

AIR PURIFIER FOR RESIDENTIAL AND COMMERCIAL BUILDINGS Type "RAP"



Product data sheet Characteristics

What is an air purifier?

Air purifiers are portable devices that combine an internal filter and fan to pull in unwanted particles from the air in a specific room. Purified air is then circulated back into the room. The filtration process repeats several times an hour, continually boosting indoor air quality.

How does an air purifier work?

Air purifiers essentially work by sanitizing the air, which may include pollutants, allergens, and toxins. They're the exact opposite of essential oil diffusers and humidifiers, which add particles to indoor air.

Air purifiers also act differently than filters. While filters only remove particles, purifiers can sanitize them, too.

The exact particles removed via an air purifier ultimately depends on the type you choose. Certain versions are made with filters to trap particles as air runs through them, while others may neutralize other particles in the air without filtering them first.

Another option is a negative ion emitting air purifier, which helps to attract positive ion particles in the air so that they're neutralized. The downside to this option is the possibility of ozone emissions.

What is indoor air quality?

Indoor air quality (IAQ) is the air quality within and around buildings and structures. IAQ is known to affect the health, comfort, and well-being of building occupants. Poor indoor air quality has been linked to sick building syndrome, reduced productivity, and impaired learning in schools.

IAQ can be affected by gases (including carbon monoxide, radon, volatile organic compounds), particulates, microbial contaminants (mold, bacteria), or any mass or energy stressor that can induce adverse health conditions. Source control, filtration, and the use of ventilation to dilute contaminants are the primary methods for improving indoor air quality in most buildings. Residential units can further improve indoor air quality by routine cleaning of carpets and area rugs.

Removing common pollutants indoors can help reduce your risk of indoor health concerns. Particles that can impact Indoor Air Quality include common smoke, bacteria, tobacco smoke, pollen, pet dander, and dust.

What is a HEPA filter?

HEPA, which stands for High Efficiency Particulate Air, is a designation used to describe filters that are able to trap 99.97 percent of particles that are 0.3 microns. Though the HEPA standard and certification process wasn't established until 1983, development of HEPA filters dates back to World War II, when American scientists with the Manhattan Project created the first HEPA filter to capture radioactive particles released during the creation of the atomic bomb.

HEPA is a type of pleated mechanical air filter.

It is an acronym for (High Efficiency Particulate Air filter).

(as officially defined by the U.S. Dept. of Energy).

This type of air filter can theoretically remove at least 99.97% of dust, pollen, mold, bacteria, and any airborne particles with a size of 0.3 microns (μm).

*Source: epa.gov, what is a HEPA filter?



Are they effective?

The short answer is yes — however, an air purifier likely won't remove or neutralize all aggravating particles in your home. This is due to the fact that many particles can sit on soft surfaces, such as furniture, bedding, and carpeting, as well as hard surfaces, such as your walls.

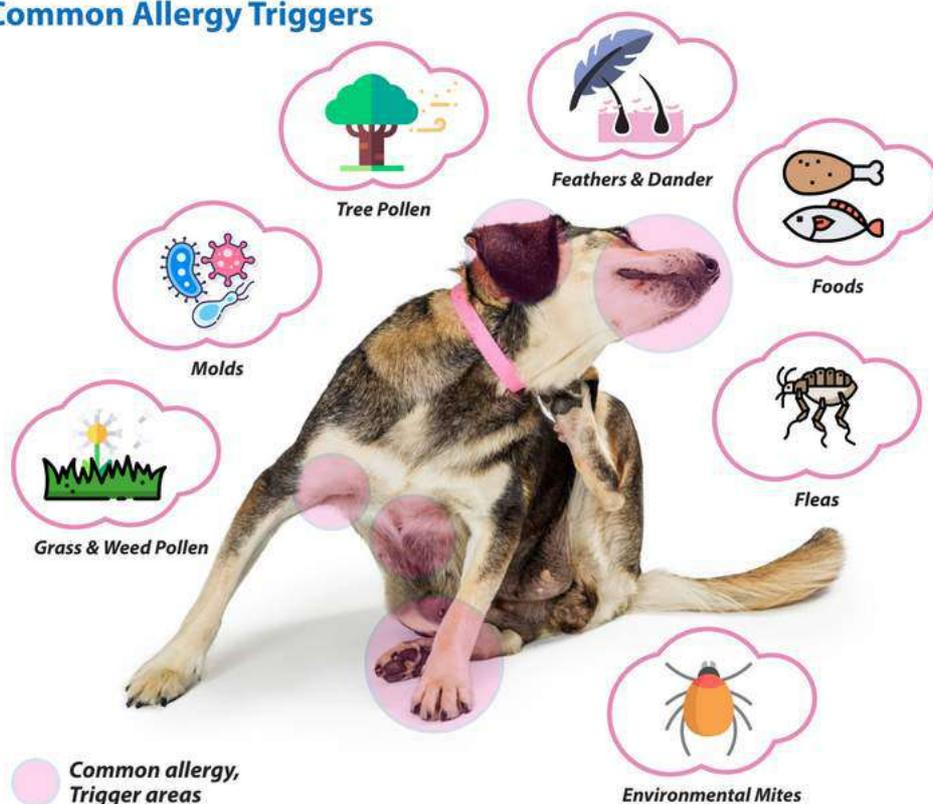
An air purifier may act as a complement to a filter and other strategies to help get rid of the following particles.

Allergens

Allergens are substances that can create adverse immune responses in the form of allergies or asthma. Pollen, pet dander, and dust mites are among the most common airborne allergens.

An air purifier may work in conjunction with a high-efficiency particulate air (HEPA) filter, the latter of which is best known to trap airborne allergens.

Common Allergy Triggers



Pollen

Climate change will potentially lead to both higher pollen concentrations and longer pollen seasons, causing more people to suffer more health effects from pollen and other allergens.

Pollen is an airborne allergen that can affect our health. Pollen grains are tiny (seeds) dispersed from flowering plants, trees, grass, and weeds. The amount and type of pollen in the air depends on the season and geographic region. Though pollen counts are typically higher during the warmer seasons, some plants pollinate year-round.

