Invention details

Title of Invention

Air disinfection device UV Care 254 and its mechanism of action.

Technical Field

Electrical Engineering and Radiation Engineering

Background Art

The problem of air pollution that is toxic to human life and health, especially disease situations. Pandemic crisis caused by Covid-19 virus (COVID19 that spreads through the air causes infection the respiratory and lung of an infected person is fatal. Including various risk factors from air pollution that cause various diseases such as respiratory infections from the flu, allergies, various strains of viruses that can be infected by the respiratory system, etc. Technology to make sterile air for the safety of human breathing is therefore necessary. UVC (UVC) is an electromagnetic wave with a wavelength range of 100-280 nanometer, which are not found in the atmosphere human habitation because it is filtered by the Earth's atmosphere in the ozone layer. Because it is a radiation that is harmful to normal life of humans, animals, including parasites or pathogens that cause harm to humans and animals that have been exposed or exposed to this radiation. Therefore, it uses the properties of UVC in this field is used to destroy these parasites or pathogens that cause harm. Humans and animals called Ultraviolet Germicidal Irradiation.

In particular, it kills undesirable germs that mix in the air used for breathing and may cause harm to the respiratory system (eg bacteria, viruses, fungi, yeasts, etc.) when exposed to UVC by radiation. Directly through the appropriate amount will be destroyed. The nucleic acid structure, which is a component of the DNA and RNA of these pathogens. Causing germs to not be able to grow or multiply genetic defect and eventually die In addition, UVC also helps to eliminate odors, which is caused by the reaction of pathogens in the air effectively as well.

The invention provides a UVC source device that generates UV rays and develops it to control UVC exposure to pathogens that are harmful to the human respiratory system and animal. That is directly in the air in the installation area and safe for radiation and users, especially in the current problem of the

epidemic of the Coronavirus disease 2019 (Coronavirus disease 2019), which is officially known as SARS-CoV-2 due to the COVID -19 virus. Can stay in the air for a long time and cause respiratory infections. And the virus has a long incubation period. Infections cannot be detected immediately within a short period of time. Causing the infected person to spend lives traveling to interact with other people as a vector to spread the infection to others in a wide area especially public areas or establishment or office building or government offices There was a large number of people coming in to contact. Until the infection spreads rapidly . The device in this invention can be prevents the spread of the virus by means of airborne disinfection. All the time, even when there are no people in the place where this device is installed . The device according in this invention generates will create a closed type of UVC radiation, a closed type of UVC (UVC) that can kill undesirable germs that mix in the air at the installation site, to be sterile air to prevent the spread of infection to others from disperse the air in the provided place where it is safe from infection accordingly preliminary measures, reduce the contamination of germs or microorganisms in the air that will fall on the island. Track surfaces in places where people interact directly and reduce the high risk of infection with Spread in the air during human interaction without basic precautions.

The nature and purpose of the invention

In this invention provide a device developed to have an origin UVC rays and control the resulting UVC rays can come in contact with unwanted pathogens and cause harm to the respiratory system of humans and animals spread from those exposed areas in the air or pathogens causing harm to the respiratory system of humans and animals, which is directly infected in the air in the installation area by radiation safety for users.

Brief Description of drawing

Figure 1 Shows the structure of the components of each working mechanism in the device.

Figure 2 Shows the components of the mechanism of operation of the device on the side.

Figure 3 Shows the reflector components installed inside the UV tunnel.

Figure 4 Shows the operation of the wave-shaped , peak-shaped radiation reflectors, the peak sizes are equal, forming a reflecting line that transmits sterile radiation energy in the incoming air mass. Go in the UV tunnel

Summary of the invention

Air disinfection device UV care 254 which the structure of the body cover the exterior is made of UV absorbent material. It consists of 3 main parts: exhaust fan (2), UV tunnel (3), UV source (4).

Exhaust fan (2) consists of 2 fans, one is an exhaust fan into the device (2A) and the exhaust fan from the device (2B) with the exhaust fan inside the device (2A). It is positioned at one end of the device's body. in the direction of sucking air masses from outside the body of the device into the UV tunnel (3) located inside the body of the device, exhaust fan into the inside of the device (2A), this serves to suck up air masses from the outside into the UV tunnel (3) so that the air is purified by UV sterilization inside the UV tunnel (3) and a fan to suck air out of the device (2B), which is installed at the end one side of the body of the device. In the direction of sucking air masses from inside the UV tunnel device trunk To push the sterile air masses that have been sterilized inside the UV bath tunnel (3) and out to the outside of the device. into the room where the air disinfection equipment is installed UV Care254 (1) . By both exhaust fans inside the device (2A) and the exhaust fan from the device (2B) will work relative to control the amount of air mass and the rate of air mass flow in and out of the device in the direction of flow paths in the alignment (5) as shown in Figure 2 and Figure 3. So that the air masses are bathed UV rays have a long duration suitable for general disinfection and provide the external air mass in the room where the device is installed according to this invention is sterile air that is suitable and safe for the user.

