



U-Lamp

User Manual

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U-Lamp



1. General Information

Before using this UV-C lamp, carefully read and understand this manual and keep it for future reference together with the device. The maintenance and operating manuals allow you to use the unit in a safe and conscious manner, as well as providing details of all its functions. Please note that, in order to ensure that the unit functions correctly and, above all, safely, users must also understand how the device works and how to store it correctly over time. Only use the unit for the areas of use indicated and in the ways described below. Any use not covered by this manual is expressly forbidden. Should the unit be used without following the instructions, or should any modifications be made, or should any makeshift repairs be carried out by unqualified personnel, U-Earth Biotech Ltd* will not be held liable. Such operations will void the warranty of this device. If a fault is detected in the device due to a manufacturing defect, you must contact your nearest U-Earth supplier.

2. U-Lamp Introduction

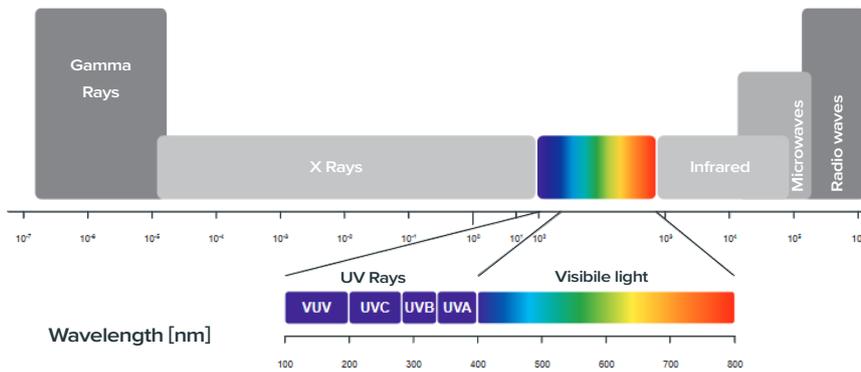
2.1 UV Radiation

The sterilisation of surfaces, objects, air or water by irradiation with C-range ultraviolet is an effective practice that has been used for many years, especially in hospital environments. The use of UV-C radiation makes it possible to disinfect and/or sterilise (depending on exposure time) elements that are potential contamination vectors during daily activity.

Ultraviolet rays, or commonly called UV, are naturally present on our planet in limited quantities that are functional to our existence. They represent a part of the non-visible electromagnetic spectrum, between the lower end of the visible spectrum wavelength and the upper end of the X-ray radiation band, i.e. between 100 and 400 nanometres in wavelength.

Ultraviolet radiation can be divided into four bands:

- UV-A (320nm-400nm): in moderate amounts they allow us to tan, but in excessive doses they contribute to skin ageing.
- UV-B (280nm-320nm): partially germicidal and actinic rays, they only partially pass through the ozone layer of the upper atmosphere (stratosphere) and if taken in excessive amounts cause photochemical reactions such as erythema and harmful effects in the eyes.
- UV-C (200nm-280nm): germicidal and actinic rays, practically non-existent at the Earth's surface as they are completely filtered out by the ozone layer.
- V-UV (100nm-200nm): or vacuum UV, they are not transmitted through the air and cause the formation of ozone.



Electromagnetic spectrum of all possible frequencies of electromagnetic radiation

2.2 Exposure of UV-C radiation on the human body

Ultraviolet radiation in the UV-C band can be harmful to the human body: they do not penetrate the lens of the eye, but can cause temporarily painful transient conjunctival irritation (inflammation of the mucous membranes of the eye); in addition, UV-C radiation does not penetrate the deep layers of the epidermis, but can be absorbed by the superficial dead skin cells, generating slight erythema (skin irritation).

