

# STERYLIS®

PROFESSIONAL ROOM STERILISERS

USER'S

MANUAL

MODELS:

ULTRA-200/450, ULTRA-300/850,  
ULTRA-700/850





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# 1. Notes for service technicians

The following service instructions are intended **exclusively for qualified service personnel**. To reduce the risk of danger (electric shock, UV-C exposure, exposure to high ozone concentrations), persons without appropriate qualifications or without appropriate training should not perform any servicing other than as described below.

When servicing this appliance, the service technician is exposed to dangerous UV-C radiation, high concentration of the hazardous substance – ozone, and high voltage. The possible effects of exposure to these dangers and assistance in such cases are described later in the manual. **It is essential that you read this information before you start servicing.** Before starting service work, you should also read the safety data sheet (ozone) and the UV-C radiation safety data sheet.



All service work must be carried out in accordance with the instructions for service technicians.



The voltage inside the device is high and can cause an electric shock. This is especially true for the very high voltage generated by the ozone generators. It is dangerous to touch any parts inside the device. In the event of an injury, follow the first aid instructions on page 5 of this manual.



The device emits UV-C radiation hazardous to human health. Before servicing, make sure that the fluorescent lamps do not emit UV-C radiation. Observe the general safety rules. Use protective measures in accordance with this manual or the UV-C safety data sheet. In case of exposure to radiation, follow the first aid instructions in this manual and the UV-C safety data sheet.



The device generates ozone, which is a dangerous substance, can lead to respiratory damage and at very high concentrations is dangerous for human and animal life. When carrying out maintenance work, do not put your face close to the ozone generator or inhale the ozone directly from the generator. Observe the general safety rules. Use protective measures in accordance with this manual or the ozone data sheet. In case of poisoning, follow the first aid instructions in this manual or the ozone safety data sheet.

## 2. Notes for users

- 1) The STERYLIS room steriliser can emit health hazardous UV-C radiation and generate high ozone concentrations. **For this reason, please read these operating instructions very carefully, especially the chapter on safety!**
- 2) Keep this manual and store it in a safe place. Do the same for the safety data sheet (ozone) and the UV-C radiation safety data sheet.
- 3) Special attention should be paid to the information specified in the grey fields with the warning sign and those in bold.
- 4) Follow the instructions.
- 5) In case of detection of malfunctioning of the device, contact the manufacturer's service department or directly the manufacturer.
- 6) For additional information not included in this manual, please contact the manufacturer directly.
- 7) It is essential that you read the meaning of the following warning icons. They are located in the manual, on the housing of the device or on other parts of the steriliser and are directly related to it:

Symbol	Meaning	Symbol	Meaning
	Important safety instruction. Be sure to read it!		The device generates ozone, which is classified as a dangerous substance.
	Warning, high voltage!		The device generates ozone, which can lead to airway damage.
	Dangerous UV-C radiation inside the device.		The device generates ozone, which in very high concentrations can lead to death or serious damage to health.
	No entry to the sterilised room!		

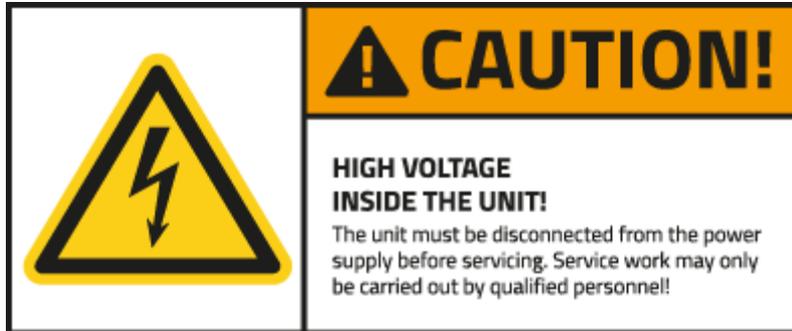
### Proper disposal of this product



This label indicates that this product should not be disposed of with other household waste throughout the EU. To avoid harmful effects on the environment and human health from uncontrolled waste disposal, the equipment should be recycled for material reuse. To return your used device, use the equipment collection systems or contact the point of sale where you purchased the product. They can accept this product for safe environmental recycling.

### 3. Important safety instructions

There are several warning stickers on the housing of the device, the contents of which are also presented below. **It is imperative that you comply with them!** Failure to comply with the information contained therein may lead to a risk to the health or life of the user or other persons, animals and living organisms, and may lead to the failure of the device.



High voltage inside the device is dangerous to human health. In case of electric shock with the parameters as in the device, skin burns, muscle spasms, loss of consciousness and, in extreme cases, cardiac arrest can occur. Therefore, **all service work may only start after the unit has been disconnected from the power supply and may only be carried out by qualified and properly trained personnel!**

In the event of an electric shock, isolate the victim from the power source as soon as possible - turn off the fuses and then unplug the plug from the electrical outlet. The second, but more risky way is to pull the victim away from the power source with a wooden stick. Call an ambulance as soon as possible after the victim is isolated from the power supply. If the victim is unconscious but breathing, circulation is maintained and spinal injury can be ruled out, the spine should be placed in a lateral fixed position. If the victim is not breathing, artificial respiration must be performed and, if necessary, a heart massage. If the victim has symptoms of concussion (pale, cold skin, sweat, chills, accelerated heart rate), place them in an anti-shock position - on their back, with their legs raised.



Despite a specially designed disinfection channel and limiting switch protection (removing any of the air filters disconnects the fluorescent lamps), there is always a minimal risk of UV-C radiation escaping outside the device due to improper use of the product or the occurrence of an unforeseeable failure by the manufacturer. **It is therefore necessary to read the following information on the possible effects of UV-C exposure, first aid measures and protective equipment!**

Fluorescent lamps inside the device emit UV-C radiation, which can cause negative effects on skin and eyes. The effects of radiation exposure depend on the wavelength, the amount of radiation absorbed and the type of tissue exposed. The most common symptom of skin exposure to this type of radiation is erythema (redness). The degree of redness and its course depend on the size of the radiation and the wavelength of the radiation. A high dose of UV-C radiation can lead to skin burns, which are manifested by painful swellings and blisters. Long-term exposure to radiation leads to unfavourable changes in the epidermis: it accelerates the skin aging process and causes pre-cancer and neoplastic changes. Repeated exposure of the skin to radiation, particularly high intensity, can cause excessive keratinization, which is a contributor to the formation of cancers such as basal and squamous cell carcinoma and melanoma. UV-C radiation absorbed by the skin can cause inflammation of the cornea, conjunctivitis, damage to the retina and cornea and can lead to photochemical

cataracts. The most common, acute symptom of eye exposure to UV-C radiation is inflammation of the cornea and conjunctiva. Corneal inflammation manifests itself in photophobia, increased tearing, a feeling of a foreign body in the eye, eyelid spasm, and sometimes visual impairment. The symptoms of inflammation appear after a period of concealment lasting even less than 30 minutes, and the symptoms of inflammation disappear about 14 hours after exposure. Radiation-induced conjunctivitis occurs after a latency period of 5 to 10 hours and is manifested by redness, itching, burning and tearing. If a higher dose is used, the correct vision may be impaired. The symptoms disappear after 10 hours to several days, depending on the exposure. **For this reason, never open the device while the UV lamps are running!**

Description of first aid measures:

General rules	All symptoms of exposure to UV-C radiation occur after the so-called latency period lasting from several minutes to several hours.
Eyes	<p>In case of slight symptoms of eye burn (slight pain, tearing, itching, redness): avoid direct sunlight, cool your eyes (with a cloth dampened with cold water or glasses with cooling gel). Do not scratch or rub your eyes. If you have contact lenses, it is essential to remove them to prevent further irritation. An appointment with an ophthalmologist is recommended.</p> <p>In case of more serious symptoms (severe blinking pain, foreign body impression in the eye) it is necessary to contact an ophthalmologist. Until an ophthalmologist has given assistance, proceed as with lighter symptoms of eye burns.</p>
Skin	<p>In case of slight burns, it is recommended to cool the skin with running water or apply a cooling gel on the skin. Contact with a doctor is recommended.</p> <p>In case of increased skin exposure to UV-C radiation, it is essential to consult a doctor.</p>

Personal protective equipment (UV-C radiation)	
Skin protection	Laboratory apron or other laboratory skin protective clothing
Hand protection	Nitrile gloves
Eye protection	Spectacles with side panels and UV400 marking, protective goggles or full face shields. Filters in the given protective measures must be marked at least "3-1,2" (3rd part number, 1,2 degree of protection). If glasses or goggles are used as eye protection, cover the remaining skin of the face with clothing.

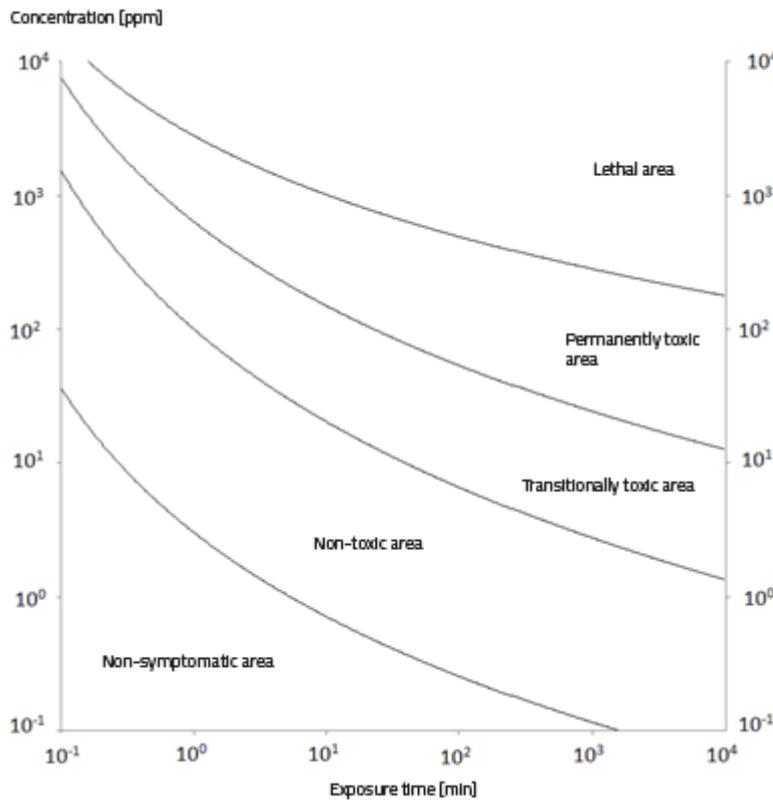


The device is designed to sterilise rooms by generating ozone in a concentration that may pose a threat to the health and life of humans and other living organisms. Despite the safety principles during the operation of the product as described in the following chapters, **it is essential to read the information below on possible effects of ozone and on first aid in case of exposure to a hazardous concentration of the substance.**

Ozone, due to its strong oxidizing effect, has an irritating effect on conjunctivitis and respiratory mucosa. This may result in burning pains and redness of conjunctivitis, coughing, wheezing, difficulty in breathing, increased frequency and severity of asthma attacks in people suffering from this disease, and increased ailments in people with coexisting respiratory and cardiovascular diseases. In very high concentrations it is dangerous to live.

