 **COILCARE<sup>®</sup>**  
**ENERGY**



*Harnessing Nature's Cleaner Power for  
Healthier Indoor Environments*



# **USER MANUAL**



**COILCARE<sup>®</sup> ENERGY**

**ENGLISH | ESPAÑOL | DEUTSCH | FRANÇAISE**

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# 01. INTRODUCTION

This user manual is produced to facilitate the safe and trouble-free operation of the Biozone Scientific CoilCare® Energy. The product is designed and manufactured in strict adherence to technical standards, incorporating cutting-edge technologies and quality components. Moreover, it is produced in complete compliance with the most rigorous quality standards.

To enhance the product's lifespan and ensure a safe and effective operation, you must follow the instructions outlined in this user manual and perform regular maintenance tasks. The technical data and specifications provided in this user manual are current, but it's important to note that the manufacturer retains the right to implement any necessary changes.

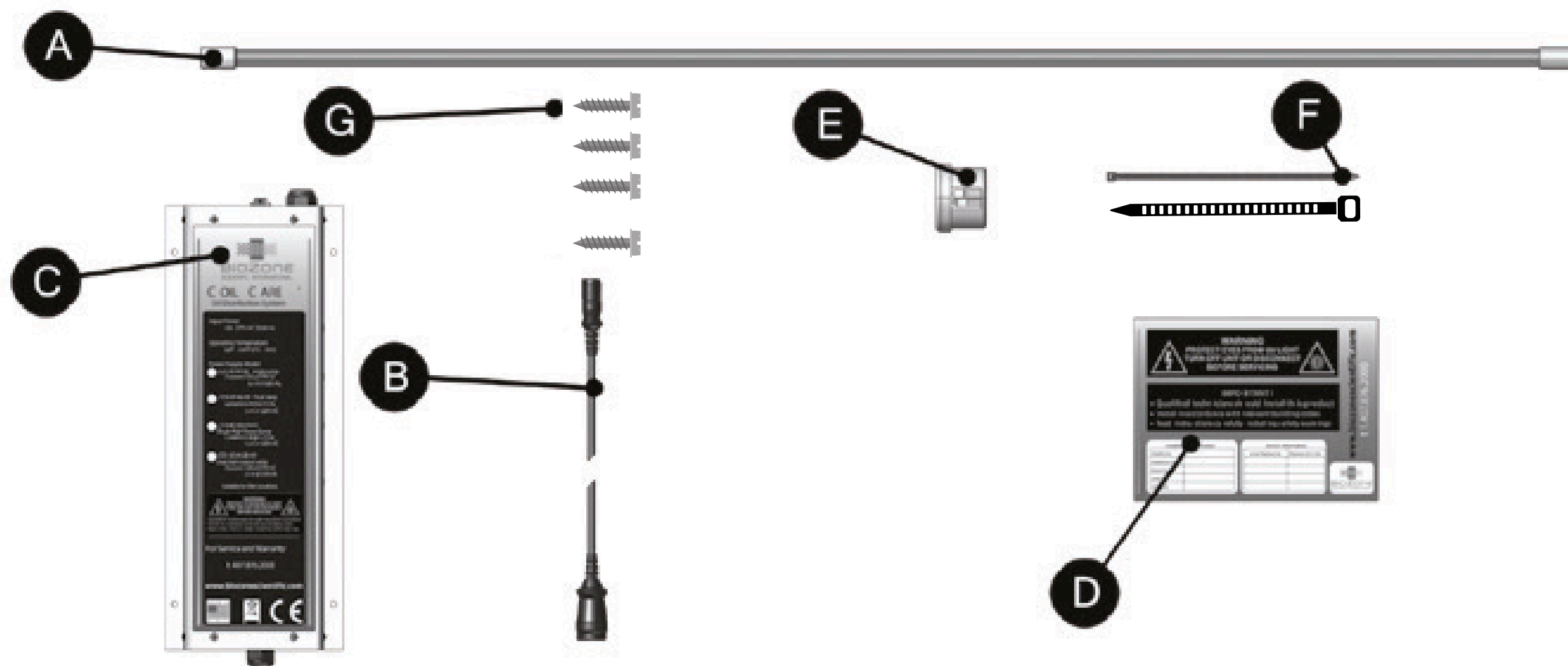


**CAUTION: DO NOT USE THE DEVICE UNLESS YOU HAVE THOROUGHLY READ AND UNDERSTOOD THIS USER MANUAL.**



**PLEASE NOTE:** The drawings in this manual are for illustration purposes only and may not perfectly match the actual product. The original operation manual is in English, and other languages are translated versions from the English original.

