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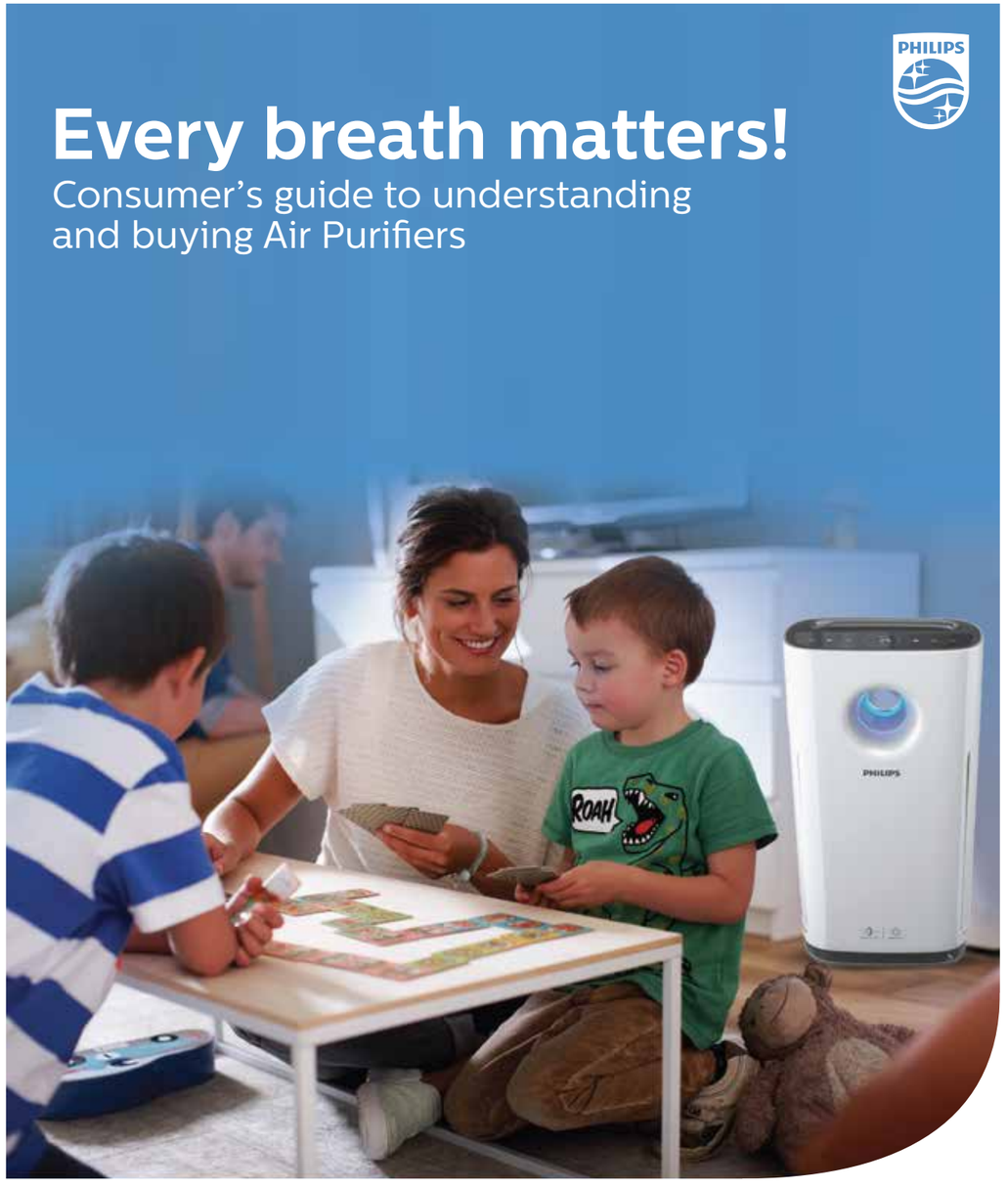
Every breath matters!

