



Photoplasma Air Purifier

innoclean™
By Purezone



Total remove harmful chemical and odor after decoration works



Grand: innoclean

Series: Purezone

Theory by: Photoplasma 光等離子

UVC Sterilizing Lamp, Photocatalytic

Plasma Ion + / - and Ozone O3 (Free by requested)

Functions:

- Toxic Chemical remove
- Bad odor remove
- Bacteria & Virus kill
- Dist Particles remove

Feature:

Lower operation cost: No Filters, aroma or other parts needed, 3 days` running consumes only 1kilowatt hour: Around HK\$1

Flexible: Free Stand or Wall Mounted available

Advance Design: Automatic Sensor to test the indoor air pollutant

Cost effective: Services area up to 500 ft.2

Purification: Active to purify the whole area



**Do you remember
how refreshing the air
is at the beach...near
a waterfall...in the
mountains or after a
lightning storm?**

Purification method

Innoclean - Purezone purifier has got the powerful purifying effects through the reaction of photo-plasma, photo-catalyst, and plasma ion.

Photo-plasma: The plasma is produced by the irradiation of the high energy ultra-violet light. It will give out a lot of electronics at the very moment when the positive and negative electrical charges are synthesized in the air. It results in the change of the organic molecules surrounding it and the transferring of energy. It then kills the bacteria and decompose the organism, and ends up as killing bacteria and getting rid of pollution.

Photo-catalyst: It's the floorboard of fiber semi-conduct material which has titanium dioxide as its representative and also has the function of photo-catalysis. It used to be the ideal material to harness pollution internationally.

Photo-catalyst can react as catalytic reaction of photosynthesis by the irradiation with high energy ultraviolet rays. It produces free hydroxyl and some oxide with powerful oxidizing energy. It can efficiently destroy cell membrane of the bacteria and oxidize the proteins of the viruses. It can kill bacteria and decompose the organic pollution and change it into unpolluted water and carbon dioxide. Therefore, there is powerful function on killing bacteria, deodorization, mould proof, pollution proof, and clearing the air.

Plasma Ion: By upgrading the circuit of the low voltage into high voltage of direct current, the high electronic corona will release a great deal of electronics at high speed by utilizing high voltage of direct current. The electronics cannot stay in the air for long time, it will be immediately captured by the oxygen molecule and become

plasma ion. It is very good for our health and being called as vitamin in the air. Plasma Ion can improve metabolism, promote immunity and keep the air fresh, clean and natural.

The process of purification

A When the air goes into the purified space, it will produce a great deal of free oxy hydrogen, oxidizing ion with photo-catalyst and photo-plasma function by the irradiation and inspiring of the high energy ultraviolet rays. These ions will charge the particles, dusts, smog in the air and get rid of them from the air. Since these particles are constantly split and oxidized, no impurity remains. Therefore, avoid the process of cleaning the machine and substituting the filter.

B The optical field produced in the purifying room causes the plasma function and makes the air become very active atom, molecule, particles and free electronics. At the same time, the plasma generator constantly produces millions of plasma which also becomes part of purification.

C Finally, the active air with a great deal of purified particles `Super Pure` is released back into the room and purify the air wherever it exists. The following effects can be reached:

- Kill bacteria, mould and viruses
- Decompose the organic pollution in the air. E.g. Cigarette smoke, VOC & HCHO from decoration material etc...
- Destroy unhealthy air.



WHAT IS A PLASMA?

We are all familiar with the three states of matter in our everyday surroundings: solid, liquid and gas; but we may be surprised to find estimates that 99% of the matter in the Universe consists of a **fourth state of matter - PLASMA**. Plasma is the most common state of matter in the Universe.

When sufficient energy is applied to a solid it becomes a liquid (ice becomes water). When enough energy is applied to a liquid it becomes a gas. (water becomes steam)

What happens when a gas gets heated?

"When a gas is heated by many thousands of degrees, the individual atoms collide with enough violence to knock electrons free, resulting in a collection of positively charged ions and free negatively charged electrons. The gas is said to be ionized, and when a sizable number of the atoms become ionized, the gas is called a **PLASMA**.

A plasma can also be formed by applying other forms of energy to a gas: ultraviolet rays, for example.....

