

# Indoor Air Quality capabilities

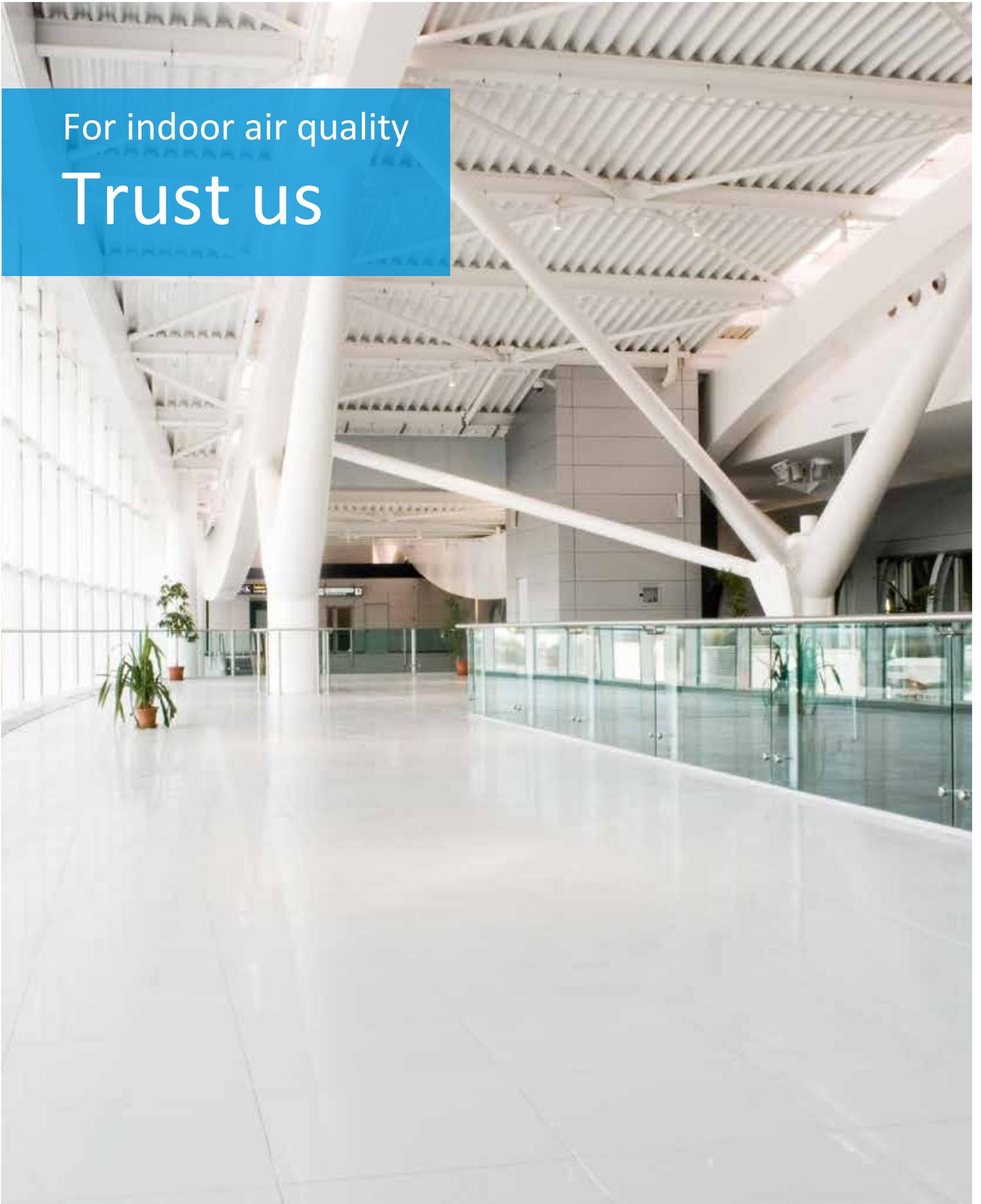
Ventilations and Filters



Advanced climate control solutions to optimise indoor air quality

For indoor air quality

Trust us





The Daikin Group focuses on delivering good indoor air quality, while maintaining energy-efficiency and comfort for users of the indoor environment. From heat recovery systems and large air handling units (AHUs) to air purifiers and filters, Daikin provides a wide variety of ventilation solutions for almost any application - from as low as 0.04 m<sup>3</sup>/s to 7.2 m<sup>3</sup>/s - to deliver a fresh, healthy and comfortable environment for residential, commercial and industrial spaces.

Our customers can depend on Daikin for the ultimate in comfort, so that they are free to focus on their own working and home lives. We dedicate ourselves to technological excellence, a design focus and the highest quality standards so that customers can trust and rely on the solutions we deliver. Our commitment to the planet is absolute.

Daikin products are at the forefront of low energy consumption and we continuously innovate to reduce further the environmental impact of HVACR solutions. We lead where others follow. And we will continue our global leadership in HVACR solutions to relentlessly redefine new standards of efficiency, control and comfort.

Our 90 years' experience encompasses specialist expertise in all market sectors, enabling us to deliver added value in long-lasting relationships based on trust, respect and credibility.

Daikin's vision is to provide safe and healthy air environments while striving to make our business activities carbon neutral by 2050. We will do this by:

- Promoting energy efficient technologies and energy management solutions.

- Adopting refrigerants such as R32 with lower global warming potential; developing next generation refrigerants; and recovering and reclaiming refrigerants in use.
- Reducing the environmental impact of materials throughout the entire life cycle of our products – from procurement and manufacture to recovery and reclaiming.

As a general principle, we will support the development of a Circular Economy, which aims to design out waste and pollution, keep products and materials in use and regenerate natural systems.

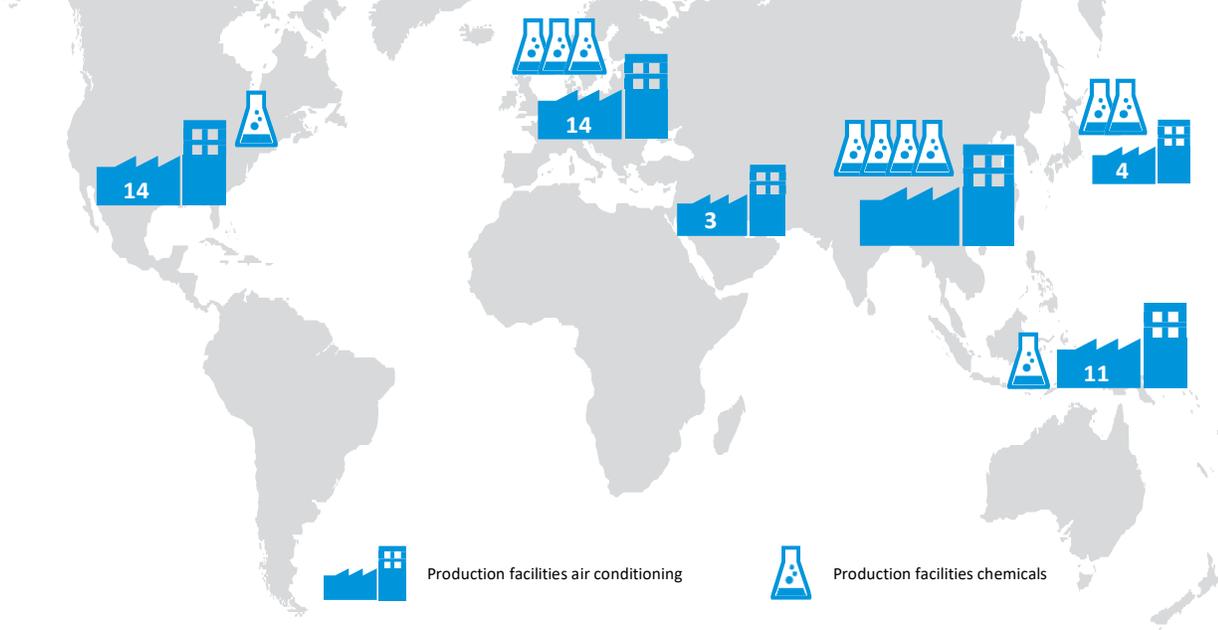
It is about moving away from the 'take, make, dispose' approach and away from the consumption of finite resources to a future in which we minimise impact on the world around us.

