



Biology and Engineering Brochure

MICROBIOLOGY & ENGINEERING DEPARTMENTS

Introducing Airfree® Concept

A natural way to clean your air

Airfree air purifiers take advantage of natural air convection and thermal sterilisation to clean the air from harmful microorganisms and particles.

Unlike the majority of other air purifiers it has no maintenance being totally silent. No expensive filters to replace. No noisy fans necessary as air convection provides the silent air flow.



Airfree® Technology – Natural Air Convection

Inside the patented TSS™ ceramic core are multiple capillaries heated at approximately 200 °C (400° F) that work as mini chimneys where microorganisms are naturally destroyed at high temperatures.

The hot air goes up the capillaries and gets sterilised, generating a negative pressure at the bottom of the capillaries causing contaminated air to be constantly drawn into them in a continuous and silent cycle called air convection.



Airfree® Technology – Natural Air Convection

User-friendly technology

Just like your grandmother used to boil water Airfree® “boils” the air, destroying all microorganisms. Airfree® technology is very safe and easy to use , being exclusively dependent on totally natural processes.



The Process

Thermodynamic Sterilizing System (TSS)

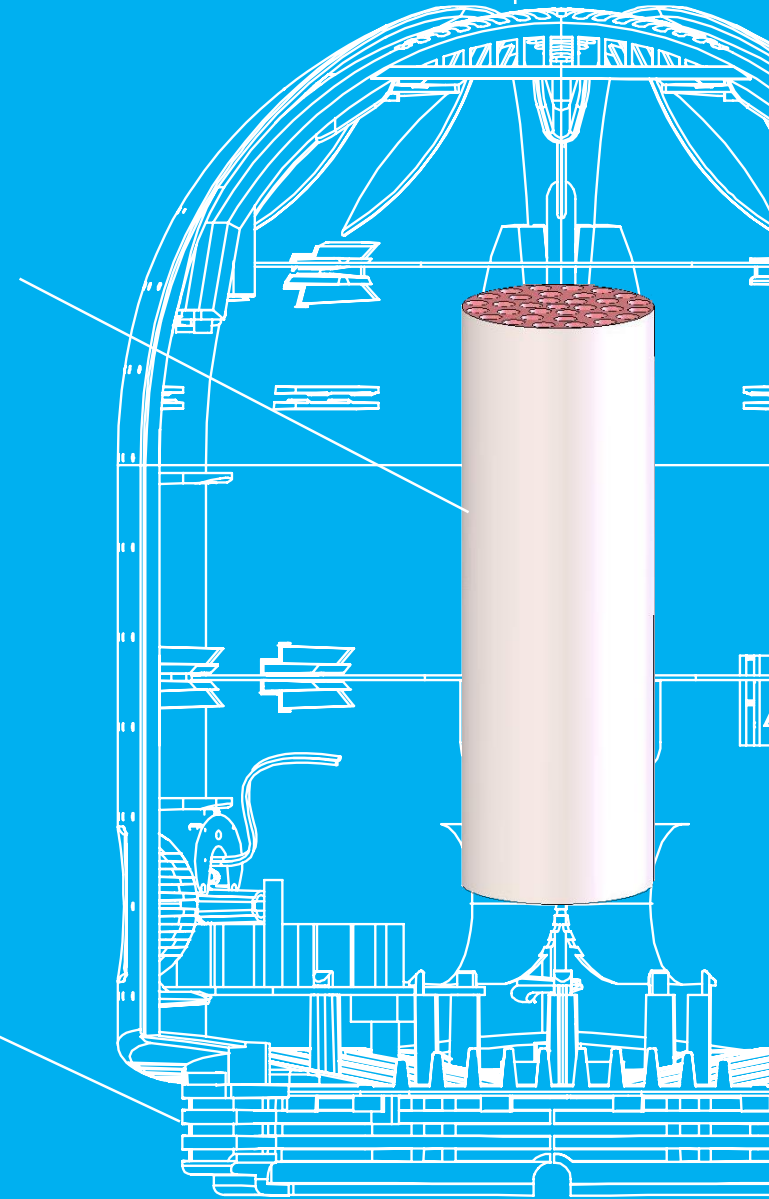
Destroys (not capture) 99.99% of airborne microorganisms.

Airfree TSS ceramic core heat of up to 210 C (410 F) inside the vertical mini ducts exceeds the temperature required to sterilise airborne bio-aerosols containing bacteria, moulds, viruses, pollens, and organic allergens including dust mite Der p1.

