


Installation Target (Several units may be required depending on the installation location.)

 Odor / VOC at work site in factory	 Office / Store	 Nursing home, odor	 Nursery schools and kindergartens	 Cram school / Seminar halls
 Linen room / garbage storage room Odor	 Sick house Odor / VOC (formaldehyde)	 Pet Odor	 Veterinary Hospital Odor	 Hospital / Clinic
 Smoking room	 Osteopathic clinic / Massage / Spa	 Hotel	 Restaurant / Bar	 Bedroom

NanoT-Air (mini) Outline of Specifications of Purification Device

NanoT-Air (mini LED)			
Air Purification Device for Business Use			
Product Name	NanoT-Air (mini LED)	Weight	22kg (with the wheels)
Model Name	PAL-NTA (S)	Size	W290/D500/H510mm
Air Purify Sizing	(49.5 m ³)	Power Supply Area Selection	Can be used with voltages from any country
Country of Manufacture	Japan (Tokyo)	Operation Mode	*It is necessary to change the socket.
Color	White	Operation Mode	FAN up to 9.0m ³ / min (made in Japan)
Power Consumption	Up to 310W	Noise	Up to 69db
Electrical Specifications	Various operations can be performed with one touch on the 7-inch liquid crystal display. SiC ceramic filter photocatalyst support (made in Japan). UV high brightness LED light source (made in Japan). Ejection fan / Adjustable from 0 to 10 (externally). Timer / 0 to 10 hours setting (externally).		
Lifetime of Main Parts	Discharge fan / up to 40,000 hours UV lighting power supply / approx. 10 years. UV LED / up to 40,000 hours		
Purpose of Use	<ul style="list-style-type: none"> ● Inactivation of influenza virus, etc. ● Decomposes organic substances to detoxify odors, etc. ● High-performance air purification device. 		

* Specifications are subject to change without notice.

PALCCOAT Photocatalytic Coating Solution

Standard Type	Harmless Water-Based Coating Solution
ST-P	Undercoating for Exterior Walls <ul style="list-style-type: none"> • When the photocatalyst is needed to be applied to an organic base material, this undercoating is used as a protective layer for preventing the photocatalysis process from occurring directly on the base material. This is mainly used for organic base materials such as coated surfaces and plasterwork.
ST	Topcoat for Exterior and Interior <ul style="list-style-type: none"> • This can be used as a topcoat for various exterior walls such as coated surfaces and plasterwork. • The undercoating is not needed for inorganic materials such as tiles. • It can also be used as an interior top coat.
MOLD	Topcoat for Exposed Concrete <ul style="list-style-type: none"> • This has been enhanced to suppress mold and algae which easily grow on concrete.
VLAG	For Interiors (visible light responsive powerful antibacterial type) <ul style="list-style-type: none"> • This strongly reacts to room lighting (visible light) resulting effective in sterilization, deodorization, and air purification. • Silver ion has been added so that the deodorization function can be maintained even during the night. • In addition to interiors, this can be used as a topcoat for exterior walls that receive thin light.
Clear Type	Highly Transparent Alcohol Dispersion Coating Solution
CLEAR-G	Clear Type for Glass <ul style="list-style-type: none"> • Alcohol dispersion increases the volatility so that a clear coating can be created. • High hydrophilic property prevents dirt.
CLEAR-P	Undercoating for Exterior Walls <ul style="list-style-type: none"> • A highly transparent coating can be created so that the design of the based material is not affected. • Suitable for dark and glossy base materials. • Available for acrylics, tent materials, and organic base materials with high water repellency.
CLEAR-T	Topcoat for Exterior Walls <ul style="list-style-type: none"> • High transparency can be achieved so that the design of the based material is not affected. • Suitable for dark and glossy base materials.

Photocatalyst Technology
PALCCOAT

Air Purification Device
● Made In Japan

What are your criteria for choosing an air purifier?