**Together we can be part of the climate solution.**

## Table of contents

<b>Introduction</b>	<b>3</b>	<b>Air handling units</b>	<b>10</b>
<b>Why Daikin</b>	<b>4</b>	Decentralised systems	12
<b>Why AAF</b>	<b>6</b>	Centralised systems	14
<b>Ventilation</b>	<b>8</b>	<b>Air purifiers</b>	<b>16</b>
Designing Ventilation	9	<b>Filters</b>	<b>20</b>

# Why Daikin?



## Daikin Global

Daikin Industries Limited is a multinational corporation listed on the Japanese stock market, with sales of over \$23.4 billion in 2018-2019, and a leading global manufacturer and supplier of HVAC (heating, ventilation and air conditioning) equipment, including heat pump and refrigeration solutions for residential, commercial and industrial customers.

and manufacturing headquarters for Europe, the Middle East and Africa, with net sales of over €2 billion in 2015-2016.

The Daikin Europe Group currently includes our headquarters in Ostend, five highly advanced production facilities in Belgium, Czech, Germany, Italy and Turkey, four sales offices and 17 affiliated sales companies throughout the EMEA region. Across the entire Daikin Europe Group, the company employs more than 6,000 people.

## Daikin Europe

A fully owned subsidiary of Daikin Industries Limited, Daikin Europe N.V. (DENV) is Daikin's sales, development

## Daikin UK

Daikin Airconditioning UK Ltd is a wholly owned subsidiary of Daikin Europe NV. The focus of our business is the sales and distribution of Daikin air conditioning products whilst fully utilising the advantage of our European Group Manufacturing Division.

# History of Daikin

1924

Akira Yamada founds Osaka Kinzoku Kogyosho Ltd., and Daikin is born

1933

Developed research for fluorine refrigerants

1935

Fluorocarbon gas is successfully manufactured

1936

"Mifujirator" refrigeration is used as Japan's first AC for trains

1938

First Daikin refrigerator

1951

Daikin becomes the first Japanese manufacturer to mass produce self-contained and packaged AC equipment

1957

Developed first Japanese rotary compressor

1958

Introduced first packaged heat pump air conditioner

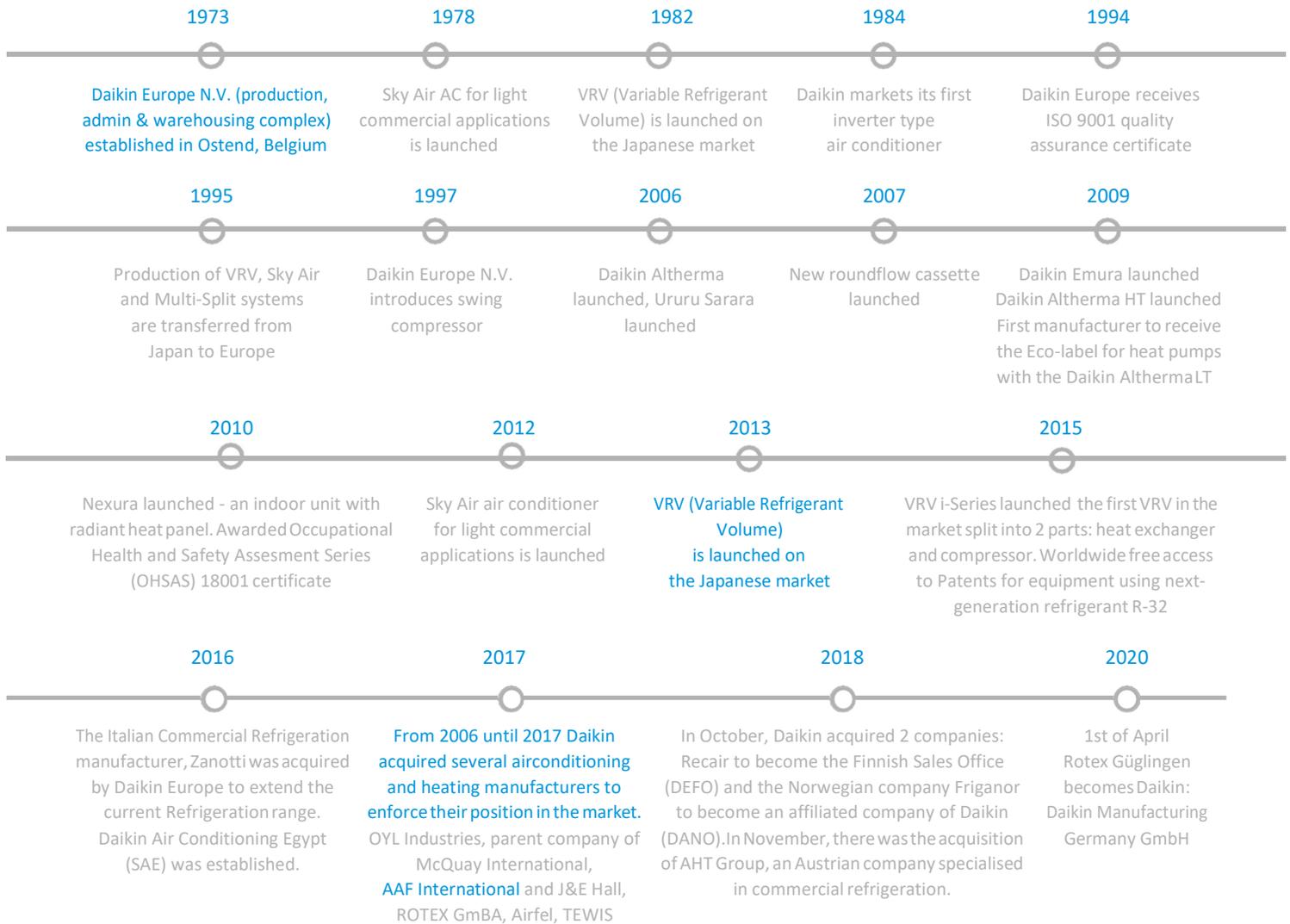
1966

Started production of centrifugal chillers

1969

Developed first Multi-Split





# Daikin UK

The Daikin UK headquarters are in Weybridge, Surrey. However, we recognise that being close to our customers, is vital to our shared success. So Daikin UK has a national network of regional sales teams, training and service centres to ensure that we provide an efficient and expert local response to your needs.

- 1 Head office / Weybridge office**  
Daikin Airconditioning UK Limited  
The Heights, Brooklands  
Weybridge, Surrey KT13 0NY
- 2 National Technology Centre**  
21 Woking Business Park  
Albert Drive, Woking  
Surrey GU21 5JY
- 3 National Solutions Centre**  
Units 25-27 Thornbury Industrial Estate  
Brunel Way, Thornbury  
Bristol, BS35 3UW
- 4 Bristol office**  
Daikin Airconditioning UK Limited  
Maple House, Brotherswood Court,  
Great Park Road, Almondsbury,  
Bristol BS32 4QW
- 5 Birmingham office**  
Daikin Airconditioning UK Limited  
2470 Regents Court, The Crescent,  
Birmingham Business Park,  
Birmingham B37 7YE
- 6 Manchester office**  
Daikin Airconditioning UK Limited  
17b Cobra Court, Blackmore Road  
Manchester M32 0QY
- 7 Glasgow office**  
Daikin Airconditioning UK Limited  
Unit 2, Glasgow Airport Business park  
Marchburn Drive, Paisley PA3 2SJ



# Why AAF?

## AAF Global

AAF is the world's largest manufacturer of air filtration solutions, operating production, warehousing and distribution facilities in 22 countries across four continents. With its global headquarters in Louisville, Kentucky, AAF is committed to protecting people, processes and systems through the development and manufacture of the highest quality air filters, filtration equipment and associated housing and hardware available in the world today.

