

AIR CLEANING & FILTRATION

Hunkeler
SYSTEME



The Hunkeler HKA Series of Air Cleaning Systems: When Safety Matters

Hunkeler
SYSTEME

The HKA air cleaning systems will provide targeted solutions when dealing with pathogens or airborne particulate matter. Compact, efficient and cost effective, these units have been engineered to the highest of standards.

Viruses and dust particles caused by movement, production processes and air circulation are a well-known and unavoidable problem in industrial buildings. The HKA series ensures improved air quality and optimal air hygiene in closed rooms.

Dust, pollen, viruses and bacteria – indoor air quality is endangered by many influences. With a heightened concentration on respiratory health these devices have gained even more importance. They represent an important bastion against the proliferation of viruses & biological aerosols.

- The Aircleaner is ISO 16890 certified.
- Pre-, main- and exhaust filters are supplied.
- The built-in fan with the most modern EC-technology has an effectivity of up to 90% and needs no maintenance.
- Thanks to electronic monitoring and easy operation, the filters can be changed quickly and easily.



Up to 60% less
cleaning work



Improved maintenance intervals of the
systems



No residual dust on the
final products



Monitored filter units



Improved breathing air quality



Effective protection from viruses



Higher production availability



Low power consumption from 90-750
watts with 230 volts



**WE CAN TEST YOUR ENVIRONMENT: SEE IF YOU MEET HSE
STANDARDS WITH OUR QUICK & EASY PARTICULATE TEST -
GET IN TOUCH 01442 206100**

The safe way to filter and clean air



Hunkeler Compact Aircleaners are the ideal solution for cleaning air in buildings. The HKA filters the entire air volume on average every two to three hours, day and night. The smallest particles are removed from the ambient air and leaves it appreciably improved in quality. Cleaning time in buildings is reduced by up to 60 percent, which means outgoings for cleaning are also reduced. Downtime for machines and production systems are reduced to a minimum thanks to improved cleanliness for the sensors.

HKA 500

HKA 3000

HKA 1000

HKA 10000

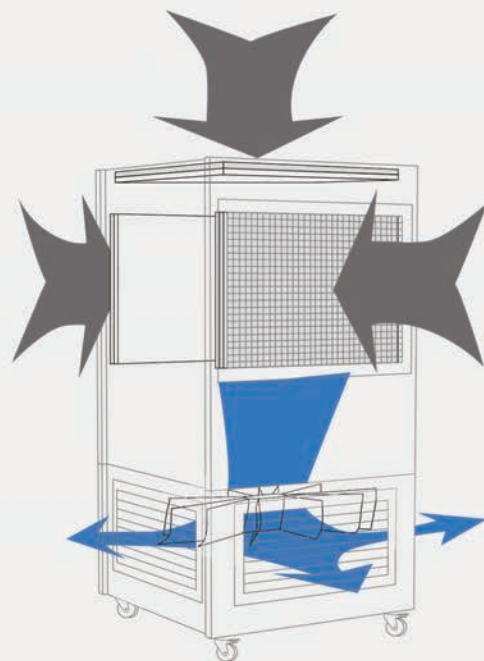
INDOOR AIR FILTER



Reduced cleaning time – ambient air quality optimised

Multi-filter system versus dust particles

The dust-laden air is sucked into the air circulatory system and cleaned of even the smallest airborne particle by the pre- and main filter. The cleaned air is then returned to the room. Thanks to the use of the most modern technology, with an effectivity of up to 90%, maximum energy savings and freedom from fan maintenance have been achieved.



Monitored room air quality to FFP 2-3 standard

The standard delivery for the HKA includes F8 filters. This permits high level air quality in accordance with **ISO 16890**. The filter materials are synthetic micro spun-bonded fabric, free of dye or solvent agents and are, due to their water-repellent properties, micro-biologically resistant. The optional high-performance particle filters (Filter class E11) are identical in filter quality to **FFP 2-3 face masks** and filter out bacteria, pollen, smoke and **viruses**.



Great efficiency with low energy consumption

Simple operation and mobility

Great value has been placed on the simple operation of the HKA. Filter changing is rapid and safe to carry out and the controls are clearly designed for the relevant user functions. The filters are monitored at all times and a **warning light** indicates when the filter should be changed. Hunkeler Systeme devices require **minimal floor space** and can be moved on rollers whenever and wherever necessary. Alternatively, the machines can also be placed in an elevated position.



