changes you are making.

**BOLT CLEAN AIR SYSTEM PLACEMENT**

When installing the BOLT Clean Air System, the unit should be mounted in a room with ceiling a minimum room height of nine (9) feet high from the floor. BOLT Fixture should mount flush to the ceiling in the center most part of the room avoiding any other obstructions.

**DO NOT Install BOLT Clean Air System in rooms with a ceiling height of less than 9 feet.**

**Turn Off Power**

At the electrical circuit box, turn off the power to the room you will be working in. Be sure to turn off the light switch as well.

 **IMPORTANT!**

- Be safe: Use a circuit tester or turn off the power to ensure that all the wires in the box are non-active, not live or not hot.

**BOLT CLEAN AIR SYSTEM INSTALLATION**

**Step 1: Prepare Location**

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Locate the electrical junction box in the center of ceiling. If there is not an electrical junction box, please contact a licensed electrician for installation. The face of the electrical box must be level and flush with the ceiling, to prevent damage of the UV-C lightbulb.



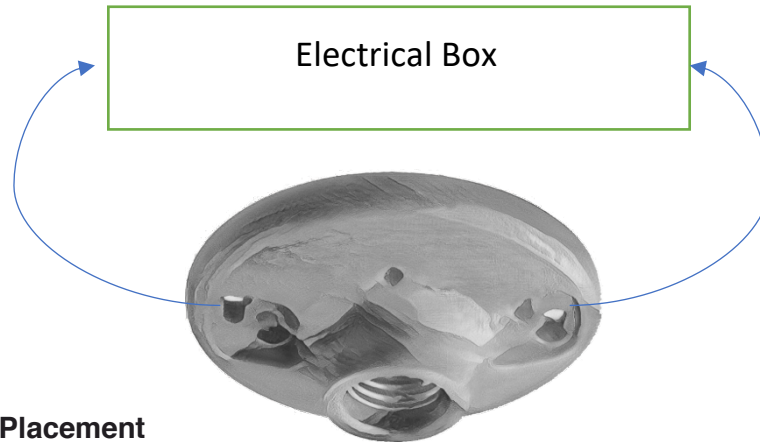
## Step 2: Install the Lampholder

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Install Lampholder per manufacturer instructions (included in the lampholder box).



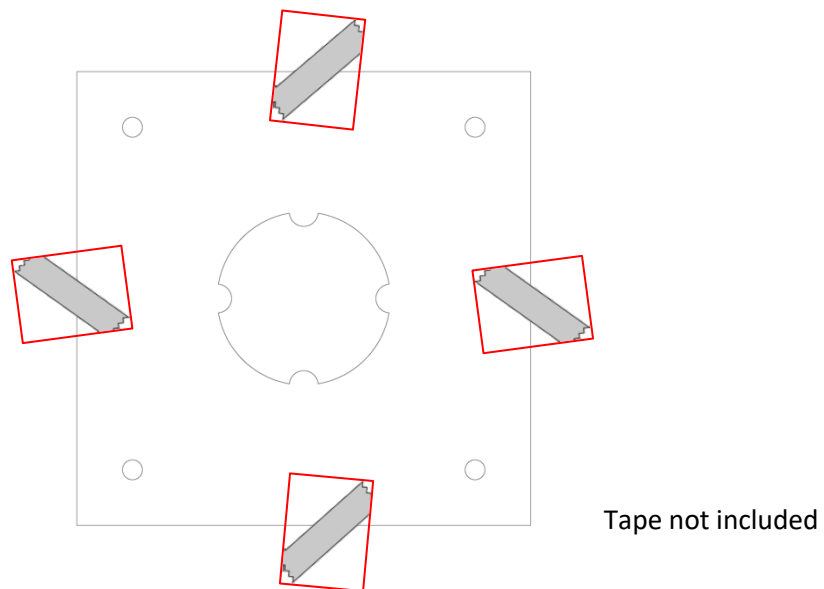
**WARNING:** Always disconnect power to the fixture before performing any services or maintenance.



## Step 3: BOLT Placement

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Using the mounting template, center the paper template over the lampholder. The four half circle tabs on the template will bend away from the ceiling at a 90-degree angle. When the template is centered with the lampholder, tape the template to the ceiling.



**IMPORTANT!** Verify that the (four) ½” inch holes in the template are not near any areas that will interfere with the anchors.