Dust

Dust is made of fine particles of solid matter. On Earth, it generally consists of particles in the atmosphere that come from various sources such as soil lifted by wind (an aeolian process), volcanic eruptions, and pollution. Dust in homes is composed of about 20–50% dead skin cells. The rest, and in offices, and other human environments is composed of small amounts of plant pollen, human hairs, animal fur, textile fibers, paper fibers, minerals from outdoor soil, burnt meteorite particles, and many other materials which may be found in the local environment.



Smoke

Filter-equipped air purifiers may also remove smoke in the air, including smoke from landscape fires Trusted Source and tobacco smoke. Still, air purifiers can't get rid of the smell of smoke entirely, and there may still be instances of smoke stains on walls and ceilings despite their use.

Smoking cessation is preferable over trying to filter out smoke-filled air. One study Trusted Source on air purifiers found that these devices did little to remove nicotine from indoor air.

Indoor toxins

Not only may your home be a source of airborne allergens and mold, but it may also be a source of indoor toxins from cleaning products, personal care products, and more.

When these particles live in the air, they can become harmful to your body. Air purifiers may also trap indoor toxins, but the best way to get rid of toxins in your home is to reduce their usage in the first place.

Pet dander and dust

People who are allergic to dogs or other animals are not technically allergic to pet hair, but to the proteins in saliva and skin flakes (dander) from pets, so keep this in mind when you are searching for an air purifier for dust and pet hair. Dust can contain pet dander and may trigger allergic reactions for some people. Often, this is one of the main concerns for households with pets. And this concern exists not only when pets are present—tiny particles of pet dander remain in carpets and floors even when pets are not in the home. Dander is material shed from the body of humans and other animals that have fur, hair, or feathers. The term is similar to dandruff, when an excess of flakes becomes visible. Skin flakes that come off the main body of an animal are dander, while the flakes of skin called dandruff come from the scalp and are composed of epithelial skin cells. The surface layer of mammalian skin is called the stratum corneum, which is shed as part of normal skin replacement.



What are activated carbon air filters?

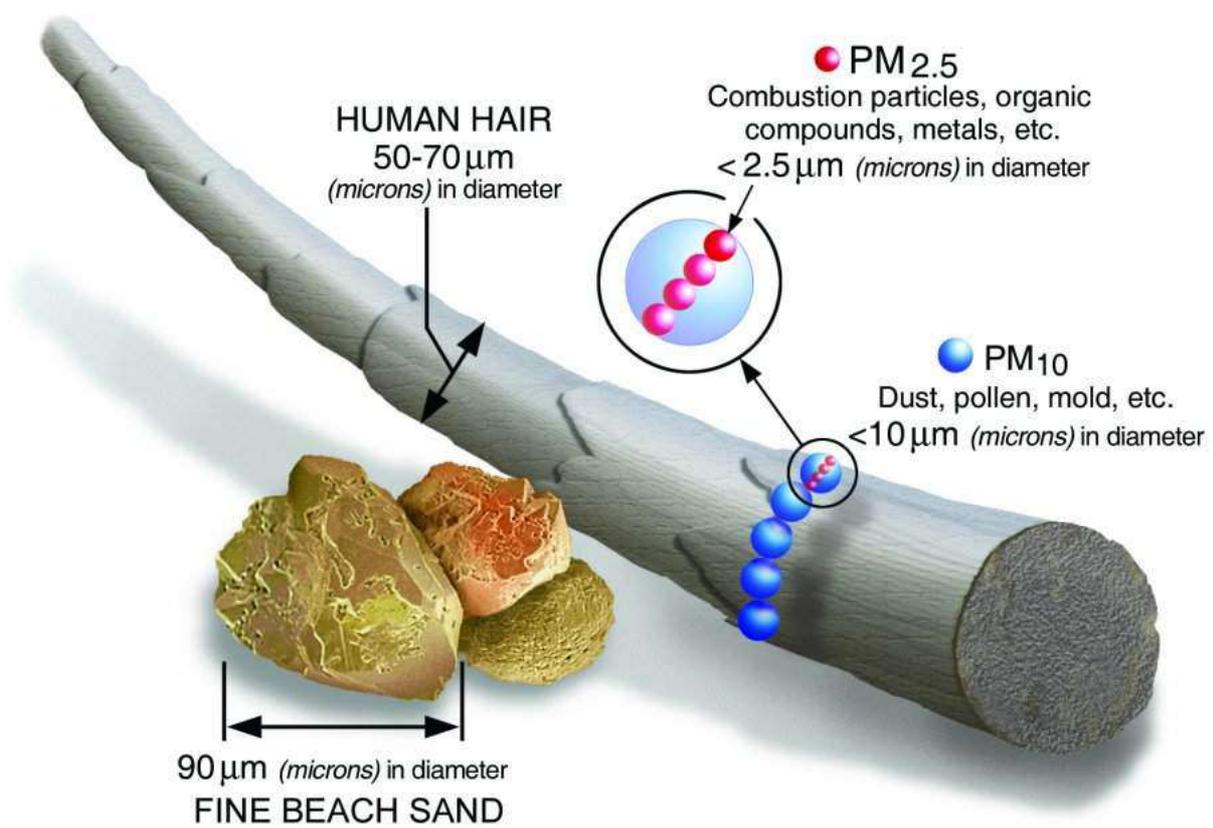
Formaldehyde removal

Fiber filters, even the best grade of HEPA filter, will not remove formaldehyde from the air it is too small. The only available filter that will reduce formaldehyde levels is a carbon air filter. These use small carbon pellets that have molecule-sized holes, cracks, and crannies in them. Chemicals like formaldehyde (and other organic gases) are absorbed on the surfaces of these pellets. Because the activated carbon air filter is pitted and extremely porous, it presents a huge surface area that chemicals can absorb onto. Carbon air filters are the filters most commonly used to remove gases. They are designed to filter gases through a bed of activated carbon (also called activated charcoal) and are usually used to combat volatile organic compounds (VOCs) released from common household products. They are also often used to remove odors from the air, such as the smell of tobacco smoke. They cannot remove fine particles like mold, dust, or pollen from the air.



What is Particulate Matter?

