UV STERIL AIR SYSTEM

KOVER SYNERGY

MADE IN ITALY

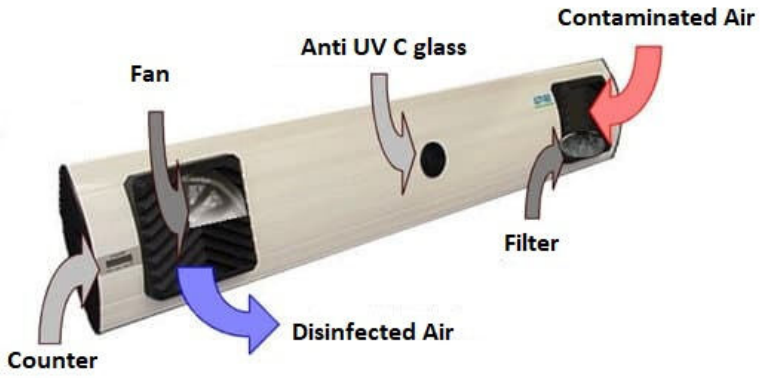
AIRBORNE DISINFECTION DEVICES

GENERAL INDEX

UV STERIL AIR SYSTEM

Studied and produced with innovative design, it overcomes the problems of direct and indirect exposure to short-wave ultraviolet rays (UV-C 253,7 nm), offering risk-free continuous use even in the presence of persons.

PATENTED AND CERTIFIED



After careful study and technical environmental testing, a totally new Germicidal Lamp has been perfected.

AIR GERM UV - SPECTRAL UV - LIGHT ENERGY UV

Operation is based on a closed-cycle forced ventilation system.
When air is taken in by the unit it passes through a mechanical filter at the entry valve where larger pollutants are blocked,
thus avoiding dirtying the germicidal lamps.
The air is then forced into direct contact with mercury vapor tubes which emit UV-C rays, completing maximum germicidal action. A high power reflecting specular screen concentrates the UV-C radiation reflections.
The air speed is 0,1 meter/second and the volume of air treated is approx. 100 m3/h.
The air is then expelled through the exit valve, micro-biologically clean.

THE MOST EFFECTIVE MEANS OF DESTROYING ALL TYPES OF MICRO-ORGANISMS PRESENT IN THE AIR

The efficiency of the sterilization system UV STERIL AIR SYSTEM has been certify by authoritative Institute and University.
UV STERIL AIR SYSTEM uses special UV lamps TUV C with 253,7 nm emission discharge in mercury vapor at low pressure arising in the peak of the bell curve.
The TUV C lamps are made with special quartz glass trasparent to radiations 253,7 nm but strongly opaque in respect to the radiation below 200 nm so as to avoid the ozone formation.
Thanks to the new technology UV STERIL AIR SYSTEM mod. SPECTRAL UV C is able to develop within the sterilization chamber 9500µW/cm2 of UVGI (Ultraviolet Germicidal Irradiation).
The particular design of the sterilization chamber promotes the passage of air in direct contact of the special TUV C lamps where they develop and focus the radiation.
The nuclei of the bacterial cells, appropriately irradiated, undergo photolytic action that stops the process of division and multiplication. Bacterial, spores aand viruses subjected to this high ultraviolet radiation field are destroyed up to 99,99%

PROTECT YOUR PATIENTS,YOUR STAFF AND YOURSELF - UV STERIL AIR SYSTEM - AIRBORNE DISINFECTION DEVICES PREVENTION FROM AIRBORNE INFECTIONS PREVENTION FROM BIOLOGICAL RISK IN CONDITION OF MAXIMUM SAFETY

THE GREATEST ADVANTAGE OF THIS SYSTEM IS ITS ABSOLUTE LACK OF DANGER TO MAN IN THAT THERE IS NO LEAKAGE OF UV-C RADIATIONS FROM THE UNIT.

ULTRAVIOLET RAYS

Ultraviolet is the name given to electromagnetic radiations with wave lenghts between 100 and 400, situated between the visible spectrum and x-rays. Ultraviolet rays are invisible and are commonly classified in three conventional bands:

- UV-A radiations (long waves) from 315 to 400nm.
- UV-B radiations (medium waves) from 280 to 315nm.
- UV-C radiations (short waves) from 100 to 280 nm.

(one nanometer corresponds to a millionth of a milimeter).

The most efficient artificial source of hight intensity UV-C rays are lamps which discharge mercury vapor at low pressure, and can supply homogeneous monochromatic radiation at 250-265 nm wave lenght. The fundamental UV-C radiation with the maximum germicidal effect is represented by the 254 nm spectral line (the point at which nucleic acids of micro-organisms have their maximum absorption).

The need for limiting the presence of pathogenic germs in the air has brought about increasing interest in the use of the short UV-C band of UV rays. UV-C ultraviolet rays are bactericidal by their physical nature.

They act by producing the denaturation of the proteins in the bacteria or the breakage of cell ways through mechanical action, provoking the death of the micro-organism (destruction of the DNA).

The case against this positive reduction of bacteria is the considerable danger of these rays which, if they come into contact with the skin and eyes, can cause rashes and conjunctivitis.

For this reason, normal lamps which exploit UV-C rays can be kept in operation only in the absence of persons, with the obvious reduction of their effectiveness over a period of time.

MICROBIOLOGICAL ANALYSIS

Figure 1 compares data relating to the levels of pollution on the outside with levels inside a waste disposal room. The latter was used to provide an extreme example of polluted air.

Values of outside air pollution were measured in order to take into account their influence on levels of internal air pollution levels were recorded at 9.30 a.m. The first sample was taken at 11.45, after the lamp had been installed. There is a notable reduction in the number of air-borne micro-organisms present.

Calculations based on the number of external air-borne micro-organisms show that this reduction is in the order of 50%.Final results demonstrate a radical change in the number of microbes present when compared to initial levels.

Before using the SPECTRAL UV lamp, the level of microbes present inside was higher than levels outside. After using the lamp, the level of pollution inside was virtually negligible.

DEVICES FOR AIR DISINFECTION. PREVENTION FROM BIOLOGICAL RISK.

