

「Cleaner and Healthier Air in the World」

Plasma Air Sterilizer

DWK-DP3000



Air needs cleaning

As you wash dirty clothes, the air you breathe needs to be cleaned.

All-in-one purification sterilization, disinfection, and deodorization of dirty indoor air with fine particles, bacteria, virus, odor, and other elements that contribute to sick building syndrome!

Dawoo Korea will lead a clean Korea with Plasma Air Sterilizer, which is embedded with innovation including air pressure plasma, photocatalytic sterilization and disinfection technologies, an antibacterial HEPA filter, and carbon absorption technologies.

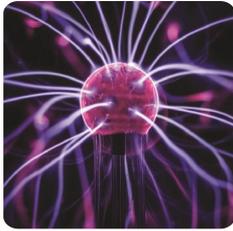


Plasma Air Sterilizer

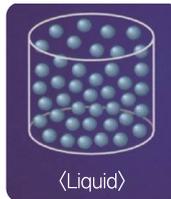
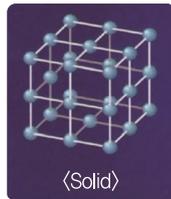
DWK-DP3000



What is plasma?



- Solid → Liquid → Gas → 4th substance (plasma)
- It is found in natural lightning and aurora.
A total of 99% of the universe is in a plasma state.
- Daily applications include PDF TV, fluorescent and mercury lamps, neon sign, semiconductor process, and new material synthesis in the environmental, energy biotechnology, material, fiber, and medical industries.



Plasma - Sterilization and Deodorization

- Electrons and ions are released and then combined with bacteria, virus, dust, and other harmful substances to cause chemical reactions and make them harmless, with a stronger sterilization than ultraviolet (UV).



Photocatalyst - Sterilization and Deodorization

- Sterilization using UV with chemical and sterilizing effects
- UV has 1,600 times stronger sterilization than sunshine, removing 99.9% of airborne bacteria and harmful substances within 20s.



HEPA Filter - Air Purification

- High-Efficiency Particulate Air (HEPA) was developed to purify harmful radioactive particulates.
- It can remove 99.9% of 0.3 μm airborne particulates and bacteria.
- Carbon absorption reduces the ozone concentration of released air to 0.05 ppm or less.



Ultrasonic Wave - Mosquito Repellency

- Ultrasonic technology applied
- Dangerous areas for malaria, elephantiasis, Japanese B encephalitis, yellow fever, and dengue fever
- Forest with many trees and flowers, camps, and places with many harmful insects

Development Process and Method of DWK- DP3000

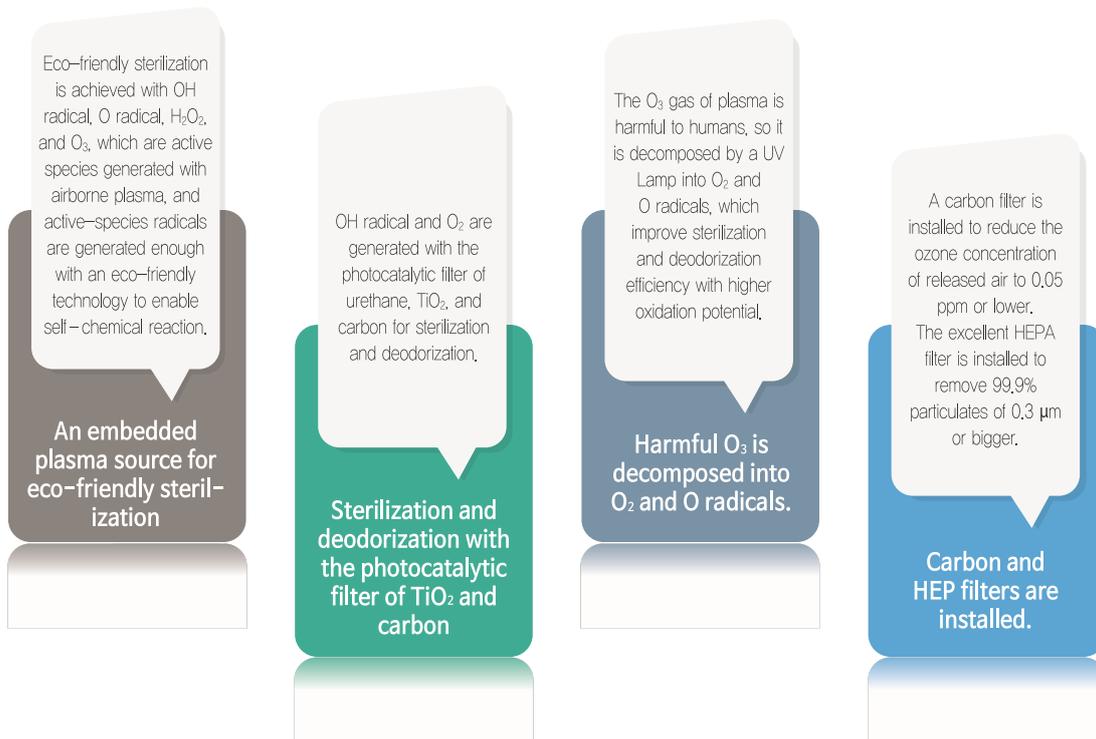
Convergence of air pressure and large-scale plasma with photocatalytic sterilization and deodorization

It was designed as such that the active species generated in the plasma source can be evenly and smoothly spread into the releasing space, and different catalysts and UV can be used to maximize OH radical generation and, thus, remove airborne bacteria, virus, and odor.

