

## MUONIO UV-O UVC Surface/Air Disinfectant Unit

People spend 90% of their time indoors but indoor air quality is 2-5 times worse than outdoor air quality. Many diseases are transmitted through poor indoor air quality or unsterilized surface areas (viruses, bacteria, moulds are all found indoors on surfaces and in the air).

UVC treatment is an environmentally friendly and chemical-free method of sterilizing surfaces and air that does not produce harmful byproducts during sterilization.

MUONIO UV-O systems operate safely on a timed or constant demand basis to disinfect the air and all surfaces exposed to the UV-O unit. The UV-O has a built in motion sensor which will switch the unit off if activated thus minimizing the risk of injury.

The unit uses well established UVC radiation which has been utilized extensively in medical, food preparation and other professions for more than 90 years to disinfect the air, surfaces and to help mitigate the risk of contracting and spreading an infection.

All bacteria and viruses tested to date (including various coronaviruses) respond to UVC disinfection.

MUONIO UV-O purification system is particularly suitable for office areas, hospitality, hospitals, retail sector and many more.

The UV-O disinfectant device is part of a broader system range that combines

# Introduction



This manual gives a detailed understanding of how to mount, wire, set up, and operate the Muonio UV-O device.

The Muonio UV-O can operate in combination with other MUONIO devices or as a stand-alone unit.

For optimum system operating results, the device should be installed and sized correctly.

## WARNING INFORMATION



This Operating Manual contains fundamental and essential advice to be followed for the installation, operation and servicing of the Unit. It must be read without fail before installation and use of the device by the fitter, the operator and the specialist personnel responsible for the device.



DANGER

The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed. Obey all safety messages that follow this symbol to avoid possible injury or death.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. IMPORTANT! Disregard will lead to permanent equipment damage!



When in operation the product will emit UV-C radiation. UV-C radiation is invisible to humans and exposure to UVC radiation may cause serious damage to eyes and skin.

The bulb contain a small amount of mercury which can be poisonous at certain concentrations. In case of actual or suspected damage to the bulb, immediately ventilate and leave the room until it is ventilated;



INFORMATION indicates an explanation containing information that is useful to know, a supplementary operating procedure, or other data. The Information symbol is used to address practices not related to physical injury and to indicate where

## IMPORTANT



DANGER

ONLY use 0.5 mm<sup>2</sup> to 1.5 mm<sup>2</sup> wiring cable when connecting to the UVO.



DANGER

Wiring external to the printed circuit board MUST be in accordance with current statutory wiring regulations and any local regulations that apply.



DANGER

The power supply must be 230 V~, 50/60 Hz, Single Phase. Attaching the Mounio UVO board to more than one phase will cause irreparable damage.



DANGER

To ensure single phase connection, we recommend that power be introduced only at the mains input terminals and that all other power inputs be derived from suitable outputs on the board itself.



DANGER

Devices attached to the UV-O MUST be properly earthed in accordance with the manufacturer's specifications. The method of connection to the mains electricity supply MUST facilitate the complete electrical isolation of the entire installation.



DANGER

A designated fused double pole isolation switch, with at least 3 mm (1/8") contact separation in both poles is required, to power the Muonio UV-O. The point of connection to the mains (Isolator) should be readily accessible and, if possible, adjacent to the UV-O device.

# Introduction



UVC radiation has sanitizing properties and has many uses in commercial, healthcare, and consumer settings. UVC has germicidal benefits, depending on the exposure dosage (based on strength, proximity and time). However, there are serious risks to UVC exposure, so safety precautions are essential.

## WARNING

The product as described herein contains components that emit UVC light. Immediate or prolonged exposure to UVC light can result in painful injury, such as eye injury, skin burns, premature skin aging or skin cancer.

Do not use the product before carefully reading this manual. Always keep this manual with the product and consult it regularly.

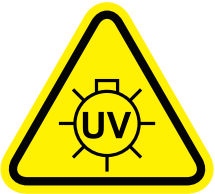
Avoid direct or indirect UVC lighting on eyes or skin for both humans and animals. Avoid exposure to direct or reflected UVC light.

Installation location should be selected to prevent exposure of humans, animals and vulnerable components to the UVC light.

Place warning signs near all access panels or doors to a space containing the Product.

## INFORMATION FOR ENABLING UNIT:

Make sure the enable switch is not accessible to someone that could potentially start the unit without being trained and/or approved to operate the unit.



## TECHNICAL DATA

### COMPLIANCE

This product must be installed by a fully qualified, competent person, registered with a supervisory trade body. The installation must comply with the guidance, standards and regulations applicable to the country or state where the product is being installed. Failure to comply with the requirements of the relevant guidance, standards and regulations could lead to injury, death or prosecution.

Do not operate the UV-O in the Presence of people or animals unless the correct safety equipment / clothing is used.

### Technical Data

The UV-O is a UVC disinfection device that makes surrounding surfaces and air cleaner/healthier by significantly reducing the risk of surface and airborne infections.

When operated, it works towards eliminating Viruses, Bacteria & Fungi, Including SARS, Coronaviruses and mould, by exposing the micro-organisms on surfaces and in the air to the UVC light.

The UVC light kills or inactivates any treated microbes by damaging their deoxyribonucleic acid (DNA).

The UV-O does not generate any harmful by-products such as ozone.

The UV-O is effective against all kinds of odours and harmful VOC - Volatile Organic Compounds.

The UV-O can operate by local switching or timed control.

### Technical Information

#### MUONIO UVO

Terminals	0.5 mm <sup>2</sup> To 1.5 mm <sup>2</sup>
Dimensions	107 X 100 X 1201mm
Mountable	Bracket, Horizontal Or Vertical
Weigh	8 Kg
Fused Power Supply	230 Vac ~, 50 Hz, Single Phase
Power Supply	0.41 A
Fuse	5 Amp, Medium Burn
Wireless Frequency	2.4 Ghz With External Antenna (only for App controlled device)
Enclosure Rating	Ip20
Hardware Version	1.0
Humidity/Temperature	non condensing / 10 - 40 degC

### Content In The Box

UV-O

Bracket

55 W Phillips UVC Lamp(s) (Not Installed)

User Manual

### Ordering Information

UV-O 55 (1 X 55 W Phillips Uv-C Lamp)

UV-O 110 (2 X 55 W Phillips Uv-C Lamp)

Tested To Standard:

En 13098:2019 Measurement of Airborne Microorganisms and Microbial Compounds

# LOCATING THE UNIT



Always isolate the AC mains supply before installing or working on any components that require 230 V~, 50 Hz supply.

## Pre- Installation Information

THIS INSTALLATION MANUAL'S GUIDELINES ARE FOR INFORMATION ONLY; THEY DO NOT PROVIDE COMPLETE ASSURANCE IN INDIVIDUAL SITUATIONS.

UVC HAS SIGNIFICANT GERMICIDAL BENEFITS, DEPENDING ON EXPOSURE DOSE (BASED ON STRENGTH, PROXIMITY AND TIME). HOWEVER, THERE ARE SEVERE RISKS TO UVC EXPOSURE, SO SAFETY PRECAUTIONS ARE ESSENTIAL.

CORRECTLY SIZED UNITS SHOULD BE SELECTED FOR OPTIMUM DISINFECTANT PERFORMANCES. THE MUONIO SELLER OR SALES AGENTS ARE AVAILABLE TO PROVIDE ASSISTANCE WITH UNIT SELECTION, LOCATION DECISIONS AND OTHER TECHNICAL SUPPORT ISSUES IF REQUIRED.

THESE PRODUCTS MUST BE MOUNTED AND INSTALLED CORRECTLY.

THE UNITS MAY OPERATE AS STAND ALONE DEVICES OR IN COMBINATION WITH OTHER MUONIO DEVICES.

UVC RADIATION HAS SANITIZING PROPERTIES AND HAS MANY USES IN COMMERCIAL, HEALTHCARE, AND CONSUMER SETTINGS.