The effect of ozone on living organisms depending on concentration is shown in the table below (based on [6]):

Effect	Concentration
Permissible workplace ozone concentration at 8 h exposure	0.05-0.1 ppm
Odour perceptibility – average	0.02 ppm
Odour perceptibility – depending on body properties	0.01-0.04 ppm
Minimum concentration causing irritation to eyes, nose, throat, headache, shortness of breath	from 0.1 ppm
Respiratory disorders, reduced oxygen absorption, respiratory disorders, general fatigue and chest pain, dry cough	0.5-1.00 ppm
Headache, breathing difficulties, drowsiness, severe pneumonia at prolonged exposure, skin irritation or dryness	1-10 ppm
Danger to life and health	10 ppm
Fatal concentration for small animals in 2 hours	15-20 ppm
Fatal concentration in a few minutes	above 1700 ppm



The graph on the left shows very clearly what effects ozone poisoning can have on humans depending on their concentration and exposure time. The graph shows: asymptomatic area (at such concentrations and such exposure times there should be no symptoms of ozone poisoning), non-toxic area (possible light, life-threatening symptoms), transiently toxic area (strong symptoms of poisoning that will disappear after a certain time, alone or after the victim's help), permanently toxic area (very strong symptoms lasting for the victim) and lethal area (huge concentrations of ozone may contribute to the death of the exposed person).

It is essential that you read the first aid measures set out in the table below:

General rules	To avoid exposure to the negative effects of ozone poisoning, wear full face and eye masks, protective gloves and protective clothing in accordance with the table "Personal protective equipment".
Guidelines for first aid providers	Wear protective gloves, avoid contact with eyes. Wash your hands thoroughly with water and soap after providing medical assistance
Inhalation	If the airways come into contact with too high a concentration of ozone, leave the ozone room as soon as possible and go out into the fresh air or take the injured person out into the fresh air. In the case of respiratory difficulties, give the victim oxygen. If the injured person stops breathing, CPR must be performed
Contact with eyes	Eyes exposed to too high a concentration of ozone should be rinsed with water as soon as possible for about 15 minutes. If you have contact lenses, remove them and rinse your eyes with water. Rinse with a continuous but not very strong stream of water, keep eyelids wide open, move the eyeball while rinsing
Contact with skin	Skin exposed to too high a concentration of ozone should be rinsed with running water and washed with soap.
Swallowing	Is not possible

**Always seek professional medical attention in cases of serious or persistent symptoms!**

**Information on special treatment:**

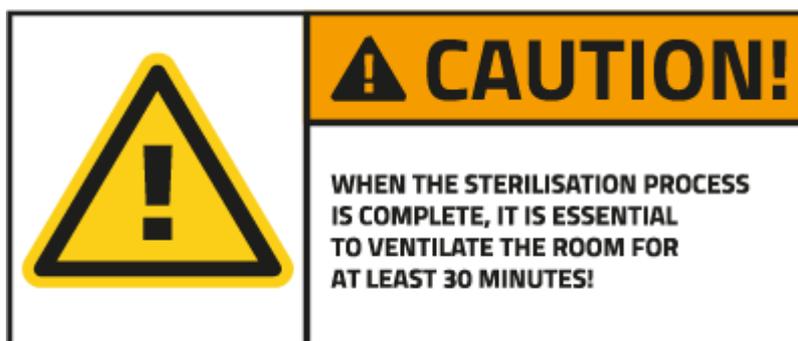
- If necessary, provide the victim with oxygen.
- The victim's circulation should be monitored.
- Show the doctor maintaining the safety data sheet (ozone)

Personal protective equipment (ozone)	
Hygiene measures	Water and soap
Respiratory protection	Full protective respiratory and eye mask with NO P3 filter (according to EN 14387)
Eye protection	Full protective mask for the airways and eyes
Hand protection	Chemical-resistant protective gloves
Skin protection	Protective clothing and footwear



Ozone sensor located on the inside the steriliser allows the current concentration of ozone in the room to be tested, so that the controller can determine the required ozone time and control the individual ozone generators accordingly to maintain the correct ozone concentration during sterilisation. The ozone sensor also transmits information to the controller when the ozone concentration in the room becomes safe for the user. These are the reasons why the ozone sensor, **which is an integral part of the device, has to work properly and therefore must not be blocked by any foreign objects and must be in full contact with the air in the ozoned room** so that their indications are correct! Improper measurements of the ozone sensor can lead to life-threatening and health-threatening effects as described in this chapter. The ozone sensor is calibrated by the manufacturer.

**CAUTION!** The following gases can affect the ozone sensor indications to a very high degree: carbon monoxide, hydrogen sulphide, nitrogen dioxide, sulfur dioxide, ethanol, nitric oxide (II), chlorine, n-heptane, ammonia, methane, hydrogen and carbon dioxide.



Although the sterilisation of the room will not be completed before the ozone concentration of 0.1 ppm (completely safe for humans) has been reached, **the room must be absolutely ventilated for at least 30 minutes after sterilisation**. This is to bring the ozone level of the room to 100% safe. Please note that the ozone sensors installed in the steriliser may fail or the user may undesirably set them off, thus interfering with their measurements. It should also be borne in mind that the safe level of ozone is different for adults, different for children and different for animals. Ventilating the device will also allow to get rid of any fog created during the ozone process (a natural phenomenon) and to get rid of the smell of ozone in the room partially or completely.

**The safe operation of the product is also related to the principles listed below:**

- The device may only be operated in sterilisation mode in a tightly closed room (no ozone may penetrate outside the sterilised room). Therefore, make sure that all windows, doors and any other escape routes for ozone from the room are tightly closed. Gaps around and under doors and ventilation grilles must be carefully sealed. The room must be protected from access by third parties.
- It is also forbidden to stay in rooms adjacent to the ozone room during the ozoning process. If the ozoned room is not properly sealed, some ozone may penetrate into other rooms.
- To protect the room from access by third parties, it is essential to place warning signs "WARNING! NO ENTRY! STERILISATION IN PROGRESS". Place them in a clearly visible place. The signs are included in the package.
- After starting the sterilisation mode, leave the room where the steriliser is operating as soon as possible. The time to leave the room is 120 seconds from the start of the ozoning function, only after that time the ozone generators start. It is forbidden to stay in the room during operation of the ozone generator without a full respiratory and eye mask with a suitable absorber. It is recommended to use a protective mask according to PN-EN 136 with an absorber according to PN-EN 14387, type NO P3. It is also recommended to use personal protective equipment for the skin according to the table of personal protective equipment.
- Smoking and the use of tools that cause a flame or spark is prohibited in an ozoned room.
- In order to deactivate the sterilisation mode before the end of the process, one should enter the room wearing a full respiratory and eye mask with a suitable absorber (in accordance with EN 136 and EN 14387 standards) and in the skin protection equipment in accordance with the personal protective equipment table.
- When the ozoning of the room is complete, it must be thoroughly ventilated for at least 30 minutes.
- Ozone is a heavier gas than air, after switching off the circulating fan of the steriliser, STERYLIS tends to settle in the recesses of the ground and migrate by the floor.
- It is not recommended to sterilise rooms below ground level without mechanical ventilation.
- It is forbidden to carry out the process of ozonisation by persons with olfactory disorders.
- This equipment may only be used by children at least 16 years of age and by persons with reduced physical and mental capabilities and those without experience and knowledge of the appliance, if supervision or instruction regarding the use of the equipment is provided in a safe manner, so that the hazards are understandable. Children should not play with the equipment. Children without supervision should not clean or maintain the equipment.

Moreover, the device should not be operated in places directly exposed to sunlight, with high humidity, in places where chemicals are used and in rooms with very small cubic capacity. For the correct operation of the ozone sensors the device must be used in an environment with the following parameters:

Temperature: -20 to 50°C

Pressure: 900 to 1100 hPa

Do not clean the room intended for ozone sterilisation with chlorine-based cleaning agents or other chlorinated substances. This can cause erroneous indications of the ozone sensor in the device and expose the user to danger.

The device is equipped with a pre-filter and an active carbon filter. In addition, there is one additional pre-filter in the package, which must be used interchangeably with the activated carbon filter when starting the sterilisation mode.

The manufacturer does not guarantee that the ozone sterilisation process (carried out in an appropriate manner) will not harm electronics, flowers and other sensitive or poor quality materials. Ozone as such is a powerful oxidant and in addition to destroying microorganisms it can also destroy other objects. No animals or plants should be left in the disinfected room, as living organisms can suffer, so it is recommended to take them out. If there are valuable objects in the room, including electronics, it is also advisable to move them during disinfection. The use of ozone sterilisation (ozoning) from time to time should not affect the destruction of objects in the room, however, the abuse of this process can all too often cause such destruction. Therefore, the manufacturer does not guarantee that long ozone sterilisation will not damage the items.

The manufacturer shall not be liable for any damage to property or damage to health and life resulting from improper use of the STERYLIS ULTRA devices or from the general safety rules of use.

## 4. Product features

### 4.1 Purpose

The product is designed for air cleaning and disinfection and surface disinfection. Depending on the mode of operation, it can work as a standard air purifier, an air purifier extended by sterilisation lamps with UV-C light source and as an ozoniser. The maximum cubic capacity of the room in which the product can work is given in the technical characteristics of the product for each model. The device is designed for use in commercial areas.

### 4.2 Product description

STERYLIS ULTRA room steriliser is a device consisting of air filters, UV-C lamps, ozone generators, fan(s), controller together with a user panel containing segmented and graphic displays and a backlit panel. The whole device is closed in a housing made of stainless steel, powder coated on the outside. The device is also equipped with a flashing warning lamp (beacon), a lamp indicating safe concentration of ozone in the room and a piezoelectric buzzer. The device can operate in several different operating modes.

In filter mode, the room air is cleaned with a pre-filter (F1) and an activated carbon filter (F2). A pre-filter with electrostatic properties traps particles of harmful pollutants, including those of microscopic size (several micrometers). It also removes harmful bacteria and allergens using a coating applied to the filter medium. In addition to particles, the active carbon filter retains harmful gases and odours through adsorption.

In the UV-C disinfection mode the UV-C lamps between the two filters are activated. The lamps emit UV-C radiation with a wavelength of 253.7 nm and power depending on the size of the device (see technical data). UV-C radiation irreversibly inactivates viruses, bacteria, fungi, moulds and yeasts. The Sterylis steriliser has been designed in such a way that people can stay inside when the device is in disinfection mode with the UV-C light source switched on. The UV-C radiation that breaks down the DNA is enclosed in a specially designed light trap so that not even the smallest part of it can escape outside the device.

In the silent disinfection mode, the unit operates in a similar way to the standard mode, but with reduced fan capacity. This results in a significantly reduced sound power level of the steriliser.

In sterilisation mode fan(s), filters and ozone generators are operating. This mode is used to sterilise the air and surfaces that come into contact with the air by generating ozone evenly throughout the room. The capacity of the ozone generator varies depending on the version (see technical data). This mode requires special precautions to be taken by the user and proper preparation of the room for the ozone process (see: Chapter "Important safety instructions" and "Procedure for carrying out the ozoning process").