Although all ultraviolet radiation causes photochemical effects, the wavelengths in the UV-C range are particularly harmful to viruses and bacteria, as the radiation is absorbed by the nitrogenous bases of RNA and DNA, modifying and destroying the genetic information inside. This phenomenon eliminates the reproductive capacity of microorganisms, rendering them inactive and no longer harmful. **It has been demonstrated that this effect (disinfecting/-sterilising) is most effective between 260-265nm:** at these wavelengths, the nitrogenous bases of the two DNA strands have the highest absorption. absorption of this energy causes the two DNA strands to bind to each other, preventing duplication and transcription.

In addition, the germicidal nature of UV-C radiation is suitable for treating microorganisms that become extremely resistant to chemical disinfectants.

2.3 U-Lamp

U-Lamp, a device designed, tested and produced by U-Earth Biotech, is a sanitising lamp for the environment and emits C-range UV radiation at a wavelength of 222 nm. The special shield with which the U-Lamp is equipped shields out radiation that is harmful to the skin and eyes and lets through only that which is not harmful, for which no personal UV radiation protection device is required, while maintaining the sanitising power of the UV rays. These features allow the device to be used directly in environments where people are present, sanitising the air and surfaces.

Exposure time is the only constraint on the use of U-Lamp in the presence of people.

Distance from the light	Maximum time of exposure
10 cm from the light	36 min (approx half an hour)
50 cm from the light	299 min (approx 5 hours)
100 cm from the light	909 min (approx 15 hours)
150 cm from the light	1158 min (approx 19 hours)
Over 2 metres from the light	≥ 24hours

It is forbidden to use U-Lamps in direct contact with the body (distance less than 10 cm).

It is also not recommended to expose injured or irritated skin or any other particular medical contraindications to U-Lamp. U-Lamp is an economical product due to its negligible consumption of only 8W of power, and an easy-to-use product as the only maintenance required is cleaning the screen of dust.

3. Technical specifications

Electrical Characteristics

Power consumption	10W
Power supply	220 – 240 VAC, 50 – 60 Hz
Power factor	>0,90
Rated current intensity	0,1 A
Power supply	Not included

Lighting Characteristics

Light source	TUV 8W FAM/10X25BOX
Amount of mercury	4.4 mg
Average lamp lifetime	11000 h
Radiometric power	8 W
UV-C irradiance in presence of the U-Earth filter	1.381 μ W/cm ² @ 10cm 0.055 μ W/cm ² @ 100cm 0.020 μ W/cm ² @ 200cm

Mechanical Characteristics

Dimensions	79 mm (H)x (W) 73 mm x 730 mm (D)
Weight	2 kg
Material	Steel
Finishes	Impacryl ABS-PMMA

General Characteristics

Operating temperature	10°C – 35°C
European conformity	CE
Power supply cable	Not included
Warranty	2 years with purchase document reference

4. Precautions for children

1. This device is not a toy. It is not intended for children or persons with reduced abilities.
2. Children must be kept away from the U-Lamp unless under adult supervision

5. Your contribution to the environment

Disposal of transport packaging

The packaging protects the U-Lamp from damage during transport. The packaging material is chosen from environmentally friendly and disposable materials, which are to be recycled. Returning intact packaging material into the material cycle saves raw materials and contributes to waste reduction. It is possible to return the packaging to the supplier.

6. Disposal of End-of-Life Equipment

Old electrical and electronic equipment still contains usable materials. However, they may also contain harmful substances necessary for their functioning and safety. If they are disposed of as unsorted waste or if they are treated incorrectly, they can damage human health and the environment. Therefore, do not simply throw your old device away in unsorted waste bins. 

Alternatively, dispose of old electrical and electronic equipment at the collection point near your place of residence. Contact your dealer for further information. Please ensure that the old device is kept out of the reach of children until it is returned.

7. Safety Instructions

U-Lamp complies with the prescribed safety regulations. Improper use may result in personal injury and property damage. Before using U-Lamp, read the operating instructions. These provide important information regarding the safety, use and maintenance of U-Lamp. With this, you will protect yourself and avoid any damage to the U-Lamp. Keep the instructions in a safe place and pass them on to any subsequent users.

