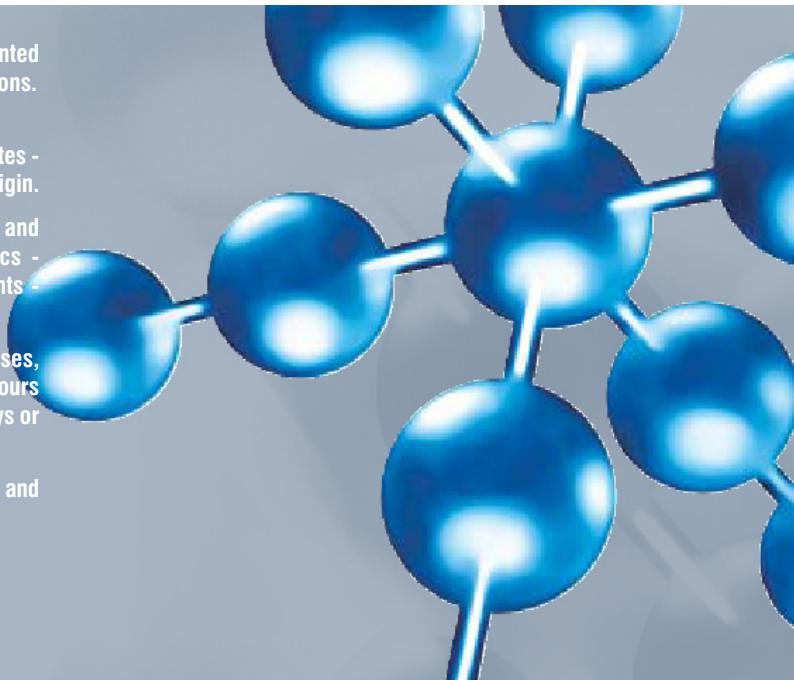


- > Stale or polluted air made to pass through the patented Bioxigen system is enriched with activated oxygen ions.
- > This has the effect of neutralising: germs - bacteria - viruses - spores - pollen - dust mites - mould - unpleasant odours of organic or chemical origin.
- > Bioxigen is an innovative system for purifying stale and polluted indoor air in: doctors' surgeries - clinics - hospitals - offices - shops and public establishments - home interiors.
- > It is capable of neutralising germs, bacteria, viruses, spores, pollen, dust mites, mould and unpleasant odours by means of activated oxygen. It does not use UV rays or chemical products.
- > It improves people's general well-being, concentration and performance.
- > It is guaranteed to work around the clock.
- > It uses a certified patented technology



Galletti completes its range of air conditioning units with an advanced indoor purification and sanitisation system, new to the Italian market but in use for over forty years in northern European countries, which have always been concerned about well-being in indoor environments.

The "product" is called Bioxigen and it is an innovative air "regeneration" and sanitisation system that exploits an oxidation-reduction process to clean the air of germs, bacteria, spores, pollen and mould and mitigate the presence of harmful polluting airborne substances and compounds.

Reducing the quantity of germs and bacteria also provides a significant deodorising effect: annoying and unpleasant odours of varying nature, present and perceived to a greater degree in indoor environments, are rapidly neutralised.

The application of Bioxigen serves to improve air quality in terms of chemical composition, bacterial activity, electrostatic equilibrium and a total absence of suspended particulates.

What distinguishes Bioxigen from other commercially available ionisers is research and the development of a truly effective solution devoid of side effects such as the production of ozone ( $O_3$ ).

The Bioxigen mission is to ensure healthier living and working environments better suited for human occupancy: with Bioxigen we can finally create an environment in which a correct ion balance can be re-established and maintained.

The result will be a healthier indoor environment, thanks to the drastic reduction in bacterial and microbial contamination, and simply a better environment, since basic human activities will benefit from an enhanced ability to concentrate and perform.

#### RESEARCH

The research leading to the design of Bioxigen drew inspiration from a process occurring in nature and was aimed at restoring a natural dimension to our habitat and recreating ideal bioclimatic conditions in the environments we live in.

Bioxigen is an ecological, energy efficient, environmentally safe machine.

#### THE BIOXIGEN SYSTEM

The Bioxigen system is founded on the theory of light absorption formulated by Albert Einstein in 1910. It is a low-energy-consuming, ecosystem-friendly system that reproduces the natural processes of sunlight, which activates the oxygen molecules present in the air by means of electromagnetic energy. Like the sun's rays in the uncontaminated biosphere, Bioxigen "frees" activated oxygen ions inside homes and workplaces and is effective in reducing indoor pollutants and germs by 80-85%.

In especially critical working situations where hygiene is of utmost importance, the application of Bioxigen can be boosted so as to achieve up to a 99% reduction in bacteria.

#### TECHNOLOGY

The basic technology employed by Sital Klima to design and manufacture Bioxigen revolves around a special condenser called an "ionising tube".

It comprises a quartz cylinder and special metal meshes and works with a single-phase AC power supply at a low rate of energy consumption.

The electric field generated between the special meshes of the ionising tube "frees" small negative or positive oxygen ions that easily form molecular ion "clusters" endowed with a high oxidising power.