ULTRA STERILIS is available in 4 versions, whose technical parameters are shown in the table:

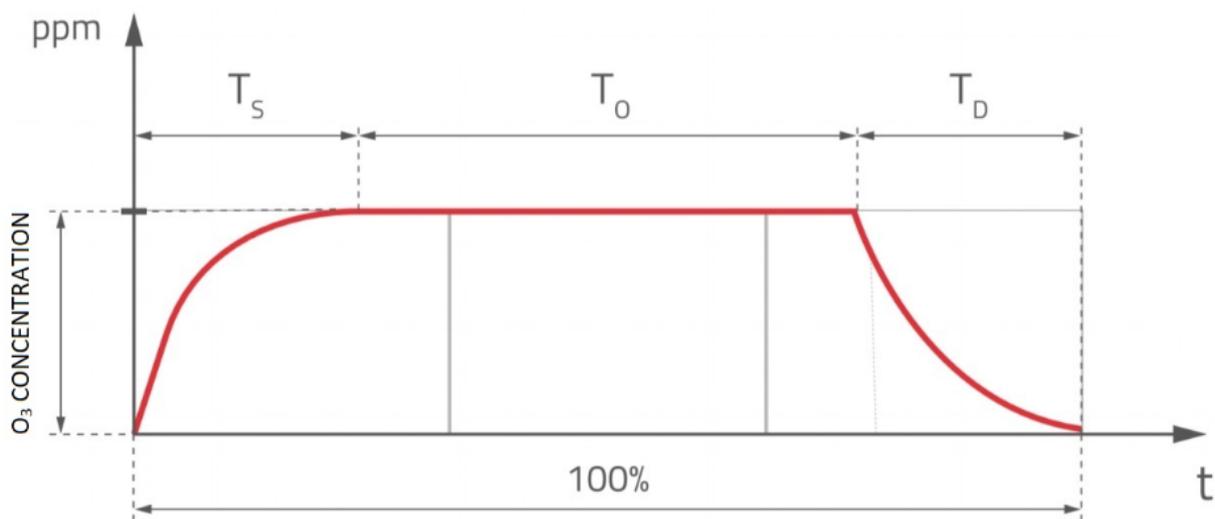
Name	STERYLIS	STERYLIS	STERYLIS
Model	ULTRA-200/450	ULTRA-300/850	ULTRA-700/850
Rated voltage	230 V	230 V	230 V
Frequency	50 Hz	50 Hz	50 Hz
Rated power*	470 W	710 W	810 W
Rated current*	2,0 A	3,1 A	3,5 A
Maximum airflow capacity	290 m <sup>3</sup> /h	410 m <sup>3</sup> /h	900 m <sup>3</sup> /h
Types of air filters	F-1: STAK-001001003-00100 F-2: STAK-001002003-00100	F-1: STAK-001001004-00100 F-2: STAK-001002004-00100	F-1: STAK-001001003-00100 F-2: STAK-001002003-00100
Number of UV-C sources / Electrical power of single UV-C source / Model	4 / 55 W / STAK-003012000-00400	6 / 55 W / STAK-003012000-00400	8 / 55 W / STAK-003012000-00400
UV-C wavelength	253,7 nm	253,7 nm	253,7 nm
UV-C source standard	EN 61195	EN 61195	EN 61195
Total electrical power of UV-C sources	220 W	330 W	440 W
Total radiant power of UV-C sources	78 W	118 W	157 W
Maximum UV-C radiation dose	654 J/m <sup>2</sup>	901 J/m <sup>2</sup>	421 J/m <sup>2</sup>
Ozone generator capacity	30 000 mg/h	45 000 mg/h	45 000 mg/h
Net weight	26 kg	36 kg	48 kg
IP degree of protection	IP20	IP20	IP20

\*in sterilisation mode

## 4.3 Operating principle

**Ozoning:** The steriliser has ozone generators, the number of which varies depending on the version. The ozoning process consists in starting all the ozone generators in the device and achieving a concentration of  $O_3$  particles in the room of 7 ppm. Once the required concentration is reached, the generators are disconnected until the concentration drops to 6 ppm. At this point, the ozone generators are restarted and aim to reach a concentration of 7 ppm again. Then they are disconnected again and the process repeats itself. This is the so-called modulated efficiency of the ozone generators by pulsation. Changes in the concentration of ozone in the room are shown in the diagram below. In the manual ozone sterilisation mode the user can change the settings for the working ozone concentration and ozone duration.

Time  $T_S$  is the time required to achieve the sterilising ozone concentration (default 5 ppm),  $T_O$  is the time required for the sterilisation process, controlled by the controller, depending on the achieved ozone concentration,  $T_D$  is the time required for the process to return to a safe ozone concentration (0.1 ppm), controlled by the controller, assisted by an ozone destructor.



For very high ozone concentrations, the ozone concentration may be lower and be at least 2 ppm. However, this is sufficient to allow for an effective ozoning process with an extended duration.

Ozone is a powerful oxidant, so it is perfect for killing bacteria, viruses, moulds and removing unpleasant odours. It is highly reactive, which means that it reacts with other molecules, breaking down their structures. The effectiveness of ozone in eliminating odours lies in the fact that, as a gas, it is able to reach wherever there is air, i.e. all the cracks, nooks and gaps inside a room. It breaks down particles present in the air responsible for odour in rooms and kills bacteria, viruses or moulds. Ozoning is an effective method of disinfection, deodorisation or disinsectisation, thanks to which rooms are not only free of unpleasant aromas but also safe and sterile. Ozone is used to sterilise living quarters, public areas, health care facilities (including operating theatres), processing plants (e.g. butcher's shops), warehouses, fruit and vegetable storage facilities, catering facilities for refrigeration chambers and shop sales halls. Ozoning is also used to extend the shelf life of food products, e.g. by eliminating fungi, bacteria and moulds, which allows to significantly extend the storage period of vegetables, fruit or dried tobacco or fruit in storage facilities. It is also a well-known and effective way of getting rid of unpleasant smell from changing rooms, classrooms or gymnasiums in schools. Ozoning is a very effective method of odour removal and deodorization of clothes and shoes, often used in costume and costume rentals or wardrobes in theatres. Ozone is also used to sterilise and remove odours from children's toys, especially in public playrooms for children.

**UV-C disinfection:** The UV-C lamps used in the device emit radiation of a strictly defined wavelength of 253.7 nm. It is a wavelength that has a photolithic effect on microorganisms such as bacteria, moulds, yeasts and viruses. Ultraviolet light of this wavelength effectively penetrates their cell membrane destroying the structure of their DNA and thus preventing their reproduction. Subjected to high levels of UV-C radiation, microorganisms and viruses are permanently destroyed. In addition to the disinfecting effect of the UV-C radiation used, we also obtain a high quality deodorising effect (removing odours from the air). Due to the special design of the UV-C chamber, the device operating in disinfection mode can be used in rooms where people are present. Specially designed light traps inside the device completely prevent invisible, harmful UV radiation from escaping from the device. The specially selected type and high power of the UV-C light source with a selective emitted wavelength of 253.7 nm, and the unique solution of the double quartz filter UV-C lamp used in STERYLIS sterilisers, causes the harmonic components of the ozone-producing UV light emissions below 240 nm to be blocked inside the lamp. Thus, in disinfection mode, the STERYLIS steriliser does not produce any harmful ozone at all and is completely safe for the people around it. In addition, the corresponding wavelengths produced by UV-C light sources contribute to the acceleration of the decomposition of O<sub>3</sub> particles into bi-atomic oxygen, reducing the ozone process length. This is the so-called ozone destruction function that every STERYLIS ULTRA model is equipped with.

## 5. Packing contents

A user who has purchased any model of STERYLIS room steriliser receives a set of:

- 1) Complete room steriliser ready for use
- 2) Additional pre-filter
- 3) Detachable 3-meter long power cord
- 4) Additional 10-meter long power cord\*
- 5) Operating manual
- 6) Safety data sheet (ozone)
- 7) UV-C safety data sheet
- 8) Safety data sheet
- 9) Declarations of conformity in Polish and English
- 10) Two warning signs "WARNING! NO ENTRY! STERILISATION IN PROGRESS" (as below):



\* if you purchase the device as an option with a longer power cord

If the manufacturer is not responsible for any of the above mentioned parts of the documentation, he should be contacted for completion or downloaded from the website at the address: <https://www.sterylis.com>

## 6. Operation

The device should be operated in rooms whose parameters are consistent with the technical characteristics of the device. In addition, they must be operated in accordance with the information contained in the chapters on safety and maintenance.

In order to become familiar with proper handling of the device, in particular the ozone sterilisation mode, it is recommended to obtain a certificate.

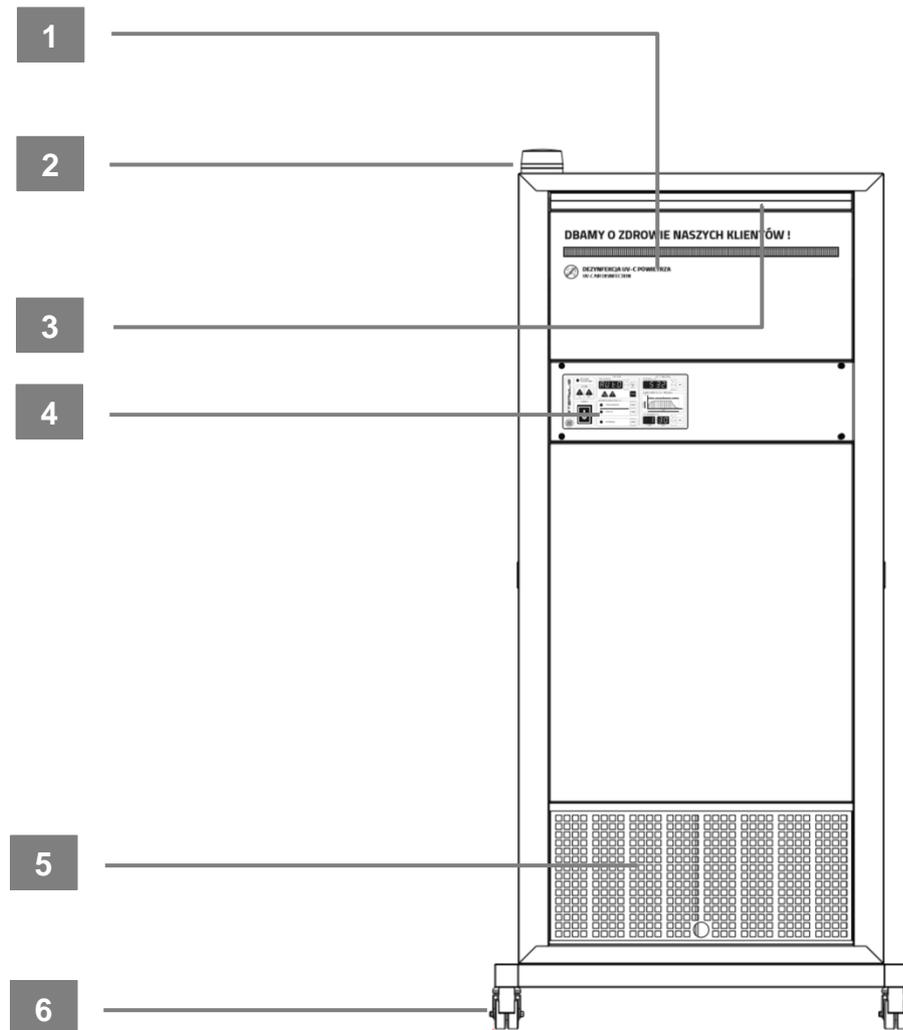
The certificate, preceded by training, is a confirmation of:

- The ability to handle the device in its full range of functionality
- The knowledge of safety rules associated with the use of STERYLIS equipment, including safety rules for ozone sterilisation
- The knowledge of first aid in case for exposure of humans to high voltage, harmful UV-C radiation and ozone
- The knowledge of user's maintenance of the device

The certificate can be obtained by participating a training program offered by PROZON Foundation for Climate Protection. For more information visit <http://prozon.org.pl/contact,28,en.html>