Consumer’s guide to understanding and buying Air Purifiers



PHILIPS

Indoor Air Quality

People encounter air pollutants not just outdoors but also at homes and their work places. It is critical to understand the potential hazards and minimize their impact. Philips brings this guide for you to understand the risk of indoor air pollution and how you can protect yourself and your loved ones from this invisible threat.

contents

Clearing the air for healthier homes

Is your home and family at risk?

We take **24,000** breaths a day & breathe in roughly **13-14 kgs of air**, which is **7 times**[1] more air than the food we eat or the water we drink, yet the air we breathe is taken for granted. Though occasional hazards like smog and visible air pollution catches our attention, the issue of everyday indoor air quality often goes unnoticed - especially indoors at our homes or place of work. Few realize that indoor air can be **2-5 times**[2] more polluted than outdoor air.

Also, today's energy-efficient homes tend to be air tight, staying warm during the winter and cool during the summer. Unfortunately, the house isn't allowed to breathe and open windows are not always a good option. Hence Air Purifiers are designed to ensure that we breathe cleaner, healthier air indoors.

[1] Source: US EPA (Environmental Protection Agency)

[2] Extracted from World Health Organisation statistics

Sources of Indoor Air Pollution

Bacteria and viruses can cause infections and worsen allergies.

Pet dander can cause allergies leading to rhinitis or asthma.

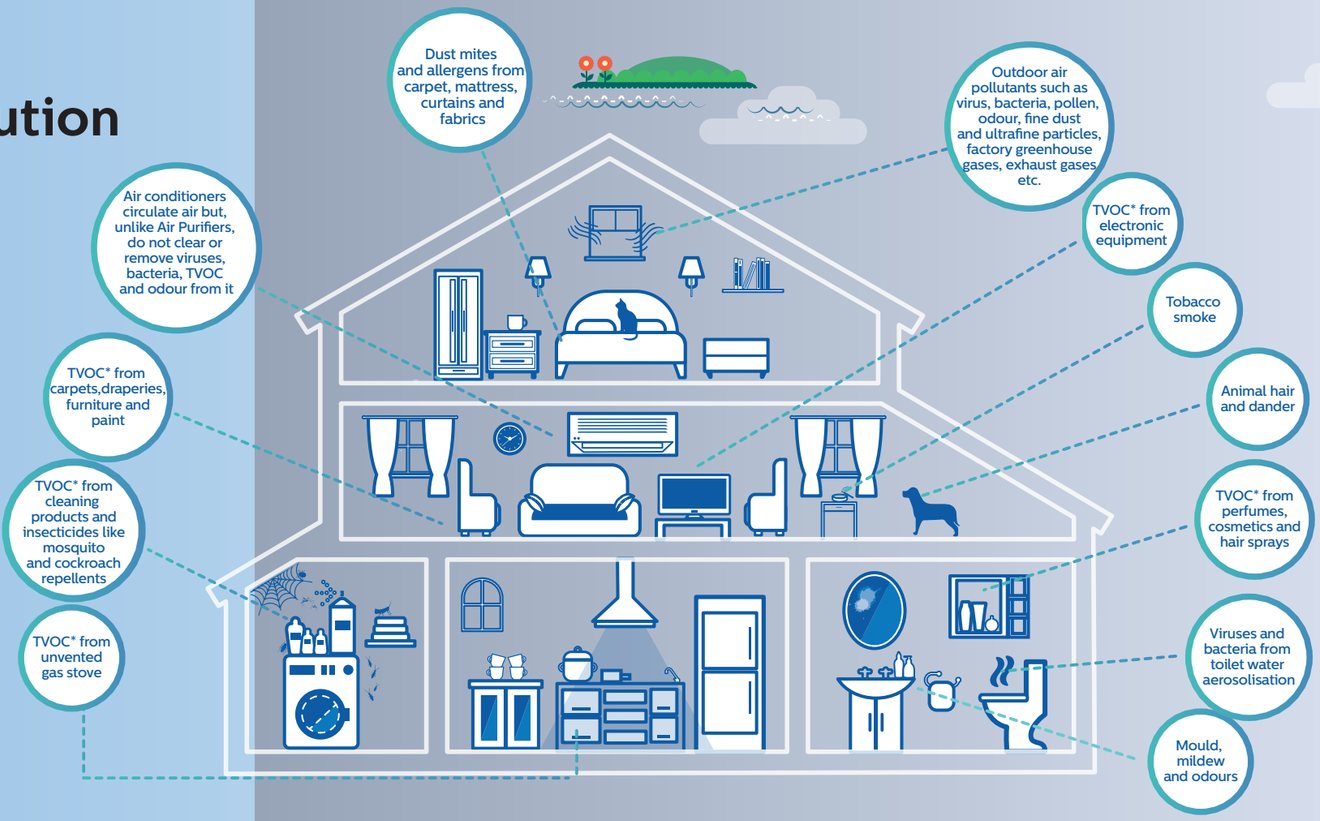
Dust mites can be found on bedding in homes & can trigger asthma. Highly humid areas are more susceptible to dust mites.