## BENEFICIAL EFFECTS

In optimal bioclimatic conditions (in the mountains, at the seaside or near rivers and streams), negative ions are present in greater quantity than positive ions.



Negative ions are fundamental for life: they perform an important therapeutic function in that they make air breathable and light. In such conditions all human activities are enhanced: by increasing oxygenation in blood, they improve physical capacities and endurance.

But negative ions also have the effect of neutralising germs and bacteria: thus they help to prevent disease and alleviate lung and bronchial congestion.

Activated oxygen clusters are strongly attracted by gases and particles, which - like the majority of organic and inorganic substances present in the air - are characterised by a positive electric charge.

Upon contact, these harmful substances are oxidised within a few seconds.

Positive ions, too, have an important role to play in the degraded bioclimatic situation in which we live as they contribute to reducing the polluting volatile compounds and gases present in the atmosphere.

## RESULT

The application of Bioxigen results in a significant improvement in the quality of air, indoor home and work environments and physical well-being; that is to say, a substantial improvement in the quality of life.



## ANTI-BACTERIAL AND DEODORISING ACTION

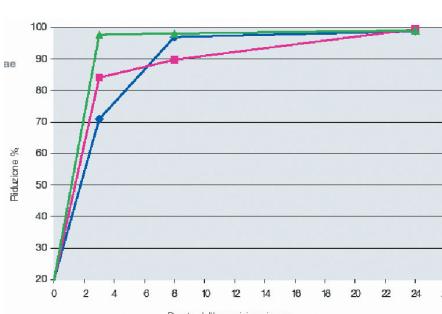
Thanks to the strong oxidising power of negative oxygen ions, Bioxigen can guarantee an effective action against odours of an organic nature and microbial and bacterial contamination present in indoor environments, as was demonstrated by trials conducted on three microbial strains (*Staphylococcus aureus* ATCC 29213, *Escherichia coli* ATCC 25922 and *Saccharomyces cerevisiae*) at the Department of Environmental Medicine and Public Health, Hygiene section, University of Padua.

Microbial strain exposed	hours of exposure		
	3 h	8 h	24 h
<i>Staphylococcus aureus</i>	70,9	97,02	98,8
<i>Escherichia coli</i>	84,07	89,77	99,53
<i>Saccharomyces cerevisiae</i>	97,71	98,14	99,05

Percentage reduction in microbial content inoculated into culture plates exposed to the effect of Bioxigen air ionisers.

Percentage reduction in known microbial content in culture plates exposed to the effect of Bioxigen air ionisers.

- ◆ *Staphylococcus aureus*
- *Escherichia coli*
- ▲ *Saccharomyces cerevisiae*



As may be seen from the data reported here, Bioxigen can effectively reduce the bacterial count by approximately 99% in the space of 24 hours.

## ION BALANCE

Modern bioclimatology has clearly demonstrated that the ideal ambient condition for the mental and physical well-being of human beings corresponds to an ionic concentration of 1,800 small ions per cm<sup>3</sup> of air, with positive and negative ions present in a ratio of 80 to 100.

In indoor environments, where the natural ionisation processes catalysed by sunlight cannot take place and human activities make their negative effects felt, it is fundamental to restore an ion balance artificially.

By freeing gauged quantities of negative oxygen ions, the Bioxigen system makes it possible to re-establish a correct air ion balance, which is a necessary condition for recreating an optimal habitat.

ENVIRONMENT	positive ions per cm <sup>3</sup>	negative ions per cm <sup>3</sup>	ion ratio + / -
Therapeutic environment	1000	9000	0.1 / 1
Mountain air	2500	2000	1.25 / 1
Rural environment	1800	1500	1.2 / 1
Urban environment	600	500	1.2 / 1
Atmosphere before a thunderstorm	3000	800	3.75 / 1
Atmosphere after a thunderstorm	800	2500	0.32 / 1
Light industry	400	250	1.6 / 1
Office / apartment	200	150	1.33 / 1
Small rooms	80	20	4 / 1
Closed moving vehicles	80	20	4 / 1
<b>Optimal situation</b>	<b>800</b>	<b>1000</b>	<b>0.8 / 1</b>

## PARTICULATE REDUCTION

The particles present in the air represent a vehicle for the transmission of a large number of pathogenic agents, such as viruses and bacteria, which are harmful to human beings: by emitting negative and positive ions Bioxigen is able to form clusters of oxygen molecules which in turn reduce suspended particulates by means of an electrostatic and gravitational effect.

## AN EXAMPLE

Radon progeny. Radon is a noble gas and it is present in the majority of living and working environments as a decay product of Radium. The progeny of Radon are non-gaseous elements, namely Polonium, Lead and Bismuth: the radioactive isotopes of Polonium are the most dangerous due to the specific nature of their radioactivity.

These isotopes can be found dispersed in indoor environments in the form of large ions and for this reason they readily bind to suspended particulates.

Once inhaled, the isotope can easily reach large organic molecules such as the nucleic acids - DNA or RNA - and manifest all of its feared carcinogenic action.