THIS PRODUCT SHOULD NOT BE OPERATED IN THE PRESENCE OF HUMANS AND ANIMALS.

THE UNIT IS EQUIPPED WITH A MOTION SENSOR WHICH WILL PREVENT THE UNIT FROM OPERATING IF ACTIVATED.

THE UNIT MUST NOT BE ACTIVATED IF THE CORRECT INSTALLATION PROCEDURES HAVE NOT BEEN FOLLOWED.

INSTALL OR LOCATE THIS APPLIANCE ONLY IN COMPLIANCE WITH THE PROVIDED INSTALLATION INSTRUCTIONS.

PLEASE READ THE WARNING AND MOUNTING INSTRUCTIONS CAREFULLY BEFORE INSTALLING AND MOUNTING THE UNIT.

IF THE MOUNTING AND INSTALLATION WORK IS INCORRECT, THERE IS A HIGH RISK OF INJURY AND DAMAGE TO THE UNIT OR OTHER OBJECTS.

IF THE EQUIPMENT'S PROTECTION IS IMPAIRED, NO RIGHTS CAN DERIVE FROM THE INSTALLATION AND PROCEDURES IF THE PRODUCT IS NOT INSTALLED OR USED IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

MUONIO RECOMMENDS THAT THE PRODUCT INSTALLATION IS BY A PROFESSIONAL INSTALLER, AND THE COMPANY CANNOT BE HELD LIABLE FOR ANY INJURY OR DAMAGE CAUSED BY INCORRECT INSTALLATION OR ASSEMBLY.

DO NOT USE THE PRODUCT BEFORE CAREFULLY READING THIS MANUAL.

ALWAYS KEEP THIS MANUAL WITH THE PRODUCT AND CONSULT IT REGULARLY.

## Eye & Skin Burn Hazard

MUONIO UV-O PRODUCT CONTAINS COMPONENTS THAT EMIT UVC LIGHT AND POSES NO DANGER TO HEALTH IF OPERATED AND INSTALLED CORRECTLY ACCORDING TO THESE INSTALLATION INSTRUCTIONS.

FAILURE TO FOLLOW THE WARNINGS IN THIS PUBLICATION AND ANY OTHER SAFETY GUIDELINE REGARDING THE INSTALLATION OR USES OF UVC PRODUCTS COULD RESULT IN PERSONAL INJURY.

THIS UNIT CONTAINS HIGH ENERGY ULTRAVIOLET C-BAND (UVC) GERMICIDAL LAMPS, WHICH CAN CAUSE TEMPORARY SEVERE EYE AND SKIN IRRITATION. NEVER EXPOSE UNPROTECTED EYES OR SKIN TO THE UVC LIGHT.

IMMEDIATE OR PROLONGED EXPOSURE TO UVC LIGHT CAN RESULT IN PAINFUL INJURIES, SUCH AS EYE INJURY, SKIN BURNS, PREMATURE SKIN AGEING OR SKIN CANCER.

IT IS CRITICAL TO VOID EXPOSURE TO DIRECT OR STRONGLY REFLECTED UVC LIGHT AS IT CAN RESULT IN HARMFUL UVC RADIATION EXPOSURE.

DO NOT LOOK DIRECTLY OR INDIRECTLY AT THE UVC LIGHT WHEN THE POWER IS ON, FOR EXAMPLE, DURING THE INSTALLATION OR MAINTENANCE ACTIVITY.

THE UNIT SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT SUITABLY QUALIFIED SERVICE PERSONNEL.

IT IS ESSENTIAL NOT TO BYPASS OR TAMPER WITH THE SAFETY INTERLOCKS.

DO NOT OPERATE THE UNIT IF IT IS DAMAGED.

IT IS CRUCIAL THAT THE UNIT IS MOUNTED CORRECTLY AND THAT THERE IS NO DAMAGE TO THE SCREWS OR FIXINGS.

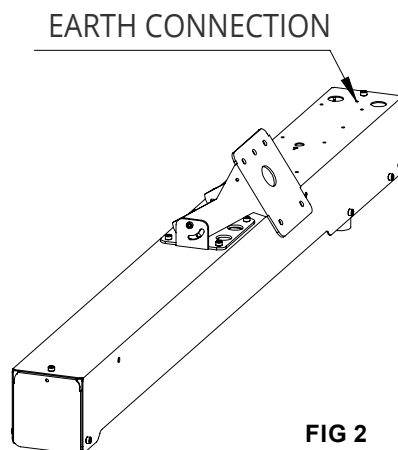
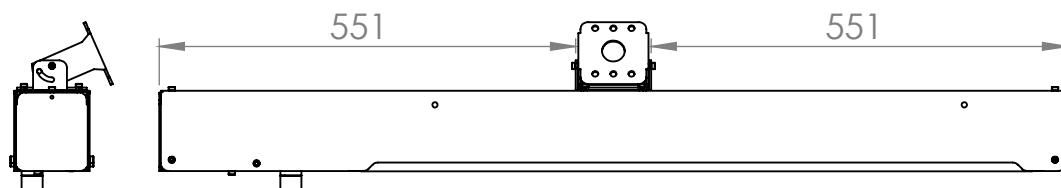
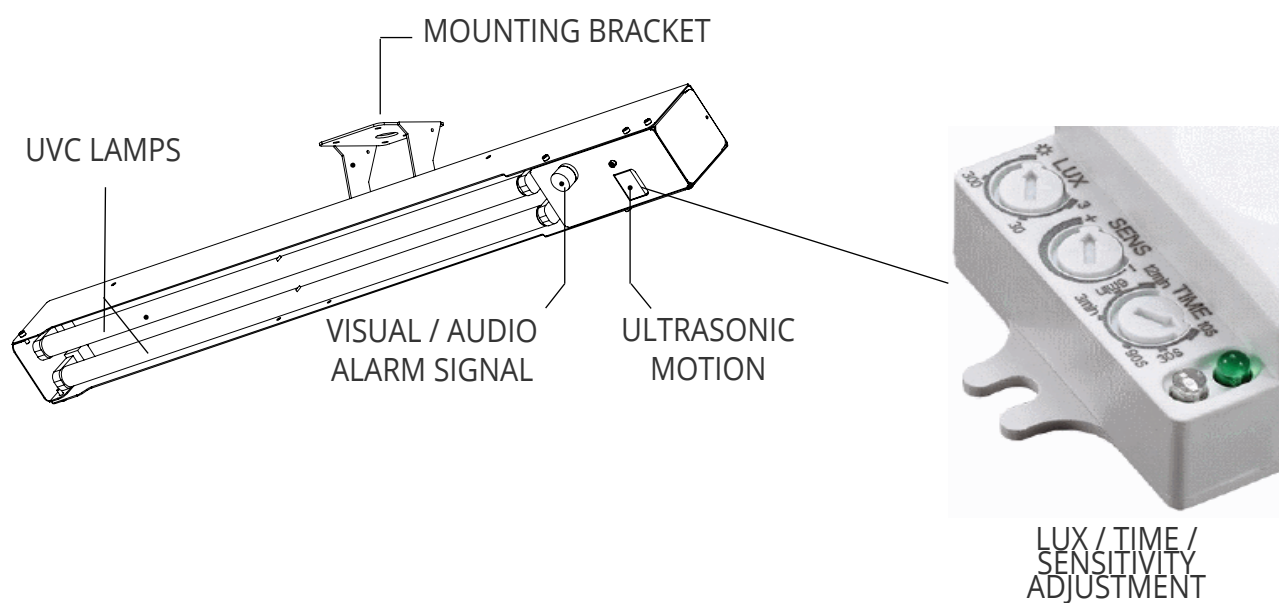
## Mounting the Unit on Hollow Walls:

IF THE UNIT IS TO BE INSTALLED ON A HOLLOW WALL, SUCH AS HOLLOW BRICKS, WOODEN PANELS OR PLASTERBOARD, WE RECOMMEND CONTACTING A SUITABLY QUALIFIED INSTALLER OR CONSULT THE WALL TYPE MANUFACTURER FOR A SPECIFIC RECOMMENDATION FOR THE SAFEST RESULTS.

