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# USER MANUAL

## GERMICIDAL PORTABLE LAMP

### MODEL: FR-DEVIRA

**Please read carefully this manual before using the product and keep it carefully for the future use.**

### The sterilizing power of UV-C rays.

Germicidal ultraviolet radiation, in English "Ultraviolet germicidal irradiation" (UVGI), is a sterilization method that uses ultraviolet (UV) light at the UV-C wavelength, which modifies the DNA or RNA of microorganisms and therefore prevents them from reproducing or being harmful.

The amount of radiation needed to destroy a microorganism depends on the type of microorganism and environmental conditions.

The lethal dose of UV radiation for a microorganism therefore depends on the time of exposure and other factors such as temperature, humidity and the form of reflection of the rays.

Our product has been designed and constructed in such a way as to maximize the effect of radiation and ensure an optimal result in various uses.

The ultraviolet dose is the product of the UV intensity (expressed as energy per unit area) with the residence time:  $DOSE = I \times T$  (expressed as  $1\text{mJ} / \text{cm}^2 = 1000 \text{micro Watts second} / \text{cm}^2$ )

From the report, a doubling of the applied dose increases the destruction by a factor of 10.

- Therefore doubling the dose required for the destruction of 90% you will have a 99% destruction of the target organism.
- Tripling the dose will destroy 99.9% of the target organism and so on.

Species	Dose (mJ/cm <sup>2</sup> )
• Bacillus subtilis (spore)	12.0
• Clostridium tetani	4.9
• Legionella Pneumophilla	2.04
• Pseudomonas aeruginosa	5.5
• Streptococcus feacalis	4.5
• Hepatitis A virus	11.0
• Hepatitis Poliovirus	12.0
• Saccharomyces cervisiae	6.0
• Infectious pancreatic necrosis	60.0

## 1 Important

**Risk information:** all personnel using UV radiation must be informed of the risks associated with use.

**Exposure limitation:** the operator must keep himself as sheltered as possible from the source in operation.

**Individual protection:** in these cases the protective measures require coverage of the exposed parts by the following means:

face and eyes: glasses, blinkers or plastic visor;

hands and arms: gloves and sleeves;

for long exposures plastic is preferable to rubber; materials that transmit little UV are also polypropylene and flannel;

- Do not expose your eyes to the emitted UV radiation:  
An unprotected exposure of the eyes can cause short-term reactions such as photosensitivity, irritation and transient redness (conjunctivitis, burns of the cornea, strong tearing, photokeratitis - which is a burn of the ocular surface); in the long run, the damage can be even more serious, causing cataracts and maculopathies, real lesions to the retina.
- Do not expose the skin to the emitted UV radiation:  
  
In the skin, it occurs in the short term erythema; The late effects of prolonged exposure to UV radiation translate into premature aging of the skin and the formation of precancerous epidermal cells.
- Do not expose plants and animals to the emitted UV radiation
- Do not apply UV radiation to fabrics, expensive paintings or other valuables to prevent oxidation due to prolonged exposure to ultraviolet rays.
- Do not immerse the product in liquids
- Do not use the product near hot sources such as radiators, stoves or other equipment that distributes heat
- The battery contained in it if exposed excessively to heat such as direct sunlight, fire could explode or cause fire
- The appliance must not be exposed to dripping or splashing
- Do not place any source of danger on the appliance (for example objects filled with liquid, or lit such as candles, lanterns, etc.).
- Keep out of reach of children.
- Do not use the product without having previously read this user manual.

## 2 Your portable germicidal LED lamp

Congratulations on your new purchase, you can fully enjoy all the benefits of your new purchase by following the instructions in this manual.

### Introduction

With FR-DEVIRA, now you will be able to eliminate up to 99% of bacteria, viruses, germs, mold fungi and allergens from any surface.

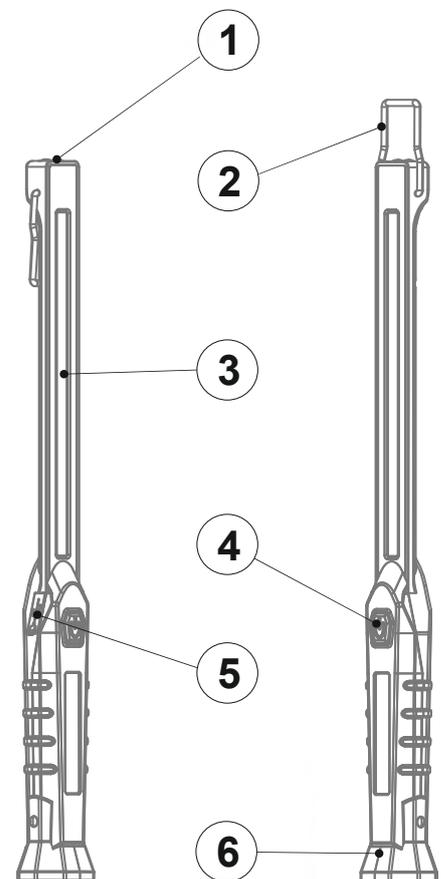
### Inside the box

This package contains:

- One “DEVIRA” UV lamp
- One charging USB cable (adapter NOT included)
- One use and maintenance manual

### Construction details and topology

1. Red LED operating indicator
2. Suspension hook
3. Beat the UV-C LED light source
4. On / off button
5. Charging connector and charging status LED
6. Magnetic base for fixing on inclinable metal



### 3 Let's start

Follow the instructions below for a correct recharge.