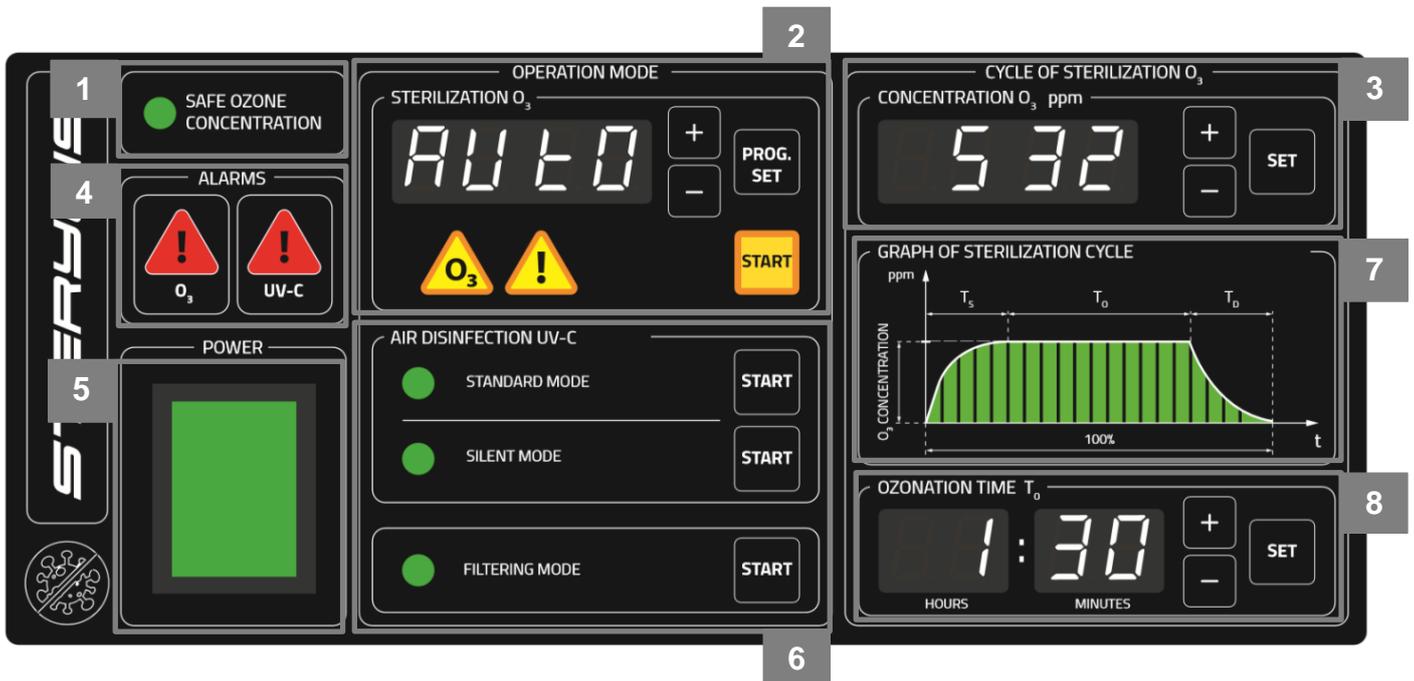
## 6.1 Operation of the device

To operate the room steriliser, use the user panel on the front of the device. The user panel consists of a main switch, controls: individual modes of operation, failure and warning, function keys, three segment displays and a graphical display of the ozone diagram. The device is also equipped with a flashing warning lamp (beacon), a piezoelectric buzzer signalling the operation of the ozone generators and an illuminated panel active in the disinfection mode.



- |          |  |          |                                |
|----------|--|----------|--------------------------------|
| <b>1</b> | Illuminated UV lamp indicator            | <b>4</b> | User panel                     |
| <b>2</b> | Beacon light                             | <b>5</b> | Cassette filters (pre-filters) |
| <b>3</b> | Cassette filters (with activated carbon) | <b>6</b> | Transport wheels               |

## 6.2 User panel



- 1 The signal LED signals a user safe ozone concentration in the air after the ozone cycle.
- 2 **STERILIZATION O<sub>3</sub>** section: segmented display indicating operating mode and error codes, +, -, **PROG. SET** and **START** and warning lights O<sub>3</sub> and !
- 3 O<sub>3</sub> CONCENTRATION section: segment display indicating the ozone concentration and the +, - and **SET** buttons
- 4 Alarm icons for failure of a system of ozone generators, ozone sensor or UV-C fluorescent lamps
- 5 Main device switch
- 6 LEDs indicating individual operating modes of the device and **START** buttons activating individual operating modes
- 7 Graphical display of the sterilisation cycle diagram
- 8 **OZONING TIME T<sub>0</sub>** section: segmented display for the process time, +, - and **SET** buttons

## 6.3 Access levels

Two access levels are possible, based on user privilege. Each access levels has a unique access code. Refer to the table below for privilege scope depending on access level.

Access level	Privilege scope
<b>USER</b>	<ul style="list-style-type: none"> <li>• Activation of Filtration mode, UV-C air disinfection - standard mode, UV-C air disinfection - silent mode</li> <li>• Resetting d102, d105, d120 counters associated with F001, F002, F006 messages</li> <li>• Access to C150, C151, C152 and C200 configuration parameters</li> <li>• Access to t204 service function</li> </ul>
<b>SUPER-USER</b>	<ul style="list-style-type: none"> <li>• Activation of Filtration mode, UV-C air disinfection - standard mode, UV-C air disinfection - silent mode, O<sub>3</sub> sterilisation mode - automatic, O<sub>3</sub> sterilisation mode - manual</li> <li>• Resetting d102, d105, d108, d111, d114, d117, d120, d201 counters</li> <li>• Deactivation of siren in sterilisation mode</li> <li>• Access to C101, C116, C117, C130, C138, C142, C150, C151, C152, C200 configuration parameters</li> <li>• Access to t200, t201, t204, t205, t208 service functions</li> </ul>

## 6.4 Starting the device and selecting the operating mode

The device can operate in four operating modes, the activation of which is forced by means of appropriate buttons on the user panel. The following modes are available: Filtration, UV-C air disinfection – standard mode, UV-C air disinfection – silent mode and O<sub>3</sub> sterilisation.

To start the device, insert the power cord plug into an electrical outlet. The voltage required for proper operation is 230 V, 50 Hz. Then set the main switch of the device to **ON**.

When the device is started, it will be in standby mode, which means that it is ready for operation and waiting for a command from the user. In the standby mode, the device indicates:

- The name of the **AUTO** or **LOCH** program (when the device is in locked mode) on the display in **STERILIZATION O<sub>3</sub>** section and error and message codes (if any)
- On the display in the **O<sub>3</sub> CONCENTRATION** section: Value of the current ozone concentration when the concentration exceeds 0.1 ppm / Characters - -.- - during the ozone sensor warm-up phase / In other cases, the display is inactive

Exiting the standby mode (for entering the access code, operating mode settings or device parameter settings) and leaving the device idle for 60 seconds automatically returns to standby mode.

After the first start-up of the device, it is recommended to set the current date and time in accordance with chapters 6.8 and 6.8.4 of this manual.

### 6.4.1 "Filtration" mode

To start the "Filtration" mode of operation, press and hold the **START** button located at the green filtering mode indicator. The filter mode light will start blinking with low frequency (the device will check the proper functioning of the relevant actuators - **PRE-TEST** function) and then it will start to light steadily and the device will start working in the selected mode. If any errors are detected during the test, the device will display a **tEst** message, enter the standby mode and then display the corresponding error codes on the display in the **O<sub>3</sub> STERILIZATION** section (except for errors F201 and F202, which cause the PRE-TEST to stop until the error is corrected - the filter cartridge is inserted)

During operation in filter mode, the device indicates:

- Characters - - - - on the display in the **O<sub>3</sub> STERILIZATION** section or the **LOCH** message (when the device is in locked mode) and error and message codes (if any)
- On the display in the **O<sub>3</sub> CONCENTRATION** section: Value of the current ozone concentration when the concentration exceeds 0.1 ppm / Characters - -. - during the ozone sensor warm-up phase / In other cases, the display is inactive
- Characters - - : - - on the display in the **OZONING TIME** section

The filtration mode can also be directly selected if the unit is in disinfection mode. To switch from disinfection mode to filtration mode, press and hold the **START** button located at the green filtration mode light.

To interrupt the filtration process, press and hold the **START** button located at the green filtration mode light again or set the switch in the "O" position to activate the sleep mode (refer to Chapter 6.5 for description of sleep mode).

## 6.4.2 "UV-C air disinfection - standard mode" operating mode

To start the "UV-C air disinfection - standard mode" operating mode, press and hold the **START** button located at the green standard mode light. The standard mode light will start blinking with low frequency (the device will check the proper functioning of the relevant actuators - **PRE-TEST** function) and then it will start to light steadily and the device will start working in the selected mode of operation. Confirmation of the disinfection mode is the operation of the front panel illuminated on the unit.

If any errors are detected during the test, the device will display a **tEst** message, enter the standby mode and then display the corresponding error codes on the display in the **O<sub>3</sub> STERILIZATION** section (except for errors F201 and F202, which cause the PRE-TEST to stop until the error is corrected - the filter cartridge is inserted)

During the standard disinfection mode, the device indicates:

- Characters - - - - on the display in the **O<sub>3</sub> STERILIZATION** section or the **LOCH** message (when the device is in locked mode) and error and message codes (if any)
- On the display in the **O<sub>3</sub> CONCENTRATION** section: Value of the current ozone concentration when the concentration exceeds 0.1 ppm / Characters - -. - during the ozone sensor warm-up phase / In other cases, the display is inactive
- Characters - - : - - on the display in the **OZONING TIME** section

The standard mode can also be directly selected if the unit is in silent disinfection or filtration mode. To switch from silent disinfection or filtration mode to standard disinfection mode, press and hold the **START** button located at the green standard mode light.

To interrupt the standard disinfection process, press and hold the **START** button next to the green standard mode light again or set the switch in the "O" position to activate the sleep mode (refer to Chapter 6.5 for description of sleep mode).



**CAUTION!** Each time the UV-C disinfection mode is activated, the UV-C lamps are on for at least 90 seconds! The UV-C lamps are powered even if the UV-C disinfection mode is deactivated manually. The UV-C lamps can only be switched off earlier than 90 seconds in emergency situations (error **E101**, **E201**, **E202** or **E301**).

## 6.4.3 "UV-C air disinfection – silent mode" operating mode

To start the "UV-C air disinfection - silent mode" operating mode, press and hold the **START** button located at the green silent mode light. The silent mode light will start blinking with low frequency (the device will check the proper functioning of the relevant actuators - **PRE-TEST** function) and then it will start to light steadily and the device will start working in the selected mode of operation. Confirmation of the disinfection mode is the operation of the front panel illuminated on

the unit. If any errors are detected during the test, the device will display a **tEst** message, enter the standby mode and then display the corresponding error codes on the display in the **O<sub>3</sub> STERILIZATION** section (except for errors F201 and F202, which cause the PRE-TEST to stop until the error is corrected - the filter cartridge is inserted)

During the silent disinfection mode, the device indicates:

- Characters - - - - on the display in the **O<sub>3</sub> STERILIZATION** section or the **LOCH** message (when the device is in locked mode) and error and message codes (if any)
- On the display in the **O<sub>3</sub> CONCENTRATION** section: Value of the current ozone concentration when the concentration exceeds 0.1 ppm / Characters - - - - during the ozone sensor warm-up phase / In other cases, the display is inactive
- Characters - - : - - on the display in the **OZONING TIME** section

The silent mode can also be directly selected if the unit is in standard disinfection or filtration mode. To switch from standard disinfection or filtration mode to silent disinfection mode, press and hold the **START** button located at the green silent mode light.

To interrupt the silent disinfection process, press and hold the **START** button next to the green silent mode light again or set the switch in the "O" position to activate the sleep mode (refer to Chapter 6.5 for description of sleep mode).



**CAUTION!** Each time the UV-C disinfection mode is activated, the UV-C lamps are on for at least 90 seconds! The UV-C lamps are powered even if the UV-C disinfection mode is deactivated manually. The UV-C lamps can only be switched off earlier than 90 seconds in emergency situations (error **E101**, **E201**, **E202** or **E301**).

## 6.4.4 "O<sub>3</sub> sterilisation" mode



**CAUTION!**

Ozone is a substance hazardous to human and animal health and life. Before starting to operate the device in sterilization mode, it is essential to read these operating instructions, especially the safety sections!



**NOTE!**

Before starting the sterilization mode, replace the activated carbon filter with a standard filter. Such a filter is included with the device. When the sterilization mode is finished, the filter must be replaced with an activated carbon filter. For instructions on how to replace the filters, see the section "CHANGING THE FILTERS".



**CAUTION!**

In order to carry out the ozoning process correctly and safely, it is necessary to follow the instructions in Chapter 8 - Procedure for carrying out the ozoning process!

