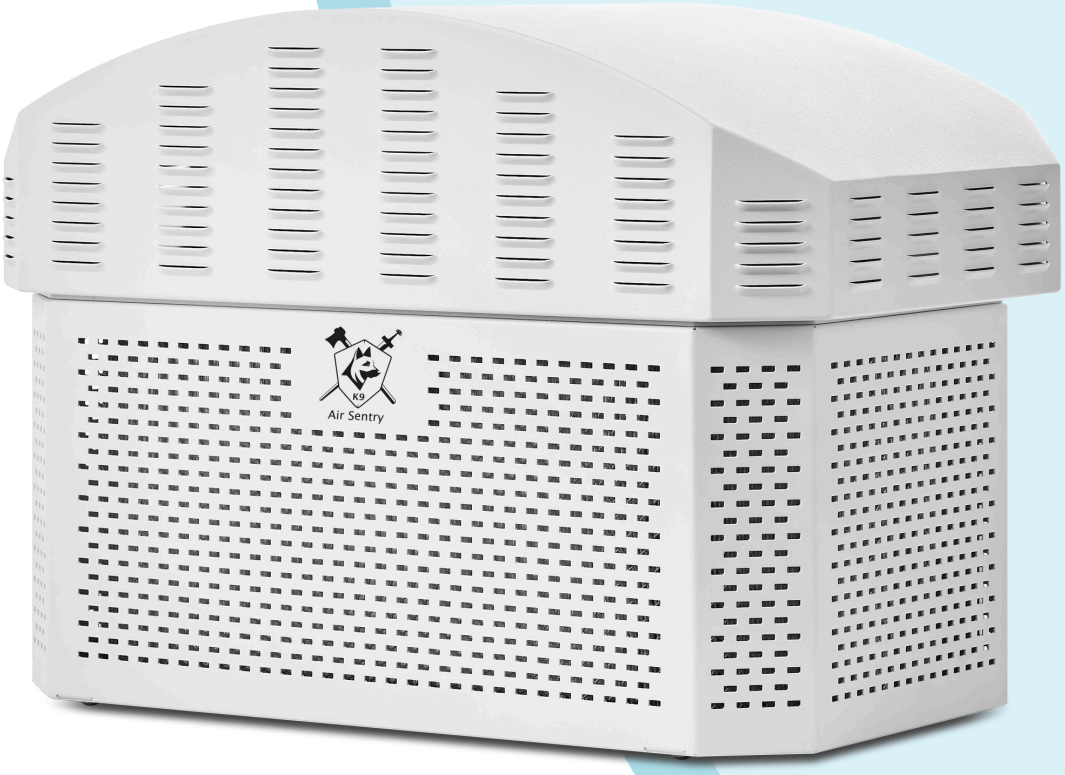
Air Sentry



100% ASSURED REMOVES CORONAVIRUS

Protecting **people,**
Protecting **workplaces,**
Protecting **life.**

Air Purification System

AIRSENTRY.CO.UK/K9

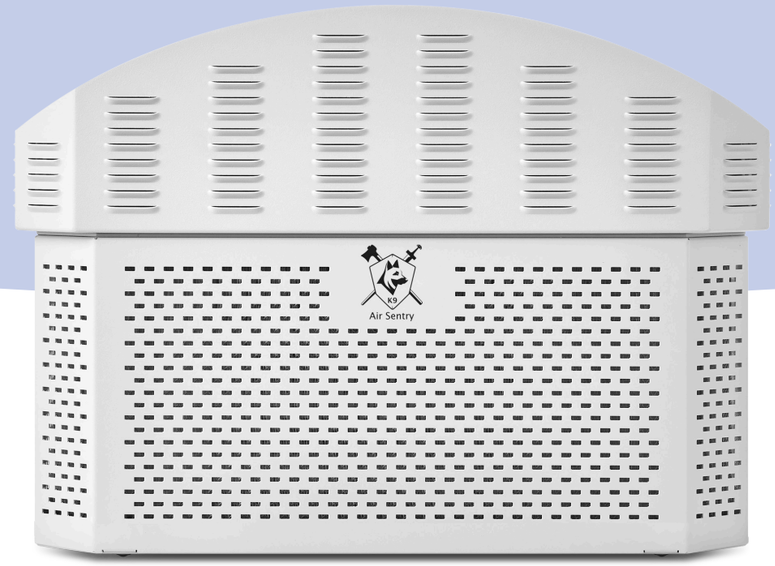


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THE K9 SYSTEM REMOVES 100% OF ALL KNOWN PATHOGENS TRANSPORTED VIA THE AIR, INCLUDING CORONAVIRUS.



