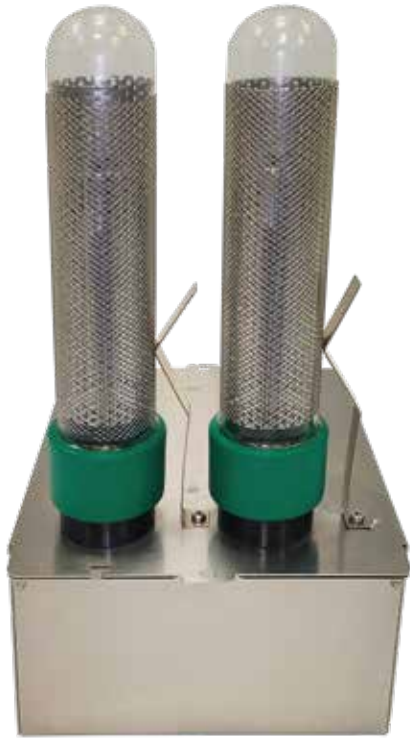




# AERBOX

*Air sanitization and decontamination  
module in VMC systems  
Jonix non thermal plasma technology*





## INDUSTRIAL TECHNOLOGY AT THE SERVICE OF THE AIR QUALITY

AERBOX by Jonix is a simple and essential sanitization module, using cold plasma sanitization technology, developed in the medical field, available for residential environments.

AERBOX can be installed in any ventilation system and is developed for the supply air purification and decontamination, from viruses, moulds, bacteria, pollen as well as fumes and odours of various kinds. The module is very effective in preventing or eliminating the formation of bacterial colonies and moulds in air ducts.

## NO CHEMICAL PRODUCT AND ZERO ENVIRONMENTAL IMPACT

AERBOX sanitizes air and surfaces constantly, without side effects on materials, eliminates odours and improves environmental comfort. In the workplace, it guarantees the healthiness of the air as required by the regulations for the safety of workers. DL.81/2008

## FEATURES

The main features of the AERBOX module are:

- High efficiency: reduction of viral, microbial and volatile organic compounds up to 99 %;
- Low energy consumption: from 20VA;
- Strong deodorising action: eliminates odours from the air;
- Natural process: does not use or produce residual chemicals.

The AERBOX module consists of the ionizing units exposed to the air flow and control electronics, surrounded by an insulating casing.

The mainboard module is designed to send output signals, maintenance warnings and possible anomalies.

There is the RS485 serial interface with Modbus protocol for querying and programming the main parameters and for remote module diagnosis.

## COMMON USES

The AERBOX module, can be used in any type of VMC (Controlled Mechanical Ventilation) system already installed in EBOX distribution boxes in satin-finished steel, with 4 - 6 - 8 for 63 mm or 75 mm connections with an air flow rate up to 500 m<sup>3</sup>/h, or alternatively with a special mounting flange for existing boxes and ducts.

The module can also be used simply, for duct installation a VMC system.

The system of air distribution develop internally bacterial and chemical pollutants that are transported to rooms by airflow.

**Module AERBOX by Jonix, with cold plasma technology eliminate bacteria, molds, virus, chemical pollutants, VOC and smells in order to guarantee the bacterial decontamination of the internal ducts surfaces and of the air in transit.**

The module is concept to a directly installation on models EBOX (box of distribution).

## ECO-LOGIC DESIGN

**AERBOX by Jonix** doesn't use chemical products and doesn't generate residual substances.

It can be used continuously also in presence of people and activities. Its continuous activity, in addition to sanitization, creates the correct air ionization that guarantees an environmental comfort conducive to stress reduction, promotes respiratory functions from the point of view of protection and promotion of health in the residential and work environments.



## NTP (NON THERMAL-PLASMA) TECHNOLOGY

With the term plasma it is indicated a mixture of ionized gas composed of one large amount of charged particles (such as ions or electrons), free radicals, ROS, molecules and also neutral atoms.

The ionization of an atom manifests itself when an electron acquires sufficient energy to overcome the attractive forces of the nucleus of the atom. When this result is obtained with processes that

they generate a plasma in which the temperature of ions and neutral atoms is significantly less than that of electrons, we speak of cold plasma or Non-Thermal Plasma (NTP). Cold plasma emits light with wavelengths both in the visible and in the ultraviolet part of the spectrum. Over to the emission of UV radiations, an important property of low plasma temperature is the presence of high-energy, highly reactive, electrons they generate numerous chemical and physical processes such as oxidation, excitation of atoms and molecules, the production of free radicals and other reactive particles.

A plasma can be artificially generated by supplying an energy with a gas sufficiently high, i.e. applying energy to a gas in such a way as to reorganize the electronic structure of species (atoms, molecules) and produce excited species and ions. One of the most common ways to artificially create and maintain a plasma is through an electric discharge in a gas. In Jonix NTP technology, so-called non-thermal discharges are used with dielectric barrier method. The potential of ionization and density of plasma-generated charge species with barrier electric discharge (DBD) are greater than those in the non-thermal plasma generated by other systems.