# 02. INCLUDED PARTS LIST



**A:** UV Lamp

**B:** Lamp Cable

**C:** Power Supply with 6ft (1.8m) power and status cabling

**D:** UV Warning Label

**E:** Sight Glass

**F:** Black Nylon Zip Ties

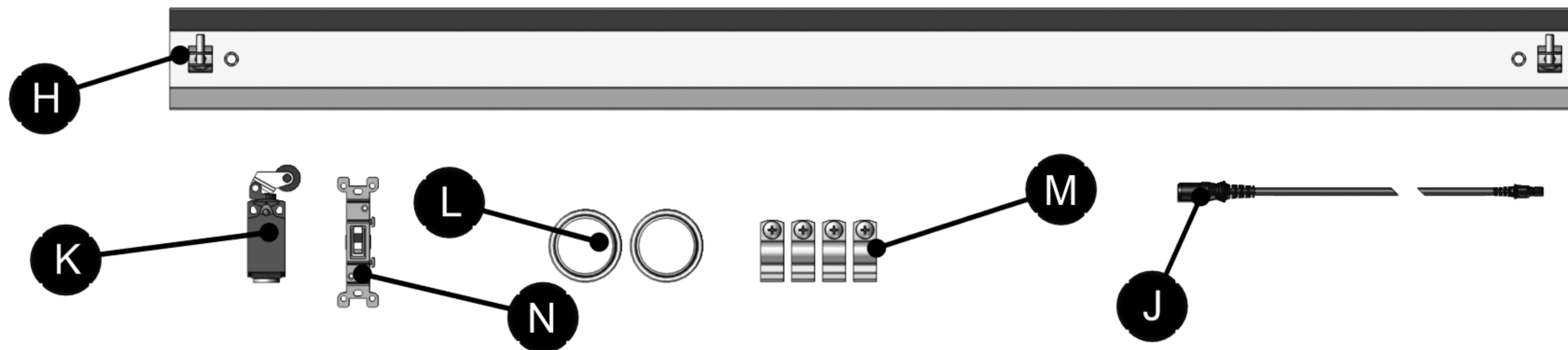
**G:** Mounting Screws



**WARNING**  
**STRONG MAGNETIC FIELD**  
**PLEASE USE WITH CAUTION**



# 02. OPTIONAL EXTRAS



## Available Accessories

**H:** UV Reflector

**J:** Lamp Cable Extension 10ft

**K:** Door Interlock Switch

**L:** Contact Plates

**M:** Lamp Clip Pack

**N:** Light Switch



**WARNING**  
**STRONG MAGNETIC FIELD**  
**PLEASE USE WITH CAUTION**





# 02. ALL PARTS AND EXTRAS

**1 UV LAMP**

**2 MOUNTING SCREWS**

**3 BLACK NYLON ZIP TIES**

**4 SIGHT GLASS**

**5 LAMP CABLE**

**6 LAMP CLIP PACK**

**7 UV WARNING LABEL**

**8 DOOR INTERLOCK SWITCH**

**9 POWER SUPPLY WITH 6FT (1.8M)**

**10 UV REFLECTOR**

**11 LIGHT SWITCH**

**12 CONTACT PLATES**

**WARNING**  
STRONG MAGNETIC FIELD  
PLEASE USE WITH CAUTION

**WARNING**  
**AVERTISSEMENT**

Protect eyes from UV light.  
Déconnectez l'appareil avant de réparer ou d'exposer la lampe.

Protéger les yeux des rayons ultraviolets.  
Débranchez l'appareil avant de réparer ou d'exposer la lampe.

Disconnect before maintenance.  
Déconnectez-vous avant la maintenance.

Installation Information		Service Information	
Installed by:		Lamp replaced by:	
Installation date:		Replacement date:	
Equipment ID:			
Lamp ID:			
Lamp QTY:			

# 03. DEVICE DESCRIPTION

The Biozone Scientific Coilcare® Energy is a highly effective disinfection system for commercial HVAC applications. Coilcare® Energy inactivates microorganisms and breaks down organic residue, preventing growth and keeping HVAC systems clean and operating smoothly.

Coilcare® Energy is the result of the extensive research and sustained product developments. Biozone Scientific has more than a decade of experience in designing and manufacturing its products.

Coilcare® Energy is highly effective and safe to use and fully complies with the criteria of the world’s most respected certification bodies. Certificates issued to this effect are listed in section 09, Warranty and Certifications section of this manual.

Every Coilcare® Energy unit has undergone a strict quality/control regime. However, if the unit malfunctions, follow the instructions in the troubleshooting section of this manual. If the problem persists, please contact your local distributor.

Biozone Scientific products are designed to be user-friendly with a high degree of functionality, ease of operation and simple installation. User feedback is important for the continuous development of our products.

We value your opinion and greatly appreciate your feedback, which you can send to: [info@bsg-uv.com](mailto:info@bsg-uv.com)



For more information, visit our home page at: [www.biozonescientific.com](http://www.biozonescientific.com) and discover:

- Biozone Scientific solutions for other applications such as garbage rooms, ice-machines etc.
- Contact information for importers and distributors

Biozone Scientific offers free UVCalc™ analysis to assist with system configuration and selection. Contact your Biozone Scientific commercial UV specialist for more information.

# 04. BIOZONE TECHNOLOGY - PHOTOPLASMA™

COILCARE® ENERGY features a series of high-output UV lamps strategically placed within the HVAC unit, specifically downstream of the cooling coils.

The primary purpose of COILCARE® ENERGY is to meticulously clean and disinfect the cooling coils, eliminating existing biofilm and inhibiting the formation of new deposits. This proactive approach helps maintain optimal system performance.

Biozone Scientific's advanced Photoplasma™ technology is designed to sustainably enhance indoor environments. It goes beyond conventional cleaning methods by harnessing combination of negative ions, hydroxyl radicals, singlet oxygen, ultraviolet light and ozone.

The elements of Photoplasma™ quickly and actively break down the structure of contaminants by a chain of reactions. Eventually the contaminants are decomposed and converted to harmless molecules such as carbon dioxide and water vapour.

In essence, Biozone Scientific's Photoplasma™ advanced technology brings the holistic benefits of the outdoors, where nature's cleansing mechanisms thrive, directly into our indoor spaces. It ensures a sustainably enhanced, healthier, and more refreshing living environment.



# 05. INSTALLATION

To ensure the safety of the user, people in the area, and/or animals; follow these instructions carefully and observe all warnings.



**ATTENTION! INSTALLATION MUST BE CARRIED OUT BY A MAINTENANCE MECHANIC OR APPROPRIATELY QUALIFIED PERSONS ONLY.**

## BEFORE INSTALLATION

Inspect the device for damage that may have occurred during transportation. If the unit has been damaged, do not connect it to the power supply or try to use it otherwise. In the event of damage, immediately inform the dispatcher or retailer. Check that the aforementioned components are included in the package (some are inside the device). In the event that something is missing, contact your supplier.