Moulds can cause irritation and allergic reactions in sensitive people.

Pollen are released by trees, weeds and plants and are carried indoors by wind, on clothes, or through open windows. It can trigger allergy symptoms.

Cigarette smoke and **cooking fumes** can cause respiratory problems including asthma.

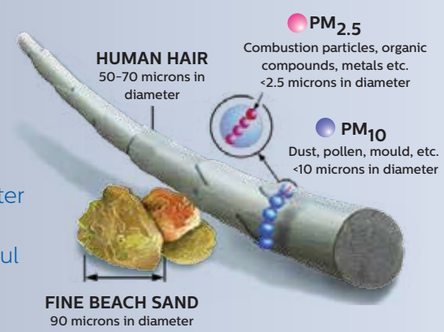
Paint fumes contain formaldehyde which is a harmful chemical. Prolonged or high exposure to paint and paint fumes can cause headaches, trigger allergies and asthmatic reactions, irritate skin, e and airways. There is a significant association between formaldehyde exposure and childhood asthma.



What invisible air pollutants are lurking in your home?

Particles of diameter 2.5 microns, commonly referred to as PM 2.5 are dangerous as they can penetrate the lungs and cause health problems. The larger (PM 10) particles are generally captured by nose hair and cause coughing and sneezing.

Ultrafine particles (UFPs) are particulate matter of diameter 0.1 micrometer size (25 times smaller than PM 2.5) and are the most harmful of all. Very few Air Purifiers today have the capability of filtering UFPs effectively.



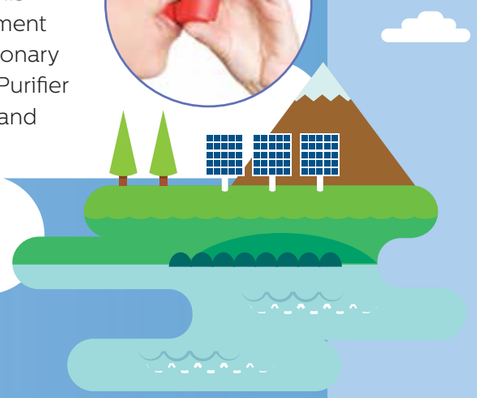
*Total volatile Organic Compound

Why should I buy an Air Purifier?

Air Purifiers are easily one of the best ways you can improve your indoor air quality and create a healthier living space for you and your family. Although Air Purifiers should be a part of every house, they are a must for people who find themselves in any one of the below situations:

Allergies - Air pollutants like pollen, dust, dust mites, moulds, tobacco smoke, pet dander and VOCs emitted by synthetic carpets, fresh paint, plastic and glues can cause allergies and can lead to itchy e , coughing, sneezing and runny nose. Air Purifiers can rid the air of all these particles and can lower the risk of allergies.

