EUROPO INTEGRATED COMFORT SYSTEMS

# EURION

## air ionization system

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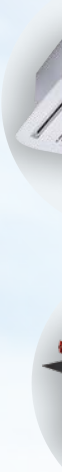
EURION

# An integrated sanitisation system that can be equipped in all Eurapo water terminal units



Eurapo's mission is to ensure indoor climate comfort and for this reason we have achieved another important goal. All our water terminal units can be equipped with a tested and certified technology which improves the air quality by removing the substances that can make air less healthy and clean or even harmful, such as chemical, physical, biological and pathogenic agents.

## A real commitment to improve the quality of indoor environments

According to the World Health Organization (WHO), about 9 out of 10 people worldwide breathe polluted indoor air. The poor quality of the air has been and still is globally associated with different health issues (this phenomenon has been called "Sick Building Syndrome").

The choice to progress further on the well-being side is carried out by Eurapo in accordance with the need to maintain a high standard of quality in indoor environments, recognized internationally as **IAQ - Indoor Air Quality**. This is one of the parameters which, together with thermal comfort, acoustic comfort and lighting quality, define the **IEQ - Indoor Environmental Quality**, this means the environmental conditions inside buildings that can influence the quality of life of the people who live or work there.

## Why employing ionization?

Pollution in an enclosed space can be caused by dust, smoke, bacteria, pollen and allergens that accumulate there causing respiratory problems.
If rooms are not sufficiently ventilated, these substances end up contaminating indoor air.
In order to purify it, ionization is used, a technology based on the basic principles of physics. How does it work? It's simple: ions are produced through an electric circuit; they are capable of binding to polluting particles suspended in the air and neutralizing them. How does it happen? Causing them to acquire an electrostatic charge which, weighing them down, causes them to fall.

## EURION, the air ioniser that removes both micro-organisms and particulate matter

Eurapo's solution to the desire and need to live in environments that are more comfortable and even healthier is the sanitization system EURION.
A needlepoint bipolar air ioniser that generates cold plasma, composed of both positive and negative ions capable of inactivating micro-organisms such as mould, viruses and bacteria in the air and on surfaces, as well as breaking down particulate matter (PM 2.5 and PM 10).

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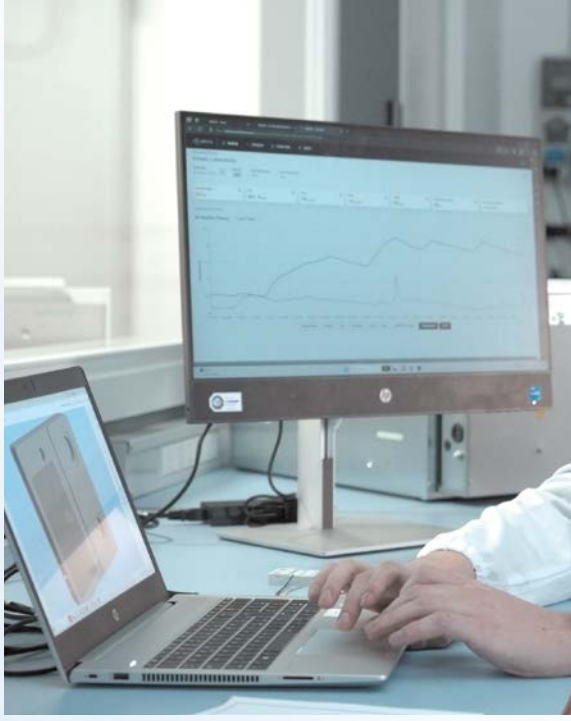
## Active sanitisation even in the presence of people

The Needle Point Bipolar Ionization (NPBI) technology is extremely reliable because it allows to perform both passive sanitisation of environments (polluted air enters the device where it is purified and then released clean into the environment) and active sanitisation of environments (the ions released by the device are spread into the treated environment, sanitising both the air and inert surfaces).
In addition to this, it offers the advantage of being enclosed in a very small device that can be easily integrated into all Eurapo water terminal units and requiring minimal maintenance. This air ionization technology, as is it harmless to living creatures, can also be used in the presence of people.

