

FILTERS DIRECT

“You Breathe The Difference”



“Your Guarantee of Excellence”

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Filters Direct was established in 1999 with the sole objective of meeting the air filtration requirements of New Zealand industry.


As a distributor of Afpro filters, our products provide cost effective, tested, top quality alternatives that meet and exceed all required standards.

Filters Direct have manufacturing plants situated in Auckland and Christchurch with knowledgeable staff operating from each location to ensure nationwide coverage.

If you have been searching for a company that can offer proven quality products, excellent customer service within the filtration industry, your search is over. Put our knowledge, quality products and pricing to work for you.



“Your Guarantee of Excellence”

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Filtration is vitally important

The air surrounding us comprises 78% nitrogen, 21% oxygen and 1% various gases and solid particles. This last component listed comprises such elements and compounds as noble gases, carbon dioxide, fine particles, salts and gas emissions from motor traffic and industry. Although one percent sounds like very little, it does determine whether the air quality is considered healthy or unhealthy.

Although the operation of a filter may appear very simple in theory, filters are in fact highly complex products. The filter fibres have to allow sufficient air to pass through – without offering too much resistance – while also trapping harmful particles. This is the strength of good filters.

Filters protect people

A human being inhales and exhales some twenty kilograms of air daily. Twenty kilos! This is quite an impressive figure, particularly when one considers that a human being also consumes around one and a half kilos of food and two and a half kilos of water. People are inclined to pay close attention to what they eat and drink, while government bodies also issue dietary recommendations. It therefore appears only logical that we should devote greater attention to the quality of the air we breathe. How might airborne substances affect our performance and health? And what can we do to ensure the optimum quality of the air that we breathe?

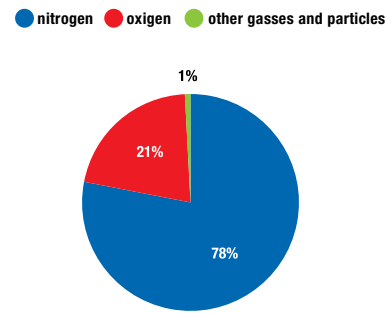
Fine particles are hazardous to human health

During the past few years, increasing attention has been drawn to the hazards of fine particles; air pollution in the form of particles which are smaller than 10 microns. Busy roads, industry, combustion engines and the bioindustry are major sources of fine particles. The human body is poorly equipped to deal with fine particles. The nose and windpipe act as natural filters for relatively large particles – larger than 5 microns. However, smaller particles can penetrate deep into our lungs, where they may cause substantial damage to health. Children, the aged and people with respiratory complaints are particularly susceptible. The concentration of fine particles in the air can vary greatly from region to region and from one country to another.

Sick building syndrome – source of problems

People in the western world spend around 70% of their time indoors. Countless health problems can consequently be attributed to 'indoor conditions'. Air quality in the workplace is sometimes also far from perfect. This can cause sick building syndrome (SBS). Almost three quarters of cases of SBS can be attributed to the dust particles present within the premises. Common symptoms of SBS include listlessness, concentration and respiratory problems, headaches, drowsiness, skin and eye irritation and fatigue. Adequate air filtration is a relatively simple means of combating SBS and protecting people from its harmful effects.

AIR COMPOSITION



Our range of appropriate products enables us to vouch for the air quality. Our sales staff are equipped to provide a suitable solution for a healthy indoor or outdoor climate in any circumstances. These applications are widely used in business premises, hotels and conference centres.

Filters protect your operating processes

Apart from protecting people, filters can also be used to guarantee the progress of operating processes. The applicable filter requirements naturally vary, depending on the type of operating process in question. Our filters can nevertheless provide a suitable filter, whatever the process. Many of our products are ultimately destined for the nuclear industry, in gas turbines, in the field of semiconductor manufacturing and the pharmaceuticals sector.

Nuclear industry

The nuclear filter industry plays an essential role in the global supply of energy and the military sector. Air filtration systems perform crucial roles in nuclear plants, such as power stations, fuel processing plants, research facilities and waste management. These nuclear air filters comply with the most stringent environmental standards, in terms of the requirements applicable for the minimisation of radioactive air pollution.

Gas turbines

The primary function of an air filter inlet system is to protect the gas turbine and other rotating machinery from pollution present in the ambient air. Dust particles (> 5 µm) can cause erosion. Fine particles (submicron) contaminate the vanes, which has a detrimental effect on the performance of the gas turbine. A well-balanced filter system is therefore crucial to optimum output.

Semiconductor manufacturing

Highly stringent standards are applicable in this industry. The products, which are often manufactured in cleanrooms, are highly susceptible to disruption. The slightest level of pollution in the air – comprising even the most minute particles – can significantly raise the percentage of rejects from the production process. Pre-filters, fine filters and HEPA filters ensure that the air present in the cleanroom is of the highest quality.

Pharmaceuticals sector

Poor air quality during the execution of production processes in the pharmaceuticals sector can have far-reaching consequences. The contamination of drugs can affect their efficacy or render them altogether ineffective, which could naturally prove hazardous to health. The use of superior quality filters is therefore crucial if the production of medicines in a manufacturing plant is to proceed without complications.

The principles of air filtration

There are two basic types of air filter: Filters for solids and filters for gaseous particles. Both types have the same objective, to reduce the concentration of airborne particles.

Gaseous particles can be filtered out by means of adsorption. Adsorption is brought about by London dispersion forces, or Van der Waal's forces, which act between the molecules. These forces have similar of properties to the forces of gravity acting between planets in the solar system.

The activated carbon in these filters is capable of removing particles from the air by means of adsorption. Different types of carbon may be used, depending on the particular field of application. Further details of the active carbon filter can be found on page 85.

There are four ways of capturing particles. The filter class, the particle size and the filter construction jointly determine the magnitude of the effects. Air filters may apply:

- the sieve effect
- the inertial mass effect
- the interception effect
- the diffusion effect.

The sieve effect

The sieve effect is one most commonly applied in air filters. The principle of the sieve effect is very simple: The particle is larger than the gap between the media fibres and therefore gets trapped.

The inertial mass effect

This filter principle is applied if the particles have substantial mass. The particle arrives at high velocity. Due to its mass, the particle collides with the media fibre, instead of being deflected with the airflow.

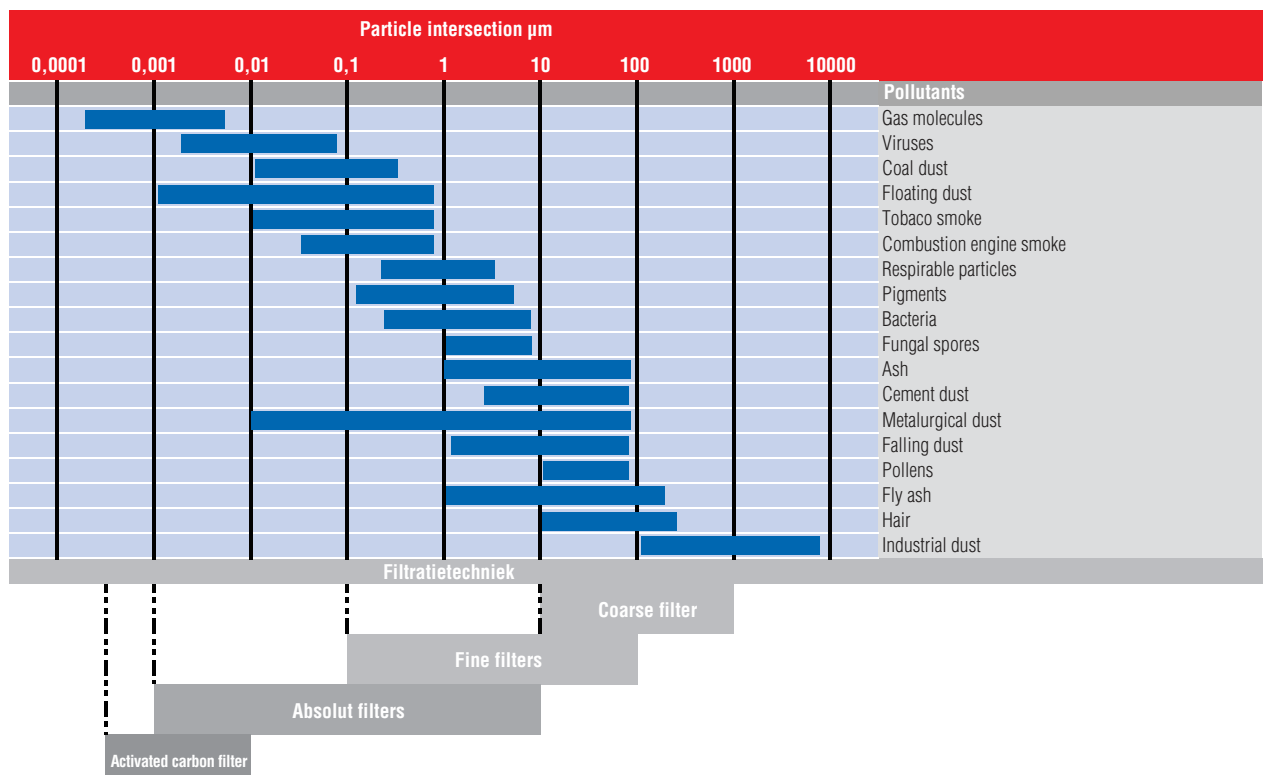
The interception effect

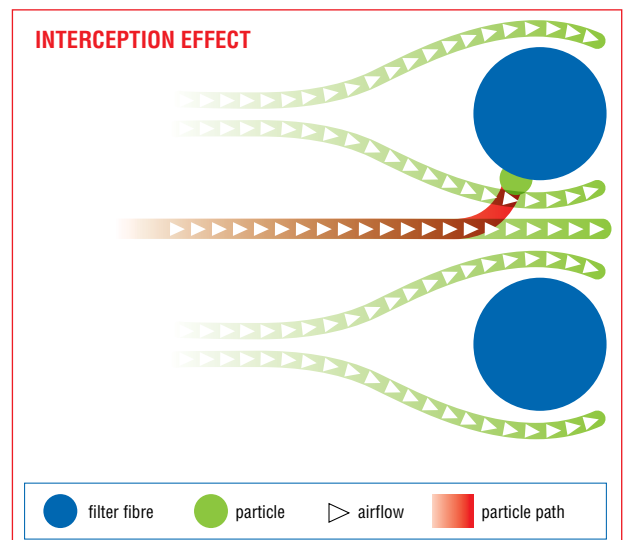
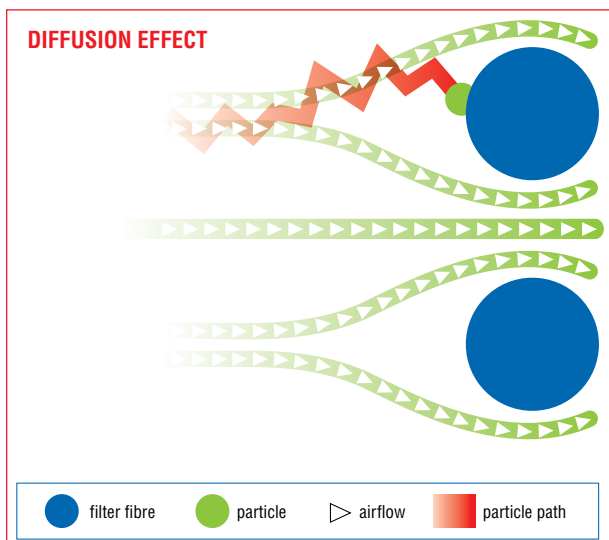
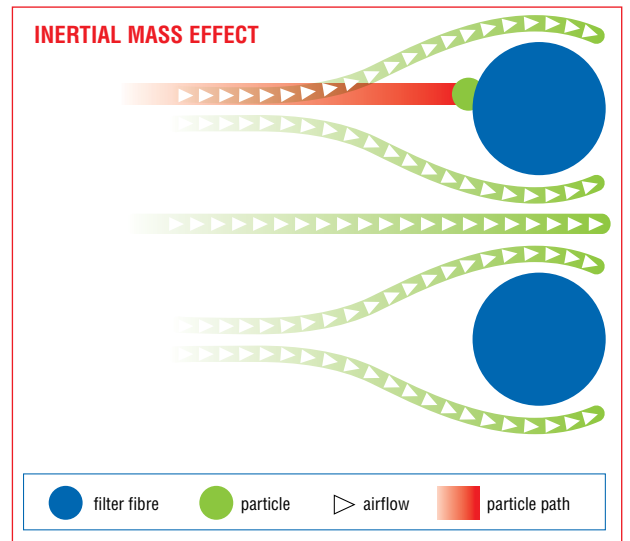
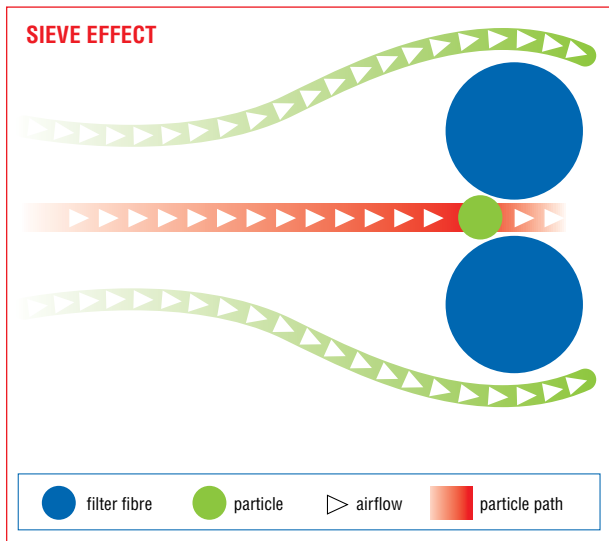
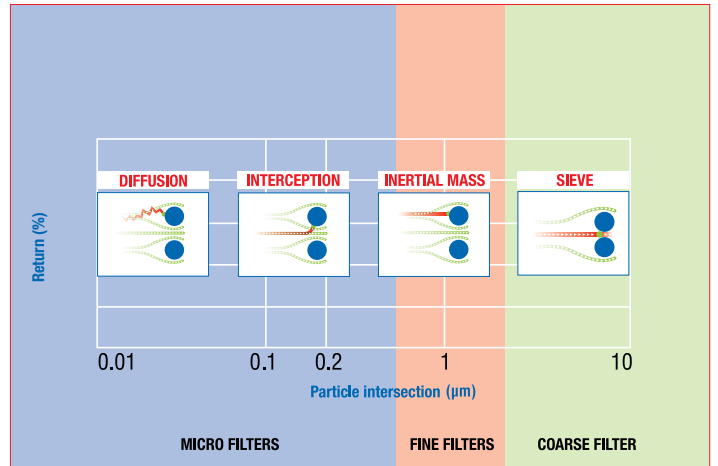
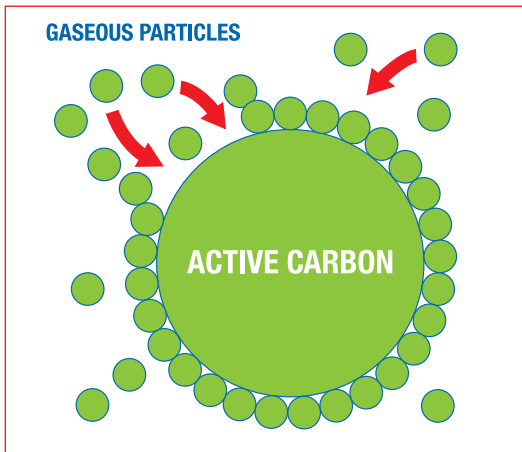
The fact that particles exert forces of attraction on one another is crucial to this filter principle. The larger media fibres attract the relatively small dust particles. Once the particles have been intercepted they remain stuck between the media fibres.