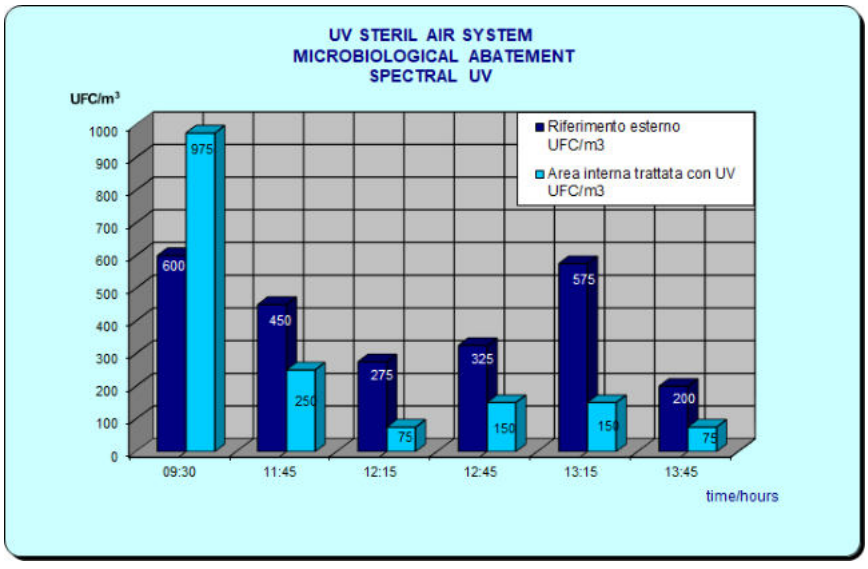


Fig. 1

Another important test was run by taking samples from the area around the air intakes and the air nozzles,
from which clean air flowed outwards (see fig. 2). As is clear from the data obtained, the level of microbe pollution was much higher in samples of untreated air than in the air flowing out of the nozzles.

MICROBE LEVELS REDUCTION

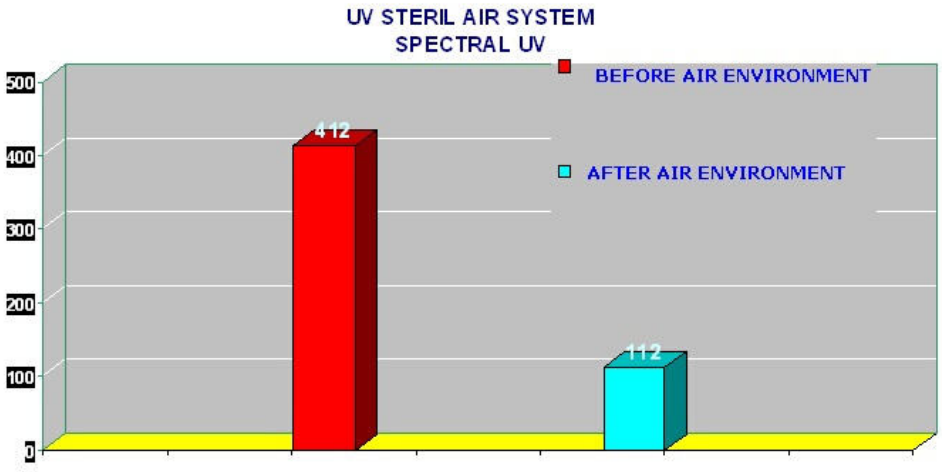


Fig. 2

It seems clear, then, that the SPECTRAL UV germicidal lamp is a real help in combating and eliminating air-borne micro-organisms In order to test the ability of the lamp to render air hygienic, a room measuring 70 cu. m. was sprayed with Bacillus Subtilis.
A series of air samples were then taken over a period of time to test the level of microbe pollution in the air. The air was sampled using an S.A.S. system both before and after the Spectral UV Germicidal Lamp was turned on. The results, as can be seen from Figure 3, show a drastic reduction in the levels of microbe pollution over this period, a clear demonstration of how effective this equipment is at destroying germs.

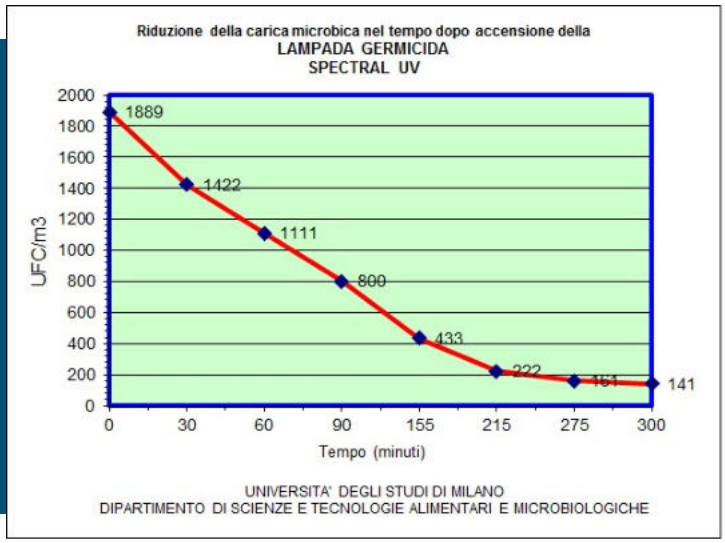


Fig. 3

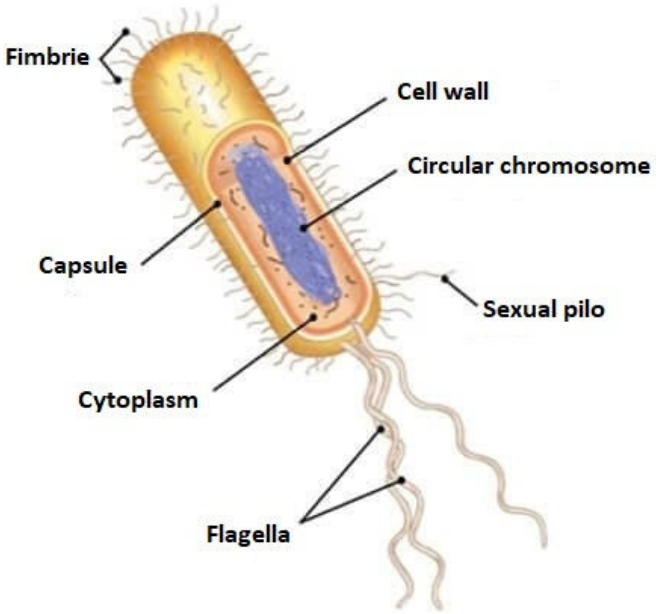
MICRO-ORGANISMS

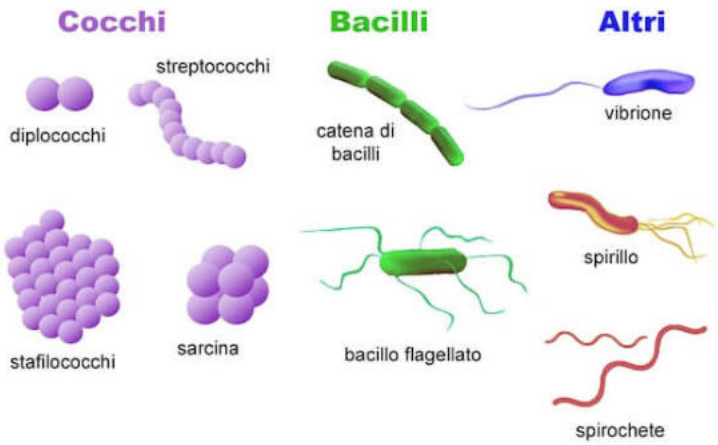
PREVENTION FROM BIOLOGICAL RISK

Micro-organism is the generic name given all organisms,of any system, which are not visible to the naked eye.
Micro-organisms include bacteria, moulds, protozoans, enzymes and viruses, and represent the lowest form of life.