	<p><b>CAUTION!</b></p> <p>The sterilization mode can be started after a period of 30 minutes after the device has been switched on. If you try to start the sterilization before 30 minutes have passed, you will end up with error P005. The error will be automatically cleared 30 minutes after starting the device and it is possible to start the sterilization mode. Such protection is related to the time required to heat up the ozone sensor. An ozone sensor that has not passed the annealing process may indicate the ozone concentration incorrectly. The heating up of the ozone sensor is indicated by the slow blinking of the safe ozone concentration indicator.</p> <p><i>P005 error can also be removed by activating any of the following operating modes: filtration, silent disinfection, standard disinfection.</i></p>
---	--

The sterilization mode can be performed in two ways – in automatic mode, where the process is carried out according to the parameters with factory settings, and in manual mode, where the user can change the parameters of ozoning time and working ozone concentration.

### 6.4.4.1 “O<sub>3</sub> sterilisation – automatic” mode

To activate O<sub>3</sub> STERILISATION in automatic mode, press and hold for 5 seconds the yellow **START** button in **O<sub>3</sub> STERILISATION** section on the user panel. Enter the correct access code.

*Entering the access code:*

The 4-character code being entered is shown on the display in the **O<sub>3</sub> STERILISATION** section. The **+** and **-** buttons can be used to change the value of the active character. The active character is the character that flashes at high frequency, inactive characters are lit permanently. The **PROG.SET** button can be used to move from one active character to the next on the right. Confirm the correct code entered by pressing and holding the yellow **START** button. If the code is incorrect, the **HHHH** message will be displayed and short squeal sound will be heard. When this happens, re-enter the code.

Once the correct code has been approved, the display in the **O<sub>3</sub> STERILIZATION** section will show the selected type of sterilization, the display in the **OZONING TIME** section will start counting down the time remaining until the start of sterilization and the **O<sub>3</sub>** and **!** will start blinking.

After the 120-second countdown, the unit will check the proper functioning of the relevant actuators (**PRE-TEST**) and then the ozone generators will start and the unit will operate in the selected mode of operation. If any errors are detected during the test, the device will display a **tEst** message, enter the standby mode and then display the corresponding error codes on the display in the **O<sub>3</sub> STERILIZATION** section (except for errors **F201** and **F202**, which cause the **PRE-TEST** to stop until the error is corrected - the filter cartridge is inserted)

When the device is in sterilization mode, an additional acoustic signal is activated (can be deactivated according to the instructions in 6.4) and a flashing signal generated by the warning beacon (regardless of the measured ozone concentration). When the safe ozone concentration (0.1 ppm) is exceeded, the safe ozone concentration indicator will stop illuminating.

The sterilisation process or the countdown to the start of sterilisation can be interrupted at any time by pressing any button on the user panel. The device will then go into standby mode.

During the **T<sub>s</sub>** phase, the display in the **OZONING TIME** will show the characters **- . - .**. During phases **T<sub>0</sub>** and **T<sub>D</sub>**, a countdown of the sterilization time will take place, which is continuously updated on the basis of the current ozone concentration.

During the ozoning process, the display in the **O<sub>3</sub> CONCENTRATION** section shows the current ozone concentration. If the heating up of the ozone sensor is still in progress during the ozone treatment, the display shows the characters **- .- -**.

After completion of the sterilization process, the device will switch off the ozone generators and after 30 minutes switch

on the UV-C fluorescent tubes to accelerate the ozone decomposition (ozone destruction). During the ozone destruction process the LED backlight panel is activated. When the safe concentration (0.1 ppm) is reached, the ozone safety light will light up.

After completion of the sterilization process the device will go into standby mode.

### 6.4.4.2 "O<sub>3</sub> sterilisation – manual" mode

To activate O<sub>3</sub> STERILISATION in automatic mode, press and hold for 5 seconds the **PROG.SET** button in **O<sub>3</sub> STERILISATION** section on the user panel. Enter the correct access code to access the manual mode.

#### *Entering the access code:*

The 4-character code being entered is shown on the display in the **O<sub>3</sub> STERILISATION** section. The **+** and **-** buttons can be used to change the value of the active character. The active character is the character that flashes at high frequency, inactive characters are lit permanently. The **PROG.SET** button can be used to move from one active character to the next on the right. Confirm the correct code entered by pressing and holding the yellow **START** button. If the code is incorrect, the **HHHH** message will be displayed and short squeal sound will be heard. When this happens, re-enter the code.

After approving a correctly entered code, the sterilisation process parameters must be completed. The display in the **O<sub>3</sub> STERILIZATION** section will show one of the following programs: **Set.1**, **Set.2** or **Set.3**. These are three different options for setting the parameters of the selected mode available to the user.

To select one of the above mentioned settings, press the **+** button or the **-** button in the **O<sub>3</sub> STERILIZATION** section to scroll up or down the setting selection accordingly.

The settings of the currently selected program will be displayed in the **O<sub>3</sub> STERILIZATION** and **OZONING TIME** sections. To change the settings of the preset ozone concentration, control the **+** and **-** buttons in the **O<sub>3</sub> STERILIZATION** section to increase or decrease the value of the active digit by 1 respectively. The active digit is changed using the **SET** button. To change the setting of the preset ozoning time, control the **+** and **-** buttons in the **OZONING TIME** section to increase or decrease the value of the active digit by 1 respectively. The active digit is changed using the **SET** button.

To save the settings for a given program, press and hold the **PROG.SET** button in the **O<sub>3</sub> STERILIZATION** section. Save of the settings will be confirmed by a short beep and a single blinking of the concentration and time displays.

To save the settings of all the programs and to proceed directly to the sterilization process (with **SET 1 / SET 2 / SET 3** selected), press and hold the yellow **START** button in the **O<sub>3</sub> STERILIZATION** section. The display in the **O<sub>3</sub> STERILIZATION** section will show the selected type of sterilization, the display in the **OZONING TIME** section will start counting down the time remaining until the start of sterilization and **O<sub>3</sub>** and **!** will start blinking.

After the 120-second countdown, the unit will check the proper functioning of the relevant actuators (**PRE-TEST**) and then the ozone generators will start and the unit will operate in the selected mode of operation. If any errors are detected during the test, the device will display a **tEst** message, go into standby mode and then display the corresponding error codes on the display in the **O<sub>3</sub> STERILIZATION** section. (except for errors F201 and F202, which cause the PRE-TEST to be suspended until the error is corrected - filter cartridge is inserted)

When the device is in sterilization mode, an additional acoustic signal is activated (can be deactivated according to the instructions in 6.4) and a flashing signal generated by the warning beacon light (when the ozone concentration exceeds the user safe level of 0.1 ppm). When the safe ozone concentration (0.1 ppm) is exceeded, the safe ozone concentration indicator will stop illuminating.

The sterilisation process or the countdown to the start of sterilisation can be interrupted at any time by pressing any button on the user panel. The parameter settings for the relevant programs can be interrupted by pressing the **START**

button for any of the other operating modes. The device will then go into standby mode.

During the  $T_5$  and  $T_0$  phases, the display in the **OZONING TIME** section will count down the set ozoning time and during the  $T_0$  phase, the time **00:00** will be displayed..

During the ozoning process, the display in the **CONCENTRATION** section shows the current ozone concentration. If the heating up of the ozone sensor is still in progress during the ozone treatment, the display shows the characters - -,- -.

After completion of the sterilization process, the device will switch off the ozone generators and switch on the UV-C fluorescent tubes to accelerate the ozone decomposition (ozone destruction). During the ozone destruction process the LED backlight panel is activated. When the safe concentration (0.1 ppm) is reached, the ozone safety light will light up.

After completion of the sterilization process the device will go into standby mode.

### 6.4.4.3 Other functions in sterilisation mode

*Deactivation/activation of the buzzer in sterilisation mode:*

To deactivate or activate the buzzer in sterilization mode follow the instructions in section 6.6, changing parameter **C130** to **0** (deactivation) or **1** (activation) respectively.

*Ozone destruction:*

Each version of the steriliser is equipped with an ozone destruction function. The action of the ozone destructor consists in starting UV-C fluorescent lamps at the end of the ozone process or after 30 minutes, depending on the sterilization mode. Activation of the lamps emitting the appropriate wavelength of UV-C radiation causes an accelerated decomposition of  $O_3$  particles into bi-atomic oxygen. The UV lamps start up spontaneously and operate until the ozone concentration in the room reaches 0.1 ppm. The ozone destruction time is between 90 and 180 minutes.

### 6.4.4.4 Compliance with the ozone concentration limits

Ozone is a highly oxidizing, irritating gas, which already at low concentrations has harmful effects on the eyes, nose, airways and lungs. For this reason, it is necessary to use real-time measurement of its concentration by the controller in order to establish and observe the limit values. The legal limit for workplace ozone concentration is 0.1 mg/m<sup>3</sup> (according to PN-Z-04007-2:1994, the WEL is 0.15 mg/m<sup>3</sup>). The built-in measurement system with the ozone sensor allows for real-time, user-safe values. The electrochemical sensor of the measuring system is distinguished by its high accuracy even at low ozone concentrations, which allows for early detection of the gas limit.

If, within 120 minutes from the start of operation of the device in sterilisation mode, the ozone concentration at the set limit level is not reached, the steriliser considers the ozone phase to be complete, displays an error and moves on to the waiting phase. Then the ozone destruction process will begin by starting the UV lamps.

If the room exceeds the 10 ppm ozone concentration threshold, the unit will display an error and proceed to ozone destruction until the safe concentration is reached and the safe ozone concentration light is lit.

### 6.4.4.5 Emergency situations during the sterilization process

The following emergencies may occur during operation in sterilization mode:

Emergency situation	Behavior of the device after an emergency situation
The sterilization process started before the time required to heat up the ozone sensor (default 30 min)	Display error <b>P005</b> , return to standby mode <i>P005 error can be removed by activating any of the following operating modes: filtration, silent disinfection, standard disinfection.</i>

During the ozoning process, an ozone concentration of 10 ppm was exceeded	Display of error <b>P003</b> , interruption of the process and transition to the ozone destruction phase until the safe concentration is reached
A concentration of 0.5 ppm will not be reached within 120 minutes from the start of the sterilization process	Display of error <b>P004</b> , interruption of the sterilization process and transition to the ozone destruction phase until the safe concentration is reached
A concentration of 0.1 ppm will not be reached within 15 minutes from the start of the sterilization process	Display of error <b>E501</b> , interruption of the sterilization process and transition to the ozone destruction <i>E501 error can be removed by activating any of the following operating modes: filtration, silent disinfection, standard disinfection.</i>
Ozone sensor malfunction	Display of error <b>E500</b> or <b>E501</b> , interruption of the sterilization process and transition to the ozone destruction phase <i>E500 error message is displayed for 4 hours after sterilisation is complete</i>
 <p>An emergency is also a possible short-circuit of the triacs or relay outputs and the display of errors <b>E300</b> and <b>E301</b>, which activate the warning beacon and the siren. This are critical errors! If this occurs, the power supply of the device should be disconnected as safely as possible, preferably by means of an overcurrent switch in the switchgear or, if necessary, by unplugging the plug of the power cord from the electrical outlet in accordance with the safety rules described in these operating instructions! After disconnecting the power supply, contact the service department.</p>	

## 6.5 Sleep mode

The room sterilizer STERYLIS ULTRA goes into so-called sleep mode when it is connected to the power supply and the main switch is in the "O" position. This is a mode in which the device looks off - the user panel is completely extinguished, no errors are signalled and no fans, UV lamps and ozone generators are running. However, the concentration of ozone is monitored. Possible exceeding of the safe ozone concentration will be indicated by a warning beacon light and indicated on the display in the **CONCENTRATION** section.