The diffusion effect

Particularly small particles often pursue an irregular path. This phenomenon is referred to as Brownian motion. The path that the particles follow may digress from that of the airflow. Brownian motion increases the chances of the particle colliding with the media fibres.

The various filter effects can be plotted on a graph, which clearly indicates the particle size on which each of the filtration principles has the greatest effect.





European filterclassification

How can one establish, as the end-user, whether a filter will provide the envisaged air quality? Throughout Europe, air filters are classified according to two standards: EN779:2012 for course and fine filters, and EN1822:2009 for HEPA and ULPA filters. Filters that are tested for compliance with these standards naturally meet stringent requirements. During such tests, the filters are exposed to circumstances which indicate precisely how they will perform in practice.

As the customer, it is a comforting thought to know that all the products we supply are compliant with European classification. The filters are tested in both our own and independent laboratories. Furthermore, we comply with the stringent requirements of the Eurovent certification programme. This guarantees that the actual filter performance is in line with the specifications presented. Further details of the Eurovent certification programme can be found on page 9.

EN779:2012 and EN1822:2009

The EN779:2012 standard is used for the classification of course and fine filters. This is based on the average efficiency of the filters. EN779:2012 allocates course filters to the classes G1 to G4, and fine filters to the classes M5 to F9.

The EN1822:2009 standard classifies HEPA and ULPA filters. In this case, MPPS efficiency is leading. The table contains detailed information on the European filter classifications.

We supply test certificates with all HEPA and ULPA filters. You can therefore rest assured that the filter supplied is of suitable quality. However, we do recommend subsequent validation of the filters following installation, to ensure that they were not damaged during transport or fitting.

Comparison Summary filter testing classification

Filter Test Standard	Prefilters				Fine filters				
	G1	G2	G3	G4	M5	M6	F7	F8	F9
EN 779 2012									
Test Aerosol - DEHS	Average gravimetric dust trapping efficiency (%) to 250 Pa				Average efficiency particulate (0.4 µm) to 450 Pa (%)				
Classification based on average Am / Em	< 65%	65-80%	80-90%	>90%	40-60%	60-80%	80-90%	90-95%	>95%
Initial Efficiency vs. particle size					Efficiency (%)				
0.1 µm	-	-	-	-	0 - 10	5 - 15	25 - 35	35 - 45	45 - 60
0.3 µm	-	-	-	0 - 5	5 - 15	10 - 25	45 - 60	65 - 75	75 - 85
0.5 µm	-	-	0 - 5	5 - 15	15 - 30	20 - 40	60 - 75	80 - 90	90 - 95
1.0 µm	-	0 - 5	5 - 15	15 - 35	30 - 50	50 - 65	85 - 95	95 - 98	> 99
3.0 µm	0 - 5	5 - 15	15 - 35	30 - 55	70 - 90	85 - 95	> 98	> 99	> 99
5.0 µm	5 - 15	15 - 35	35 - 70	60 - 90	90 - 99	95 - 99	> 99	> 99	> 99
10.0 µm	40 - 50	50 - 70	70 - 85	85 - 98	> 98	> 99	> 99	> 99	> 99
Eurovent 4/5	EU1	EU2	EU3	EU4	EU5	EU6	EU7	EU8	EU9
ASHRAE 52.1									
Test Aerosol - Multiple airflow	Average gravimetric dust trapping efficiency (%) to 250 Pa				Average efficiency particulate (0.4 µm) to 450 Pa (%)				
Classification based on average Am / Em	< 65%	65-80%	80-90%	>90%	40-60%	60-80%	80-90%	90-95%	>95%
ASHRAE 52.2	The particle size varies with E1: 0.3-1.0 µm - E2: 1.0-3.0µm - E3: 3.0-10µm								
Test Aerosol - KCI									
Classification based on MERV (Minimum Efficiency Reporting Value)	MERV 1-3	MERV 4-5	MERV 6-7	MERV 8-9	MERV 9-10	MERV 11-12	MERV 13-14	MERV 15	MERV 16
EN 1822									
Initial Efficiency based on MPPS (Most Penetrating Particle Size)	-	-	-	-	-	-	-	-	-
US. Federal Standard 209									
0.3µm DOP	-	-	-	0 - 5	5 - 15	10 - 25	45 - 60	65 - 75	75 - 85



MPPS

MPPS stands for *most penetrating particle size*. This refers to the dimensions of those particles that are the most difficult to trap. It generally lies in the region of 0.1 to 0.2 microns (μm). The MPPS has to be established before subjecting a filter to tests. The *overall efficiency* and the *local efficiency* are then determined, depending on the filter class.

HEPA Filters					ULPA Filters		
E10	E11	E12	H13	H14	U15	U16	U17
Efficiency (%)							
> 85	> 95	> 99.5	> 99.99	> 99.999	> 99.9999	> 99.99999	> 99.999999
EU10	EU11	EU12	EU13	EU14	EU15	EU16	EU17
Efficiency (%)							
> 85	> 95	> 99.5	> 99.99	> 99.999	> 99.9999	> 99.99999	> 99.999999
> 85	> 95	> 99.5	> 99.99	> 99.999	> 99.9999	> 99.99999	> 99.999999



EUROVENT CERTIFICATION COMPANY SCRL
53 rue Turbigo 75003 Paris FRANCE - RCS Paris B 393 363 460 - Code APE : 748K

Accreditation # 5-0527 Industrial Product Certification
according to ISO/IEC guide 65:1996 or EN 45011:1998
Scope and validity at www.cofrac.fr
International recognition EA/IAF

Certification Diploma N° : 09.10.433

EUROVENT Certification Company certifies that

M5-F9 Air Filters

from

AFPRO FILTERS BV

Located at

Berenkoog 67 - 1822, ALKMAAR, Netherland

EUROVENT
CERTIFIED PERFORMANCE

Trade name

AFPRO Filters

have been assessed according the requirements of following standard

OM-11-2012

The list of certified products is displayed at :

<http://www.eurovent-certification.com>

AFPRO FILTERS BV

is authorised to use the EUROVENT Certification mark in accordance with the rules

specified in the Operational Manual

OM-11-2012

Erick MELQUIOND

Managing Director

Our filters comply with the stringent requirements applicable for Eurovent certification. Eurovent is the European association of air conditioning suppliers, which has developed a certification programme in cooperation with various air filter manufacturers. Eurovent's aim in introducing certification is to promote fair competition in the filter sector. We are pleased to inform you of the benefits that this significant quality mark offers you.

The Eurovent certificate is your guarantee

- that your air filters have been tested by independent laboratories
- that the filters correspond to the design specifications
- that the filters you purchase comply with the energy consumption levels stated.

Furthermore, Eurovent accreditation serves as a guarantee that all documents supplied together with your filter comply with the European standard. These documents include the product information contained in this catalogue, on our website and in user manuals. In short: The Eurovent quality mark vouches for safe air filters, which also provide excellent performance. The Eurovent certificate is applicable to all our bag filters, compact filters and panel filters (M5 to F9) tested in accordance with the EN 779:2012 standard.

Object of the certificate

The object of the Eurovent certification programme is to enable the comparison of air filters using an equivocal set of assessment criteria. By publishing the technical specifications of certified filters, Eurovent makes it easier for customers to choose. After all, they need no longer subject the products they intend buying to their own extensive comparison and performance assessments. As a customer, one can therefore select products manufactured by us in the assurance that they are fully compliant with both the applicable specifications and the Eurovent requirements.

Independent test laboratories

Eurovent-certified filters have been tested in two independent laboratories: SP in the Swedish city of Borås and VTT in Espoo, Finland. These are the sole ISO 17025 accredited laboratories in Europe, and therefore the only ones compliant with the standard. Furthermore, the tests in question are carried out 'blind': None of scientists involved knows which filter manufacturer supplied the products being tested. Eurovent applies a reference number only to the filters for its own records.

The Eurovent logo

This logo offers you the assurance that your products have been subjected to an independent test process and that they have been meticulously assessed. The customers of filter manufacturers authorised to display this logo need not have any worries whatsoever as to the quality of the products, as they have been meticulously assessed. With a view to guaranteeing continuously high quality, furthermore, Eurovent selects several filters at random each year, which it subjects to further inspection.



Further information

The range of fne filters, compliant with the EN779 standard, is certified under number 09.10.433 and is presented in the folder containing certified air filters on the Eurovent certification website: www.eurovent-certification.com This website also contains information on the entire certification programme and the certification process completed by us.

EN779:2012

The society changes continuously. Environmental responsibility increases, work conditions are getting more important and technological developments are chasing each other rapidly. It is therefore that after 10 year the air filtrations' most important norm is revised.

Recently the European EN779 norm for course and fine dust is modified. It is expected that as from the first of January 2013 this norm will officially be accepted. To this respect we would like to inform you about the upcoming changes.

Two biggest changes

Introduction Minimum Test Efficiency

With the new EN779:2012 norm a minimum test efficiency (MTE) is introduced for fine filters. During the EN779 performance test, the filters have to reach a minimal test efficiency. This MTE, tested on particles of 0.4 micron, is set for fine filters to:

F7 > 35%

F8 > 55%

F9 > 70%

Direct effect of the MTE is that electrostatic synthetic filters will receive a lower classification as they have a lower efficiency after losing their electrostatic load

F5 turns M5 and F6 turns M6

With the new EN779:2012 norm F5 will become M5 and F6 becomes M6. The letter M indicates a medium efficiency of the air filter. For this range of medium efficient filters there is no MTE, these filters however do have to pass their average efficiency (Em) of:

M5 → 40 ≤ Em < 60

M6 → 60 ≤ Em < 80

What does this mean for you?

Range G1 to M6

The filters in the range of G1 till M6 will besides the name, not have any actual changes. You will be able to keep using the product as you are doing right now.

F7 and F9 filters

The filters in this range will have to commit to the new MTE. Many synthetic filters in these filtration classes will not pass the new standard and will have to be replaced with filters that does apply to the new standard.

Filter class	G4	M5	M6	F7	F8	F9
MTE	-	-	-	MTE ≥ 35%	MTE ≥ 55%	MTE ≥ 70%
	Mg = 350g ASHRAE	Mm = 250 g ASHRAE		Mf = 100 g ASHRAE		
A	0-600 kWh	0-650 kWh	0-800 kWh	0-1200 kWh	0-1600 kWh	0-2000 kWh
B	> 600 kWh - 700 kWh	>650 kWh - 780 kWh	>800 kWh - 950 kWh	>1200 kWh - 1450 kWh	>1600 kWh - 1950 kWh	>2000 kWh - 2500 kWh
C	>700 kWh - 800 kWh	>780 kWh - 910 kWh	>950 kWh - 1100 kWh	>1450 kWh - 1700 kWh	>1950 kWh - 2300 kWh	>2500 kWh - 3000 kWh
D	>800 kWh - 900 kWh	>910 kWh - 1040 kWh	>1100 kWh - 1250 kWh	>1700 kWh - 1950 kWh	>2300 kWh - 2650 kWh	>3000 kWh - 3500 kWh
E	>900 kWh - 1000 kWh	>1040 kWh - 1170 kWh	>1250 kWh - 1400 kWh	>1950 kWh - 2200 kWh	>2650 kWh - 3000 kWh	> 3500 kWh - 4000 kWh
F	>1000 kWh - 1100 kWh	>1170 kWh - 1300 kWh	>1400 kWh - 1550 kWh	> 2200 kWh - 2450 kWh	>3000 - 3350 kWh	>4000 kWh - 4500 kWh
G	> 1100 kWh	> 1300 kWh	> 1550 kWh	>2450 kWh	>3350 kWh	>4500 kWh

Energy labels

The Eurovent energy labels are used as from the 1st of January 2012 by all Eurovent members with their G4 till F9 filters. Convenient for you, cause this enables you to select the desired energy classification and its corresponding usage. The energy labels only relate to those filters that are in accordance with the new EN779:2012 and that are in the range G4 till F9 with a nominal debit of 3400m³/h. The energy label can be found on the quotation, the boxes, the filter frame, our website and catalog.

Classification

Filters in the range G4-F9 all have their own energy consumption determined by the applied dust concentration. The G4 filters are charged with 350g ASHREA dust, M5 and M6 with 250g ASHREA dust and the F7-F9 filters with 100g ASHREA dust. These quantities of ASHREA dust are determined based on a predicted dust amount dealt with by an average air handling unit.

After the filters are charged with the standard dust amount, the energy labels are determined bases upon there theoretical energy consumption. The labels are classified A to G. An A label being the most energy friendly.

The calculation

The energy consumption is determined using the following equation:

$$E(kWh) = \frac{q \times \Delta p \times t}{\eta \times 1000}$$

In which:

- q = airflow (m³/s)
- Δp = pressure drop (Pa)
- t = operating time (hours)
- η = fan efficiency

The equation learns us that filters with a large filter surface are more energy economical than filters with a smaller filter surface. This usually also count for products with a high dust holding capacity. A bag filter will therefore always perform better than a panel filter.

