



# KLIN-AIR

FOR PERFECTLY WASHED AIR

SANIFICATION SYSTEM FOR AIR CONDITIONED DUCTS

the system which sanificates the air

Powered by BIOXIGEN®

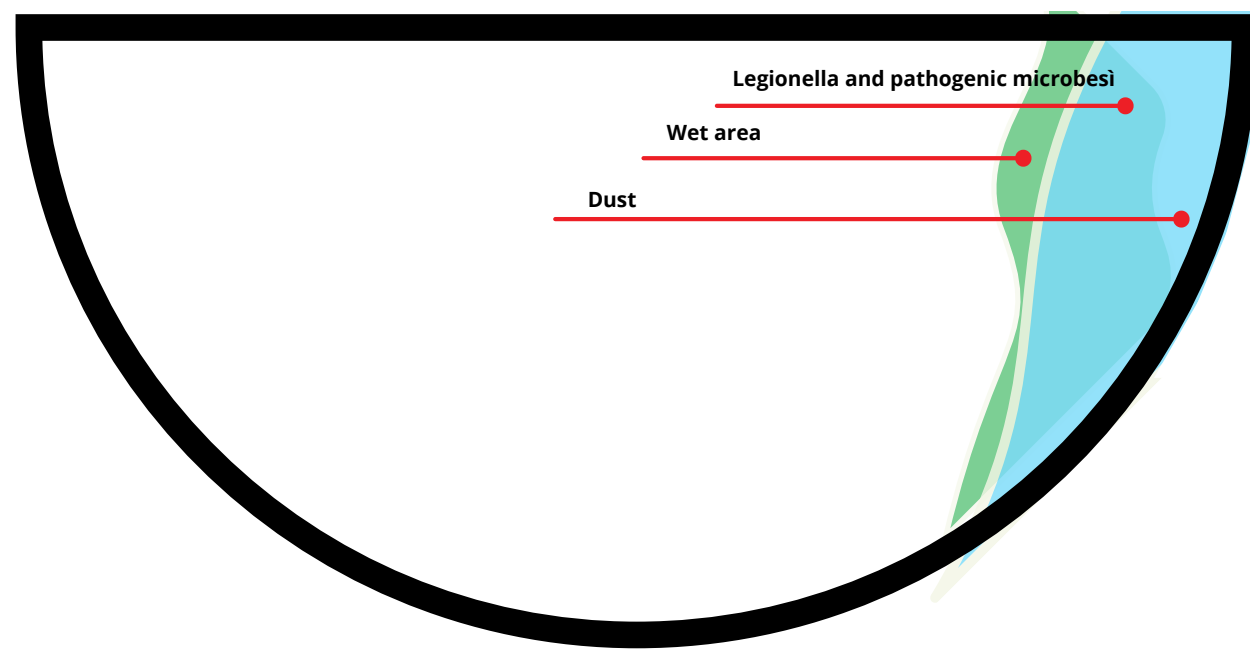
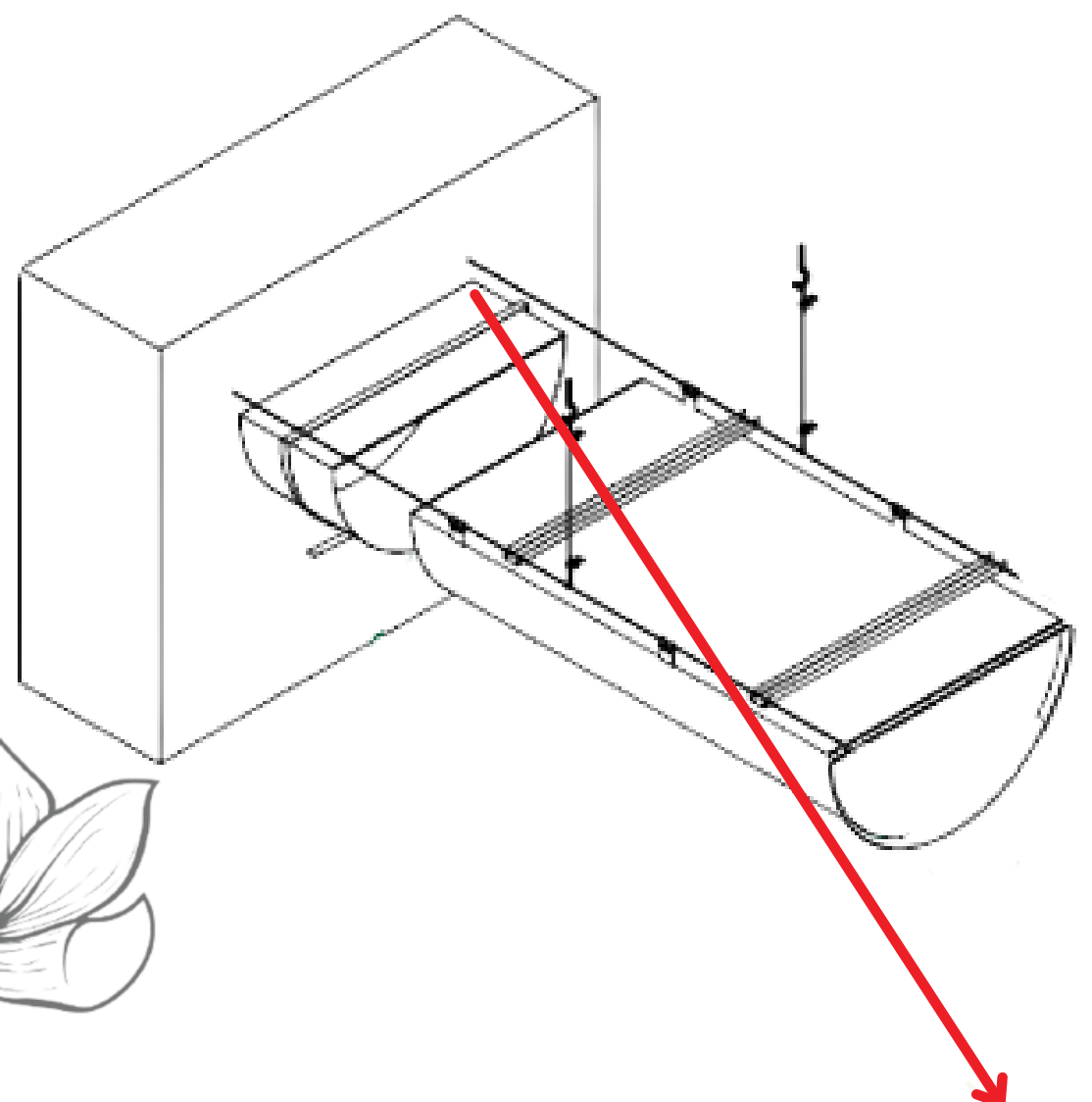
# KLIN AIR BY KLIMAGIEL

