

UV STERIL AIR SYSTEM

AIRBORNE DISINFECTION DEVICES

KOVER
SYNERGY
INDOOR AIR QUALITY

GENIUS 485J CTI

COD, G6554

HOSPITAL DIVISION



The working is based on the application of ultraviolet germicidal radiation(UVGI) with a ventilation closed –cycle system. The contaminated air it's aspirate into the irradiation chamber from 2 silent fans.

It firstly passes through mechanical filters (at the air grating) that have the task to block the biggest particles (superior to 10 micron) avoiding the germicidal lamps fouling.

Then the air is forced into direct contact with mercury vapour tubes which emit UV-C rays (253,7 nm), performing the maximum germicidal action.

A high power reflecting specular screen concentrates the UV-C radiation reflection, increasing the irradiation efficiency. Bacteria, spores and viruses treated with this elevated ultraviolet radiations field are destroyed at 99,999%.

The air is exposed to a second germicidal treatment through an ionic source that supplies at the microscopic particle elimination (bad for health) and at the same time increases the air with negative ions (salutary for our health).

The air is expelled from the air grating determining therefore the microbiological reduction.

The progressive and continuous treatment of the air allows to maintain the environment without bacterial pollution.

THE GREAT ADVANTAGE OF UV STERIL AIR SYSTEM CONSISTS IN THE ABSOLUTE LACK OF DANGEROUSNESS FOR MAN BECAUSE IT HASN'T THE MINIM UV-C RADIATIONS LEAKAGE FROM THE UNIT.

It is therefore possible to carry out a continuous and constant air disinfection of whichever high risk environment, during every working phase.

The efficiency of the sterilization system UV STERIL AIR SYSTEM it has been certify by authoritative Institutes and University.

Conforms with the following standard **CE**
GENIUS 485J CTI 230v 50Hz 285 W
Medical equipment Group B Class I ref . EN 55011

GENIUS 485J CTI

COD. G6554

TECHNICAL DATA

Rated voltage	230V 50 Hz
Consumption	285W
Electrical connection	switch -on/off fuse 2 A
Electronic power	high frequency
Rated flow	400 m ³ /h
Operation	continuous
Noise level	35dB
Lamp	n.6 x 55W UV-C PL-L
Wavelength	253,7 nm
Ultraviolet energy levels	102W
Germicidal Irradiation (An sterilization chamber)	48.500 μW/cm ²
Level of air sterilization <i>refers to germicidal UV 253,7 nm radiation for the destruction of Mycobacterium tuberculosis</i>	99,99%
Life of UV-C tubes	6000 hours
Equipment	N. 2 Filter
Lamp switch	Anti UV-C glass
Ozone	none
Ranger level	none
External UV-C emission	none
Electronic control system	Electronic timer for tube substitution Remote control with on/off switch Air ionizer
Installation	Wall mounting / Stand
Dimensions	cm 110x37X16
Weight	Kg. 25

KOVER Srl informs that the above specifications are indicative. **KOVER** Srl reserves the right to introduce any modification without notice.

APPLICATIONS

The main applications of UV STERIL AIR SYSTEM can be classified as follows:

* For a general disinfection of the air

hospitals - operating theatre - emergency rooms - dental laboratories - dentists' offices - doctors' offices - veterinary offices - pharmaceutical industries - breeding farms - area for food and drink production - food laboratories - refrigerator cells - aesthetic institutes – homes – offices - air conditioned areas - etc.

CERTIFICATION

- University of Studies of Milan, Italy - Istituto di Ispezione degli Alimenti di origine animale.
- University of Studies of Milan, Italy – Dip. di Scienze e Tecnologie Alimentari e microbiologiche
- Russian federation Institute of Infantile Oncology OSC – Russian Academy for Medical Sciences RAMS Moscow, Russia.
- IST – National Institute for Cancer Research – Genova, Italy
- Fondazione Salvatore Maugeri – Laboratorio di Igiene Ambientale e Tossicologia industriale
- University of Studies of Milan, Italy – Dip. Di Scienze e Tecnologie Veterinarie per la Sicurezza Alimentare
- University of Ottawa-Ontario CANADA Faculty of Medicine Centre for Research in Environmental Microbiology(CREM)
- **University of Athens** -Medical school -Laboratory of Microbiology -Professor Dr N.J.Legakis

CASING

- Steel
- epoxy painting
- performance & design
- hard-wearing and long-lasting

OPTICAL SAFETY DEVICE TUBE CONTROL

- Anti UV – C glass
-

DESCRIPTION AND OPERATION

The hour meter "COUNTER" (timer switch) installed on the UV STERIL AIR SYSTEM has been specially developed for checking germicidal tubes with 6000 hours of life.

It includes:

- a 230 V 50 Hz mains input (IN);
- a 230 V 50 Hz output for loading (lamps) (OUT);
- 3 LEDs (GREEN, YELLOW and RED respectively);
- a blue key for resetting the hour count.

The hour meter "COUNTER" checks the length of time for which the germicidal tubes have been used and indicates this by means of the LEDs. The metering of the germicidal tubes' working hours begins when the lamp is switched on and it is then interrupted when the lamp is switched off, before beginning again as soon as the lamp is switched on. After 6000 working hours the "COUNTER" switches off the lamp completely and indicates its current status.

In brief:

- 1 After 2000 working hours of the germicidal tubes the GREEN LED goes on;
- 2 After 4000 working hours of the germicidal tubes the YELLOW LED goes on;
- 3 After 6000 working hours of the germicidal tubes the RED LED goes on and the lamp is completely switched off.

GUARANTEE

- Three year of manufacturing defect

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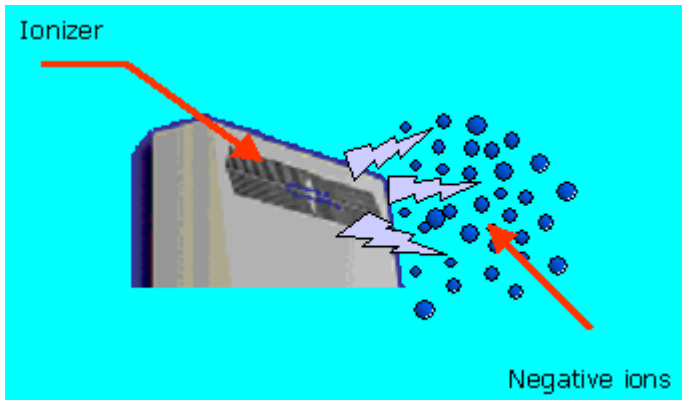
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- air conditioned areas
- etc.



SCHEDULE

Ultraviolet energy levels at 254 nanometer unit wavelength required for 90% destruction of various microorganisms.

Bacteria	dose (J/m²)	Spores	dose (J/m²)
Bacillus anthracis	45	Saccharomyces cerevisiae	60
Bacillus subtilis (spore)	120	Torula sphaerica	23
Clostridium tetani	130	Mould spores	
Corynebacterium diptheriae	34	Aspergillus flavus	600
Escherichia coli	30	Aspergillus niger	1320
Mycobacterium tuberculosis	62	Cladosporium herbarum	600
Proteus vulgaris	26	Mucor mucedo	650
Pseudomonas aeruginosa	55	Oospora lactis	50
Serratia marcescens	24	Penicillium chrysogenum	500
Staphylococcus aureus	26	Scopulriopsis brevicaulis	800



AIR IONIZER

What are ions?

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 cm^3 . It must be understood that in a cm^3 there are in total more than 2 millions of 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 plant, 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 gaseous 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.