BACTERIA

Bacteria, given their microscopic dimensions and low food and enviromental requirements, are the most widespread form of life.
They are present everywhere:land water, air.
Their morphology is not very differentiated and their form is mainly spherical or rod-shaped.

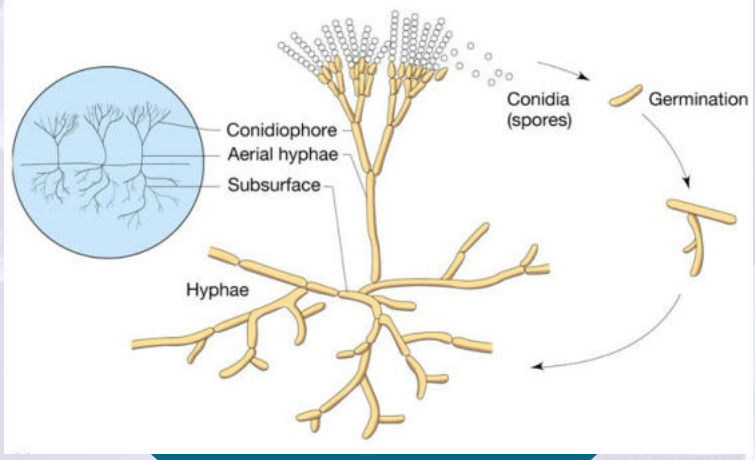




The bacterial cell is characterized by a coating (bacterial wall) that covers the plasma membrane;
This coating, consisting of several layers, has the function of maintaining the shape and stiffness of the cell.
Outside the wall there is often a light capsule composed of polysaccarids secreted by the cell itself.
Bacteria lack a real nucleus with a membrane that separates it from the cytoplasm and also lacks morphologically identifiable chromosomes: bacterial chromosome means a single DNA molecule that contains all the information genetics essential for a given species.
Some bacteria have particular enclosures (spores) that have a formidable resistance to aging and all agents of destruction.
In particular situations such as the high temperature or the extreme aridity of the environment, they do not lose their ability to multiply.
The spores sprout when the environmental conditions become favorable.

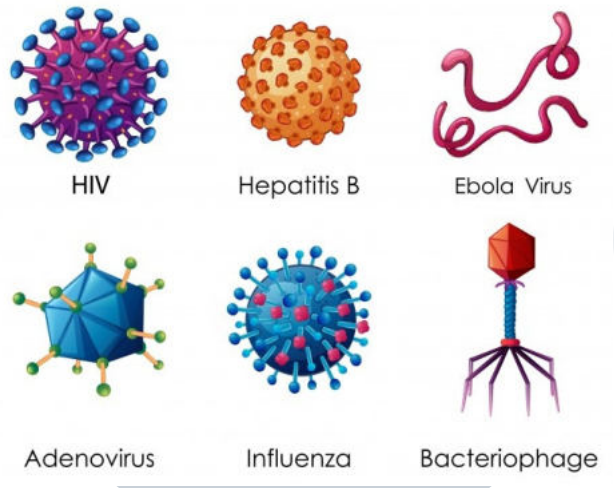
MOULDS

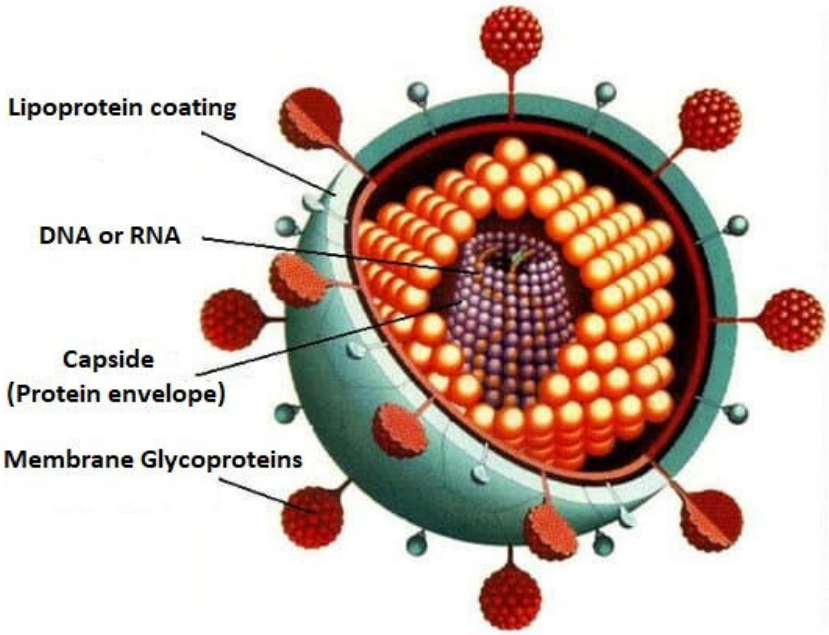
Moulds are aerobes and require an atmosphere rich in oxygen in order to grow.
Consequently they develop primarly on the surface of contaminated substratas.
Some are parasites of man, animals and plants, and can even cause seriuos damage.
Moulds compared to other living forms have a more differentiated structure, have a cell nucleus and therefore belong to the family of Eucariotes.
Regardless of their taxonomic classification,all fungi whose mycelium is often visible on food, are called mold.
Many microscopic fungi of the genus Aspergillus, Mucor, Pennicillium are generally indicated.
These live like saprofiti on different organic substances, forming with their fruity bodies a dusty efflorescence (mycelium), often presenting green, blue, brown or black colors that characterize moldy foods.
Molds compared to bacteria survive better than extreme environmental conditions.
They resist decreases in PH and water content or low temperatures, showing less drastic development inhibitions than most bacteria.
Many molds have gained great importance in medicine for their ability to process different chemical compounds (antibiotics) that are highly effective in the treatment of many infectious diseases.



VIRUSES

Viruses form a group of forced intracellular parasites.
They have a biological organization characterized by a sub-cellular level of structuring as they consist essentially of generic material formed by nucleic acid (DNA or RNA) enclosed in a container of a protein nature (capside) having the protect the viral genome. Viruses do not have systems capable of producing autonomous energy and biosynthetic capabilities and are therefore only able to express their pathogenic power when their genome, introduced into a cell, integrates and completes at the expense of the host cell.
Viruses have been identified as the agents responsible for some of the desease of man, animals, plants and bacteria themselves (bacteriophagism).