In cooperation with KLIMAGIEL and SKILL GROUP is born KLIN-AIR.



How is born  
KLIN-AIR

**WHY  
CHOOSE  
KLIN AIR**



In the air ducts in particular in the most critical sections ( elbows, change of direction, section angles etc... ) concentrate dust cumulation, humidity swell, different condensation, mucilage which determine the best conditions for the biofilm formation. The consequence is the proliferation of bacteria and the formation of the legionella, a danger not to underestimate for the environments and for the human beings healthy.



dust mites



fungi and bacteria

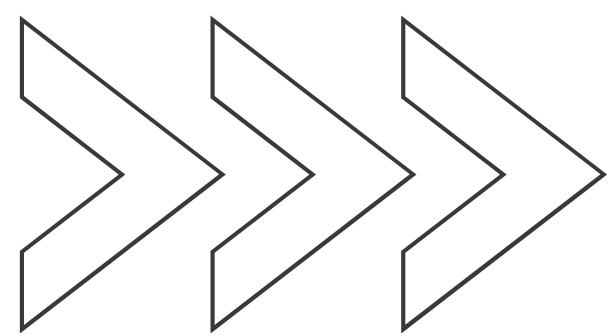


viruses and moulds



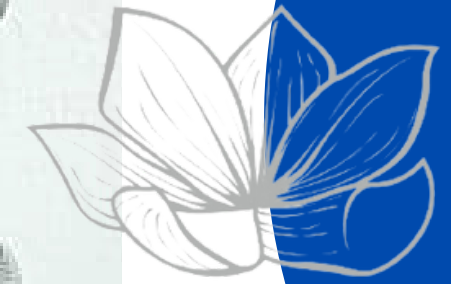
pollens, spores and allergens

The infections caused by this bacteria are being monitorated by WORLD HEALTH ORGANIZATION and in ITALY by ISTITUTO SUPERIORE DELLA SANITA to sensibilize the attention by project and installation of ducts especially in EEC.





**KLIN-AIR is the only ducts sanification system which permits to reduce the microbe charge in the air using the checked and tested technology by Bioxigen®.**



**KLIN-AIR**  
**Klimagiel**

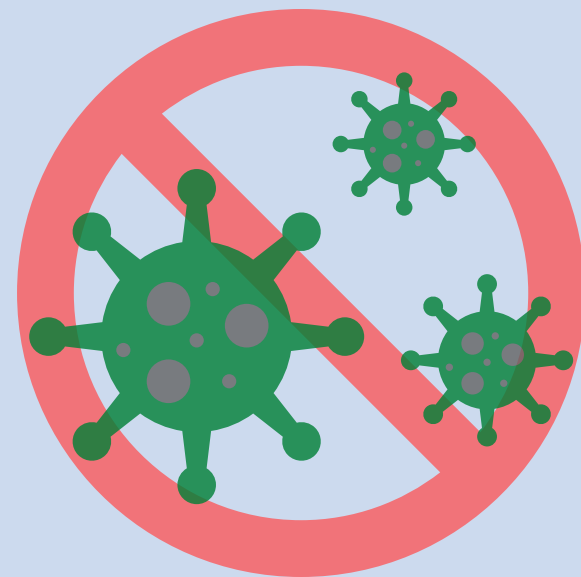
KLIN-AIR products suit for existing and new installations and be dimensioned according to the air flow of the and the scope of the project.