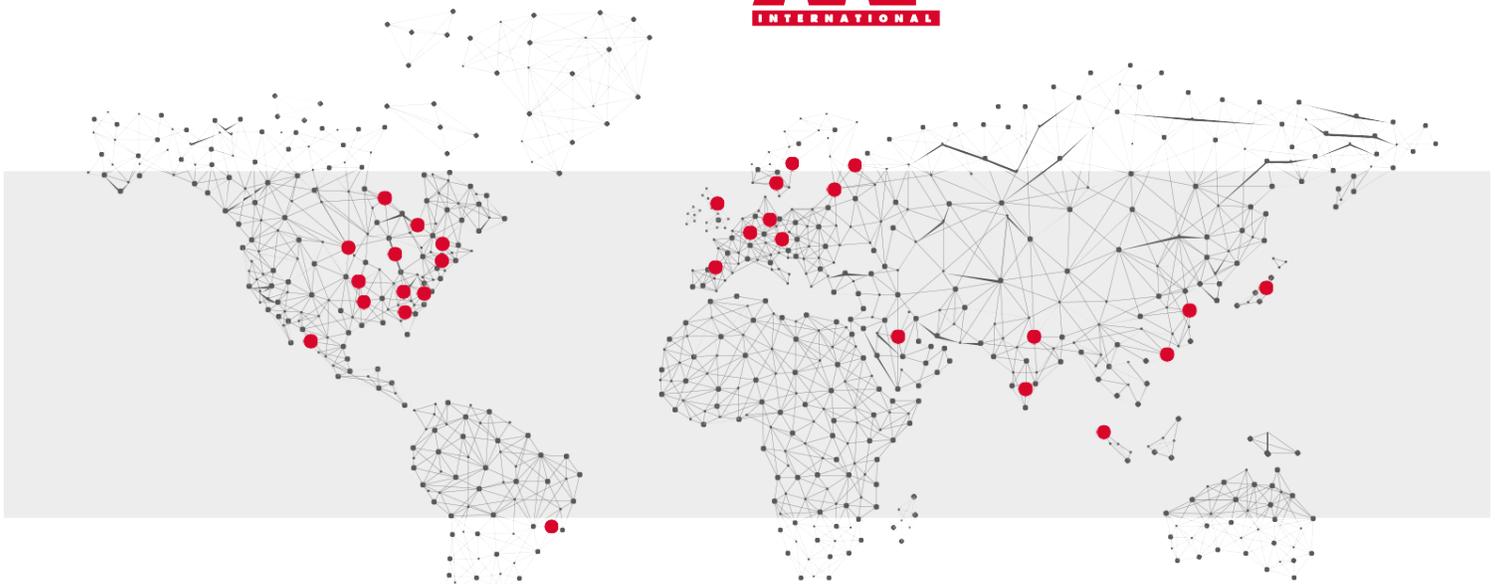
## A strong and large international group

Present in **66** countries  
**22** factories  
**6** R & D Centers all over the world  
**1,500** employees  
**200,000** customers

AAF understands the vital importance of clean air. That's why we are committed to cleaning the indoor air around the globe to improve our quality of life, increase productivity, protect critical processes and equipment, and create products that advance the human condition.

AAF has an in-depth understanding of air filtration challenges and opportunities. This understanding and technical ability makes AAF the preferred partner in optimizing your indoor air quality.

## AAF International Plant Locations



### Europe

Cramlington, UK  
 Gasny, France  
 Vitoria, Spain  
 Ecoparc, France  
 Trencin, Slovakia  
 Olaine, Latvia  
 Horndal, Sweden  
 Vantas, Finland

### Asia & Middle East

Riyadh, Saudi Arabia  
 Shah Alam, Malaysia  
 Suzhou, China  
 Shenzhen, China  
 Miaoli, Taiwan  
 Bangalore, India  
 Noida, India  
 Yuki, Japan (Nippon Muki)

### Americas

Louisville, KY  
 Atlanta, GA  
 Ardmore, OK  
 Bartow, FL  
 Columbia, MO  
 Fayetteville, AR  
 Hudson, NY  
 Momence, IL  
 Ontario, CA  
 Smithfield, NC  
 Tijuana, Mexico  
 Votorantim, Brazil  
 Washington, NC



### C & I Commercial & Industrial

Products oriented to provide clean indoor air in all types of buildings, to protect equipment and ensure productivity in the industry and protect ultra pure processes such as microchip and pharmaceutical production.



### P & I Power & Industrial

Filtration equipment and aftermarket solutions designed to remove air-borne particles and contaminants to protect people, environment, equipment and products during manufacturing processes.

#### Environmental Solutions



#### Gas Turbine Solutions



## History of AAF

1921

AAF® Foundation

1950

Formal test procedures for air filters leading to the formation of the Air Filter Institute (AFI), became ASHRAE

1969

Filters from AAF® were used in Apollo 11 mission to prevent contamination of lunar surface

1970

Market expansion

1990

2006

AAF become part of Daikin Industries, Limited

2009

AAF introduces MEGAceI® I, first HEPA filter with ePTFE filtration technology.

2016

AAF acquires DinairGroup AB to form one of the strongest networks within Europe's filtration industry

AAF introduces REDClean Media®, the advanced filtration media for optimum dust collector performance

2017

AAF introduces N-hance® Performance Filtration, the world's first EPA E12 high velocity filtration system for offshore gas turbines

AAF introduces software and technology packages such as TCO Diagnostic®, Sensor360®, and VisionAir™ Clean

2019

AAF expands its dust collection portfolio by launching new Plug & Play filtration units to meet the needs of different key industrial markets

# Ventilation

Daikin has the widest range of integrated ventilation systems in the market, offering a variety of solutions from small energy recovery ventilation to large-scale air handling units for the provision of fresh air ventilation to homes and organisations, businesses and industrial premises.

## Ventilation solutions

Daikin offers state-of-the-art ventilation solutions that can easily be integrated into any project:

- › **Unique portfolio** within manufacturers
- › High-quality solutions complying with the **highest Daikin quality standards**
- › **Seamless integration** of all products to provide the best indoor climate
- › All Daikin products connected to a single controller for **complete control** of the HVAC system.

## Energy Recovery Ventilation

Our energy recovery units **recover sensible energy** (Modular L Pro / Modular L Smart) or **total (sensible + latent) energy** (VAM/VKM), substantially reducing the load on the air conditioning system up to 40%.

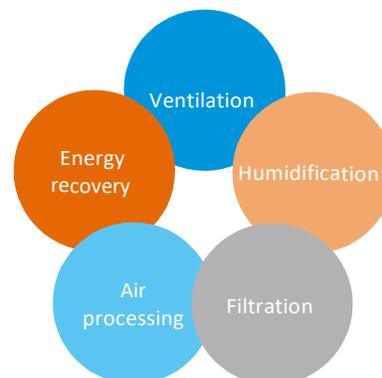
## Total control over fresh air

Daikin offers a range of inverter condensing units to be used in combination with Daikin AHUs for ultimate control over the fresh air. There are four control possibilities when **combining AHU and Daikin outdoor units**, offering all the required flexibility for any installation. Indoor units can be combined to

the same outdoor unit to reduce the installation costs. For **false-ceiling installations** where space is a constraint, the VKM can fit perfectly to deliver fresh air at a comfortable temperature and it has an optional humidification element.

## Five components of indoor air quality

- › **Ventilation:** Ensures the provision of fresh air
- › **Energy recovery:** Delivers energy savings by transferring heat and moisture between airflows
- › **Air processing:** Delivers the right supply temperature to decrease the indoor unit load
- › **Humidification:** Ensures relative indoor humidity levels are respected
- › **Filtration:** Separates pollen, dust and pollution odours that are harmful to individuals' health



# Designing Ventilation

## as part of whole building climate control

As with any element of HVAC, the design of ventilation, whether as a standalone system or as part of a whole building solution, must meet the requirements of the building's occupants.

The key factor in designing ventilation is that it must provide sufficient fresh air supply and extraction to minimise moisture build-up (and therefore control mould) and deal with bio-effluents (body odour), as well as to keep exposure to NO<sub>2</sub>, CO and VOCs to a minimum.

In the UK, ventilation design is controlled by the Building Regulations Approved Document Part F, which sets out criteria for both homes and 'non-domestic,' primarily offices.

