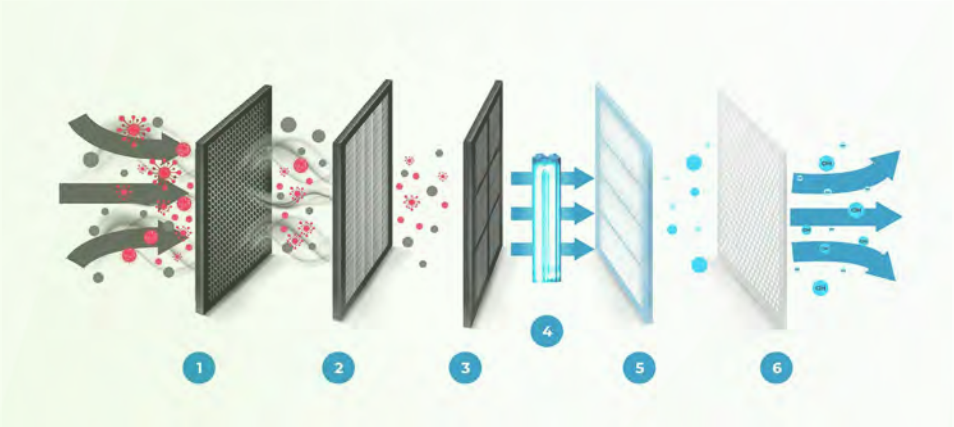
EP Lighting, Inc.

UVAW TECHNOLOGY

EP Lighting, Inc presents UVAW – a high efficient sterilizing purifier to the worldwide market. UVAW is a professional quality air sterilization at an affordable price for all commercial and residential markets. UVAW units:

1. Disinfect the air from viruses, bacteria, fungi, and other pathogens.
2. Eliminat indoor allergens like dander, dust mites, molds, house dust, etc.
3. Remove the odor and freshen the indoor air.
4. Continuously sterilize the indoor air.

UVAW technology uses 6 layers of protection to remove odors, VOCs and kill pathogens maintaining excellent indoor air quality.



UVAW uses the following **SIX** layers of filtration technologies:

STAGE 1: PRE-COTTON FILTER: Performs the initial air cleansing by removing the largest particles in the air, such as hair and foreign debris.

STAGE 2: HEPA filter: Removes 99.97% of the germs, dust, pollen up to 0.3 microns size.

STAGE 3: ACTIVATED CARBON FILTER: Absorbs the pollutants, odor, smoke, toxic gases, and other harmful chemicals called Volatile Organic Compounds (VOCs) that are common in any household.

STAGE 4: UVC STERILIZATION: With its germicidal efficacy, UVC light emanated from UVAW kills the viruses, bacteria, and fungi in the air.

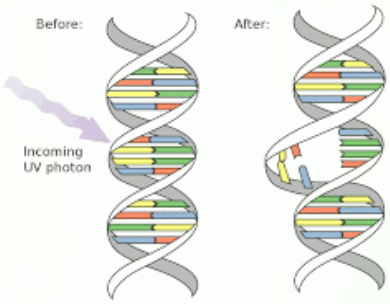
STAGE 5: PHOTOCATALYTIC OXIDATION: This is a powerful sterilization technique achieved by a 150% increase in OH radical generation on TiO2 membrane activated by UVA-365nm light.

STAGE 6: CRISP AIR: UVAW releases negative ions into the air to eliminate dust and other contaminants, generating revitalized fresh air.

The uniqueness of the UVAW technology is that, they disperse OH radicals and negative ions into the air continuously so they sterilize the indoor air.

In-depth Science : Stage 4, 5 and 6 are the key

Stage 4 - UVC Sterilization: UVC lamps are tested and proven to kill airborne viruses, bacteria up to 99.99%. UVC lamps use the principle of photolysis, a process in which the UV-C light breaks the molecular bonds and rearranges them so the pathogens will not live any further. UVAW uses proven 253.7nm germicidal UV-C at higher irradiation energies to kill the pathogens at a much faster rate, up to 99.99%.



Stage 5 - Photocatalytic Oxidation using TiO_2: Photocatalytic Oxidation is a process in which the free OH radicals rip the electrons in the pathogens and break their cellular walls so the pathogens will not live any further.

1. When the photons in the light hit the TiO_2 membrane, electron-hole pair is generated.
2. The hole interacts with OH particles off the air moisture to create “free OH radicals”.
3. The free OH radicals interact with the pathogens to kill them and release products such as CO2 and H2O.

$$1)\ TiO_2 + hv \rightarrow TiO_2\,(e^- + h^+)$$

$$2)\ H_2O + h^+ \rightarrow OH^* + H^+$$

$$3)\ OH^* + pathogens \rightarrow CO_2 + H_2O$$

Stage 6 - Negative Ion Generation: Negative ions help to push the dust and allergens away from them. Negative ions help people in relieving the symptom of allergies to dust, mold spores, and other allergens. Negative ions also help to remove particulate matter.

UVAW - BREATH EASY Poor Air Quality leads to both short-term and long-term health risks. Short-term health risks include flu, sneezing, itchy skin, nasal congestion, coughing, etc. Long-term health risks are respiratory diseases, heart diseases, and possibly cancer, affecting the quality of a person’s life. Air filters and purifiers are available to improve indoor air quality using HEPA filters. However, they cannot kill pathogens or airborne diseases in the air. UVAW technology is proven to kill all kinds of viruses, bacteria, odor, smoke in the room, thus help maintain excellent indoor air quality.