Fine particulate matter PM_{2.5} is an air pollutant that is a concern for people's health when levels in air are high. PM_{2.5} are tiny particles in the air that reduce visibility and cause the air to appear hazy when levels are elevated. The term fine particles, or particulate matter PM_{2.5}, refers to tiny particles or droplets in the air that are two and one half microns or less in width. Like inches, meters and miles, a micron is a unit of measurement for distance. There are about 25,000 microns in an inch. The widths of the larger particles in the PM_{2.5} size range would be about thirty times smaller than that of a human hair. The smaller particles are so small that several thousand of them could fit on the period at the end of this sentence. Most studies indicate PM_{2.5} at or below 12 $\mu\text{g}/\text{m}^3$ is considered healthy with little to no risk from exposure. If the level goes to or above 35 $\mu\text{g}/\text{m}^3$ during a day period, the air is considered unhealthy and can cause issues for people with existing breathing issues such as asthma.

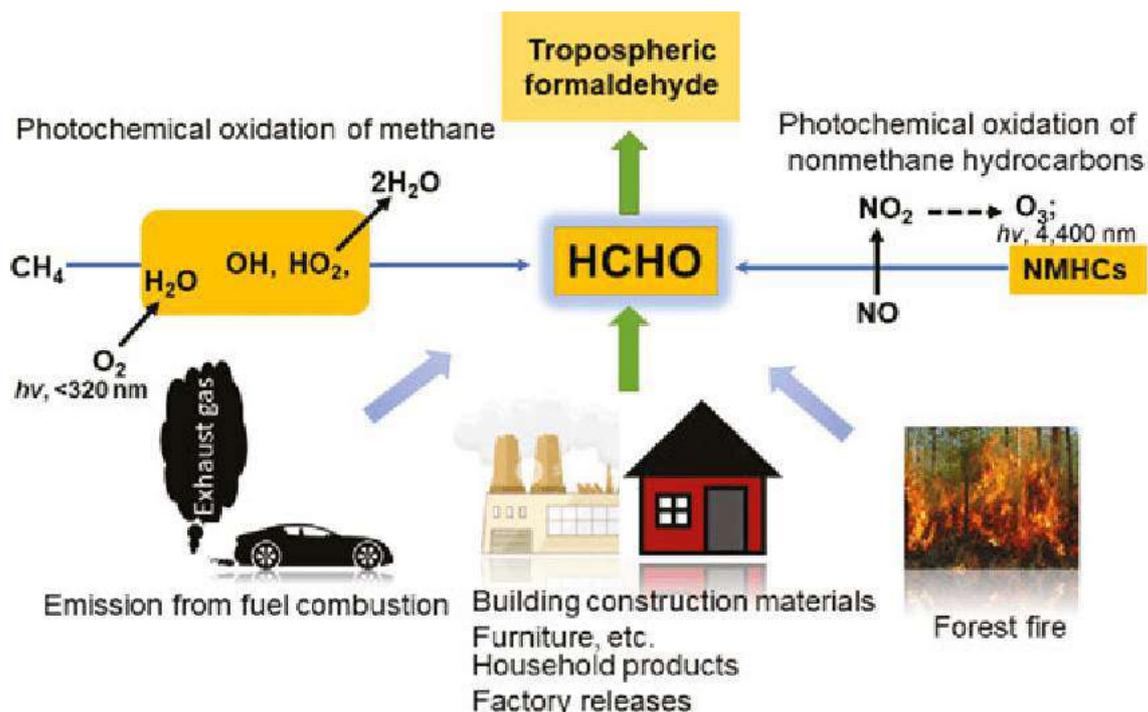


Size comparisons for PM particles

What is formaldehyde? and what causes formaldehyde in your home?

Formaldehyde is a colorless chemical with a strong odor (some describe it as pickle-like) that is often used in manufacturing a variety of products including pressed-wood, adhesives, fabrics, and insulation materials. It is also used as an industrial disinfectant, fungicide, and germicide. While it is man-made, it can also occur naturally, it is produced by the metabolic processes of most living organisms, albeit in small amounts. At room temperature, formaldehyde becomes a gas, making it part of a larger group of chemicals called volatile organic compounds (VOCs). It is found in gas stoves and open fireplaces, as well as outdoors in automobile emissions.

Since formaldehyde is used in the manufacturing of many household items—from furniture to cosmetics—it is present in every home. Higher concentrations of formaldehyde are found in homes with new products or new construction, as well as in homes with people who smoke tobacco products.



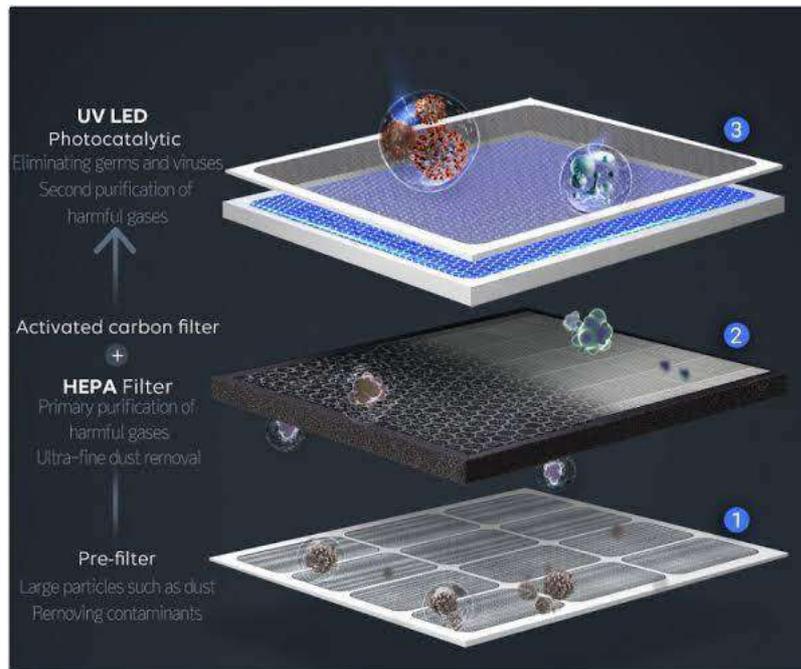
What is Photocatalytic filter? the Principle and its working

In a photocatalytic filter, ultraviolet light acts as the prime ingredient to clean the air of impurities with the help of a catalyst, in this case titanium dioxide.

Photocatalytic filter does not trap the pollutants in their original form. They convert the harmful organic contaminants into carbon dioxide and water thereby completely transforming the toxic chemicals. In fact, they eradicate the pollutants.