WHAT IS K9?

K9® is a British invention. It is an **air purification system** that purifies air to become Ultra Clean®. Ultra Clean air status is required in clinical environments, it is near sterile air quality.

The K9 system is the best air purification system on the market. This is because of its unique design which has evolved from hospital systems.

K9 uses our purpose built EN1822 HEPA14 filter. It produces similar room air change rates to the Air sentry system which produces far better air flow than basic air purifiers or 'scrubbers'.

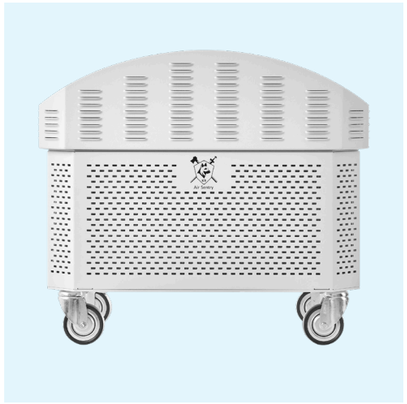
The huge surface area of our K9 filter allows for a filter life of up to 24 months between changes which helps reduce costs significantly.

WITH A DESIGN LIFE OF OVER 25 YEARS, FLEXIBILITY HAS BECOME THE WATCHWORD OF THE K9 SYSTEM.

The K9 unit can protect people in any room and is designed for use in **healthcare, commercial, hospitality and educational settings.**

The unit can be wall mounted easily so it doesn't obstruct the room flow. It can simply sit on top of an existing piece of furniture. Mobile units have wheels which make them easy to transport to their desired location.









ABOUT US

Air Sentry was founded in 2000 by Andrew Carnegie with the goal of protecting staff and patients from air transmitted or transported diseases and pollutants.

Initially developed with the support of Newham NHS trust, Ealing NHS trust London and the Royal Belfast Hospital for Sick Children, Air Sentry has evolved into being a full hospital orientated system used across most NHS clinical areas.

K9 builds on this expertise to offer a high end HEPA solution for use in commercial, education, hospitality, GP clinics and Dental clinics. The K9 unit has been developed to be a more affordable solution but does not compromise on innovation and quality.

Currently deployed in NHS and private hospitals across the UK; Air Sentry® provides unparalleled protection in clinical environments with a high risk of pathogens, such as hospital wards, intensive care, operating theatres and covid wards.

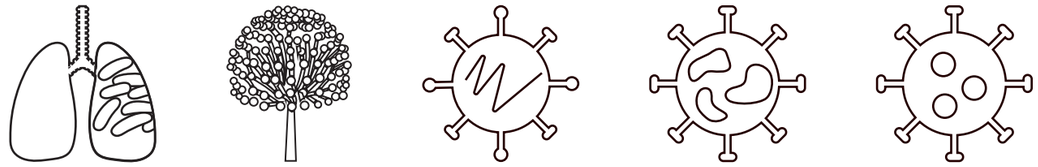
Air purification, using air dilution, has always been a requirement of clinical environments. However, now that we are living with Sars-cov 2 (coronavirus) air purification is now a critical tool in everyday life. Air purification is an essential part of health and safety planning in commercial, hospitality and education settings.

K9 has been developed to cater to these settings. It is an affordable, flexible, air purifying system that houses an impressive and purpose designed HEPA 14 cartridge filter, effective against all airborne pathogens, including coronavirus.