PLACE UVC WARNING SIGNS NEAR ALL ACCESS PANELS OR DOORS TO A SPACE CONTAINING THE PRODUCT.

# General layout

## GENERAL LAYOUT



# INSTALLATION



Choosing the correct fastening method to fix the unit securely to the selected wall or ceiling for the particular job is critically important to secure the public's safety and protect the

## Mounting The Unit on Walls or Ceilings

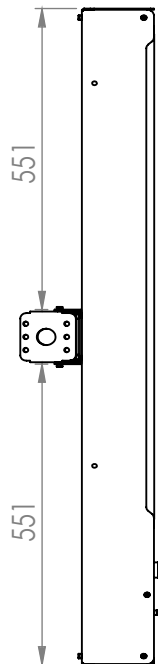
FASTENINGS ARE **NOT** SUPPLIED BECAUSE THE OPTIONS ARE TOO VARIED TO ENSURE OPTIMAL FIXING STRENGTH.

PLEASE DO NOT INSTALL THE UNIT IN LOCATIONS WHERE IT CAN BE DETRIMENTALLY AFFECTED BY ACCUMULATIONS OF DIRT, GREASE, CONDENSATION, OR OTHER DAMAGING SUBSTANCES.

DO NOT COVER OR OBSTRUCT THE UV-O WHEN OPERATING.

ENSURE THE APPLIANCE IS EARTHED.

DO NOT USE THIS MUONIO UV-O IN AREAS WHERE EXCESSIVE DUST EXISTS.



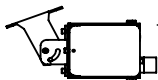
ALWAYS DISCONNECT ELECTRICAL MAINS SUPPLY BEFORE WORKING ON THE PRODUCT.

DO NOT INSTALL THE UVC BULBS (DELIVERED IN PROTECTIVE PACKAGING, INSIDE THE UNIT) UNTIL THE UNIT IS SECURELY FASTENED IN PLACE, WIRED AND AFTER ALL INSTALLATIONS STEPS ARE COMPLETE..

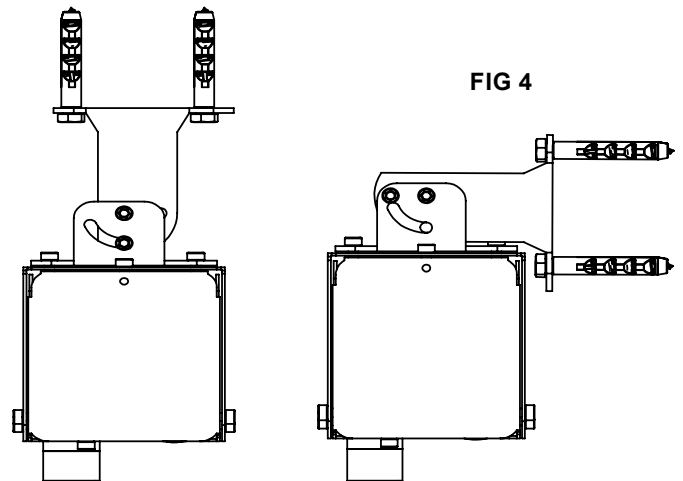
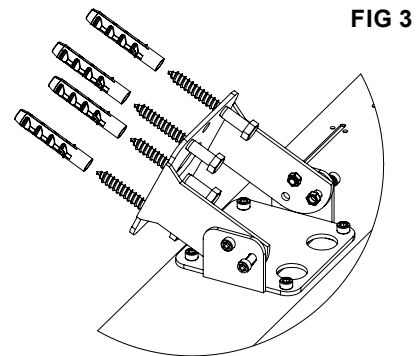
THIS PRODUCT SHOULD BE MOUNTED SAFELY TO SOLID WALL OR CEILING SURFACES ONLY.

SOLID BRICK OR CONCRETE BLOCK WALLS MUST BE DRILLED (USING A SPIRIT LEVEL AS A GUIDE TO ENSURE BRACKET IS LEVEL) AND PLUGS WITH RAWLPLUGS (NOT SUPPLIED). THE PLUG AND SCREW FASTENINGS MUST BE LOCATED IN THE SOLID PART OF THE WALL, NOT JUST IN THE PLASTER LAYER.

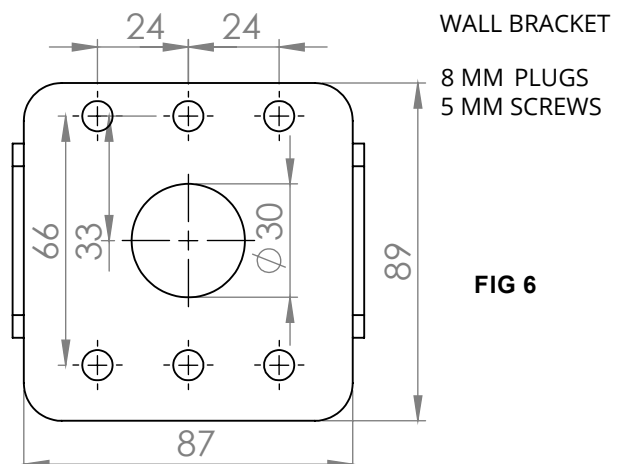
FOR PANELLED INTERNAL WALLS OR CEILINGS, IT IS BEST TO LOCATE IN THE STUDDING, POSITION THE HEATER FIXING BRACKET ACCORDINGLY.



## EXAMPLE BRACKET FIXINGS



## Bracket Dimensions



# INSTALLATION



## WALL BRACKET

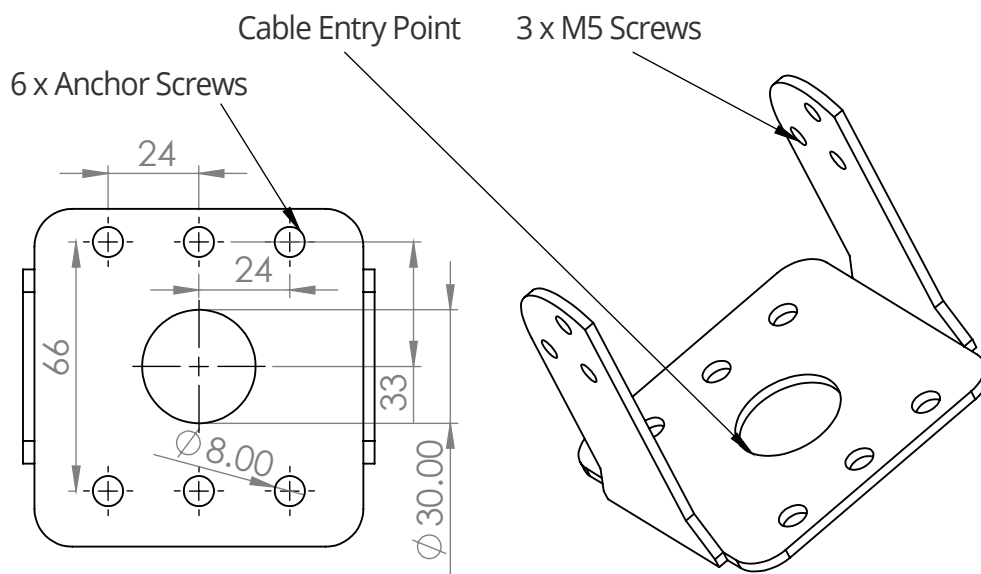


FIG 7

Wall bracket supplied with the unit is intended to mount the unit in the horizontal or vertical position. The bracket can support the UV-O unit being installed on the wall or ceiling.