Set the main switch to "O" position to move the device to the sleep mode from any operating mode (except the lock mode). Set the main switch to "I" position again to leave the sleep mode and automatically switch the device to the operating mode as shown in the table below:

Active mode before the sleep mode	Active mode after the sleep mode
Standby mode	Silent disinfection mode
O3 sterilization mode (automatic and manual)	Silent disinfection mode
Standard disinfection mode	Standard disinfection mode
Silent disinfection mode	Silent disinfection mode
Filtration mode	Filtration mode

## 6.6 Front panel locking mode

The STERYLIS ULTRA room sterilizer is equipped with the possibility of activating a front panel lock. It is intended to block the device in such a way that undesirable persons cannot operate it, including in particular the possibility of accidentally starting a sterilization mode. In lock mode, all buttons on the front panel (except those used to exit the mode) are no longer active.

Lock mode can only be activated when the unit is in standby, silent disinfection, standard disinfection or filtration mode.

Lock mode features:

- After entering and leaving the sleep mode, the lock mode remains active
- The mode is active without any time limit
- When the device is restarted, the lock mode is always inactive
- In the lock mode, the display in the **O<sub>3</sub> STERILIZATION** section shows "LOCH" (scrolling with possible error codes and messages)

*To activate the front panel locking mode:*

During active standby, silent disinfection or filtration, press and hold the + and - buttons in the **O<sub>3</sub> STERILIZATION** section for at least 3 seconds.

*To deactivate the front panel locking mode:*

While the front panel lock mode is active, press and hold the + and - buttons in the **O<sub>3</sub> STERILIZATION** section for at least 3 seconds.

## 6.7 Changing the configuration parameters

To change the configuration parameters, press and hold the **SET** button in the **OZONING TIME** section in the standby mode. Then enter the appropriate code to change the parameters.

*Entering the access code:*

The 4-character code being entered is shown on the display in the **O<sub>3</sub> STERILISATION** section. The + and - buttons can be used to change the value of the active character. The active character is the character that flashes at high frequency, inactive characters are lit permanently. The **PROG.SET** button can be used to move from one active character to the next on the right. Confirm the correct code entered by pressing and holding the yellow **START** button. If the code is incorrect, the **HHHH** message will be displayed and short squeal sound will be heard. When this happens, re-enter the code.

You can change the following parameters:

Parameter code	Description	Min value	Max value	Default value
<b>C101</b>	Operating concentration in <b>AUTO</b> mode [ppm]	1	10	7
<b>C116</b>	Service interval - UV-C lamps [h]	0	9999	9000
<b>C117</b>	Service/inspection interval - air filters [h]	0	9000	2160
<b>C130</b>	Siren operation in sterilisation mode [ON/OFF]	0	1	1
<b>C138</b>	50% reduction in the power of ozone generators	0	1	0
<b>C150</b>	Date setting - day of the month	1	31	4
<b>C151</b>	Date setting - month	1	12	11
<b>C152</b>	Date setting - year	2020	2120	2020
<b>C200</b>	FIRMWARE revision (read only)	-	-	FW_REV

The individual parameters are changed using the + and - buttons in the **O<sub>3</sub> STERILIZATION** section. The code of the selected parameter is displayed in the **O<sub>3</sub> STERILIZATION** section. The current value of the selected parameter is displayed in the **O<sub>3</sub> CONCENTRATION** section. To change the value of the parameter, operate the + and - buttons in the **O<sub>3</sub> CONCENTRATION**. The active digit is selected using the **SET** button in the same section of the user panel. To confirm the value of the selected configuration parameter, press and hold the **PROG.SET** button. The selected value will be confirmed by a short beep and all active displays will flash.

To return to the standby mode, press and hold the **SET** button in the **OZONING TIME** section.

## 6.8 Working time counters

The device is equipped with the operating time counters listed in the table below. The user has the possibility to read the indications of these counters and reset them.

To view or reset the counters, press and hold the **SET** button in the **OZONING TIME** section while the unit is in standby mode. Then enter the appropriate code to change the parameters.

### *Entering the access code:*

The 4-digit code entered is shown on the display under **O<sub>3</sub> STERILIZATION**. The **+** and **-** buttons change the value by 1 active digit. An active number is the one that flashes at a high frequency, inactive numbers light up constantly. The **PROG.SET** button changes the active digit to the next one on the right. After entering the correct code, confirm it by pressing the yellow **START** button longer. If the code is incorrectly entered, the code **XXXX** or **HHHH** will be displayed and a short beep will occur. In this case, the code must be re-entered.

You can interfere with the following counters:

Parameter code	Description
<b>d102</b>	UV-C lamp service interval timer [s]
<b>d105</b>	Fan service interval timer [s]
<b>d108</b>	Service interval timer for the 1. ozone generator bank [s]
<b>d111</b>	Service interval timer for the 2. ozone generator bank [s]
<b>d114</b>	Ozone sensor service interval timer [s]
<b>d117</b>	Ozone sensor life timer [s]
<b>d120</b>	Air filter interval timer [s]
<b>d201</b>	Active electricity consumption meter [kWh]

The individual parameters are changed using the **+** and **-** buttons in the **O<sub>3</sub> STERILIZATION** section. The code of the selected parameter is displayed in the **O<sub>3</sub> STERILIZATION** section. The current value of the selected parameter is displayed in the **O<sub>3</sub> CONCENTRATION** section. To reset the selected counter, press and hold the **PROG.SET** button. The reset will be confirmed by a short beep and all displays will flash. As an alternative, the **d105** counter can be reset to zero following the instructions in Chapter 9.

### 6.8.1 Electricity consumption counting

The device is equipped with a function of counting the total amount of electricity consumed. The energy is measured in all operating modes, including standby and sleep mode. The value of the electricity consumed is previewed using the **d201** meter.

## 6.9 Other functionality of the device

Other remaining functionality of the device is described in subsections 6.8.1, 6.8.2 and 6.8.3. These are the **AUTO-TEST**, **OZONE-SENSOR-TEST**, **PRE-TEST**, **SET-TIME**, **OZONE-MONITOR** and **RH-MONITOR** functions.

To access the above mentioned functions, press and hold the **SET** button in the **OZONING TIME** section of the device standby mode. Then enter the appropriate code to move to the above mentioned functions.

### *Entering the access code:*

The 4-character code being entered is shown on the display in the **O<sub>3</sub> STERILISATION** section. The **+** and **-** buttons can be used to change the value of the active character. The active character is the character that flashes at high frequency, inactive characters are lit permanently. The **PROG.SET** button can be used to move from one active character to the next on the right. Confirm the correct code entered by pressing and holding the yellow **START** button. If the code is incorrect, the **HHHH** message will be displayed and short squeal sound will be heard. When this happens, re-enter the code.

The available functions are under the following codes:

Parameter code	Description
t200	<b>AUTO-TEST</b> function
t201	<b>OZONE-SENSOR-TEST</b> function (ozone sensor test)
t204	<b>SET-TIME</b> function (setting the current time)
t205	<b>OZONE-MONITOR</b> function
t208	<b>RH-MONITOR</b> function

**PRE-TEST** function is started automatically when the selected operating mode is activated.

The individual parameters are changed using the + and - buttons in the **O<sub>3</sub> STERILIZATION** section. The code of the selected parameter is displayed in the **O<sub>3</sub> STERILIZATION** section. To move to a given function, select it and press and hold the **PROG.SET** button. The selection of a given function will be confirmed by a short beep and all displays will blink.

## 6.9.1 AUTO-TEST function

The function consists in an automatic check of the operating status of all actuators (fan, UV-C lamps, ozone generators) and the ozone sensor. If the device detects an error in one of the elements during the process, it will display the error. If an error is detected during previous use of the unit, the **AUTO-TEST** function can erase this error if the unit operates correctly during this function (error erase does not apply to the ozone sensor).

During the active **AUTO-TEST** function:

- The lights blink quickly: safe ozone concentration, warning and operating modes
- The display under **O<sub>3</sub> STERILIZATION** indicates a **tEST** message
- The display under **CONCENTRATION** indicates the characters - .- -
- The display under **OZONING TIME** indicates the characters - .- -

To interrupt the **AUTO-TEST** function, press any of the **START** buttons corresponding to filtration, disinfection or sterilization modes.

When the **AUTO-TEST** function is completed, the unit will go into standby mode.

## 6.9.2 OZONE-SENSOR-TEST function

The function consists of an automatic check of the ozone sensor's operating status. If the device detects an error in the ozone sensor during the process, it will display the error. If an ozone sensor error has been detected during previous use of the unit, the **OZONE-SENSOR-TEST** function can erase this error if the unit will function correctly during this function (applies to the following errors: **E500** and **E501**).

During the **OZONE-SENSOR-TEST** function: the message **O3\_t** on the display in the **O<sub>3</sub> STERILIZATION** section, the measured instantaneous voltage value on the display in the **O<sub>3</sub> CONCENTRATION** section, the time remaining for checking the ozone sensor on the display in the **OZONING TIME** section and the warning lights and the safe ozone concentration are blinking quickly.

To interrupt the **OZONE-SENSOR-TEST** function, press any of the **START** buttons corresponding to filtration, disinfection or sterilization modes.

When the **OZONE-SENSOR-TEST** function is completed, the unit will go into standby mode.

## 6.9.3 PRE-TEST function

The function consists in self-checking the operating status of fans, UV-C fluorescent lamps, ozone generators and the ozone sensor. It is always activated when you select and start a particular operating mode. If a negative **PRE-TEST** result is obtained, the corresponding error codes are displayed and the device returns to standby mode. In the case of a positive

**PRE-TEST** result, the device switches to the previously selected operating mode and deletes any previously detected errors (applies to errors: **E101, E102, E103, E500 and E501**).

During the active **PRE-TEST** function:

- The green active mode light blinks quickly
- Yellow warning pictograms **O<sub>3</sub>** and **!** blink quickly (only when the sterilization mode is selected)
- The display under **O<sub>3</sub> STERILIZATION** indicates the characters "- - -". / **LOCH** message in lock mode / selected **AUTO/SET1/SET2/SET3** program in sterilization mode in case of no active errors and blinking **tEst** message in case of active errors.
- The display in the **O<sub>3</sub> CONCENTRATION** section shows: The value of the current ozone concentration when the concentration exceeds 0.1 ppm / characters - .- - during the heating phase of the ozone sensor when the concentration exceeds 0.1 ppm and when the selected sterilization mode / In other cases the display is inactive
- The display under **OZONING TIME** indicates the characters - .- -

## 6.9.4 SET-TIME function and setting the current date

The function is used to set the current time on the controller. Selecting the **SET-TIME** function displays the currently set time on the display in the **OZONING TIME** section.

*To set the current time:*

The **+** and **-** buttons change the value by 1 active digit. The selection of the active digit is made by pressing the **OK** button in the **OZONING TIME** section. The time is saved immediately after changing any number, no additional approval is required.

*To set the current date:*

To set the current date, go to configuration parameters **C150, C151** and **C152** and correctly define and validate the values of these parameters in accordance with Chapter 6.6.

## 6.9.5 OZONE-MONITOR function

The function consists in measuring the instantaneous ozone concentration and displaying the measured value on the display in section **O<sub>3</sub> CONCENTRATION**.

## 6.9.6 RH-MONITOR function

The function is used for measuring the momentary value of relative air humidity in the room. The function is activated by calling the **t208** function. The measured concentration is shown on the display in the **O<sub>3</sub> CONCENTRATION** section.

## 7. Maintenance

### 7.1 Recommendations for maintenance



**Note!** All maintenance work should only be carried out when the unit is disconnected from the power supply (with the exception of alarm removal activities)!



**Note!** Maintenance work related to the replacement of the ozone sensor, UV-C fluorescent lamps and ozone generators may only be carried out by authorized personnel and the manufacturer's factory service. For details on service, see the Warranty and Service section.



**NOTE!** The following gases can affect the ozone sensor indications to a very high degree: carbon monoxide, hydrogen sulphide, nitrogen dioxide, sulfur dioxide, ethanol, nitric oxide (II), chlorine, n-heptane, ammonia, methane, hydrogen and carbon dioxide. The device must not be cleaned with agents containing these substances, in particular the grille covering the ozone sensor.