TECHNICAL SPECIFICATIONS

Description	K9 Fixed	Mobile	K9 - BMS
Size (mm)	590(l)x390(w)x420(h)	590(l)x390(w)x495(h)	590(l)x390(w)x420(h)
Casing	Steel - powder coated	Steel - powder coated	Steel - powder coated
Weight	25kg	27.2kg	17kg
Air Inlet	300 degrees	300 degrees	300 degrees
Air Outlet	285 degrees	285 degrees	285 degrees
Pre Filter Inlet Port	Yes	Yes	Yes
Post Filter Inlet Port	Yes	Yes	Yes
Power	30-150W	30-150W	30-150W
Frequency	50Hz	50Hz	50Hz
Voltage	230V / 110V	230V / 110V	230V / 110V
Motor	Reverse curve continuous	Reverse curve continuous	Reverse curve continuous
Max Fan Flow 230/110	1400m3/Hr	1400m3/Hr	1400m3/Hr
Total Air Change Rate Equivalent	2800M3/Hr / 2400M3/Hr	2800M3/Hr / 2400M3/Hr	2800M3/Hr / 2400M3/Hr
Max fan flow with module(s)	Modules only available for Air Sentry	Modules only available for Air Sentry	Modules only available for Air Sentry
Filter Type	Cartridge	Cartridge	Cartridge
Main Grade	H14	H14	H14
Certification	EN1822	EN1822	EN1822
Noise	1 - 32dB, 2 - 41dB, 3 - 68dB	1 - 32dB, 2 - 41dB, 3 - 68dB	1 - 32dB, 2 - 41dB, 3 - 68dB
Mounting	Wall or on suitable surface	Mobile	Wall or on suitable surface
Alarms	On board control	On board control	BMS / User

THE SYSTEM IS EFFECTIVE AGAINST ALL AIRBORNE PATHOGENS...



Tuberculosis | Aspergillosis | Measles | Flu | Coronavirus

...ALL OF WHICH ARE SAFELY BROKEN DOWN IN THE FILTER.

K9 has been developed using over 21 years' experience of developing air purification systems for use in hospitals.

In hospitals, air quality has a direct impact on patient recovery and the health of medical staff. The K9 has taken the knowledge and expertise needed for clinical Ultra Clean® air and adapted the system for use in commercial, hospitality and education settings.

Both Air Sentry and the K9 systems can combat future air transmitted disease.

Clients using the system have been better prepared than others to cope with the ongoing coronavirus pandemic.

Air Sentry® is used in some ICU and OR areas as the sole air handling system. Both fixed and mobile systems offer protection from coronavirus (sars_cov_2).



"

K9 IS DESIGNED FOR USE IN COMMERCIAL, HEALTHCARE AND EDUCATION SPACES.

K9 OFFERS

- Exceptional air biosecurity
- Good infection control
- Robust 24/7 operation
- Ease of maintenance
- Low purchase or rental costs
- Significant savings
- Faster patient throughput
- Positive impact on staff morale
- Work alongside existing installations

THE K9 CREATES A CURRENT IN THE ENTIRE ROOM, EVEN THE FAR REACHING CORNERS OF A ROOM WILL HAVE ULTRA CLEAN AIR.

The best location for the unit to be placed is mid wall for mobile and fixed units and 30cm from the ceiling for mounted units. It can even be placed on top of furniture such as a set of drawers for example. The system has been designed to be flexible enough to be used in any room.

Operation of the system couldn't be easier. Once installed it will pull 'dirty' air towards the unit at a low level and return ultra clean® air making room air ultra clean®.

Ultra Clean status is clinically clean air, near sterile air quality. Combining the K9 system with some simple steps in line with government advice reduces infection risk to near zero.



HOW DOES K9 WORK?

The image below shows a computerised modeling of air flow in an office with a K9 unit.