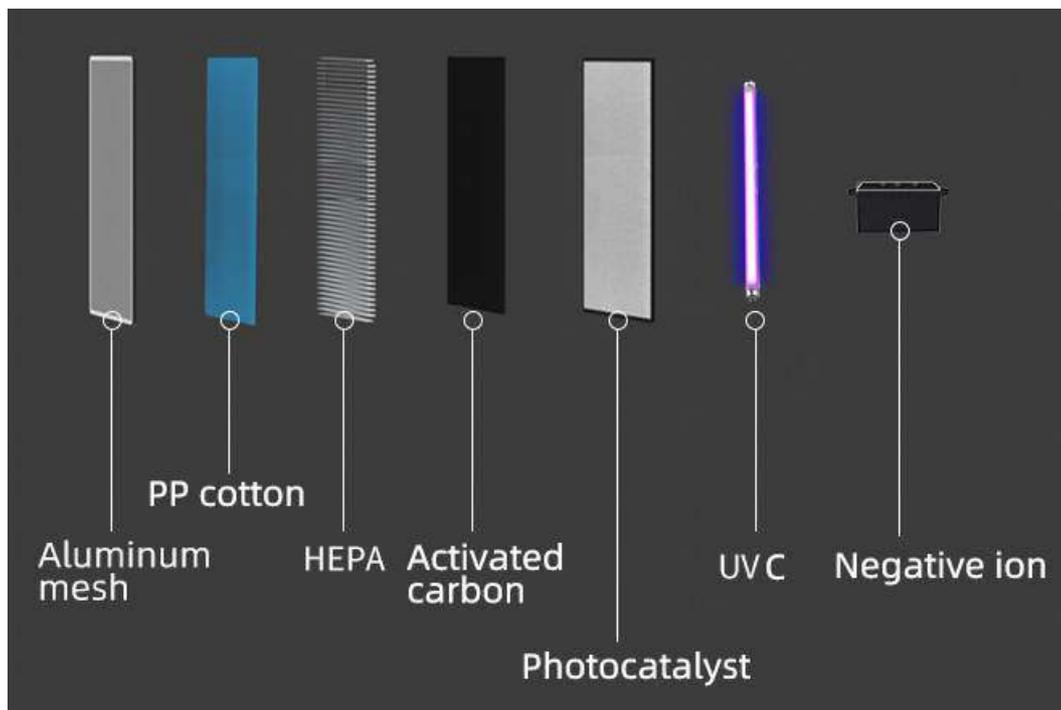
The ultraviolet radiation has more energy than the standard light, and it is not visible to the human eye. It can produce the right amount of energy required to excite the titanium dioxide molecules to enable the release of electrons to start the oxidation process.

Photocatalysis only tackles certain, chemical forms of air pollution and does not solve the problem of particulates (soot and dirt). That is why REPS Air purifier has photocatalytic filters, (UVC) lamp combined with HEPA filter, carbon activated filter, titanium-based catalyzers as its multiple filtering technologies to form a comprehensive purification route.



Air purification process

- * Primary Washable Filter: Removes large airborne particles such as dust and hair
- * True HEPA Filter: Eliminates 99.97% of smokes, household dust, pet dander, mold spores, pollen, bacteria and airborne viruses up to 0.3 microns in size.
- * Activated Carbon Filter: Removes formaldehyde, toxic substances and foul odour.
- * TiO₂ Photocatalyst Filter: Helps in Oxidising pathogens and harmful gases such as exhaust fumes, volatile organic compounds, and so on. UV-LED UV-C bulbs help kill bacteria and viruses captured on HEPA even those that escape through HEPA
- * Negative Ioniser: Helps recharge the air with fresh negative charge to maintain a feeling of early morning freshness.



Why choose a RAP Air Purifier and Filter?

Our True HEPA filter helps capture 99.97% of airborne particles, including allergens, dust, lint, mold spores, bacteria, viruses and pet dander. Plus, every filter is electrostatically engineered to pull in and trap particles 1,000x smaller than you can see.

Can I use an air purifier in an apartment?

Yes, cleaner air can be yours in any living situation—no HVAC required. Because no two living spaces or families are alike, we designed air purifier devices and filters for different room sizes—from small to extra-large.

What is the best air purifier size for my family?

The best device will depend mostly on room size, plus your lifestyle and purification needs. For instance, do you want a filter with extra carbon layers to combat odors? A room air purifier for allergens? True HEPA filter for maximum filtration? As filtration experts, we know the filter is the true hero to help improve indoor air quality. If you want to monitor and clean your indoor air all day, every day, a RAP Smart Air Purifier can help. Wi-Fi connectivity allows you to connect your air purifier to your smartphone, where you can use the Smart App to keep tabs on your air quality and filter life.



Applications

RAP types purification products are designed to solve challenging indoor air quality problems and can be customized for different environmental needs. RAP-410 have been installed in a diverse number of environments including casinos, bars, cigar shops, nursing homes, office buildings and restaurants, residential homes.

Smart Air Purifier

Model: RAP- 410

7 level purification system

Product description:

Capacity: 242 CFM

Haze CADR: 410 m³/hr

Formaldehyde CADR: 170 m³/hr

Voltage: 240 V

Frequency: 50 HZ

Power: 80 W

Filter Type: Pre filter + Composite filter

Germicidal lamp: UVC

UV Wavelength: 253.7 nm

PM2.5 (Particulate Matter)

Control: Remote + Touch screen button + WIFI

Timer set: 8 Hours

Wind speed: Sleep mode + 3 speed adjustment

Noise level: 35 ~ 55 dB

Anion concentrations: 8 millions /cm³

Applicable area: 4/ACH~1/ACH=40m²~160m²

Single package size: 470x255x675 mm

Certification: FCC, CE, RoHS

Product parameters:

Twelve perfect function:
Intelligent purification
Four color indicator
PM 2.5 display
Temperature and humidity display
Energy saving
8 millions anion
Safe child lock
Reminder
8 Hours timer
Multiple mode
Silent sleep
Three level wind speed

Filtration:

Formaldehyde
Haze
Fine dust
Floc
Pollen
Toluene
Smoke
Bacterial
Odor
TVOC
Pet dander
Microbes
Allergies
PM2.5

Accessories:

Remote control
User Manual

Packaging:

Color carton: 1 pcs
Single package size: 470x255x675 mm
Single net/gross weight: 7.50 / 8.50 Kg
Yellow carton: 2 pcs
Double package size: 470x510x675 mm
Double net/gross weight: 15.0 / 17.0 Kg