- The device should be kept in a state of general cleanliness. Use only neutral detergents for cleaning. Do not use chlorine-based detergents. After washing, dry the device.
- Do not use for washing the water jet under pressure.
- The air filters should be checked and replaced periodically as described in Chapter 7.2. The signalling of exceeding the time of use / need to check the air filters is indicated on the user panel by displaying appropriate messages (see: Section 9). Replacement of the filters must be carried out according to the instructions in chapter 7.2.1 and 7.2.2. Do not let the filters clog and avoid their excessive operation.
- After the service life of the UV lamps (9,000 operating hours) in the steriliser, they should be replaced. This is related not only to the possible burning of the lamp but also to the decrease of its maximum radiation dose over time. The UV lamps' overrunning time is indicated on the user panel by displaying an appropriate message (see Section 9). Only the qualified service technicians can replace the lamp/s!
- After the service life of the ozone generators (9,000 operating hours) in the steriliser, they should be replaced. The ozone generators' overrunning time is indicated on the user panel by displaying an appropriate message (see Section 9). Only the qualified service technicians can replace the ozone generators!
- The ozone sensor is periodically recalibrated and exchanged in accordance with Chapter 7.5!

## 7.2 Replacing the filters

Filter cleaning and replacement intervals depend on the on-site environmental conditions, the extent of use and the setting (configuration) of the device. A filter inspection reminder (message **F002**) pops up automatically at intervals of 3 to 12 months, depending on the way the device is used.

Assess during inspection whether or not filters are damaged and whether they can be still used. It is necessary to replace filters that meet at least one of the following criteria:

- signs of any mechanical damage (holes, tears, structural defects, etc.)
- visible stains, decolouration, leaks or other impurities from liquid substances
- heavy and unpleasant smell
- heavily contaminated with dust which significantly reduces airflow



**PLEASE NOTE!**

Heavily soiled filters should under no circumstances be cleaned (washing, vacuuming, air blowing, etc.) but must be replaced.



Always replace all filters in the unit.



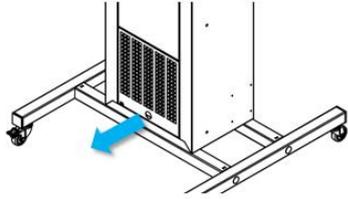
A filter replacement reminder (message F006) pops up automatically every 12 months. Using the same filters for longer than the recommended 12-month period may deteriorate operating conditions and decrease unit's performance.

After filter inspection or replacement delete message F002 and/or F006. The deletion method is described in chapter 9 of this manual.

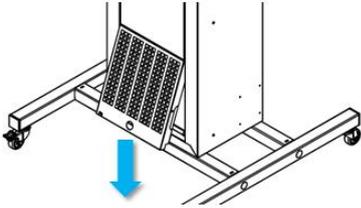
### 7.2.1 Pre-filter replacement (F1)

Make sure that the device is switched off and disconnected from the power supply.

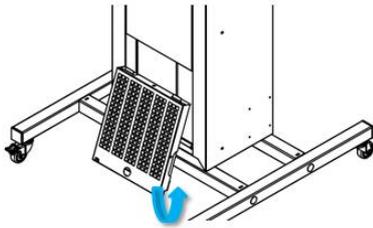
Follow the instructions below:



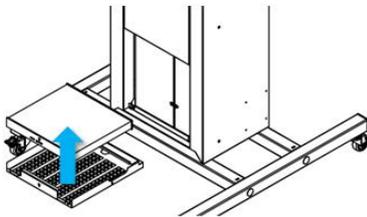
1. Insert your index finger into the hole in the air filter cartridge and pull it towards you with a slight movement.



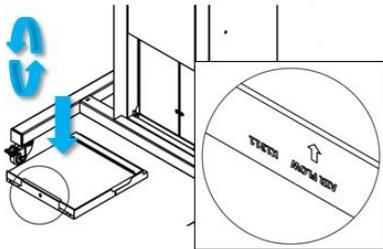
2. Pull the cassette out with a downward motion



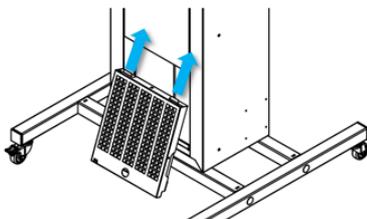
3. Turn the front air filter cartridge towards the floor



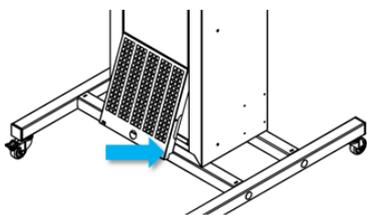
4. Remove the air filter from the cartridge



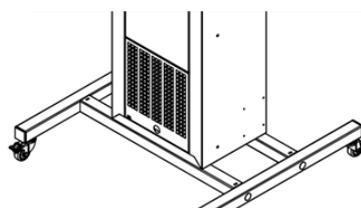
5. Insert a new air filter into the cartridge, making sure that the direction of the arrow on the cartridge and on the filter are aligned.



6. Turn the air filter cartridge as shown in the picture opposite and put it back into the device



7. Push the cassette into the device housing



8. The filter has been properly replaced

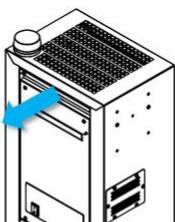
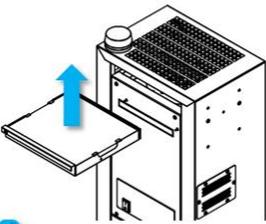
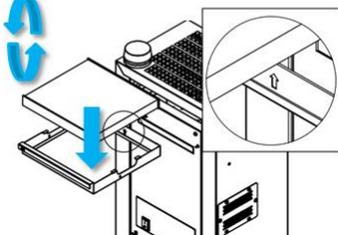
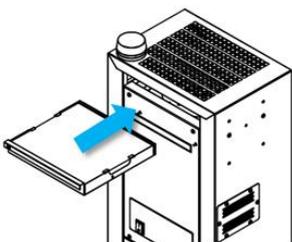
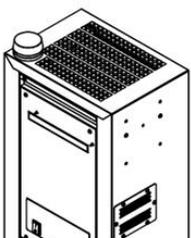
A pre-filter that is pulled out of the destination causes a violation of the limiting switch. If a limiting switch is violated during the sterilisation process, the process will be stopped and completed and the device will go into standby mode. In case of violation of the limiting switch in filtration or disinfection mode, the process will be stopped at the current moment and the unit will go into pause mode. When the limiting switches of the filter cartridge are no longer violated (inserting the filter cartridge back), the unit will resume the filtration/disinfection process. Violation of the end point also results in a corresponding error on the display in the **O<sub>3</sub> STERILIZATION** section. If the end point violation stops, the error is automatically reset.

The safety limiting switches provide protection in case of an attempt to change the air filters during operation.

## 7.2.2 Active carbon filter replacement (F2)

Make sure that the device is switched off and disconnected from the power supply.

Follow the instructions below:

- 
1. Remove the air filter cartridge out by pulling it towards you
- 
2. Remove the air filter from the cartridge
- 
3. Place a new air filter in the cartridge. Make sure that the direction of the arrow on the cartridge is the same as the direction of the arrow on the air filter
- 
4. Insert the filter cartridge back into the device and push it
- 
5. The filter has been properly replaced

The active carbon filter that is pulled out of the destination causes a violation of the limiting switch. If a limiting switch is violated during the sterilisation process, the process will be stopped and completed and the device will go into standby mode. In case of violation of the limiting switch in filtration or disinfection mode, the process will be stopped at the current moment and the unit will go into pause mode. When the limiting switches of the filter cartridge are no longer violated (inserting the filter cartridge back), the unit will resume the filtration/disinfection process. Violation of the end point also results in a corresponding error on the display in the **O<sub>3</sub> STERILIZATION** section. If the end point violation stops, the error is automatically reset.

The safety limiting switches provide protection in case of an attempt to change the air filters during operation.

## 7.3 Replacing the UV-C lamps

Regular replacement of the UV-C radiators is essential for proper operation. Exceeding the service life of UV light bulbs may result in their burning out. It should also be remembered that with time the maximum dose of lamp radiation decreases.

The lifetime of UV bulbs is approx. 9000 hours. This is at the same time the time after which a message indicating that this time has been exceeded will be displayed.



**Note!** The replacement of UV-C fluorescent tubes in STERYLIS sterilisers may only be carried out by the manufacturer's service or another authorised service centre!

## 7.4 Replacing the ozone generators

Regular replacement of the UV-C lamps is essential for proper operation. The lifetime of the generators is approx. 9000 hours.



**Note!** The replacement of ozone generators in STERYLIS sterilisers may only be carried out by the manufacturer's service or another authorised service centre.

## 7.5 Ozone sensor service

The ozone sensor is one of the most important elements of the device, which determines its proper functioning and safety. Regular recalibration and replacement after the expiry date of the ozone sensor is essential for proper and safe operation. Re-calibration should take place every 1,000 hours of operation of the device in sterilization mode, while replacement is related to the expiry date after 5 years from the purchase of the device.

Messages for recalibration and expiry date of the ozone sensor are displayed by means of codes **F004** and **F005** (See: Chapter 9) and the warning beacon. When the counters are reset after recalibration or sensor replacement (according to the instructions in Chapter 6.5), the signaling by means of messages and the warning beacon is switched off.



**Note!** The replacement and re-calibration of the ozone sensor in STERYLIS sterilizers may only be carried out by the manufacturer's service or another authorised service centre.

## 8. Procedure for carrying out the ozoning process

The room ozonisation process must be carried out according to the following instructions. Before starting to ozone, read the rest of this manual and meet all the safety requirements described at the beginning of this document.

- 1) Prepare the room according to the instructions below:
  - (a) Clean the room - vacuum, ventilate, clean from any spills.
  - (b) Move the furniture away from the walls, open the cabinets and empty them.
  - (c) Remove all plants and animals (except fish in the aquarium) from the room.
  - (d) Take out or seal with foil valuable objects such as works of art, electronics.
  - (e) Tightly close all escape routes of ozone from the room - (windows, doors). Gaps around and under doors and ventilation grilles must be sealed carefully.
  - (f) Make sure that no one is in the rooms adjacent to the sterilised room
- 2) Prepare the device for sterilisation mode - replace the activated carbon filter with a standard filter in accordance with the filter replacement instructions.
- 3) Place the unit on a stable surface and as close to the centre of the room as possible. You can put it above the floor. In such a case secure it from falling.
- 4) Place the warning sign "**WARNING! NO ENTRY! OZONING IN PROGRESS**". If the room has other possible entrances, also place this sign on them in a visible place.
- 5) Connect the unit to the mains (voltage of 230 V, frequency of 50 Hz).
- 6) Switch the main switch on the control panel to the **ON** position.
- 7) Make sure that the device does not indicate any alarms (malfunction or need to replace components)
- 8) Start the **O<sub>3</sub> STERILIZATION** mode according to the instructions in section 6.3.4.
- 9) Exit the room by closing the door behind you and make sure again that it is tightly sealed and that no one is in the room immediately adjacent to the ozone room.
- 10) The ozoning process has begun. Its duration is determined by the controller based on the current ozone concentration in the sterilised room. During the ozoning it is forbidden to enter the room. In extremely exceptional cases, where it is necessary to enter such a room, it is necessary to wear a full respiratory and eye mask with an appropriate absorber (in accordance with EN 136 and EN 14387 standards).
- 11) During the ozonisation process, the device generates a light signal (using a warning beacon) and an acoustic signal (using a buzzer) - if not already deactivated.
- 12) The ozoning process will be completed when the green safety ozone LED comes on.
- 13) Once the ozone process is complete and you have made sure that the green safety ozone lamp is active, you can enter the room to ventilate it. The room must be ventilated for a minimum of 30 minutes by providing a supply of fresh air from outside. It is forbidden to stay in the room during ventilation.
- 14) Once the ventilation is complete, the room can be considered as completely safe.