Advantages

Direct savings

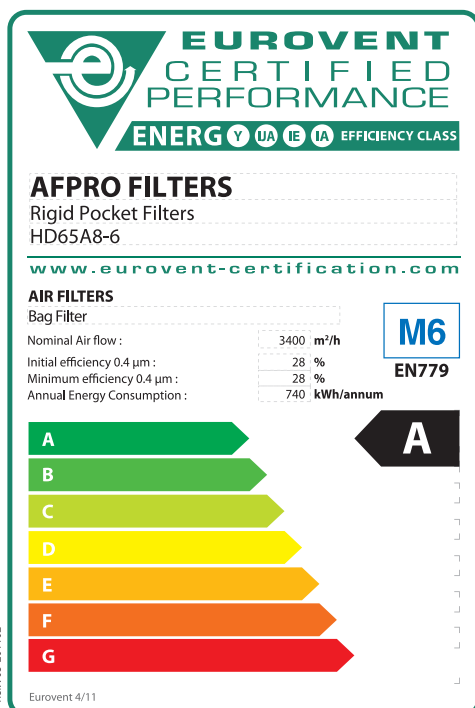
The energy label will provide information on the energy usage of the filter. The total cost of filtration are for 80% determined by energy cost. The better the energy label on the product (low energy consumption) the lower the energy cost during the total lifetime of the filter.

Recognize an energy efficient filter directly.

Thanks to the introduction of the energy labels everybody can determine an energy efficient filter at sight. Sustainable entrepreneurship and energy saving have been simplified.

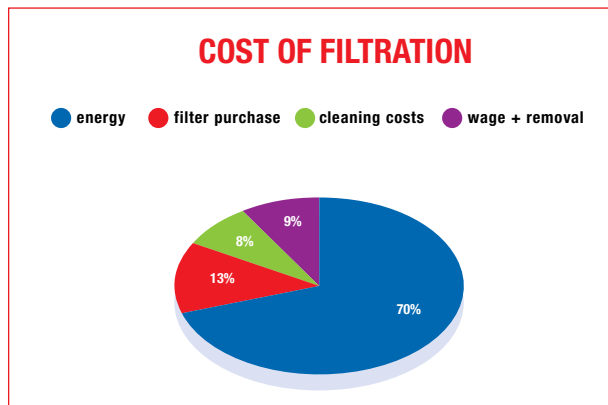
Guaranteed performance

The energy labels are independent certified by the Eurovent commission. This means that the filter performance is guaranteed. Manufacturers that are not part of the Eurovent committee are not entitled to use these energy labels. These producers use other labels which are not tested by Eurovent and therefore not have an independently tested certified performance. Please note this when you make your purchase.



The Importance of Energy Efficient Filters

Energy consumption is one of the main cost items related to air filtration. There is evidence that an average of seventy percent of the total cost of filtration can be attributed to energy consumption. It is therefore important that one purchase air filters which offer energy savings. This enables one to save money while also reducing the burden on the environment. The purchase of inferior quality filters can ultimately entail both higher energy costs and increased replacement frequency.



Together with customers, We have succeeded in reducing the energy consumption involved in air filtration, often with notable results. Simple modifications of the filter configuration have proven to yield considerable energy savings, while continuing to provide the required air quality.

We view the manufacture of air filters with a low resistance as a spearhead. The lower the resistance, after all, the lower the energy costs. Research has shown that if the resistance of a filter is reduced by an average of 1 Pa, the costs of air filtration also decline by around 1 euro per annum. This becomes clear from the model calculation below. The air treatment cabinet in the following example requires ten bag filters to achieve the envisaged air quality.

	# Filters	Class	Average resistance (Pa)	Capacity/ filter	Duration (days)	Fan output efficiency	kWh	Energy rate (€ 0.12)
D-label filter	10	F7	160	3400	365	0.6	22000	€ 2640
A-label filter	10	F7	120	3400	365	0.6	16500	€ 1980

The energy costs can be calculated using the following equation.

$$E \text{ (kWh)} = \frac{q \times \Delta p \times t}{\eta \times 1000}$$

In which:

q = airflow (m³/s)

Δp = pressure drop (Pa)

t = operating time (hours)

η = fan efficiency (0.6 – 0.7)



Energy consumption may vary.

It has been assumed that the fans are to run non-stop during the operating time of one year. The remaining data can be derived from the table above. These show that, in the event of fluctuating energy prices, the lower resistance yields savings on energy costs of over 600 euros. Even when the slightly higher purchase price of the filters is deducted from this sum, considerable savings are still made.

The message is therefore clear: When purchasing an air filter, one should consider not only the purchase price, but also the energy costs. We would be pleased to advise you on such matters. Our sales staff and technicians collaborate in analysing the possibilities of cutting costs while maintaining air quality standards, by modifying the filter configuration.



The power of our Filters

All our services are based on the following strengths: Quality, sustainability, innovation and delivery reliability. Opting for our filters means choosing a filter supplier that aims to provide cost savings, sound advice and delivery reliability.

Quality

We manufacture all major products ourselves, and can therefore vouch for quality and continuity. Furthermore, we are capable of supplying filters with non-standard dimensions. We strictly distinguish between standard and special products, however. This enables us to supply standard products at particularly keen prices, while also supplying special products within in very short space of time.

Sustainability


We consider sustainable manufacturing a matter of course. This implies that we make responsible use of raw materials, while also considering the environmental impact of such materials further along the production chain. The majority of our products are manufactured using materials that can be safely and fully incinerated, while no harmful substances are emitted in the process. Moreover, we devote considerable attention to reducing the resistance of air filters. After all, this can considerably reduce energy consumption.

Innovation

We have our own laboratories, where both incoming goods are inspected and finished products checked, before being dispatched to the customer. Our existing products are subjected to a continuous process of innovation. In addition, however, we regularly introduce new products, such as energy efficient filters. Another of our innovative services is the analysis of your existing air filters: We are capable of analysing the areas where you might implement improvements.

Delivery reliability

We achieve high scores for our logistics and delivery periods, as customer satisfaction has shown. We have an extensive logistics network with complete tracking & tracing facilities. We can inform you of your order status at any given moment. We uphold the motto 'a deal is a deal'. We therefore do everything within our power to carry out delivery at the agreed time. We work solely with reliable transport partners: you can therefore rest assured that your shipment will arrive at your premises both in time and in sound working order.



AFPRO Filters laboratories

AFPRO Filter Services

AFPRO Filters stands for quality, durability and innovation. In order to continue to guarantee our customers these important core values, AFPRO Filters has set up its own highly advanced laboratories. Here, research is carried out on a daily basis with a view to rendering our air filters more efficient and durable.

AFPRO Filters monitors all products in accordance with the ISO 9001 quality assurance system. The raw materials, semi-manufactured and finished products are checked on the basis of the criteria that the quality system prescribes. This helps vouch for the continuously high quality of our products.

Research and development laboratory

The staff in our R&D lab endeavour to develop new filter media and filtration techniques. For instance, the lab performs research into high quality, unbreakable synthetic fibres, which are progressively constructed by means of a multi-layering technique. This technique contributes to greater durability: The air resistance and therefore also the energy consumption of such filter media is lower.

AFPRO Filters is Eurovent accredited in accordance with the Certify All programme. The Eurovent quality mark vouches for consistent quality. The added value that the accreditation offers is guaranteed by independent testing laboratories in Sweden and Finland. These labs perform regular 'blind' tests on all manufacturers' filters for compliance with the stringent Eurovent standards. Further details of Eurovent certification can be found on page 9 of this catalogue.

Activated carbon laboratory

In addition to its R&D lab, AFPRO Filters has an activated carbon laboratory. Activated carbon is used to trap gaseous particles. In this laboratory, AFPRO carries out research into the adsorption capacity of various types of active carbon and filter media, in accordance with the applicable active carbon standards. The lab can also take samples for customers, which it subsequently uses to analyse the remaining service life or adsorption capacity of a filter. This analysis serves as the basis for recommendations concerning the filters to be used and the consequences in terms of air quality, energy consumption and costs.

Our laboratory also serves as a customer service and expertise centre. It therefore also accommodates AFPRO Filter Services, where one can acquire a great deal of knowledge of air filtration, filter media, test standards and monitoring techniques. Furthermore, AFPRO Filters has its own EN779:2012 test duct, which is used to test and verify the high quality of all product groups. As a customer, you may also opt to have filters tested in accordance with the latest EN779 testing standard. A list of our services follows.

Performing air measurements

The knowledge we have acquired in our laboratories enables us to perform on-site air measurements. In the process, we can assess your entire filtration system's compliance with the applicable standards. The test methods applied in the course of air measurements are listed below:

- **Eurovent 4/10 - 1996** In situ determination of fractional efficiency of general ventilation filters.
- **ISO/CD 29462** Field testing of general ventilation filtration devices and systems for in-situ removal efficiency by particle size and resistance to airflow.

Filter performance surveys

Your used filters can be examined in our laboratory, to establish filter performance according to the EN779 2012 criteria (resistance – efficiency), particle analysis and particle interception capacity. The findings of the survey are used as the basis to issue you, the customer, sound advice on the performance of your filter.

Calculating the actual costs

Our laboratory also advises customers in making a conscious sustainable choice using the Filter Durability Model (FDM). This model, which AFPRO Filters developed itself, provides insight into the actual costs per filter, per month. The FDM is based on the latest filter testing standards and the Eurovent energy label guidelines. Once the calculations have been performed, AFPRO Filters can inform you exactly which type of filter is best for your purposes, as well as the most energy efficient solution for your entire filtration system.

Panel filters

Qualities

Our panel filters are characterised by their superior filtration properties. The synthetic filter medium is progressively constructed, which makes for a high particle interception level. This technology guarantees lower air resistance, which also entails reduced energy consumption.

Advantages of panel filters

- Large filter surface
- High particle interception capacity
- Lengthy service life
- Low energy consumption
- Dimensions compliant with EN15805
- Moisture-resistant cardboard frame
- Completely safe for incineration

Construction

Our pleated filters are assembled with a moisture-resistant cardboard frame.

Application

Panel filters are used as a pre-filter for air treatment cabinets, air conditioning systems and industrial systems.

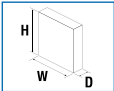
Installation

- Ensure that the filter is fitted correctly:
Suction side – clean air side
- Filter should be correctly installed: no leaks
- Gaskets should be completely undamaged
- Filter should be secured at four points
- Ensure that the filter medium is not folded double
- Take care to avoid damaging the filter during installation
- System should be run in for several hours to achieve the desired result
- Filter installation records; note the date, type and initial resistance.

Panel filters

V-Pleat Panel

G4



SPECIFICATIONS

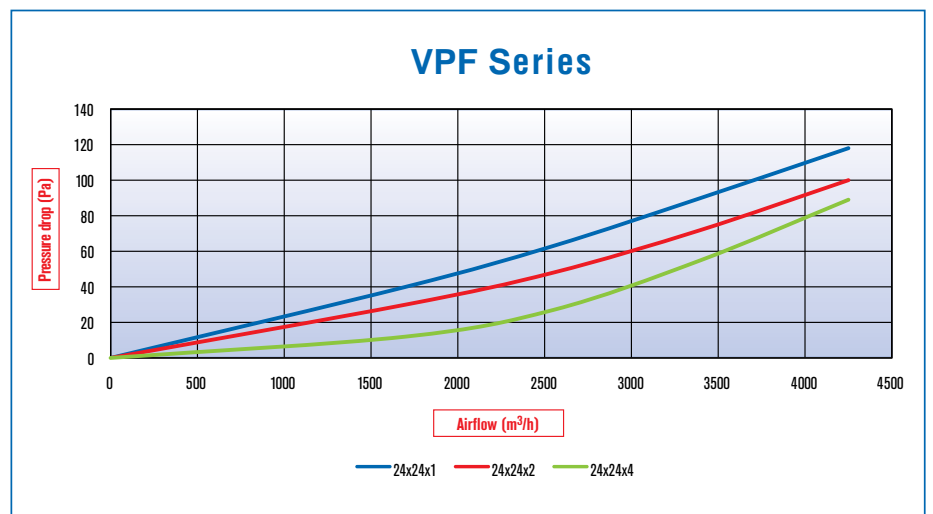
Application: prefilters HVAC, industry,
Frame: Aluminium or Stainless
Spacers: n.a.
Bonding: n.a.
Media: synthetic
Gasket: optional Neoprene
Filterclass according to EN 779:2012: G4
Maximum final pressure drop: 250Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Straightforward assembly
- Firm construction

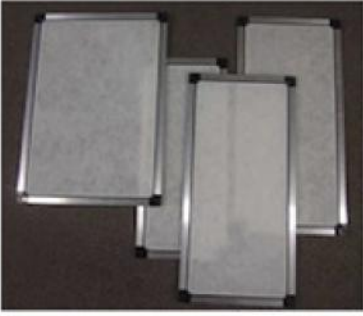
Made to any size requested

Type	Dimensions WxHxD (mm)	Filterclass	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
VPF 12x24x1	287x592x23	G4	0.3	1700	90	40	600x600x500
VPF 16x20x1	394x490x23	G4	0.4	1880	90	32	640x510x530
VPF 16x24x1	394x592x23	G4	0.5	2250	90	27	640x510x530
VPF 16x25x1	394x620x23	G4	0.5	2350	90	28	640x510x530
VPF 20x20x1	490x490x23	G4	0.5	2350	90	27	640x510x530
VPF 20x24x1	490x592x23	G4	0.5	2800	90	24	640x510x530
VPF 20x25x1	490x620x23	G4	0.6	2900	90	22	640x510x530
VPF 24x24x1	592x592x23	G4	0.7	3400	90	20	600x600x500
VPF 12x24x2	287x592x45	G4	0.6	1700	70	22	600x600x500
VPF 16x20x2	394x490x45	G4	0.7	1880	70	16	640x510x530
VPF 16x24x2	394x592x45	G4	0.8	2250	70	15	640x510x530
VPF 16x25x2	394x620x45	G4	0.8	2350	70	13	640x510x530
VPF 20x20x2	490x490x45	G4	0.8	2350	70	14	640x510x530
VPF 20x24x2	490x592x45	G4	1.0	2800	70	12	640x510x530
VPF 20x25x2	490x620x45	G4	1.1	2900	70	12	640x510x530
VPF 24x24x2	592x592x45	G4	1.2	3400	70	10	600x600x500
VPF 12x24x4	287x592x96	G4	1.1	1700	55	10	600x600x500
VPF 16x20x4	394x490x96	G4	1.2	1880	55	8	640x510x530
VPF 16x24x4	394x592x96	G4	1.5	2250	55	7	640x510x530
VPF 16x25x4	394x620x96	G4	1.5	2350	55	7	640x510x530
VPF 20x20x4	490x490x96	G4	1.5	2350	55	7	640x510x530
VPF 20x24x4	490x592x96	G4	1.9	2800	55	6	640x510x530
VPF 20x25x4	490x620x96	G4	1.9	2900	55	5	640x510x530
VPF 24x24x4	592x592x96	G4	2.4	3400	55	5	600x600x500



Panel filters

Aluminium Frame



SPECIFICATIONS

Filter class: G2 acc. To EN779:2012
Average separation rate: 70-75%
Filter media: 100% polyester
Temperature: Resistance: max. 100°C
Max. Final pressure drop: 250 Pa
Max. Air speed: 1,9 m/s

ADVANTAGES

- Synthetic polyester filter media
- Low initial pressure drop
- High economic efficiency
- Washable

Article Code	Dimensions (mm)	Depth (mm)	IPD	FPD
PF	On Request	11	15	150

Filters Direct offers a wide range of Fan Coil filter elements, compatible for all kinds of Fan Coil equipment.