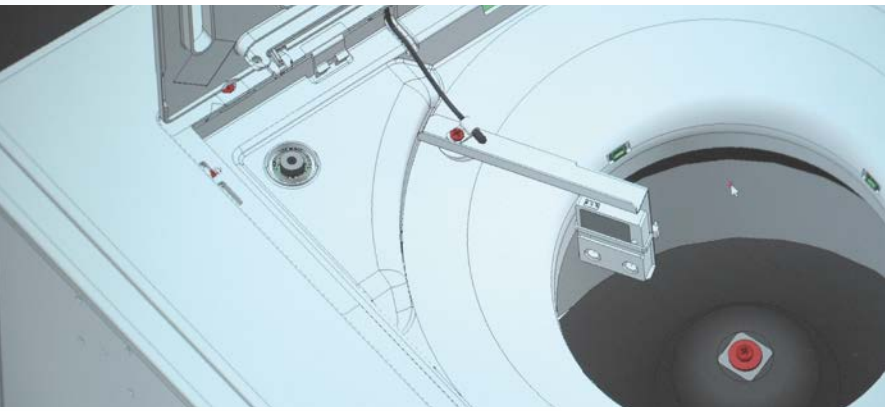



## Ionization: a winning choice against the most varied substances

The superior effectiveness of the ionization action in reducing PM and inhibiting micro-organisms and allergens immediately emerges by comparing the main sanitisation technologies together.

| TECHNOLOGY | PM | MICRORGANISMS | Allergens (Pollen, Mites etc.) |
|---|---|---|---|
| PASSIVE SANITIZATION | | | |
| **UV Light** | | ✓ | |
| **HEPA Filters** | ✓ | ✓ | ✓ |
| **Photocatalysis on filters** | ✓ | ✓ | |
| **Electrostatic filters** | ✓ | ✓ | ✓ |
| ACTIVE SANITIZATION | | | |
| **Cold plasma** | | ✓ | ✓ |
| **Active photocatalysis** | ✓ | ✓ | ✓ |
| **Cold plasma with bipolar ionizer** | ✓ | ✓ | ✓ |

** Effectiveness and efficiency depend on the type of filters*

# Certified effectiveness against micro-organisms

The ability to make bacteria, fungi, mould, spores and viruses inactive is attested by the results of the meticulous tests carried out by international certification bodies.

| Microorganism | Name | Certification Body | Removal | Year |
|---|---|---|---|---|
| Bacteria | Escherichia Coli | EMSL Analytical, USA | 99% | 2011 |
| | Escherichia Coli ATCC | Istanbul University, Turkey | 91% | 2011 |
| | Staphylococcus aureus | EMSL Analytical, USA | 81% | 2011 |
| | Pseudomonas aeruginosa | Istanbul University, Turkey | 99% | 2011 |
| | Staphylococcus aureus (MRSA) | EMSL Analytical, USA | 99% | 2013 |
| Fungus | Aspergillus Niger | EMSL Analytical, USA | 97% | 2011 |
| | Candida albicans | EMSL Analytical, USA | 97% | 2011 |
| | Dichobotrys abundans | Prof. Joe F. Boatman, USA | 90% | 2006 |
| | Penicillium | Prof. Joe F. Boatman, USA | 95% | 2006 |
| Mold | Cladosporium cladosporioides | EMSL Analytical, USA | 36% | 2011 |
| Spores | Bacillus subtillis var niger | Istanbul University, Turkey | 89% | 2011 |
| Viruses | Influenza H1N1 | Kitasato Research Center, Japan | 99% | 2011 |
| | Influenza H1N1 | Kasetsart University, Thailand | 99% | 2011 |
| | Influenza SARS-COV-2, aerosolized | Innovative Bioanalysis | 99% | 2021 |
| | Influenza SARS-COV-2, surface | Innovative Bioanalysis | 99% | 2021 |

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## An effective technology that guarantees tangible benefits

- **Sanitise environments even in the presence of people**
- **Does not generate ozone (*)**
- **Does not produce odours**
- **Low energy consumption required**
- **It can be integrated into existing systems**
- **Easier maintenance: simply clean the needles every time you clean the filter**

*(*) Compliant with EN CEI 60335-2-65 regulation. Production certified by third party, less than 0,005 ppm.*

