



Bulldair Performance Book

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Contrary to the widespread idea that naturally attributes any discovery to the emergence of a brilliant intuition: "Eureka!", it took several years of research, reflection and development for Air Natural to establish itself as a leader on the French market.

"We spend between 80 and 90% of our time in confined atmospheres." Based on this observation, in 2006, Air Natural has developed a range of products to improve the quality of indoor air, combining design, ease of use and the most efficient technologies.

We offer multiple solutions, that are aimed at everyone in the family from the youngest to the oldest and suitable for all environments: houses, apartments, offices and cars.

Since then, Air Naturel defines itself in one sentence: "**healthy air at home**"



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Buldair

Product Description

Buldair is a small and practical air purifier (lacquered black finish) that will elegantly take care of your indoor air.

Suitable for rooms up to 15 square meters, it boasts a EPA + active carbon particle filter, and an ionizer. The activated carbon filters pollens and dusts present in the air. It can either be plugged into a 220 V socket or on the USB port of your computer. With its integrated receptacle, you can put essential oils.

Field of Application

Ideal for small apartments, studios, office, kitchen, hallway or bathroom Buldair is very suitable for small living rooms or bedrooms.

Quality and Safety

Buldair is a mini air purifier which features technologies such as activated carbon, 11 EPA particles filter and negative ionization. Clearly, it effectively fights against particles, bacteria with a diameter bigger than 0.3 microns :

- Pollens
- Dust
- Saliva
- Hairs
- Mites and Dust Mites
- Odors (Humidity, tobacco, etc)



Fragrance diffusion



3 watts



Suitable for rooms up to 15 m²



32 dB max.



21 x 22,5 x 22,5 cm (h x w x d)



0,9 kg

HEPA Filtration

A HEPA filter is an air filter, which stands for High Efficiency Particulate Arresting filter. HEPA is not a brand, but a standard that applies to any device capable of filtering, in one pass, at least 99.97% of particles with a diameter greater than or equal to 0.3 microns.

For the standard HEPA, the filter should have an efficiency of at least 99.97% for particles of 3 microns and 95% for those of 1 micron using a flow rate of 85 liters per minute. The particle size of the order of 0.3 microns being the most difficult to filter¹, it is generally recognized that larger or smaller particles are more easily filtered. Indeed, the greater will be unable to prevent the fibers of the filter due to their inertia and smaller because of the diffusion phenomenon (see Brownian motion)

To sum up :

- Epa E10 : the filter will pass a max. of 15% of 0.1 microns' particles per liter of air
- Epa E11 : the filter will pass a max. of 5% of 0.1 microns' particles per liter of air
- Epa E12 : the filter will pass a max. of 0.5% of 0.1 microns' particles per liter of air
- Hepa H13 : the filter will pass a max. of 0.05% of 0.1 microns' particles per liter of air
- Hepa H14 : the filter will pass a max. of 0.05% of 0.1 microns' particles per liter of air

Ionizer

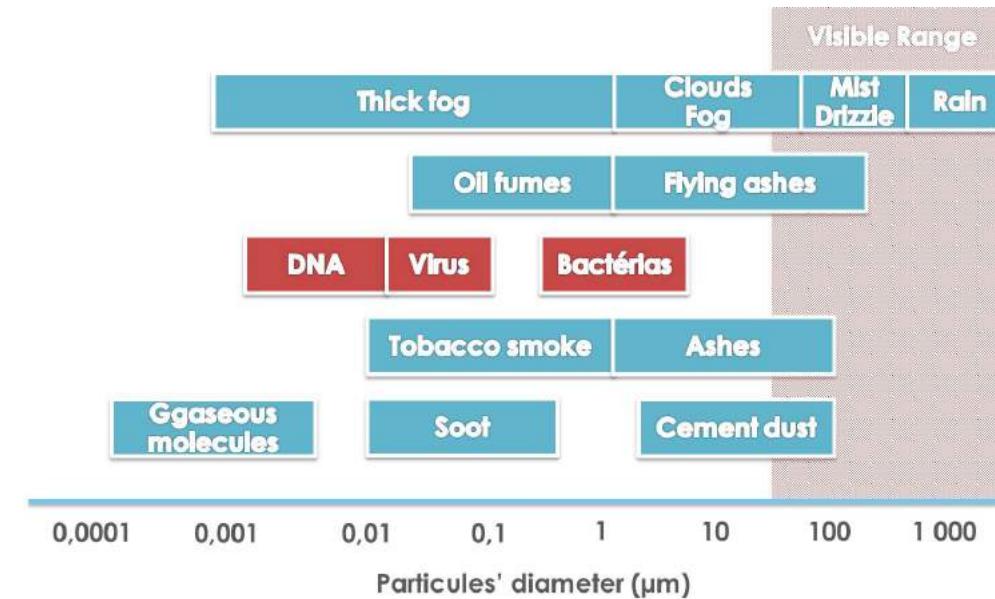
This type of filtration loads the suspended particles by charging it negatively through negative ions. Once loaded, dust, pollen, pet hair and VOCs are more easily retained in the filter.

Active Carbon

The activated carbon is in the form of a light and black powder, consisting essentially of carbonaceous material with a porous structure. It is mainly used to destroy odors, such as kitchen range hoods.