Asthma - India has 20-28 million asthmatics, with a prevalence of 10-15% amongst children aged 5-11 years.[2] Long term exposure to PM 2.5 can trigger pulmonary oxidative stress and inflammation. This damage is associated with the primary development of asthma and COPD (Chronic Obstructive Pulmonary Disorder). If you have asthma symptoms, an Air Purifier will help you breathe better by trapping PM 2.5 and a vast majority of other air pollutants.

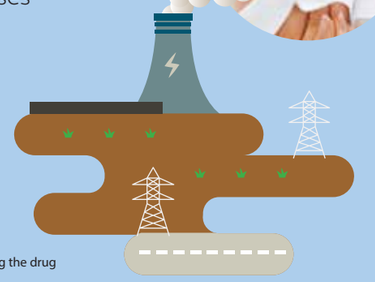


People with babies and kids - Infants have underdeveloped immune systems, making them particularly susceptible to air borne pollutants. Babies crawling on the floor inhale pollution equivalent of four cigarettes a day, the result of dust from carpets, dust mites and moulds[1].

Pregnant women - A recent study shows that PM 2.5 can increase the risk of low birth weight (LBW) babies, pre-term birth (PTB) so it's important that effective measures are taken to reduce PM 2.5 exposure around pregnant women and babies.

People with pets - If you have a pet and you or someone in your home is allergic to it, an Air Purifier can help. People are generally allergic to the pet dander of cats and dogs. Air Purifiers help reduce the amount of pet fur floating in the air, which keeps your home cleaner.

People with homes/offices in high dust/construction areas/roads - Construction sites are full of contaminants from the construction materials therein, high levels of dust is generated from concrete, cement, wood, stone, silica, vehicular emission and can be classified as PM 10 which causes various health issues.



1 Scientific America
2 Gaude GS, Hattiholi J, Chaudhary A. Role of Health education and self-action plan in improving the drug compliance in bronchial asthma J Family Med Prim Care. 2014 Jan;3(1):33-8.

What to look for when buying an Air Purifier?

1. Technology

a. Filter based-

- ❑ **HEPA** (**High Effciency Particulate Arrestant**) — Traps ultrafine particles including some viruses.
- ❑ **Activated Carbon Filter** — Removes harmful gases such as formaldehyde, toluene and TVOCs. Removes gas-based odour.
- ❑ **Pre-Filter** — Traps big particles such as hair and dust.

b. Ionization- This process produces negatively charged particles which attract allergens and other airborne particles, which are positively charged. The newly-formed larger particles are then able to fall harmlessly to the ground, and out of the air we breathe. Even the best ionizers produce a small amount of **Ozone**, which is harmful and can lead to chest pain, shortness of breath, worsening of asthma & decreased immunity.

c. Ozone Generators- Ozone generators are sometimes sold as room Air Purifiers. They produce a significant amount of **Ozone**, a strong oxidant gas which can lead to chest pain, shortness of breath, worsening of asthma & decreased immunity.

d. UV filter/ UV sterilization- When the pollutants pass through the purifier, they are exposed to the UV radiation released by the light, and as a result, bacteria, mould, and viruses are killed. It is safe only in closed environment devoid of human presence.

e. Photo Catalytic Oxidation- PCO produces hydroxyl radicals capable of breaking down smaller particles, chemicals, and odours. These particles become either CO_2 or water vapour.

***Air Purifiers which produce Ozone as their main product/by-product are strictly not recommended.[1] Filtration technology which is ozone free and uses HEPA and Activated Carbon Filters is more effective and widely used option. HEPA filter based Air Purifiers are the only type of Air Purifiers which meet specific EPA standards for efficacy[2] and safety.**

1. US Environmental Protection Agency
2. http://learn.allergyandair.com/ozone-generators/

2. CADR

Clean Air Delivery Rate (CADR) is a measure of purified air being delivered (meter cube per hour), by an Air Purifier operating at it's highest speed setting. The CADR is a measurement that combines both the amount of airflow and particle removal efficiency. AHAM certified models are marked with CADR rating. Simply put, higher the CADR, better the air purification performance for a given room size.