## INSTALLATION LOCATION

CoilCare® Energy features a series of high-output UV lamps strategically placed within the HVAC unit, specifically downstream of the cooling coils. This placement ensures optimal exposure for effective cleaning and disinfection.

## RECOMMENDED TOOLS

- #2 Phillips screw driver (#8 screws for lamp clip attachment).
- 11/32" socket or wrench (#8 nylon locknuts for lamp clip attachment).
- Drill.
- 1/4" socket (#8 sheet metal screws for power supply mounting).
- 1/2" hole saw (viewport installation hole).

## COMPONENTS

- Metallic lamp framework at installer's discretion. Example: channel strut, EMT or IMC conduit.
- Electrical junction boxes, cable glands, etc as needed.

**BIOZONE SCIENTIFIC OFFERS FREE UV-CALC™ ANALYSIS TO ASSIST WITH SYSTEM CONFIGURATION AND SELECTION. CONTACT YOUR BIOZONE SCIENTIFIC COMMERCIAL UV SPECIALIST FOR MORE INFORMATION.**

# 05. INSTALLATION

## LAMP FRAMEWORK

- Lamp clips should be attached to framework so clip centers are spaces 1.5" [38mm] less than the lamp length.
- Lamp should be equally distributed on the framework.

### Example AHU

Dimensions (H x W x D): 12" x 30" x 18" [300 x 750 x 450mm].

Specified UV Lamps: 2x24" [610mm] UV lamps.

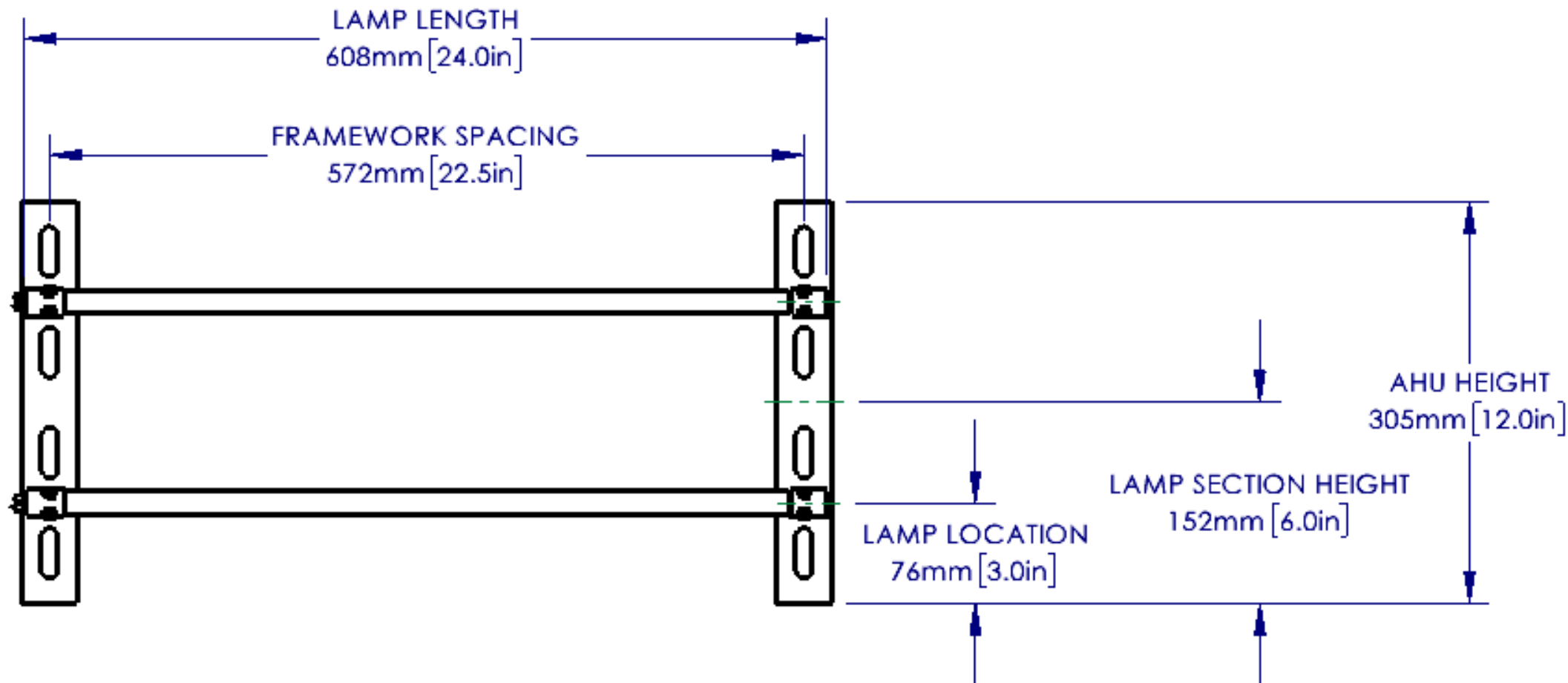
Install framework at midpoint of depth:  $18" / 2 = 9"$  [450mm / 2 = **225mm**].

Framework post spacing:  $24" - 1.5" = 22.5"$  [610mm - 38mm = **572mm**].

Divide the height by lamp quantity:  $12"/2 = 6"$  [300mm / 2 = 150mm] section height.

Place UV lamps at midpoint of each section: **3"** and **9"** [**75mm** and **225mm**].