Sophisticated technology and great efficiency

The core of the mobile de-dusting system is the modern fan. It is characterised by the use of the latest technology and is maintenance-free. For effective filter-performance from up to **10,000 cubic meters an hour**, a total current consumption of only **750 watts an hour** is necessary. Special air filters ensure a steady and quiet air discharge. A **230 volt electrical connection** is sufficient for operation.

Our tailor-made products and solutions



The advantages of HKA products:

- no dust on the products or production lines
- no cleaning time for the sensors and electronic components required
- effective protection against micro-organisms and viruses
- improved air quality
- improved maintenance intervals for systems and machines
- up to 60% less cleaning work
- rapid Plug & Play installation, mobile use
- monitored filter units with visual display
- minimal energy requirements of only 750 watts at 230 volts at 10000 m³/h
- dust measurements by Hunkeler Systeme with before/after comparisons

Hunkeler Compact Aircleaner – HKA

Product Description

Dust particles caused by movement, production processes and air circulation are a well-known and unavoidable problem in industrial buildings. The Hunkeler Compact Aircleaner is a multi-filter system with the most modern air technology. It ensures improved air quality and optimal air hygiene in closed rooms. The Aircleaner is ISO 16890 certified. Pre-, main- and exhaust filters are supplied. The built-in fan with the most modern EC-technology has an effectivity of up to 90% and needs no maintenance. Thanks to electronic monitoring and easy operation, the filters can be changed quickly and easily.



Applications

From offices to large industrial buildings. In addition to the virus filter EPA E11, HEPA filter H13 with a 99.95% protection or activated carbon filter F7 can also be used for odorous air.

Customer advantages

Virus protection

- Protects your environment from viruses and bacteria up to 99.5%
- Significantly reduce the risk of infections indoors
- Filter aerosols in winter and summer
- Optionally also available with HEPA filter H13 (only for HKA 3000)

Product advantages

- Plug & Play with a 230V mains cable (3m), no installation problems
- low cost replacement filters, pre-filter improves operating life of the main filter
- filter monitoring with visual display

Operating costs

- low heating costs thanks to good air circulation of the various air levels
- Reduction of the cleaning intervals for machines, systems and buildings

Productivity

- employee absences reduced (e.g. due to respiratory problems)
- maintenance intervals for the system and machines are improved
- dust reduction of 40-90% (protects the filter in the air circulation or air-conditioning system)

Technical Data

Type	Article No.	Filter performance	Room size	Filter class	Decibel level
HKA office	9768.90030	190m³/h	up to 190m³	E11	48 dB(A)*
HKA 1000	9768.90001	1000m³/h	up to 3000m³	E11	56 dB(A)
HKA 3000	9768.90003	3000m³/h	up to 10'000m³	F8, E11, H13	58 dB(A)
HKA 10000	9768.90010	10000m³/h	up to 30'000m³	F8, E11	64 dB(A)

Dimensions, Weight, Connection values

Type	LxBxH [cm]	Weight [kg]	Voltage	Power / Current Consumption
HKA office	25x25x33	5	230V 50/60HZ	14W
HKA 1000	66x37x78	18	230V 50/60HZ	80W / 0.7A
HKA 3000	66x68x125	42	230V 50/60HZ	250W / 1.1A
HKA 10000	90x90x182	100	230V 50/60HZ	750W / 3.3A

*= at 2m distance

Hunkeler Systeme HKA

Area of use

From offices to large industrial buildings. In addition to the virus filter EPA E11, HEPA filter H13 with a 99.95% protection or activated carbon filter F7 can also be used for odorous air.

How Do Hunkeler Air Cleaning Systems Work?

It is first wise to take a quick look at how these systems function on a basic level. The core component of any air cleaning system is its internal fan. This fan draws in a significant amount of air before the air is passed through a series of filters.

Built-in filters will then remove particulate matter from the air. Adhering to ISO 16890 standards, the filters can trap pollen, smoke, bacteria, viruses and similar allergens. Note that these filters are equivalent to those associated with FFP 2-3 surgical face masks.

1. Setting the Bar in Terms of Efficiency

One of the ways in which the efficiency of an air filter can be gauged involves how long it takes to clean a room. Our filters are generally able to recirculate the volume of a room within three hours with the correct dimension of the filters..

Not only will this provide a healthier ambient environment, but it can reduce cleaning times by up to 60 per cent. This is particularly relevant when dealing with large buildings (such as manufacturing or production facilities). Thus, in-house maintenance costs will be dramatically reduced. These air cleaning machines are also engineered to automatically detect when a filter needs to be changed. This results from an automatic monitoring system that will immediately alert the user. Therefore, common maintenance issues can be tackled within a short period of time.