A polyester fibre fleece with progressive construction is used as filter media. For the most part Fan Coil filter elements are used with mini air conditioners and air curtain systems.

Available with Aluminium frames.

Made to any size requested

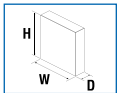
Available with media grades G2-M5

11mm or 22mm versions

Panel filters

DF Panel Filters

G4



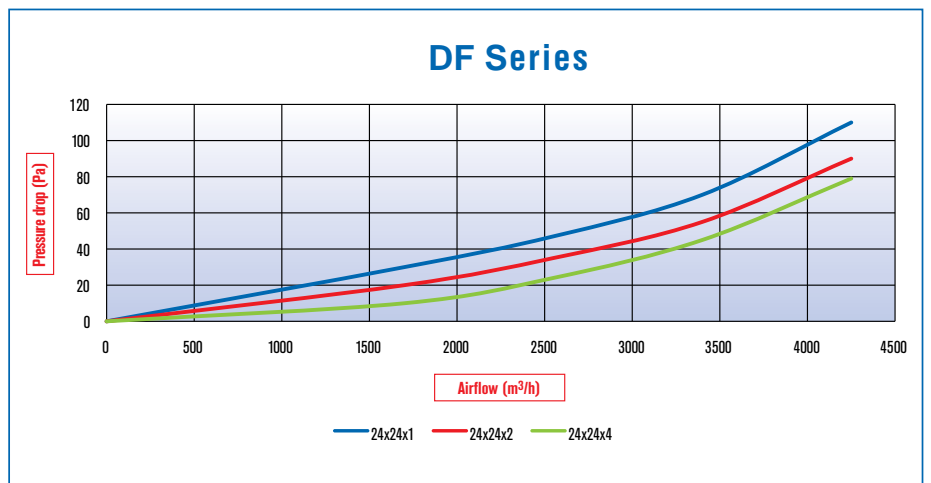
SPECIFICATIONS

Application: prefilters HVAC, industry, spray booth
Frame: firm cardboard frame
Spacers: n.a.
Bonding: n.a.
Media: synthetic
Gasket: optional Neoprene
Filterclass according to EN 779:2012: G4
Maximum final pressure drop: 250Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Straightforward assembly
- Lower pressure drop
- Larger dustholding capacity

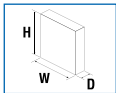
Type	Dimensions WxHxD (mm)	Filterclass	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
DF 12x24x1	289x594x23	G4	0.4	1700	70	40	600x600x500
DF 16x20x1	394x495x23	G4	0.5	1880	70	32	640x510x530
DF 16x25x1	394x622x23	G4	0.7	2350	70	28	640x510x530
DF 20x20x1	495x495x23	G4	0.7	2350	70	27	640x510x530
DF 20x24x1	495x594x23	G4	0.7	2800	70	24	640x510x530
DF 20x25x1	495x622x23	G4	0.8	2900	70	22	640x510x530
DF 24x24x1	594x594x23	G4	0.9	3400	70	20	600x600x500
DF 12x24x2	289x594x45	G4	0.8	1700	55	22	600x600x500
DF 16x20x2	394x495x45	G4	0.9	1880	55	16	640x510x530
DF 16x25x2	394x622x45	G4	1.0	2350	55	13	640x510x530
DF 20x20x2	495x495x45	G4	1.0	2350	55	14	640x510x530
DF 20x24x2	495x594x45	G4	1.3	2800	55	12	640x510x530
DF 20x25x2	495x622x45	G4	1.4	2900	55	12	640x510x530
DF 24x24x2	594x594x45	G4	1.6	3400	55	10	600x600x500
DF 12x24x4	289x594x94	G4	1.7	1700	45	10	600x600x500
DF 16x20x4	394x495x94	G4	1.6	1880	45	8	640x510x530
DF 16x25x4	394x622x94	G4	2.0	2350	45	7	640x510x530
DF 20x20x4	495x495x94	G4	2.0	2350	45	7	640x510x530
DF 20x24x4	495x594x94	G4	2.5	2800	45	6	640x510x530
DF 20x25x4	495x622x94	G4	2.5	2900	45	5	640x510x530
DF 24x24x4	594x594x94	G4	3.1	3400	45	5	600x600x500



Panel filters

CP Panel

M5 M6 F7 F9



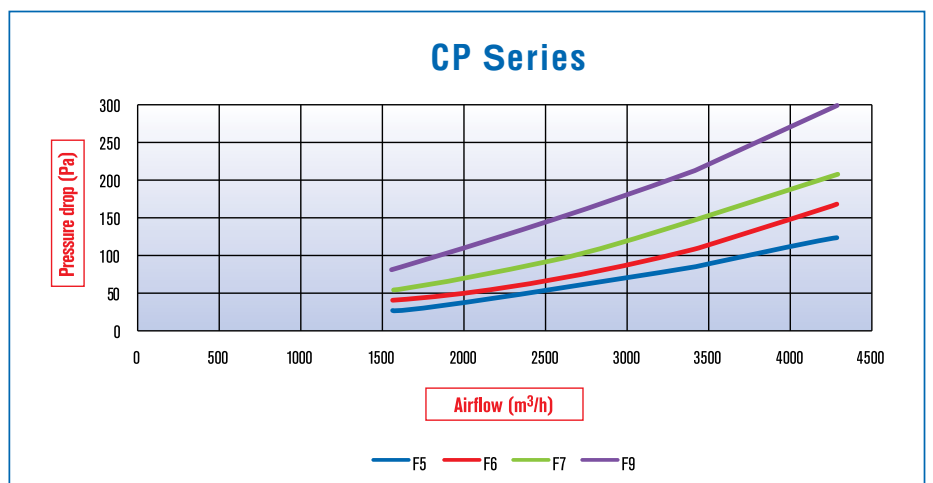
SPECIFICATIONS

Application: HVAC
Frame: plastic
Spacers: Hotmelt
Bonding: 2 component polyurethane
Media: Synthetic
Gasket: continuous poured gasket
Filterclass according to EN779:2012: M5, M6, F7, F9
Maximum/recommended final pressure drop: 450 Pa
Maximum temperature: 65°C
Maximum relative humidity: 90%

ADVANTAGES

- Compact construction
- Firm construction

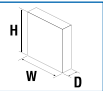
Type	Dimensions WxHxD (mm)	Filterclass	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
CP24x24x2-M5	592x592x48	M5	5.2	3400	75	10	600x600x500	G
CP20x24x2-M5	490x592x48	M5	4.3	2800	75	12	640x510x530	G
CP12x24x2-M5	287x592x48	M5	2.5	1700	75	22	600x600x500	G
CP24x24x4-M5	592x592x96	M5	11	3400	90	5	600x600x500	G
CP20x24x4-M5	490x592x96	M5	9.1	2800	90	6	640x510x530	G
CP12x24x4-M5	287x592x96	M5	5.2	1700	90	10	600x600x500	G
CP24x24x2-M6	592x592x48	M6	5.2	3400	100	10	600x600x500	G
CP20x24x2-M6	490x592x48	M6	4.3	2800	100	12	640x510x530	G
CP12x24x2-M6	287x592x48	M6	2.5	1700	100	22	600x600x500	G
CP24x24x4-M6	592x592x96	M6	11	3400	120	5	600x600x500	G
CP20x24x4-M6	490x592x96	M6	9.1	2800	120	6	640x510x530	G
CP12x24x4-M6	287x592x96	M6	5.2	1700	120	10	600x600x500	G
CP24x24x2-F7	592x592x48	F7	5.2	3400	180	10	600x600x500	G
CP20x24x2-F7	592x592x48	F7	4.3	2800	180	12	640x510x530	G
CP12x24x2-F7	287x592x48	F7	2.5	1700	180	22	600x600x500	G
CP24x24x4-F7	592x592x96	F7	11	3400	150	5	600x600x500	G
CP20x24x4-F7	490x592x96	F7	9.1	2800	150	6	640x510x530	G
CP12x24x4-F7	287x592x96	F7	5.2	1700	150	10	600x600x500	G
CP24x24x2-F9	592x592x48	F9	5.2	3400	250	10	600x600x500	G
CP20x24x2-F9	490x592x48	F9	4.3	2800	250	12	640x510x530	G
CP12x24x2-F9	287x592x48	F9	2.5	1700	250	22	600x600x500	G
CP24x24x4-F9	592x592x96	F9	11	3400	215	5	600x600x500	G
CP20x24x4-F9	490x592x96	F9	9.1	2800	215	6	640x510x530	G
CP12x24x4-F9	287x592x96	F9	5.2	1700	215	10	600x600x500	G



Panel filters

CP/FL Panel

M5 M6 F7 F9



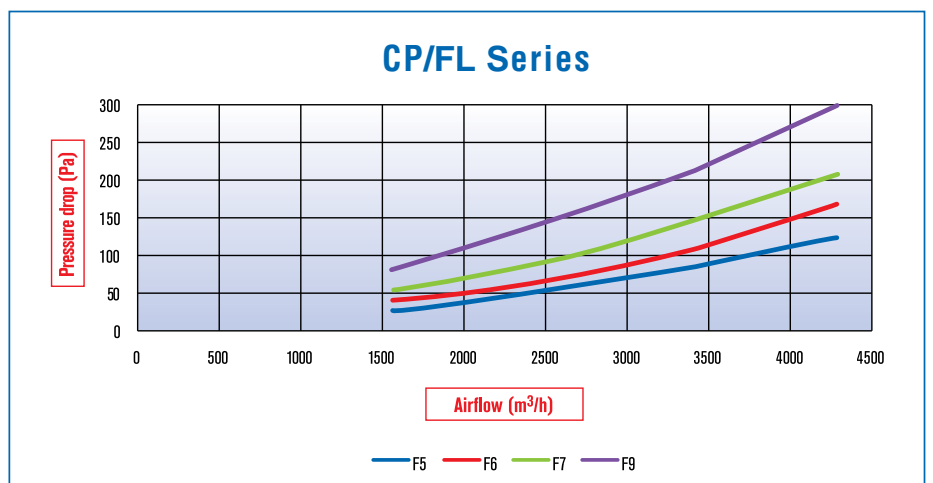
SPECIFICATIONS

Application: HVAC
Frame: plastic
Spacers: Hotmelt
Bonding: 2 component polyurethane
Media: Synthetic
Gasket: continuous poured gasket
Filterclass according to EN779:2012: M5, M6, F7, F9
Maximum/recommended final pressure drop: 450 Pa
Maximum temperature: 65°C
Maximum relative humidity: 90%

ADVANTAGES

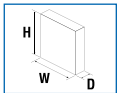
- Compact construction
- Firm construction

Type	Dimensions WxHxD (mm)	Filterclass	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
CP/FL24x24x2-M5	592x592x48	M5	5.2	3400	75	10	600x600x500	G
CP/FL20x24x2-M5	490x592x48	M5	4.3	2800	75	12	640x510x530	G
CP/FL12x24x2-M5	287x592x48	M5	2.5	1700	75	22	600x600x500	G
CP/FL24x24x4-M5	592x592x96	M5	11	3400	90	5	600x600x500	G
CP/FL20x24x4-M5	490x592x96	M5	9.1	2800	90	6	640x510x530	G
CP/FL12x24x4-M5	287x592x96	M5	5.2	1700	90	10	600x600x500	G
CP/FL24x24x2-M6	592x592x48	M6	5.2	3400	100	10	600x600x500	G
CP/FL20x24x2-M6	490x592x48	M6	4.3	2800	100	12	640x510x530	G
CP/FL12x24x2-M6	287x592x48	M6	2.5	1700	100	22	600x600x500	G
CP/FL24x24x4-M6	592x592x96	M6	11	3400	120	5	600x600x500	G
CP/FL20x24x4-M6	490x592x96	M6	9.1	2800	120	6	640x510x530	G
CP/FL12x24x4-M6	287x592x96	M6	5.2	1700	120	10	600x600x500	G
CP/FL24x24x2-F7	592x592x48	F7	5.2	3400	180	10	600x600x500	G
CP/FL20x24x2-F7	592x592x48	F7	4.3	2800	180	12	640x510x530	G
CP/FL12x24x2-F7	287x592x48	F7	2.5	1700	180	22	600x600x500	G
CP/FL24x24x4-F7	592x592x96	F7	11	3400	150	5	600x600x500	G
CP/FL20x24x4-F7	490x592x96	F7	9.1	2800	150	6	640x510x530	G
CP/FL12x24x4-F7	287x592x96	F7	5.2	1700	150	10	600x600x500	G
CP/FL24x24x2-F9	592x592x48	F9	5.2	3400	250	10	600x600x500	G
CP/FL20x24x2-F9	490x592x48	F9	4.3	2800	250	12	640x510x530	G
CP/FL12x24x2-F9	287x592x48	F9	2.5	1700	250	22	600x600x500	G
CP/FL24x24x4-F9	592x592x96	F9	11	3400	215	5	600x600x500	G
CP/FL20x24x4-F9	490x592x96	F9	9.1	2800	215	6	640x510x530	G
CP/FL12x24x4-F9	287x592x96	F9	5.2	1700	215	10	600x600x500	G



Eco-V-Pleat

G4



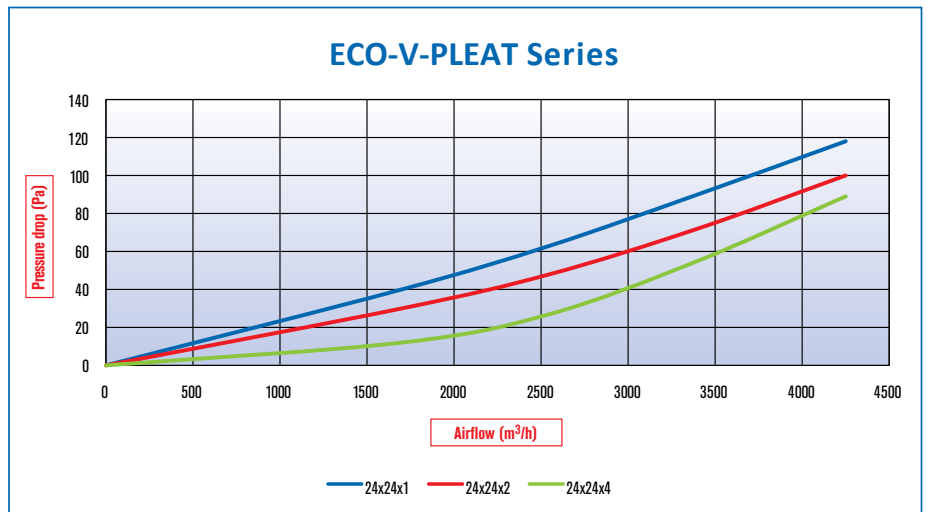
SPECIFICATIONS

Application: HVAC, industrial
Frame: plastic
Spacers: n.a.
Bonding: 2 component polyurethane
Media: synthetic - PS
Gasket: continuous poured gasket
Filterclass according to EN779:2012: G4
Maximum/recommended final pressure drop: 250 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%
Comments: very good alternative for the DF filter

