

# STERIAL

## Professional Air Purifier



The sanitary shield  
for every  
professional space

STERIAL III  
Professional Air Purifier

**STERIAL III Professional Air Purifier** is an **innovative and high-performance, certified air purification device**, specially created to provide an answer for the crucial issue of air purification in indoor **professional spaces** with a great deal of mobility and a high concentration of people.

This is a device that virtually eliminates the microbial and viral load in the air (purification) and is particularly effective against **coronavirus**, as **within the first 15 minutes of its operation it can kill up to 70.62% of the SARS-CoV-2 virus that causes the COVID-19 disease.**

#### **What makes the device so innovative?**

What is really innovative about **STERIAL III Professional Air Purifier** is its speed (just 15 minutes) at reducing around 70.62% of the viral load by simultaneously neutralising, destroying and absorbing the viruses, microbes and other pathogenic organisms through the use of the patented triple-barrier technology

and 7 different air-purification levels, ensuring real air purification in a way that is **completely safe for those gathered inside.**

#### **The patented “triple-barrier” technology.**

This is implemented through the simultaneous use of:

- (a) new special active purification filters, impregnated with **patented** organic polymers
- (b) photocatalytic neutralisation with titanium dioxide in a special maze-like layout and
- (c) powerful ultra-violet UV-C ray technology





## Technical features

- 1 Air intake.
- 2 Power deactivation switch, in case of violation, in order to protect from UV-C radiation.
- 3 Array of three (3) different active filters, impregnated with patented organic polymers. These don't just filter the microbes but also destroy and eliminate viruses and microbes. Environmentally friendly.
- 4 Specially coated anti-microbial, anti-viral maze-shaped photocatalysis section, stopping the UV-C rays from exiting the radiation chamber.
- 5 Reflective surface for multiplication of UV-C radiation power.
- 6 UV-C high power lamps (6 x 40W)
- 7 Radiation chamber with double aluminium walls, for total protection against the UV-C radiation escape.
- 8 Touch screen – Device control panel and basic air data report.
- 9 Four-speed silent high-efficiency compression fans (35db at 100m<sup>3</sup>/h - 67db at 900m<sup>3</sup>/h).
- 10 Second array of three (3) different filters, with HEPA 14 stage.
- 11 Electric power switch, with safety fuse.
- 12 Fresh air outlet (without trace elements and microbial microorganisms).

## How does it work?

At the inlet of the device there is a first array of filters, comprising of three (3) different filters: a) PPU20 class G3, b) Carbon Filter, c) ALU mesh Filter. First-stage destruction takes place there, while they also function as pre-filters for the air inside the device. Furthermore, they are impregnated with patented organic polymer.

After the first destruction stage, the air makes its way inside the chamber, where, through photocatalysis and powerful UV-C radiation, it continues to be purified as it approaches the exit, where it enters the second array of three (3) different filters: a) ALU mesh Filter, b) Carbon Filter, c) HEPA 14 Filter. These filters contain and eliminate all the remaining residues from the previous processes, releasing the air once again into the environment, now healthy and free from viruses, bacteria, microbes and micro-organisms in general.