Indoor Environment Improvement Device for Business Use

Photocatalyst purification system

NanoT-Air

The Culmination of Photocatalytic Environmental Technology



Background of NanoT-Air development



(NanoT-Air large machine)

Founded in 1980, Soma Co., Ltd. has been engaged in transportation and printing-related businesses. Since 2004, we have also been engaged in environmental business centered on photocatalysts. Initially, our main business was the sale of titanium oxide solutions and coating construction, but in recent years we have dealt with the problems of bile duct cancer caused by chemical substances in printing factories, as well as in-hospital infections and odor problems at medical institutions and nursing homes. We thought that these problems could be solved by applying the photocatalyst technology of, and decided to work on the development of an air purification device.



Features of NanoT-Air

- It is a high-performance purification device. Decomposes antibacterial, deodorant, and T-VOC (toluene, acetaldehyde, ammonia, formaldehyde, etc.) and makes them harmless.
- The industry's first 7-inch touch panel is used for digital operation (same operation as navigation).
- Panel display operation (temperature / humidity / air volume adjustment / timer function / dirt display / CO2 concentration / maintenance display, etc.).
- Compact appearance with a width of 290 mm, a depth of 500 mm, and a height of 510 mm for commercial use (3 suction ports).
- The power supply is in Japan (100V 50Hz / 60Hz), and overseas voltage is also available.
- Equipped with casters (4 legs) that are convenient for transportation as standard equipment.
- Uses long-life, high-brightness, Japanese-made UV (ultraviolet) LEDs.
- A lightweight SiC (silicon carbide) ceramic filter carrying a photocatalyst is used at the heart of the purification device (made in Japan). The main filter retains its function semi-permanently, has no operating cost, can be washed, dried in sunlight and reused.
- Large machines are made-to-order (3 months after receiving an order) Capacity of about 200m³ for 200V.



(The industry's first. LCD touchscreen adopted.)

Indoor Effect

1. Antibacterial

PALCCOAT kills bacteria and viruses such as E. coli (O-157), Staphylococcus aureus, avian influenza that cause of food poisoning, and even the corpse of a germs (verotoxin) are decomposed and becomes harmless. A toxicity test has been proven that it is harmless to humans and animals.

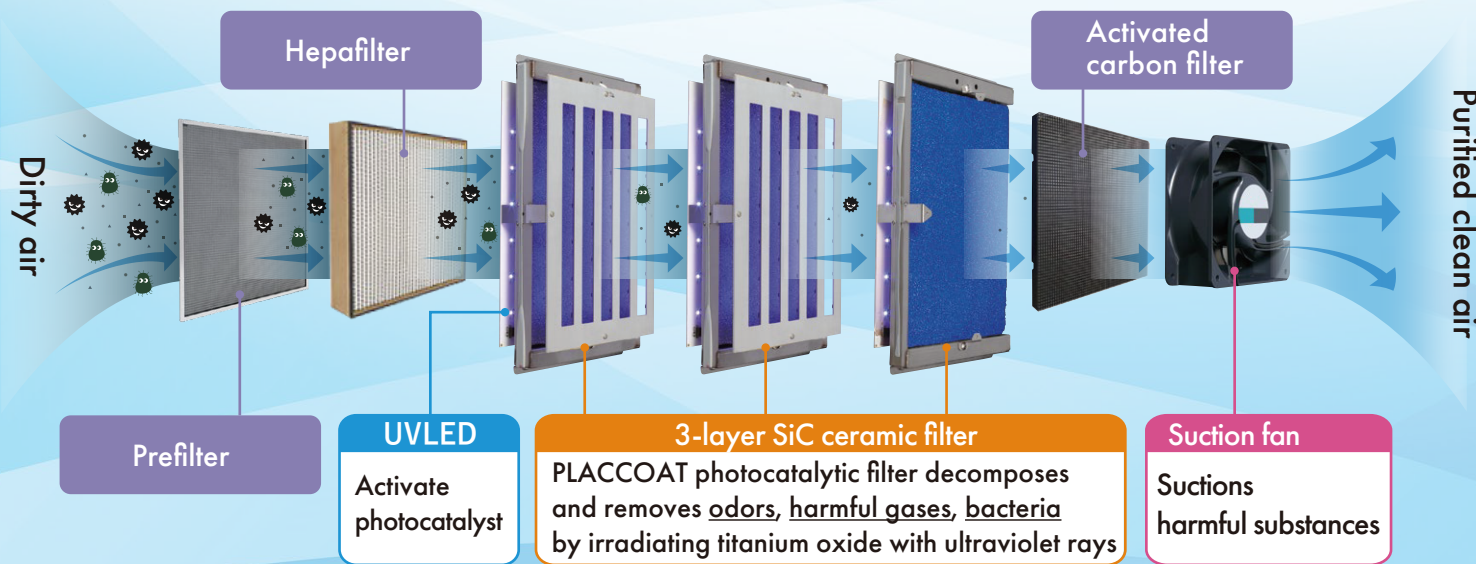
* It is not effective against all viruses and fungi. In addition, it does not completely prevent infectious diseases.