Intelligent operation multifunction panel



Particulate matter CCM: P4

Formaldehyde CCM: P4

| | | |
|---|--|--------------------------------------|
| 410m³/h Haze CADR | 170m³/h Formaldehyde CADR | |
| 99.9% Particulate purification rate | 99% Formaldehyde purification rate | 98% TVOC purification rate |

Applicable scene



Home



Office



Hospital



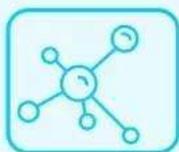
School



Kitchen



Bathroom



Formaldehyde filtration



Haze filtering



Dust filtration



Toluene filtration



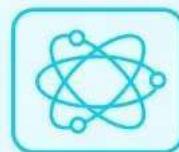
Second-hand smoke filtration



Bacterial filtration



Odor filtering



TVOC filtering

Features of this air purifier



Efficient composite multiple filtration system



Sleep / working mode



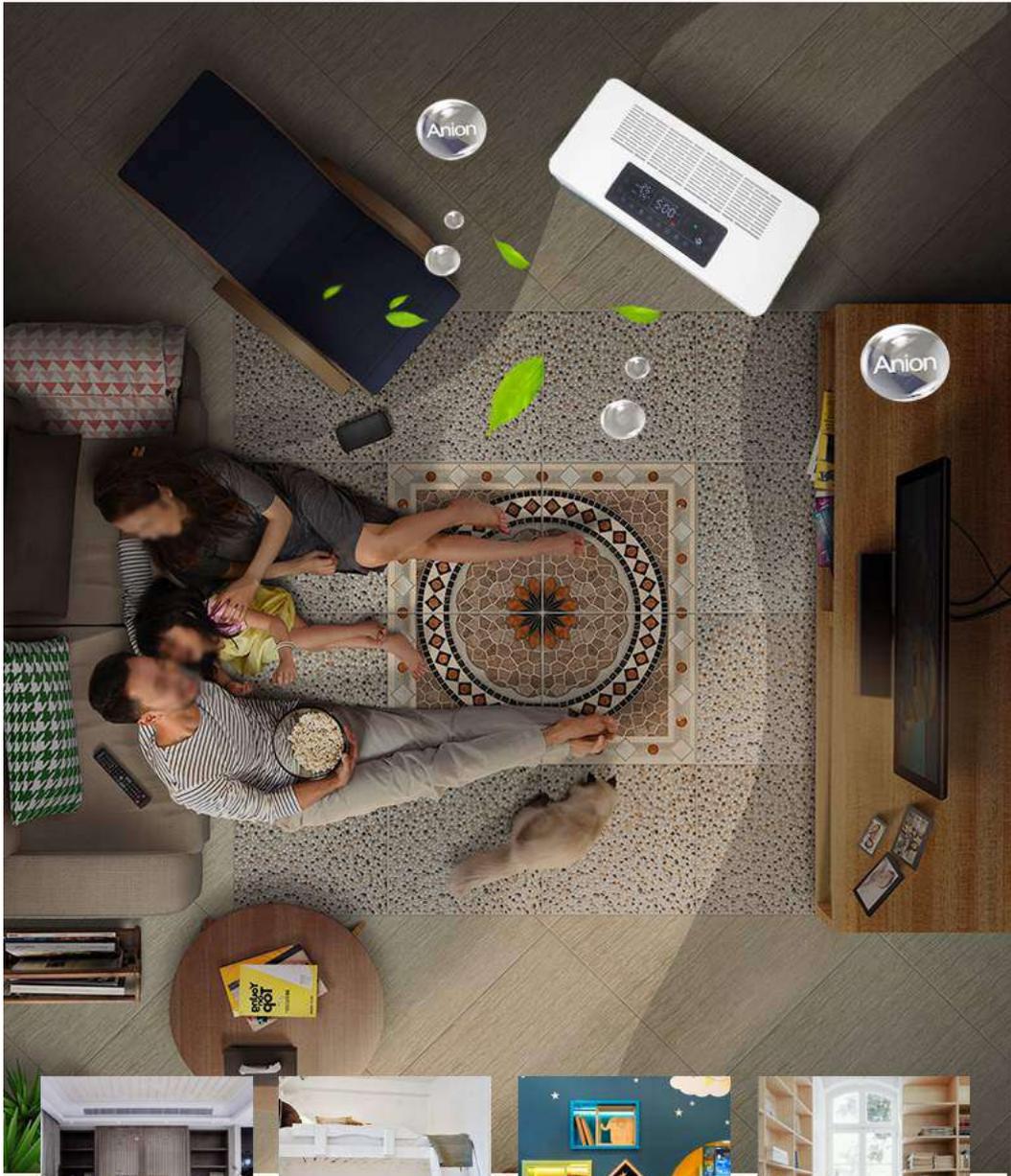
Remote / touch screen control buttons



Faster, stronger and more efficient purification

Quick purification, easy to get 40m²

Fresh air overflows the entire room



10min

40m² living room



8min

20m² bedroom



6min

13m² children's room



4min

8m² study

Fear of virus infection Home needs to be cleaner and safer

There may be a large number of bacteria and viruses that cannot be seen by the naked eye in the living space for a long time, and it is harmful to human health if inhaled



1 bacterial infection

Small mites on pets



2 skin allergy

Bacteria and viruses are easy to cause skin discomfort



3 Easy to get sick

Old people and children have poor resistance and are easy to get sick



4 moldy smell

Indoor humidity or new painting, new furniture

**For the health of
myself and my family
Pay attention to air quality problems**



Go out and purify in advance

Turn on the machine before
going to work and going out
Start anion mode
Clear formaldehyde odor bacteria
After work, enjoy clean air