**NOTE: Recommended lamp placement location is provided as part of a Biozone Scientific UVCalc analysis report.**



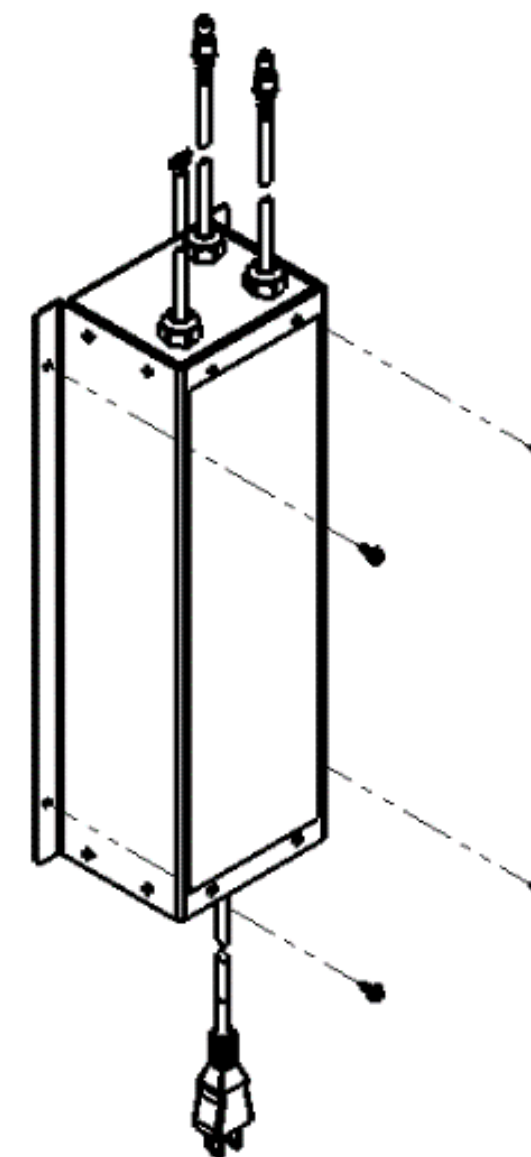


# 05. INSTALLATION

## POWER SUPPLY

The power supply is IP 54 water resistant and is suitable for mounting to the interior or exterior of the air handler. The power supply is not weather proof and should not be mounted outdoors without adequate protection.

- Fasten power supply to AHU with 4x sheet metal screws
  1. *Interior (recommended) – lamp connections can be made without pass through; power and dry contact connections can be run to junction boxes.*
  2. *Exterior – lamp connectors (diameter 0.75" / 19mm) must pass through to AHU interior. Method of pass-through at installer's discretion. Power and dry contact run to junction boxes.*
- Lamp cabling is 10ft [3m]; available extensions (optional) are also 10ft [3m].
- Route cabling, zip ties secure cables to frame. When possible, cabling should be routed on opposite side of framework from lamps to reduce total UV exposure.



**POWER SUPPLY IS NOT FIELD SERVICEABLE.  
DO NOT OPEN POWER SUPPLY ENCLOSURE OR  
INGRESS PROTECTION WILL BE COMPROMISED.**

# 05. INSTALLATION

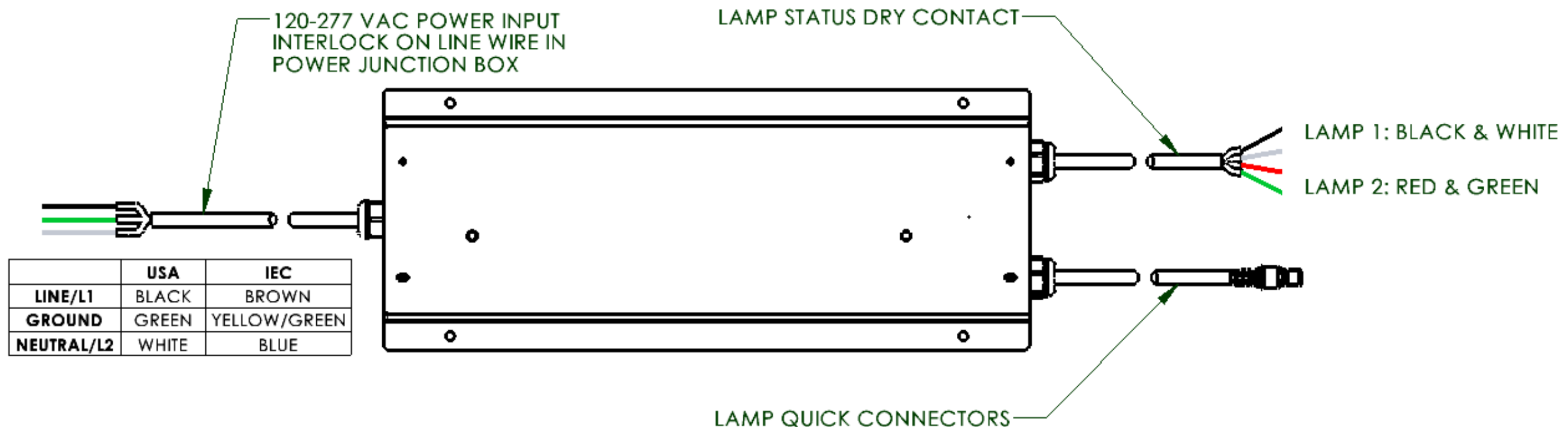
## ELECTRICAL: POWER

Connect the power cable to 120-277 VAC single phase electrical power. Alternatively, two legs of a 3 phase source may be used if the total voltage difference is within the above rating. Conductor colours may vary according to the diagram depending on intended region for sale.

- 120-277 VAC, 50/60 Hz, Single Phase.
- Line – Black (USA) or Brown (IEC).
- Ground – Green (USA) or Green/Yellow (IEC).
- Neutral – White (USA) or Blue (IEC).
- Interlock switch wired on the NO contacts to disconnect Line power when AHU access panel is removed.
- If multiple power supplies are used on one AHU, the switch should be wired to interrupt voltage supply prior to distribution to power supplies so all lamps are turned off.
- Max Current Consumption: 1.16A per lamp @ 120VAC; 0.51A per lamp @ 277VAC.
- If lamp quantity power requirement exceeds current rating of switch, then multiple switches will be needed.