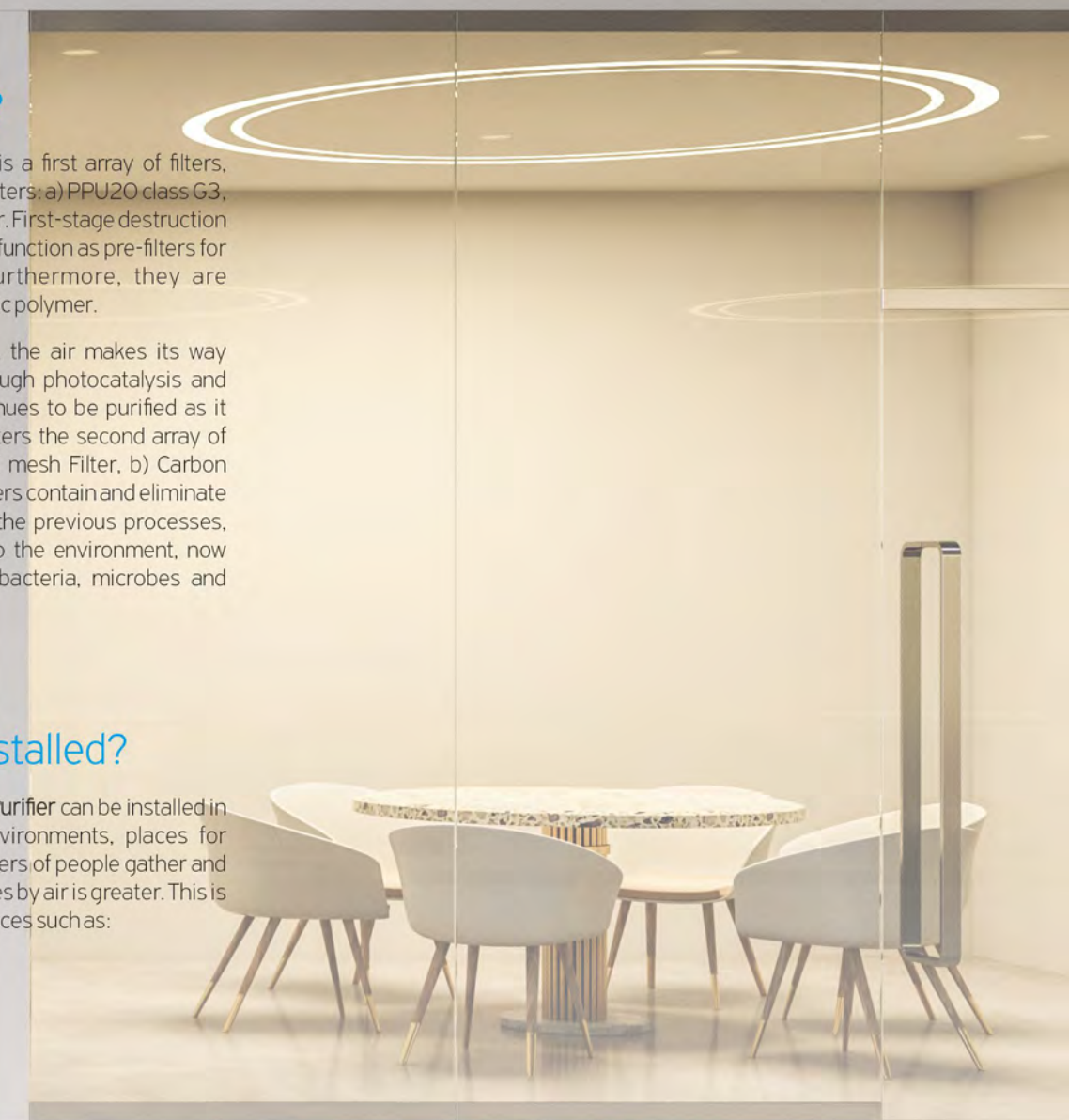
## Where it can be installed?

The STERIAL III Professional Air Purifier can be installed in healthcare and professional environments, places for cultural events, where large numbers of people gather and the danger of transmitting diseases by air is greater. This is why this device is essential for spaces such as:

- Eating establishments
- Hotels
- Events halls
- Office premises
- Museums
- Exhibition halls
- Operating rooms, clinics, hospitals
- Schools
- Stores
- Homes
- etc.

## How is it installed?

The device is installed vertically in the place chosen. Once plugged in, the device can start to operate without any further adjustments.



## Basic touch screen functions

- Fan power adjustment
- Power mode (high power for 5 mins)
- Warning for burned-out lamp
- Warning for clogged filters
- Warning for fan malfunction
- Automatic shutdown in case of device opening
- LED brightness adjustment



## Specific technical features

The specific technical features that give **STERIAL III Professional Air Purifier** the edge:

### / Photocatalysis

The **STERIAL III Professional Air Purifier** has the advantage of the special titanium oxide (TiO) coating. These materials multiply the strong performance of UV-C rays that are emitted by special lamps inside the air-purification chamber. In this way, **STERIAL III** can attain the optimum degree of photocatalysis.

### / Special coating of the internal surfaces

The surfaces of the device's input and output chamber are coated in a special nanotechnology material, that has photocatalytic function, which provides:

- Strong antimicrobial action
- Anti-mould action

### / High efficiency filters

The device has two arrays of filters with three (3) filters each. The arrays of filters are specially designed not only to contain viruses and microbes (as it happens with common filters in similar devices) but also to actively operate towards destroying-eliminating them also. This is achieved by impregnating the filters with patented polymer material.

- Environmentally friendly as regards their handling
- Certified for the way they destroy viruses and eliminate microbes
- They are impregnated with patented polymer material
- They are easy to replace
- They are harmless in their handling
- The output filters are twice the thickness of the others and also have a HEPA 14 filter

### / Fast air flow

The airflow coming from the fans of **STERIAL III Professional Air Purifier** is 3,000m<sup>3</sup>/h, while the device processes 900m<sup>3</sup>/h of polluted air. The device is designed in such a way that can create fast airflow to the incoming air.