4 wind speeds

Just choose what you like



Sleep 1 speed 2 speed strong speed



Very quiet



Comfortable



fresh



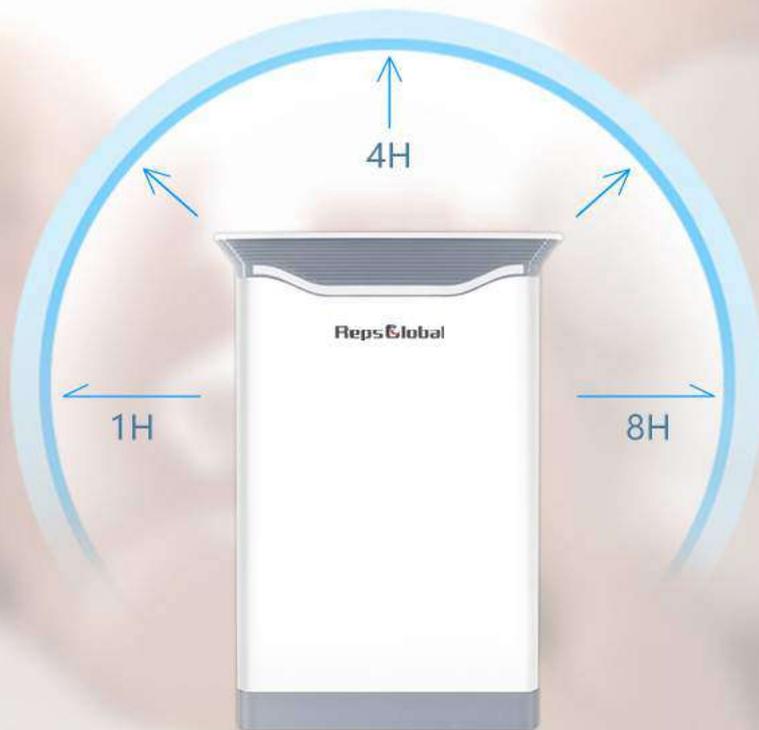
Powerful purification



user friendly design

Intelligent timing disinfection

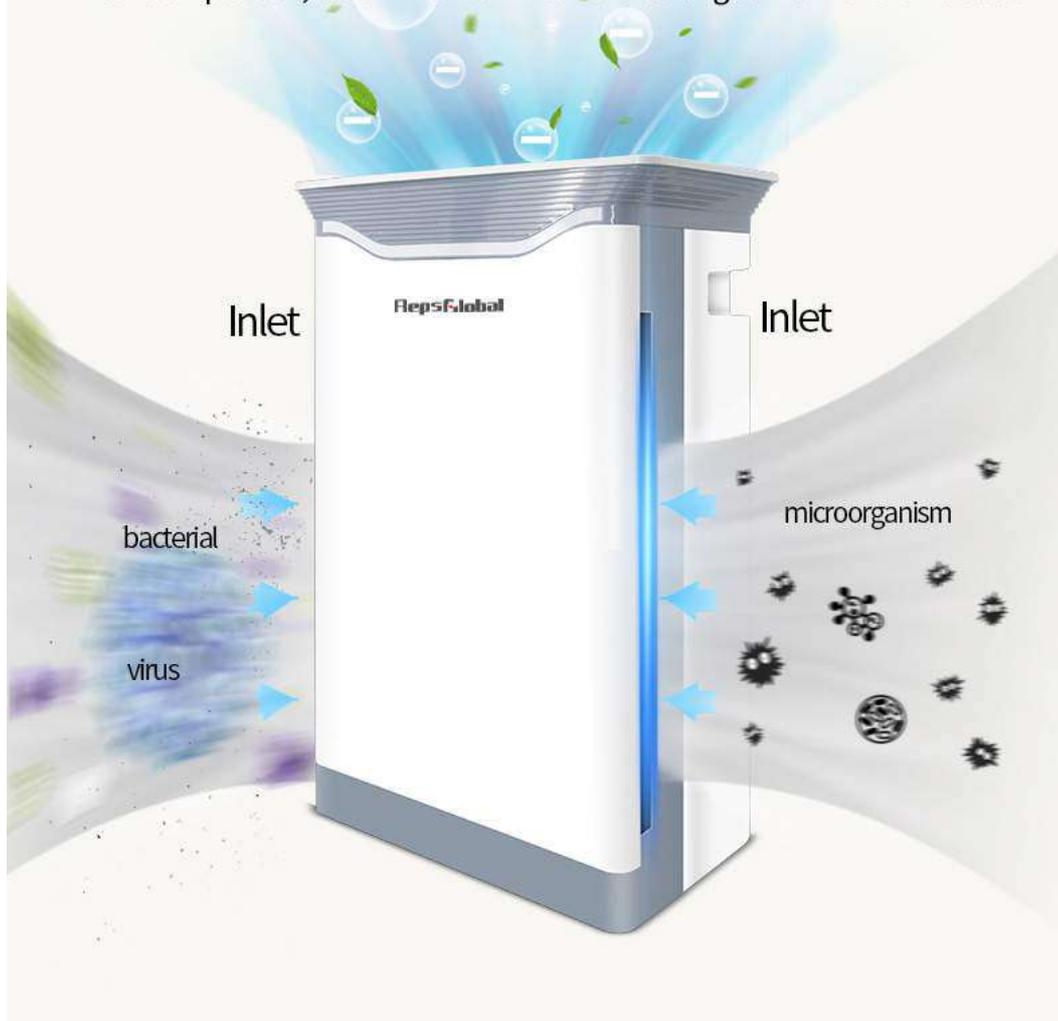
1-8 hour timing can be set
Timing operation
Convenient and save worry



When the machine is working, the personnel can directly enjoy the fresh and clean air on the site

Working principle

Inhale air containing bacteria and viruses from the side
High intensity ultraviolet lamp irradiation in sterilizer
Disinfection through machine cavity
After completion, clean fresh air will be discharged from the air outlet



Efficient sterilization Quiet guard

Lightly start the sleep mode, quietly guarding your breathing health



0-20db
Breathing

36db
Sleep file

40-60db
library

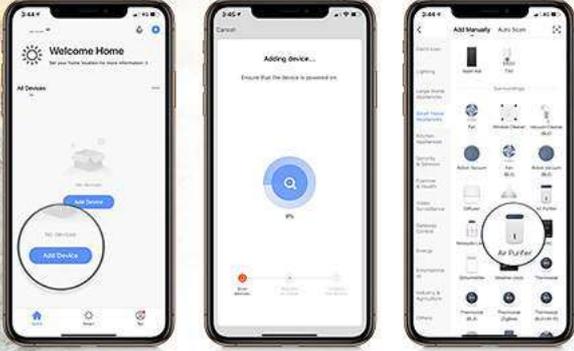


Smart Air Purifier

Wifi Connect & App Control

With wifi controlled air purifier, you can control it anytime and anywhere, saving energy, keeping secure for your home, more convenient and comfortable!