Sterilised Air Outlet

The purified air is cooled down and released back into the environment

Contaminated Air Inlet



Airfree® as per many independent tests destroys:



Viruses



Bacteria



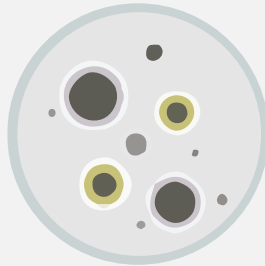
Pollens



Organic Odours



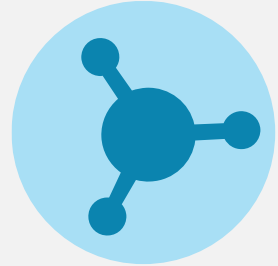
Pet Dander Allergens



Mould and Fungi



**Dust Mites Allergens
like Der P1**



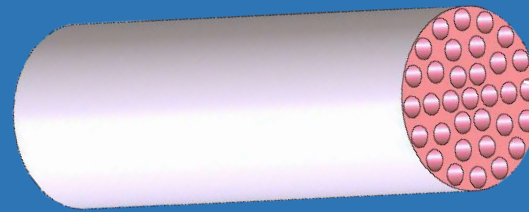
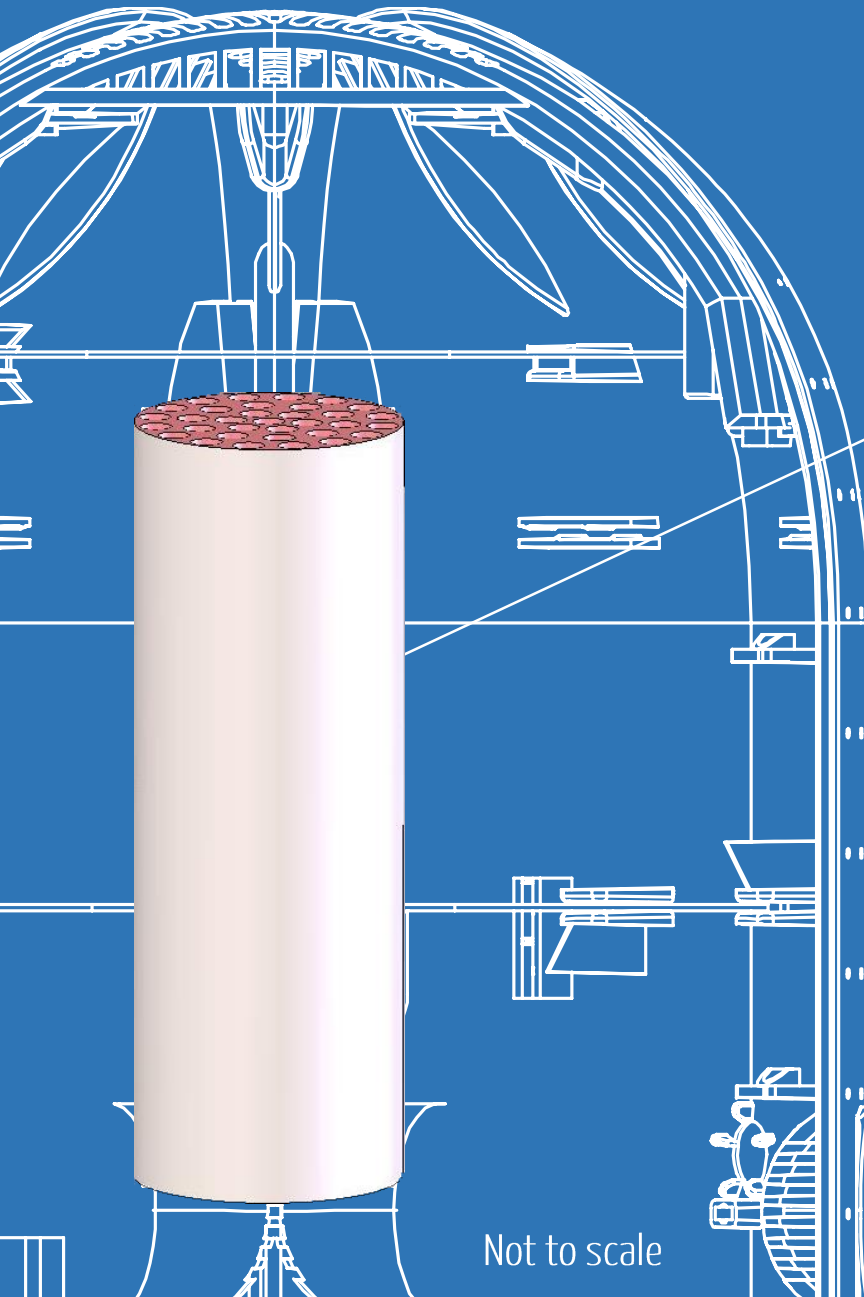
Ozone

How does Airfree® work?