3. Area Coverage

Air Purifiers can be heavy and bulky, with some requiring a few feet of clearance on all sides. Be sure to measure your available space and allow for all space considerations before you buy. Consumer Reports recommend that you purchase a model with more square-footage capacity than you need, so that you can run the machine effectively on its (quieter) "low" setting resulting in less noise and less energy consumption.
If you're planning to use an Air Purifier in your bedroom, for instance, you'll want to choose a model with a noise level that you can tolerate while sleeping. In living spaces, choose an Air Purifier with adjustable speed settings so you can turn it up to a higher setting when you're not in the room to be disturbed by the noise.

4. Type of filters

Filters are the heart of an Air Purifier and it is very important that your Air Purifier has the best filters. Your Air Purifier should definitely come with a TRUE HEPA filter. A TRUE HEPA removes 99.97% of particles that have a size of 0.02 microns. Filters that claim to be 'HEPA-type', 'HEPA-like', 'HEPA-style' or '99% HEPA' do not have the same efficiency as TRUE HEPA. Also, a washable pre-filter is a must as it keeps other high cost filters (HEPA and Activated Carbon) from getting contaminated and increases their life span.

5. Indoor Air Quality Indicator

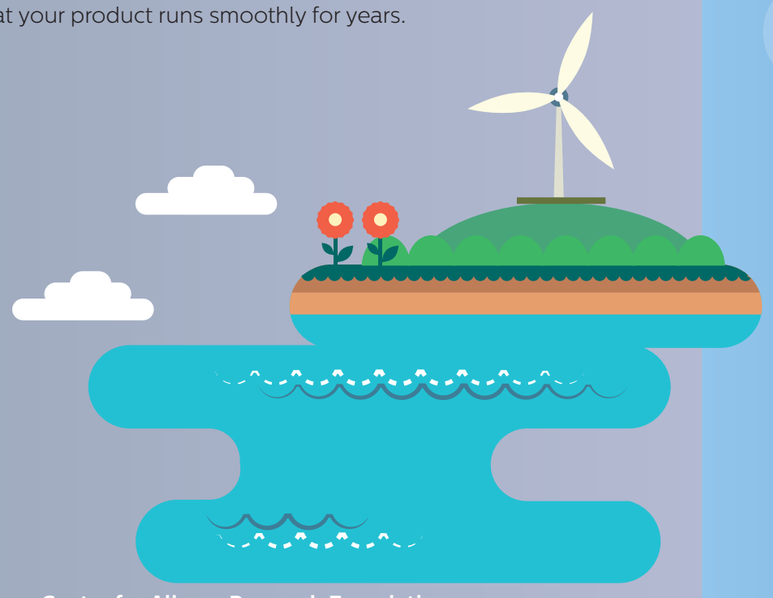
A light indicator changes color in response to the indoor air quality, so that you can adjust the fan speed accordingly. A higher-end Air Purifier is usually equipped with an **Auto Mode** function, which would adjust the speed setting in response to the indoor air quality automatically. Some newer models are also available in the market with numerical **PM 2.5** display. These help you measure and see exactly how bad the air is.

6. Filter Replacement & Customer Service

A filter needs to be changed usually after every 12-18 months, so the filters should be readily available. One should always look out for pre and post sale demonstration / installation service option provided by the manufacturer.

7. Warranty

As Air Purifier is a costly product and a longer period warranty coverage is beneficial so that you do not face any issues and can be asssured that your product runs smoothly for years.



*ECARF - European Centre for Allergy Research Foundation.

8. Individual Situation

For people suffering from Asthma - Air Purifiers with true HEPA filters are excellent in removing asthma triggers . Also, Ozone based purifiers should be strictly avoided as ozone released from them is harmful for us.

People who are prone to allergies - Air Purifiers are effective for helping relieve year-round allergies, including allergies from pollen and dust. Models that feature HEPA filter technology trap nearly 100% of allergens smaller than the human eye can see. **ECARF*** certified models should be the preferred choice.