Ventilation also has to comply with a number of British Standards covering energy performance, filters and maintenance. As part of HVAC systems, ventilation must comply with:

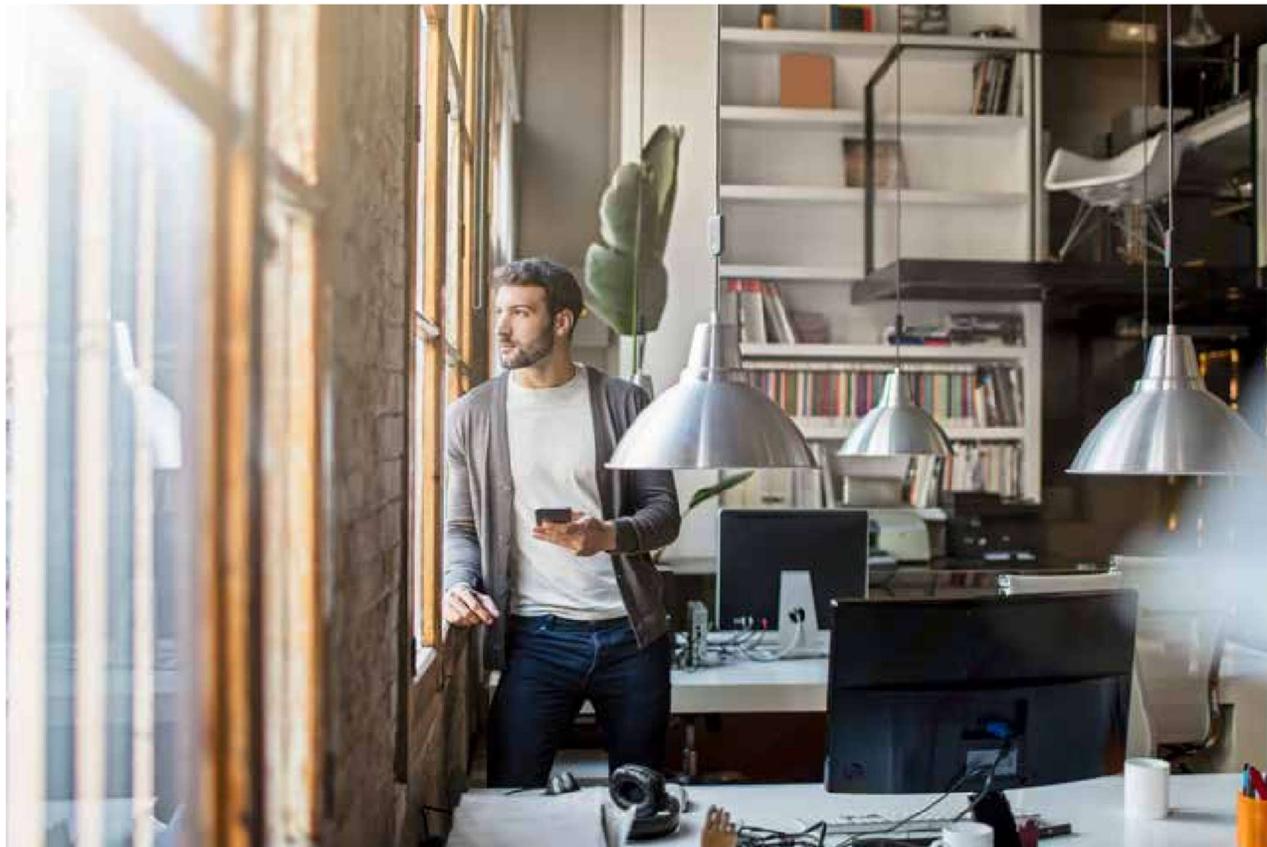
- Part B (fire safety)
- Part C (site preparation and resistance to contaminants and moisture)

- Part E (resistance to the passage of sound)
- Part L (conservation of fuel and power)
- Part J (combustion appliances and fuel storage systems)
- Part P (electrical safety)

A wide range of ventilation guidance is available for designers, published by industry bodies including:

- Building Research Establishment
- Chartered Institute of Building Services Engineers
- REVHA (the Federation of European Heating, Ventilation and Air Conditioning Associations)

The key source of information on Ventilation is CIBSE Document B (Section 2.3) that builds on the advice given in Part F.



# Air Handling units



## Why choose Daikin air handling units?

### Simplifying solutions

The unique, total solution approach by Daikin provides unparalleled product combinations for end-users, while simplifying life for installers by supplying a wide range of high-quality products all from the same manufacturer. Unlike many of its competitors, Daikin does not use products from other manufacturers as part of its air conditioning and air handling solutions, because we can offer everything from one source – so maintenance and management of our systems is much simpler. **Because we can provide a total solution for all your indoor air quality needs, Daikin is the right choice for your building.**

### One-stop shop

Daikin is the only global manufacturer in the market capable of offering a true Plug & Play solution. Daikin AHUs are manufactured by Daikin Applied Europe and certified by Eurovent, offering off-the-shelf compatibility with Daikin's unique VRV outdoor unit range for the best performance in the market. This unique integration of products, gives the customer both peace-of-mind and added value when promoting a total solution approach.

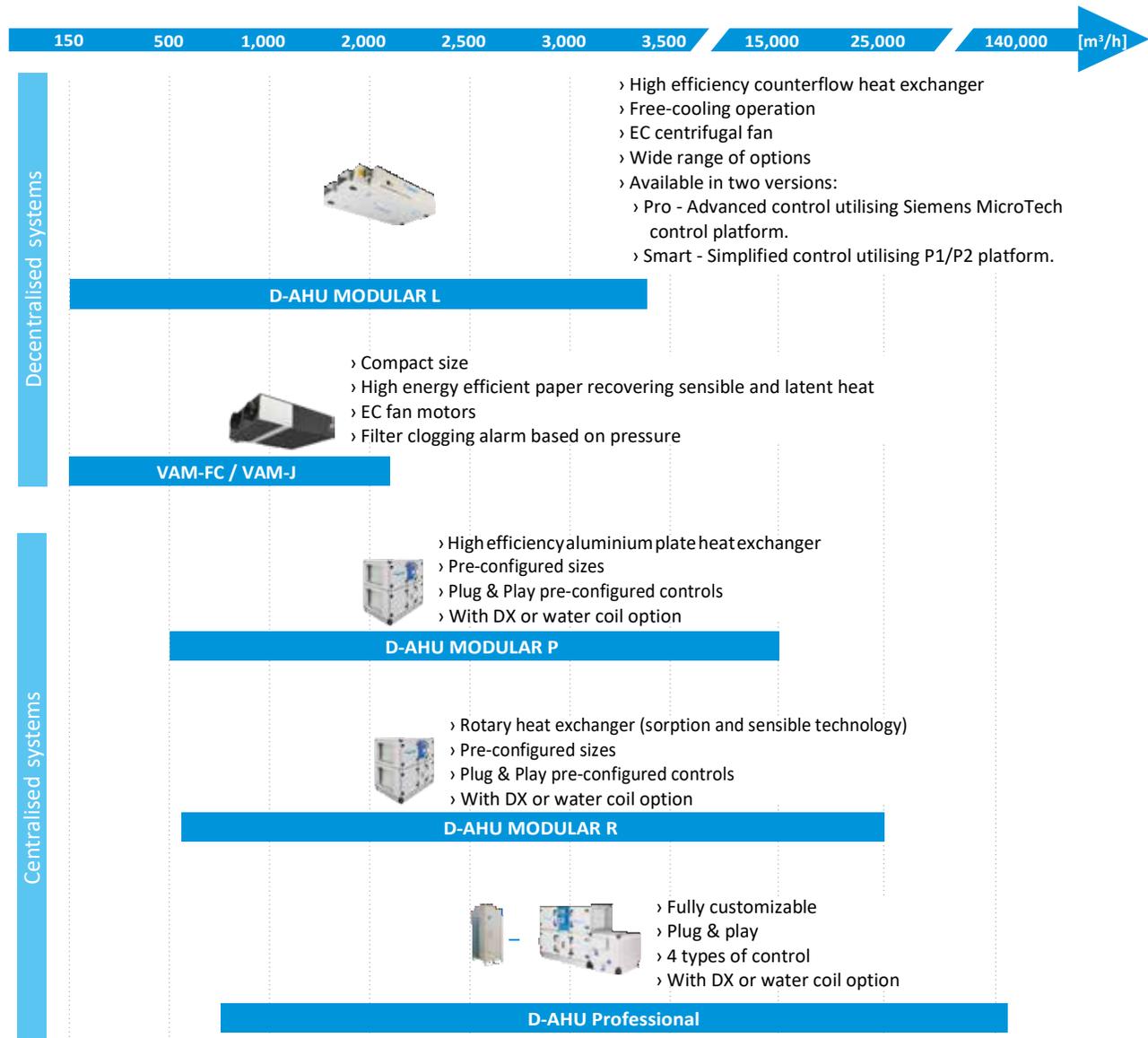
### Complete range of possibilities

With the **most complete offer in the market**, Daikin has the solution for all types of commercial applications requiring fresh air. Daikin provides ventilation solutions based on AHU from 2,500 m<sup>3</sup>/h up to 140,000 m<sup>3</sup>/h either with natural heat recovery or more advanced ventilation solutions where a VRV outdoor unit can be connected to the Daikin AHU for ultimate climate control. The harmonised control, between the VRV outdoor unit and the AHU offers outstandingly reliable operation of the system when connected to an iTM.