Airfree is not a dust filter therefore, it only requires $14\text{m}^3/\text{h}$ silent air flow generated by natural convection to maintain rooms safe with up to 90% reduction on airborne microorganism contamination levels at the same time it avoids the formation of mould and mildew colonies.



How does Airfree® work?



38 vertical
mini ducts

Air sterilising
mini chambers

Airfree offers 99.99% air sterilisation efficiency at the air outlet for bacteria and moulds.

Contaminated air is drawn into the capillaries by air convection and travels up being sterilised at high temperatures and released to the ambience after being cooled down.

Insect R&D in the UK tests confirm 70.6% destruction of Der P1 the major dust mite allergen.

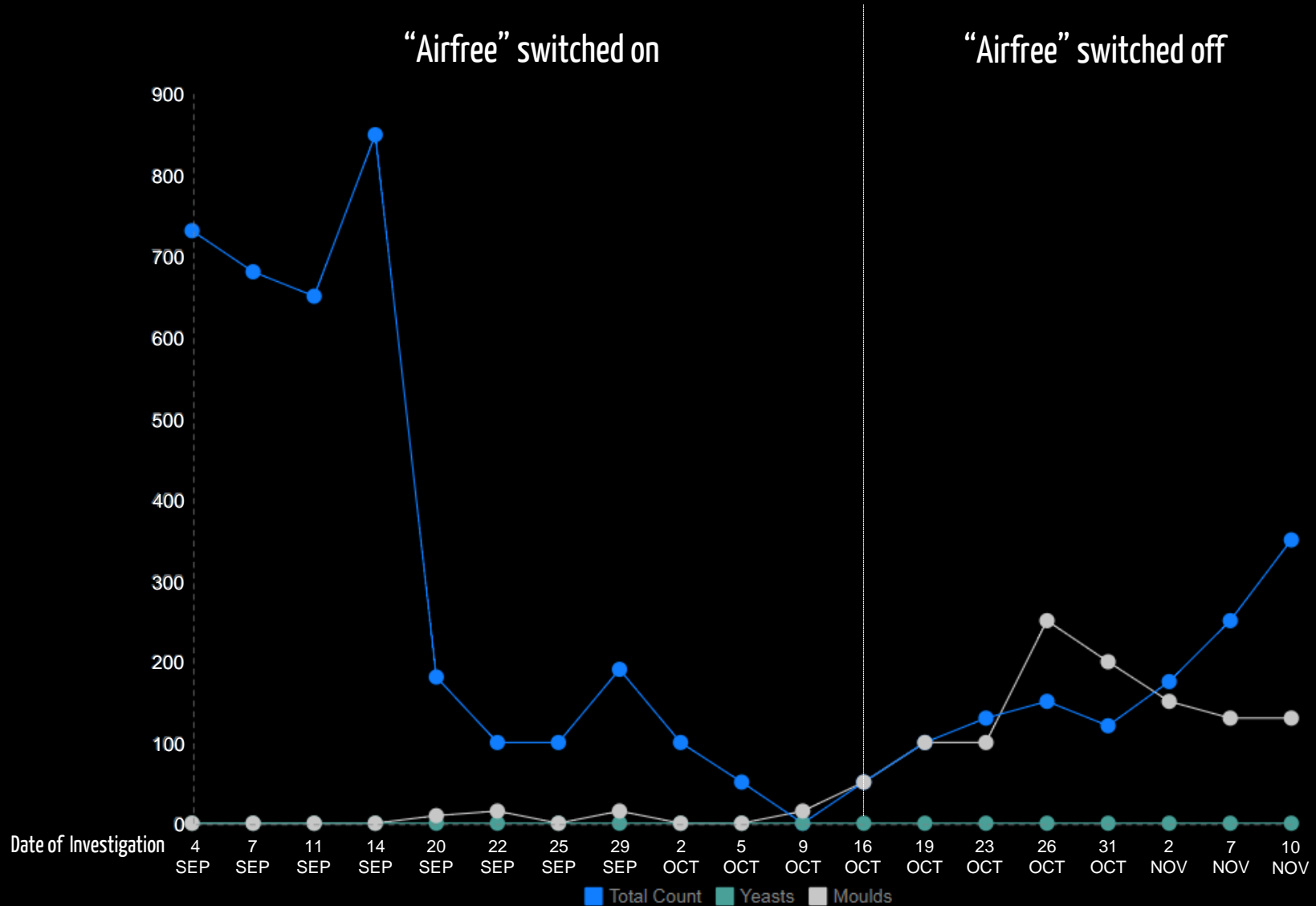
Not to scale

Efficiency

Airfree extraordinary efficiency is duly confirmed on the independent tests performed by accredited entities in a diversity of real working environments, such as offices, hotel rooms, hospital rooms, food processing plants, etc, which are available at (<http://www.airfree.com>).