2. Deodorize

Various odors that occur in our daily lives are adsorbed daily on walls, curtains, sofas, etc. and become unpleasant odors. Since the photocatalyst repeatedly decomposes and removes the odor, it suppresses accumulation and continues to create a comfortable space.

3. Air Purification

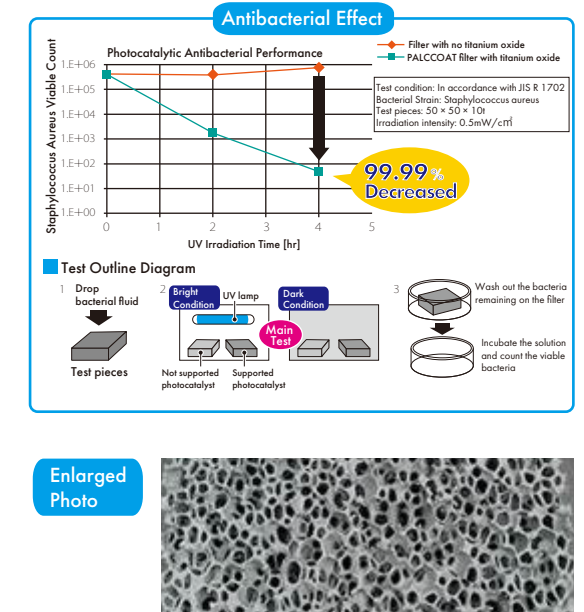
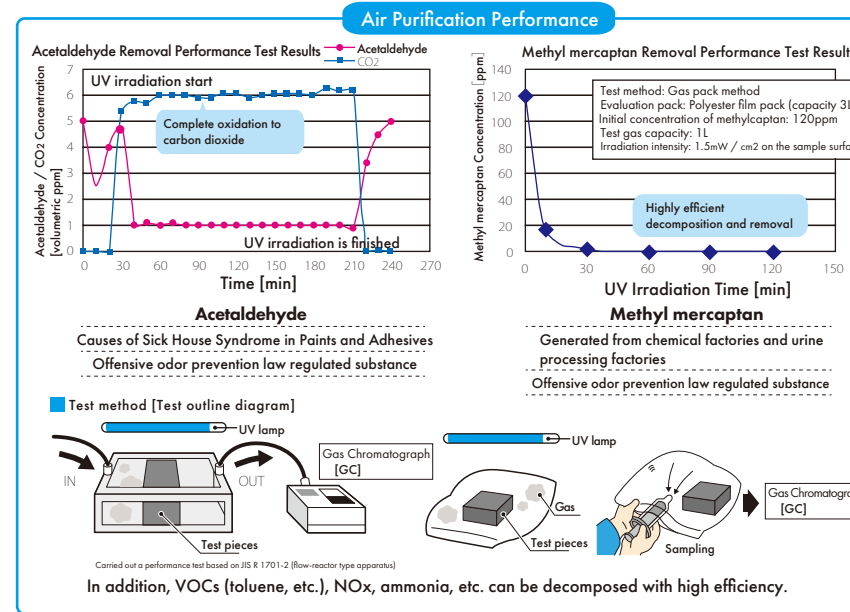
PALCCOAT decompose and detoxify harmful chemical gases (TVOC such as formaldehyde) that cause sick house syndrome.