## Advantages

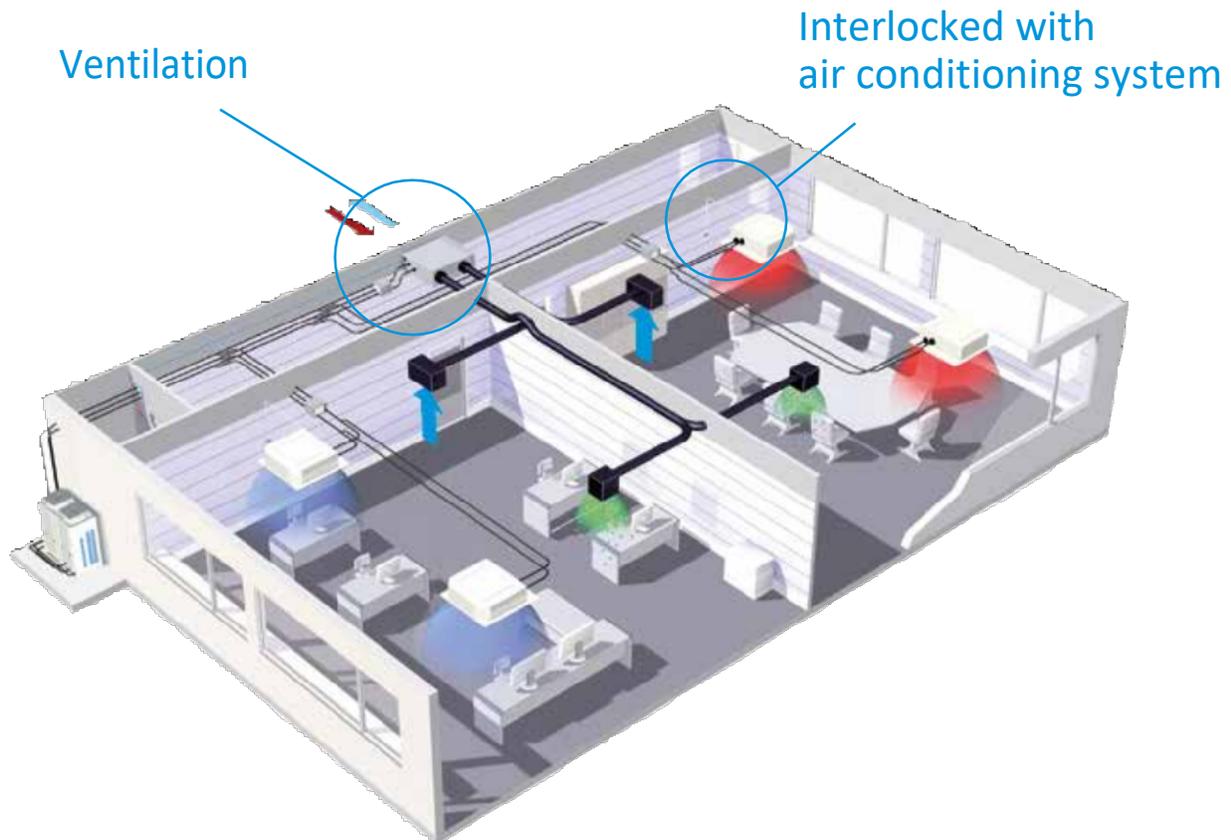
- › Unique manufacturer offering a complete range
- › Plug & Play solution
- › Direct iTM compatibility

# Air Handling unit range



# Decentralised systems

For energy / heat recovery ventilation



Premium efficiency heat recovery unit  
Modular L (Smart) (ALB-(RBS/LBS))

- › Heat recovery unit
- › Counter flow plate heat exchanger
- › ESP up to 600 Pa
- › Operates as stand-alone or combined with Sky Air or VRV systems



Energy recovery ventilation (VAM-FC/J)

- › Heat and moisture recovery
- › Achieve free cooling with fresh outdoor air
- › Operates as stand-alone or combined with Sky Air or VRV systems

# Modular L Smart

Premium Efficiency Heat Recovery Unit

## Highlights

- › Connects Plug&Play into the Sky Air and VRV control network
- › Easy installation and commissioning
- › Internal pre-filter stage (up to ePM<sub>1</sub> 50% (F7) + ePM<sub>1</sub> 80% (F9)) fulfils highest indoor air quality requirements
- › Wide air flow coverage from 0.041m<sup>3</sup>/s to 0.96m<sup>3</sup>/s
- › Exceeds ErP 2018 requirements
- › Best compact choice (only 280 mm height up to 0.15m<sup>3</sup>/s)
- › 50 mm double skin panel (120 kg/m<sup>2</sup>) for maximum sound and thermal insulation

## EC centrifugal fan

- › Maximum ESP available 600 Pa (depending on model sizes and airflow)
- › Inverter driven with IE4 premium efficiency motor
- › High-efficient blade profiling
- › Reduced energy consumption
- › Optimised SFP (Specific Fan Power) for an efficient unit operation

# VAM-FC/J

Total Heat Exchanger

Our popular range of Total Heat Exchangers (VAM) are fully compliant with the lot 6 Ecodesign requirements and rated under the EN 308 testing standard. VAM units recover waste energy from the exhaust airstream to minimise running costs and reduce the carbon footprint of the building.

## Heat exchanger

- › Premium quality counter flow aluminium plate heat exchanger
- › Up to 92% of the thermal energy recovered
- › High grade aluminum allowing optimum corrosion protection



Eliminates up to 73% of the additional heating & cooling loads caused by introducing fresh air.



# Centralised systems

## Offering Plug & Play functionality

### Modular P

High Efficiency Heat Recovery Unit

#### Energy efficiency and indoor air quality

- > Predefined sizes
- > IE4 premium efficiency motor
- > High efficiency plate heat exchanger (heat recovery)
- > Compact design
- > Advanced control features
- > Easy installation
- > Indoor air quality compliant with VDI 6022 hygiene guideline
- > Operating limits from -25 °C, -40 °C with electric heaters, up to +46 °C ambient temperature
- > VRV IV and ERQ coupling capability
- > Indoor and outdoor versions
- > Free cooling capability
- > Economy and Night mode operation
- > Monitoring and control through Daikin ITM



#### EC fan

- > Air flow or pressure control (Variable Air Volume – Constant Air Volume)
- > Nominal air flow programmed at factory
- > Reduced noise with option NRLS



### Modular R

High Efficiency Heat Recovery Unit

#### Energy efficiency and indoor air quality

- > Predefined sizes
- > IE4 premium efficiency motor
- > High efficiency heat wheel (heat recovery)
- > Compact design
- > Advanced control features
- > Easy installation
- > Indoor air quality compliant with VDI 6022 hygiene guideline
- > Operating limits from -25 °C, -40 °C with electric heaters, up to +46 °C ambient temperature
- > VRV IV and ERQ coupling capability
- > Indoor and outdoor versions
- > Free cooling capability
- > Economy and Night mode operation
- > Monitoring and control through Daikin ITM



#### EC fan

- > Air flow or pressure control (Variable Air Volume – Constant Air Volume)
- > Nominal air flow programmed at factory
- > Reduced noise with option NRLS



# A complete fresh air package

## For Plug & Play connection to Daikin systems

Daikin air handling units, with their plug-and-play design and inherent flexibility, can be configured and combined specifically to meet ventilation or air conditioning requirements.