Construction Area - A pre-filter is a must for people residing in construction areas as there is a lot of dust. HEPA filter helps in removing pollution arising from vehicular emission.

Factory area/area with issue of gases with smell - Activated Carbon filter is a must as it can absorb those harmful gases on it's surface. Be sure to check the filter before purchasing.

People with pets at home - Activated carbon filters absorb pet odours and produce fresh-smelling, healthy air throughout your home. Pre-filter traps the hair and dander.

Families with - Young children at home, patients of lower immunity, transplant patients, dialysis & cancer patients, people who want a healthy lifestyle.

Frequently asked questions

1. The air outdoor is so polluted, how much of a difference can an indoor Air Purifier make?

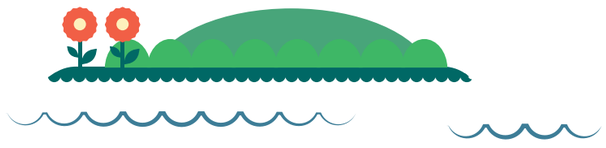
On an average we spend close to 80% of our time indoors (home, office, etc.), children and babies spend even more time indoors. With an Air Purifier, you can control the quality of air indoors and protect your family, and it is indoor air which is more polluted than outdoor air as per data sources.

2. Breathing clean healthier air indoors will make me more vulnerable to diseases or reduce my immunity when I breathe the outside polluted air ?

Actually, it is the average exposure during the day that is most important for your health. The World Health Organization defines their guidelines for air pollution levels based on the 24-hour average value. By breathing clean healthier air inside you can reduce your daily average exposure level and do the best to protect your health.

3. Does my Air Conditioner not act as an Air Purifier?

1. Purification is dependent on the quality of the filters. Air Purifiers have very high quality HEPA filters which naturally catch very small dust particles, most bacteria and even some viruses. ACs with purification system do not have such advanced filters and rely on chemicals to kill bacteria and viruses, producing Ozone which in turn can also be harmful.
2. ACs cannot be run through the year, but you need pure air throughout the year. Even in summers, the electricity cost of running an AC is much more than running a 40-50W Air Purifier.



FAQs

4. Can you run the Air Purifier throughout the day?

, you can. The power consumption is very low, so long usage doesn't cause a heavy impact on electricity bill. As compared to an AC which consumes 2000W power, an Air Purifier consumes 1/40th of it (~50 W). So power consumption per hour of an AC is equivalent to 40 hours of power consumption by an Air Purifier. The filter life is dependent on usage/quality of air and that should be kept in mind.

5. How long do the filters last?

Filter life is proportional to the pollutant holding capacity and the pollution level in your surroundings. TRUE HEPA filter has high capacity, thus the long filter life. A filter will last longer in a relatively cleaner area. In general, filters last for 12-18 months with 6-8 hours daily average usage.

6. A lot of Air Purifiers produce ozone as the main element or as a by-product. Should I be concerned?

One should be careful while buying Air Purifiers which release ozone, since ozone may cause serious health issues like permanent lung damage or aggravate asthma. Ozone reacts with organic matter both outside and inside the body, resulting in harmful health consequences[1]. As a result they are not recommended by the US Environmental Protection Agency.

1. United States Environmental Protection Agency

7. Does CADR vary with fan speed?

CADR is specified for the highest speed setting. But users will often use lower settings to reduce noise, and this can reduce the efficiency of an Air Purifier.

8. What should be the required CADR for my room?

AHAM recommends a "two thirds" rule when it comes to the first rating: "You'll always want a unit with a tobacco smoke CADR at least two third your room's area. Example if your room is 420 Square feet in area, buy an Air Purifier with atleast a CADR of 2/3*420= 280 m^3/h.

9. Many Air Purifiers have a HEPA filter. How to differentiate?

There are a lot of Air Purifiers out there which are advertised as having HEPA filters, but actually don't. Usually these are disguised as having HEPA-like filters, and don't meet strict HEPA standards.