[Download on the App Store](#) [Get it on Google Play](#)



High intensity UV lamp

UVC lamp (253.7nm band) is set inside the machine to start sterilization mode Efficient removal of harmful bacteria
More comprehensive sterilization



Air disinfection Air purification

Dual function intelligent machine



Purification + activated carbon

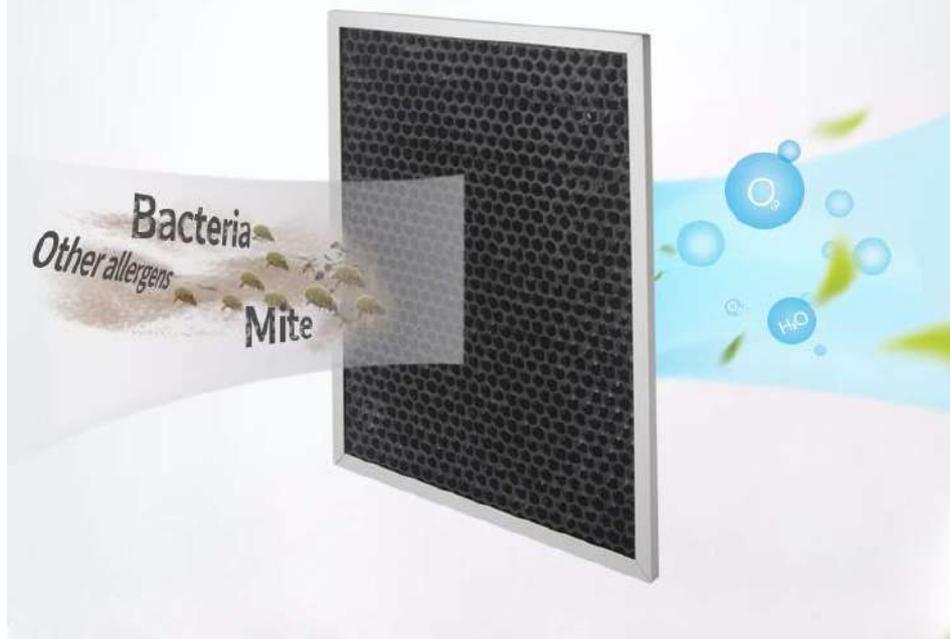
No smell in the new house
Activated carbon is arranged inside the boiler network

-  Formaldehyde
-  PM2.5
-  dust
-  pollen
-  Smoke smell
-  Allergen



MULTIPLE PURIFICATION AND DEEP FILTRATION

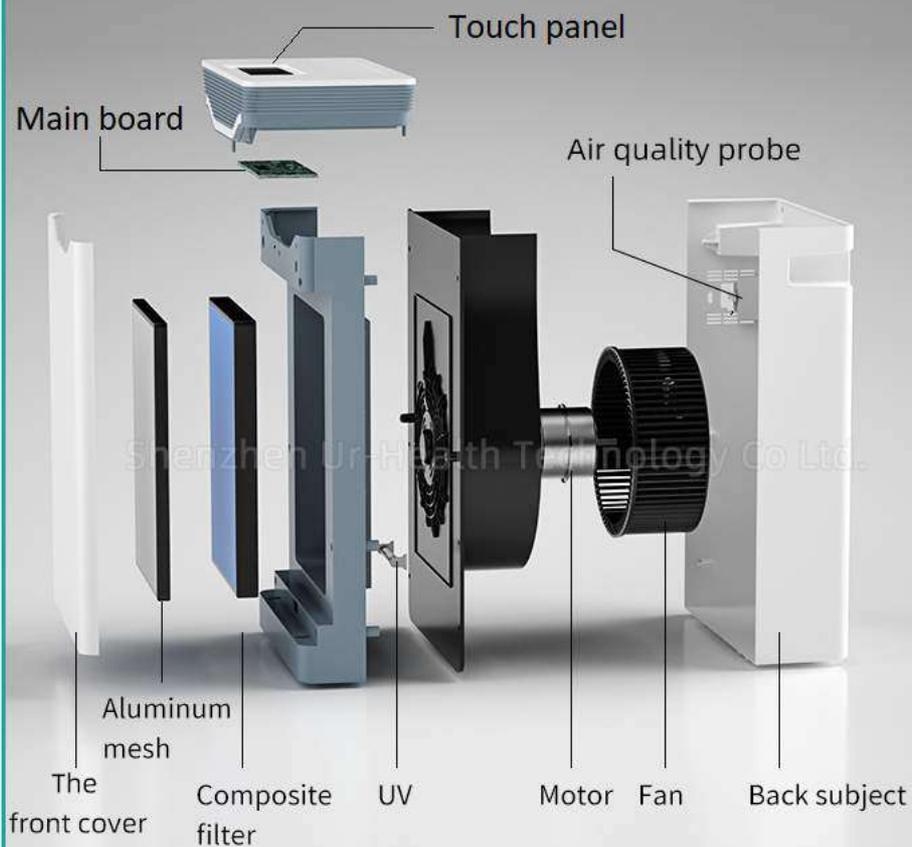
Deodorization, deodorization and fresh air

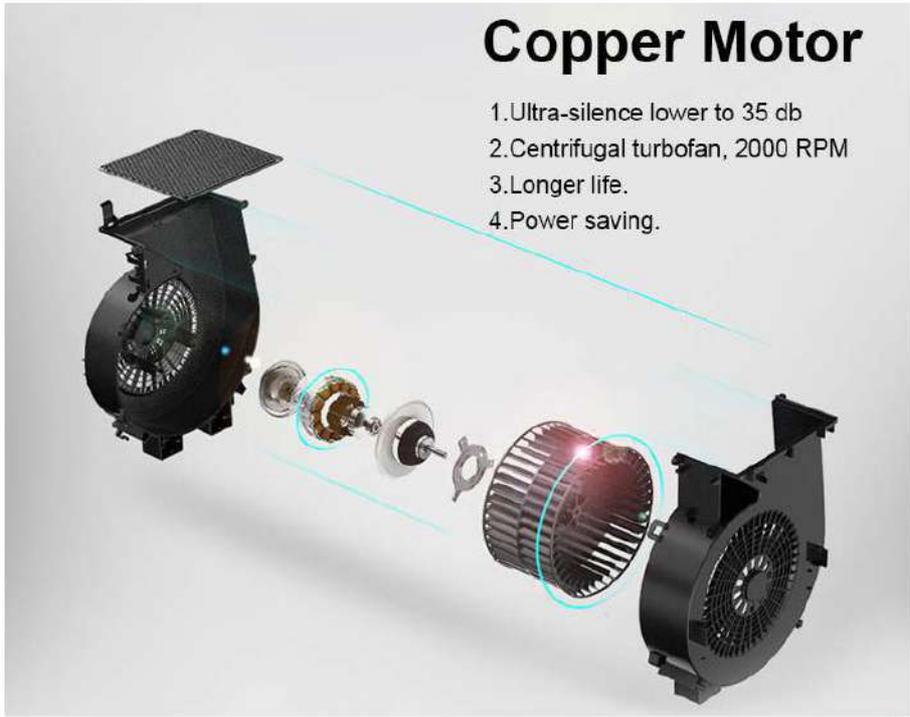


Structural analysis, visible quality.