ALLERGENS

The attention given to what we eat and drink must also be given to the air around us.
Dust contains viruses, bacteria, chemical pollutants and mites.
All allergens responsible for respiratory problems are of minute dimensions, microns in size, and thus can remain suspended at length in invisible enviromental dust where we live.
Sneezing, stuffy nose, red watering eyes, difficult breathing and headaches are the typical signs of allergies from both pollen and dust.
The fact that the feces of mites are rich in allergens has moved the attention of researchers from the mites themselves to their excrements and has posed the problem of determining the allergenic power of micro-environments.
In fact both mites and their debris are rarely present in suspended air, but particles of their feces are abundant.
During normal breathing these particles present in the air are inhaled and enter deeply into the lungs and bronchial tubes.
There exists a correlation between the level of airbound allergens inhaled and the incidence of allergic manifestations.

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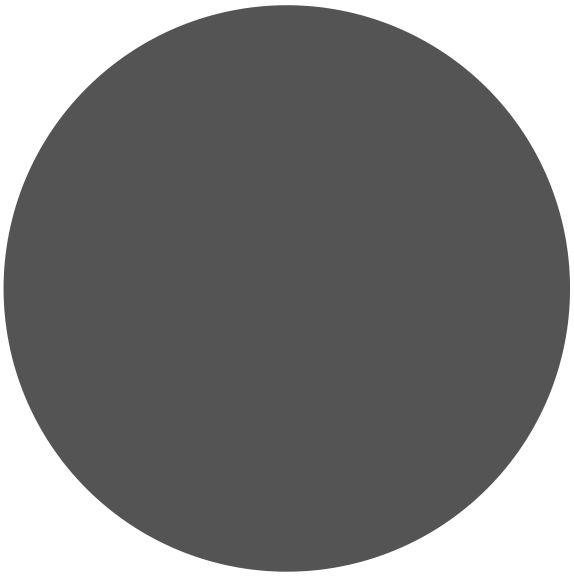
TAKING PREVENTIVE ACTION WITH THE GERMICIDAL LAMPS IS FOUNDAMENTAL



DEVICES FOR AIR DISINFECTION.

UV STERIL AIR SYSTEM

KOVER SYNERGY

MADE IN ITALY

AIR GERM UV

Cod. 11200 - 11200-B

TECHNICAL SPECIFICATIONS

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	42W
LEVEL OF AIR PURIFICATION	95.8%
RANGE	56mc/h
NOISE LEVEL	29 dB
INSTALLATION	wall mounting/ on base
OPERATION	continuous
EXTERNAL UV-C EMISSION	none
DANGER LEVEL	none
EQUIPMENT	pre-filter in the air intake
LIFE OF UV-C TUBES	6000 hours
AIR NOZZLES	fixed
CASING	extruded aluminium
LAMP SWITCH	anti UVC glass
LAMPS	n° 2 UVC tubes 9W
WAVELENGTH	235,7 nm
COLOUR	Ral 9010
WEIGHT	3,5 Kg + 3,5 Kg base
DIMENSIONS	45x18x8 cm

AIR GERM UV - C

Cod. 11300 - 11300-B

TECHNICAL SPECIFICATIONS

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	42W
LEVEL OF AIR PURIFICATION	95.8%
RANGE	56mc/h
NOISE LEVEL	29 dB
INSTALLATION	wall mounting/ on base
OPERATION	continuous
EXTERNAL UV-C EMISSION	none
DANGER LEVEL	none
EQUIPMENT	pre-filter in the air intake counter
LIFE OF UV-C TUBES	6000 hours
AIR NOZZLES	fixed
CASING	extruded aluminium
LAMP SWITCH	anti UVC glass
LAMPS	n° 2 UVC tubes 9W
WAVELENGTH	235,7 nm
COLOUR	Ral 9010
WEIGHT	4 Kg + 3,5 Kg base
DIMENSIONS	60x18x8 cm

SPECTRAL UV

Cod. 11201

TECHNICAL SPECIFICATIONS

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	50W
LEVEL OF AIR PURIFICATION	99,99%
RANGE	100mc/h
NOISE LEVEL	29 dB
INSTALLATION	wall mounting
OPERATION	continuous
EXTERNAL UV-C EMISSION	none
DANGER LEVEL	none
EQUIPMENT	pre-filter in the air intake
LIFE OF UV-C TUBES	6000 hours
AIR NOZZLES	fixed
CASING	extruded aluminium
LAMP SWITCH	anti UVC glass
LAMPS	n° 2 UVC tubes 15W
WAVELENGTH	235,7 nm
COLOUR	Ral 9010
WEIGHT	5,5 Kg
DIMENSIONS	100x18x8 cm

All UV STERIL AIR SYSTEM disinfection devices can be equipped with:

-ELETTRONIC COUNTER for the control of the dust filter and the real life of germicidal tubes.

- Every 2000 hours, the progress of the actual operating hours is reported by Green-Yellow-Red LED.

Every 2000 hours the dust filter must be replaced.

- After 6000 hours the device turns off and the red LED flashed.

Every 6000 hours germicidal tubes must be replaced.

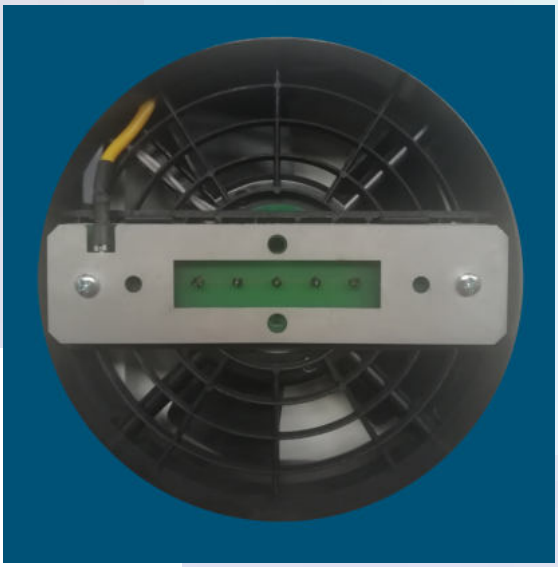
- After the replacement of the germicidal tubes, a RESET key, placed on the electronic counter, allows the reset of the same.