8. Intended use

1. U-Lamp must not be used in explosive environments.
2. U-Lamp should not be used outdoors.
3. Use U-Lamp only in dry environments. All other forms of application are prohibited. U-Earth is not liable for damage resulting from abuse or misuse.
4. Persons who are unable to safely operate U-Lamp due to their physical, sensory or mental state or due to their lack of experience or knowledge, should not use the device without the supervision or guidance of a responsible person.
5. The temperature of the surroundings must not fall below 10°C or exceed 35°C.

9. Technical security

1. Before installing the U-Lamp, check for any visible external damage. A damaged U-Lamp must not be installed or used.
2. The electrical safety of the U-Lamp is only guaranteed when it is connected to an electrical system that complies with safety regulations. It is very important to check the essential safety requirements and, if in doubt, to consult an experienced electrician to examine the electrical system. Only connect the luminaire to legally compliant installations.
3. For safety reasons, do not use extension cords (fire hazard due to overheating)
4. Defective parts may only be replaced with original U-Earth spare parts. For these parts only, U-Earth guarantees that the safety requirements are fully met. The use of non-original parts will impair the function of the device and does not guarantee safe operation.
5. Incorrect repairs can lead to unforeseeable risks for the user for which U-Earth is not responsible. Repair work must only be carried out by technicians authorised by U-Earth. Otherwise, no warranty claims can be made for the damage caused.
6. If the connecting cable is damaged, it must be replaced by U-Earth authorised technicians in order to safeguard the user from any danger.

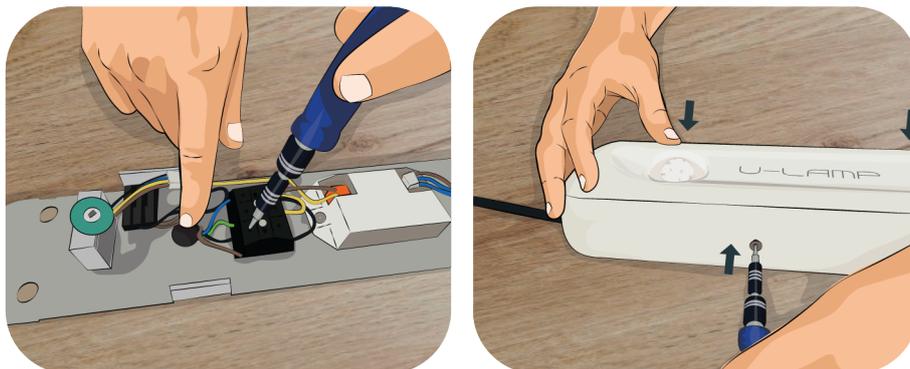
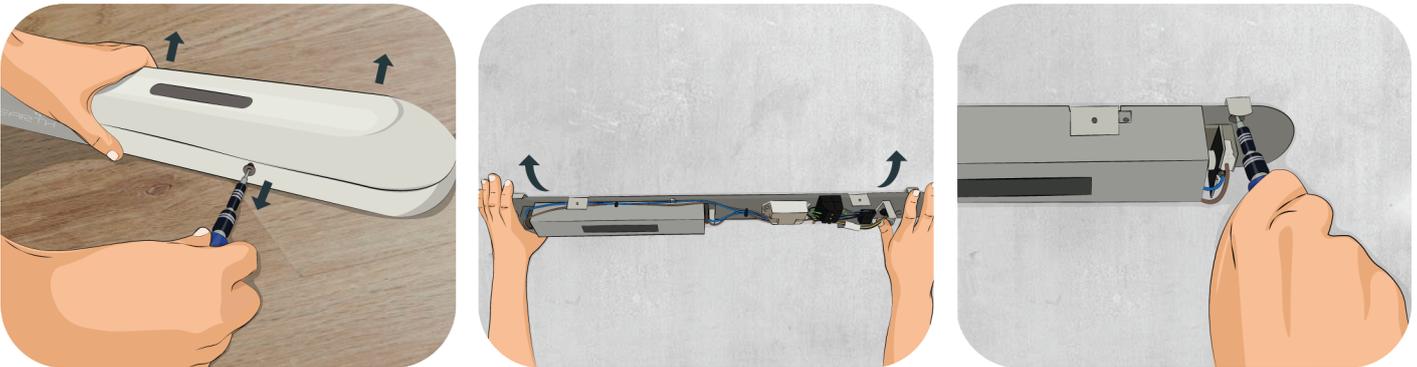
10. What's in the box