Plasma exists in and around the stars, including the sun, and throughout interstellar space.Plasmas possess remarkable properties not found in ordinary solids, liquids, and gases..... the free electrons are extremely mobile. "*Plasma and Plasma Physics.*"

Function:

- A. Destroy any biological contaminants, including viruses, bacteria, mould, fungi and mould spores etc;
- B. Clear the allergens and pet dander;
- C. Neutralize any chemical poisonous gases such as benzene, formaldehyde, TVOC, SO₂, CO etc., which released from decoration stuff.
- D. Get rid of bad odor arising from living house or office work;
- E. Remove very small particles: particles under 0.2 (micron) can be dismissed;
- F. Keep the indoor air fresh and clean.

Features:

- Micro-computer control
- Automatic sensing and cleaning
- Lower operation cost: no filters, drugs or other parts needed, 3 days` running consumes only 1kilowatt hour: Around HK\$1
- High efficiency: the cleaning rate is 200 times quicker than other air purifier
- High light LED display
- 12 hours time-fixing and non-stop selection
- Easy operation with infra remoter
- 3 wind speeds
- Low noise design
- Small and portable
- Simple positioning

Specifications:

- Suitable area: Turn on 1 UV: 500 ft.2 / or 2 UV: 1,000 ft.2
- Power: 12V DC, 15W AC/DC transform power
- Materials: ABS and aluminum alloy
- Control: Infrared remoter or keys
- Method of purification: photo-plasma / photo catalytic oxidation / Plasma Ion
- Plasma Ion released: 200, 000 pieces/cm³
- Ozone released: <0.05ppm (comply with OSHA requirement)
- Noise: <35dB (maximum)
- Size: 260 (L)* 98 (H)* 240mm (W)
- Net weight: 1.2kg
- Color: White



Lift Lobby



Corridor



Toilet



Cabinet

Great for removal of odors & harmful chemical e.g. TVOC & HCHO etc... from tobacco smoke, urine, body odors, foods, pets, mildew, diapers, sewage, fire smoke or floods. Totally deodorize cars, trucks, hotel rooms, meeting rooms, newly painted rooms, etc.

Photoplasma Air Purifier

光等離子空氣淨化器 >>> 主動出擊



技術說明

Feature:

- Lower operation cost:** No Filters, aroma or other parts needed, 3 days` running consumes only 1kilowatt hour: Around HK\$1
- Flexible:** Free Stand or Wall Mounted available
- Advance Design:** Automatic Sensor to test the indoor air pollutant
- Cost effective:** Services area up to 500 ft.2 / 1,000 ft.2
- Purification:** Active to purify the whole area



“innoclean” – “Purezone 百純”係列空氣淨化器，是“innoclean”推出的一種具有強效殺菌消毒功能的空氣淨化器，是根據目前最先進的光電等離子技術生產、製造，並結合了光催化效應與負離子技術。具有高效能、低噪音、體積小、耗電少、不需經常保養等獨特的優點。

“innoclean” - “Purezone 百純”係列產品廣泛適用於工廠、醫院、學校、辦公室、賓館、餐廳、娛樂場所、住宅居室、火車、艦船、地鐵、隧道等各種場所。適用於用戶不同場所及面積大小的實際需要，已成為人們改善室內衛生環境的理想選擇，贏得了眾多客戶的信賴和使用。

主要功能

- 清除空氣中的生物污染物—殺死和摧毀空氣中和物體表面的細菌、病毒、黴菌，防止因空氣中的死皮屑、花粉等引起的疾病，減少病菌在空氣中的傳播。
- 中和化學氣體—中和從揮發性有機物、甲醛、苯、殺蟲劑、霧狀碳氫化合物、油漆中散發出的有害氣體，防止因吸入有害氣體引起的身體不適。
- 除去空氣中的粒子—除去空氣中的灰塵、煤塵、煙霧、纖維雜質花粉及霉孢子等。
- 去味—除去化學物品、動物、煙草、食品、材料等散發的怪味同時達到除臭的效果。
- 保持室內空氣清新自然。