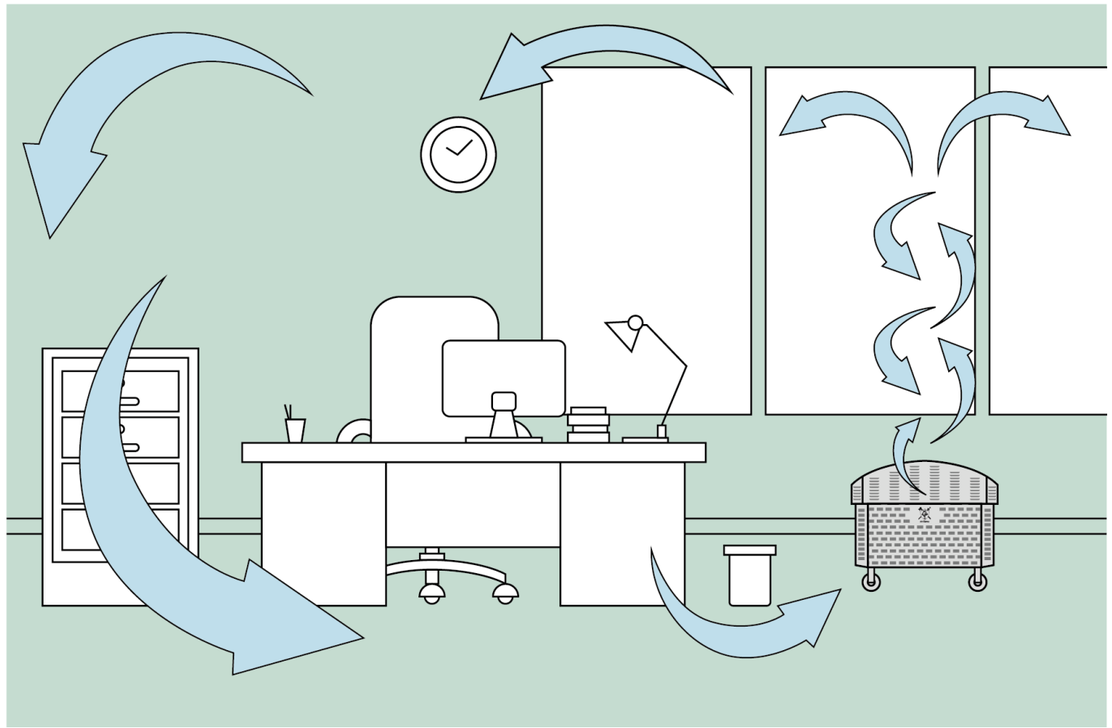
This slow-moving air flow 'pulls' air from the entire room. The K9 system creates an air current in the room including corner areas. **The result of this air movement through the room and through the K9 unit is that all air is purified within the room, at all heights and even in the corners.** Other systems on the market do not work in this way, especially where ventilation inlets and outlets are solely ceiling mounted.

The design of the slow-moving air current also has the additional benefit of reducing surface depositing of pathogens such as coronavirus. This means it is less likely that people who work in rooms with the K9 unit will contract coronavirus through air or touch transmission.

The arrows below show that Ultra Clean air, near sterile air exits the system and rotates upwards to form a return path. This pushes the Ultra Clean air to every level of the room. **This creates an extreme level of air mixing and air dilution.**

The unique rotational air flow from K9 combined with the bespoke cartridge filtration system, **results in any room achieving Ultra Clean air, near sterile air within 10 minutes.** This is maintained within 30 minutes of running 24/7.

K9 can work independently or be used alongside any existing air conditioning systems.



> **"THE DILUTION EFFECT IS EQUIVALENT TO AROUND 30 AIR CHANGES PER HOUR**

The flow from the K9® system forms a rotational motion within the slow-moving air stream, throughout the entire room.

This creates a significant level of mixing within the room environment, maximising dilution. Dilution is the rationale behind all healthcare ventilation systems used for infection control.

The unique design of K9® means that our system exceeds actual air change requirements. The aerofoil shape helps provide a venturi effect which translates into better performance than traditional air purification systems.

In any room, the dilution effect is equivalent to around sixty air changes per hour, without the noise or wind that would be required to achieve this conventionally. The majority of rooms are maintained at ISO EN Level 8, significantly cleaner than 'normal' air.

In areas with open windows, K9® can significantly reduce the risk of airborne pathogens such as Aspergillus. We have also tested our systems against MRSA and C.Diff.