#### Note

- The lamp is energized by an internal rechargeable lithium ion battery
- The micro USB socket is intended ONLY for charging the contained battery
- Full recharge time in about 2-3 hours
- The rechargeable battery has a limited number of charge cycles. Battery life and number of charge cycles vary by use and settings

- Lift the charging protection side door
- Connect the supplied USB cable between:
  - il lato Micro-USB (piccolo) nella presa di ricarica laterale della lampada the Micro-USB side (small) in the side charging socket of the lamp
  - a USB socket on a computer or a USB power supply (on a mobile phone or similar)
- During the charging cycle, the red charge status LED located on the side of the lamp will be ON
- At the end of the charging cycle the status LED will be GREEN
- Disconnect the cable when lamp is fully charged
- Close the socket side protection door

The network adapter (NOT SUPPLIED) is STANDARD USB 5V type

### 4 Switching ON the LED source on and OFF

By pressing the power button will activate Devira according to the logic:

- UV-C LED bar lighting and red operating indicator
- Shutdown
- etc.

#### Automatic shutdown:

if left ON, the lamp will automatically turn OFF after 5 min of operation.

#### Important notes

**DIRECT THE LUMINOUS FLOW DOWNWARD BEFORE PRESSING THE IGNITION BUTTON**

## 5 Surface sterilization

Hold the lamp correctly to have a firm control;

direct the UV emission side towards the surface to be treated;

turn on the lamp by pressing button (5) once;

scroll along the surface at a distance as close as possible (the maximum sterilizing effect occurs at a distance of 1 to 10 cm) in order to concentrate the luminous flux on the surface;

for correct sterilization repeat the passage over it repeatedly in order to optimize the untreated spaces;

make sure to remain on the single surface for a sufficient time to obtain an appreciable result;

the shaded areas are not sterilized, so make sure during the exposure to evenly irradiate all the desired surfaces;

UV radiation is not penetrating, so clean the surface to be treated beforehand by removing dust, liquids, grease or dirt in general.

### Important notes

- **TURN THE LAMP OFF BEFORE PLACING IT - ABSOLUTELY DO NOT LEAVE IT ON**
- **UNIVOCATE DIRECTLY THE LIGHT FLOW TO THE SURFACE TO BE TREATED**
- **DO NOT DIRECT THE LUMINOUS FLOW TO THE EPIDERMIS OR EYES**
- **DO NOT DIRECT THE FLOW TO ANIMALS OR OTHER PEOPLE**

### Important notes

**PAY SPECIAL ATTENTION TO REFLECTIVE**

### Important notes

Reflective surfaces (mirrors, shiny or chromed surfaces, glass, screens, etc.) could reflect the UV flow towards yourself or third parties.

It is recommended to handle the lamp with care during use and make sure not to harm third parties during use.

### Important notes

Elettroapparecchiature Friggeri srl DOES NOT RESPOND for the product improper use

## 6 Product informations

### Notes

Product features are subject to change without notice from the manufacturer

		Quantity	7
<b>Battery</b>		Overall power	4.2W
Type	Lithium ion	Light wavelength	260 ~ 280nm
Voltage	3.7V	Classification	UV-C
Capacity	2000mAh	Emission	H 35° - V 52°

### Recharge

Connector	U-usb
Necessary time	2-3 H

### Working indicator LED source

Type	2x 5mm LED Red
Overall power	0.2W

### UV-C source

Source	LED
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### Indicative working time

Normal use	2,5 - 3 hours
Intensive use	2-2,5 hours

### Note

The autonomies listed are indicative

## 7 Troubleshooting

### Attention

Do no disassemble the lamp body in order not to void the warranty

To keep the warranty valid, never try to repair the lamp yourself.

If you find problems while using this device, check the following points before requesting assistance.

If the problem persists, consult the Friggeri webpage ([www.friggeri.com/contattaci](http://www.friggeri.com/contattaci)).

When contacting Friggeri, make sure that the device is nearby, the device model number and original package are available.

### No working signs

- Charge the lamp
- Be sure that charger is correct (standard USB 5V) and working
- Replace the charger
- Verify if the connection is correct

### No bright UV emitted light

- The UV-C radiation is hard to be identified by eyes
- Make sure you have pressed the power button correctly
- Make sure the battery is charged (see point 3)

## 8 Notice

Any changes or modifications made to this device that are not expressly approved by Elettroapparecchiature Friggeri may void the user's authorization to use the appliance.

### Conformity

Elettroapparecchiature Friggeri srl declares that the product complies with the essential requirements and other relevant provisions of Directive 89/656 / EEC.

## Environmental protection

### **Disposal of the product when used and the battery contained**

This product is designed and manufactured with quality materials that can be recycled and reused. This symbol indicates that the product is subject to directive 2012/19 / EU. This symbol indicates that the product contains an integrated rechargeable battery, the disposal is regulated by the European Directive 2013/56 / EU and cannot be disposed of with normal domestic waste. We recommend that you contact an authorized center to remove the integrated battery before disposal. Find out about the local separate collection system for electrical and electronic products and rechargeable batteries. Follow local regulations and never dispose of the product and rechargeable batteries with normal household waste. Proper disposal of old products and rechargeable batteries helps prevent negative consequences for the environment and human health.