**IMPORTANT!** Connect in accordance with all state and local electrical and building codes. If power surges occur often, it is suggested that you use an external power suppressor.



# 05. INSTALLATION

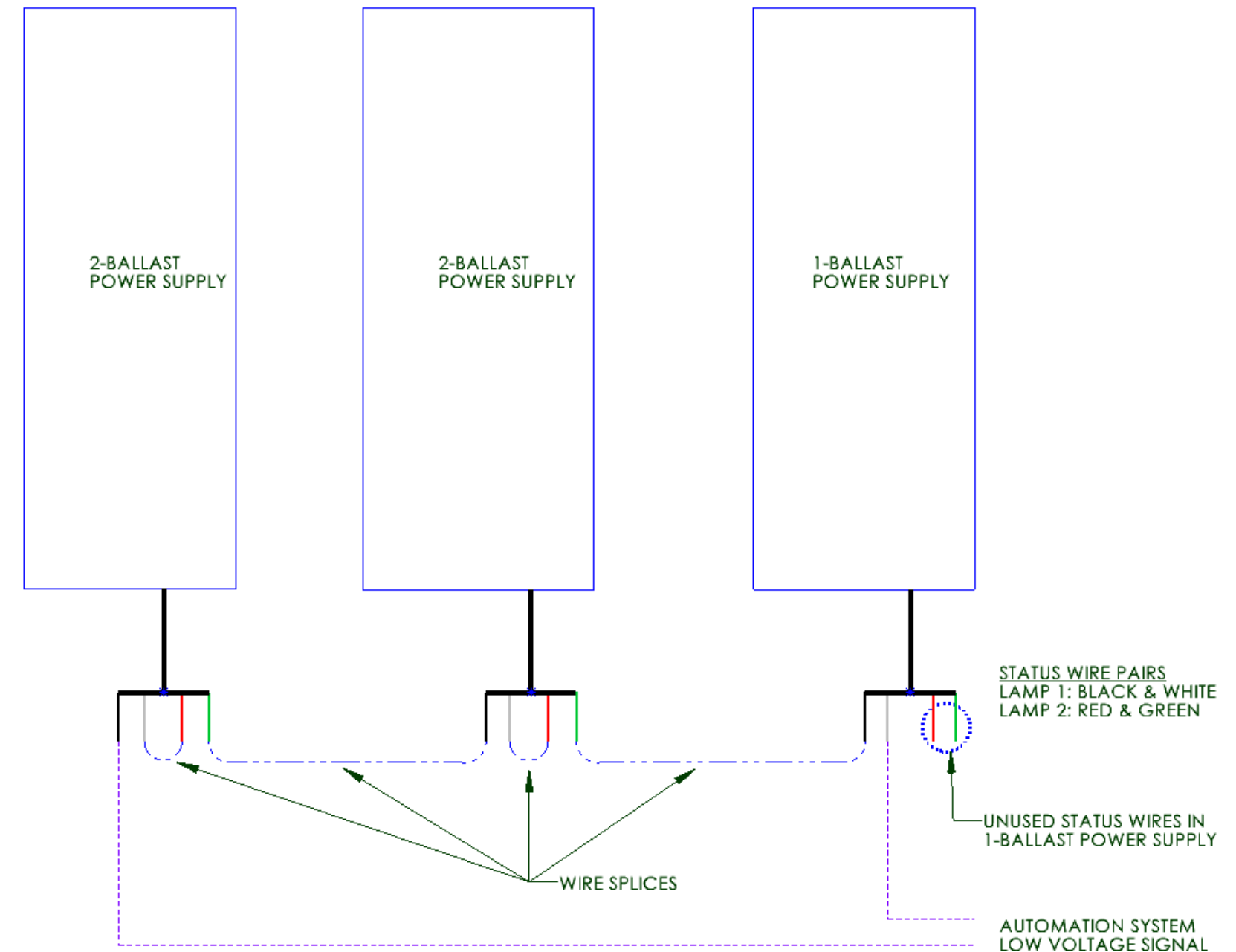
## ELECTRICAL: POWER

### Dry Contact (Optional)

Dry contact provides status of each lamp. If circuit is closed, lamp is on. If circuit is open, lamp is not on.

When connecting to an external power source, the maximum load through dry contact: 60V, 0.5A

- Lamp 1 – white & black wires
- Lamp 2 – red & green wires





# 05. INSTALLATION

## ELECTRICAL: INTERLOCK SWITCH



**IMPORTANT!** Switch is rated to 10A, 300VAC. If lamp quantity exceeds 6 (120VAC) or 12 (277VAC), then multiple switches or a higher rated switch must be used.

An interlock switch (BioZone Part Number: CCX-KT-DS) is required to prevent accidental exposure to UV light if the panel/door is opened. If multiple power supplies are used on one AHU, the switch should be wired to interrupt electrical to all power supplies.



Electrical Rating	300VAC, 10A (AC-15 A300)
Connection	M12 Cable Gland
Sealing	IP 67
Operating Temperature	-20-70°C [14-176°F]
Operating Toque	0.34Nm [1.59 in-lb]
Pretravel	25°
Overtravel	70°
Differential Travel	15°