2. Ensuring the Health and Safety of On-Site Personnel

Studies have shown that modern filtration systems can significantly reduce the presence of viruses and similar airborne pathogens. When we consider the impacts of the recent COVID-19 outbreak, their importance can be clearly appreciated. This is largely due to how the filters have been constructed. The line is comprised of a series of filters (preliminary, main and exhaust). Thus, three levels of protection are offered. These filters are free from all dyes and solvents. Thanks to their water-repellent nature, they can also trap extremely small biological organisms (such as viruses). at Hunkeler Systeme likewise provides the option to select high-performance filters. These include HEPA E11 and F7 carbon variants when addressing very fine dust particles and allergens (1).

3. Portability and Low Energy Consumption

The team at Hunkeler Systeme appreciates that many businesses are facing operational challenges due to limited budgets. However, these issues should not cause workplace safety to be jeopardised. This is why our air cleaning systems boast a decidedly user-friendly edge.

These units are portable and can be easily transported from place to place. All that is needed is a 230-volt mains power supply. Furthermore, they consume only 750 watts per hour while effectively filtering up to 10,000 cubic metres of air. Note that these filters can be mounted in an elevated position when required. Constant on-board monitoring alerts users in the event that a filter needs to be changed, thanks to a warning light. Therefore, efficiency is never compromised.

What Other Features Do These Air Cleaning Systems Offer?

Hunkeler Systeme believes that nothing should be left to chance in terms of on-site air quality. This is why several additional amenities are provided, including:

- Sensors and electronic components do not require cleaning.
- These units are compatible with mobile devices.
- A plug-and-play configuration ensures rapid implementation.
- Before-after air quality can be measured.

Simply stated, these units will provide a much greater level of operational oversight when compared to generic filtration solutions. It should be noted that in the rare event that spare parts are required, Hunkeler Systeme can be contacted directly.

The Hunkeler HKA Series of Air Cleaning Systems: When Safety Matters

The HKA air cleaning systems will provide targeted solutions when dealing with pathogens or airborne particulate matter. Compact, efficient and cost-effective, these units have been engineered to the highest of standards.

Viruses and dust particles caused by movement, production processes and air circulation are a well-known and unavoidable problem in industrial buildings. The HKA series ensures improved air quality and optimal air hygiene in closed rooms. Dust, pollen, viruses and bacteria – indoor air quality is endangered by many influences. With the beginning of the corona pandemic, these devices have gained even more importance. They represent an important bastion against the spread of the viruses & bacterial aerosols.

- The Aircleaner is ISO 16890 certified.
- Pre-, main- and exhaust filters are supplied.
- The built-in fan with the most modern EC-technology has an effectivity of up to 90% and needs no maintenance.
- Thanks to electronic monitoring and easy operation, the filters can be changed quickly and easily.

Dust in the Workplace



(SOURCED FROM HSE: <https://www.hse.gov.uk/textiles/dust.htm>)

What Are The Different Types of Workplace Dust?

Inhalable Dust

Inhalable dust is the larger of the two types of dust. Most inhalable dust is filtered out naturally in your nose and throat.

Respirable Dust

Respirable dust is the more dangerous of the two. These dust particles cannot be filtered out by your nose or throat due to their small size. Therefore, they can cause you serious health problems with prolonged exposure by penetrating the pulmonary alveolar region of the lungs.

Depending on your workplace, you may be exposed to different forms of dust. How you categorise these different forms, such as metallic or chemical dust, is therefore dependent on the size of the dust particles and how dangerous they are.

Why Do Employers Need to Focus on Dust Suppression?

Dust exposure in the workplace can exacerbate and cause a range of conditions, and for this reason both employers and employees need to be aware of the dangers it can pose, before it leads to serious health issues. The most common include:

Asthma – Respirable dust particles make their way into your lungs, which causes inflammation and the swelling of airways.

Byssinosis - an illness associated with exposure to cotton and textile dust with both acute and long-term effects.

Chronic Bronchitis - inflammation (swelling) and irritation of the bronchial tubes.

Persistent Rhinitis - persistent inflammation of the inside of the nose that is not due to an allergy.

Persistent Conjunctivitis - persistent irritation of the clear membrane that lines the eye

Your Responsibilities as an Employer

Several pieces of legislation state that as an employer, it is your responsibility to make the workplace a safe and suitable environment for employees. If you fail to do so, you are legally and morally liable.