# WHY CHOOSE AERBOX?

## Which are the benefits of AERBOX?

The air of closed rooms could be up 5 times more polluted than the outside.

Substances capable of altering indoor air quality can be classified as: chemical agents, physical and biological, they come partly from the outside (outdoor pollution, pollen), but many of them are made by internal sources. The main internal sources of pollution are represented by: occupants (humans, animals), powder (excellent receptacle for microorganisms), structures, building materials, furnishings, systems (air conditioners, humidifiers, plumbing systems) and outdoor air.

(Source: [www.salute.gov.it](http://www.salute.gov.it)) . AERBOX considerably reduces chemical-physical agents (combustion gases, airborne atmospheric particulates, volatile organic compounds VOCs, polycyclic aromatic hydrocarbons, passive from tobacco combustion, radon) and biological (bacteria, viruses, pollens, mites, biological residues and allergenic compounds) that have effects on the respiratory system, cause allergies and asthma, disorders of the immune system. They also have harmful effects on the cardiovascular system and on the nervous system as well as on exposed skin and mucous membranes.

## Does AERBOX have contraindication for people's health?

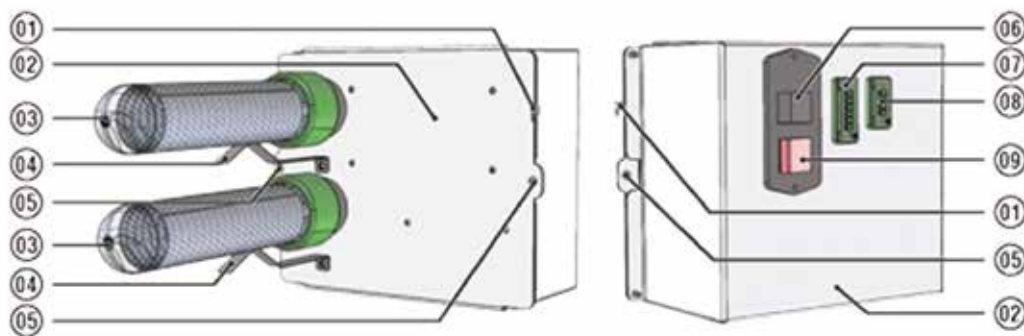
AERBOX is absolutely safe both for the health of people and animals.

## Where is AERBOX installed?

AERBOX can be installed in any environment of civil use: residential buildings, shops, offices, kindergartens, etc. ...

Inside the AERBOX system, it is installed in the discharge section of the VMC system and in particular in the point where the air is conveyed and addressed to the various environments.

# CONNECTION PANEL AND DESCRIPTION



COMPONENT DESCRIPTION	
01	Wall hooking clamp
02	Electric part box
03	Ionized tube
04	Condenser activation bracket
05	Filling holes at the EBOX
06	Electric socket with fuse holder
07	Input connector and serial signal
08	Connettore di output segnalazione allarmi
09	ON / OFF light switch

# MODELS AVAILABLE

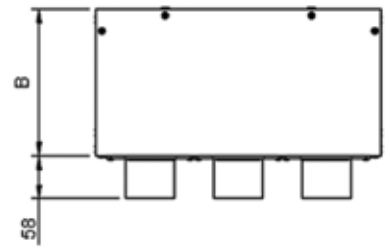
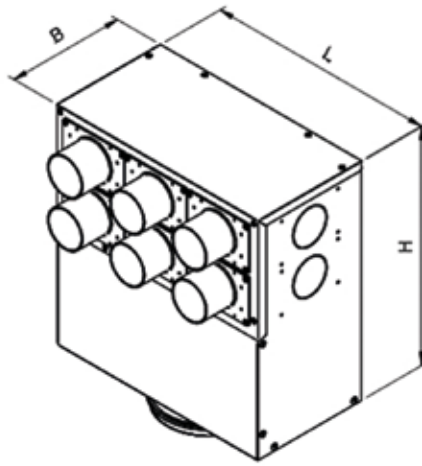
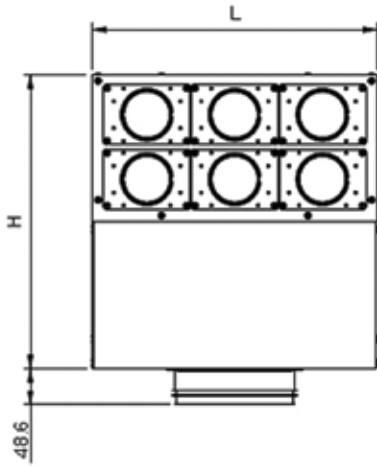
4 Plugs



6 Plugs



8 Plugs



Model	Nominal dimensions L x H x B (mm)	Main attack (mm)	Attacks available	Optional attacks
4 plugs	270x401x200	125	4	4
6 plugs	390x401x200	160	6	4
8 plugs	510x401x200	160	8	4



## EFFECTIVENESS

The biocidal activity occurs by oxidation of the cell membrane. Reactive particles carrying electric charges, among which the most important are the reactive oxygen species (e.g. atomic oxygen and ozone), which are concentrated on the surface of the membranes causing their destruction. The device is effective on: gram + and - bacteria, molds and yeasts, viruses, bacterial endotoxins, VOC (volatile organic compounds), odors.