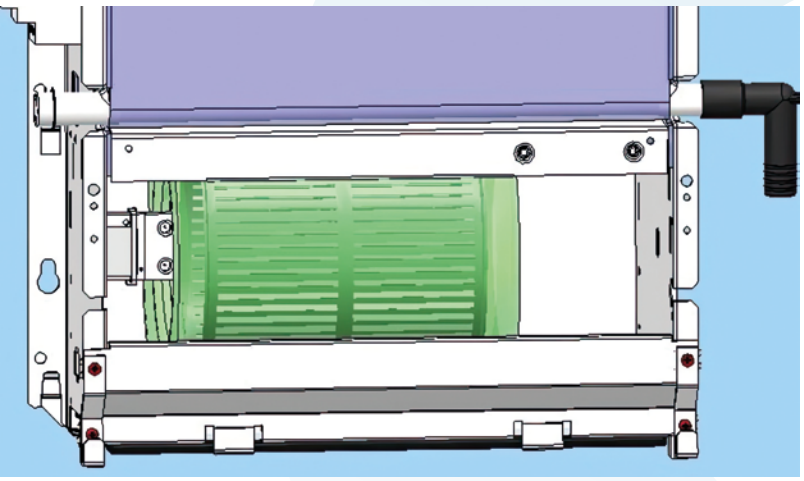
## A solution that makes the difference even for low maintenance rate and high durability

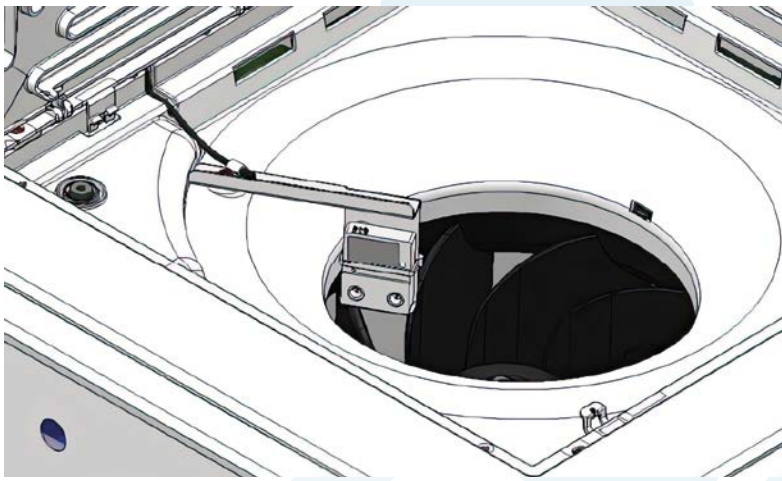
As compared to other sanitisation technologies, the Needle Point Bipolar Ionization technology requires rare maintenance and has excellent durability. All this translates into a low incidence of running costs, consisting in a real economic advantage.

| TECHNOLOGY | ORDINARY MAINTENANCE | DEVICES'S END-OF-LIFE |
|---|---|---|
| **UVC-Light** | Disassemble and clean dust deposits on the lamp (approximately every 3 months, depending on the treated environment) | 1 year |
| **HEPA Filters** | Filter clogging check for the replacement (must be dirty) | 12 months (depending on the properties of the treated environment) |
| **Photocalysis on filters** | Clean dust deposits on the UV lamp | 2/3 years (depending on the type and properties of the treated environment) |
| **Electrostatic filters** | Cleaning every 1/3 months | 10/15 years |
| **Cold Plasma** | Ioniser cleaning approximately every 3/6 months (depending on the treated environment) | The ioniser must be replaced every 1,5 years |
| **Active Photocalysis** | Clean the honeycomb structure with compressed air, when replacing the UV-C lamp | The UV-C lamp must be replaced every 2 years |
| **Bipolar Ioniser** | Cleaning the needles from dust every time the filter is cleaned (depending on the properties of the treated environment) | Average lifespan of 5 years |

## Requirements to ensure better performances

The position of the air ioniser has been optimised, to obtain a more homogeneous diffusion of the ions and to guarantee a more effective sanitisation action. Considering the specific air flow distribution of each water terminal unit in the range, numerous tests were carried out in Eurapo laboratories.





**For EURION to work properly it is necessary that:**

**the air to be ionised is treated with an ISO COARSE 55% type filter (former G3 filter)**

**the minimum speed of the air passing through it is 0,3 m/s**

**the device works in parallel with the fan of the water terminal unit in which it is installed**

EURION air ioniser installed on a Eurapo water terminal unit is managed with Omnibus 360 control system.

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