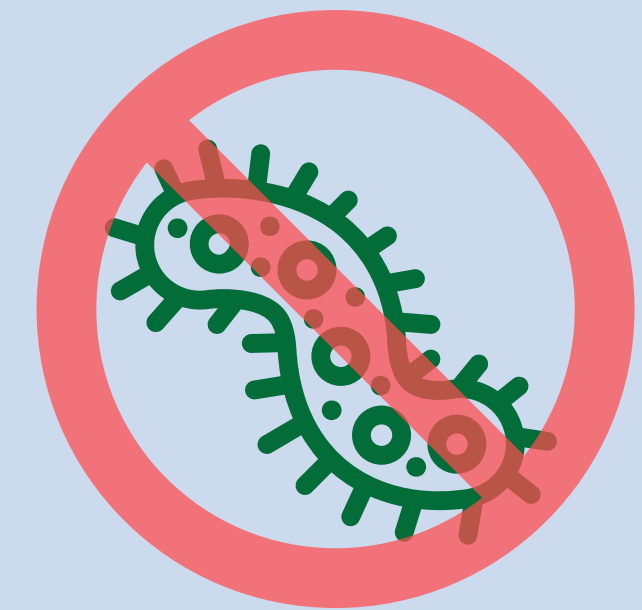
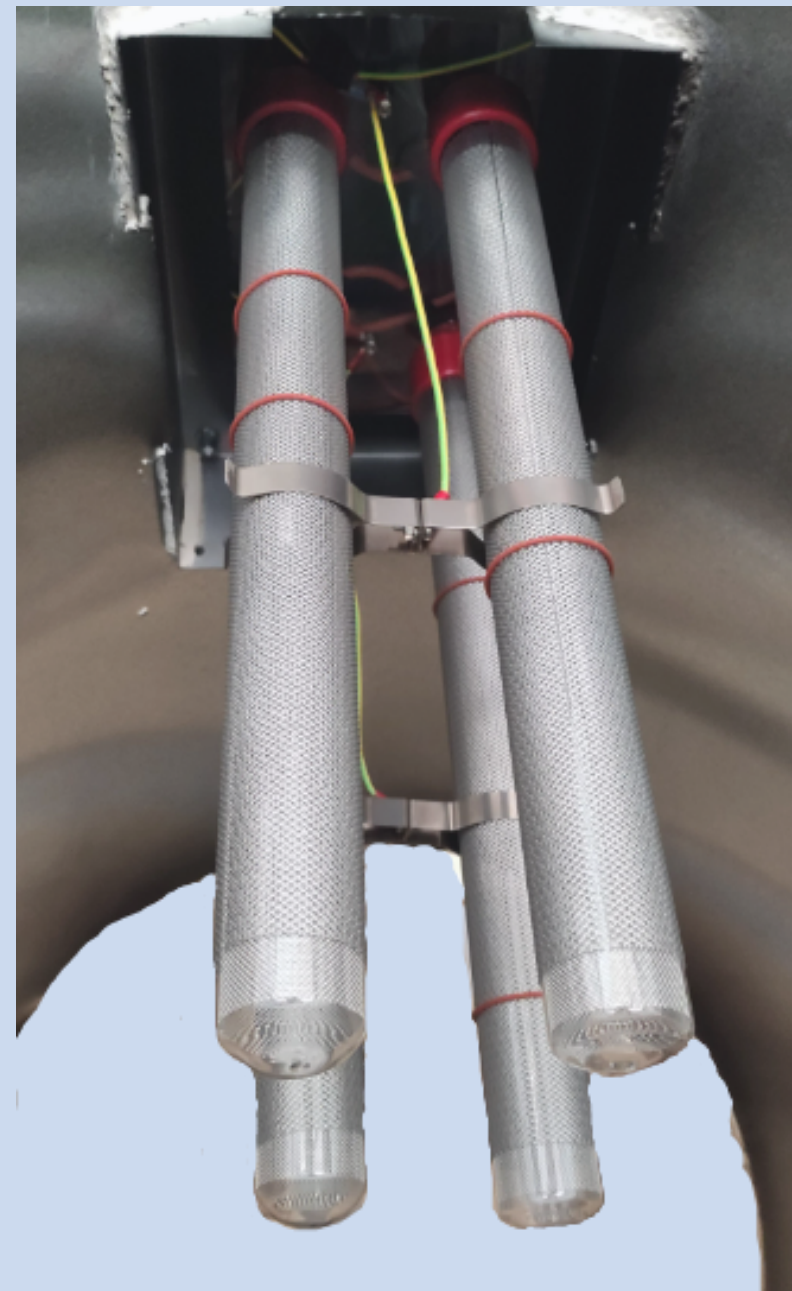
# KLIN-AIR BY KLIMAGIEL

KLIN-AIR lead benefits either for the persons reducing teh contagious risks caused by bacteria proliferation or for the environments.

Benefici



**NO Virus**



**NO Bacteria**

KLIN-AIR guarantees a reduction activity of microbes charge in a continuos and controlled way during the whole day.

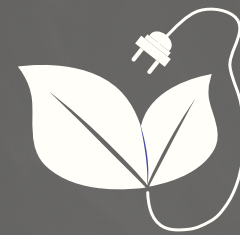


KLIN-AIR is a system which prevents the diffusion of the microbes avoiding the negative consequences linked to the achievement of the criticality



KLIN-AIR is the optimal solution to all a.m. problems as makes a preventive and continous action.

The traditional clean systems, through the use of chemical agents or mechanical bonification, act when the problem of environment hygiene is already grave.



The reduced energy consumptions are the result of a special care during the development phase KLIN-AIR.

WHY CHOOSE

KLIN-AIR



**The technology of Bioxigen® used in KLIN-AIR by Klimagiel reduces dramatically the microbe charge in the air, reduces the thin dusts and maintains the correct ionic balance thanks to the special quartz condenser.**

**Laboratory  
test**



In particular the advantages are due to the impact ionization process the condenser does controled reactions of oxydereductions on volatile organic compound reducing the air pollutants . Further the oxygen ions generated by the electric field can reach the whole duct, producing a microbicidal effect in all the areas where air flows.