### Notes:

Fog may form during the ozoning. This is a normal phenomenon caused by the reaction of ozone with volatile organic compounds. The odour of ozone persisting after the ozoning process does not indicate its presence.

## 9. Possible errors and messages

All possible errors and messages are indicated by 4-digit codes on the display in the **O<sub>3</sub> STERILIZATION** section. If more than 1 error occurs simultaneously, the codes are displayed one after the other, the presentation time of each code is 2 seconds. The meaning of all errors and messages is described in the table below.

Code	Description
<b>P003</b>	Ozone process error - ozone concentration limit exceeded
<b>P004</b>	Ozone process error - threshold ozone concentration not reached
<b>P005</b>	Ozone process error - the ozone sensor was not properly heated
<b>E101</b>	UV-C sources malfunction - too low power consumption
<b>E102</b>	Fan operation error - too low power consumption
<b>E103</b>	Operating error of the ozone generators - too low power consumption
<b>E201</b>	Air filter error F1
<b>E202</b>	Air filter error F2
<b>E300</b>	Ozone generator error - short circuit of the triac output
<b>E301</b>	Relay outputs error - sticking of the contacts
<b>E500</b>	Ozone sensor error - reference voltage
<b>E501</b>	Ozone sensor error - incorrect reading
<b>F001</b>	Exceeded service life of the UV-C lamp
<b>F002</b>	Exceeded service life of air filters
<b>F003</b>	Exceeded service life of ozone generators
<b>F004</b>	Exceeded service life of the ozone sensor
<b>F005</b>	Exceeded expiry time of the ozone sensor
<b>F006</b>	Air filters expiration date exceeded



**CAUTION!** Errors **E300** and **E301** are fatal errors. They activate the warning beacon and the siren. If they occur, disconnect the power supply to the device as safely as possible, preferably through an overcurrent circuit breaker in the electrical switchboard or, if necessary, by unplugging the power cord plug from the electrical socket, observing the safety rules described in this manual! After disconnecting the power supply, contact the service department.

*Important notes on the occurrence of codes from the above table:*

- Errors **P003** and **P004** are cleared when the device is restarted and when any mode of operation is activated.
- Error **P005** is cleared after the ozone sensor's warm-up time (default 30 minutes after starting the device) or after activating the filtration, silent or standard disinfection mode
- Errors **F004** and **F005** are additionally communicated via an active warning beacon
- **E500**, **E501**, **F004**, **F005** – If one of these errors occurs, the "Safe Ozone Concentration" light is always off.
- Errors **E201** and **E202** should disappear when the filter cartridges are inserted back into the device again and correctly.
- Errors **E101**, **E102** and **E103** may be cleared by using the **PRE-TEST** and **AUTO-TEST** functions
- Errors **E500** and **E501** may be cleared by using the **PRE-TEST**, **AUTO-TEST** and **OZONE-SENSOR-TEST** function
- Error **E501** can be reset by activating the filtration, silent or standard disinfection mode
- **E500** error message is displayed for 4 hours after sterilisation is complete
- Errors **E300** and **E301** are critical errors and can only be removed after removal of the fault!
- **Fxxx** messages can be deleted by resetting the corresponding counters:
  - **F001** – counter d102
  - **F002** – counter d105
  - **F003** – counters d108 and d111
  - **F004** – counter d114
  - **F005** – counter d117

- **F006** – counter d120 (resetting this counter also resets counter d105)

To reset the selected counter, follow the instructions in Chapter 6.7

Messages **F002** and **F006** can also be deleted by using the key combination on the user panel as described below. Alternatively, message **F002** can be deleted using the air filter cartridges, as described below.

**Instructions for resetting the d105 counter/deleting the F002 message:**

- 1) Go to the standby mode (the device alternately displays the **AUTO** inscription and the **F002** message)
- 2) Press and hold 3 buttons simultaneously for at least 3 seconds:
  - "+" in the section **O<sub>3</sub> STERILIZATION**
  - "-" in the section **O<sub>3</sub> STERILIZATION**
  - **SET** in the section **O<sub>3</sub> CONCENTRATION**
- 3) The correct reset of the counter and deletion of the message is confirmed by a short beep and a blink of all displays.

**Alternative instruction to reset the d105 counter / delete the F002 message (using air filter cartridges):**

- 1) Switch to standby mode (unit's display alternates between **AUTO** and **F002**)
- 2) Remove air filter cartridges (F1 and F2) - errors **E201** and **E202** will be generated.
- 3) The **F002** message is deleted when both cartridges are removed simultaneously.
- 4) Re-insert filter cartridges into the device.

**Instruction for resetting the d120 counter / deleting the F006 message (resetting this counter also resets counter d105):**

- 1) Switch to standby mode (unit's display alternates between **AUTO** and **F006**)
- 2) Press and hold the following 3 buttons simultaneously for at least 3 seconds:
  - "+" in the **O<sub>3</sub> STERILISATION** section
  - "-" in the **O<sub>3</sub> STERILISATION** section
  - **SET** in the **O<sub>3</sub> CONCENTRATION** section
- 3) Correct counter reset and message deletion is confirmed by a short beep and by flashing of all displays.

The device can communicate with the user through the following indications:

Indication	Meaning
Green filtration mode light is on	The device works in filtration mode
Green silent mode light is on	The device works in silent disinfection mode
Green standard mode light is on	The device works in standard disinfection mode
Countdown of the time on the display in the <b>OZONING TIME</b> section	The device, after a timeout, will go into sterilization mode <b>or</b> The device will stop working in the sterilization mode after deduction of the indicated time ( <b>AUTO</b> sterilization mode) <b>or</b> the ozone generators will be switched off after deduction of the indicated time and the device will go to ozone destruction ( <b>MANUAL</b> sterilization mode)
Flashing green light in filtration mode	<b>PRE-TEST</b> function for filtration mode in progress, no active errors
Flashing green light in silent mode	<b>PRE-TEST</b> function for silent disinfection mode in progress, no active errors
Flashing green light in standard mode	<b>PRE-TEST</b> function is in progress for standard disinfection mode, no active errors
Flashing green light in filtration mode + flashing text <b>tESt</b>	<b>PRE-TEST</b> function for filtration mode in progress, active errors
Green silent mode light blinking + <b>tESt</b> text blinking	<b>PRE-TEST</b> function for silent disinfection mode is running, active errors
Standard mode green light blinking + <b>tESt</b> text blinking	<b>PRE-TEST</b> function is in progress for standard disinfection mode, active errors
Yellow pictograms <b>O<sub>3</sub></b> and <b>!</b> flashing	<b>PRE-TEST</b> function for sterilization mode in progress, no active errors
Yellow pictograms <b>O<sub>3</sub></b> and <b>!</b> flashing + <b>tESt</b> flashing	<b>PRE-TEST</b> function for the sterilization mode in progress, active errors
<b>Safe ozone concentration</b> light is on	Ozone concentration in the room is safe for the user (<0.1 ppm)
<b>Safe ozone concentration</b> light is off (despite the lack of ozone in the room)	Ozone sensor error detected
<b>Safe ozone concentration</b> flashing light	Ozone sensor heating process is in progress
<b>TEST</b> blinking	<b>AUTO-TEST</b> function in progress
<b>O<sub>3</sub>_t</b> blinking	<b>OZONE-SENSOR-TEST</b> function in progress
<b>XXXX</b> or <b>HHHH</b> text display and short beep	Incorrectly entered access code
Display the <b>LOCH</b> message	The device is in lock mode
The display in the <b>CONCENTRATION</b> section shows the current ozone concentration, the work of the beacon, the rest of the operator panel is dimmed	The device is in sleep mode, an ozone concentration exceeding the safe level for the user has been detected
All displays blink and a short beep	Storing the value of a selected configuration parameter <b>or</b> Resetting the value of the selected counter <b>or</b> Summoning the selected service function
Flasher beacon operation	The measured ozone concentration exceeding 0.1 ppm <b>or</b> Active sterilization process <b>or</b> Integration tests <b>F004</b> and <b>F005</b>
Buzzer operation	Active sterilization process
Backlit panel operation	Operation of UV-C lamps (silent disinfection mode, standard disinfection or ozone destruction active)

## 10. Declaration of conformity



This device complies with the relevant directives and standards in force in the European Union, provided that the device is operated as intended and in accordance with this manual.

The product complies with the following directives:

- Directive 2014/35/EU, on the harmonisation of the laws of Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
- Directive 2014/30/EU, on the harmonisation of the laws of the Member States relating to electromagnetic compatibility
- Directive 2011/65/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment

And with the following standards:

- PN-EN 55014-1:2017
- PN-EN 55014-2:2015
- PN-EN 60335-2-65:2004+A1:2008+A11:2012
- PN-EN 60335-1:2012+A11:2014-10+A13:2017-11+A1:2019-10+A2:2019-11
- PN-EN 61000-3-2:2019-4
- PN-EN 61000-3-3:2013-10+A1:2019-10

The full declaration of conformity is enclosed with the packaging and is held by the manufacturer and distributors of the device.

# 11. Warranty and Service

The warranty period is 1 year. It is possible to extend the warranty period for a fee. Please contact the manufacturer for more detailed warranty information.

### Manufacturer's data

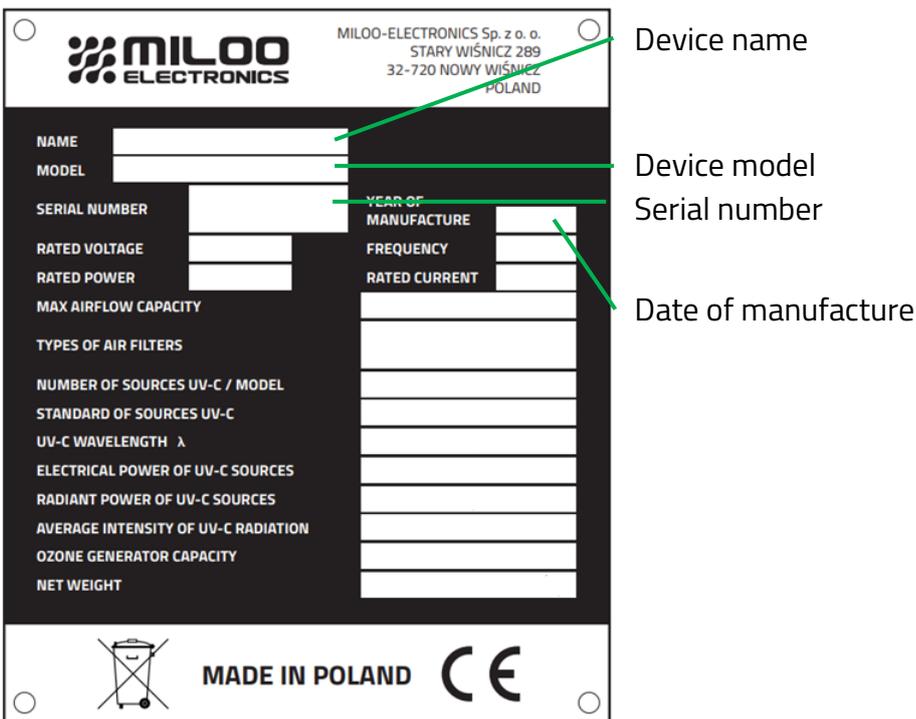
MILOO-ELECTRONICS Sp. z o.o.  
 Stary Wiśnicz 289,  
 32-720 Nowy Wiśnicz  
 Phone +48 14 662 19 55  
 E-mail address: info@sterylis.com

### Contact with the service department

Phone: +48 801 080 257  
 E-mail address: serwis@emiloo.pl

When contacting the service department, you may be required to provide the data on the unit's nameplate:

- Serial number
- Date of manufacture
- Device name and model



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