Does it really work?



SGS Results (Germany)

Graphic shows one office room air contamination decline while Airfree is ON and its increase after being switched off.

Does it really work?

Efficiency tests performed worldwide in real life conditions

Laboratory	Place where test was performed	Country	Test type
EMSL	Laboratory	USA	Fungi (Mould)/Bacteria
Intertek	Laboratory's office	USA	Ozone
Intertek	Laboratory's office	USA	Virus (MS2)
Technical Micronics Control	Laboratory	USA	Fungi (Mould)/Bacteria
SP - Swedish National Testing and Research Institute	Laboratory	Sweden	Ozone Reduction
SP - Swedish National Testing and Research Institute	Laboratory	Sweden	V.O.C
SP - Swedish National Testing and Research Institute	Laboratory	Sweden	Particules
SP - Swedish National Testing and Research Institute	Laboratory	Sweden	Airflow
Barakat Quality Plus (L.L.C.)	Fruit Peeling areas	Dubai	Fungi (Mould) and Bacteria
KIBSONS International LLC	KIBSONS International LLC	Dubai	Fungi (Mould) and Bacteria
Organic Foods&Café	Laboratory	Dubai	Fungi (Mould) and Bacteria
Soto	Livestock farm test	Brazil	Fungi (Mould) and Bacteria
San Juan de Dios Educational Foundation Inc. (Hospital)	San Juan de Dios Educational Foundation Inc. (Hospital)	Philippines	Bacteria
Campana	Campana Laboratory	Brazil	Fungi (Mould)/Bacteria
Ainia Centro Tecnológico – Valencia	Cold Chambre	Spain	Mould and Yeast
Universidad Complutense de Madrid (English)	Laboratory's Office	Spain	Fungi (Mould)/Bacteria
POLICON	Chicken Farm	Portugal	Fungi (Mould)/Bacteria
INETI	D. Estefânia Hospital	Portugal	Fungi (Mould)/Bacteria
INETI	4 Star Hotel	Portugal	Fungi (Mould)/Bacteria
INETI	Portuguese National Library	Portugal	Fungi (Mould)/Bacteria
INETI	Portuguese Bank	Portugal	Fungi (Mould)/Bacteria
INETI	Portuguese National Archives	Portugal	Fungi (Mould)/Bacteria
INETI	8 people office in laboratoty	Portugal	Fungi (Mould)/Bacteria
SGS Natec Institute	Laboratory's Office	Germany	Fungi (Mould) and Yeasts
Insect Research institute UK	Laboratory	UK	Dust Mites Allegen DerP1
INETI	645 sq. Ft. room	Portugal	Mould/Bacteria

Link: www.airfree.uk.com/Scientific-Tests.aspx



What are the advantages of using Airfree® when comparing to other purifiers?



Patented and Environment
Friendly Technology



Requires no
Maintenance



Totally Silent



Reduces Ozone
Does not release ions



Small and Portable



Night Light*



Award-Winning design



2-year Warranty



Low Energy Consumption

* Check the available models

References

- [1] <http://www.airfree.pt/Files/Billeder/AirFree/Testes/Airfree-VInglesa.pdf>
- [2] <http://www.airfree.pt/Files/Billeder/AirFree/Testes/SGS-Natec1.1.pdf>
- [3] <http://www.airfree.pt/Files/Billeder/AirFree/Testes/Intertek%20Test%20report.pdf>
- [4] <http://www.airfree.pt/Files/Billeder/AirFree/Testes/Insect%20Research%20Institute%20UK.pdf>
- [5] http://www.airfree.pt/Files/Billeder/AirFree/Testes/Airfree_Airflow.pdf
- [6] <http://www.airfree.pt/Files/Billeder/AirFree/Testes/SP%20Swedish%20National%20Testing%20and%20Research%20Institute%20Particules.pdf>
- [7] <http://www.airfree.pt/Files/Billeder/AirFree/Testes/SP%20Swedish%20National%20Testing%20and%20Research%20Institute%20Ozone.pdf>
- [8] <http://www.arb.ca.gov/research/indoor/cr-12-2007.pdf>



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