10. What other features may I look into before buying an Air Purifier?

Features like caster wheels, handles for easy mobility, digital controls, remote controls, timer settings, multiple fan speeds may be additional features which one can look for while buying Air Purifiers.

11. What are the differences between an Air Purifier and Humidifier?

Air Purifiers are used to clean indoor air, but do not optimize humidity levels. They remove particles, dust, and smoke from the air, as well as allergic substances like animal dander and pollen. Humidifiers increase the humidity level by distributing water into dry air.

*ECARF - European Centre for Allergy Research Foundation.

FAQs

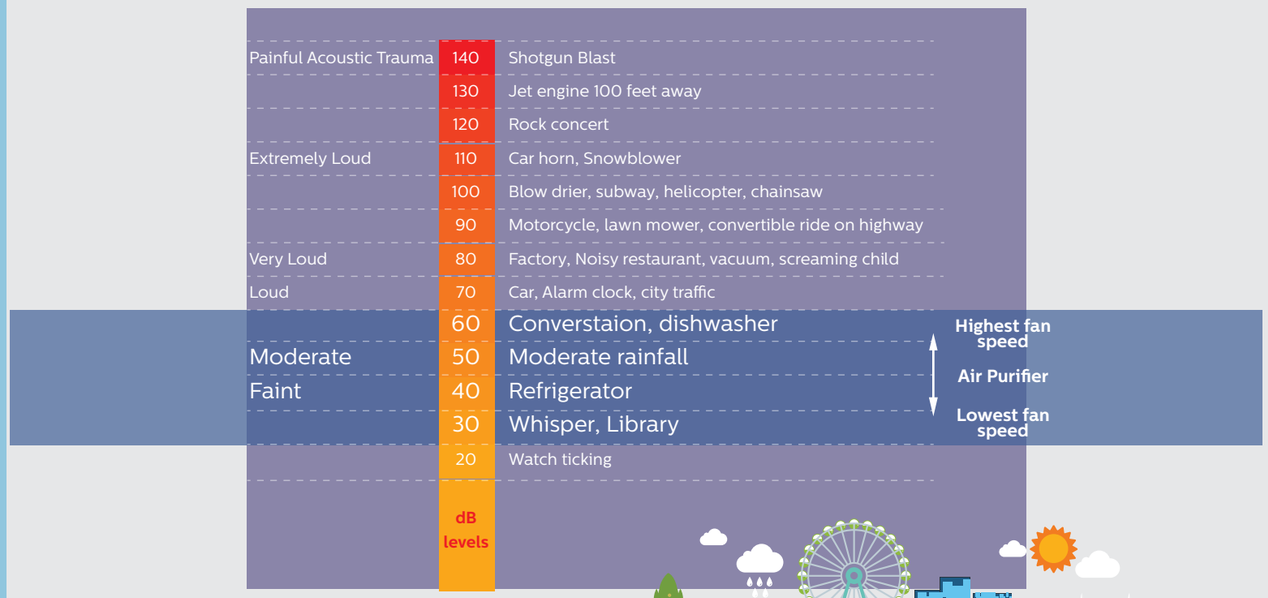
12. I want cleaner air, so I will need an Air Purifier However, I am still not sure if I should get a humidifier.

Dry air may cause chapped skin, contribute to respiratory problems, increase static electricity, and cause wooden furniture to crack. Humidifiers help to optimize the humidity level of indoor air to reduce the level of dryness in the air within your home.

13. I want the benefits of a humidifier, but my house does not have space for both appliances.

You may consider a 2-in-1 solution commonly known as a Combi; such an appliance combines the functions of an Air Purifier and a humidifier.