Using high-quality selected ABS safety materials,
The surface is smooth and durable.



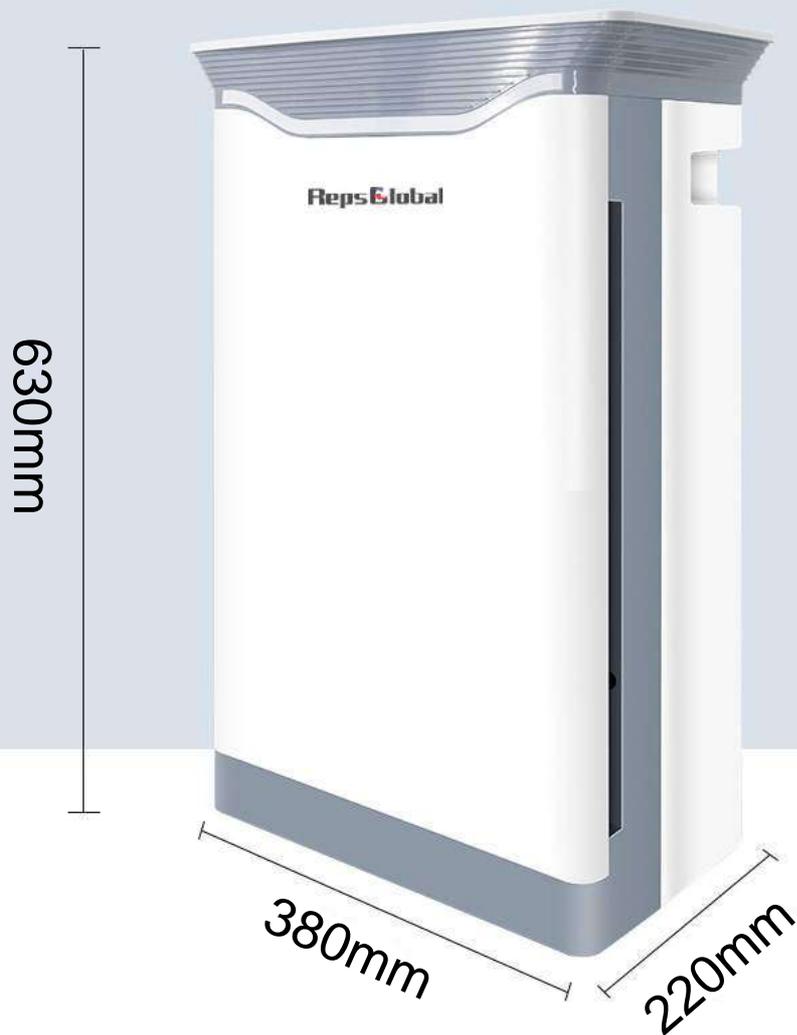


Pure copper motor, high-speed operation

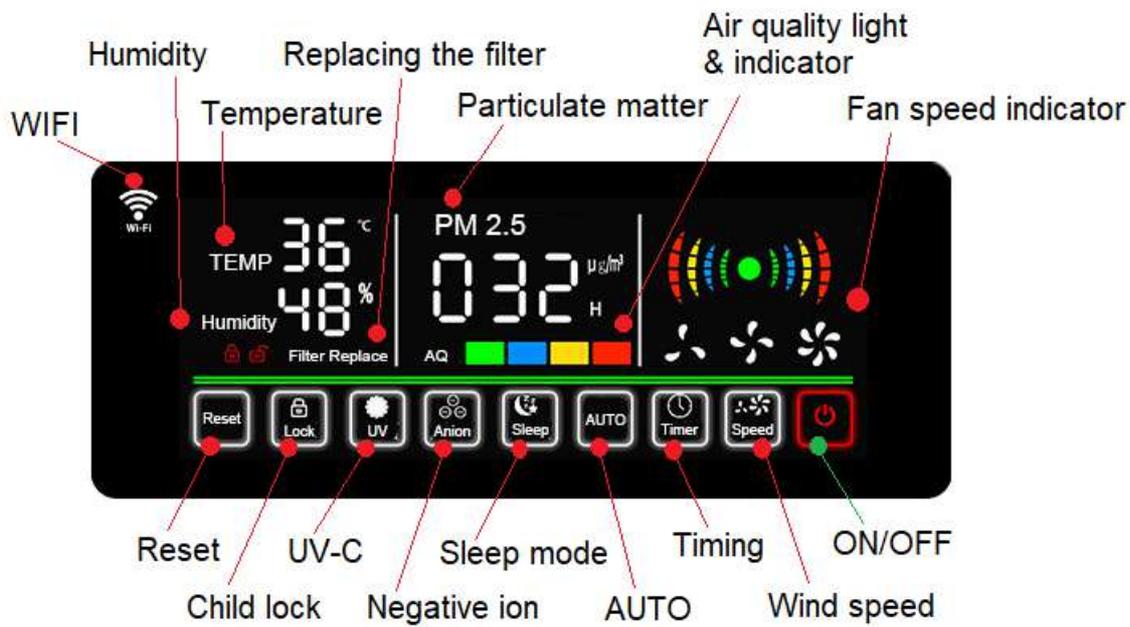
Safe and reliable, large starting rotation distance,
stable operation, low noise, temperature
Raises low and has a long service life.



PRODUCT PARAMETERS



Intelligent operation Multi function panel





*Intelligent household
Air purifier*

///

AIR PURIFIER



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