



Ultraviolet Disinfection Systems

*This is Not the Type of
Ultraviolet Light That We Use*



Wastewater Depot, LLC

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We are cleaning both water and air with our systems



Wastewater Effluent Being Disinfected (By UV)

How Does UV Work?

Ultraviolet photons harm the DNA molecules of living organisms, such as viruses, in different ways. In one common damage event, where it distorted the virus's DNA molecule so that it will not function properly, such as in reproduction.

Ultraviolet disinfection systems are used in the wastewater treatment industry to remove micro-organisms such as fecal and E-Coli organisms in wastewater. We do know that these are micro-organisms and are not viruses, but the process of disabling them both will work with viruses as well. Wastewater Depot LLC has also used this process in both for water and airborne applications, on using this UV technology for applications to disable some virus that exist in places such as hospitals and nursing homes where we know the virus exists. The virus is in the range of parts per billion not parts per million, so is hard to find.



This is a channel type ultraviolet disinfection unit for a wastewater treatment system.

Wastewater Depot, LLC can provide systems from design flow rates of 1000 gallons per day to 1,000,000 gallons per day.

Both horizontal and vertical design.

What is Ultraviolet (UV) Light?

UV light is

electromagnetic radiation with wavelength from 10 nm to 460 nm, shorter than that of visible light but longer than X-rays. UV radiation is present in sunlight, and constitutes about 10% of the total electromagnetic radiation output from the sun. It is also produced by electrical and specialized lights, such as mercury lamps, tanning lamps, black lights. The chemical and biological effects of UV are greater than simple heating effects, and many practical applications of radiation derived from its interactions with organic molecules. Short-wave ultraviolet light damages DNA and sterilizes surfaces with which it comes into contact. For humans, sun tan and sun burn are familiar effects of exposure of the skin to UV light, along with an increased risks of skin cancer.

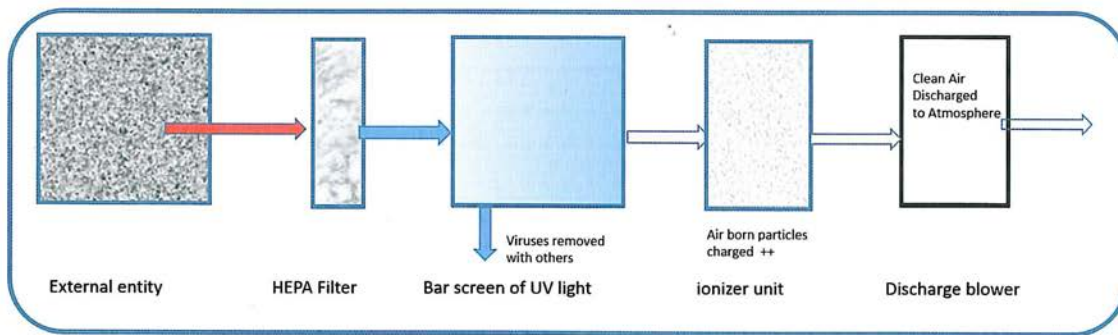
Commercial Germicidal Ultraviolet lamps

Shortwave UV lamps are made using a fluorescent lamp tube with no phosphor coating, composed of fused quartz, since ordinary glass absorbs UVC. These lamps emit ultraviolet light with two peaks in the UVC band at 253.7 nm and 185 nm due to the

mercury within the lamp, as well as some visible light. From 85% to 90% of the UV produced by these lamps is at 253.7 nm. The fused quartz tube passes the 253.7 nm radiation but blocks the 185 nm wavelength.. These "germicidal" lamps are used extensively for disinfection of surfaces or air and water borne particles.