On new pipelines, non-thermal plasma (NTP) prevents the formation of bacterial colonies on surfaces internal pollution and the spread of contamination through the flow of air in transit.

On existing pipelines, with the presence of already developed bacterial colonies, the non-thermal plasma oxidizes the microorganisms making micro-biologically inert the pre-existing particulate deposits.

The biocidal and neutralization activity of polluting substances is measurable already after the first few hours after ignition.

AERBOX eliminates odors of organic and chemical origin, reactive particles break the chemical bonds of smells substances by decomposing them.



Listeria  
monocytogenes



Staphylococcus  
aureus



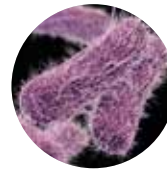
Escherichia  
coli



Pseudomonas



Aspergillus  
brasiliensis



Salmonella



Legionella

## BIOSAFE

The product is tested according to the protocol Bio-Safe®, through laboratory analysis with test chamber (UNI EN 16000) able to verify their emissive potential and/or through environment surveys (UNI EN 14412) and to restore the level of purification of the air reached by the same inside the rooms of use.

**The specific path of analysis and control undertaken led to the obtaining of the Bio-Safe® Validation Seal: a guarantee mark for health and well-being within the confined spaces.**





## REFERENCE NATIONAL LAWS AND REGULATIONS

### Valid for the following categories: Civil, Industrial, and Healthcare sectors

Italian Legislative Decree 81/2008 Consolidated Law on Health and Safety in the Workplace of 10th April 2008 (published in the Ordinary Supplement No. 108 of the Official Gazette No. 101 of 30th April 2008); Legislative Decree No. 81 was published on 9th April 2008) • Guidelines issued by the Italian Presidency of the Council of Ministers (Permanent Conference for relations between the State and the Regions), Center for disease control and prevention, General Directorate of Health prevention, Dept. II entitled: "Outline of guidelines for the prevention of indoor risk factors for allergies and asthma in schools" of 18th November 2010 • Guidelines issued by the Italian Presidency of the Council of Ministers (Permanent Conference for relations between the State and the Regions), entitled (Outline of Guidelines for the definition of technical protocols for predictive maintenance on air conditioning systems" of 5th October 2006. • Guidelines issued by the Italian Presidency of the Council of Ministers (Permanent Conference for relations between the State and the Regions), "Operating procedure for the appraisal and management of risks connected to the sanitation of air treatment systems" of 7th February 2013 • Guidelines for preventing and controlling legionellosis O. G. No. 103, of 5th May 2000 (Ministry of Health - Permanent Conference for relations between the State, the Regions and the Independent Provinces of Trento and Bolzano) • Guidelines indicating recommendations on legionellosis for managers of tourist and spa facilities of 13th January 2005 (Permanent Conference for relations between the State, the Regions and the independent provinces of Trento and Bolzano) • Guidelines for preventing and controlling legionellosis of 7th May 2015 (Ministry of Health - Permanent Conference for relations between the State, the Regions and the independent Provinces of Trento and Bolzano) • Guidelines issued by the Italian Presidency of the Council of Ministers (Permanent Conference for Relations between the State and the Regions) entitled "Guidelines for the protection and the promotion of health in confined environments and for the prevention and control of legionellosis" of 27th September 2001.

## REGIONAL LAWS AND STANDARDS

### Valid for the following categories: Civil, Industrial, and Healthcare sectors

Region: Liguria, Law No. 24 of 2nd July 2002 • Region: Puglia, Law No. 45 of 23rd December 2008 "Health provisions." • Region: Emilia Romagna -resolution of the Regional Council No. 1115 of 21st July 2008 "Regional guidelines for monitoring and controlling legionellosis". • Region: Molise – Law No. 15 of 13th July 2011 "Regulations for the prevention of the spreading of infectious diseases". • Guidelines for the prevention and control of legionellosis in Lombardy of 28/02/2005, Directorate-General for Health Decree No. 2907.

### Valid for the following categories: Healthcare sector

Regional law of Lombardy No. 33 of 30th December 2009 - New Regional Consolidated laws on health and Implementing Decree No. 1751 dated 24/02/2009 of the Directorate-General for Health of Lombardy.

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