## SPACE REQUIREMENTS

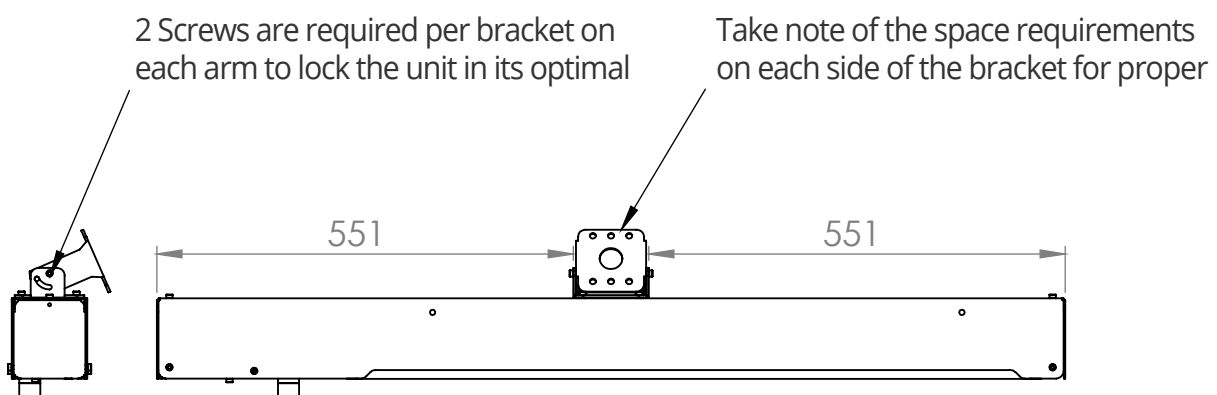


FIG 8



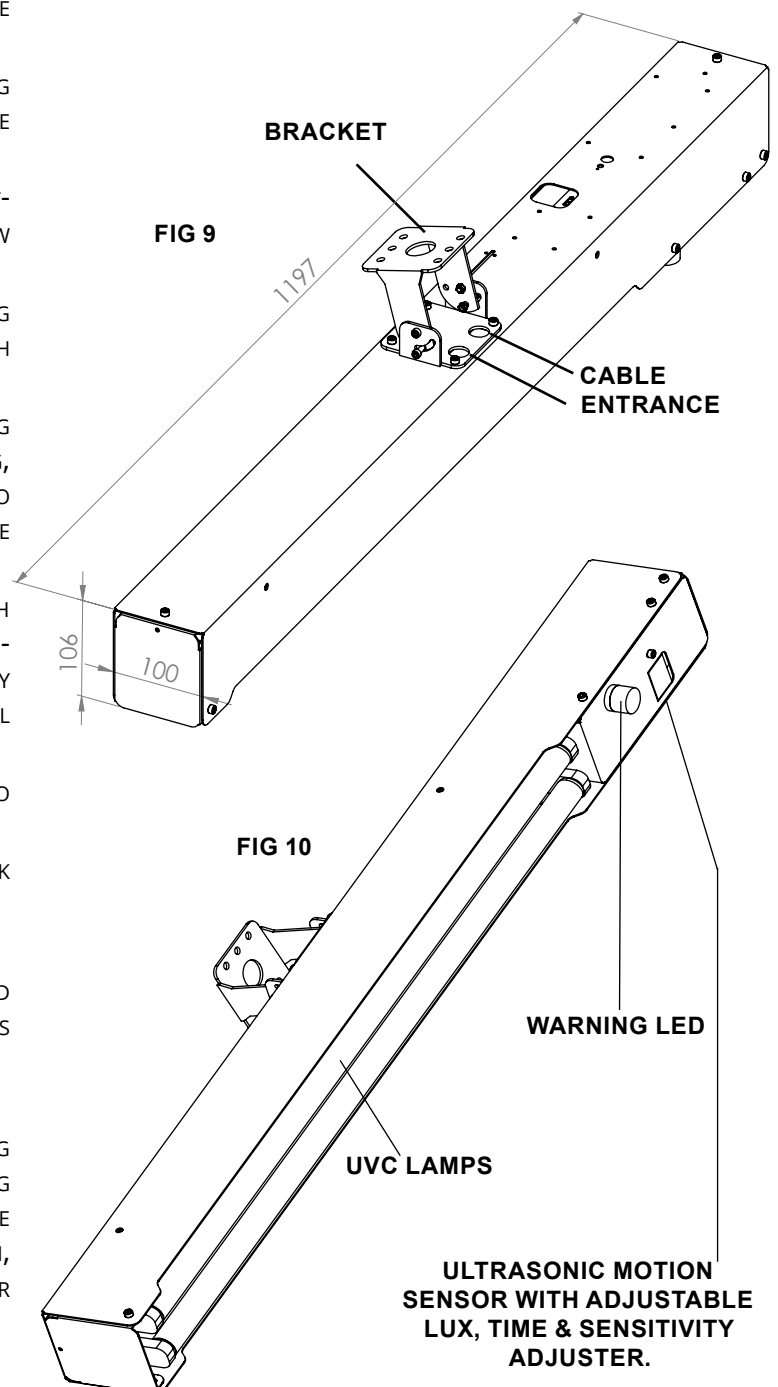
# INSTALLATION



## Installation Procedure

1. Do NOT USE THIS UNIT IN AREAS DURING CONSTRUCTION OR WHERE EXCESSIVE DUST/HUMIDTY EXISTS.
2. Do NOT MOUNT THE UNIT WHERE THE UVC LAMPS ARE COVERED OR OBSTRUCTED.
3. ATTACH MOUNTING BRACKET TO CEILING OR WALL USING AN APPROPRIATELY STRONG FIXING METHOD TO DO THE JOB SAFELY AND PROPERLY.
5. THE BRACKET MUST BE MOUNTED SECURELY USING SUITABLE FASTENERS THROUGH AT LEAST 4 OF THE 6 SCREW HOLES BEFORE DRILLING THE WIRE ENTRY HOLE.
6. ENSURE THAT THE UNIT IS SECURED TO THE MOUNTING BRACKET USING FOUR LOCKING SCREWS PROVIDED ON EACH SIDE TO FIX IT AT THE FINAL SELECTED ANGLE POSITION.
7. USE THE MOUNTING BRACKET TO MARK THE MOUNTING HOLE CENTRES ON THE SELECTED WALL OR CEILING, ALLOWING IF NECESSARY FOR THE ELECTRIC CABLES TO PASS THROUGH THE CABLE ENTRY HOLE IN THE CENTRE OF THE BRACKET.
8. WE WOULD RECOMMEND SCREWED FASTENINGS WITH PLUGS FOR SOLID WALLS, DIRECTLY TO SECURE STUD PARTITION CEILING TIMBER OR IF NECESSARY TO CORRECTLY SIZED TOGGLES THROUGH DRILLED HOLES FOR DRYWALL OR HOLLOW CONCRETE BLOCK WALLS.
10. BRING UNIT UP TO MOUNTING BRACKETS AND LOCK INTO POSITION WITH FOUR SETS OF SCREWS.
11. CONNECT THE POWER SUPPLY TO THE UNIT AND CHECK IF UNIT STARTS (WITHOUT BULBS INSERTED).
12. SETUP THE ULTRASONIC MOTION DETECTOR (PAGE 12)
11. INSERT THE UVC BULBS INTO THE BULB HOLDERS AND GENTLY, BUT FIRMLY, ROTATE THEM IN THEIR SOCKETS UNTIL THEY LOCK INTO POSITION.
12. ROTATE UNIT TO REQUIRED ANGLE.
13. AVOID DIRECT UVC EYE AND SKIN EXPOSURE DURING INITIAL TESTING / SETUP, UVC PROTECTIVE CLOTHING AND GOGGLES MUST BE WORN. IF THE ANGLE OF THE UV-O UNIT MUST BE ALTERED AFTER INITIAL OPERATION, MAKE SURE TO ISOLATE THE MAINS ELECTRICAL POWER BEFOREHAND.

## DIMENSIONS & CLEARANCES



# TERMINAL IDENTIFICATION & DESCRIPTION



## Safety Precautions/Warnings

To avoid the risk of electric shock, disconnect AC power before installation or maintenance.