ADVANTAGES

- Very low pressure drop
- Firm construction
- Totally combustible

Type	Dimensions WxHxD (mm)	Filterclass	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
ECO-V-PLEAT	287x592x25	G4	0.3	1700	90	40	600x600x500
ECO-V-PLEAT	394x490x25	G4	0.4	1880	90	28	640x510x530
ECO-V-PLEAT	394x592x25	G4	0.5	2250	90	24	640x510x530
ECO-V-PLEAT	394x620x25	G4	0.5	2350	90	28	640x510x530
ECO-V-PLEAT	490x490x25	G4	0.5	2350	90	27	640x510x530
ECO-V-PLEAT	490x592x25	G4	0.5	2800	90	24	640x510x530
ECO-V-PLEAT	490x620x25	G4	0.6	2900	90	22	640x510x530
ECO-V-PLEAT	592x592x25	G4	0.7	3400	90	20	600x600x500
ECO-V-PLEAT	287x592x48	G4	0.6	1700	70	22	600x600x500
ECO-V-PLEAT	394x490x48	G4	0.7	1880	70	16	640x510x530
ECO-V-PLEAT	394x592x48	G4	0.8	2250	70	15	640x510x530
ECO-V-PLEAT	394x620x48	G4	0.8	2350	70	13	640x510x530
ECO-V-PLEAT	490x490x48	G4	0.8	2350	70	14	640x510x530
ECO-V-PLEAT	490x592x48	G4	1.0	2800	70	12	640x510x530
ECO-V-PLEAT	490x620x48	G4	1.1	2900	70	12	640x510x530
ECO-V-PLEAT	592x592x48	G4	1.2	3400	70	10	600x600x500
ECO-V-PLEAT	287x592x96	G4	1.1	1700	50	10	600x600x500
ECO-V-PLEAT	394x490x96	G4	1.2	1880	50	8	640x510x530
ECO-V-PLEAT	394x592x96	G4	1.5	2250	50	6	640x510x530
ECO-V-PLEAT	394x620x96	G4	1.5	2350	50	7	640x510x530
ECO-V-PLEAT	490x490x96	G4	1.5	2350	50	6	640x510x530
ECO-V-PLEAT	490x592x96	G4	1.9	2800	50	6	640x510x530
ECO-V-PLEAT	490x620x96	G4	1.9	2900	50	5	640x510x530
ECO-V-PLEAT	592x592x96	G4	2.4	3400	50	5	600x600x500



Aqua Filter

G4

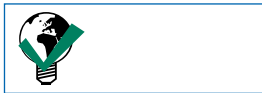
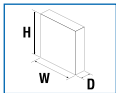


SPECIFICATIONS

Application: HVAC, industrial
Frame: plastic
Spacers: n.a.
Bonding: 2 component polyurethane
Media: 100% Polyester, hydrophobic
Gasket: Neroprene of Polyurethane
Filterclass according to EN779:2012: G4
Max/recommended final pressure drop: 250 Pa
Max temperature: 70°C
Max relative humidity: 100%

ADVANTAGES

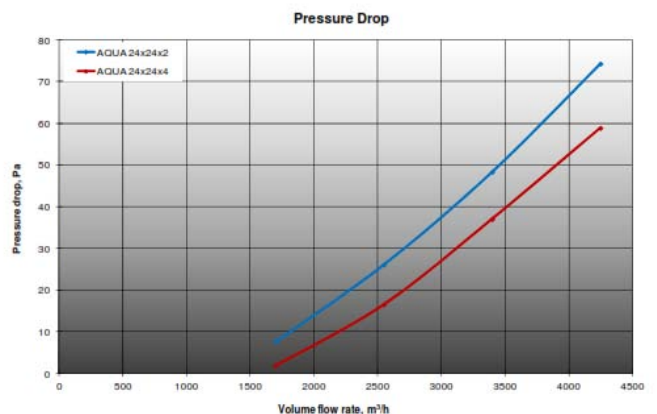
- Very low pressure drop
- Firm construction
- Totally combustible



Type	Dimensions WxHxD (mm)	Filterclass	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
AQUA	287x592x48	G4	0.6	1700	70	22	600x600x500
AQUA	394x490x48	G4	0.7	1880	70	16	640x510x530
AQUA	394x592x48	G4	0.8	2250	70	15	640x510x530
AQUA	394x620x48	G4	0.8	2350	70	13	640x510x530
AQUA	490x490x48	G4	0.8	2350	70	14	640x510x530
AQUA	490x592x48	G4	1.0	2800	70	12	640x510x530
AQUA	490x620x48	G4	1.1	2900	70	12	640x510x530
AQUA	287x592x96	G4	1.1	1700	50	10	600x600x500
AQUA	394x490x96	G4	1.2	1880	50	8	640x510x530
AQUA	394x592x96	G4	1.5	2250	50	6	640x510x530
AQUA	394x620x96	G4	1.5	2350	50	7	640x510x530
AQUA	490x490x96	G4	1.5	2350	50	6	640x510x530
AQUA	490x592x96	G4	1.9	2800	50	6	640x510x530
AQUA	490x620x96	G4	1.9	2900	50	5	640x510x530

AQUA-filter

Product	AQUA 24x24x2	AQUA 24x24x4
Dimensions (mm)	592x592x48	592x592x96
Surface area (m ²)	1.2	2.1
Air flow at test (m ³ /h)	3400 (2,7m/s)	3400 (2,7m/s)
Media velocity (m/s)	0.78	0.45
Initial pressure drop (Pa)	48	37
Final pressure drop (Pa)	250	250
Average arrestance (%)	93	94
Dust holding capacity (g)	198	325
Filter classification	G4	G4
Maximum temperature (°C)	70	70
Maximum rel. Humidity (%)	≤ 100	≤ 100
Energy classification	n.a.	n.a.





Bag filters

Qualities

Our bag filters are used as a pre- or fine filter in air conditioning systems among other things. The filters are available in filter classes G3 - F9 in compliance with EN779:2012, besides which all M5 to F9 filters are certified by means of the EUROVENT "certify all" system. The filter media, made from both polymer and glass fibres, are assembled in a robust plastic, steel or aluminium frame. The aluminium frame is a new introduction for our filters – its advantage is its great stiffness and the detail of the finish level. With the new aluminium frames in combination with the aerodynamic finishing strips, the filters are even simpler to install, and they will have a lower resistance throughout their lifetime.

Advantages of bag filters

- Large filter area
- Unique construction and opening of the filter bags
- Very high dust retention capacity through use of high-grade filter materials
- Long filter lifetime
- Low energy consumption
- Dimensioning according to EN15805
- Corrosion free
- Simple waste processing

Structure

The bag filters are constructed from bags with a unique structure through which as low a resistance as possible can be realised. The bags are assembled in an aluminium, plastic or steel frame. The filters resist up to 70°C and 95% RH.

New EN779:2012

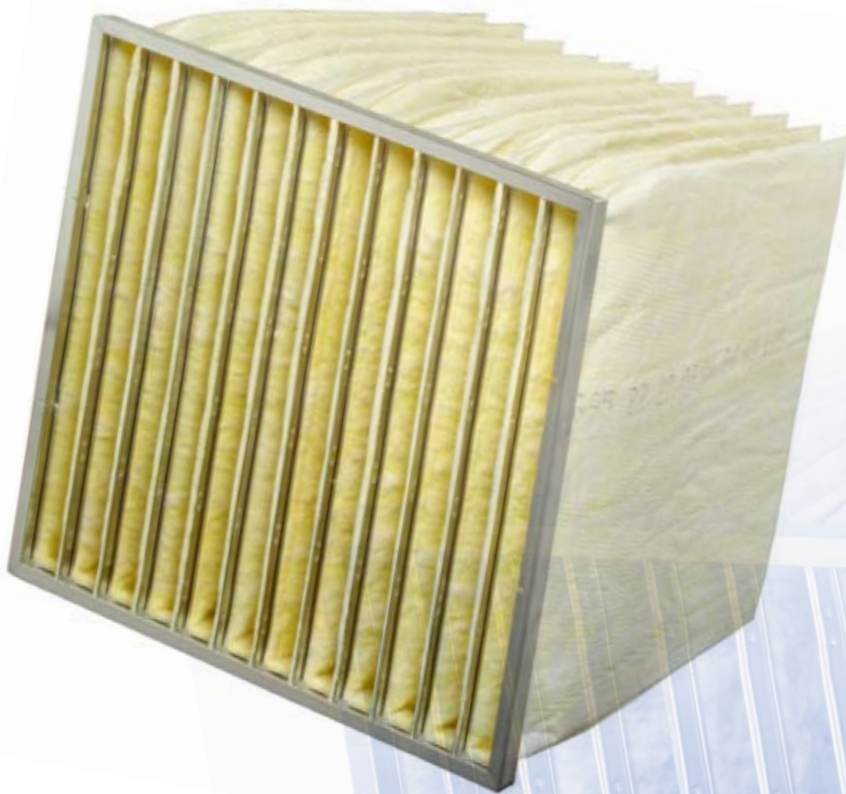
The new EN779:2012 has ensured further development of many bag filter products. We have made sure that all our bag filters comply with the new EN 779:2012 by improving the filter medium. Because we make a large proportion of the media ourselves, this improvement could be made rapidly, and the new filters were immediately notified to EUROVENT. Through the EUROVENT "certify all" programme for air filters, the customer is assured of the quality of our filters. Besides a polymer version, we also introduced a glass fibre version that generously complies with the minimum efficiency stipulated in EN 779:2012. Below, you can find the new classification table containing the new MTE values. For an F7 glass fibre filter, the minimum efficiency of our filters is 58%; this is over 65% above the minimum requirement specified in EN779:2012.

Energy labels

Via EUROVENT, the bag filters have already obtained an energy label, as a result of which the mutual comparison of filters has become straightforward. A filter with a smaller filter area, fewer or shorter bags will have a poorer energy label and will use more energy in practice. The labels immediately clearly show the expected energy consumption, which is very important considering that 70-80% of the life cycle costs are determined by energy. Our bag filters with A (most energy efficient) to G (least energy efficient) labels. As well as in this catalogue, you can find these labels on the EUROVENT website and on our boxes and filters.

AFPRO Filters presents the new HQ-series. Perfect for usage in areas with high concentrations of fine dust

- The media of the BFHQ bag filters consists of a new generation super fine fibers. The material is finished with a dense membrane to prevent fiber migration.
- The BFHQ-Series is ranked the best energy ratings.
- A-label performance



Bag filters

BFHQ65-Series

M6



SPECIFICATIONS

Application: fine filters HVAC, industrial

Frame: Aluminium

Bonding: N/A

Media: Glasfiber

Gaslet: optional, continuous poured gasket

Filterclass according to EN779:2012: M6

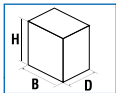
Maximum final pressure drop: 450 Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Lightweight frame
- High dustholding capacity
- Constant efficiency
- High energy efficiency

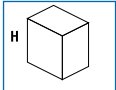


Type	Dimensions WxHxD (mm)	Filter classification	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
BFHQ65A8-6	592X592X635	M6	8	6	3400	70	2	609x183x607	B
BFHQ65B8-6/90	592X490X635	M6	8	5	2800	70	2	609x183x607	B
BFHQ65C4-6	287X592X635	M6	4	3	1700	70	4	609x183x607	B

Bag filters

BFHQ85-series

F7



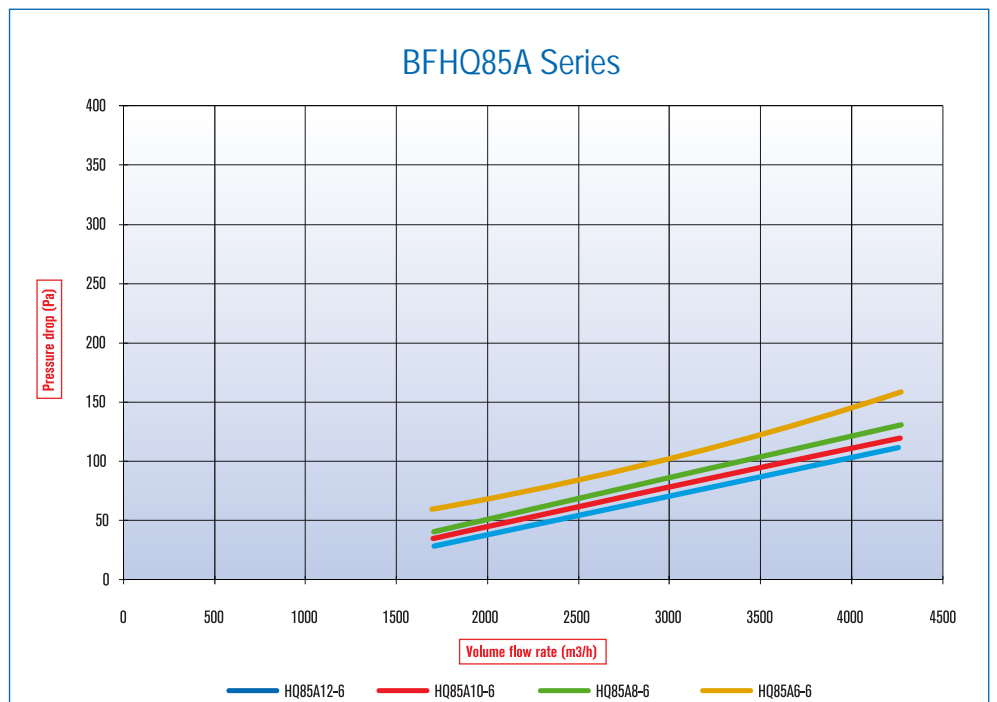
SPECIFICATIONS

Application: fine filters HVAC, industrial
Frame: Aluminium
Bonding: N/A
Media: Glasfiber
 Gasket: optional, continuous poured gasket
Filterclass according to EN779:2012: F7
Maximum final pressure drop: 450 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Lightweight frame
- High dustholding capacity
- Constant efficiency
- High energy efficiency