NanoT-Air Performance test data of main part SiC ceramic filter

- Deodorization test data of VOC gas of SiC ceramic filter & antibacterial effect test & test method (explained in the figure)

It can remove a wide variety of harmful substances by a high-efficiency photocatalytic filter.



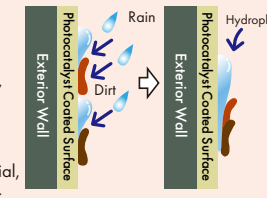
What is a Photocatalyst?

- Due to the characteristics of titanium oxide, when there is light energy such as sunlight or indoor lighting, strong oxidative decomposition power is generated on the surface of the titanium oxide coating film, decomposing and detoxifying various substances that are approaching.
- The titanium oxide white powder (ultrafine particles) has long been used in white pigments, paints, dental materials, toothpaste, cosmetics, sunscreens, etc.
- In the food industry, it is used for white chocolate, sweets, gum, etc. and is odorless and harmless to humans and animals.
- It is a photocatalyst that is active in the following various situations.

Asset Conservation Function (Self-Cleaning function)

Decompose rain stains of outside the building, dirt, mold, etc.

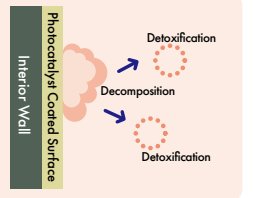
Self-cleaning functionality maintains the beauty appearance of exterior walls and glass. The protective effect extends the life of the base material, reduces maintenance costs, and increases asset value.



Nosocomial Infection Control Function

Decomposes floating bacteria and viruses

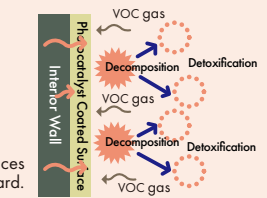
It decomposes and inactivates bacteria and viruses floating in the hospital. It is effective in preventing nosocomial infections.



Sick House Measures Function

Decomposes and detoxifies harmful chemical substances generated from building materials

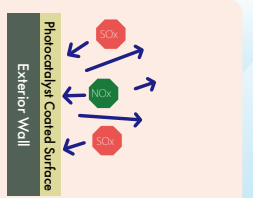
It decomposes and detoxifies formaldehyde, toluene, xylene, etc. that cause sick house syndrome, and reduces the concentration of indoor pollution below the standard.



Environmental Purification Function

Decomposes harmful pollutants in the air

It decomposes air pollutants, which have become a social problem, into harmless and simple substances and purifies the environment.



Experimental report of COVID-19 (new corona virus, SARS-CoV-2)

September 25, 2020 Nara Medical University <http://www.naramed-u.ac.jp>

(World's First) It confirmed the inactivation of the new corona virus by the visible light responsive photocatalyst and clarified the conditions.

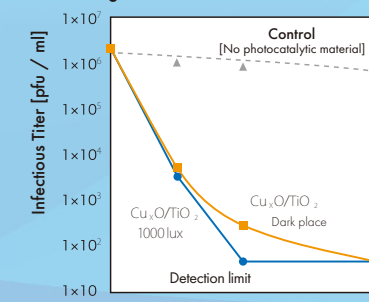
Summary

Research by Nara Prefectural Medical University (Associate Professor Ryuichi Nakano, Department of Microbial Infectious Diseases), Tokyo Institute of Technology (Professor Masahiro Miyachi, Faculty of Materials Science and Engineering), Kanagawa Institute of Industrial Science and Technology (KISTEC) (Research and Development Department, Anti-bacterial and Antivirus Research Group) For the first time in the world, the group confirmed the inactivity of the new coronavirus by the visible light responsive photocatalyst material (Cu_xO/TiO₂) The antiviral effect of the photocatalyst was academically shown by experimentally clarifying the inactivation conditions.

Visible light responsive photocatalytic solution Cu_xO/TiO₂ Complex of copper oxide and titanium dioxide

<https://doi.org/10.3390/catal1009109>

(a) Changes in viral load



(b) An example of virus infection evaluation