性能特點

- 微電腦控制：運行安全可靠；
- 自動感應：先進的自動感應氣體污染功能，自動清除污染物；
- 無線遙控：配備紅外遙控器，所按即所得，操作方便；
- 液晶顯示：大螢幕高亮液晶顯示，各項功能直觀，一目了然；
- 定時功能：設置 12 小時定時及連續檔位，可隨意選擇時間；
- 高效節能：連續工作 3 天，電耗僅為 1 度；
- 靜音設計：運行寧靜，讓您的環境免受噪音污染；
- 小巧輕便：體積小，重量輕，移動方便自如；
- 安裝簡便：獨特掛牆設計，方便掛於牆壁或放置於任何地方。

技術參數

- 1、 電源：12vdc，11W/15W
- 2、 電源線：AC/DC 轉換電源
- 3、 材質：ABS 及鋁合金
- 4、 控制：遙控器或按鍵
- 5、 淨化方法：等離子/光觸媒/負離子
- 6、 淨化率：懸浮顆粒 99% 細菌 97.61% TVOC>90%
- 7、 噪音：< 30dB(最高)
- 8、 負離子釋放：20 萬~50 萬個/cm³ (臭氧釋放：<0.05ppm)
- 9、 尺寸：R601: 260mm×240mm×98mm
- 10、 淨重：R601: 1.2 kgs
- 11、 顏色：R601:白色
- 12、 適用面積：開 1 支紫外光 500 ft.2 / 開 2 支紫外光: 1,000 ft.2
- 13、 不寫更換過濾器，只需每 2 - 3 年更換紫外光燈

Grand: innoclean

Series: Purezone Model: R601

Theory by: Photoplasma 光等離子

2 x UVC Sterilizing Lamp, Photocatalytic and Plasma Ion + / -, Ozone (Free on requested)

Functions:

- Toxic Chemical remove 分裂空氣中的有機污染物
- Bad odor remove 摧毀不健康氣體
- Bacteria & Virus kill 殺死細菌、黴菌和病毒
- Dist Particles remove 消除空氣中的粒子、灰塵和煙霧

工作原理

基本：等離子、負離子、光觸媒三種技術結合（可附加臭氧 O3 殺菌）

空氣淨化器主要通過光等離子效應、光催化效應及負離子技術達到超強的淨化效果。

○ 光等離子（Photoplasma）效應：由高能紫外光照射空氣室而激發等離子效應。在空氣中進行正負電荷中和的瞬間會釋放巨大的能量，導致周圍的有機分子結構改變或能量轉換，從而致使細菌死亡和有機物分解，實現殺菌及清除污染物的作用。

○ 光催化（Photocatalyst Oxidation）：俗稱光觸媒效應。光觸媒是一種以二氧化鈦為代表的具有光催化功能的光纖半導體材料的總稱，是目前國際上治理環境污染的理想材料。光觸媒在高能紫外光的照射下會發出類似光合作用的催化反應，產生氧化能力極強的自由氫氧基和部分氧化物，能有效破壞細菌的細胞膜和氧化病毒的蛋白質，可殺滅細菌和分解有機污染物。能將有機污染物分解成無污染的水和二氧化碳，因而具有極強的殺菌、除臭、防黴、防汗、淨化空氣的功能。

○ 負離子（Anion）：通過將低電壓電路升級為直流高電壓，利用直流高壓產生高電量並高速釋放出大量的電子（e⁻），而電子無法長久存在於空氣中。它會立刻被空氣中的氧分子捕捉而形成負氧離子。它對人們的身體健康極為有益，被譽為空氣中的“維生素”。負離子能增強人體新陳代謝、提高免疫力並能保持空氣清新自然。

○ 淨化過程：

- 1.當空氣進入淨化空間後在高能紫外光的照射與激發下產生具有大量自由氫氧基及氧化離子的光催化效應與等離子效應。這些離子將對空氣中的粒子、灰塵和煙霧進行充電使其從空氣中消除。由於這些粒子被不斷地分裂和氧化，沒有任何雜質的積累，免除了清洗淨化器的過程。
- 2.淨化室中產生的光場所引起的等離子效應與光催化效應使空氣成為活性極高的原子和分子、離子以及自由電子。同時由負離子發生器不斷產生的數以百萬計的負離子也成為淨化離子的一部分。
- 3、最後帶有大量淨化離子的“超純”活性空氣被釋放回室內並對每處空氣進行淨化而達到以下淨化效果：
 - ① 殺死細菌、黴菌和病毒
 - ② 分裂空氣中的有機污染物
 - ③ 摧毀不健康氣體