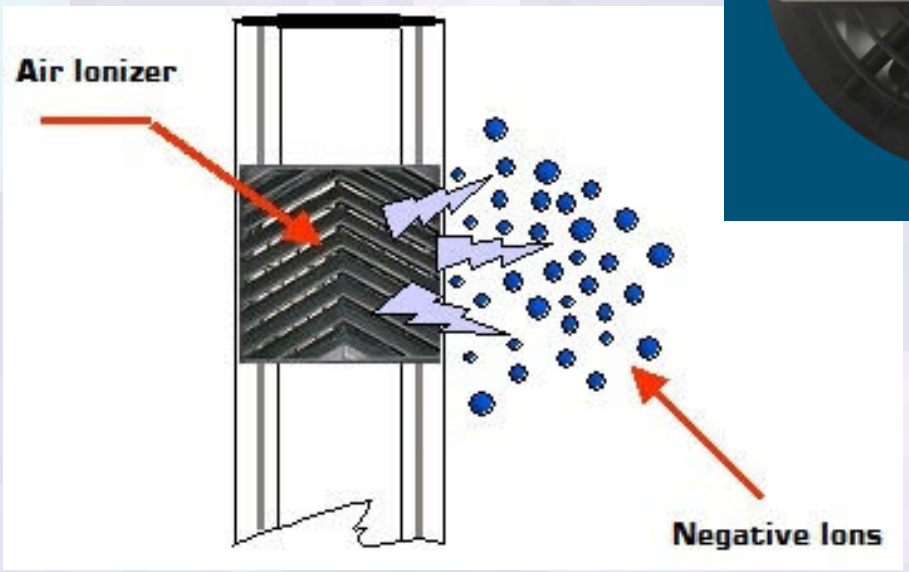
- IONIZER

- REMOTE CONTROL

WHAT IONS ARE

In order to understand what an ion is, one must go back to the last constituents of matter. The constituents of solid, liquid and gaseous matter are molecules, which are themselves constituted of atoms. Each atom of any chemical element is made up of smaller electrically charged particles.
Under normal conditions, an atom appears electronically neutral, because the total negative charge of electrons and the positive charge of the nucleus neutralize each other exactly. It can happen that an atom, or a molecule or a fragment of molecule can lose or gain one or more electrons with respect to those it has when it is neutral.
These charged bodies are called ions. Thus, the ionization is a necessary step to extract an electron from the external orbit of the atom and this is possible when energy is supplied.





WHAT IS IONIZATION OF AIR

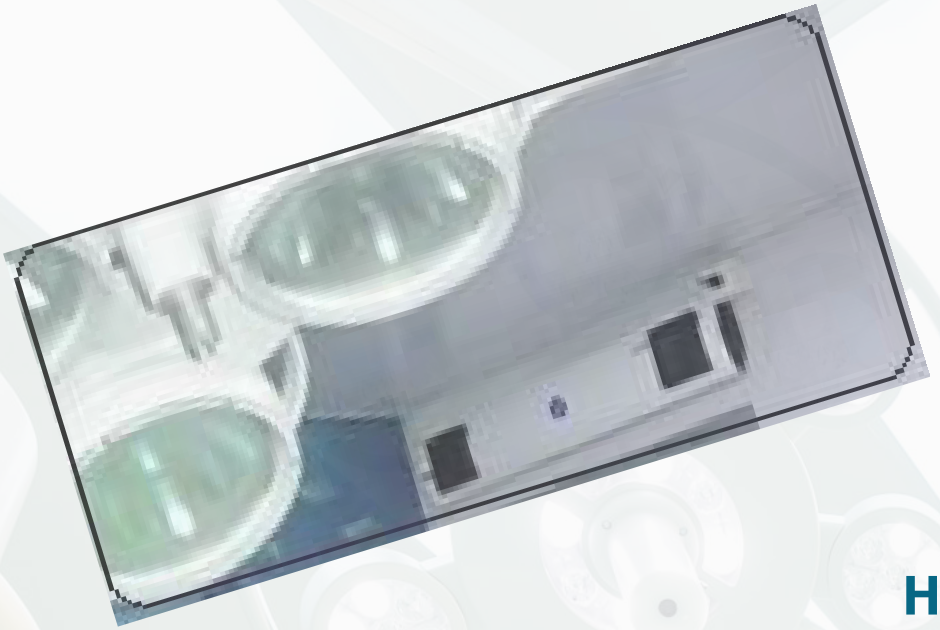
It is the name given those molecules of air when they are associated with an electrical charge, be it positive or negative.
This effect is at its maximum in mountain air, where the quantity of ionized air particles is more than 4000 per cm3. It must be understood that in a cm3 there are in total more than 2 millions of millions of particles of which only a minimal part is ionized.
This small part of particles is that which has a fundamental influence in the life of the living beings, animal and plants, and in particular of man.
From the distribution of the positive or negative charge can depend the health, growth, operative efficiency of many living beings.

HOW IS NEGATIVE IONIZATION PRODUCED

Technically, great quantities of negative ions can be produced by applying the physical principle of bringing a pin point to an elevated potential, until a spontaneous emission of electrons (also called crown effect) is obtained. This principle, in concept very simple, requires a certain accuracy in realization.
The equipment, in order to be able to function for long periods of time under high tension, must be studied with particular attention to the choice of components, design and electrical connections.

WHAT HAPPENS WITH AIR IONIZERS

The electrons emitted by the ionizer negatively charge the oxygen molecules and atmospheric nitrogen thus are formed negative ions. Molecules of the same sign repel each other and increase the deposit speed of the suspended particles, which, by electrostatic attraction, are drawn from the ground and from surfaces.
Therefore the physical phenomena which occurs is rather simple; it must be kept in mind that various factors, such as temperature, humidity,etc. can influence it.
Bacteria which is transmitted by way of air undergo a reduction, since they are usually aggregated to dust particles to form large positive ions,
The same happens to odours constituted by gaeous molecules. To summarize, the air ionizers serve a double action:
1) They increase the speed of cigarette smoke deposit and of atmospheric dust to which polluting substances can be aggregated, thus determining a real and proper cleansing of the air.
2)They restore in confined and stagnant air a natural ionic equilibrium, generating negative vital ions, equal to those given by atmospheric phenomena.



SPECTRAL UV-C
HOSPITAL DIVISION

Cod. 11235 - 11235-B

TECHNICAL SPECIFICATIONS

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	85W
LEVEL OF AIR PURIFICATION	99.99%
RANGE	100mc/h
NOISE LEVEL	29 dB
INSTALLATION	wall mounting/ on base
OPERATION	continuous
EXTERNAL UV-C EMISSION	none
DANGER LEVEL	none
EQUIPMENT	pre-filter in the air intake counter
LIFE OF UV-C TUBES	6000 hours
AIR NOZZLES	fixed
CASING	extruded aluminium
LAMP SWITCH	anti UVC glass
LAMPS	n° 2 UVC tubes 36W
WAVELENGTH	235,7 nm
COLOUR	Ral 9010
WEIGHT	5,5 Kg + 4,5 Kg base
DIMENSIONS	100x18x8 cm 120x18x8 cm