Type	Dimensions WxHxD (mm)	Filter classification	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
BFHQ85A8-6	592X490X635	F7	8	6	3400	100	2	609x183x607	B
BFHQ85B6-6	490X592X635	F7	6	4.5	2800	100	2	609x183x607	B
BFHQ85C4-6	287X592X635	F7	4	3	1700	100	4	609x183x607	B



Bag filters

BFHQ98-Series

F9

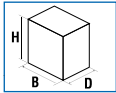


SPECIFICATIONS

Application: fine filters HVAC, industrial
Frame: Aluminium
Bonding: N/A
Media: Glasfiber
 Gaslet: optional, continuous poured gasket
Filterclass according to EN779:2012: F9
Maximum final pressure drop: 450 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Lightweight frame
- High dustholding capacity
- Constant efficiency
- High energy efficiency



Type	Dimensions WxHxD (mm)	Filter classification	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
BFHQ98A8-6	592x592x635	F9	8	6	3400	170	2	609x183x607	B
BFHQ98B8-6	492x592x635	F9	8	5	2800	170	2	609x183x607	D
BFHQ98C4-6	287x592x635	F9	4	3	1700	170	4	609x183x607	B

Bag filters

BFHD-Series

G4 M5 M6 F7

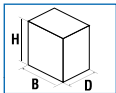


SPECIFICATIONS

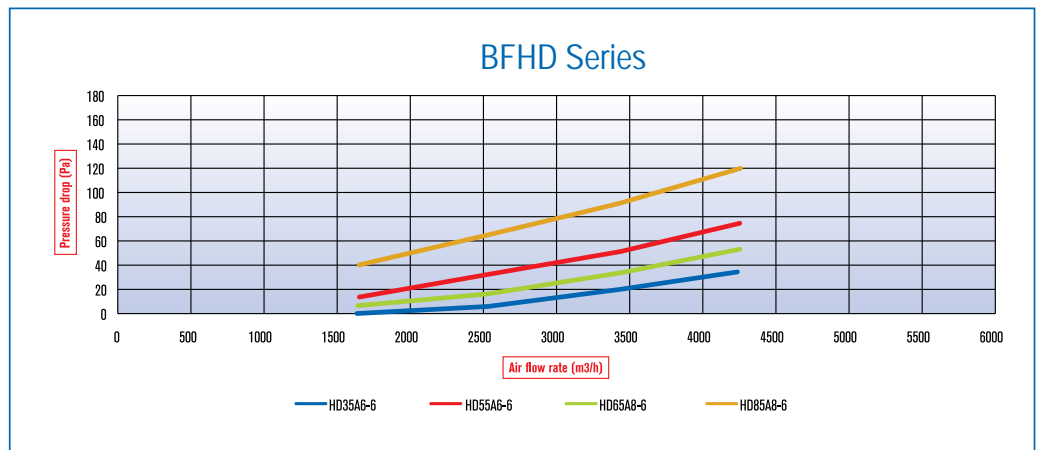
Application: fine filters HVAC, industrial
Frame: Aluminium
Bonding: N/A
Media: Synthetic
 Gaslet: optional, continuous poured gasket
Filterclass according to EN779:2012: G4, M5, M6, F7
Maximum final pressure drop: 450 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Withstands extreme pressure
- Totally combustible
- Lightweight frame
- High dustholding capacity
- Unique self supporting filter medium



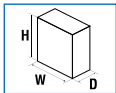
Type	Dimensions WxHxD (mm)	Filterclass	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
BFHD35A6-6	595x595x600	G4	6	5.0	3400	20	3	730x630x690	A
BFHD35C3-6	288x595x600	G4	3	2.5	1700	20	6	730x630x690	A
BFHD55A6-6	595x595x600	M5	6	5.0	3400	50	3	730x630x690	A
BFHD55C3-6	288x595x600	M5	3	2.5	1700	50	6	730x630x690	A
BFHD65A8-6	595x595x600	M6	8	6.4	3400	35	3	730x630x690	A
BFHD65B6-6	493x595x600	M6	6	4.8	2800	35	3	730x630x690	A
BFHD65C4-6	288x595x600	M6	4	3.2	1700	35	6	730x630x690	A
BFHD65CC4-6	288x288x600	M6	4	1.7	800	35	8	730x630x600	A
BFHD85A8-6	592x592x600	F7	8	6.4	3400	90	3	730x630x690	A
BFHD85B6-6	493x595x600	F7	6	4.8	2800	90	3	730x630x690	A
BFHD85C4-6	288x595x600	F7	4	3.2	1700	90	6	730x630x690	A
BFHD85CC4-6	288x288x600	F7	4	1.7	800	90	8	730x630x600	A



Bag filters

BFHSB25-Series

G3



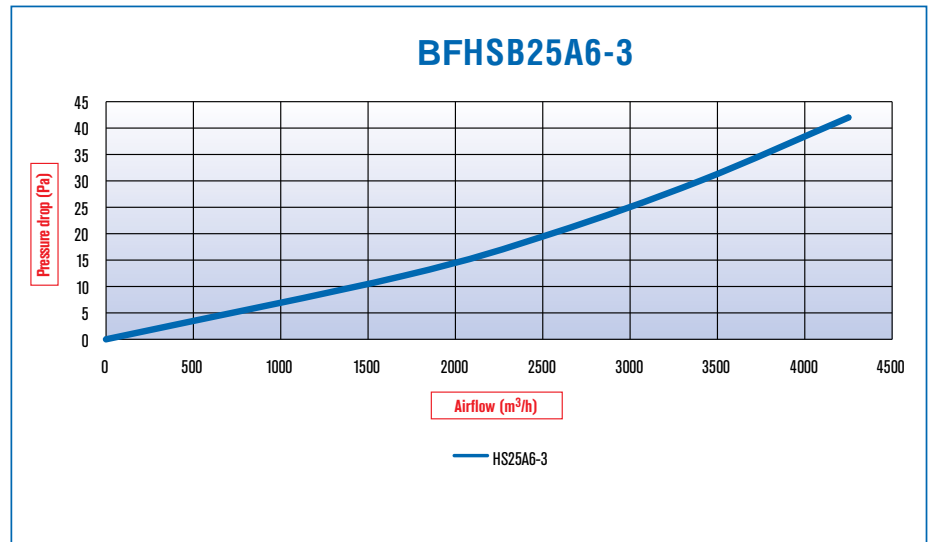
SPECIFICATIONS

Application: prefilters HVAC, industrial
Frame: plastic, optional galvanization
Spacers: synthetic
Bonding: n.a.
Media: synthetic
Gasket: continuous poured gasket
Filterclass according to EN779:2012: G3
Maximum final pressure drop: 250 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Totally combustible
- Lightweight frame

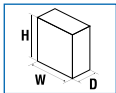
Type	Dimensions WxHxD (mm)	Filterclass	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
BFHSB25A6-3	592X592X360	G3	6	3.0	3400	30	4	605x605x183
BFHSB25B5-3	490X592X360	G3	5	2.5	2800	30	4	605x605x183
BFHSB25C3-3	287x592x360	G3	3	1.5	1700	30	8	605x605x183
BFHSB25A6-6	592X592X600	G3	6	4.5	3400	26	2	605x605x144
BFHSB25C3-6	492X592X600	G3	5	3.7	2800	26	2	605x605x144
BFHSB25B3-6	287X592X600	G3	3	2.2	1700	26	4	605x605x144



Bag filters

BFHSB35-Series

G4



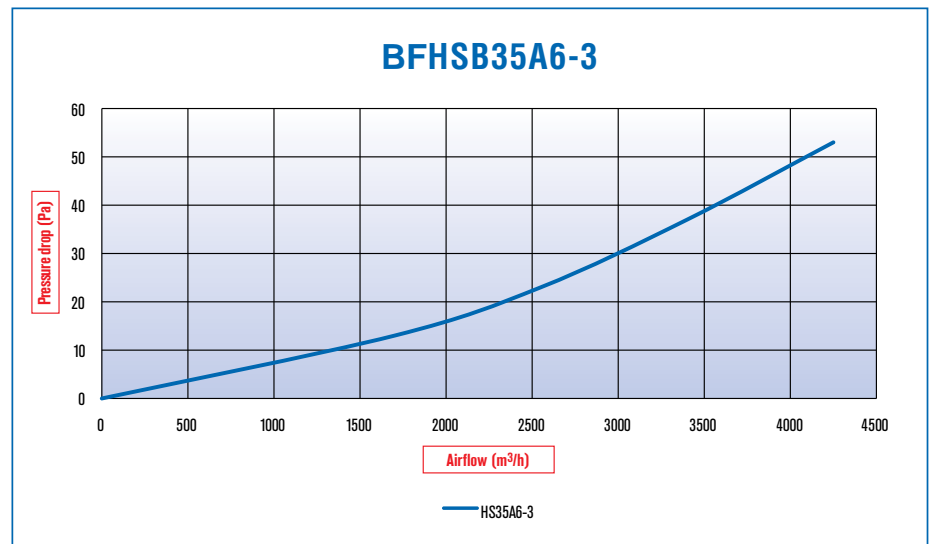
SPECIFICATIONS

Application: prefilters HVAC, industrial
Frame: plastic, optional galvanization
Spacers: synthetic
Bonding: n.a.
Media: synthetic
Gasket: continuous poured gasket
Filterclass according to EN779:2012: G4
Maximum final pressure drop: 250 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Totally combustible
- Lightweight frame

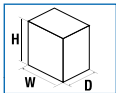
Type	Dimensions WxHxD (mm)	Filterclass	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
BFHSB35A6-3	592X592X360	G4	6	3.0	3400	40	4	605x605x183
BFHSB35B5-3	490X592X360	G4	5	2.5	2800	40	4	605x605x183
BFHSB35C3-3	287X592X360	G4	3	1.5	1700	40	8	605x605x183
BFHSB35HA6-6	592X592X600	G4	6	4.5	3400	34	2	605x605x144
BFHSB35HC3-6	490x592x600	G4	5	3.7	2800	34	2	605x605x144
BFHSB35HB5-6	287X592X600	G4	3	2.2	1700	34	4	605x605x144



Bag filters

BFHSB55-Series

M5



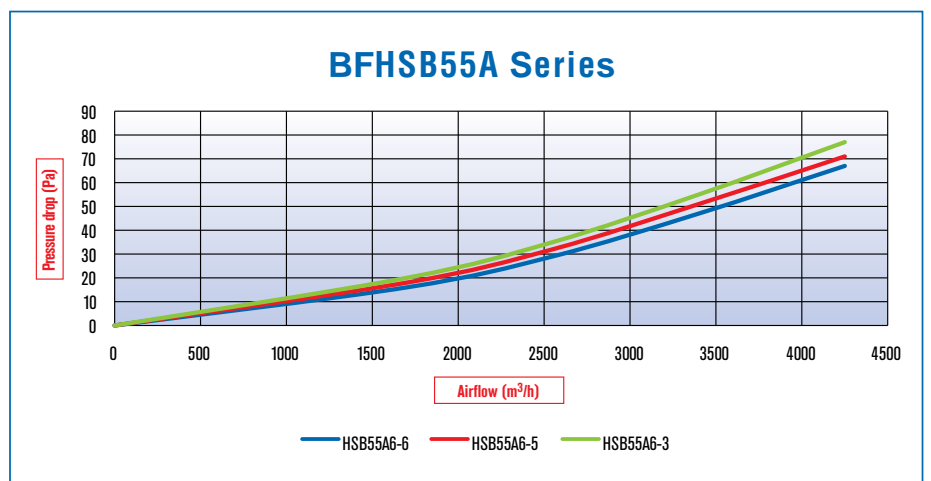
SPECIFICATIONS

Application: prefilters HVAC, industrial
Frame: plastic
Spacers: synthetic
Bonding: n.a.
Media: synthetic
Gasket: continuous poured gasket
Filterclass according to EN779:2012: M5
Maximum final pressure drop: 250 Pa
Maximum temperature: 70°C
Maximum relative humidity: 90%

ADVANTAGES

- Totally combustible
- Lightweight frame

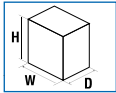
Type	Dimensions WxHxD (mm)	Filterclass	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
BFHSB55A6-3	592X592X360	M5	6	3.0	3400	60	4	605x605x183	F
BFHSB55B5-3	490X592X360	M5	5	2.5	2800	60	4	605x605x183	F
BFHSB55C3-3	287X592X360	M5	3	1.5	1700	60	8	605x605x183	F
BFHSB55A6-6	592X592X600	M5	6	5.0	3400	45	4	605x605x240	D
BFHSB55B5-6	490X592X600	M5	5	4.1	2800	45	4	605x605x240	D
BFHSB55C3-6	287X592X600	M5	3	2.5	1700	45	8	605x605x240	D



Bag filters

BFLSB60-Series

M6



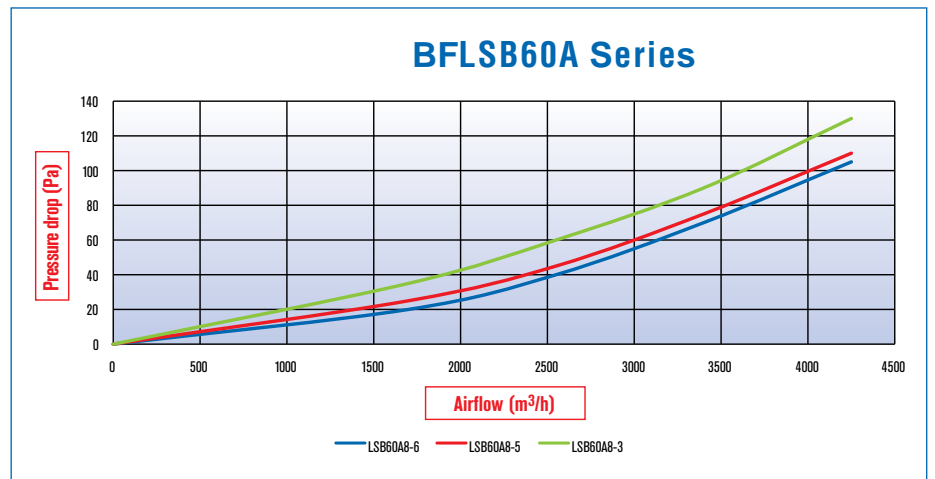
SPECIFICATIONS

- Application:** fine filters HVAC, industrial
- Frame:** plastic
- Spacers:** synthetic
- Bonding:** n.a.
- Media:** synthetic
- Gasket:** continuous poured gasket
- Filterclass according to EN779:2012:** M6
- Maximum final pressure drop:** 450 Pa
- Maximum temperature:** 70°C
- Maximum relative humidity:** 90%

ADVANTAGES

- Totally combustible
- Lightweight frame

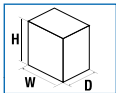
Type	Dimensions WxHxD (mm)	Filterclass	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
BFLSB60A8-6	592X592X600	M6	8	6.4	3400	70	4	605x605x240	G
BFLSB60B5-6	490X592X600	M6	5	4.1	2800	65	4	605x605x240	G
BFLSB60C4-6	287X592X600	M6	4	3.2	1700	70	8	605x605x240	G



Bag filters

BFLSB80-Series

F7



SPECIFICATIONS

Application: fine filters HVAC, industrial

Frame: plastic, optional galvanization

Spacers: synthetic

Bonding: n.a.

