

R-Zero Inc.
**Installation Standard Operating
Procedure**



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Safety Information

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

a) This equipment is designed for use with germicidal UV radiation sources and must be installed in compliance with competent technical directions to prevent risk of personal injury from UV radiation.

b) UV radiation can pose a risk of personal injury. Overexposure can result in damage to eyes and bare skin. To reduce the risk of overexposure this equipment must be installed in accordance with the manufacturer's site planning recommendations. This may include instructions on the relative location of each germicidal system component, the minimum distances between UV-generating devices and other objects or surfaces, and protection from line-of-sight exposure to UV radiation in occupied spaces located above the equipment mounting area (e. g. upper floor balconies, open staircases, etc.)

c) UV and optical radiation can be reflected by surrounding surfaces such as ceilings and walls. Since the reflective properties of surfaces can vary widely, it should be considered as part of site planning. Follow the manufacturer's recommendations for selecting appropriate ceiling and wall finishes.

d) IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT PERSONS WILL NOT BE EXPOSED TO EXCESSIVE UV OR OPTICAL RADIATION DURING EQUIPMENT OPERATION. THIS WILL REQUIRE THE INSTALLER TO CONDUCT AN ASSESSMENT OF IRRADIANCE OR ILLUMINANCE LEVELS IN THE SURROUNDING OCCUPIED SPACES PRIOR TO OCCUPANCY.

e) Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

f) Maintenance and servicing of this UV generating equipment shall be performed by authorized personnel. Service personnel must wear appropriate Personal Protective Equipment (PPE) if the equipment will be in operation during the maintenance or servicing work. Contact the equipment manufacturer for PPE recommendations and guidance.

g) When replacing lamps, replace them only with the lamps for which the equipment is marked and intended.

Note: Item g applies only to equipment with user-replaceable lamps.

h) The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.

i) Do not use this equipment for other than intended use.

SAVE THESE INSTRUCTIONS



rzero

▲WARNING

Do not enter the irradiance zone. Light can be harmful to bare skin and eyes. Can cause burns. Can cause temporary loss of vision. Do not look directly at the lights while illuminated without a protective barrier (such as glass).

▲WARNING

Risk of electric shock. Operating instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions. Always disconnect device power before any servicing or maintenance.

▲WARNING

To reduce the risk of electrical shock, the device has a grounding-type plug that has a third (grounding) pin. This plug will only fit into a grounding type power outlet. If the plug does not fit into the outlet, contact qualified personnel to install the proper outlet. Do not alter the plug in any way. Do not operate the device if the power cord and/or plug are damaged. Ensure Utility power supplied to the device matches power requirements listed on the label.

▲WARNING

Power supplied to the unit must match power requirements listed on the unit label.

▲CAUTION

Do not mount under any source of moisture or condensation, such as humidifiers, cooling coils, etc.

▲CAUTION

Dispose of LEDs in accordance with state and local laws.

▲CAUTION

Device must be installed by qualified professionals.

▲CAUTION

Germicidal ultraviolet rays may break down plants, plastic, rubber or other non-metallic materials with inadequate resistance to ultraviolet. Shield all such materials that may be exposed to direct or reflected germicidal ultraviolet rays.

▲CAUTION

It is the user's responsibility to determine the suitability of the device for use in the user's applications. R-Zero Systems does not guarantee performance or results from the device's use. The user should clean and inspect the device as required to maintain it in working order and confirm all labels are present. Contact the manufacturer as needed.

Do not remove any labels. Do not discard these instructions.



2.0 Beam Installation Procedure

2.1 Introduction

The objective of this procedure is to educate the end-user of how to mount a R-Zero Beam device. Note there are two commissioning processes post mounting the Beam. These include WiFi connectivity set-up and eye level safety which will be managed by R-Zero in the interim period.

2.2 Installation Tools Required

The following equipment is required to perform an installation successfully:

- Digital Angle Level
- Stud Finder
- Pencil
- 1/8" Drill Bit
- Power Drill
- Hammer
- Hex & Torque Set (Must Contain 2mm)

2.3 Bill of Material

The following material is required per single Beam installation:

- 1x Beam
- 1x Wall Mount Bracket (77 x 4 x 0.5)
- 1x 6ft cable with IEC C14 plug
- 1x 15ft cable with IEC C 14 plug
- 2x M3 Socket Head Cap Screw (used as a retention screw)
- 2x 8mm Thumb Screw
- 6 x Washer Head Pan Screw #10x2" Multi Material