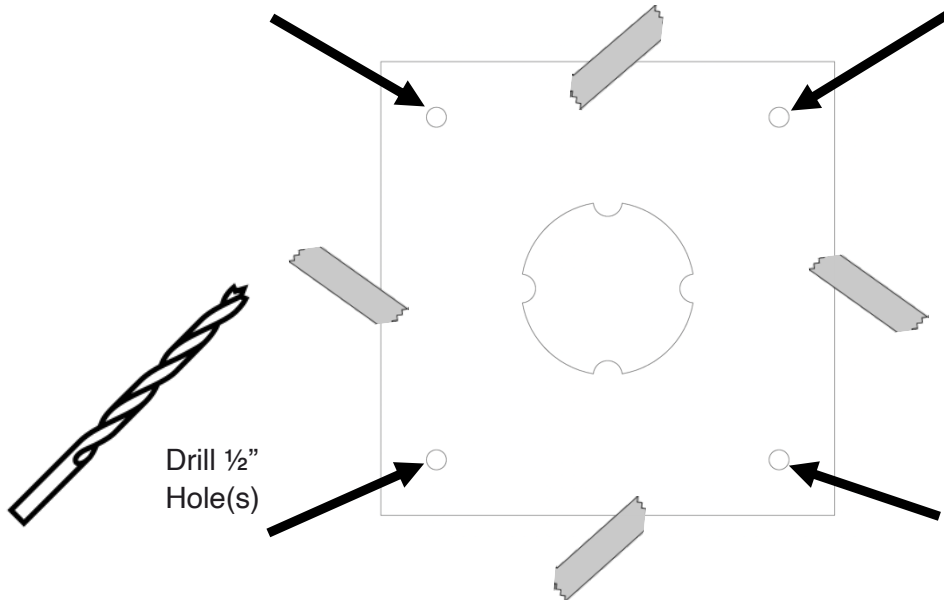
**IMPORTANT!** Take care to accurately drill the (four) ½” holes relative to the 4 holes on the template. (If the drilled holes are not accurately located, the attachment of the BOLT Fixture to the ceiling could be a problem.)

#### Step 4: Drill Pilot Holes

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Drill (four) 1/2" inch holes as indicated on the paper template.

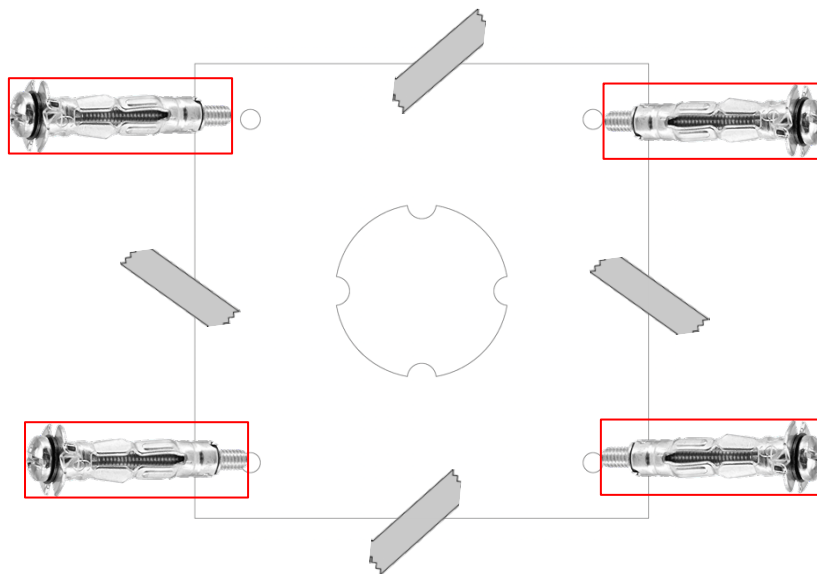
- Note: Accurately locate the holes on the paper template before drilling.
- Remove the paper mounting template after all four holes are drilled.