LIGHT ENERGY UV

Cod. 11208

TECHNICAL SPECIFICATIONS

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	147W
LEVEL OF AIR PURIFICATION	99.99%
RANGE	100mc/h
NOISE LEVEL	29 dB
INSTALLATION	wall mounting/ on base
OPERATION	continuous
EXTERNAL UV-C EMISSION	none
DANGER LEVEL	none
EQUIPMENT	pre-filter in the air intake
LIFE OF UV-C TUBES	6000 hours
AIR NOZZLES	fixed
CASING	extruded aluminium
LAMP SWITCH	anti UVC glass
LAMPS	n° 2 UVC tubes 30W
WAVELENGTH	235,7 nm
COLOUR	Ral 9010
WEIGHT	13 Kg + 3,5 Kg base
DIMENSIONS	180x18x8 cm

GENIUS 485J CTI

Airborne disinfection device
Continuous closed cycle working
UVGI technology (Ultraviolet germicidal Irradiation)
Irradiation 485J/m2 (λ 253,7 nm)
Air treatment 400m3/h
Disinfection degree 99,99% (rif. Mycobacterium tubercolosis)
Use with presence of people without risk
Maintenance of the disinfection in real time
Absence of ozone
General switch and fuse
Electronic power supply
Electronic power to keep watch on the filters and tubes
Optical safety device tube control
Remote control
Air Ionizer - negative ions
Stand
Filter

THANKS TO THE BRAND NEW TECHNOLOGY GENIUS 485J CTI CAN BE DEVELOP 48.500µW/cm2 UVGI (Ultraviolet Germicidal Irradiation) INSIDE THE STEILIZATION ROOM.

TECHNICAL SPECIFICATIONS

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	380 W
LEVEL OF AIR PURIFICATION	99.99%
RANGE	400 mc/h
NOISE LEVEL	35 dB
INSTALLATION	wall mounting/on base
OPERATION	continuous
EXTERNAL UV-C EMISSION	none
DANGER LEVEL	none
EQUIPMENT	pre-filter in the air intake
LIFE OF UV-C TUBES	6000 hours
AIR NOZZLES	fixed
CASING	extruded aluminium
LAMP SWITCH	anti UVC glass
LAMPS	n° 6 tubes UVC 55W
WAVELENGTH	235,7 nm
COLOUR	Ral 7035
WEIGHT	25 Kg
DIMENSIONS	110x37x16 cm

GENIUS 485J CTI

Airborne disinfection device using UVGI (Ultraviolet Germicidal Irradiation). Reduction of the microbiological air contamination in highest safety conditions in presence of personnel.

MICRO ORGANISMS	UV DOSE (J/m^2) - 90%	UV DOSE (J/m^2) - 99%	UV DOSE (J/m^2) - 99,9%	UV DOSE (J/m^2) - 99,99%
SPORES				
Aspergillus niger	1320	2640	3960	5280
Aspergillus flavus	600	1200	1800	2400
Cladosporium herbarum	600	1200	1800	2400
Cladosporium cladosporioides	600	1200	1800	2400
Mucor racemosus	170	340	510	680
Mucor mucedo	650	1300	1950	2600
Penicillium expansum	130	260	390	520
Penicillium roquefortii	130	260	390	520
Rhizopus nigricans	1110	2220	3330	4440
BACTERIA				
Bacillus Subtilis	70	140	210	280
Legionella pneumophila	62	124	186	248
Mycobacterium tubercolosis	62	124	186	248
Pseudomonas aeruginosa	53	106	159	212
Staphilococcus aureus	26	52	78	104
Streptococcus pyogenes	21	42	63	84
VIRUSES				
Adenovirus Type III	23	46	69	92
Bacteriophage (E.coli)	33	66	99	132
Coxackie A21	32	64	96	128
Influenza virus	22	44	66	88
Rotavirus	80	160	240	320

DOSES OF UV AT 253,7 NM NECESSARY TO INACTIVATE SOME SPECIES OF MICROORGANISMS FROM 90% TO 99,99%

The illustration evidences the doses of ultraviolet radiations necessary to destroy different microrganisms.
As we can see, the fungine spores are obviously the most resistant species, compared to viruses and bacteria.
Aspergillus niger and Rhizopus nigricans are the spores more resistant to the short wave length ultraviolet radiations.
Penicillium is 10 times more sensible, while Cladosporium and Aspergillus flavus can be eliminated just with half dose used for more resistant spores.

Microbiological analysis

The goal of this analysis has been the evaluation of UV STERIL AIR SYSTEM - **GENIUS 485J CTI** efficacy in the air sterilization process and the lasting of its effect.
For the experiment it has been prepared a room hermetically closed; the volume of the ambience is about 38 m3, (5x3x2,5m).
The room has been sterilized before every trial, to avoid crosscontaminations during the analysis.
Resistant fungine species have been used for the experiments.
Then the room has been contaminated atomizing biological suspended particles with a sprayer called "ULTRALITE" that atomizes particles with diameter from 20 to 80µm, situated in the middle of the room, at about 2,5 m distance from UV STERIL AIR SYSTEM - **GENIUS 485J CTI**
The controls have been done with system "S.A.S, super 90" (International PBI, Milan) which can inspirate wellknown air volumes.
Every trial included 2 series of drawings in two different point of the room, respectively in the centre and in the opposite side.
The results indicated are expressed in U.F.T./m3.
The formula of UV lamps efficiency is given by the spores destruction percentage:
e% = (spores destroyed/initial spores) x 100
e% = [(t1 – tn)/tn] x 100
tn = t2, t3, t4, t5, t6.

The results state the microbiological destruction efficacy of more reistant spores (Aspergillus niger and Rhizopus nigricans) in 150'.
In short, as from the results obtained, we can state that UV STERIL AIR SYSTEM - **GENIUS 485J CTI** has actually demonstrated how can definitely destroy the environmental microbiological contamination, in the shortest time.
Therefore it can be used in every ambience where protection and sanitary control are required.

UV STERIL DUCT

UNITA' DI DISINFEZIONE DELL' ARIA

AIR DISINFECTION UNIT

PER IMPIANTI DI CLIMATIZZAZIONE

FOR THE AIR CONDITIONING PLANTS

KOVER SYNERGY

UV STERIL DUCT CI

Mod. K 255

TECHNICAL DATA

RATED VOLTAGE	230V 50-60Hz
CONSUMPTION	120W
LEVEL OF AIR PURIFICATION	99.999%
OZON	none
EQUIPMENT	° electronic timer for tube substitution and filter control ° air ionizer
LIFEOF UVC TUBE	6000 hours
CASING	steel/epoxy painting
LAMPS UV-C	n° 2 UVC tubes 55W
WAVWLENGHT	235,7 nm
INSTALLATION	duct mounting
DIMENSIONS	27x67x12,5 cm

The main applications of UV STERIL DUCT studied for the air disinfection in the air conditioning system can be used:

- hospitals
- dental laboratories
- doctors office
- veterinary offices
- analysis laboratories
- pharmceutical industries
- food laboratories
- breeding farms
- area for food and drink production
- homes
- offices

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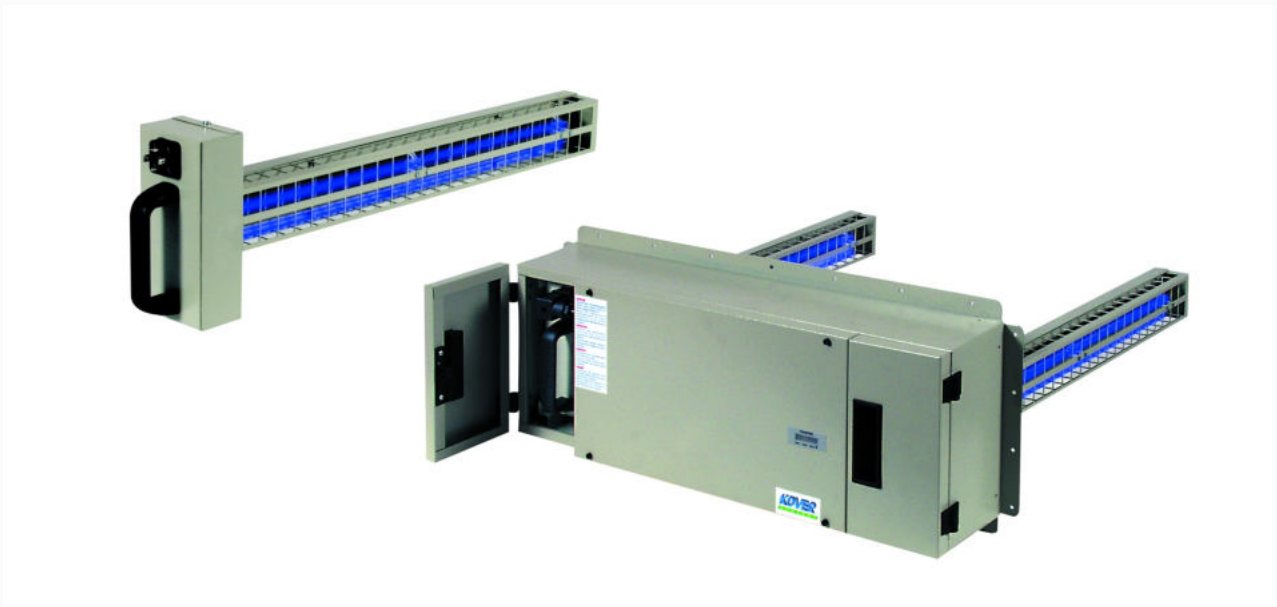
DESCRIPTION AND FUNCTION

UV STERIL DUCT is applied to the ventilation ducts of the air conditioning plants.
UV STERIL DUCT is equipped with particular ultraviolet lamps with germicidal action which are inserted inside the aeration duct.
UV STERIL DUCT has mechanical filters which prevent from the formation of dust on the lamps.
The high concentrated levels of ultraviolet germicidal irradiated energy (UVGI), inside the air duct, let a continuative and steady sterilization to be effected.
UV STERIL DUCT is equipped with a particular electronic counter which monitors the effective lasting of the special germicidal lamps.
UV STERIL DUCT is complete with an electronic generator "ion source germicidal" which enriches the air of negative ions (very healthy).



THE AIR IONIZATION IN THE AIR CONDITIONING PLANT

In an ambient, where a canalized plant of air treatment is present, the unconvenients related to the air ionization are mostly characterized by black deposit near the air intake.
Along the ducts the air is electrically polarizated due to the attrition on the walls, it is ionized positively provoking the power transfer to the suspended particles and their precipitation.
In this way the suspended particles are electrically polarizated, they are deposited close to the air intakes and too many positive ions are diffused in the ambient.
To avoid these unconvenients the ducts must be connected on the floor, the air must be effectively filtered and enriched with positive ions before being released in the room.
The most correct and rational intervention is to install adequate filters to block the particles, amending also the ion altered equilibrium with electronic emitters of negative ions.
UV STERIL DUCT is equipped with a ion negative source which neutralizes the positive powers diffusion into the air canalization.

AIR STERILIZATION UNIT

The sources of the internal pollution releasing pollutants in the air are the first responsibles of the problems connected to the quality of the indoor air.

The main sources are the people and their activity, the building materials together with the air treatment.

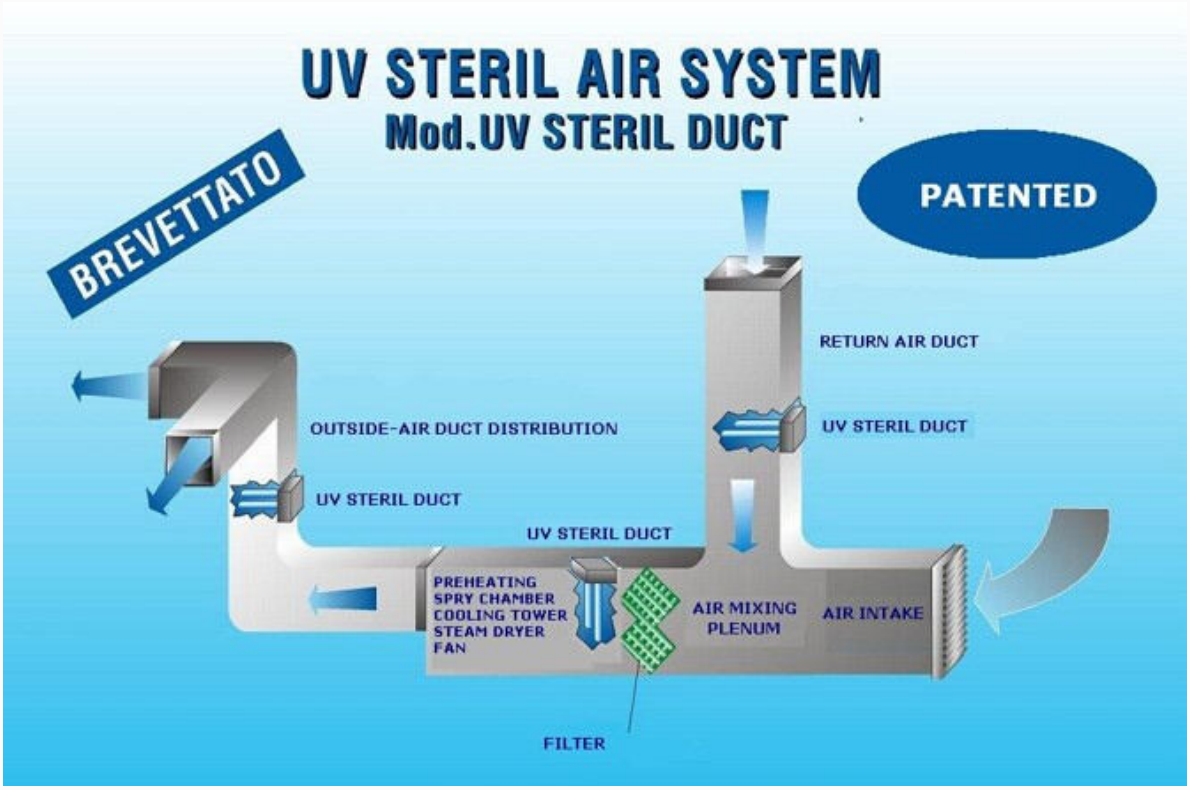
A ventilation system bad working or a wrong position of air plugs, next to polluted areas, can determine a high penetration of pollutants from outside.