There are several pieces of legislation relevant to minimising workplace dust, the most significant of which being:

- The Factories Act of 1961
- The Health and Safety at Work Act 1974
- The 1988 Control of Substances Hazardous to Health Regulations

Up-to-date COSHH assessments, control to within **Workplace Exposure Limits (WELs)** and simple health surveillance are priorities where dust is a hazard. For the wool industries especially dusty operations include opening, blending, carding, and backwinding. All processing, printing, embroidery and general garment manufacture are known to cause excess levels of cotton & wool dust. These hazards pose serious risks that need to be mitigated wherever possible.

Controlling risks from dyestuff dust

Dust from dyestuffs used in textile finishing can be extremely harmful to health.

The starting point should be to stop the dust being generated altogether. Whenever possible, try to handle dyes in dust-free or reduced-dust forms, for example, in solution, as granules, pellets, pastes, or dedusted powders, rather than as dry powders.

Where you can't avoid handling dyes in their dry powder form, try to reduce the amount of dust that ends up aerosolised or other migration into the workplace.

Personal protective equipment (PPE)

- PPE should only be used to protect workers as a last resort and in addition to other controls where it isn't reasonably practicable to fully control the dust by other means. Take care when choosing PPE and make sure that it is appropriate for the work. PPE should be used properly and maintained in good condition.
- Coveralls of close-weave fabric (or suitable disposable ones) should be worn when handling dyestuffs.
- Gloves and aprons may be needed for some jobs. These should be impermeable and either disposable or cleanable. They should be removed when not needed because they may be a continuing source of dust if contaminated. Workers should remove gloves and aprons in a way that does not contaminate skin or clothes. Take a look at the following web pages for how to do this:
 - [Removing gloves without contaminating hands](#)
 - [Removing single-use gloves without contaminating your hands](#)
- Respiratory protective equipment (RPE) may be needed for short-duration jobs, such as filter changing. RPE should be carefully selected to provide adequate protection. It needs to be suitable for the wearer as well as for the task. Correct fitting is important and suppliers can help by offering face-fit testing. More information here: [Respiratory protective equipment \(RPE\)](#)

More information about safety with dye dust can be found at [Dyes and dyeing](#).

Limits of Exposure:

- The WEL (Work Place Exposure Limit) for cotton dust is 2.5 mg/m³ (8-hr TWA) (TWA= Time Weighted Average)
- The WEL for wool process dust is 10 mg/m³ (8-hr TWA).

(Wool process dust is the term used to describe the dust generated in the production of woollen and worsted textiles)

Where a WEL does not apply, dust exposure should still be adequately controlled.

More information about WELs can be found on the following webpages:

- [Workplace exposure limits](#)
- [EH40/2005 Workplace exposure limits](#)

Control of dust exposure

It isn't possible to eliminate process dusts from mills but it may be possible to reduce the quantity of dust produced. Batches of cotton and wool vary in their dustiness, depending on the quality of the raw material,

the treatment it receives and the processes through which it is put. You should consider the reduction of dust as one of your objectives when introducing new processes or machines or when changing existing ones.

Control of exposure to dust has to be achieved without the use of respiratory protective equipment (RPE) if this is reasonably practicable. Often the most effective approach is to enclose machinery as much as possible and then to use **LEV (Local Exhaust Ventilation)** to control dust escaping from essential openings. Good general ventilation is necessary to prevent the build-up of high background dust levels.

The filters in dust collection systems will either be under positive or negative pressure depending on whether the fan is on the dirty or clean side. Filters under positive pressure (blown filters) should be enclosed or located in a separate filter room since any leak in the filter will cause dust to be blown into the working area. Any air returned to a workroom from a dust collector should not significantly increase the exposure of workers. Dust concentrations in returned air may need to be further reduced using a high efficiency secondary filter, water spray scrubbers or electrostatic precipitators. Determination of the appropriate measures is a matter for specialist advice.

Unless the system is designed with rotary valves to be emptied while running, dust collectors should be emptied with the system switched off and using a method which prevents the release of dust. One option is to use a disposable bag in a collector bin. Emptying dust collectors is a very dusty task and RPE should be worn if dust cannot be adequately controlled during emptying. A failure to ensure filter systems are regularly emptied and well maintained will lead to a dropping-off in their performance and will make their eventual emptying an even more difficult and dusty task.

Guidance on removing waste from a dust extraction unit can be found at the following links:

- [General ventilation \(PDF\)](#)
- [Engineering controls \(PDF\)](#)
- [Removing waste from a dust extraction unit \(PDF\)](#)

Talk to Friedheim today about dedusting, air cleaning and ventilation.