## TECHNOLOGY AT NATURE'S SERVICE

Bioxigen is an innovative air purification system capable of significantly reducing germs, bacteria, spores, pollen and mould, chemical fumes and vapours by means of an oxidation-reduction process.

Reducing the quantity of germs and bacteria also provides a significant deodorising effect: annoying and unpleasant odours of varying nature, perceived to a greater degree in indoor environments, are neutralised by the oxidising action of negative oxygen ions.

## PUBLIC SECTOR

- Schools
- Cinemas and theatres
- Shopping centres
- Offices
- Libraries

In these environments, where there is a high density of people, Bioxigen is capable of purifying and deodorising the air as well as making the air fine and light: the result is a healthy environment that improves performance and mental concentration.



## HEALTH CARE SECTOR

- Rest homes
- Hospitals
- Doctors', dentists' and veterinary surgeries
- Waiting rooms
- Chemical and pharmaceutical industry

In all health care facilities, guaranteeing an aseptic environment is an absolute must. By activating oxygen ions, Bioxigen can oxidise germs and bacteria and achieve up to a 99% reduction, even on surfaces and instruments.



## BEAUTY AND FITNESS SECTOR

- Fitness centres
- Swimming pools
- Well-being and beauty centres
- Hairdressing salons
- Solariums

Air treated with Bioxigen is free of unpleasant odours, hygienically pure and rich in oxygen, which is synthesised in blood, improving the physical performance of athletes and those who practice sports in general.



## HOSPITALITY AND CATERING SECTOR

- Restaurants
- Hotels
- Bars, pubs
- Wine bars
- Discothèques

Bioxigen represents the ideal solution for indoor environments with problems of unpleasant odours and a need to refresh air. Bioxigen sterilises the air, guaranteeing conditions of hygiene within the environment.



## FOOD SECTOR

- Cold storage rooms
- Refrigerated counters
- Refrigerated display units
- Refrigerated transport



In this sector, indoor pollution is harmful not only to a firm's image but also to the people who use a service as well as those who live and work in the indoor environment.

Bioxigen helps eliminate all types of germs and bacteria on shelves, worktops and buffet counters.

Foods kept in cold storage retain their freshness longer and meat does not oxidise.

## PRIVATE SECTOR

- Homes
- Smoking areas
- Private clubs



In homes and private interiors the activated oxygen of Bioxigen reaches every corner and rids the air of bacteria, mould and dust mites, dust and traces of detergent and neutralises the smell of smoke and other unpleasant odours.

The benefits for adults, the elderly and children are highly important: clean air makes you breathe deeper and enhances your mental and physical well-being.

## INDUSTRIAL SECTOR

The residues of industrial processes are one of the main causes of environmental pollution.



When applied to the cutting-edge air treatment systems by Sital Klima, Bioxigen can significantly reduce the harmful polluting substances that are emitted into the atmosphere.

The activated oxygen freed by Bioxigen improves air quality inside manufacturing facilities as well, thus introducing a source of well-being into all places where people work.

Bioxigen can also be retrofitted to existing installations: in this case it will be able to neutralise bacteria that have accumulated over the years in the air ducts (Legionella, mould, spores of varying nature) and are released into the indoor environment, resulting in a serious health hazard.

Galletti is committed to applying Bioxygen technology in all of its indoor units, both current and future, which thus combine the benefits of air purification and deodorisation with the efficiency, durability and quiet operation typical of Galletti fan coil and duct units.

## 2x1



Cooling capacity  
1,1 • 11 kW

## / Indoor unit for air conditioning systems

- > Natural air convection in heating operating mode
- > Fan coil in summer cooling operating mode
- > 4 models
- > One styling with 2x1 and Flat

## KAIMAN



Heating capacity  
1 • 2 kW

## / Thermoconvectors

- > 6 models in 3 different dimensions
- > 4 and 6 row heat exchanger for operation with water at low temperature
- > Air outlet flap with microswitch (optional) to close the thermostatic valve
- > One styling with 2x1 and FLAT

## FLAT



Cooling capacity  
1,15 • 3,5 kW

## / Fan coils with centrifugal fan

- > 7 models in 3 different dimensions
- > With cabinet, wall mounted
- > One styling with 2x1 and FLAT

## ESTRO



Cooling capacity  
1,15 • 11 kW

## / Fan coils with centrifugal fan

- > 12 models in 9 different versions
- > with cabinet, floor, wall or ceiling mounted
- > Without cabinet, vertical/horizontal recess mounted
- > Low cabinet

## FCNT



Cooling capacity  
1 • 2,5 kW

## / Fan coils with centrifugal fan

- > 4 models
- > With cabinet, wall mounted

## PWN



Cooling capacity  
2,5 • 10 kW

## / Duct units

- > 9 models
- > Recess ceiling mounted
- > 7 speed electric motor

## UTN



Cooling capacity  
2,5 • 18 kW

## / Thermal ventilating Units

- > 12 models in 2 different versions
- > 1 coil (2 -pipe systems), horizontal/vertical mounted
- > 2 coils (4 -pipe systems) horizontal/vertical mounted