#### Step 5: Insert Anchors

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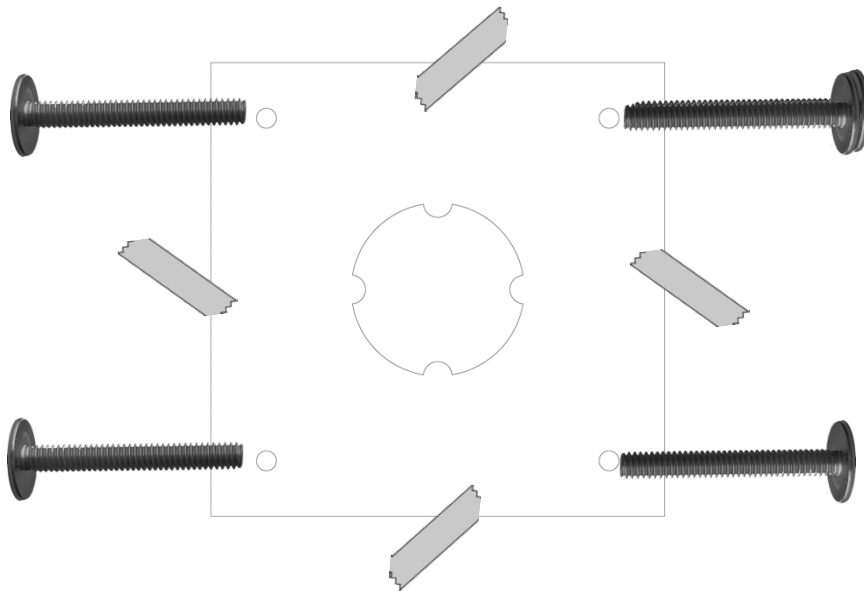
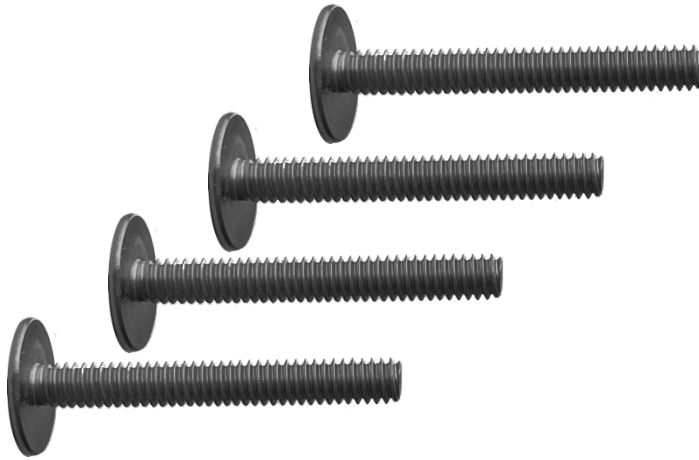
Screw-in all four anchors until each anchor has expanded completely. Once the anchors are expanded remove the screws leaving the anchors in place.



- **DISCARD THE ANCHOR ¼" SCREWS**



Replace Anchor Screws with Bolts. Screw-in all (four) ¼" **Bolt** into the anchors. Do not tighten bolts yet, leave a little room to slip the BOLT Fixture into place.



## Step 6: Screw in UV-C Lightbulb

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Wearing gloves, screw UV-C lightbulb into lampholder. Install lightbulb per manufacturer's instructions (included in the UV-C lightbulb box).

**IMPORTANT! DO NOT** hold UV-C Lightbulb by the 4 glass tubes. Hold the UV-C Lightbulb by the bulb base as you screw the bulb into the lampholder. (See manufacturer's instructions located in the bulb box.)



## Step 7: Fastening the BOLT Fixture

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Carefully center and slide BOLT Fixture over the UV-C lightbulb. Next, align the four large holes in the BOLT Fixture with the 4 bolts on the ceiling. Lift BOLT Fixture against ceiling. Hold BOLT Fixture against the ceiling and rotate the BOLT Fixture so the Bolts slip into the small slots. Lower the BOLT Fixture and allow it to rest on the heads of the bolts. Then **TIGHTEN ALL FOUR BOLTS** to secure the BOLT Fixture to the ceiling.

**MAKE SURE BOLT IS LEVEL TO THE FLOOR**

Flat 5" diameter surface

**IMPORTANT!** The flat 5" diameter surface must be level in both the north-south and east-west direction. If it is not, add shims between the ceiling and the BOLT Fixture near the bolts to make the flat 5" diameter surface level. (This is required for eye safety.) IF THE BOLT FIXTURE IS EVER REMOVED FROM THE CEILING THE ABOVE PROCESS OF LEVELING THE FLAT 5" DIAMETER SURFACE HAS TO BE DONE AGAIN.

## Step 8: Turn Power On

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Check to see that everything is working by turning the power on at the circuit board and flipping on the light switch.