The developments of the bipolar ionization technology in cooperation with the most important universities and research centers ( Padua, Udine university, Maugeri Institute, Archa Laboratories and Pisa university ) testing the effects even in critical situations.



# RESULTS

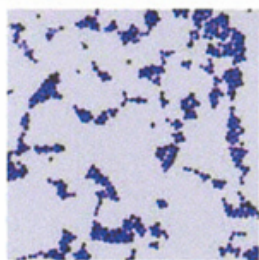
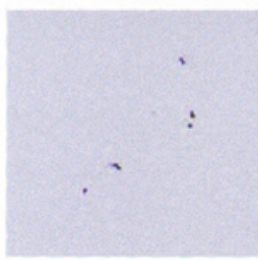
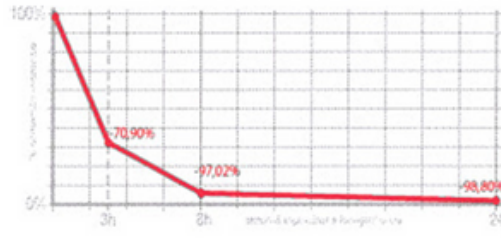
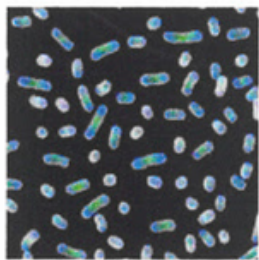
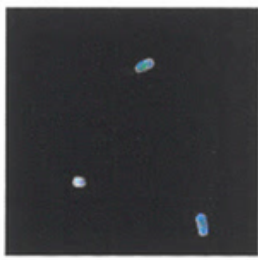
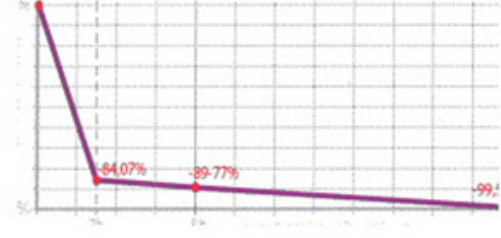

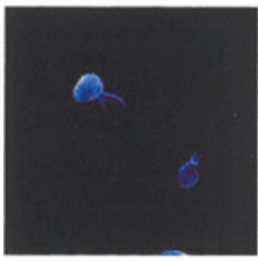
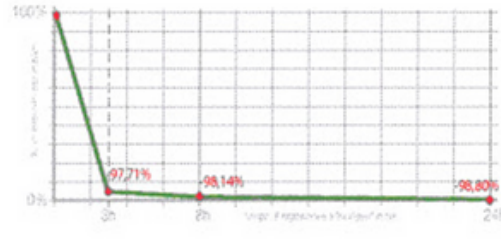
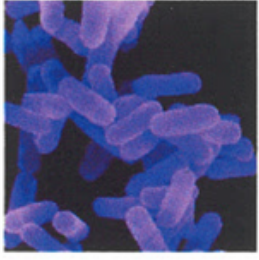

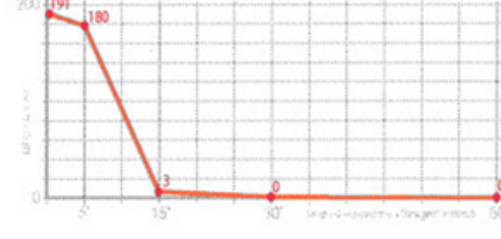
Test has demonstrated that the the application of the technology led to improvements guaranteeing:

- MICROBIAL REMOVE
- IMPROVEMENT OF THE QUALITY OF THE INDOOR AIR

Prima  
Before

Dopo  
After

Abbattimento del contenuto microbico con KLIN-AIR  
Decrease in microbial contents with KLIN-AIR

		<b>Staphylococcus aureus</b>		
		Tempo   Time — 3 h	-70,90 %	
		Tempo   Time — 8 h	-97,02 %	
		Tempo   Time — 24 h	-98,80 %	
		<b>Escherichia coli</b>		
		Tempo   Time — 3 h	-84,07 %	
		Tempo   Time — 8 h	-89,77 %	
		Tempo   Time — 24 h	-99,53 %	
		<b>Saccaromices cerevisiae</b>		
		Tempo   Time — 3 h	-97,71 %	
		Tempo   Time — 8 h	-98,14 %	
		Tempo   Time — 24 h	-99,05 %	
		<b>Legionella</b>	UFC / 0,1 ml	
		Controllo negativo   Negative control	0	
		Controllo positivo   Positive control	191	
		Dopo   After — 05 min	180	
		Dopo   After — 15 min	3	
		Dopo   After — 30 min	0	
		Dopo   After — 60 min	0	



Laboratory  
test

KLIN-AIR makes the purification of the air.



**KLIN-AIR by Klimagiel contributes to the application of the specific requests on workers' safety and health ( DL 81/08 ) and indoor comfort as per UNI EN 15251/2008 because reduces the bacteria proliferation.**

**Settori di applicazione**

Its application brings huge benefits even in areas with tighten environments parameters where the host structure or process line requires a contaminants control and purity and healthy criteria baout the air.