14. How much noise does the Air Purifier make?



[1]United States Environmental Protection Agency

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Why **Philips Air Purifier?**

AeraSense™

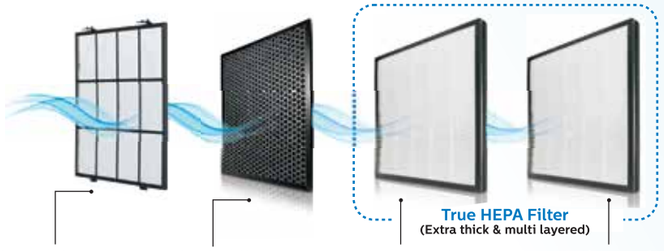
Real time PM2.5 measurement and display with professional-grade air quality sensing technology

VitaShield IPS™

Removes 99.97% allergens and ultrafine particles as small as 0.02 microns, over 100 times smaller than PM 2.5 with 100% natural & ozone-free filtration

All New **NanoProtect™ S3 Filters**

Advanced Purification system with 3 filters



Special Pre-Filter
Filters dust, pollen, dust mites, hair and other large particles

Activated Carbon Filter
Removes bad odours, gases & TVOCs with an unfolded absorption area of about 20 football courts

HEPA Layer 1
Anti-bacterial layer with German technology

True HEPA Filter
(Extra thick & multi layered)

HEPA Layer 2
Removes upto 0.02 micron fine particles like H1N1, PM2.5, dust mites, pet dander

100% OZONE FREE — Natural filtration with NO harmful chemicals and NO Ozone[3] released

Trusted & Certified by Globally Accredited Organizations

INDIA HEALTH & WELLNESS SUMMIT AND AWARDS
3rd Annual Edition
Health Brand of the Year | Air
Gold Award

HOME SERVICE
Strong Service Network (Pre & Post Sale Demo + Installation)

Different models to suit everyone's needs

Range starts at ₹11,995 only

Model Specifications

Model	AC 1215	AC 2882	AC 2887	AC 3256
Area Covered (in sq.ft.)	677	851	851	1027
CADR | Clean Air Delivery Rate (m^3/h)	270	333	333	397
AeraSense™ | Real-time PM2.5 Measurement & Display	-	-	✓	✓
Effective Filtration Size (in microns)	>= 0.02	>= 0.02	>= 0.02	>= 0.02
Effective Filtration Efficiency (for 0.3+ microns)	99.97%	99.97%	99.97%	99.97%
Sensor Touch User Interface Panel	✓	✓	✓	✓
Allergen Mode (Automatic)	✓	✓	✓	✓
Pollution Mode (Automatic)	-	✓	✓	-
Bacteria & Virus Mode (Automatic)	-	✓	✓	-
Ionization / Ion Generation Technology	✗	✗	✗	✗
Ozone Generation	100% Ozone Free	100% Ozone Free	100% Ozone Free	100% Ozone Free
Multi-color Air Quality Indicator (4-color)	✓	✓	✓	✓
VitaShield IPS™ Technology (Intelligent Purification System)	✓	✓	✓	✓
Fan Speeds	3 step with Turbo Mode	3 step with Turbo Mode	3 step with Turbo Mode	5 step with Turbo Mode
Timer (in hours)	-	-	12 hrs	24 hours
Child Lock	✓	-	-	✓
Number of Filters	3 Filters	3 Filters	3 Filters	3 Filters
TRUE HEPA Filter	NanoProtect™ TRUE HEPA Filter	NanoProtect™ TRUE HEPA Filter	NanoProtect™ TRUE HEPA Filter	NanoProtect™ TRUE HEPA Filter
Filter Change Indicator (Air Protect Alert)	✓	✓	✓	✓
Noise Level (in decibels)	33 db	20.5 db	20.5 db	33 db
Auto Mode (Completely Automatic Operation)	✓	✓	✓	✓
Extra-silent Sleep Mode	✓	✓	✓	✓
Power Consumpation (max. in watts)	50 W	56 W	56 W	60 W
ECARF Certified	✓	✓	✓	✓
AHAM Certified	✓	✓	✓	✓
AIRMID Certified (and tested for H1N1 Virus)	✓	✓	✓	✓
Warranty (in years)	2 years INTL.	2 years INTL.	2 years INTL.	2 years INTL.