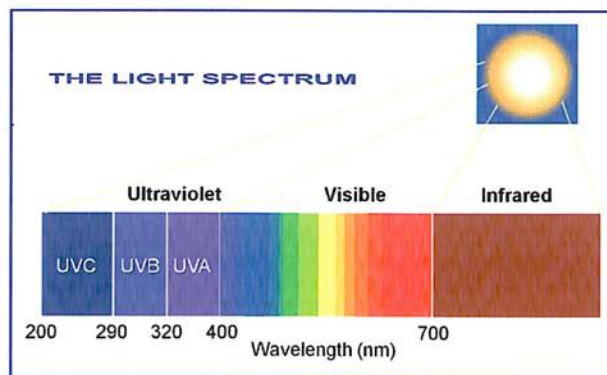
For Atmospheric Air Particles Being Air Stripped and then Cleaned

HOW WWD AIR PURIFICATION UNIT WORKS

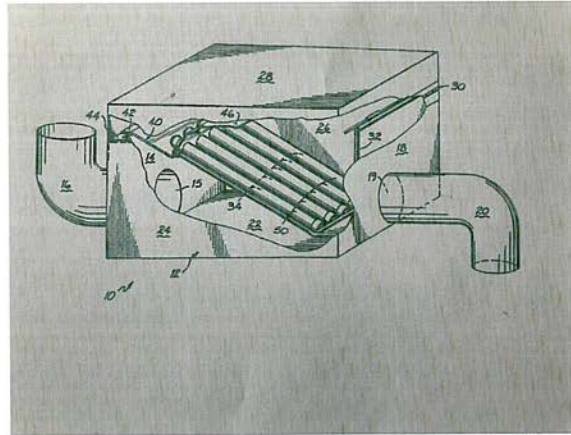


How Does An Ionizer Work?

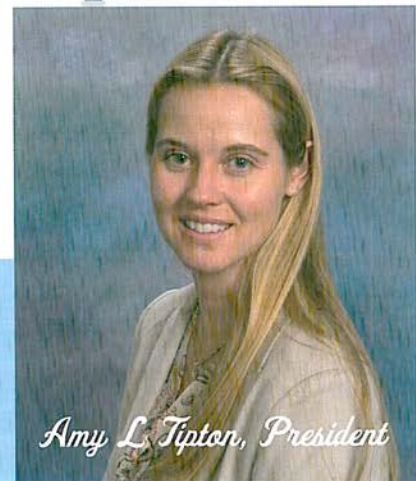
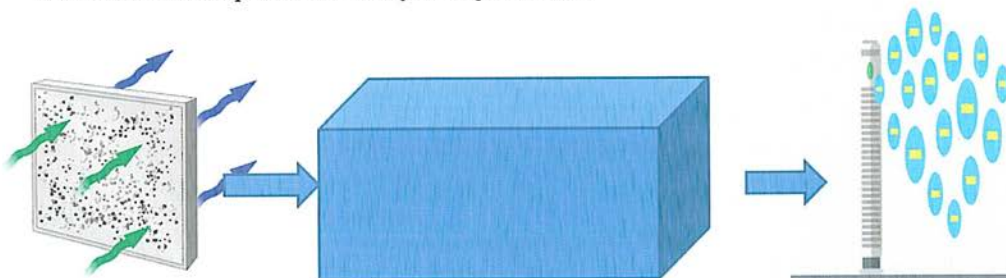
Ionization is the process where an atom/ molecule gains or loses an electron. An ionizer works by electrostatically charge negative ions internally and disperse them into the air. Like a magnet, the released negative ions will merge with positive ions particle in a room. This includes dust mites, pollen, pet dander, bacteria, and viruses. The bonded ions will fall due to the increased weight leaving the air free from any contaminants. Owners will have to vacuum/ clean up the particulates on the ground, wall,.



The photo to the right shows the inclined ultraviolet light system which was granted on patent number 5,208,461. This technology is used in the disinfection of wastewater in wastewater treatment systems. This is basically the same technology Wastewater Depot, LLC is using to clean air being discharged to the atmosphere.



An air ionizer is a device that cleans the air by discharging 20,000 and 200,000 ions per second to bring down airborne particulates and produces ions while the latter produces ozone. Ionizer only causes the contaminant to fall while the ozone generator disintegrates them. Both devices strive for clean air by removing airborne irritants. That's all the similarity ends as they utilize a different set of technology. Air ionizer electrostatically charges and merges ions causing them to fall to the ground. Conventional HEPA air purifier pulls in impurities and traps them in the filter. Needless to say, an air purifier is far more efficient than a standalone ionizer in clearing out contaminants. Our systems uses both technology's. The discharge fan systems move the air through the cleaning unit. The unit shall generating trillions of air cleansing negative ions per second and activated oxygen, the Air purifier will begin to eliminate indoor air pollution effectively within just minutes!



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