### Benefits for the installer

- › Single source of supply for a complete ventilation solution
- › Completely wired with temperature and pressure sensors
- › No need for 3rd party design of coils and condenser selection
- › Factory pre-configured to meet design requirements

### Benefits for the consultant

- › ErP compliant and Eurovent certified
- › Pre-defined configuration with factory fitted option flexibility
- › Use of highest efficiency components to meet current and future regulations - ErP2018 compliant
- › Manufacturer defined control algorithm and interface with cooling units

### Benefits for the end user

- › Reduced energy costs due to high heat recovery potential and efficient IE4 EC fanmotors
- › Visibility of unit operation via central I-touch Manager or BMS front end
- › Complete Daikin solution

### Daikin fresh air package

The Daikin fresh air package provides a complete solution, including all unit controls (expansion valve, control box and AHU controller) and sensors, factory mounted and configured. This unique solution allows for plug and play connection of our AHU series to Daikin ERQ and VRV condensers or chillers.

### High efficiency

Daikin heat pumps are renowned for their high energy efficiency. Integrating the AHU with a heat recovery system is even more effective, since an office system can frequently be in cooling mode, while the outdoor air is too cold to be brought inside in an unconditioned state. In this case, heat from the offices is simply transferred to heat up the cold incoming fresh air.

### High comfort levels

Daikin ERQ and VRV units respond rapidly to fluctuations in supply air temperature, resulting in a steady indoor temperature and high comfort levels for the end user. The ultimate is the VRV range which improves comfort even more by offering continuous heating, also during defrost.

### Daikin fresh air package



# Filters



## Bringing clean air to life

In 1921, William Reed, the founder of AAF International, recognised the importance of clean air to human health, process performance and the global environment. Based on its strong heritage, R&D investments and broad industry perspective, AAF has gained significant expertise in air filtration solutions that make a real difference in meeting increasingly challenging demands. The extensive portfolio covers a full range of highly efficient particulate and gasphase filters that offer the customer a total clean air solution, suited to the specific application needs. All products are designed and tested to meet the leading air filtration standards.

### Air Filtration Solutions for all Branches General Building Ventilation

AAF is helping facility managers to achieve better Indoor Air Quality to create a more comfortable, healthy, and odour-free environment for building occupants.

### High Purity Production Areas

AAF designs solutions for industries where highest filtration performance is crucial for both – to protect people who work in risky environments and to create high-purity environments in which sensitive products are produced.

### Industrial Environment

Air quality is critical in many steps of industrial processes. Smallest factors can have serious consequences for workers, equipment, products and the environment. AAF offers complete solutions that help to improve the air quality in any kind of industrial environment.



# Pads and Rolls

## Roll-O-Mat®

Roll filter media on core with high tensile strength for optimal performance throughout the lifetime

Recommended application:  
For use in AAF's Roll-O-Matic® automatic roll filter system as pre-filtration under demanding conditions

Configuration and performance:

- ISO 16890: n/a
- Filter class EN779: G3
- Media: fibreglass
- Provided with: bacteriostatic treatment
- Temperature limit: 80 °C



## AmerTex

Efficient filter media with an optimised blend of synthetic fibres, available as pad or roll

Recommended application:  
Filtration for protection of air ducts and fans in paint spray booths or for central air handling systems

Configuration and performance:

- ISO 16890: coarse 35%, 40%, 45%, 50%
- Filter class EN779: G2 - M5
- Media: synthetic
- Available as: F- and R-series
- Temperature limit: 100 °C



## AmerGlas® PaintStop

Filter media of fibreglass in an optimised structure for long life, ensures reduced emissions and is available as pad or roll

Recommended application:  
Filtration for protection of air ducts, fans and engines in paint shops

Configuration and performance:

- Media: fibreglass
- Available as: Yellow and Green
- Temperature limit: 80 (Yellow) - 150 °C (Green)



# Panel Filters

## AmerGlas® Box

Lightweight panel filter made of fibreglass in an intricate structure for optimised dust holding capacity

Recommended application:

Pre-filtration in central air handling, air conditioning and ventilation systems for regular and demanding use

Configuration and performance:

- ISO 16890: Coarse 35%
- Filter class EN779: G2
- Media: fibreglass
- Framematerial: metal / cardboard / plastic
- Temperature limit: 75 °C



## MetaNet

Permanent washable metal filter with media of multiple layered knitted steel wire and a high dust holding capacity

Recommended application:

Pre- or final filtration in demanding air handling, air conditioning and ventilation systems for collecting grease and oil mist

Configuration and performance:

- ISO 16890: coarse 35%
- Filter class EN779: G2
- Media: galvanised steel, stainless steel, aluminium steel
- Filter frame: galvanised steel
- Temperature limit: 65 (treated) - 500 °C (untreated)



## Chevronet

Lightweight panel filter made of synthetic media in an optimised composition for uniform filtration performance

Recommended application:

Pre- or final filtration in central air handling, air conditioning and ventilationsystems

Configuration and performance:

- ISO 16890: coarse 65%
- Filter class EN779: G4
- Media: synthetic
- Filter frame: galvanised steel
- Temperature limit: 100 °C



Available  
for purchase  
on the  
proshop

# Red Pleat Panel Filters

## RedPleat® / RedPleat® Ultra

Panel filter with a self-supporting media pack, consistent pleat spacing and excellent stiffness and durability

Recommended application:

Pre-filtration in central air handling, air conditioning and ventilation systems under humid and turbulent conditions

Configuration and performance:

- ISO 16890: Coarse 70%
- Filter class EN779: G4
- Media: synthetic
- Filter frame: metal / cardboard / plastic
- Optional: gasket and wire mesh at air leaving side
- Optional: bacteriostatic treatment (Ultra)
- Temperature limit: 65 °C



## RedPleat® ePM10 70%

Panel filter with folded media pack made of fibreglass with supporting mesh grille for increased stability

Recommended application:

Pre-filtration in central air handling, air conditioning and ventilation systems

Configuration and performance:

- ISO 16890: ePM10
- Filter class EN779: M5
- Media: Glass
- Filter frame: metal / cardboard / plastic
- Optional: Gasket and wire mesh at air leaving side
- Temperature limit: 65 °C



## RedPleat® Carb

Lightweight panel filter with a self-supporting media pack consisting of a combination of synthetic media and activated carbon

Recommended application:

Pre-filtration in central air handling, air conditioning and ventilation systems for removal of gaseous contaminants

Configuration and performance:

- ISO 16890: Coarse 65%
- Media: synthetic with activated carbon
- Filter frame: cardboard
- Temperature limit: 40 °C



## RedPleat® HT

Silicone-free high temperature panel filter with folded fibreglass media pack, laminated with a mesh grille for enhanced stability

Recommended application:

Final filtration of high temperature processes in the automotive industry

Configuration and performance:

- ISO 16890: Coarse 90%
- Filter class EN779: G4
- Media: glass
- Filter frame: metal
- Optional: gasket
- Temperature limit: 260 °C.