Auto/Deodorization Mode, Components

Prefilter ▶ HEP filter ▶ Fan ▶ Plasma ▶ Photocatalytic filter ▶ UV Lamp ▶ Carbon filter
(ozone sensor, fine particle / VOC sensor): Air purification, sterilization, and deodorization

Features of DWK- DP3000



Specifications of DWK- DP3000

Size	600(W) x 400(L) x 1,200(H) (mm)
Weight	< 60 kg
Power	AC 220V, 60Hz

Power	< 450W
Noise	< 50 Db
Applicable area	150 – 450m ²

Performance of DWK- DP3000

- Colon bacillus and Bacillus pyocyaneus sterilization efficiency (8 m³ of laboratory volume): **99.9%** or higher (for 1 hr)
- NH₃ and HCHO deodorization efficiency (8 m³ of laboratory volume): **95%** (for 2 hr)
- Density of released ozone (O₃) (26.3 m³ of laboratory volume): **0.05 ppm or less**

Sterilization and Deodorization Test ※ KCL Certification Test



Bacillus Pyocyaneus Test Report



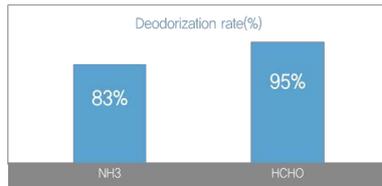
◆ Conditions

- Temperature and humidity: 23°C ± 0.5°C (Bacillus pyocyaneus), 23°C ± 0.3°C (Colon bacillus) 50.5% ± 1% (Bacillus pyocyaneus), 50.3% ± 2% (Colon bacillus)
- Size of the laboratory: 8 m³ (2 × 2 × 2 m)
- Sterilization time: 1 hr
- * Number of bacteria at the beginning: 1.7 × 10⁴ CFU/m³

- ◆ Sterilization efficiency: 99.9% or higher for Colon bacillus, 99.9% or higher for Bacillus pyocyaneus



Colon Bacillus Test Report



◆ Conditions

- Temperature and humidity: 21°C ± 1°C / 46% ± 5%
- Size of the laboratory: 8 m³ (2 × 2 × 2 m)
- Time: 2 hr * Initial density: 10 ppm

- ◆ Deodorization efficiency: NH₃, 83%; HCHO, 95%



Deodorization Test Report

Ozone Density Test



Ozone Release Test Report (Successful)



Air sterilization in the test room



Bacillus pyocyaneus test (before)



Bacillus pyocyaneus test (after)

Applications and Recommended Installations



Prevention Machin

Plasma air sterilizer is required anywhere to enhance air quality.
Dawoo Korea will create a clean and clear space.

Leading in plasma air sterilization and purification

Dawoo Korea will create a clean Korea

Dawoo Korea is an R&D and manufacturing specialist that kills virus and bacteria. With increased needs for sterilization and disinfection to kill virus and bacteria in clinics and hospitals since MERS in 2015, the plasma air sterilizer with deodorizing function has been developed with in-house high-density plasma technology. Converging nano-bio convergence technology, the plasma air sterilizer has been jointly developed with Plasma Bioscience Research Center, Kwangwoon University, and it is being sold in Korea and highlighted globally. Dawoo Korea will fulfill customers needs with thorough sterilization and infection prevention in hospitals, food factories, schools, and sanatoriums using the distinguished plasma air sterilizer.

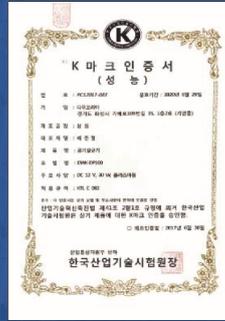
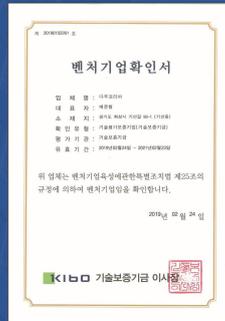
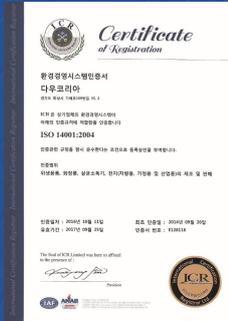
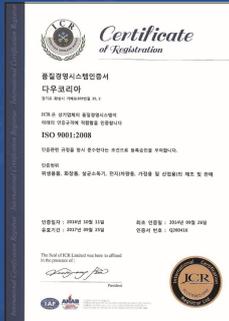


Headquarters 93-1, Gian-gil, Hwaseong-si, Gyeonggi-do (Gian-dong)

Established on March 2, 2010

Business area Plasma air sterilizer

Patents Three patents, one Korean patent application, one Chinese patent application, one design, and Excellent Design in 2016



■ Registration, Certificates, and Patents

Patent and Program	Country	Applied/Registered on	Remarks
Cabin or Indoor Sterilizer Using Plasma	Korea	December 28, 2015 June 14, 2016	Registered
Plasma Sterilizer to Generate Active Species Using Several Rod Poles and Dielectric Tubes	Korea	November 2, 2016	Registered
Sterilizing Cabinet Using Plasma	Korea	March 13, 2017	Registered
Air Sterilizing and Deodorizing Device Using Plasma and Photocatalys	Korea	December 7, 2017	Applied
Sterilizer for the Vehicle of the Room with Plasma	China	December 21, 2016	Applied



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