K9 will also maintain an Ultra Clean® air environment for Sars_Cov_2 and is currently being widely deployed to help protect against Coronavirus.

CLIENT STORY: BRITISH GYPSUM

Wall units were supplied to:
BRITISH GYPSUM PLC

Room 1: Shift Managers Office
Room 2: Production Office upstairs
Room 3: Production Office downstairs

Equipment Used
- Aerotrak laboratory grade air particulate sampling unit
- 1um smoke generation system with visual tag.

British Gypsum is part of the Saint-Gobain group. It has 3,000 employees and is the UK's leading manufacturer of interior lining systems for over 100 years. They develop innovative products and services that help customers build better spaces to live, work and play. British Gypsum supplies the residential, commercial, hospitality and healthcare sectors across the UK.

Introduction
The client purchased the system to reduce the likelihood of coronavirus transmission (sars-cov-2) in areas where shift pattens may make social distancing occasionally problematic.

Air quality reports show air particulate levels were high due to the nature of this client's business. Although the levels were high, these were within acceptable health and safety limits.

This raised the question regarding filter depositing as it seemed likely the normal filter life of 24 months could be significantly reduced. We therefore designed, at our cost, a free issued additional filtration media to be attached to the units.

These can be regularly visually inspected without any tools being required allowing for regular removal and cleaning.



Results
Initial testing took place on 19 November 2020 and then post installation on 16 December 2020.

Room	19/11 0.5um	19/11 1.0um	19/11 5.0um	16/12 0.5um	16/12 1.0um	16/12 5.0um
Room 1 Shift Managers (no unit)	59.5M	34.5M	880.7K	N/A	N/A	N/A
Room 1 Shift Managers	39.7M	20.4M	321.7K	8.7M	4.75M	7.9K
Room 2 Production Office	N/A	N/A	N/A	N/A	N/A	N/A
Room 3 Production Office	80M	46M	1.1M	15.0M	6.38M	80.67K

Notes
- Above readings are highest readings of multiple samples.
- Room 2 was unable to be tested due to recent fogging which gave extreme levels.
- Measurement unit (um) is microns.
- Coronavirus particles are an average size of 1um (Micron).
- British Gypsum is a high dust environment, extra pre-filters were added free of charge to help extend the HEPA14 filter life by preventing large dust particles from entering the filter. In a low dust working environment (such as an office or hospital) the clean room standards achieved would be significantly higher.

Conclusions
It can be seen from the previous table that each area is now reaching clean room standards for air quality.

There is a high-quality regime of air sampling already in existence and we would expect the next set of these to reflect lower pollutant levels for particles of concern to be subsequently evidenced by this report.

With regard to coronavirus we also undertook 1um aerosol release testing in each area.

In an unventilated space a bio aerosol can remain suspended for up to 28 days without touching a surface. For coronavirus this may mean transmission is feasible up to 7 days after an asymptomatic individual has been in an area.

> "
>
> **AIR PURIFICATION IS AN ESSENTIAL PART OF HEALTH AND SAFETY PLANNING.**

Room	Dissipation time approx	Direction
Room 1 Shift Managers	3-4 seconds	Upwards
Room 2 Production Office	3 seconds	Downwards
Room 3 Production Office	1-2 seconds	Downwards

All areas showed rapid dilution of an aerosol release. Room 3, due to its smaller size, gave the best result, but all rooms show exceptional **air dilution is occurring. The upwards result for Room 1 is du**e to various convection currents occurring around the air conditioning system.

Anecdotal evidence was given by a staff member in Room 2 who has noted a significant reduction in precipitation onto their desk and work surface since the units were put into use.

Benefits:
The level of air dilution occurring meets or exceeds the infection control guidelines given by W.H.O and P.H.E for safe ventilation around coronavirus. This means that, when run as advised, the risk of air transmission is significantly reduced. When combined with good infection control protocols, as currently exist on site, we would deem such a risk in these areas to be approaching zero.

British Gypsum is a construction and manufacturing business. Which is inherently a particle producing process. Therefore Air Sentry designed a bespoke filter cover for British Gypsum. This demonstrates the flexibility and innovative design of the K9 unit. It can be adapted for any business to create Ultra Clean air for the safety of employees.