# Pocket Filters

## DriPak® SX

Pocket filter made from synthetic material in a new tapered design with reduced pressure drop and reliable filtration performance

Recommended application:

Pre- or final filtration in central air handling, air conditioning and ventilation systems

Configuration and performance:

- ISO 16890: ePM 1, ePM2,5 and ePM10
- Filter class EN779: M5 - F7
- Media: synthetic
- Optional: bacteriostatic treatment
- Filter frame: galvanised steel, plastic and polyurethane
- Optional: neoprene (flat gasket)
- Temperature limit: 70 °C



## DriPak® GX

Pocket filter made of fibreglass in a tapered design for very low pressure drop and high filtration efficiency

Recommended application:

Pre- or final filtration in central air handling, air conditioning and ventilation systems, pre-filtration for cleanrooms

Configuration and performance:

- ISO 16890: ePM 1, ePM2,5 and ePM10
- Filter class EN779: M5 - F9
- Media: fibreglass
- Filter frame: polystyrene plastic or galvanised steel
- Optional: neoprene (flat gasket)
- Temperature limit: 70 °C



## DriPak® NX / NX+

Highly efficient synthetic pocket filter in a new tapered AAF design, with extremely low pressure drop and long service life

Recommended application:

Pre- or final filtration in central air handling, air conditioning and ventilation systems, pre-filtration for cleanrooms

Configuration and performance:

- ISO 16890: ePM1
- Filter class EN779: F9
- Media: highly efficient synthetic
- Filter frame: injection moulded polyurethane, galvanised steel or beechwood
- Optional: neoprene (flat gasket)
- Temperature limit: 70 °C



## DriPak® KX

Pocket filter made of uncharged synthetic media with self-rigid properties with high dust holding capacity and long service life

Recommended application:

Pre- or final filtration in automotive paint booths, healthcare facilities, commercial buildings, and industrial applications

Configuration and performance:

- ISO 16890: Coarse 80% and ePM10
- Filter class EN779: M5, M6
- Media: synthetic
- Filter frame: injection moulded polyurethane
- Temperature limit: 70 °C



## DriPak GC

Pocket filter made of microglass media with self-rigid properties removes both particles and gases

Recommended application:

Pre- or final filtration in properties in environments with heavy traffic flows, hospitals, schools, day care centres

Configuration and performance:

- ISO 16890: ePM1
- Filter class EN779: F7
- Media: microglass with activated carbon granules
- Filter frame: galvanised steel
- Temperature limit: 50 °C



# Compact Filters

## VariCel®

Highly efficient compact filter with a deep-pleat media pack, supported by aluminium separators in a robust construction

Recommended application:

Pre- or final filtration in central air handling systems and industrial installations under demanding conditions

Configuration and performance:

- ISO 16890: ePM1 and ePM10
- Filter class EN779: M6 - F8
- Media: fibreglass
- Filter frame: galvanised steel and extruded aluminium
- Optional: dry seal gasket
- Temperature limit: 70 (with gasket) - 150 °C (without gasket)



## VariCel® EcoPak

Very compact filter with uniform media pack for high filtration efficiency of fine dust in lightweight and fully combustible frame

Recommended application:

Pre- or final filtration in central air handling systems and industrial installations with limited space

Configuration and performance:

- ISO 16890: ePM 1 and ePM 10
- Filter class EN779: M6 - F9
- Media: fibreglass
- Optional: bacteriostatic treatment
- Filter frame: HIPS
- Optional: dry seal gasket
- Temperature limit: 70 °C



## VariCel® M-Pak

Lightweight and space-saving compact filter with extended filtration surface in non-corrosive and fully combustible frame

Recommended application:

Pre-filtration in central air handling systems and industrial installations under turbulent conditions

Configuration and performance:

- ISO 16890: ePM 1 and ePM 10
- Filter class EN779: M6 - F9
- Media: fibreglass
- Optional: bacteriostatic treatment
- Filter frame: HIPS
- Optional: dry seal gasket
- Temperature limit: 70 °C



## VariPak

Mini-pleat filter with ultrafine fibreglass media pack, low pressure drop and available with various configuration options

Recommended application:

Pre- or final filtration in central air handling systems, pre-filtration for cleanrooms

Configuration and performance:

- ISO 16890: ePM 1 and ePM 10
- Filter class EN779: M6 - F9
- Media: fibreglass
- Filter frame: anodised extruded aluminium or MDF
- Optional: dry seal or gel seal gasket
- Temperature limit: 70 °C



## VariCel® V XLE

Air filter with high capacity in a robust V-shaped configuration with a lightweight and fully combustible plastic construction

Recommended application:

Designed to provide excellent performance combined with high energy savings, in either industrial or commercial HVAC installations

Configuration and performance:

- ISO 16890: ePM1
- Filter class EN779: F7 - F9
- Media: fibreglass
- Filter frame: combination of HIPS and ABS
- Optional: Polyurethane foamed endless
- Temperature limit: 70 °C



Available for purchase on the proshop

### VariCel® V XL

Air filter with high capacity in a robust V-shaped configuration with a lightweight and fully combustible plastic construction

#### Recommended application:

Pre- or final filtration in central air handling systems and demanding industrial installations, pre-filtration for cleanrooms

#### Configuration and performance:

- ISO 16890: ePM1 and ePM10
- Filter class EN779: M6 - F9
- Media: fibreglass
- Filter frame: combination of HIPS and ABS
- Optional: dry seal gasket / reverse airflow
- Temperature limit: 70 °C



Available  
for purchase  
on the  
proshop

### VariCel® Aero V (H)XL

High efficiency compact filter for high filtration efficiency of fine dust in lightweight and fully combustible frame

#### Recommended application:

Final filtration in central air handling systems wherever highest possible efficiency on (bio)aerosols is needed

#### Configuration and performance:

- ISO 16890: ePM 1 95%
- Media: fibreglass
- Filter frame: plastic
- Optional: polyurethane foamed endless gasket
- Temperature limit: 70 °C



### BioCel® V (H)XLA

High efficiency filter with class-leading protection. With vertical pleats, plastic mesh grid and a durable moisture-resistant construction.

#### Recommended application:

Final filtration for challenges presented by farm pests.

#### Configuration and performance:

- ISO 16890: n.a.
- Media: fibreglass
- Filter frame: plastic
- Optional: foam gasket
- Temperature limit: 70 °C



# EPA/HEPA/ULPA Filters

## BioCel®

Highly efficient filter with a deep-pleat media pack, supported by aluminium separators in a robust construction

Recommended application:

Final filtration in central air handling systems and industrial installations under turbulent conditions, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: E10
- Media: fibreglass
- Filter frame: galvanised steel and extruded aluminium
- Gasket: dry seal
- Temperature limit: 70 (with gasket) - 120 °C (without gasket)



## BioCel® II

Mini-pleat filter with lightweight frame and low pressure drop for easy installation and reduced energy consumption

Recommended application:

Final filtration in central air handling systems and industrial installations under turbulent conditions, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: E11
- Media: fibreglass
- Filter frame: anodised extruded aluminium
- Gasket: dry seal, gel seal or knife edge
- Temperature limit: 70 °C



## BioCel® III

Highly efficient filter in a V-shaped configuration with optimized media packs of fibreglass, suitable for high airflow rates

Recommended application:

Pre- or final filtration in high airflow air handling systems, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: E11
- Media: fibreglass
- Filter frame: galvanised steel
- Gasket: dry seal
- Temperature limit: 70 °C



## BioCel® VXL

Air filter with high capacity in a robust V-shaped configuration and a lightweight and fully combustible plastic construction

Recommended application:

Pre- or final filtration in central air handling systems and demanding industrial installations, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: E10 - E12
- Media: fibreglass
- Filter frame: combination of HIPS and ABS
- Gasket: dry seal
- Temperature limit: 70 °C



## BioPak®

Mini-pleat filter with ultrafine fibreglass media pack and low pressure drop, available in different frame executions

Recommended application:

Pre- or final filtration in central air handling systems, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: E11
- Media: fibreglass
- Filter frame: anodised extruded aluminium or MDF
- Gasket: dry seal
- Temperature limit: 70 °C



### AstroCel® I

Efficient HEPA filter with high capacity and deep-pleat media pack, supported by aluminium separators

Recommended application:

Final filtration in central air handling systems and industrial installations

Configuration and performance:

- Filter class EN1822: E12 - H14
- Media: fibreglass
- Filter frame: anodised extruded aluminium, steel or MDF
- Gasket: dry seal
- Temperature limit: 70 (std. gasket) - 120 (without gasket) - 260 °C (silicone gasket)



### AstroCel® II

High quality and space-saving mini-pleat filter, individually tested for guaranteed filtration performance

Recommended application:

Final filtration for cleanrooms and turbulent or laminar airflow systems

Configuration and performance:

- Filter class EN1822: H14 - U17
- Media: fibreglass
- Filter frame: anodised extruded aluminium
- Also available: TM Hood (terminal module)
- Gasket: dry seal, gel seal or knife edge
- Temperature limit: 70 °C



### AstroCel® III

Highly efficient filter in a V-shaped configuration with optimised media packs of fibreglass, suitable for high airflow rates

Recommended application:

Final filtration in central air handling systems and industrial installations, areas in which hazardous materials are being handled

Configuration and performance:

- Filter class EN1822: E12 - H14
- Media: fibreglass
- Filter frame: steel
- Gasket: dry seal or gel seal
- Temperature limit: 70 (regular version) - 120 °C (nuclear grade)



### AstroCel® VXL

Air filter with high capacity in a robust V-shaped configuration with a lightweight and fully combustible plastic construction

Recommended application:

Final filtration in central air handling systems and industrial installations, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: E10 - E12
- Media: fibreglass
- Filter frame: combination of HIPS and ABS
- Gasket: dry seal
- Temperature limit: 70 °C



### AstroPak®

Mini-pleat filter with ultrafine fibreglass media pack and low pressure drop, available in different frame executions

Recommended application:

Final filtration in central air handling systems and industrial installations, pre-filtration for cleanrooms

Configuration and performance:

- Filter class EN1822: H13 - H14
- Media: fibreglass
- Filter frame: anodised extruded aluminium or MDF
- Gasket: dry seal or gel seal
- Temperature limit: 70 °C



### MEGAcel®

Energy efficient mini-pleat filter with a sturdy aluminium frame, boron-free media pack and outgassing-free separator

Recommended application:

Final filtration for sensitive microelectronic cleanrooms and laminar airflow systems

Configuration and performance:

- Filter class EN1822: U16
- Media: ePTFE membrane
- Filter frame: anodised extruded aluminium
- Also available: TM Hood (terminal module)
- Gasket: dry seal, gel seal or knife edge
- Temperature limit: 70 °C



### MEGAcel® I

High-efficiency HEPA filter with a deep-pleat media pack, supported by aluminium separators, and a very low pressure drop

Recommended application:

Final filtration in industrial installations and cleanroom environments

Configuration and performance:

- Filter class EN1822: H13 - H14
- Media: ePTFE or eFRM membrane
- Frame: galvanised or stainless steel
- Gasket: dry seal
- Temperature limit: 70 °C



### MEGAcel® II

High quality and durable mini-pleat filter with a high efficiency and a very low pressure drop characteristic

Recommended application:

Final filtration for cleanrooms with turbulent or laminar airflow systems

Configuration and performance:

- Filter class EN1822: H14 - U16
- Media: ePTFE or eFRM membrane
- Filter frame: anodised extruded aluminium
- Also available: TM Hood (terminal module)
- Gasket: dry seal, gel seal or knife edge
- Temperature limit: 70 °C



### MEGAcel® III

Highly efficient filter in a V-shaped configuration for handling high airflow rates at an extremely low pressure drop

Recommended application:

Final filtration in central air handling systems and industrial installations, areas in which hazardous materials are being handled

Configuration and performance:

- Filter class EN1822: H13 - H14
- Media: ePTFE or eFRM membrane
- Filter frame: galvanised steel or ABS
- Gasket: dry seal
- Temperature limit: 70 °C



# High Temperature Filters

## VariCel® HT

Silicone-free high efficiency compact filter with a deep-pleat media pack in a frame construction of aluminised steel

Recommended application:

Pre- or final filtration for drying ovens in the automotive industry

Configuration and performance:

- ISO 16890: ePM 1 and ePM10
- Filter class EN779: M6 - F8
- Media: fibreglass
- Filter frame: aluminised steel and extruded aluminium
- Optional: glass rope gasket
- Temperature limit: 385 °C



## VariCel® II HT

Silicone-free mini-pleat filter with fibreglass media in a robust aluminium frame and faceguards on both sides

Recommended application:

Final filtration for drying ovens in the automotive industry

Configuration and performance:

- ISO 16890: n/a
- Filter class EN779: M6, F8
- Media: fibreglass
- Filter frame: anodised extruded aluminium
- Gasket: glass rope
- Temperature limit: 385 °C (480 °C 1h peak)



## VariCel® V HT

Silicone-free air filter in a V-shaped configuration with a sturdy construction of aluminised steel for high integrity

Recommended application:

Final filtration for recirculation systems of drying ovens under turbulent conditions in the automotive industry

Configuration and performance:

- ISO 16890: n/a
- Filter class EN779: M6 - F7
- Media: fibreglass
- Filter frame: aluminised steel and extruded aluminium
- Gasket: glass rope
- Temperature limit: 385 °C (480 °C 1h peak)



## VariCel® XL HT

Silicone-free high temperature compact filter with a deep-pleat media pack in an aluminised steel frame construction and low pressure drop

Recommended application:

Final filtration for drying ovens in the automotive industry

Configuration and performance:

- ISO 16890: ePM 1 and ePM10
- Filter class EN779: M6 - F8
- Media: fibreglass
- Filter frame: aluminised steel and extruded aluminium
- Optional: glass rope gasket
- Temperature limit: 385 °C (480 °C 1h peak)



### BioCel® HT

Highly efficient compact filter with a deep-pleat media pack in a silicone-free aluminised steel frame construction

Recommended application:

Final filtration for drying ovens in the automotive industry

Configuration and performance:

- Filter class EN1822: E10
- Media: fibreglass
- Filter frame: aluminised steel and extruded aluminium
- Gasket: glass rope
- Temperature limit: 260 °C (480 °C 1h peak)



### BioCel® V HT

Silicone-free air filter in a V-shaped configuration with a sturdy construction of aluminised steel for high integrity

Recommended application:

Final filtration for recirculation systems of drying ovens under turbulent conditions in the automotive industry

Configuration and performance:

- Filter class EN1822: E10
- Media: fibreglass
- Filter frame: aluminised steel and extruded aluminium
- Gasket: glass rope
- Temperature limit: 385 °C (480 °C 1h peak)



### AstroCel® I HTP

Silicone-free HEPA filter with superior durability, highly reliable operation and performance in compliance with FDA / GMP guidelines

Recommended application:

Filtration under high-temperature for dry heat sterilisation and the removal of pyrogens in the pharmaceutical industry

Configuration and performance:

- Efficiency:  $\geq 99,99\%$  at  $0,3 \mu\text{m}$ ,  $\geq 99,95\%$  at MPPS
- Media: fibreglass
- Filter frame: stainless steel
- Gasket: fibreglass
- Temperature limit: 350 °C (400 °C 1h peak)



# Gas-Phase Filters

## VariSorb® XL / VariSorb® XL SAAFCity

Fully incinerable combination filter for particulate and molecular filtration with a wide range of chemical media options

### Recommended application:

Pre-filtration in central air handling, air conditioning and ventilation systems for removal of gaseous contaminants

### Configuration and performance:

- ISO 16890: ePM2,5
- Filter class EN779: M5 (SAAFCity)
- Media: synthetic with activated carbon
- Filter frame: combination of HIPS and ABS
- Relative humidity: 10 - 95%
- Temperature limit: 55 °C



## SAAF™ Canister

Molecular filtration system consisting of cylindrical cartridges with a choice of various chemical media, mounted in a galvanised frame

### Recommended application:

Pre-filtration in central air handling and ventilation systems for removal of gaseous contaminants

### Configuration and performance:

- ISO 16890: n/a
- Filter class EN779/EN1822: n/a
- Media: activated carbon, activated alumina, blends
- Cartridge: HIPS, galvanised or stainless steel
- Frame: galvanised sheet metal
- Relative humidity: 10 - 95%
- Temperature limit: 55 °C



## SAAF™ Cassette

Patented gas-phase filtration system with multiple cassettes in a V-shaped construction, pre-filled with chemical media

### Recommended application:

Pre-filtration in central air handling and ventilation systems for removal of gaseous contaminants

### Configuration and performance:

- ISO 16890: n/a
- Filter class EN779/EN1822: n/a
- Media: activated carbon, activated alumina, blends
- Cassette: HIPS, stainless or epoxy-coated steel
- Relative humidity: 10 - 95%
- Temperature limit: 55 °C



## SAAF™ Media

Highly efficient filtration for removal of unwanted gaseous pollutants with a wide choice of media options and combinations

### Recommended application:

Pre-filtration in central air handling systems for removal of gaseous contaminants

### Configuration and performance:

- ISO 16890: n/a
- Filter class EN779/EN1822: n/a
- Media: activated carbon
- Optional: various additives to improve specific adsorption properties
- Relative humidity: 10 - 95%
- Temperature limit: 55 °C



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