### / Low - power consumption technology (LOW-P)

**STERIAL III Professional Air Purifier** saves as much energy as possible. Thanks to the device's technologically advanced materials and purpose-designed special arrangement, a high airflow (to ensure that a sufficient volume of air is purified) is achieved using low-power motors.

### / Low - noise technology (LOW-N)

The device operates in such a way as to produce the lowest-possible noise levels (min. 35db). This is achieved by the use of high-performance low-load motors and smart design.

### / Safety technology

The device offers:

- Filter saturation detection and user alert sensors.
- A special system that instantaneously interrupts the device's operation, should there be an attempt (intentionally or not) to break into the interior.
- Power safety.

## Technical features – Basic functions

### Air purification technology

- 7 filtering levels
- Active filtering with filters impregnated with a patented solution
- Photocatalysis
- UV-C
- HEPA 14

### Features

## STERIAL III

Professional Air Purifier

Dimensions (Height x Width x Depth)	153cm x 42cm x 28cm
Weight	51 Kg
Power	600 W
UV lamp power	6 x 40 W
Fan flow	3000 m <sup>3</sup> /h
Filtered airflow	900 m <sup>3</sup> /h
Noise	35db – 67db
Filter life (Depends on the air pollution level)	max. 2.000 h
Screen	Colour 3.5" TFT
Mounting base	Trolley
Risk (toxicity) of filters	None
Device's materials	Manufactured entirely with heavy-type extruded aluminium with anodised surface, 100% recyclable
Colour	Champagne Bronze, Carbon Black (special edition)
Airflow adjustment levels	5
Air purification levels	7
Space surface	Up to 350 m <sup>2</sup>
Ozone production	NO
External radiation	None
PM removal	99,99%
SARS-CoV-2 (causes Covid-19) elimination	(70% in 15', 98% in 30', 99.4% in 60')
Use of HEPA filters	HEPA 14





## Certifications

The air purification device has the required technical and laboratory certifications.

### TECHNICAL CERTIFICATIONS

1. Certification ISO 9001 (Manufacturer)
2. Declaration of Conformity / CE, which is accompanied by complete technical documentation that includes all the individual elements, the tests of the device (EMC test) and the respective certifications of its individual accessories as well.

### LABORATORY CERTIFICATIONS

1. **ATTESTATION** from the National Center for Scientific Research "Demokritos", for the test of the device regarding the non - escape or emission of ultraviolet radiation (UV-C, UV-A, UV-B) from it.
2. **ATTESTATION - CERTIFICATION** from the University of Patras, Hygiene Laboratory\*, for the inspection of the device regarding the produced air through specification of the particulate matter.
3. **ATTESTATION - CERTIFICATION** from the University of Patras, Department of Chemistry, regarding the suitability of the materials that are used for the filters of the device.
4. **ATTESTATION - CERTIFICATION** from the University of Patras, School of Medicine - Hygiene Laboratory\*, regarding the effectiveness of the device against bacteria, viruses and microbes and special attestation about the new coronavirus SARS-CoV-2, which causes COVID-19 disease.
5. **CERTIFICATION OF NON-TOXICITY** from the University of Patras, Hygiene Laboratory\*, regarding the non-toxicity of the filters.
6. **CERTIFICATION OF PURITY** of the Produced Air, from the National Center for Scientific Research "Demokritos".

7. **CERTIFICATION of Non-Ozone Production** Production from the National Center for Scientific Research "Demokritos".

8. **MEASUREMENT REPORT** of dust emissions by Alfa Measurements\*

\*The laboratory is level 2 and is accredited according to ELOT EN ISO/IEC 17025 by the Hellenic Accreditation System (ESYD).

### SPECIAL NOTE

Two (2) patents for STERIAL III Professional Air Purifier have been filed with the Hellenic Industrial Property Organization. Specifically:

- Patent No. 231 - 0004071711 (filed under No. 20210100071)
- Patent No. 231 - 0004074827 (filed under No. 20210100073)

This device is a result of Greek invention and manufacturing, and it was developed under the collaboration of the following Greek laboratories and companies:

- ALUMIL SA
- Metricon Digital systems
- University of Patras / School of Medicine / Hygiene Laboratory
- University of Patras / Department of Chemistry / Laboratory of Advanced polymers and hybrid Nano materials
- Filtrex - Filter solutions
- Ringel electronics
- GLM Hellas SA

### REDUCTION OF MICROORGANISMS

Operating time	ECOLI	Adenovirus	SARS-CoV-2 (COVID-19)
15 minutes exposure	29,59%	77,36%	70,62%
30 minutes exposure	90,82%	91,04%	98,14%
60 minutes exposure	99,13%	96,67%	99,40%

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