The additional benefits for British Gypsum in this instance is twofold. Firstly, the air filter life is considerably lengthened which reduces the lifetime cost. Secondly, the filter can be easily inspected without the use of tools or special equipment.

HOW DO I GET A K9 SYSTEM?

K9 IS A VERSATILE AIR PURIFICATION UNIT WITH AN EN1822 HEPA 14 FILTER. IT IS ADAPTABLE FOR ALL SPACES REGARDLESS OF SIZE AND SHAPE.

The number of units required for your space will be dependent on several factors including your type of business and the space size.

The first step of acquiring the system for your premises is simply a phone call to discuss your needs and the costs involved. **There is the option to buy or lease the units which makes this system very affordable.**

After the initial consultation we can then schedule a visit to your business for an Air Sentry Technician to demonstrate the product, carry out an air purity inspection and advise on the K9 unit location for optimum purification.

Once your order is confirmed your K9 unit will undergo a 24-hour run test before being delivered to you. On arrival at your premises, you simply 'plug and play' the unit. From this point onwards the system will operate with no intervention other than keeping it switched on. The filter lifespan is 24 months in normal operation. It runs on 100 to 230 volts, similar to a light bulb.

To start your air purification project contact us at:

Phone: 01249 721422 / 24hr support 01666 818087

Email: webrequest@airsentry.co.uk

www.airsentry.co.uk

> "
>
> **K9 AIR PURIFICATION UNITS CAN BE PURCHASED OR LEASED.**

FAQ'S

Why is K9 better than any other Air Purification system on the market?

Existing air purifiers often operate as air scrubbers because they only rotate the air close to the unit. This is because the inlet and outlet are in close proximity. The unique design of the K9 produces a rising rotational air current. Which allows the system to move and purify air throughout the entire room, including corners.

How long is the K9 lifespan?

In excess of 25 years.

How long is the filter life?

The expected lifespan of the filter is 24 months in normal use.

What is the average delivery time?

We normally quote lead times of six weeks for K9 units but we will always try to reduce this if requested.

What voltage does the system run on?

The system runs on 230v or 100 to 130v.

Is the system CE or UKCA marked?

Yes. Each unit comes with dual certification.

How much power does the system use?

Around 70-150w; similar to a light bulb.

Will K9 remove coronavirus / sars-cov-2?

Yes, the system removes 100% of all known pathogens transported via the air.

Is the system easy to operate?

Yes, simply place it away from the area you wish to protect. It will pull 'dirty' air towards it at a low level and return ultra clean® air making room air ultra clean®. Combined with some simple steps in line with government advice, infection risk can be reduced to near zero.

How can I be sure the system is working once it is operational?

The onboard electronics monitor the system every 5 minutes to ensure the air remains Ultra Clean in the surrounding room. This is an automatic monitoring process which is ongoing for the lifetime of the system.

Where do the pathogens such as coronavirus go when they enter the K9 unit?

The design of our filter systems is such that they stop and trap 100% of all known pathogens, including coronavirus. Safely contained within the filter, the constant air flow will dry out and either kill or deactivate the virus. It is due to our advanced design that we don't need UV, which normally indicates a lower filter capability.

Why don't you use UV-C (Ultraviolet or UV light)?

The K9 system does not require UV light to deactivate viruses such as coronavirus because it is a more advanced, hospital grade filter. It is also important to note that claims around UVC in air purifiers can be misleading.

UVC needs an exposure time to work but is often added to supplement lower grade filters to allow faster air movement. Thus, such systems don't stop everything and then try to compensate by adding UVC to a fast moving air flow where it is least effective. This added unnecessary complexity also has implications for running costs and equipment reliability.

What if I have a query outside office hours?

We have a 24-hour support line number, 01666 818087, or our office on 01249 721422 with trained engineers that can call you for an instant diagnostic of your problem.

How often should my system be serviced?

Annual service is recommended.

Servicing is undertaken directly in England and Wales. In other areas we have agents trained by our team to complete servicing.