- U-Lamp
- QR code for instructions

11. Use of U-Lamp

11.1 Setup

1. Remove U-Lamp from the packaging;
2. Remove transport protection;
3. Separate the plastic dome from the rest of the lamp by removing 4 M4 screws;
4. Position the base of the lamp on the ceiling where the U-Lamp is to be installed;
5. Mark on the ceiling with a pencil the 4 points where the U-Lamp installation holes will be drilled (distance 637 mm in length and 48 mm in width), alternatively use the template provided on the side of the box;
6. Use a drill to drill the positions marked in the previous point;
7. Insert the four supplied expansion plugs;
8. Position U-Lamp, insert the four screws and secure it to the ceiling;
9. Connect the power supply to the terminal box, running the cable through the cable grommet;
10. Fit the cap removed in step 3 and secure it to the rest of the U-Lamp with the four M4 screws.



11.2 Details of operation

After the U-Lamp has been installed by an authorised technician, you can finally switch it on and enjoy its sanitising capacity. For the best operation of U-Lamp, set the switch to I. At this point U-Lamp will switch on when required, i.e. when a person enters the motion sensor's cone of perception, and will remain on as long as there is activity. To sanitise effectively, the U-Lamp can and must be used in the presence of people. All safety will be provided by the integrity of the filter and compliance with maximum exposure times.

12. Maintenance

Routine maintenance of U-Lamp will be carried out by technicians appointed by U-Earth biotech Ltd. The user may still clean U-Lamp using a dry cloth, preferably synthetic, with the device switched off and not powered, taking care not to damage the transparent filter.

13. Correct use

13.1. General

The correct use of U-Lamp requires correct installation by technicians authorised by U-Earth biotech Ltd. Following installation the U-Lamp will be switched on by the authorised technician and maximum sanitising efficiency will be achieved in this configuration.

The user of the U-Lamp must not tamper with the integrity of the housing or any other part of the U-Lamp.

13.2. Improper use

Any use of the appliance not covered in this manual is considered incorrect. This appliance complies with current safety regulations. Improper use may result in personal injury and damage to property. Read the operating instructions carefully before operating the appliance: they contain important information on safety, operation and maintenance. This will protect you and prevent damage to the machine itself.

The manufacturer cannot be held liable for damage caused by failure to observe the safety instructions and warnings.

13.3. Cleaning and care

The customer may only carry out the cleaning and care of the device described above. Any other operations are to be delegated to a technician authorised by the manufacturer.

13.4. Support in case of failure

In the event of faults or malfunctions of the device please contact service@u-earth.eu.

13.5. Electrical connection

U-Lamp must be connected to the mains to function. We recommend that you contact a specialised and authorised technician to connect the device to the mains.

13.6. Residual risks and warnings

It is forbidden to tamper with or alter the device.

It is mandatory to read and understand this user manual in full.

The appliance is powered by 220-240V AC, do not use the appliance if damaged or missing parts.

The appliance is only to be used by suitably trained personnel who have read and fully understood this user manual.



14. Warranty Conditions

U-Earth provides the customer with a limited warranty on materials and electrical/electronic components of its U-Lamp UV-C lamps under the following terms and conditions.