## **KLIN-AIR is suitable for each aeraulic installation of:**



**FOOD INDUSTRY**



**SHOPPING MALL, SUPERMARKETS**



**WELLNESS & FITNESS CENTRES**



**HOSPITALS**



**HOTELS AND RESTAURANTS**



**HOTELS AND RESTAURANTS**

**KLIN-AIR is available for all the air volume range from 200 from 200 till 2000 cbm.**

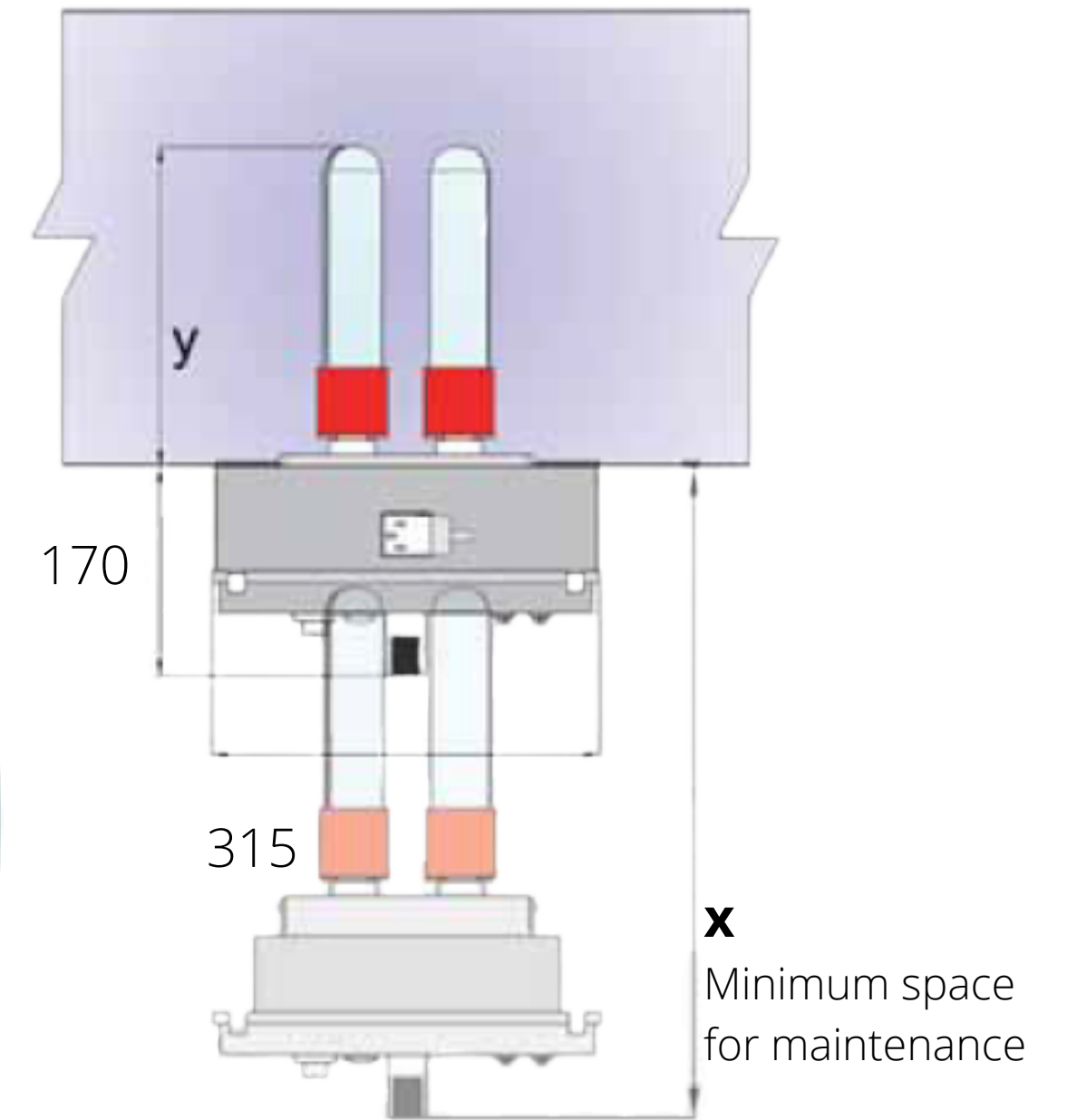


**AIR VOLUME**



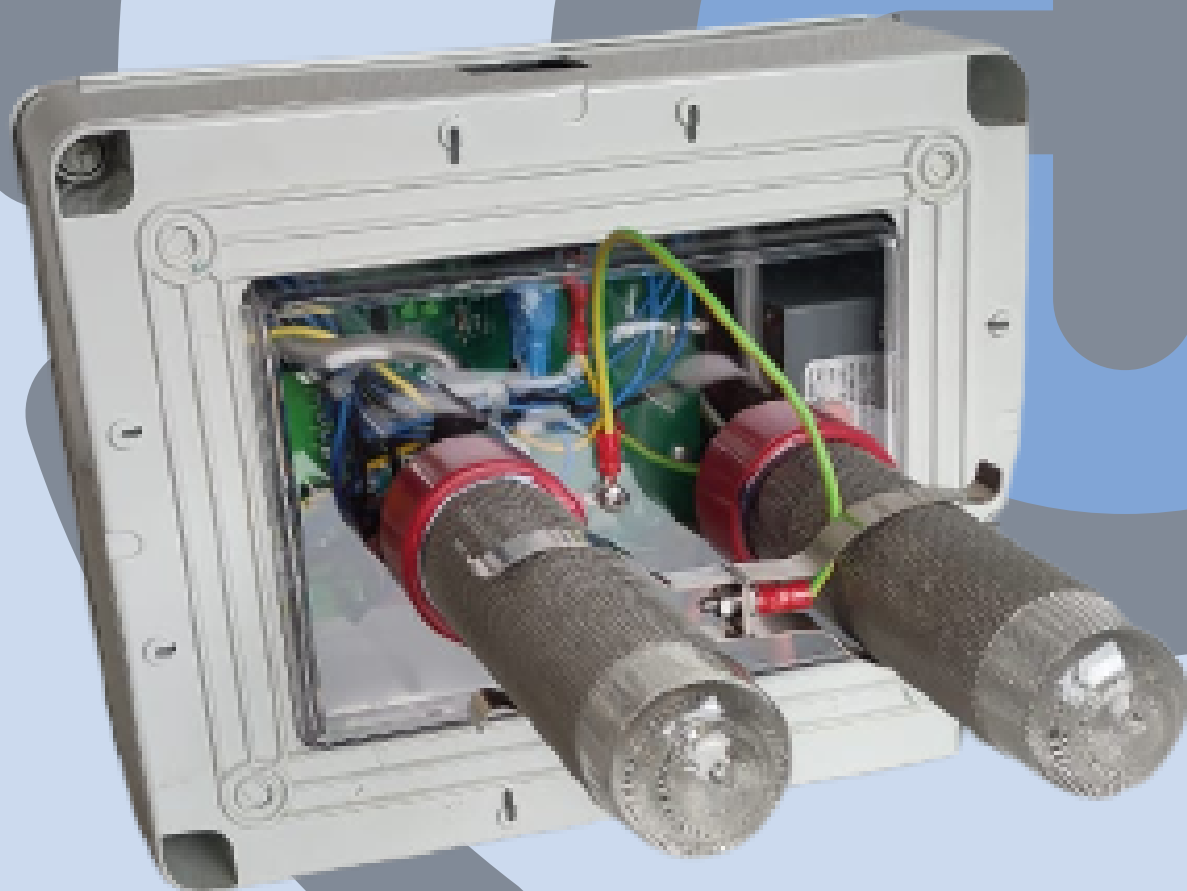
# DIMENSIONS OF KLIN-AIR

## Installation



The dimensions of KLIN-AIR changes according to the applied size .

The installation of KLIN-AIR allows to keep the air distribution sanitized thanks to the action of oxidising ions created by the quartz condenser, which can destruct polluting agents like bacteria, viruses and allergens. Being an active system, it produces a sanitising effect not only where the module is installed, but also in the entire aeraulic circuit. The presence of the KLIN-AIR modules allows to reduce the periodic cleaning, sanitizing and remediation interventions for the aeraulic ducts.