### Installation Wiring

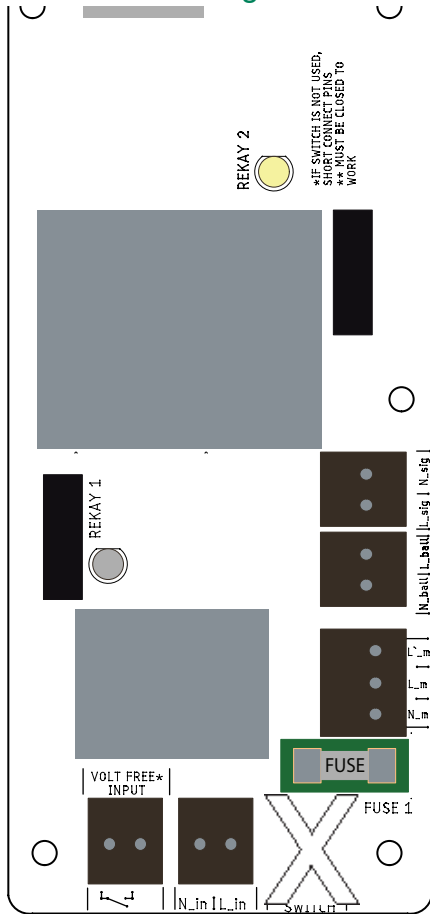


FIG 11

WARNING LIGHT

BALLAST POWER SUPPLY

ULTRASONIC MOTION DETECTOR

5 A. FUSE MEDIUM BURN



### Double Pole Isolation



THE UV-O DEVICE REQUIRES A FUSED DOUBLE POLE ISOLATED ELECTRICAL SUPPLY (230 ~ V<sub>AC</sub> 1PH 50Hz) EXTERNAL TO THE UNIT, PROTECTED BY A 5 AMP FUSE WITH A CONTACT SEPARATION OF AT LEAST 3MM IN BOTH POLES. THE FUSED POWER SUPPLY INPUT - L, N TO THE UNIT SHOULD SERVE THE UV-O DEVICE ONLY.

### Control Module Connections

THE CONTROL BOARD (PCB) IN THE MUONIO UV-O IS ALSO USED IN OTHER DEVICES AND SOME ELEMENTS ARE NOT REQUIRED IN THIS PRODUCT.

SOME CONTROL BOARD ELEMENTS ARE NOT USED:

- MAIN SWITCH - NOT USED IN THE UV-O UNIT.

THE POWER SUPPLY TO THE UVC LAMP BALLAST IS PRE-WIRED FROM THE BALLAST TO THE POWER BOARD.

### Power Supply

THE CABLES TO CONNECT THE POWER SUPPLY AND THE VOLTAGE FREE CONTACTS ARE WIRED TO CONNECTORS OUTSIDE THE UNIT FROM THE CABLE ENTRY POINT AT THE TOP OF THE UNIT. THE POWER SUPPLY SHOULD BE CONNECTED TO N<sub>IN</sub> (NEUTRAL - BLUE) AND L<sub>IN</sub> (LIVE - BROWN). THE E - (EARTH - GREEN YELLOW) MUST BE CONNECTED TO GROUND.

### Volt free SWITCHING CONTROL

IF THE UV-O IS TO BE OPERATED BY EXTERNAL SWITCHING EQUIPMENT, THEN AN EXTERNAL SWITCH MUST BE INSTALLED ACROSS THE VOLT FREE TERMINAL CONNECTIONS. THE UNIT WILL OPERATE IF THE VOLT FREE TERMINALS MAKE CONTACT THROUGH THE EXTERNAL SWITCH, FOR EXAMPLE A TIMER OR CO<sub>2</sub> SENSOR.

### Earth Connection

DO NOT OPERATE THE UNIT WITHOUT PROPER GROUNDING TO EARTH. SEE FIG 2 FOR EARTH CONNECTION.

DO NOT CONNECT VOLTAGE ACROSS THE VOLT FREE CONTACTS OR THE UNIT WILL BE DAMAGED

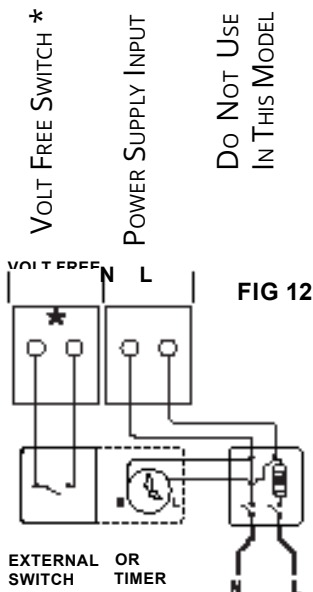


FIG 12

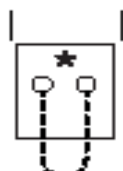


FIG 13

LINK FOR PERMANENT OPERATION

### OPTIONAL SWITCH LIVE CONTROL

IF THE UNIT IS TO BE OPERATED WITH A SWITCH CONTROL ON THE POWER SUPPLY THEN THE SWITCH LIVE AND NEUTRAL FEEDS SHOULD CONNECT TO THE POWER SUPPLY INPUT. IN THAT EVENT IT WILL BE NECESSARY TO CONNECT A WIRE LINK ACROSS THE VOLT FREE INPUT TERMINALS FOR THE UNIT TO OPERATE THROUGH THE SWITCH LIVE.

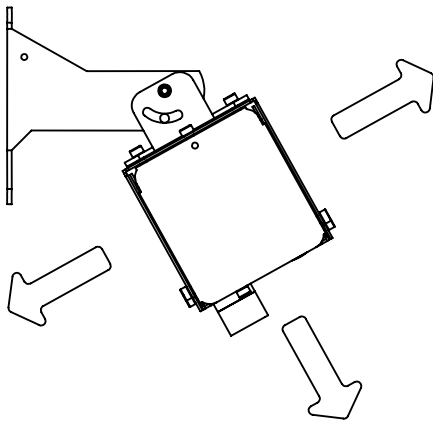
### ULTRASONIC MOTION CONTROL WIRING Pre-Wired

## POSITIONING THE UV-O

### POSITION OF THE UNIT TOWARD THE ROOM

The Muonio UV-O can be installed on the ceiling or on the wall.

Place the unit toward the room/area you want to disinfect. Use the bracket to correctly adjust the



The MUONIO UV-O can disinfect objects / surfaces upto 25m away, if directly exposed to the UVC Light.

### SIZING THE MUONIO UV-O

Studies have revealed that the required dosage values for comparable viruses in the same SARS family is 10-20 mJ/cm<sup>2</sup> using direct UVC light at a wavelength of 254nm. In a recent study (1) the upper limit determined for the log-reduction dose (90% reduction) is approximately 10.6 mJ/cm<sup>2</sup> (median), while the true value is probably only 3.7 mJ/cm<sup>2</sup> (median) for SARS-CoV-2 viruses.

If the virus is not directly targeted (i.e. virus could be in some fluid or some other media) it could take more time to receive the appropriate dosage.

UV Power emitted by 2x55W lamps	distance (m)	time in min needed to treat the exposed surface
37	5	30 -60
37	4	20 - 30
37	3	20
37	2	10
37	1	5

### Recommended Usage

In standard rooms, with height up to 2.5 - 3.5m, use the UV-O unit for 10 minutes (approx) during the day. and 20-60 minutes during the night. (Room must be UNOCCUPIED by humans and animals during operation period).

Lamp output values could vary with time, cleanliness of bulbs and for various other factors.

(1) Ultraviolet irradiation doses for coronavirus inactivation – review and analysis of coronavirus photoinactivation studies, (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7273323/>)

## SETUP

The Muonio UV-O is available in a single (UV-O 55) 55 watt or double (UV-O 110) 2 x 55 watt bulb unit. UVC also reacts to dust in the room. If dust is from an organic sources (like human skin or hair), the UVC radiation can create a slight odour which is harmless.