## PRECAUTIONS

Immediately following initial Installation of the BOLT Clean Air System, the occupied area of the room should be surveyed with a UV-C Detector to ensure that the ultraviolet radiant exposure of personnel is within acceptable limits. Thereafter, this procedure should be repeated whenever any maintenance is performed, including lamp changes or whenever maintenance or repairs are performed in the vicinity of the fixture. In addition, procedures should be adopted to ensure that the fixture is powered off whenever personnel are working above the 6-foot level. Personnel who work in and around the treated area should be briefed on the benefits and the precautions to be observed.

## MAINTENANCE



Personal protection equipment, such as gloves, long sleeves- with no gaps between cuffs and gloves, and ultraviolet resistant face shield is **required** when entering the irradiated space with the germicidal lamp operating.


 **WARNING:** Always disconnect power to the unit before performing any services or maintenance.


- The UV-C Lightbulb in the BOLT Clean Air System is designed to operate with a minimal amount of maintenance. Occasional ultraviolet measurements **MUST** be made to ensure that germicidal ultraviolet intensities in the treated areas remain within the allowable exposure limits and above minimum levels.
- The UV-C Lightbulb used in this fixture has a manufacturer's rated average effective life of 8,000 hours. UV-C Lightbulbs may operate longer than the rated effective life, but the reduction in ultraviolet output will make it impractical to use past the manufacturer's rated life. For maximum efficiency lightbulb replacement is recommended every 8,000 hours of operation or about one (1) year of continuous use.
- Unless lightbulb replacement is due to failure or breakage, it is recommended that all lightbulbs be replaced at the same time.

#### **BOLT FIXTURE CLEANING and UV-C LIGHTBULB INSTALLATION or REPLACEMENT**



**BE SURE TO WEAR THE FOLLOWING SAFETY EQUIPMENT: SAFETY GLASSES OR A FACE SHIELD, AS WELL AS GLOVES.**

 **WARNING:** Always disconnect power to the fixture before performing any services or maintenance.

 **CAUTION:** UV-C lights are easily damaged and may cause injury if broken. Exercise care when handling.

1. Shut down power to the Unit and disconnect the fixture from the utility power source.
2. Open the BOLT Fixture, by loosening the 4 ceiling bolts by 4 revolutions.
3. Push the BOLT Fixture against the ceiling and then rotate the BOLT Fixture until the four bolts are centered with the four large holes in the base of the BOLT Fixture. Then gently lower the BOLT Fixture downward over the UV-V Lightbulb. Make sure the BOLT Fixture is below the UV-C Lightbulb before you move the BOLT Fixture sideways.
4. Place the BOLT Fixture on a tabletop.
5. If the BOLT Fixture needs cleaning, moisten a clean cloth to remove dirt and dust from between the louvers.
6. To remove the UV-C light use gloves to hold the lightbulb by the base and rotate the light counter clockwise from the porcelain lamp holder.
7. To install or replace the UV-C lightbulb do the following: Wearing gloves, hold the UV-C lightbulb by the base and rotate the bulb clockwise to screw it into the porcelain lampholder.
8. The flat 5" diameter surface must be level in both the north-south and east-west direction. If it is not, add shims between the ceiling and the BOLT Fixture near the bolts to make the flat 5" diameter surface level. (This is required for eye safety.)
9. Reconnect power to the fixture.
10. Verify operation by viewing BOLT Clean Air System, use of personal protection equipment required.



**WARNING:** Avoid exposure to direct or reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.

### DISPOSAL OF UV-C LIGHTBULB

Germicidal ultraviolet lamps, like standard fluorescent lamps contain small amounts of mercury. Mercury added lamps **should not be placed in the trash**. Dispose of properly. For further information regarding the disposal and recycling of lamps containing mercury, along with Federal and State requirements visit [www.lamprecycle.org](http://www.lamprecycle.org)

### REORDER UV-C LIGHTBULB

Sunset Healthcare Solutions

877-578-6738

<https://www.BOLTcleanair.com>

### CONTACT US

**BOLT Clean Air System**

[info@BOLTcleanair.com](mailto:info@BOLTcleanair.com) <https://www.BOLTcleanair.com>

### WARRANTY

It is the user's responsibility to determine and validate the suitability of this equipment for use in the user's system or process.

No warranty or representation is made by the manufacturer with respect to suitability or performance of this equipment or to the results that may be expected from its use.

The user should periodically inspect, clean as necessary and confirm the presence and good legibility of the product safety labels. Contact the factory for replacement labels in the event that any of the labels are missing or illegible.

The product comes with a 90 day warranty against manufacturer defects or damage.