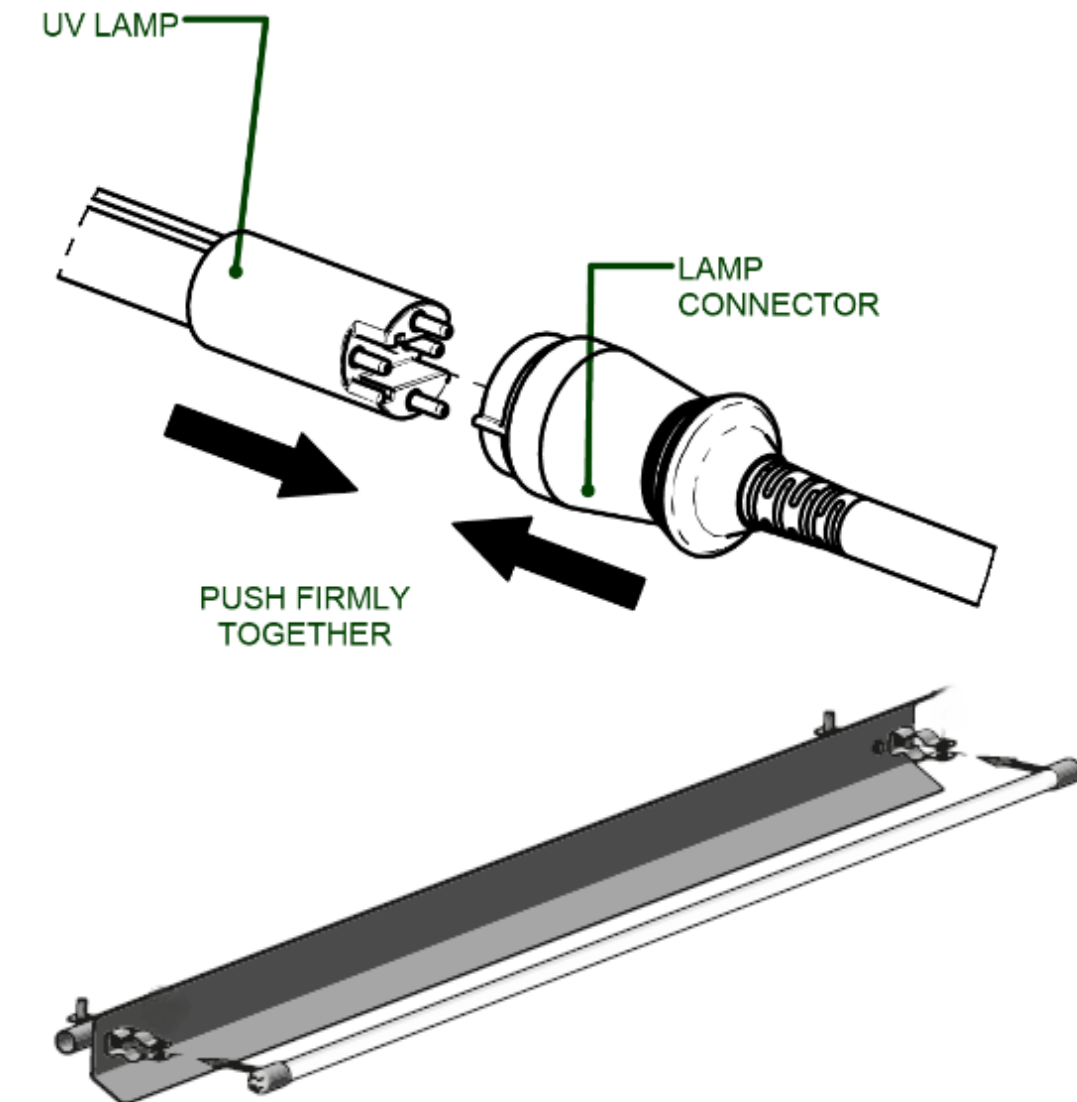
# 05. INSTALLATION

## INSTALL THE UV LAMPS

1. Attach the lamp connector cable(s) to the UV lamps by aligning electrical pins and pushing them firmly together.
2. Press UV lamps into the lamp clips inside reflector (Reflector is available as an optional accessory).  
Clips should only be attached to ceramic lamp bases at each end. Use black nylon zip-ties to secure lamp cables to supports as needed.

### NOTE:

- When handling lamps make sure that you are wearing gloves or only touch the ceramic ends.
- Do not touch the lamp glass with bare hands as skin oils can degrade lamp performance.
- The use of gloves is recommended when handling UV lamps.
- Wipe UV lamp with isopropyl alcohol as needed to clean glass.



**DO NOT** clamp onto the lamp glass.

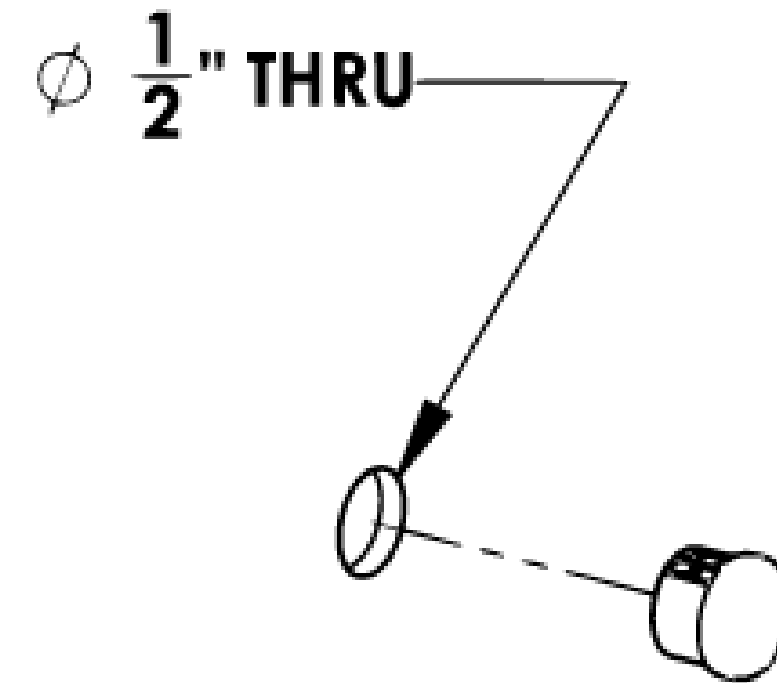
# 05. INSTALLATION

## INSTALL SIGHT GLASS

The sight glass allows safe viewing of the UV light system when in operation to verify system operational status.