### SETTING UP THE ULTRASONIC MOTION

The UV-O will stop operating if it detects movement in front of the unit, this is done by the built-in ultrasonic motion sensor on the front of the unit. This reduces the risk of human / animal exposure to harmful UVC radiation.

In order for the sensor to work properly, it must be adjusted for each project / installation individually.

There are 3 adjustable set points on the ultrasonic motion sensor.

1. TIME - Minimum time between stop & start operation.
2. LUX - Setting the room/area lux level.
3. SENSITIVITY - Setting sensor sensitivity to cater for varying room dimension & distances.

All 3 setting must be adjusted on a project by project basis.



LUX / TIME / SENSITIVITY  
ADJUSTMENT

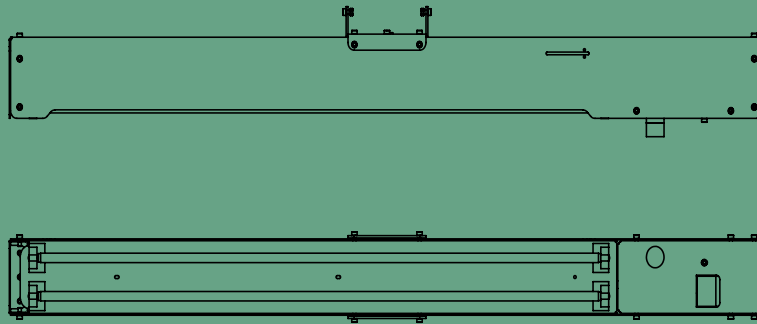
- 1) When testing the UV-O, set the time limit to a maximum of 10 seconds so the output can be tested frequently. After initial setup is complete make sure you adjust this period to 30 seconds or more.
- 2) UVC bulbs must not be installed before the room lux level is set.
- 3) Regarding the sensitivity setting, start in the middle position and adjust until results are satisfactory.  
note: An ultrasonic transducer emits an ultrasonic wave and receives reflections from nearby objects. One potential drawback of the ultrasonic sensors is that the sensor can be sensitive to motion in areas where coverage is undesired, for example, due to reflections of sound waves around corners or adjacent rooms so adjust sensitivity with care.

The UV-O will emit a flashing light in parallel to an audio warning sound when the unit is operating. If the ultrasonic motion sensor is triggered the UV-O will stop operating, the light & audio alarm will also stop operating.

If you unplug the 3 wires for the ultrasonic sensor, the unit will not have ultrasonic motion protection.



## SERVICE & COMMISSIONING



### Service & Maintenance

#### CAUTION:



THE MOUNIO UV-O IS A PREVENTATIVE MEASURE THAT REDUCES THE POSSIBILITY OF INFECTIOUS TRANSMISSION. TO MAXIMISE THE UNIT PROTECTIVNESS, CORRECT SIZING AND LOCATION OF THE UV-O IS ESSENTIAL. MOUNIO AGENTS CAN ASSIST AS REQUIRED WITH SELECTION AND ANY OTHER TECHNICAL ISSUES.

NEVER, UNDER ANY CIRCUMSTANCE, ATTEMPT TO ADJUST OR CLEAN



THE UNIT DURING OPERATION OR WHILE THE POWER SUPPLY IS ON.

#### UVC Ballast

THE BALLAST IS ANOTHER CRITICAL COMPONENT OF THE UV-O UNIT. IT ALLOWS THE ELECTRIC CURRENT TO BE REGULATED FOR THE LAMP TYPE AND CONTROLS CURRENT FLOW AT VARYING SUPPLY VOLTAGES. BALLAST SERVICE LIFE IS AROUND 3000 STARTUPS. THE OPTIMUM WAY TO ENSURE THE UNIT'S CONTINUOUS OPERATION IS TO EVALUATE THE TIME SWITCHINGS DURING THE OPERATIONAL PERIODS, DEPENDING ON USAGE, AND REPLACE THE BALLAST IN ADVANCE OF THE CALCULATED SERVICE LIFE OR REGULAR SERVICE INTERVALS.

#### UVC Lamps

UVC LAMPS USE A HIGHLY ENGINEERED, TRANSPARENT GLASS TO ALLOW THE 254.5NM LIGHT WAVELENGTH TO PASS UNFILTERED, PLEASE HANDLE WITH EXTREME CARE.

WEAR PROTECTIVE CLOTHING AND EQUIPMENT (EG. GLOVES, GOGGLES) WHEN CARRYING OUT MAINTENANCE WORK

UVC LAMPS COULD LOSE SOME OF THEIR EFFECTIVE USABLE ULTRAVIOLET (UV) OUTPUT BUT STILL RETAIN THE BLUE LIGHT THAT IS VISUAL TO THE HUMAN EYE. FOR THAT REASON, IT IS GOOD PRACTICE TO REPLACE THE LAMPS ONCE EVERY YEAR.

IN NORMAL CIRCUMSTANCES, UVC LAMP SERVICE LIFE IS AROUND 9000 HOURS OR RUNNING PERMANENTLY FOR 1 YEAR, BUT OTHER FACTORS, SUCH AS RE-STARTS AND ELEMENT EROSION OF FILLERS IN THE UVC LAMP CAN ALSO AFFECT THE QUALITY OF OUTPUT OVER TIME. DUST CAN ALSO DECREASE THE LAMP'S DISINFECTANT EFFICIENCY.

EXERCISE EXTREME CAUTION WHEN CLEANING THE UNIT OR DISPOSING OF A LAMP THAT HAS BROKEN

#### Cleaning Guidelines

CLEANING THE UV-O UNIT PERIODICALLY IS ESSENTIAL FOR OPTIMAL PERFORMANCE (APPROXIMATELY EVERY THREE MONTHS), WITH INTERVALS BASED ON THE USAGE PATTERN AND CONDITIONS.

UVC LAMPS CAN BE CLEANED WITH A DRY COTTON CLOTH OR PAPER TOWEL. WEAR RUBBER GLOVES AND CLEAN WITH ALCOHOL ONLY.

#### Precautions with cleaning



NEVER USE LIQUID CLEANER OR SPRAY OR POUR LIQUIDS DIRECTLY ON ANY PART OF THE UNIT. SEVERE DAMAGE TO THE DEVICE OR BODILY INJURY MAY OCCUR.

ALWAYS SPRAY CLEANER ONTO SOFT CLOTH, THEN WIPE THE INSIDE SURFACE OF THE DEVICE.

THE UNIT'S EXTERIOR MAY PERIODICALLY BE WIPED WITH A SOFT CLOTH AND MILD CLEANER. NEVER USE HARSH CHEMICALS OR SPRAY CLEANER DIRECTLY ONTO THE UNIT.

#### Cleaning The Unit's Interior

IF NECESSARY, TO PREVENT DUST BUILDUP WITHIN THE UV-O, REMOVE THE UVC BULBS, AND WIPE THE UNIT'S INTERNAL SURFACES CLEAN.

NEVER SPRAY OR POUR LIQUID CLEANERS INTO THE DEVICE.

ISOLATE THE UNIT FROM THE POWER SUPPLY BEFORE REMOVING THE BULBS.

REMOVE THE BULBS AND CLEAN THE INSIDE CAREFULLY WITH A SOFT CLOTH TAKING PARTICULAR CARE NOT TO DISPLACE OR DAMAGE THE LAMPS.

#### To replace the UVC Bulbs

ISOLATE THE UV-O FROM THE POWER SUPPLY.

HOLD THE TWO WHITE END CAPS OF ONE LAMP, AND GENTLY TWIST IT  $\frac{1}{4}$  TURN TO ALIGN THE PINS VERTICALLY WITHIN THE BASE HOLDER SLOTS, REMOVE IT FROM THE BASE AND PUT IT IN A SAFE LOCATION. REPLACE THE NEW LAMP INTO THE OPEN BASE HOLDER SLOTS, GENTLY TWIST IT IN REVERSE DIRECTION  $\frac{1}{4}$  TURN TO LOCK THE PINS IN THE BASE LOCK POSITION. CHECK THAT THE LAMP IS FIXED IN PLACE SECURELY. IF NECESSARY, REPEAT THE PROCESS FOR THE REMAINING LAMP.