Medium: synthetic

Gasket: continuous poured gasket

Filterclass according to EN779:2002 F7

Maximum final pressure drop: 450 Pa

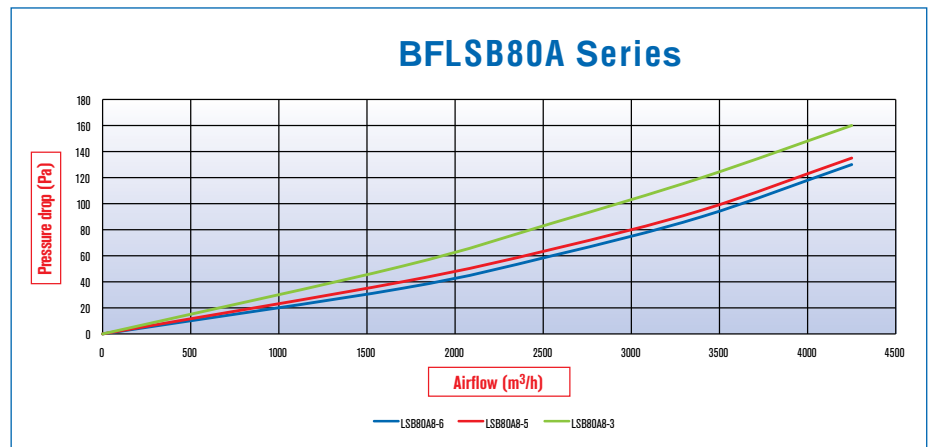
Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Totally combustible
- Lightweight frame
- Constant efficiency

Type	Dimensions WxHxD (mm)	Filter classification	# pockets	Filter surface (m ²)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
LSB80A6-6	592x592x600	F7	6	5.0	3400	75	2	605x605x144	G
LSB80B5-6	490x592x600	F7	5	4.1	2800	75	2	605x605x144	G
LSB80B6-6/90	592x490x600	F7	6	4.2	2800	75	2	605x605x144	G
LSB80C3-6	287x592x600	F7	3	2.5	1700	75	4	605x605x144	G
LSB80C6-6/90	592x287x600	F7	6	2.8	1700	75	4	605x605x144	G
LSB80CC3-6	287x287x600	F7	3	1.4	850	75	8	605x605x144	G



Bag filters

BFLSB90-Series

F8



SPECIFICATIONS

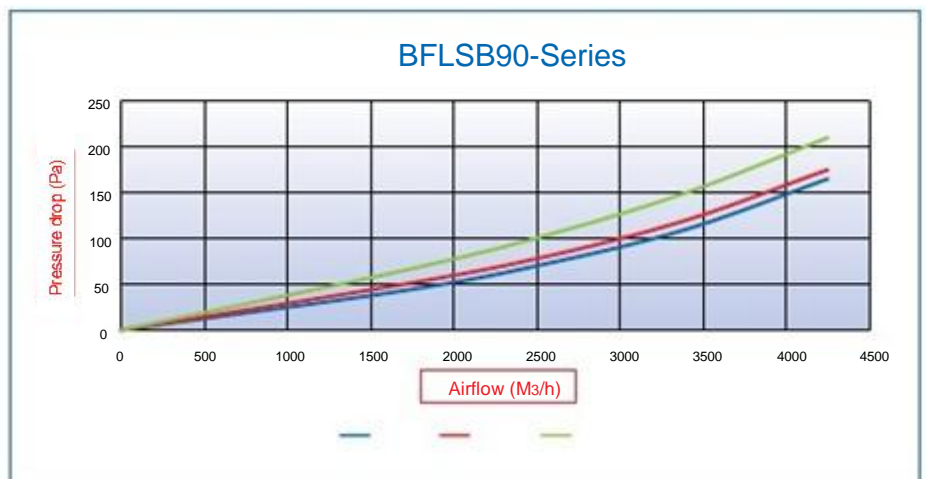
Application: Fine filters HVAC, industrial
 Frame: Plastic
 Spacers: Synthetic
 Medium: Synthetic
 Filterclass: According to EN779:2002: F8
 Maximum: Final pressure drop: 450 Pa
 Maximum: Temperature: 70°C
 Maximum: Relative humidity: 90%

ADVANTAGES

- Totally combustible
- Lightweight frame



Type	Dimensions WxHxD (mm)	Filterclass	# pockets	Filter surface (m2)	Airflow (m3/h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
BFLSB90A8-6	592x592x600	F8	8	6.4	3400	110	2	605x605x144
BFLSB90B6-6	490x592x600	F8	6	4.8	2800	110	2	605x605x144
BFLSB90C4-6	287x592x600	F8	4	3.2	1700	110	4	605x605x144



Compact filters

Qualities

Our compact filters or HPQ – High Performance Quality – filters are mini-pleated filters, characterised by their high filtration characteristics. The glass fibre filter medium is made with a “wet-laid paper technique” that guarantees high dust retention effectiveness and constant filter efficiency. The technology guarantees sustainability, which is expressed as reduced air resistance and lower energy consumption. The compact filters gain an A energy label time and again for this very reason!

Advantages of compact filters (HPQ filters)

- Large filter area
- Spacers – hot melt
- 100% leak free
- Very great dust retention capacity
- Long lifetime
- Low energy consumption
- Dimensioning according to EN15805
- Moisture resistant
- Corrosion free
- Fully combustible

Structure

Compact or HPQ filters are mini-pleated filters that are assembled in a polystyrene frame. This type of air filter can withstand temperatures up to 70°C. The largely robot-automated production of these filters ensures that they comply with the highest quality standards.

Application

Compact or HPQ filters are used in air conditioning units and systems, industrial systems and as pre-filters for clean rooms.

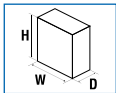
Installation

- Ensure that the filter is correctly installed:
suction side – clean air side
- Filter must be correctly mounted: no leaks
- Gaskets must not be damaged
- Filter must be clamped down in four places
- Avoid touching the filter medium during installation
- Avoid damaging the filter during installation
- System must run for a few hours to achieve the desired result
- Installation record for filters: note date, time, initial resistance

HPQ filters

HPQ-Series

M6 F7 F9



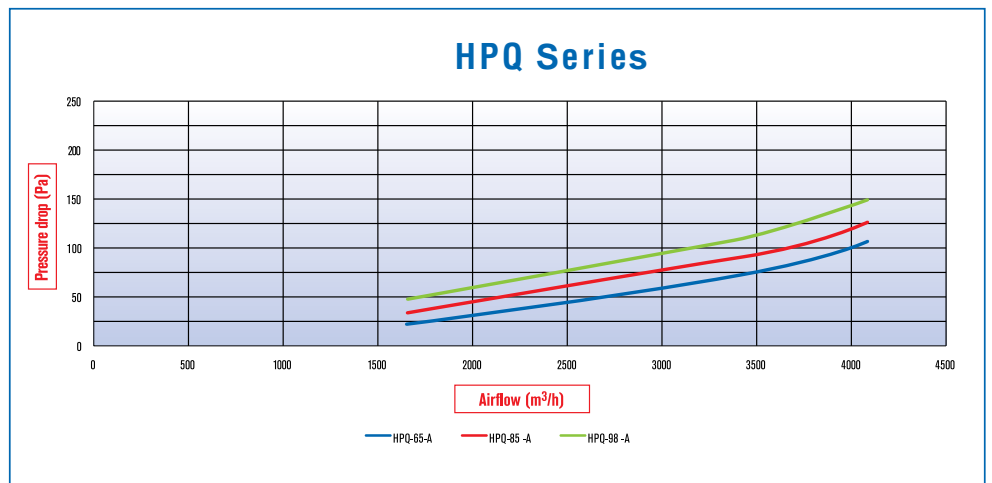
SPECIFICATIONS

Application: HVAC, Industry
Frame: plastic
Spacers: hotmelt
Bonding: 2 component polyurethane
Media: fiberglas
Gasket: continuous poured gasket
Filterclass according to EN779:2012: M6, F7, F9
Maximum final pressure drop: 450Pa
Maximum temperature: 65°C
Maximum relative humidity: 90%
Comments: It is preferd to use a prefilter with these products

ADVANTAGES

- Small constructionspace
- Low pressure drop
- Maximum airflow 45% above nominal value

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m³/h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
HPQ-65-A	592x592x292	M6	3400	75	1	605x300x605	C
HPQ-65-A	490x592x292	M6	2800	75	1	605x300x505	C
HPQ-65-A	288x592x292	M6	1700	75	2	605x300x605	C
HPQ-85-A	592x592x292	F7	3400	95	1	605x300x605	A
HPQ-85-A	490x592x292	F7	2800	95	1	605x300x505	A
HPQ-85-A	288x592x292	F7	1700	95	2	605x300x605	A
HPQ-85-A	592x592x292	F7	3400	95	1	605x300x605	A
HPQ-85-A	490x592x292	F7	2800	95	1	605x300x505	A
HPQ-85-A	288x592x292	F7	1700	95	2	605x300x605	A
HPQ-98-A	592x592x292	F9	3400	110	1	605x300x605	A
HPQ-98-A	490x592x292	F9	2800	110	1	605x300x505	A
HPQ-98-A	288x592x292	F9	1700	110	2	605x300x605	A
HPQ-98-A	592x592x292	F9	3400	110	1	605x300x605	A
HPQ-98-A	490x592x292	F9	2800	110	1	605x300x505	A
HPQ-98-A	288x592x292	F9	1700	110	2	605x300x605	A



Grease Filters

Designed for Tough Applications

Filters Direct permanent metal filters are suitable for use in very difficult operating conditions

By far the most preferred filter to capture cooking oils used in kitchens today. This filter is a strong durable element and because it is fully washable it becomes a very economical choice.

Available in a variety of sizes to suit most kitchen hoods.

Grease Trap Filters

Honeycomb



SPECIFICATIONS

A typical filter 495mm x 495mm x 48mm has a rated capacity of 1200 cfm
Clean resistance of 20pa
A typical filter 595mm x 595mm x 48mm has a rated capacity of 1770 cfm
Clean resistance of 22pa
Please contact our factory for a full list of sizes available

APPLICATION

By far the most preferred filter to capture cooking oils used in kitchens today. This filter is a strong durable element and because it is fully washable it becomes a very economical choice.

Available in a variety of sizes to suit most kitchen hoods.

Grease Trap Filters

Stainless Steel



SPECIFICATIONS

Type HD - Steel Construction

- Washable for repeated use
- Ideal for high moisture or high velocity conditions
- Low resistance
- 65 - 70% arrestance

APPLICATION

Designed for Tough Applications
Filters Direct permanent metal filters are suitable for use in very difficult operating conditions including high velocity (up to 900 FPM), high temperature, high moisture, corrosive environments, oil or grease laden air.

Type HD – Steel

Media – The media consists of multiple layers of pleated and flat stainless steel screen wire to provide an intricate maze of dirt catching surfaces. Multiple layers of media offer maximum filter surface area. Heavy gauge expanded metal grids on both sides protect the media and add rigidity to the filter construction.

Frame – The frame is made from a single piece of 20 gauge stainless steel channels with mitered corners for extra strength. The frame is predrilled with holes to allow grease to drain.

Washable for Repeated Use

Permanent metal filters can be cleaned by flushing with a hose, washing in warm soapy water or steam cleaned. Allow filters to dry then re-install. With proper care and handling, metal filters can provide years of dependable service. Both styles of filters are available with bail type lift handles.

HEPA Filters

Qualities

Our HEPA filters are characterised by their combination of innovative design and proven technology. HEPA stands for high efficiency particle air filter. The use of high quality materials enables these filters to provide an extremely high air quality. On completion of the assembly process, each individual filter is tested in accordance with the EN1822 standard.

The HEPA filters' construction and the materials used are subject to continuous further development, which yields increasingly lower resistance and therefore reduced energy consumption. The filter media are made of glass microfiber sheet. This vouches for consistent performance, while enabling use of the filters in highly critical environments, such as in hospitals and the nuclear industry.

Advantages of HEPA filters

- Consistent performance
- Large filter surface
- Every single product is tested in compliance with EN1822
- Robust construction helps prevent damage during transportation and fitting
- Low energy consumption, thanks to smart pleating methods
- Proven quality, even in critical environments

Construction

HEPA filters are constructed in various ways, depending on their application. We endeavour to achieve the lowest possible resistance for each model, thus helping to reduce your energy costs. We supply the following types of HEPA filters:

Turbulent flow filters

This type of HEPA filter is widely used in circumstances where there are few requirements relating to the airflow's laminarity, but high air quality standards are applicable. The filters have a high flow rate, thanks to the application of efficient deep-pleating methods. The construction methods applied vary for the following model types:

A Standard model

These filters have nominal capacities, which serve as the basis for system design. Application of the deep-pleating method makes for low resistance at relatively low cost. The filter surface may be up to fifty times larger than its front area.

B High capacity model

These HEPA filters have even lower resistance and higher flow rate. They operate on the basis of V-shaped filter packages, which are inserted in the filter. This method creates twice as large a filter area and flow rate in comparison to those of the standard model.

Laminar flow filters

HEPA filters with a laminar flow are widely applied in cleanrooms, where high air quality standards are essential. These have a lower flow rate than the turbulent flow filters. Laminar flow filters guarantee greater cleanliness in the cleanroom, thanks to aspects including the use of high quality filter paper and innovative pleating techniques.

HEPA filters are available as standard in 68. 80. 90 and 110 mm thicknesses, while the pleat package has a maximum height with a view to achieving low resistance.

Applications

HEPA filters are used in hospitals and various other sectors, including the nuclear, food processing and semiconductor industries. HEPA filters are highly reliable, as they are subjected to strict quality checks and extensive testing.

Installation

It is essential that the following rules be observed when installing HEPA filters:

- Avoid touching the pleat package, as this may cause damage
- Ensure that every HEPA filter is validated following installation, to ensure that it is correctly fitted and devoid of damage
- Keep copies of test reports on the filters, and maintain suitable records of the test reports, stickers, resistances and validation reports
- Ensure that the flow rate of HEPA filters is never exceeded by more than 25%. Such excesses may cause performance deterioration or even damage the filter
- When fitting, ensure that the frames and filters are clean and that gaskets and any other seals are completely intact
- Use suitable protective equipment at all times, even when replacing used filters
- Maintain filter installation records; note the date, type and initial resistance.

