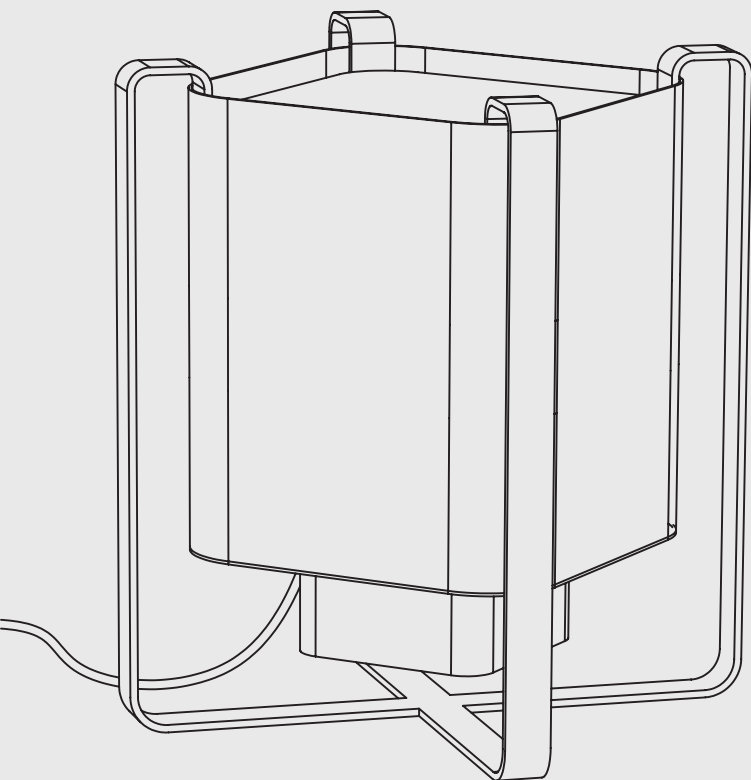


Instructions manual

Ozone generator

Toto model



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1.1 Operating principle

According to the WHO, ozone is the most efficient disinfectant for all types of microorganisms. It is the most active form of oxygen, capable of deactivating viruses, bacteria, parasites, fungi, molds, spores and many other microorganisms by oxidation in a few seconds. Besides, it acts at a lower concentration and with a shorter contact time than other disinfectants.

The use of ozone for air disinfection is much more recommended than the use of other disinfectants, apart from its effectiveness and its rapid decomposition. It is a natural biocide that leaves no hazardous waste. It is the most ecological and sustainable disinfection.

This ozone generator uses a high-frequency system to turn the surrounding oxygen molecules into ozone by micro-discharge. Once the ozone is generated, it is expelled by a generated flow air. For the oxygenation and ozone destruction process once disinfection is finished, this device has a carbon filter that helps to break down ozone molecules.

1.2 Manufacturer

Ozone generator manufactured by **LEMAR LEBEN GROUP S.L.**

Contact address:

Pol. Industrial nº2 – C/ En proyecto, s/n

46134 Foios, Valencia, Spain.

Teléfono (+34) 961490950

www.lemarleben.com

1.3 Technical specifications

Ozone output

10g/h

Ozone generator

Corona discharge

Voltage +/- 10%

AC220_v 50Hz

Power

150_w

Flow

2250l/min

Treated zone

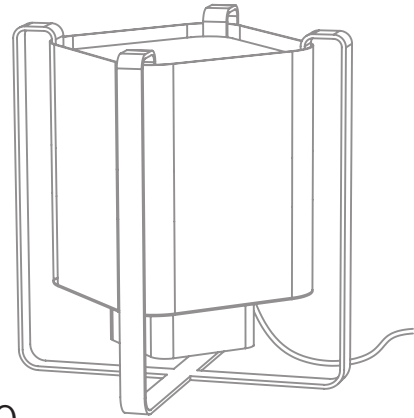
0-80m²

Weight

9kg

Dimensions

440x310x310mm



Estandard programs:

Cars

Pr.1 – 6min

Vans

Pr.2 – 10min

Rooms up to 30m²

Pr.3 – 105min

Rooms up to 80m²

Pr.4 – 225min

- Programs type: ozone + oxygenation cycle
- App programming by volume: Calculation according to the space to be disinfected
- Low energy consumption.
- Ozone gauge sensor. It allows to know when there are no ozone residues left to use the room again in a completely safe way.
- Operation light sign.
- Active carbon filter to carry out the oxygenation process quickly.
- With the programmed loads and times, no incompatibilities with any material have been found.
- Work areas calculated with a height of 3 m.