We undertake particle counts and 1µm aerosol dilution testing after each service.

Does the system clean air in every part of the room?

The K9 creates a current in the entire room, even the far reaching corners of a room will have Ultra Clean air.

What is the best location in a room for the K9 unit?

The best location is mid wall for mobile and fixed units and 30cm from the ceiling for mounted units.

How long is the warranty?

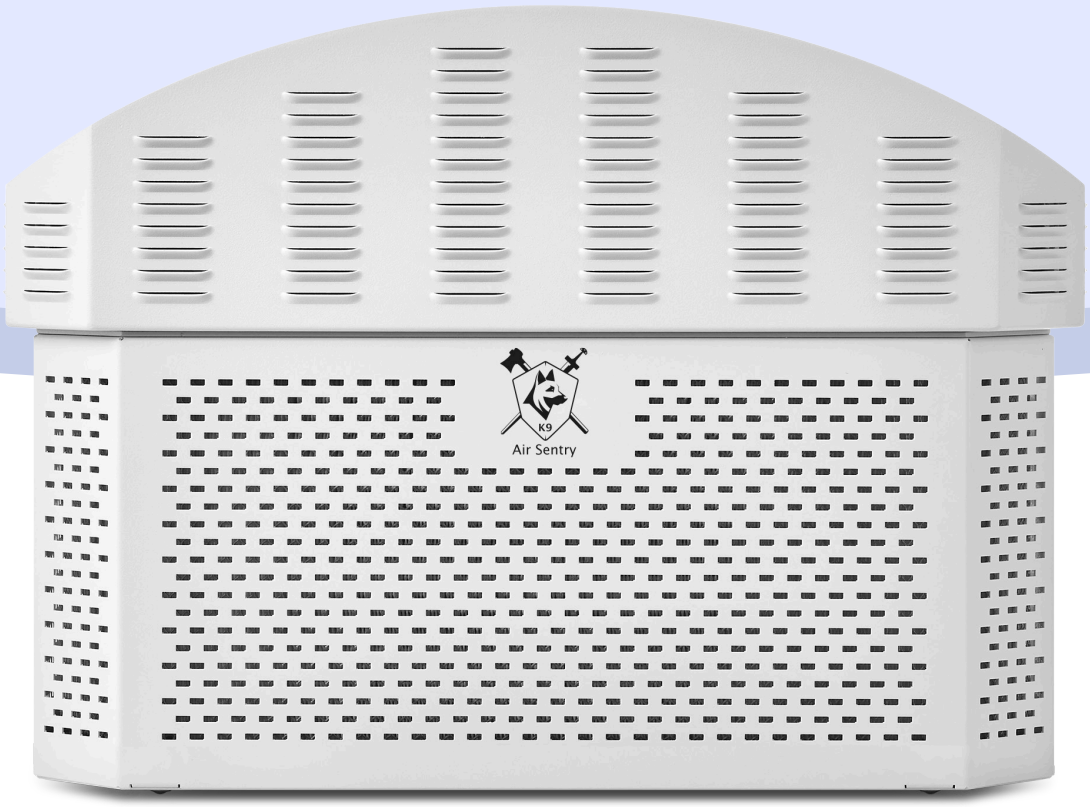
We offer a 12-month warranty, but we have rarely had a correctly serviced system fail since we started installing in 2003.

Can I rent K9?

Yes, we offer a rental programme. For many office areas the rental cost is similar to renting high end printers.

What is EN1822?

The K9 filter is manufactured to EN1822, the industry norm for HEPA Filters. Once the filter is inserted in the K9 unit, we individually test each K9 system to make sure it is working 100% to specification prior to shipment.



GET IN TOUCH

To request a no obligation demonstration and quote for your air purification needs, contact us using the details below:

Unit 1, Manor Stables, West Street,

Great Somerford, Wiltshire, SN15 5EH

Phone: 01249 721422 / 24hr support 01666 818087

Email: webrequest@airsentry.co.uk

www.airsentry.co.uk

K9 Air Sentry

Patent Applied For

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IHEEM

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