The air conditioning systems can also become plant count agar for moulds and other biological contaminants spreading them in all the building.

Other possible sources of the micro-organisms shedding are the humidifiers and the air conditioning systems.

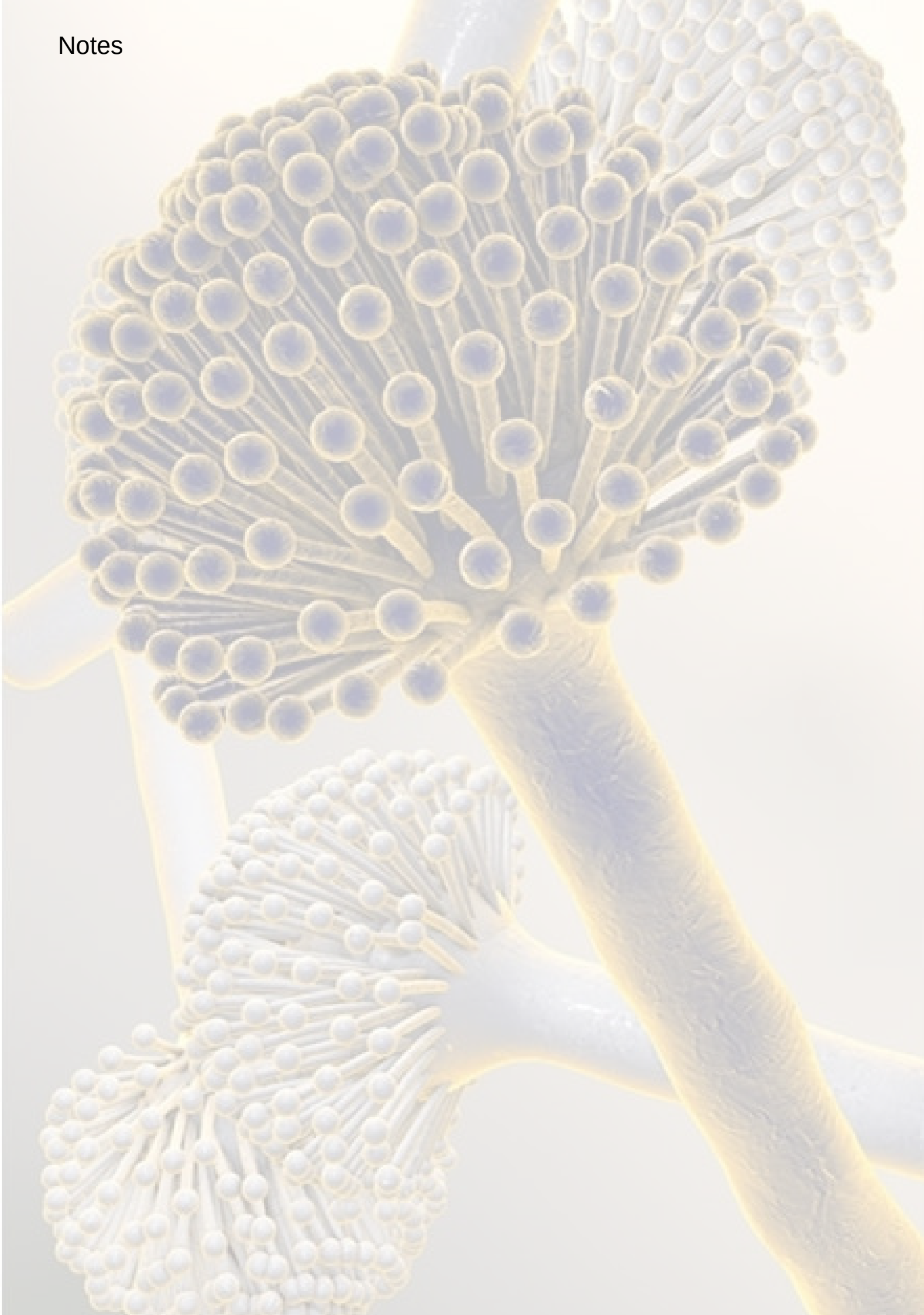
In fact the high humidity level and the inadequate maintenance of these apparatus provoke the induction and the moltiplication of the micro-organisms which are then widenspread from the air distribution plant.

As a matter of fact many studies have pointed out that the umidifiers of central plants are plate count agar for bacteria thermophile/thermoresistant and tanks of bacterial endotoxins.



In the domestic humidifiers has been found also the presence of fungi mesophile.
Other contaminants sources are the dry cooling towers of the air conditioning systems together with the internal surfaces of the ventilation ducts.
Studies on the infections, originated by microbiological air contamination or ventilation systems, tell that the microbic contamination is strictly related to the low hygienic conditions of the buildings, to the overcrowds or the insufficient maintenance of the air conditioning plant.
The indoor microbiological pollution is the source of many infection diseases as flew, chickenpox, measles, pneumonitis.
Some bacteria like legionella pneumophila, some species of Pseudomonas and Acinetobacter, because of their moltiplication and shedding into the ducts of air conditioning plants, have been responsibles of some epidemic pneumonia even letal.
The pathologies arising from any specific agent present in the air, either dust and baceria, are included in a grouping called BRI "Building related illness", diseases of the respiratory system, like asthma, flews, dry socket alveolitis, légionnaires disease.
Those pathologies have a high social repercussion for a great number of people involved who must be treated with specific medicaments with inevitable costs increase.
A particular attention must be directed to the infections raising into the hospitals where the "hospital infections" can be originated by the shedding of micro-organisms through the air conditioning system ducts.
The possibility of transmission of infections into communities as schools, kindergartner,jails,barracks, offices, let us understand how important is to investigate on the effective microbiological risk and to predispose the necessary hygienic ambient intervention to prevent any epidemic arising.
KOVER Srl inside their reserches, to individuate new and efficient prevention systems against the microbiological pollution of the indoor air, have realized an innovative apparatus for sterilizing the air in the air conditioning plant.

Notes



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SYNERGY

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