CONNECT THE POWER SUPPLY, AND TEST THE UNIT TO BEGIN A DISINFECTION CYCLE.

## Warranty

### WHAT DOES THIS WARRANTY COVER?

THIS APPLIANCE HAS BEEN MANUFACTURED WITH CARE AND WAS METICULOUSLY EXAMINED BEFORE DELIVERY. THIS LIMITED MANUFACTURER WARRANTY COVERS ANY DEFECTS OR MALFUNCTIONS IN MATERIAL AND MANUFACTURING WORKMANSHIP OF ALL PARTS SUPPLIED BY MOUNIO UNDER NORMAL USE AND SERVICE WHEN OPERATED AND MAINTAINED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR THE DURATION OF THE WARRANTY PERIOD. PLEASE RETAIN YOUR PROOF OF PURCHASE (SALES RECEIPT) AND THE PRODUCT SERIAL NUMBER FOUND AT THE REAR OF THE UNIT FOR THE DURATION OF THE WARRANTY PERIOD OFFERED.

ALL SPARE PARTS SUPPLIED BY MOUNIO AND PURCHASED BY THE END USER ARE WARRANTED TO BE FREE FROM FAULTY MATERIAL OR DEFECTIVE WORKMANSHIP FROM THE DATE OF SALE TO THE ORIGINAL PURCHASER FOR 12 MONTHS.

ALL PARTS WARRANTY CLAIMS MUST INCLUDE A COPY OF THE PURCHASE INVOICE TO THE END USER.

MOUNIO CANNOT CONSIDER CLAIMS FOR WHICH SALES INVOICES ARE NOT AVAILABLE.

THIS WARRANTY IS NOT TRANSFERABLE.

HOW LONG DOES THE COVERAGE LAST?

THE MOUNIO UVO UNIT INCLUDING THE LAMPS AND POWER SUPPLY, ARE WARRANTED FOR GERMICIDAL OUTPUT FROM THE DATE OF SALE TO THE ORIGINAL PURCHASER FOR 12 MONTHS FROM DATE OF PURCHASE.

WHAT WILL MOUNIO DO?

THE WARRANTY OFFERED BY MOUNIO IS LIMITED TO THE MAKING GOOD BY REPAIR OR REPLACEMENT FOR THE PURCHASER ANY PART OR PARTS FOUND, UPON EXAMINATION AT ITS FACTORY, EXCLUDING SHIPPING CHARGES, TO BE DEFECTIVE UNDER NORMAL USE AND SERVICE DUE TO DEFECTS IN MATERIAL OR WORKMANSHIP.

IF A PROBLEM ARISES WITH A MOUNIO UNIT, IT MUST HAVE AN IMMEDIATE REPAIR. CONTINUED USE OF THE MOUNIO UNITS AFTER A PROBLEM HAS OCCURRED MAY HAVE SAFETY IMPLICATIONS AND CAN RESULT IN FURTHER COMPONENT FAILURE, FOR WHICH MOUNIO CANNOT BE HELD LIABLE.

RETURNED PARTS MUST BE COMPLETE AND UNEXAMINED. PACK THE COMPONENT(S) CAREFULLY TO AVOID ANY DAMAGE IN TRANSIT. CERTAIN COMPONENT PARTS, ELECTRICAL ITEMS, FOR EXAMPLE, MAY REQUIRE PARTICULAR CARE WHEN PACKING TO AVOID DAMAGE IN TRANSIT.

WHAT DOES THIS WARRANTY NOT COVER?

THIS WARRANTY DOES NOT EXTEND TO ANY MOUNIO PRODUCT THAT HAS BEEN MODIFIED OR ALTERED IN ANY WAY.

THIS PRODUCT IS NOT INTENDED TO BE PURCHASED AND INSTALLED BY UNREGISTERED PERSONEL AND ELECTRICAL CONTRACTORS. THIS WARRANTY DOES NOT COVER PRODUCTS OR PARTS PURCHASED FROM ANY SOURCE OTHER THAN LICENSED HVAC OR ELECTRICAL CONTRACTORS. THIS WARRANTY DOES NOT COVER PARTS INSTALLED BY UNREGISTERED INSTALLERS OR CONTRACTORS.

THIS WARRANTY DOES NOT APPLY TO ANY PART OF THE GOODS SUBJECTED TO IMPROPER OR ABNORMAL USE, OR ANY USE OTHER THAN ITS INTENDED USE, ACCIDENT, ACTS OF GOD, NEGLIGENCE, OR FROM IMPROPER OPERATION, ALTERATION, MODIFICATION, FITMENT OF NON-GENUINE PARTS, ACCIDENT DAMAGE, OR DAMAGE RESULTING FROM IMPROPER OPERATION, MAINTENANCE, INSTALLATION, WIRING OR NONCOMPLIANCE WITH INSTALLATION INSTRUCTIONS, DAMAGE CAUSED BY FOREIGN OBJECTS, FAILURE DUE TO LACK OF MAINTENANCE, USE OF INCORRECT FUSE PROTECTION, OR WHICH HAS SERVED ITS NORMAL LIFE.

THE WARRANTY EXCLUDES REPEAT OR ADDITIONAL REPAIRS RESULTING FROM INCORRECT DIAGNOSIS OR POOR-QUALITY PREVIOUS REPAIR WORK.

MOUNIO SHALL HAVE NO RESPONSIBILITY FOR CHARGES INCURRED BY THE CUSTOMER FOR INSTALLATION OR REMOVAL OF WARRANTED ITEMS.

THIS WARRANTY DOES NOT COVER PARTS OR EQUIPMENT USED WITH MOUNIO UNITS THAT MOUNIO DOES NOT MANUFACTURE OR SUPPLY AS PART OF THEIR PRODUCT.

CONSEQUENTIAL AND INCIDENTAL DAMAGES ARE NOT RECOVERABLE UNDER THIS WARRANTY. THE WARRANTY PERIOD WILL NOT EXTEND TO THE UNIT OR TO REPLACED OR REPAIRED PARTS THROUGH REPAIRS MADE UNDER WARRANTY DURING THE WARRANTY PERIOD. THE MANUFACTURER ASSUMES NO LIABILITY FOR ANY HARM, WHICH MAY OCCUR AS A RESULT OF THE USE OF THE EQUIPMENT HEREIN AND SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR ANY OTHER DAMAGES WHETHER OR NOT CAUSED BY MANUFACTURER'S NEGLIGENCE OR RESULTING FROM ANY EXPRESS OR IMPLIED WARRANTY OR BREACH THEREOF. CONSEQUENTIAL DAMAGES FOR THE PURPOSE OF THIS WARRANTY SHALL INCLUDE, BUT NOT BE LIMITED TO, LOSS OF USE, INCOME OR PROFIT, OR LOSS OF OR DAMAGES TO PROPERTY OR INJURY OR DEATH TO PERSONS OR ANIMALS OCCASIONED BY OR ARISING OUT OF OPERATION, USE, INSTALLATION, REPAIR OR REPLACEMENT OF THE EQUIPMENT OR OTHERWISE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.

IT IS HEREBY CLARIFIED THAT AFTER THE STANDARD WARRANTY PERIOD, CALL-OUT CHARGES WILL BE APPLICABLE FOR ALL CALL-OUTS WITH THE COST WILL BE BORNE BY THE CUSTOMER.

WARRANTY DOES NOT COVER CHANGES OF THE PRODUCT SETTINGS BY THE USER OR ANY DAMAGE RESULTED AS FROM SUCH CHANGES.