2. Product operation

2.1. Manual operation

Connect the machine to the electrical current (220V AC, 50Hz). Always make sure that the equipment is on a stable surface before plugging in the connection cable. Preferably place in the center of the cabin or room to be disinfected.

Press the power switch. The device will do an internal test for a few seconds. A light sweep of the LEDs will be shown in GREEN color. Once the test is finished, a fixed BLUE LED will remain.

Select the desired program pushing the Program button (consult section 3.1).

Push the Run button to start the operating cycle (consult section 3.1).

The ozonation process will start 10 seconds later. This security time is used so that the user can leave the room to disinfect. During this time the GREEN LEDs will be flashing.

Be careful, ozone generator cannot be used in the presence of people or animals.

Program 1

Specific program for **car** disinfection.

Cycle time: **6 minutes**.

During ozonation process, the GREEN LED light no. 1 will flash quickly. During the oxygenation process the flashing will be slow. When finished, the BLUE led will light up flashing.

To achieve maximum disinfection effectiveness, the vehicle's air conditioning must be used at half power throughout the cycle.

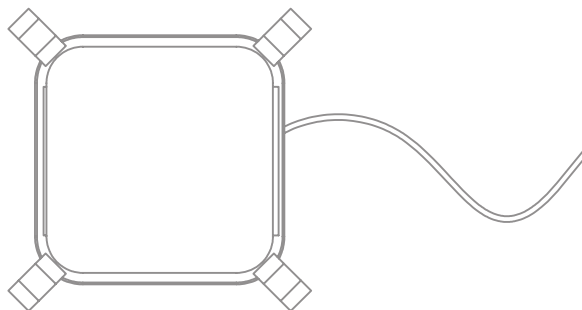
Program 2

Specific program for **vans and campers** disinfection.

Cycle time: **10 minutes**.

During ozonation process, the GREEN LED lights no. 1 and 2 will flash quickly. During the oxygenation process the flashing will be slow. When finished, the BLUE led will light up flashing.

To achieve maximum disinfection effectiveness, the vehicle's air conditioning must be used at half power throughout the cycle.
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Program 3

Specific program for **rooms up to 30 m²**, calculated with a height of 3 m.
Cycle time: **105 minutes**.

During ozonation process, the GREEN LED lights no. 1, 2 and 3 will flash quickly. During the oxygenation process the flashing will be slow. When finished, the BLUE led will light up flashing.

Air out the room after disinfection.

Program 4

Specific program for **rooms up to 80 m²**, calculated with a height of 3 m.
Cycle time: **225 minutes**.

During ozonation process, the GREEN LED lights no. 1, 2, 3 and 4 will flash quickly. During the oxygenation process the flashing will be slow. When finished, the BLUE led will light up flashing.

Air out the room after disinfection.