The warranty does not cover the following circumstances:

- a. Malfunctioning due to improper operations that do not follow instructions;
- b. Damage due to improper storage, maintenance, use or other factors;
- c. Damage caused by unauthorised disassembly, protection of the device;
- d. Extreme or external causes beyond reasonable control, including, but not limited to, thunder, fire, earthquake, flood, and other acts of God.

For product warranty questions, please contact our customer service department at support@u-earth.eu.

14.1. Users

U-Earth products are intended for professional use (B2B).

14.2. Validity

U-Earth guarantees its products; the starting date of the guarantee refers to the occurrence of one of the following events:

- a) the items are unwrapped from the original packaging;
- b) date of receipt by the user.

U-Earth products are covered by warranty in accordance with the law.

The appliance must be returned to the manufacturer's premises at the Customer's expense, who will also be charged for shipping costs.

Extraordinary maintenance, cleaning, routine maintenance and replacement of components subject to wear and tear are excluded from the guarantee.

The guarantee shall be voided if the appliance has been tampered with or if the defect has resulted from improper use, damage, fall, impact, damage resulting from carelessness or causes not attributable to the manufacturer.

The warranty is void in the absence of regular maintenance as prescribed by the manufacturer. The guarantee shall be void in the event of damage to the appliance due to voltage fluctuations, overvoltage or overcurrent. Under no circumstances does the guarantee imply compensation for direct or indirect damage of any kind during the period of inefficiency of the appliance. Under no circumstances does the guarantee imply compensation for direct or indirect damage resulting from failure to use the appliance during the warranty repair period.

Any extension of the warranty period, promised or insured by the dealer, shall be at the dealer's expense.

Incorrect use of the device or use not prescribed in this manual voids the warranty.

The assessment of the reasons for the need for repair work within the guarantee period is the sole responsibility of the supplier.

14.3. Performance guarantee

- a. The sizing and positioning of the U-Earth system must be adequately indicated by a qualified U-Earth Air Quality Specialist in order to effectively resolve any doubts the Customer may have.
- b. U-Earth cannot be held responsible for poor performance, in terms of pollution reduction and biological contamination, in case of incorrect sizing (number of units used) or positioning of the units, if decided autonomously by the end user.
- c. The customer shall ensure that all system operating data, including troubleshooting and maintenance, is regularly recorded, checked, archived and documented in a systematic form from the start-up of the system. This data must be made available to U-Earth upon request in the event of a warranty claim.
- d. Prior to installation and use, the units must be stored in their original packaging and must not be exposed to temperatures above 50°C or below 0°C.

14.4. U-Lamp - Component guarantee

14.4.1. Materials

U-Earth guarantees that the new components within the U-Lamp devices are free from material defects.

The care of the Customer and the total liability of U-Earth (including those involved in the distribution and sale of the units) towards the Customer with regard to the material guarantee for any claim is limited - at the discretion of U-Earth - to the repair or supply of new elements for the replacement of all components covered by this guarantee. The replacement of parts with parts supplied by U-Earth shall be at the expense of the Customer.

This material warranty is valid for two (2) years from the date of delivery of the product. .

14.4.2. Electronic components

The guarantee is conditional on the proper preservation and maintenance of the product and does not include all electrostatic discharge ("ESD") sensitive parts that have been subjected to physical or electrical stress as a result of improper treatment or storage. All ESD-sensitive products must be stored according to the manufacturer's recommendations.

14.4.3. Electrical components

U-Earth warrants that its bulbs are free from defects and are covered by a one (1) year warranty for malfunctions due to manufacturing defects, provided that the unit has been properly maintained and repaired ONLY by qualified U-Earth technical personnel. The Customer must anticipate that the average lifetime of the bulb, under normal conditions, is 11000 hours of continuous use.

The Customer also acknowledges that the bulb may be subject to premature wear and tear when used with multiple switching on and off; in this case with multiple close switching on and off, the Customer shall take into consideration the possibility of premature deterioration of the components and consequently anticipate their replacement.

14.4.5. Return/Refund

U-Lamp units can be refunded or returned in the event of malfunctions during initial installation or defective components.