**\*\*THIS WARRANTY SHALL BE VOID IF UV LAMPS FROM MANUFACTURER'S OTHER THAN MOUNIO ARE USED WITH THIS EQUIPMENT.**

### DAMAGE TO NEW

ALL MOUNIO PRODUCTS MUST BE EXAMINED ON RECEIPT; PLEASE EXAMINE ALL UNITS AND PACKAGING, ANY CLAIMS IN RESPECT TO THE DELIVERED PRODUCTS, INCLUDING VISIBLE DEFECTS, QUANTITY SHORTAGES OR INCORRECT PRODUCT SHIPMENTS, MUST BE MADE WITHIN TEN (10) DAYS OF DELIVERY. FAILURE TO NOTIFY SELLER IN WRITING OF ANY VISIBLE DEFECTS IN THE PRODUCTS OR OF QUANTITY SHORTAGES OR INCORRECT SHIPMENTS WITHIN SUCH PERIOD SHALL BE DEEMED UNQUALIFIED WAIVER OF ANY RIGHTS TO RETURN PRODUCTS ON THE BASIS OF VISIBLE DEFECTS, SHORTAGES OR INCORRECT SHIPMENTS.

NO CLAIMS WILL BE ACCEPTED AFTER THIS TIME.

### FAILED BALLAST & ELECTRICAL CONTROLS

ANY BALLAST & ELECTRICAL CONTROL UNITS FITTED TO ANY MOUNIO UNIT THAT FAILS DURING THE FIRST TWELVE MONTHS OF WARRANTY MUST BE RETURNED TO US UNEXAMINED. WE WILL REJECT THE WARRANTY IF THEY HAVE BEEN DISMANTLED. THIS ONLY APPLIES TO THE FIRST TWELVE MONTHS OF WARRANTY.

### HOW DO YOU GET SERVICE?

TO BE ELIGIBLE FOR SERVICE UNDER THIS WARRANTY YOU MUST RETURN THE WARRANTY REGISTRATION CARD INCLUDED AT THE BACK OF THIS MANUAL WITHIN 30 DAYS OF INSTALLATION OF THE MOUNIO PRODUCT. IF SOMETHING GOES WRONG WITH YOUR PRODUCT, CALL 00353 (0)21 4355728 TO RECEIVE A RETURN MERCHANDISE AUTHORISATION (RMA) AND INSTRUCTIONS FOR RETURNING THE PRODUCT TO A LICENSED DISTRIBUTOR IN YOUR AREA OR DIRECTLY TO THE MANUFACTURER.

ONCE THE PRODUCT IS RETURNED, WE WILL INSPECT YOUR PRODUCT AND CONTACT YOU WITHIN 10 BUSINESS DAYS OF OUR RECEIPT OF THE PRODUCT TO GIVE THE RESULTS OF OUR INSPECTION. IF WE DETERMINE THAT THE PRODUCT IS COVERED UNDER THIS WARRANTY, WE WILL SHIP A REPLACEMENT TO YOU AT NO ADDITIONAL COST. REPLACEMENT PARTS MAY BE REFURBISHED. IF WE DETERMINE THAT THE PRODUCT IS OUTSIDE WARRANTY CONDITIONS, OR THAT THIS WARRANTY IS VOID, WE WILL RETURN THE PRODUCT TO YOU WITH CASH ON DELIVERY TERMS. THERE IS NO CHARGE FOR INSPECTION.

ANY FAULT MUST BE REPORTED TO AN AUTHORISED MOUNIO DEALER AS SOON AS IT OCCURS. CONTINUED USE OF A UNIT, AFTER A FAULT HAS OCCURRED, CAN RESULT IN FURTHER COMPONENT FAILURE OR INJURY FOR WHICH MOUNIO CANNOT BE HELD LIABLE.

ALL CLAIMS MUST BE SUBMITTED, BY AN AUTHORISED MOUNIO SERVICE DEALER, WITHIN 30 DAYS OF THE DATE OF REPAIR.

IN THE EVENT OF A CLAIM, PROOF OF THE SERVICE WORK CARRIED OUT BY A SUITABLY QUALIFIED TECHNICIAN IS REQUIRED.

THE CUSTOMER SHALL PROVIDE A REASONABLE, SAFE AND ACCESSIBLE WORKING ACCESS THE APPLIANCES FOR MAINTENANCE AND SERVICE PERSONEL.

ANY REPAIR OR MAINTENANCE WORK OUTSIDE THE SCOPE OR PERIOD OF THE WARRANTY SHALL BE CHARGED TO THE CUSTOMER.

### LIMITATION OF LIABILITY

MOUNIO DISCLAIMS ANY EXPRESS (EXCEPT AS SET FORTH HEREIN) AND IMPLIED WARRANTIES CONCERNING THE GOODS INCLUDING, BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

MOUNIO MAKES NO WARRANTY AS TO THE DESIGN, CAPABILITY, CAPACITY OR SUITABILITY FOR USE OF THE GOODS.

EXCEPT AS PROVIDED HEREIN, MOUNIO SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO THE PURCHASER OR ANY OTHER PERSON OR ENTITY CONCERNING ANY LIABILITY, LOSS, OR DAMAGE CAUSED OR ALLEGED TO BE CAUSED DIRECTLY OR INDIRECTLY BY THE GOODS INCLUDING, BUT NOT LIMITED TO, ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES RESULTING FROM THE USE OR OPERATION OF THE GOODS OR ANY BREACH OF THIS WARRANTY. NOTWITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, THE MANUFACTURER'S LIABILITY HEREUNDER FOR DAMAGES INCURRED BY THE PURCHASER OR OTHERS SHALL NOT EXCEED THE PRICE OF THE GOODS.

NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS WARRANTY OR TRANSACTIONS UNDER THIS WARRANTY MAY BE BROUGHT MORE THAN ONE (1) YEAR AFTER THE CAUSE OF THE ACTION HAS OCCURRED.

### MISCELLANEOUS

EXCEPT AS PROVIDED HEREIN, NO EMPLOYEE, AGENT, DEALER OR OTHER PERSON IS AUTHORISED TO GIVE ANY WARRANTIES OF ANY NATURE ON BEHALF OF MOUNIO.

MOUNIO MAY WAIVE COMPLIANCE WITH ANY OF THE TERMS OF THIS LIMITED WARRANTY, BUT NO WAIVER OF ANY TERMS SHALL BE DEEMED TO BE A WAIVER OF ANY OTHER TERM.

### HOW DOES STATE LAW APPLY?

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS.

APPLICABLE LAW MAY PROVIDE RIGHTS AND BENEFITS TO THE PURCHASER IN ADDITION TO THOSE PROVIDED HEREIN, WHICH MAY VARY FROM STATE TO STATE.

IF ANY PROVISION OF THIS LIMITED WARRANTY SHALL VIOLATE ANY APPLICABLE LAW AND IS HELD TO BE UNENFORCEABLE, THEN THE INVALIDITY OF SUCH PROVISION SHALL NOT INVALIDATE ANY OTHER PROVISIONS HEREIN.

PLEASE RETAIN YOUR PROOF OF PURCHASE (SALES RECEIPT) FOR THE DURATION OF THE WARRANTY PERIOD OFFERED.

## WARRANTY & SERVICE DISPOSAL



### Disposal of Old Devices

Devices marked with this symbol are subject to European Directive 2002/96/EC. All electric and electronic devices must be disposed of separately from household waste at official disposal centres. Avoid hazards to the environment and dangers to your personal health by disposing of the device properly. For further information about proper disposal, contact your local council, waste disposal office or the shop where you bought the device.

SYSTEM NOTES



DATE: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

CUSTOMER SIGNATURE: \_\_\_\_\_

SEABOX ENERGY LTD T/A NRG AWARENESS LTD

PH: 00353 (0)21 4355728

EMAIL: [INFO@NRGAWARENESS.COM](mailto:INFO@NRGAWARENESS.COM)

WEB: [WWW.NRGAWARENESS.COM](http://WWW.NRGAWARENESS.COM)

Local Agent

**MUONIO**  
FRESH & INTELIGENT