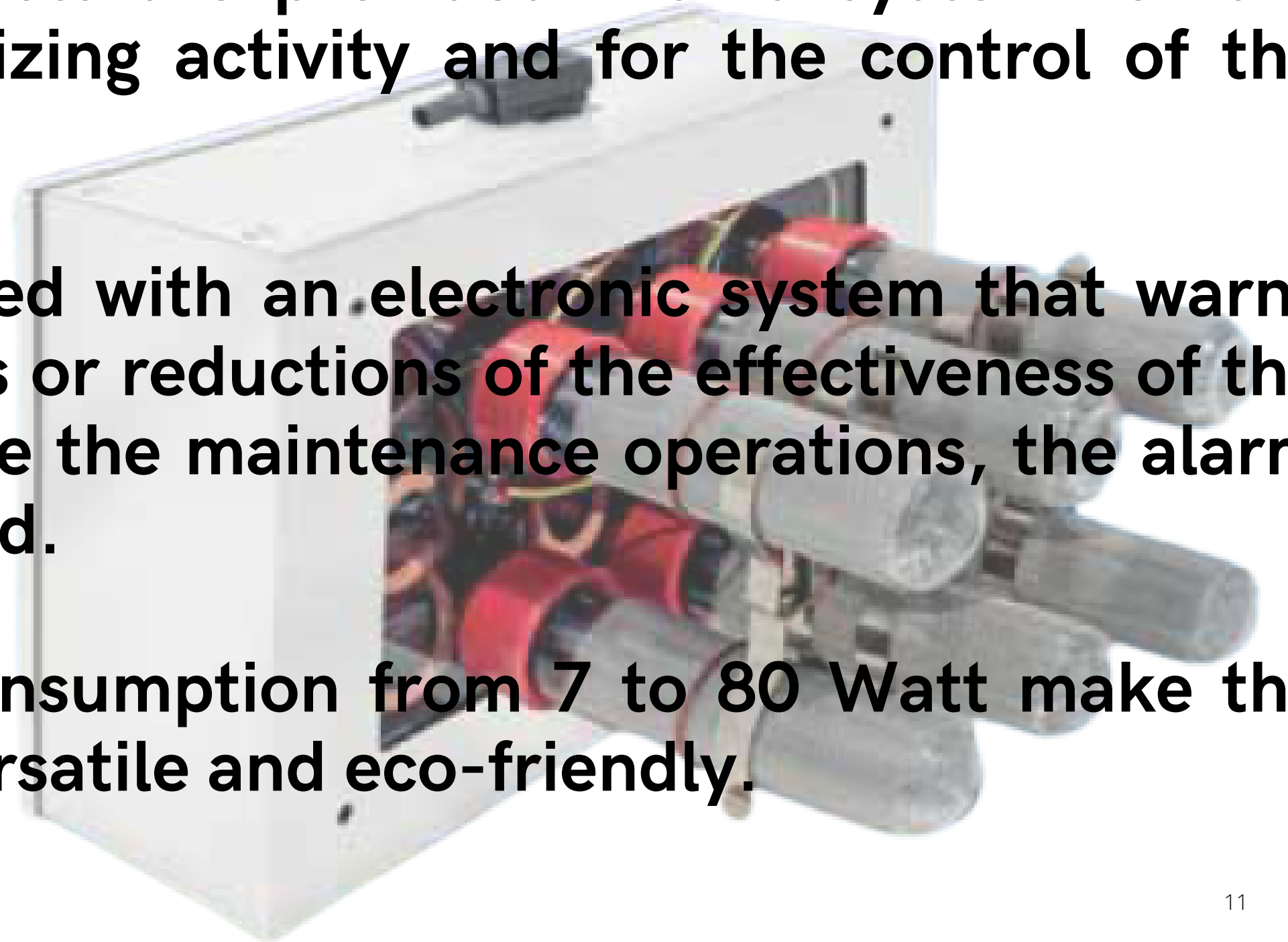
**Main values**

**The KLIN-AIR modules are designed to be easily installed in the new or already existing air ducts. Depending on the models, they are made of a plastic or sheet metal on which are placed the condensers.**

**All the KLIN-AIR products are provided with a system for the monitoring of the sanitizing activity and for the control of the functioning status.**

**In fact, they are provided with an electronic system that warns the user in case of faults or reductions of the effectiveness of the product. In order to ease the maintenance operations, the alarm signals can be remoteised.**

**The reduced electric consumption from 7 to 80 Watt make the KLIN-AIR series very versatile and eco-friendly.**





# OZONE



VS

# KLIN-AIR



Ozone is widely known for its antibacterial, fungicidal and antiviral properties, but its usage is definitely not possible in the presence of people.

**SIGNIFICANT LIMITS:** Ozone is a poisonous gas to humans and to the environment and because of that its treatment must be done by highly qualified staff and be repeated over time.

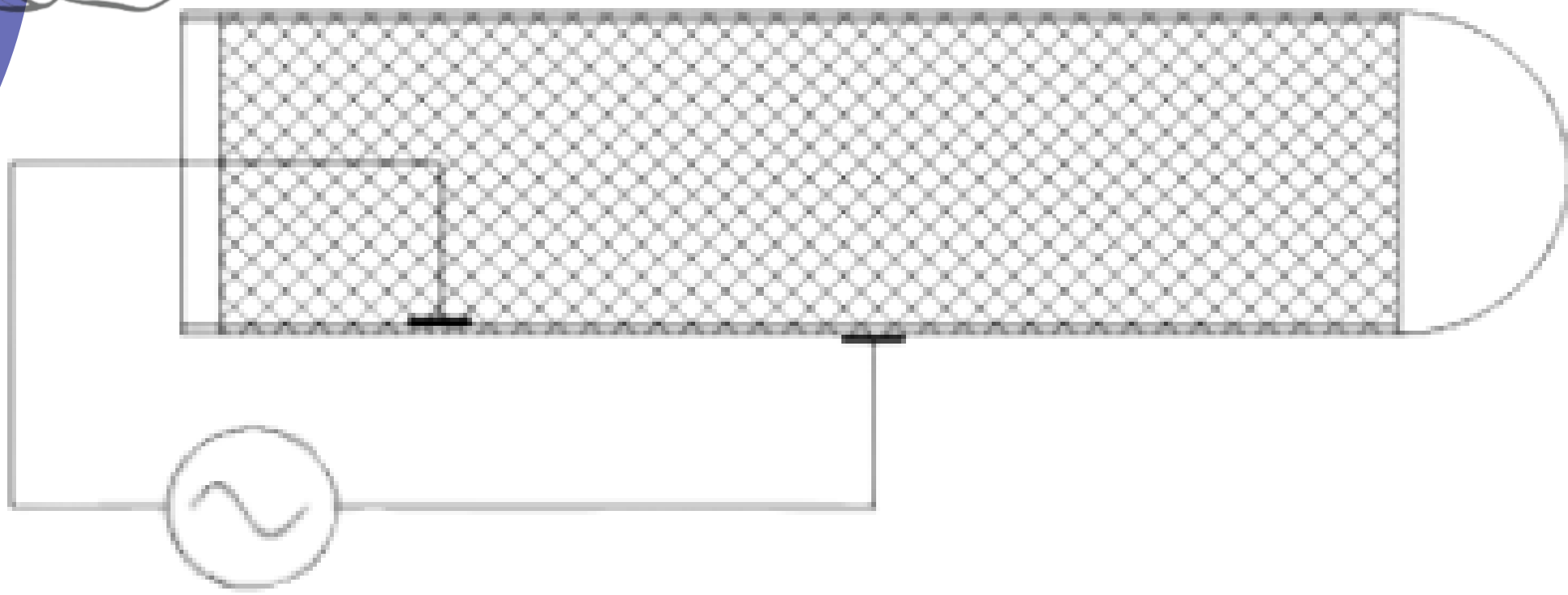
KLIN-AIR uses a bipolar ionisation process that produces a sanitizing action through activation of oxygen molecules, remarkably reducing the presence of viruses and bacteria in the air (including COVID-19).