UV tunnel (3) It is a working part installed inside the body of the device. Inside is installed a UV source (4). Inside the walls of this tunnel are installed reflectors (3.1) as shown in Figure 2 and Figure. 3 The reflector (3.1) will produce Reflection line transmits radiation energy. When air mass flows into the UV tunnel (3) will collide with the reflecting line of the reflector (3.1 until the turbulence and at the same time will reflect to transmit energy to destroy pathogens mixed with Air drawn in through a tunnel on the side wall inside the UV tunnel (3). A reflector (3.1 in Figure 4, mounted inside a UV tunnel (3). It is designed with a undulating shape, spiers, and peaks of equal size. The angle in each peak is 130-135

degrees, covering the distance from the UV source pole on one side to the opposite thread, approximately 588 mm. long. They are positioned with overlaps of 20 mm. to create a non-constricting reflection, paste below at Radiation reflector(3.1) by UV tunnel (3) will serve to allow the air mass to be sucked in to flow come inside the tunnel exposed to UV rays for a period of time. The amount of intensity and length of radiation suitable for Disinfection of incoming air masses is bathed and exposed to UV rays from UV sources in the right amount to kill unwanted pathogens that may cause harm or infection in the airway of the user until it is a sterile air mass and then passes out to the outside device trunk.

UV source (4) is a blue fluorescence lamp as shown in Figure 1, installed inside a UV bath tunnel (3) in a position inside the body of the device. There are 1 or 2 tubes, flanked by reflectors surrounding the UV source (4) will serve to create with UV rays Optimum UV intensity and length (UV at 253.7 nanometer wavelength) with bathing and disinfecting unwanted germs that are mixed in the incoming air mass thoroughly together with the reflector plate thoroughly before releasing the incoming air mass to the outside of the device at a rate circulation and the amount of air mass that is optimally controlled by exhaust fan to the inside of the device (A) and the exhaust fan from the device (B), which work in relation.

The working mechanism of the UV Care254 (1) air disinfection device is when the switch is turned on from electrical power supply (6) Supply electricity to the device. The apparatus starts up where the air inlet fan (2A) sucks the air masses outside the fuselage inside the apparatus appropriate amount and flow velocity of air mass to allow air mass to pass through in a UV tunnel (3) is sterilized in a UV tunnel (3) in duration, volume, intensity and the appropriate radiation length is related to the amount of air mass and the ejection velocity of the sterile air mass sterilized at an appropriate rate by exhaust fan. The apparatus (B) acts as a suction and discharge function.

The incoming air mass flows through the interior UV tunnel (3) with a UV source (4), which serves as a UV source. Generates UV rays with the intensity of UV rays and prepares to bathe in air masses that flow through them. in order to disinfect the appropriate amount, with the characteristics that The incoming stream of air masses disinfects in the UV tunnel (3) flows through and is stirred by a reflector (3.1) designed in a undulating shape. The peaks are the same size. The angles of each peak are 130-135 degrees covers the distance from the UV source lamp terminal on one side. In order for the air mass to pass through it to be bathed in UV rays thoroughly disinfect according to the appropriate duration

and amount of UV intensity make air masses that flows outside the device as a sterile air mass that is released from the device to the floor in the room where this device is installed sterile air released outside the device. Into the room where the equipment is installed will be 99 % sterile air of the air mass sterilized by this process. That inhibits the growth of pathogens and prevents the spread of infectious agents to others from air diffusion in the facility. Safe from infection according to preliminary measures. Reduce contamination of germs or microorganisms in the air that will fall, cling to the contact surface in places where people interact directly. Reduce the high risk of contracting airborne diseases during human interaction without initial precautions.

Any changes it may be understandable and actionable by someone with expertise in this field, subject to the scope and intent of this invention as shown in the claims attached herewith.

Best Mode for Carrying out the Invention

As already mentioned in the Invention Complete Disclosure section.

Claim

1. Air disinfection device UV care 254 which the structure of the body cover the exterior is made of UV absorbent material. It consists of 3 main parts: exhaust fan (2), UV tunnel (3), UV source (4).
2. Air disinfection device UV Care 254 according to claim 1, which has a working mechanism that is, when the switch is turned on from an electrical power supply (6), supply electricity to the device. The device will start with exhaust fan Into the inside of the machine (2A) will serve to suck the air masses outside the fuselage in the amount of and the appropriate air mass flow velocity to proper airflow to pass through the UV tunnel (3). The appropriate duration, intensity, and radiation length are related to the amount of air mass and the outflow velocity of the sterile air mass at an appropriate rate by the exhaust fan from the device (B) will suck up and discharge it by the air mass. The inlet flows into the tunnel (3) with a UV source (4), which serves as a source of UV rays Creates UV rays with the intensity of UV rays and prepares to bathe the air masses that flow through to sterilize the right amount.
3. Air disinfection device UV Care 254 according to claim 1, which has a specific characteristic that a stream of air mass flowing into the UV sterilization tunnel (3) will flow through the barrier. Reflect the radiation until it is turbulent by the reflector plate (3.1) which is designed to be shaped like a wavy peak. The same size peaks, the corners of each peak make an angle 130-150 degrees covers the distance from the UV source lamp (4) cap on one side, so that the air masses that pass through have been thoroughly disinfected with UV rays according to the appropriate duration and amount of UV intensity causing the air masses to flow outside the device as a sterile air mass released from the device to the floor in the room where the equipment is installed. Sterile air released outside the device to the room where the device is installed is sterile air 99% of air masses sterilized by this process. To inhibit the growth of pathogens and prevent the spread of infectious agents to others from the spread of air in a place that is safe from infection according to basic measures. Reduce the contamination of airborne germs or microorganisms that will fall on the surface of contact in places where people interact directly. Reduces the high risk of contracting airborne diseases. When people interact without basic precautions.