Find a suitable location such as a door or access panel to the HVAC system for the sight glass.

Drill a 1/2" hole and press the sight glass into the hole until it snaps in place.



# 06. OPERATION AND MAINTENANCE

## POWERING UP THE SYSTEM

**Caution:** UV light can cause serious eye burns and temporary blindness. Ensure all access panels have been replaced and doors closed before activating the system. Turn on the electrical supply. Use the sight glass to confirm that the UV lamp is operating.



**WARNING**  
**PROTECT EYES FROM UV LIGHT**  
**TURN OFF UNIT OR DISCONNECT**  
**BEFORE SERVICING**

## MAINTENANCE

As needed, periodically wipe the UV lamps with a clean cloth or alcohol swab to remove any accumulated dust or dirt.

This process should be performed at least every six months or during routine maintenance intervals.

Lamp fouling could occur if lamps are installed under chilled water lines. Wipe clean or install an optional shield.

Use of replacement lamps from other manufacturers **will cause system failure** and will immediately void the system warranty.

# 07. LAMP CLEANING AND REPLACEMENT



**ATTENTION:** Avoid touching the glass portion of the lamps with bare fingers. Use gloves or a cloth to handle the lamps. If the glass is touched, use isopropyl alcohol to wipe the glass surface clean.

1. **Disconnect the power supply.**
2. **Allow 10 minutes for the lamps to cool.**
3. **Unplug the lamp connectors from the lamps.**
4. **Remove the lamps from the lamp clips.**
5. **Wipe the lamps with alcohol to clean the glass surface.**
6. **Place the cleaned lamp or new lamp into the lamp clips.**
7. **Connect the lamp connector observing the correct orientation of the pins.**
8. **Reconnect the power supply.**



## **IMPORTANT!**

**Use only authentic Biozone Scientific replacement lamps.**

**Use of replacement lamps from other manufacturers will immediately void the system warranty and affect performance of the system.**

Part Number	Part Details
10-H64000-P	1554mm [61"] lamp High Output
10-H48000-P	1148mm [645"] lamp High Output
10-H36000-P	842mm [33"] lamp High Output
10-H24000-P	610mm [24"] lamp High Output
10-H18000-P	457mm [18"] lamp High Output

**Disposing of the lamps according to local hazardous waste disposal laws. The lamps are disposed of at the same facilities as household fluorescent bulbs or compact fluorescent lamp bulbs. The lamps contain mercury.**

Biozone Scientific high output lamps are rated for 16000 hours (~2 years) of germicidal effectiveness in Coilcare® Energy systems.

The lamps will continue to illuminate with a blue glow after they have exceeded their rated lifespan, however their germ-killing effectiveness diminishes with time, so they must be replaced on schedule for the system to function properly.

Contact your local supplier for replacement lamps.

# 08. TROUBLESHOOTING



**ATTENTION:** Servicing Coilcare® Energy requires a qualified maintenance professional. Disconnect power before cleaning or servicing the Coilcare® Energy.

ISSUE	CHECK
<p>Lamp(s) not lit</p>	<ul style="list-style-type: none"> <li>• Electrical and lamp cable connections.</li> <li>• Power is applied to power supply.</li> <li>• The unit is turned ON.</li> <li>• Install new UV lamp(s).</li> </ul>
<p>Lamp(s) flickering</p>	<ul style="list-style-type: none"> <li>• lamp connectors to ensure proper connections.</li> <li>• lamp(s) have reached end of effective service life. Install new lamp(s) of same type.</li> </ul>
<p>Power supply will not light UV lamp(s) even after new lamps are installed</p>	<ul style="list-style-type: none"> <li>• If power surges occur, an external power suppressor may be needed.</li> </ul>

# 09. WARRANTY AND CERTIFICATIONS

## WARRANTY

Biozone Scientific provides a standard 1-year warranty on its products. Warranty coverage starts from the date of purchase.

## WARRANTY CONDITIONS

- The appliance is guaranteed against defects in material and workmanship under normal use and appropriate voltage for one year from the purchase date.
- Warranty does not apply to any appliance that has been tampered with, altered, subjected to misuse, abnormal voltage input, power interruption, electric shock, negligence, accident, force majeure, or if the serial number has been altered, effaced, or removed.
- Failures due to improper or unreasonable usage, maintenance, accident, improper packing, unauthorised tampering, alteration, or modification will not be covered under warranty as determined by Biozone Scientific.
- Any unsanctioned repairs of the interior or exterior finish of the casing, control plate, knobs, accessories, or consumable parts will void warranty.
- Replacement lamps are excluded from warranty coverage; Biozone Scientific lamps are covered by a 1-year prorated warranty.
- Any repairs or replacements of defective parts by Biozone Scientific will be covered under warranty.
- Transportation or shipping costs to or from the repair facilities are not covered under warranty.
- Warranty is valid only when using Biozone Scientific replacement lamps and parts.
- Biozone Scientific engineers will determine whether the product will be repaired or replaced at their sole discretion.



# 09. WARRANTY AND CERTIFICATIONS

## WARRANTY

Please note that this warranty supersedes any other written warranty, whether expressed or implied, written or oral, including a warranty of merchantability or fitness for a particular purpose. The manufacturer's maximum liability shall not exceed the actual purchase price paid for the product. Additionally, the warranty will be considered void if the label bearing the serial number has been removed or defaced.

## WARRANTY RETURN PROCESS

1. Contact your supplier for specific return instructions and to receive your RMA (Return to Manufacturer Authorisation) number. Any return not labelled with an RMA number will be systematically refused.
2. Pack the product in its original box and in the same manner you received it or as similar as possible. Label the outside of the box with your RMA number.