2.4 Wall Mount Bracket Installation

The mounting bracket will be mounted on the wall using the following instructions:

- Bottom bracket slots will be a minimum of 7' from the floor. Special height guidance will be issued by R-Zero if otherwise required.
- Bracket edge must be a minimum of 4' from the nearest wall unless special guidance provided by R-Zero engineering. Bracket center from a known point in the room (mounting location) will be issued by R-Zero Engineering.
- Ensure bracket is level.
- For a standard wall mount, a minimum of 6 mounting points (three on top of bracket, three on bottom of bracket) wall studs or 25lbs/anchor drywall stud shall be required.
- Use a stud finder and locate all available wall studs that could be utilized.
- Use the horizontal slots on the bracket to find an appropriate mounting location that meets the specified wall position +/- 3" and allows for the six fastening points.
- Mark the center of each mounting point with a pencil. These will determine where the holes will be drilled.
- Remove the bracket from the wall. Drill holes in the wall using the previously mentioned marks.
- If using a drywall or concrete anchor, lightly tap anchors with a hammer until they are securely in place flush with the face of the wall, to the product spec.
- Position bracket to be mounted flush to the wall. Place screws provided into each anchor and tightened until they are firm to the face of the bracket.

2.5 Beam Device Mounting Installation

The Beam will be mounted onto the bracket using the following steps.

- Identify the two mounting slots on the back face of the Beam's housing device.
- Align these two mounting slots with the two hooks on the bracket.
- With two people, carefully slide the Beam device onto the mounting bracket, ensuring the device settles completely.
- Unscrew the two torc T-20 screws at the front of the baffle housing.
- Adjust the two thumb screws so that the top of the beam housing angle with the baffle open is 0.7° , +/- 0.3° .
- Measurements are verified using a lightweight digital angle finder so it does not deflect the sheetmetal of the housing or the baffle.
- Lock the device into place with a 3mm machine or allen head screw in the slot immediately next to the thumb screw, using an allen head screwdriver or bit to secure the beam to the mounting bracket.
- Close the bracket. Screw the two locking screws into place using a torx 20 screwdriver or bit to attach the front of the bracket to the back. When the baffle is closed, the housing should read 0.0° , +/- 0.3° . Baffle angle should be 9.5° on the far left and right sides, +/- 0.5° .



*When taking the final baffle measurement, place the angle finder and the base of the baffle where it connects to the housing, not the leading edge. Otherwise the weight of the angle finder will deflect the baffle. **See attached photo.***

2.6 Beam Start Up

- **SAFETY: Before the device is plugged into the power outlet, wear safety glasses or goggles until output readings are verified.**
- Plug the power cord into the IEC C14 socket on top of the device. The socket is a one-way directional connection so be sure the power supply is fully connected.
- Switch the power button to the on position. A yellow pulsing LED Indicator should appear as the device starts up.
- **SAFETY: Ensure no one is in the disinfection zone (area above the baffle of the device, extending out 40' from the device) when the device is powered on.**
- Move to the front of the device and confirm the LED indicator switches to a pulsing blue after approximately 10 seconds. This indicates the UV-LEDs are operating correctly



3.0 Maintenance

3.1 Introduction

3.2 LED Bulb Change

There are 4 LED bars in the device. All should be changed every 6800 hours. If you are subscribed to the dashboard and maintenance plans, you will be alerted when it is time to change the bars through the dashboard.

- Turn off power to the device by pressing the button on the bottom. Disconnect the device from power. Allow the device to cool for a minimum of 15 minutes.
- Open the front of the frame by removing the two torx T20 machine screws on the baffle. The fixture does not need to be removed from the wall.
- If replacing- ensure the LED is cool.
- Disconnect LED Bar power connector from board. Hold down the tab on one side to pull the connector (similar to an ethernet cable)
- Unscrew the mounting screws at each corner of the LED bar holder with a T8 Torx screwdriver or 2mm allen key. There are 4 screws per bar.
- Remove LED Bar. Return bars to R-Zero for recycling.
- Slide new LED bar into the empty spot.
- Screw each of the four corners to attach the bar to the holder.
- Connect the electrical connector to the board.
- Clean LED lens with an anti-static lens wipe.
- Close the baffle. Screw the two locking screws into place using a torx 20 screwdriver or bit to attach the front of the bracket to the back.
- Press the power button to turn the device back on.
- Move into the center of the room and confirm the LED indicator switches to blue. This indicates the LEDs are operating correctly