¹ Lloyd, GM, Roe, JA Filtration and humidification. *Probl Respir Care* 1991;4,474-486, via Robert R. Demers, BS, RRT - Bacterial/Viral Filtration

Table of particulate contaminants



Focus on micro-particles

Microparticles are very fine particles with a diameters' rang between 0.1 and 100µm. Depending on their size, they are more harmful to human health:

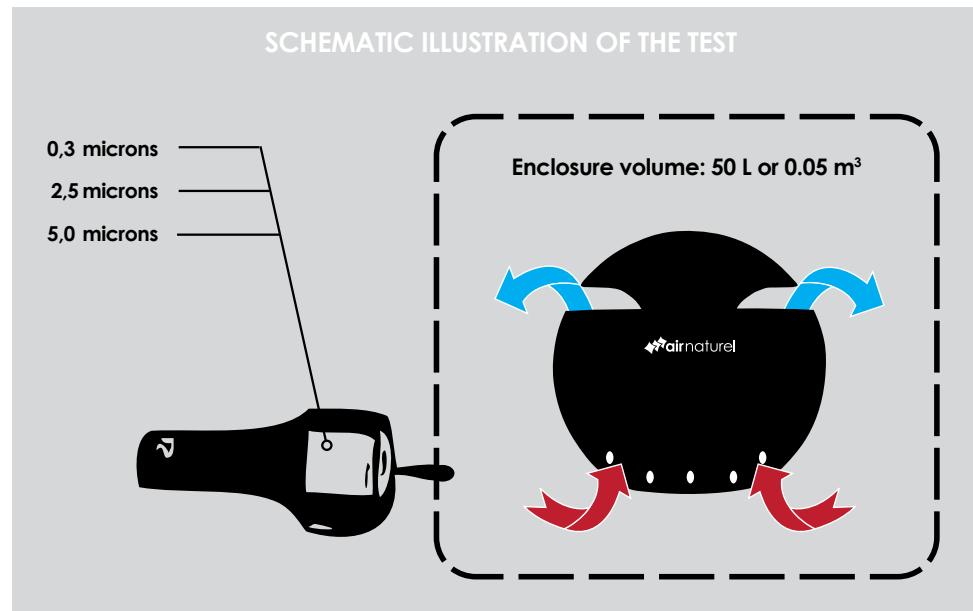
- $\varnothing > 10$ microns: retained by the upper airways
- PM 10: Penetrate the bronchi
- PM 2,5: Penetrate the alveoli
- PM 1,0: Can pass the alveolar-capillary barrier

Test Process

With the intention to test the effectiveness of the purifier Buldair, we conducted a serie of tests with a particle counter (PMT AeroTrak 9303).

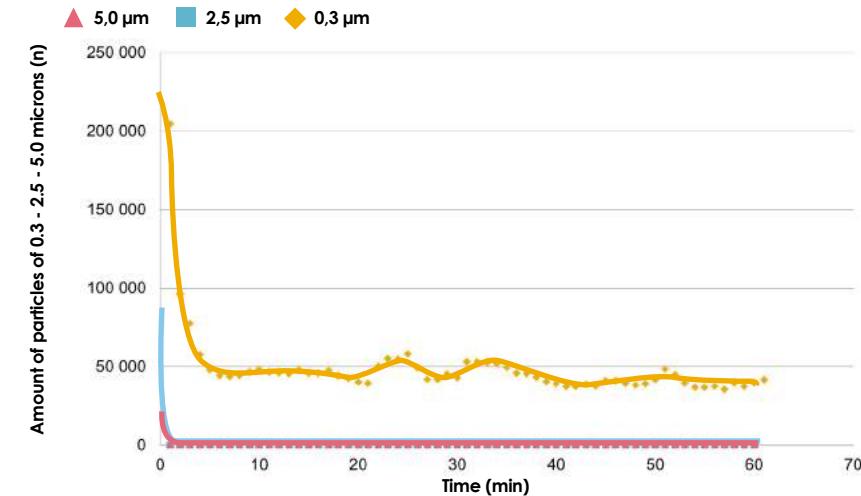
To do this, we installed an air purifier Buldair in a closed area and processed to 60 samples of 8 seconds every 60 seconds. With a certified calibration, three sizes of particles were measured:

- 0,3 microns
- 2,5 microns
- 5,0 microns



Results

Buldair: amount of particles in the air as a function of time



Particle size	Proportion removed
0,3 microns	80%
2,5 microns	99.7%
5,0 microns	99.9%

Conclusion

The test result obtained indicates a notable effectiveness of the purifier on the three sizes of particles identified. Overall, eliminated proportions observed are consistent with the E11 standard filter included. However, a difference of 15% for 0,3 microns' particles is observable. In order to ensure an effective result of 99.95% put forward by the standard filter E11, the seal between the filter and its support must be perfect, which is hardly the case on a device of this size. In addition, because of its small size and low air flow, the air replacement remains lower than a larger device.

In the office, bedroom or any other small room (< 15m²), Buldair takes care of yourself by removing particles in your air. With it's certified EPA 11 filter, this small purifier fight effectively against particles bigger than 0.3 microns diameter.



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