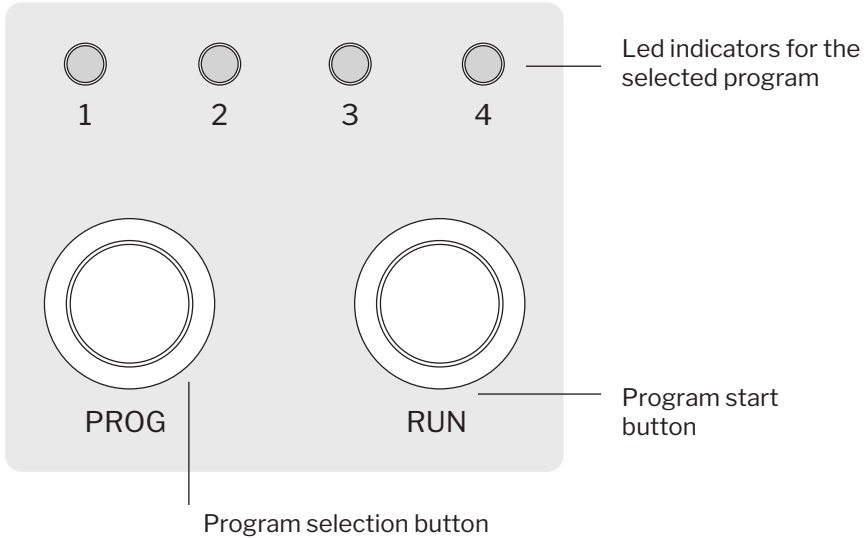
Program error

If disinfection process has been stopped due to any error, the first LED will remain in RED to indicate the error. Turn off and on the device to restart the process. If you notice a strong ozone odor, air out the room immediately.

If the error persists, consult the manufacturer.

3. Machine components

3.1 Button panel



3.2 Active carbon filter

This ozone generator has an active carbon filter. This filter helps to break the ozone molecules (O₃) once the disinfection process has been completed, to refill the room with oxygen (O₂) in a faster way.

3.3 Air circulation

The device has two fans, each with an air flow rate of 2250 l/min to improve ozonization and oxygenation processes.

3.4 Ozone generator

The ozone generator used provides an ozone output of 10 g/h and works by corona effect. Ozone is produced from an electrical discharge, commonly known as a spark. The spark splits the oxygen molecule (O₂) found in ambient air into elemental oxygen (O). These oxygen atoms quickly bond with another oxygen molecule (O₂) to form ozone (O₃).

In a corona discharge ozone generator, the electrical discharge takes place in an air space within the corona cell specifically designed to split the oxygen molecule and produce ozone. In this air gap, a dielectric is used to distribute the flow of electrons evenly through this gap to spread the flow of electrons to the largest volume of oxygen possible.

3.5 Ozone gauge sensor

This ozone generator has an ozone gauge sensor that can measure the amount of this gas throughout the process. When access to the vehicle or disinfected room is safe, it will be indicated with the BLUE LED.

The disinfected area must be properly ventilated before use.

4. MAINTENANCE



Clean the device with non-abrasive products. Always with a damp cloth, never with a spray bottle, to prevent the electronic components from getting wet and causing internal short circuits.



Do not force the equipment and follow the instructions in the manual to work safely.



Do not pull the main wire to disconnect the device. It is recommended to inspect it periodically and change it in case of deterioration.



Unplug the device when not in use or when cleaning.



Any damaged part should only be replaced by the manufacturer. If the device is disassembled or shows manipulation signs without the consent of the manufacturer, the product warranty will be lost.



The ozone gauge sensor should be replaced after 5 years of use. To do this, consult the manufacturer.



The ozone generator should be replaced after 5 years of use. To do this, consult the manufacturer.

5. Product applications

This ozone generator is useful for the disinfection of viruses and bacteria and the elimination of odors from all types of vehicles (cars, vans, buses, etc.) and rooms up to 80m².

Suitable for hospitals, clinics, laboratories, residences, shops, restaurants, coffee shops, hotels, spas, beauty centers, hairdressers, gyms and sports centers.

6. Safety recommendations. Indications and warnings

6.1. Specific warnings

This ozone generator reaches levels above $100 \mu\text{g} / \text{m}^3$ (0.05 ppm), which is the maximum value recommended by the WHO and therefore, according to the UNE 400-201-94 standard, it is considered Type C.

It cannot be used in the presence of people, animals and / or living beings. If the entrance is necessary where generators of this type are in operation, it must be carried out observing the adequate protective measures against irritating gases.

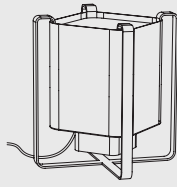
The device should be used in a controlled way minimizing the risk of exposure. The vehicle or rooms where the generator has been used will be accessible under normal conditions once it indicates that the ozonation + oxygenation cycle has ended (programs 1, 2, 3 or 4, times in section 2.1). The disinfected area must be properly ventilated before use.

Always use this device connected to a protected electrical line with a differential of at least 30 mA.

6.2. General warnings

Do not use in rooms where volatile chemicals are handled. Ozone may react with flammable substances and may produce hazardous chemical reactions on contact with other chemicals.

Ozone is irritating at higher levels than those indicated in this manual. Do not apply on unpackaged foods.



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