3. Return the product with proof of purchase. Any return not including a proof a purchase will be systematically refused.
4. Label and ship the unit, freight prepaid to the address provided with your RMA number.

## CERTIFICATIONS

# RoHS





# 11. SAFETY GUIDELINES

## CONDITIONS OF USE

### USAGE SAFETY



**CAUTION:** Carefully read all safety warnings and instructions. Failing to adhere to these warnings and instructions may result in severe injury or, in extreme cases, even death.

In the following safety warnings and instructions, the terms "device" or "product" refer to the Oil & Grease Removal.

### ELECTRICAL SAFETY

- Refrain locating enclosures such that they are touching grounded elements such as pipes, heaters, boilers, and refrigerators. There is a higher risk of electric shock if the grounded device is exposed to rain, comes into direct contact with a wet surface, or operates in a moist environment. Water getting into the device drastically increases the risk of device damage and electric shock.
- Do not touch the device with wet or damp hands.
- Use cables solely for their intended purpose. Never use cables to transport the device. Ensure the cable remains clear of fire, sharp objects, or moving components.
- Compromised or tangled cables heighten the potential for electric shock.

- If you find yourself using the device in a damp environment as an unavoidable necessity, it is advisable to incorporate a residual current device (RCD). The use of an RCD significantly diminishes the risk of electric shock.
- Do not operate the device if the cables exhibit damage or display signs of wear. A cable should be replaced by a qualified electrician.
- To prevent the risk of electric shock, avoid submerging the device itself in water or any other liquids. Likewise, do not use the device on wet surfaces.
- Take precautions to shield the enclosures from moisture, as exposure may lead to an elevated risk of electric shock.

### SAFETY IN THE WORKPLACE

- Ensure that your workspace is clean and well-lit. A cluttered or poorly lit workspace can increase the risk of accidents. Exercise foresight, pay attention to ongoing activities, and apply common sense when operating the device.
- If you come across any damage or irregular operation, promptly turn off the device and report the issue to a supervisor without delay.
- If there are any uncertainties regarding the correct operation of the device, contact the manufacturer's support service for guidance.
- Only the manufacturer's authorised service point should undertake repairs on the device. Do not attempt any repairs on your own.
- In the event of a fire, use a powder or carbon dioxide (CO<sub>2</sub>) fire extinguisher designed for use on live electrical devices to extinguish it.

# 11. SAFETY GUIDELINES

- Please retain this manual's **QR code** for future reference. If you transfer the device to a third party, ensure the QR code is passed on along with it.
- Keep the device out of reach of children and animals.

## **PERSONAL SAFETY**

- Do not operate the device when tired, unwell, or under the influence of alcohol, narcotics, or medications that could significantly impair your ability to use the device safely.
- The device is not intended for use by individuals, including children, with limited cognitive and sensory capabilities, or by those lacking relevant experience and knowledge, unless they are under the supervision of someone responsible for their safety or have received proper instruction on device operation.
- Only physically fit individuals, who have received appropriate training, are familiar with this manual, and have been educated in occupational health and safety, should handle the device.
- While working with the device, exercise common sense and remain vigilant. Lapses in concentration during device operation can result in injury.
- To prevent accidental activation of the device, ensure that the switch is set to the OFF position before connecting it to a power source.
- The device is not a toy. Children must be supervised to prevent them from engaging in play with the device.

## **USE GUIDELINES**

The device is designed to clean cooker hoods and ducts. The user is liable for any damage resulting from unintended use of the device.

# 11. SAFETY GUIDELINES

## SAFE DEVICE USE

- Do not use the device if the ON/OFF button or display panel malfunctions.
- Ensure the power is disconnected before making any adjustments or replacing consumables. These precautions minimize the risk of unintentionally activating the device.
- Do not allow children or individuals who are unfamiliar with the device and have not read the user manual near the device. Inexperienced users can pose a safety risk when handling the device.
- Maintain the device in good condition. Before each use, inspect it for any general damage, with particular attention to cracked parts or elements, as well as any other issues that might affect safe operation. If damage is detected, send the device for repair before using it.
- Keep the device out of reach of children.
- Device repairs or maintenance should only be carried out by qualified individuals using original spare parts to ensure safe usage.
- To preserve the device's operational integrity, avoid removing factory-fitted guards and refrain from loosening any screws.
- When transporting and handling the device from the warehouse or storage to the destination of use, adhere to the occupational health and safety guidelines applicable in the country where the device will be used.
- Do not move, adjust, or rotate the device while in operation.
- Regularly clean the device to prevent the buildup of stubborn grime.
- The device is not a toy, and children should not perform cleaning and maintenance tasks without supervision from an adult.
- If any treated room has a suspected residual Photoplasma™ level higher than normal level, leave the room and wait 20 minutes.
- It is prohibited to modify the device's structure to alter its parameters or construction.
- Keep the enclosures and cables away from sources of fire and heat.
- Do not overload the device.
- Individuals with impaired sense of smell should refrain from using the device.
- Before turning on the device, ensure there is sufficient open space around it.
- Under no circumstances should you directly inhale Photoplasma™ emitted from the lamps. Inhaling high concentrations of Photoplasma™ over a short period or low concentrations of Photoplasma™ over an extended duration may pose serious health risks or even be life-threatening.
- Do not use the equipment for therapeutic purposes.
- Do not look at Photoplasma™ lamps when lit ; UV light may damage eyes.
- No UV light should leak out of the system when installed. Overexposure to UV radiation can lead to serious health issues.
- If respiratory, eye, nose and throat irritation, shortness of breath, chest pain or coughing is experienced, seek fresh air immediately. Seek medical attention if necessary. Disconnect power from device and please contact your doctor.



**ATTENTION! Despite the safe design of the device and its protective features, and despite the use of additional elements protecting the operator, there is still a minor risk of accident or injury when using the device. Stay alert and use common sense when using the device.**