If a unit is damaged during transport, it cannot be refunded. The customer is strongly advised to insure the transport for the full value of the goods.

If the end user has used the unit improperly, U-Earth is not liable for a refund.

- a. If any unit has manufacturing defects, having been used in accordance with the performance warranty clauses, it shall be U-Earth's responsibility to repair, remanufacture or replace, at its discretion, such units at an EXW price to which a discount will be applied in proportion to the unfulfilled life during the warranty period, excluding any customs, taxes, labour for replacement.
- b. U-Earth's liability shall apply as long as the total number of items supplied for replacement is less than or equal to the initial number of items installed. Claims for damages and right of recourse are excluded.
- c. Transport of the units to be returned to U-Earth for verification of compliance with the guarantee shall be paid for by the Customer. If the verification fails, i.e. the guarantee clauses are not fulfilled, the Customer shall pay all costs incurred by U-Earth personnel for the investigation. If the malfunction is not found by U-Earth, U-Earth shall return the goods to the Customer, with the consignee being responsible for the transport.

14.4.6. Disclaimer of Liability

No warranties, express or implied, are given other than those expressly set forth above.

Implied warranties of merchantability and fitness for a particular purpose are not given and are expressly excluded. U-Earth shall not be liable for indirect, incidental, punitive or exemplary damages, loss of profits, downtime of the equipment or legal action by third parties against the Customer, due to malfunctions or defects of the component. These terms and conditions are subject to change.

14.4.7. Storage Conditions

The device is intended to be stored under the following environmental conditions:

- Temperature between 0 and 50 °C;
- In the absence of condensation.

The following conditions should also be observed:

- Storage rooms: The equipment storage rooms must be dry and well ventilated. The room must be able to maintain a more or less constant temperature, neither too cold nor too hot. Direct exposure to sunlight should be avoided in all cases. Outdoor storage sites are to be avoided at all costs;
- Heat sources: appliances must be stored away from any heat source such as ovens or boilers.

15. Rules and Regulations

U-Lamp complies with the following European directives.

- 2014/30/EU Electromagnetic Compatibility Directive
- 2014/35/EU Low Voltage Directive of 20 April 2016
- 2011/65/EU European Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment electronic equipment (RoHS)
- 2015/863/EU Directive amending Annex II of Directive
- 2011/65/EU of the European Parliament and of the Council as as regards the list of restricted substances of use (RoHS)
- 2012/19/EU Directive on waste electrical and electronic equipment electronic equipment (WEEE)
- 2001/95/EC General Product Safety Directive

CE DECLARATION OF CONFORMITY

U-Earth Biotech LTD
172 Fulham Road, London, SW10 9PR, UK
VAT Number: 10920970968

In his capacity as manufacturer, he declares that the new machine described below:

Machine model:	Serial number - lot:	Year of construction:
U-Lamp	xxx	2022

It complies with all safety requirements regarding traffic, accident prevention, health and anti-pollution protection, prescribed by current legislation and in particular by the following directives:

- Electromagnetic compatibility directive 2014/30/UE
- Low voltage directive 2014/35/UE
- Machinery directive 2006/42/CE
- Restriction of the use of certain hazardous substances in electrical and electronic equipment directive 2011/65/EU
- Determination of certain substances in electrotechnical products - Part 3-1: Screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry IEC 62321-6:2015
- Apparecchi di illuminazione - Parte 1: Prescrizioni generali e prove EN 60598-1:2015-4
- Protection of health and safety in the workplace D.Lgs. N.81/2008

It is forbidden for the machine covered by this declaration to be put into service before its instructions have been carefully read by the operator.

We declare that the CE plate has been applied to the machine in question.

The person authorized to compile the technical file is **Mrs. Maggio Elisabetta**.

The technical file was created at U-Earth Biotech at the above address.

Place: London, United Kingdom

Date: 30/09/2022

Signature: Elisabetta Maggio



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