**ADVANTAGES:** The air that passes through the condenser spreads throughout the environment, reaching spots not accessible by hand. We recommend 24-hours use in the presence of people for air sanitizing.

Confronto tra i  
metodi di sanifi-  
cazione

The Bioxigen® technology used by KLIN-AIR includes a glass cylinder with appropriate metal meshes powered by electricity. This allows to create an alternate electrical field outside the cylinder whose lines of force keep changing in intensity and direction over time, increasing the vibration of the molecules in the air.

Bipolar ionisation  
technology



The KLIN-AIR modules need a simple periodic maintenance that includes the cleaning of the quartz condensers. The cleaning is important because it guarantees the effectiveness of the devices and increases the durancef the condensers.

All the KLIN-AIR products are provided with a system for the monitoring of the functioning status. In case of malfunction the system warns thanks to a remotizable alarm contact, that also informs of the necessity for cleaning or subtitution of the condensers.



Maintenance



Researches  
and  
certifications



**University of Padova,**

Department of Environmental Medicine and Public Health, Environmental Epidemiology Laboratory. Experiments conducted on three microbial strains: Staphylococcus aureus ATCC 29213, Escherichia coli ATCC 25922, Saccharomyces cerevisiae.

**University of Padova,**

Department of Environmental Medicine and Public Health, Hygiene Section. Trials conducted to identify mould in the air and test the effectiveness of Bioxigen® on Legionella.

**University of Udine,**

Department of Food Science. Experiments conducted on microorganisms including: Escherichia coli, Listeria monocytogenes, Saccharomyces cerevisiae.

**LabAnalysis** defined Bioxigen as “effective against all enveloped viruses (including the coronaviruses such as SARS-Cov-2)”

# THE NORMS IN FORCE REPORT THE FOLLOWING REQUIREMENTS FOR DESIGN ACTIVITIES, INSTALLATION, OPERATION AND MAINTENANCE OF THE AEREAULIC SYSTEMS:

**Directive 89/391/EEC** - European Directive on improvements in the safety and health of workers.

**Italian leg. decree 81/2008** - Occupational health and safety act.

**UNI EN 15251/2008** - Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics.

**Guidelines** published in Italian Official Gazette on 27/11/2001. National Health Plan.

**AiCARR** - Guidelines on the maintenance of air-conditioning systems (2005).

**White book on Legionella** - CM, Joppolo (2000).

**Italian Presidential Decree no. 412/93** - Regulations on the design, installation, operation and maintenance of building heating and cooling systems for the purpose of reducing energy consumption, implementation of article 4, paragraph 4, law no. 10 of 9 January 1991.

**UNI 10399/95 and UNI 13779** - Ventilation systems for comfort applications. Introduction, classification and requirements. Rules for requesting and issuing quotations, ordering and supplying.

**UNI 10381-1/96** - Ventilation systems. Ductwork: classification, design, sizing and installation.

**UNI ENV 12097/99** - Ventilation for buildings. Ductwork. Requirements for ductwork components to facilitate maintenance of ductwork systems.

**UNI EN ISO 14644-1:2001** - Cleanrooms and associated controlled environments - Specifications for monitoring and periodic testing to prove continued compliance.

**Supplement to Italian Official Gazette no. 256 of 3/11/2006** - Agreement, pursuant to article 4 of legislative decree no. 281 of 28 August 1997, between the State, Regions and Autonomous Provinces of Trento and Bolzano on the document entitled: "Guidelines for the definition of technical preventive maintenance protocols on air-conditioning systems".

**WHO Guidelines** - World Health Organization, air quality guidelines for Europe.



Standards of  
reference



us  
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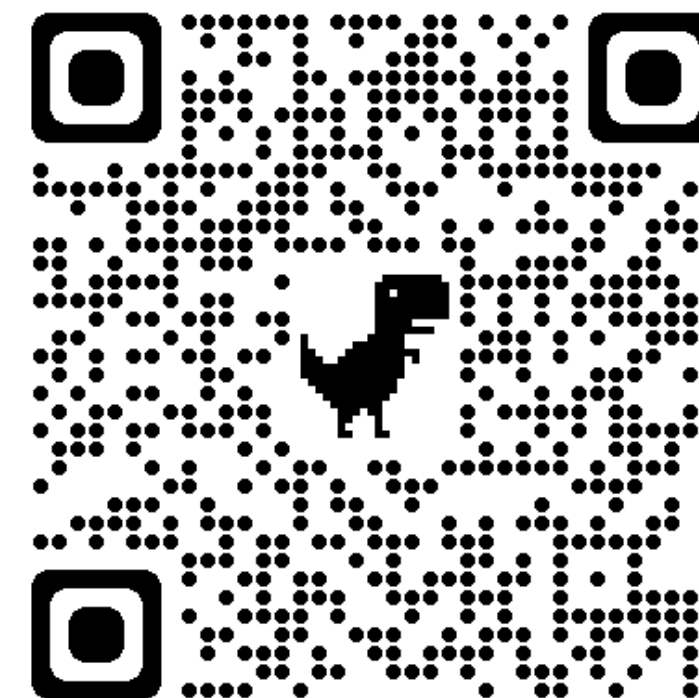
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**KLIMAGIEL®**

l'aria che ti rispetta



Scan it for our website