HEPA filters

PB Series

F8 F9 **H10** H12 H13



SPECIFICATIONS

Application: Clean rooms, operating rooms
 Frame: Galvanized steel
 Spacers: Hot melt
 Bonding: 2 component polyurethane
 Medium: Glasfibre paper
 Filterclass according to EN779/EN1822: F8, F9, H10, H12, H13
 Maximum / Recommended final pressure drop: 450Pa
 Maximum: Temperature: 70°C
 Maximum: Relative humidity: 90%

ADVANTAGES

- Compact construction

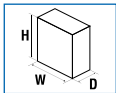


Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m3/h)	Pressure drop (Pa)	Filter surface (m2)	# Filters / box	Dimensions box (mm)
PB-F8-V	202 x 600 x 86	F8	200	40	3.5	1	210x610x96
PB-F8-V/90	202 x 600 x 65	F8	200	100	3.5	1	210x610x75
PB-F9-V	202 x 600 x 86	F9	200	50	3.5	1	210x610x96
PB-F9-V/90	202 x 600 x 65	F9	200	120	3.5	1	210x610x75
PB-H10-V	202 x 600 x 86	H10	200	100	3.5	1	210x610x96
PB-H10-V/90	202 x 600 x 65	H10	200	145	3.5	1	210x610x75
PB-H12-V	202 x 600 x 86	H12	200	150	3.5	1	210x610x96
PB-H12-V/90	202 x 600 x 65	H12	200	195	3.5	1	210x610x75
PB-H13-V	202 x 600 x 86	H13	200	160	3.5	1	210x610x96
PB-H13-V/90	202 x 600 x 65	H13	200	200	3.5	1	210x610x75

HEPA filters

HEPA HVG-series

H13 H14



SPECIFICATIONS

Application: cleanrooms, asbestos remediation, operating rooms

Frame: galvanized steel

Spacers: Hotmelt

Bonding: 2 component polyurethane

Media: glasfibre paper

Gasket: frothed polyerethane

Filterclass according to EN1822: H13, H14

Maximum/recommended final presssure drop: 500 Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Low pressure drop
- High airflows
- Every filter is delivered with a test certificate

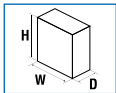
The HEPA filters are checked for leak proofness at the end of the production proces. It is advised to validate the functioning of the airhandling unit after installation of the new HEPA filters, because of possible damages during transport or installation.

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	Filter surface (m ²)	# Filters / box	Dimensions box (mm)
HVG1113NBBM	305 x 305 x 292	H13	900	250	9	1	321 x 321 x 318
HVG1113NBEM	305 x 610 x 292	H13	1750	250	19	1	311 x 616 x 318
HVG1113NCEM	457 x 610 x 292	H13	2250	250	28	1	463 x 616 x 318
HVG1113NEEM	610 x 610 x 292	H13	3750	250	38	1	616 x 616 x 318
HVG1113NEFM	610 x 762 x 292	H13	4250	250	47	1	616 x 768 x 318
HCG1113NBBM	305 x 305 x 292	H13	1000	250	10	1	321 x 321 x 318
HCG1113NBEM	305 x 610 x 292	H13	2000	250	21	1	311 x 616 x 318
HCG1113NCEM	457 x 610 x 292	H13	3000	250	31	1	463 x 616 x 318
HCG1113NEEM	610 x 610 x 292	H13	4000	250	42	1	616 x 616 x 318
HCG1113NEFM	610 x 762 x 292	H13	5000	250	52	1	616 x 768 x 318
HVG1113NADM	288 x 592 x 292	H13	1550	250	20	1	294 x 598 x 318
HVG1113NCDM	490 x 592 x 292	H13	2650	250	30	1	496 x 598 x 318
HVG1113NDDM	592 x 592 x 292	H13	3200	250	49	1	598 x 598 x 318
HVG1114NBBM	305 x 305 x 292	H14	900	280	9	1	321 x 321 x 318
HVG1114NBEM	305 x 610 x 292	H14	1750	280	19	1	311 x 616 x 318
HVG1114NCEM	457 x 610 x 292	H14	2250	280	28	1	463 x 616 x 318
HVG1114NEEM	610 x 610 x 292	H14	3750	280	38	1	616 x 616 x 318
HVG1114NEFM	610 x 762 x 292	H14	4250	280	47	1	616 x 768 x 318
HCG1114NBBM	305 x 305 x 292	H14	1000	280	10	1	321 x 321 x 318
HCG1114NBEM	305 x 610 x 292	H14	2000	280	21	1	311 x 616 x 318
HCG1114NCEM	457 x 610 x 292	H14	3000	280	31	1	463 x 616 x 318
HCG1114NEEM	610 x 610 x 292	H14	4000	280	42	1	616 x 616 x 318
HCG1114NEFM	610 x 762 x 292	H14	5000	280	52	1	616 x 768 x 318
HVG1114NADM	288 x 592 x 292	H14	1800	280	20	1	294 x 598 x 318
HVG1114NCDM	490 x 592 x 292	H14	3100	280	30	1	496 x 598 x 318
HVG1114NDDM	592 x 592 x 292	H14	3750	280	49	1	598 x 598 x 318

HEPA filters

HEPA HVS-Series

H13 H14



SPECIFICATIONS

Application: cleanrooms, asbestos remediation, operating rooms

Frame: stainless steel

Spacers: Hotmelt

Bonding: 2 component polyurethane

Media: glasfibre paper

Gasket: frothed polyerethane

Filterclass according to EN1822: H13, H14

Maximum/recommended final presssure drop: 500 Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Low pressure drop
- High airflows
- Every filter is delivered with a test certificate

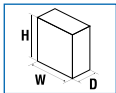
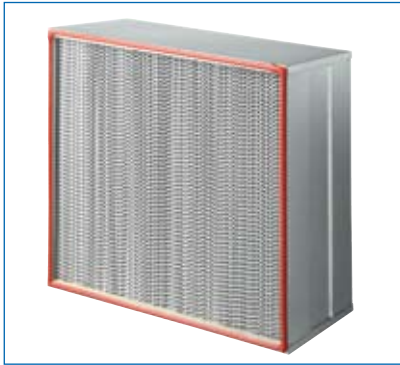
The HEPA filters are checked for leak proofness at the end of the production proces. It is advised to validate the functioning of the airhandling unit after installation of the new HEPA filters, because of possible damages during transport or installation.

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	Filter surface (m ²)	# Filters / box	Dimensions box (mm)
HVS1113NBBM	305 x 305 x 292	H13	900	250	9	1	321 x 321 x 318
HVS1113NBEM	305 x 610 x 292	H13	1750	250	19	1	311 x 616 x 318
HVS1113NCEM	457x 610 x 292	H13	2250	250	28	1	463 x 616 x 318
HVS1113NEEM	610 x 610 x 292	H13	3750	250	38	1	616 x 616 x 318
HVS1113NEFM	610 x 762 x 292	H13	4250	250	47	1	616 x 768 x 318
HCS1113NBBM	305 x 305 x 292	H13	1000	250	10	1	321 x 321 x 318
HCS1113NBEM	305 x 610 x 292	H13	2000	250	21	1	311 x 616 x 318
HCS1113NCEM	457x 610 x 292	H13	3000	250	31	1	463 x 616 x 318
HCS1113NEEM	610 x 610 x 292	H13	4000	250	42	1	616 x 616 x 318
HCS1113NEFM	610 x 762 x 292	H13	5000	250	52	1	616 x 768 x 318
HVS1113NADM	288 x 592 x 292	H13	1550	250	20	1	294 x 598 x 318
HVS1113NCDM	490 x 592 x 292	H13	2650	250	30	1	496 x 598 x 318
HVS1113NDDM	592 x 592 x 292	H13	3200	250	49	1	598 x 598 x 318
HVS1114NBBM	305 x 305 x 292	H14	900	280	9	1	321 x 321 x 318
HVS1114NBEM	305 x 610 x 292	H14	1750	280	19	1	311 x 616 x 318
HVS1114NCEM	457x 610 x 292	H14	2250	280	28	1	463 x 616 x 318
HVS1114NEEM	610 x 610 x 292	H14	3750	280	38	1	616 x 616 x 318
HVS1114NEFM	610 x 762 x 292	H14	4250	280	47	1	616 x 768 x 318
HCS1114NBBM	305 x 305 x 292	H14	1000	280	10	1	321 x 321 x 318
HCS1114NBEM	305 x 610 x 292	H14	2000	280	21	1	311 x 616 x 318
HCS1114NCEM	457x 610 x 292	H14	3000	280	31	1	463 x 616 x 318
HCS1114NEEM	610 x 610 x 292	H14	4000	280	42	1	616 x 616 x 318
HCS1114NEFM	610 x 762 x 292	H14	5000	280	52	1	616 x 768 x 318
HVS1114NADM	288 x 592 x 292	H14	1800	280	20	1	294 x 598 x 318
HVS1114NCDM	490 x 592 x 292	H14	3100	280	30	1	496 x 598 x 318
HVS1114NDDM	592 x 592 x 292	H14	3750	280	49	1	598 x 598 x 318

HEPA filters

HEPA HPG-Series

H13 H14



SPECIFICATIONS

Application: cleanrooms, asbestos remediation, operating rooms

Frame: galvanized steel

Spacers: aluminium

Bonding: 2 component polyurethane

Media: glasfibre paper

Gasket: frothed polyerethane

Filterclass according to EN1822: H13, H14

Maximum/recommended final pressure drop: 500 Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Firm frame
- Every filter is delivered with a test certificate

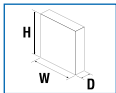
The HEPA filters are checked for leak proofness at the end of the production proces. It is advised to validate the functioning of the airhandling unit after installation of the new HEPA filters, because of possible damages during transport or installation.

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	Filter surface (m ²)	# Filters / box	Dimensions box (mm)
HPG2113NBBM	305 x 305 x 292	H13	500	250	5.5	1	321 x 321 x 323
HPG2113NBEM	305 x 610 x 292	H13	1200	250	12.5	1	321 x 328 x 323
HPG2113NCEM	457x 610 x 292	H13	1500	250	16.8	1	475 x 628 x 323
HPG2113NEEM	610 x 610 x 292	H13	2400	250	22.5	1	628 x 628 x 323
HPG2113NEFM	610 x 762 x 292	H13	2500	250	28.0	1	628 x 780 x 323
HPG2113NADM	288 x 592 x 292	H13	900	250	10.3	1	306 x 610 x 323
HPG2113NDDM	592 x 592 x 292	H13	1850	250	21.2	1	610 x 610 x 323
HPG2114NBBM	305 x 305 x 292	H14	500	280	5.5	1	321 x 321 x 323
HPG2114NBEM	305 x 610 x 292	H14	1000	280	12.5	1	321 x 328 x 323
HPG2114NCEM	457x 610 x 292	H14	1500	280	16.8	1	475 x 628 x 323
HPG2114NEEM	610 x 610 x 292	H14	2400	280	22.5	1	628 x 628 x 323
HPG2114NEFM	610 x 762 x 292	H14	2500	280	28.0	1	628 x 780 x 323
HPG2114NADM	288 x 592 x 292	H14	900	280	10.3	1	306 x 610 x 323
HPG2114NDDM	592 x 592 x 292	H14	1850	280	21.2	1	610 x 610 x 181
HPG2113NBBL	305 x 305 x 150	H13	225	250	3.7	1	321 x 321 x 181
HPG2113NCCL	457 x 457 x 150	H13	500	250	8.4	1	475 x 475 x 181
HPG2113NBEL	305 x 610 x 150	H13	450	250	7.4	1	321 x 628 x 181
HPG2113NCEL	457 x 610 x 150	H13	675	250	11.2	1	475 x 628 x 181
HPG2113NEEL	610 X 610 X 150	H13	900	250	14.9	1	628 x 628 x 181
HPG2113NEFL	610 x 762 x 150	H13	1125	250	18.6	1	628 x 780 x 181
HPG2114NBBL	305 x 305 x 150	H14	225	280	3.7	1	321 x 321 x 181
HPG2114NCCL	457 x 457 x 150	H14	500	280	8.4	1	475 x 475 x 181
HPG2114NBEL	305 x 610 x 150	H14	450	280	7.4	1	321 x 628 x 181
HPG2114NCEL	457 x 610 x 150	H14	675	280	11.2	1	475 x 628 x 181
HPG2114NEEL	610 x 610 x 150	H14	900	280	14.9	1	628 x 628 x 181
HPG2114NEFL	610 x 762 x 150	H14	1125	280	18.6	1	628 x 780 x 181

HEPA filters

HEPA HLA-E Series

H13 H14



SPECIFICATIONS

Application: cleanrooms, operating rooms

Frame: extruded aluminum

Spacers: Hotmelt

Bonding: 2 component polyurethane

Media: glasfibre paper

Gasket: frothed polyerethane

Filterclass according to EN1822: H13, H14

Maximum/recommended final pressure drop: 500 Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Lightweight construction
- Every filter is delivered with a test certificate
- HLA HEPA are fitted with 2 protection grids

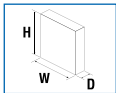
The HEPA filters are checked for leak proofness at the end of the production proces. It is advised to validate the functioning of the airhandling unit after installation of the new HEPA filters, because of possible damages during transport or installation..

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	Filter surface (m ²)	# Filters / box	Dimensions box (mm)
HLA1113DBBE	305 x 305 x 68	H13	150	120	2.7	1	321 x 321 x 99
HLA1113DCCE	457 x 457 x 68	H13	335	120	6.2	1	473 x 473 x 99
HLA1113DBEE	305 x 610 x 68	H13	300	120	5.5	1	321 x 626 x 99
HLA1113DCEE	457 x 610 x 68	H13	450	120	8.2	1	473 x 626 x 99
HLA1113DCBE	457 x 305 x 68	H13	225	120	4.1	1	473 x 321 x 99
HLA1113DEEE	610 x 610 x 68	H13	600	120	11.0	1	626 x 626 x 99
HLA1113DEGE	610 x 915 x 68	H13	900	120	16.5	1	626 x 931 x 99
HLA1113DEHE	610 x 1220 x 68	H13	1200	120	22.0	1	626 x 1236 x 99
HLA1113DEIE	610 x 1524 x 68	H13	1500	120	27.5	1	626 x 1540 x 99
HLA1113DEJE	610 x 1830 x 68	H13	1800	120	33.0	1	626 x 1846 x 99
HLA1113DFBE	762 x 305 x 68	H13	375	120	6.9	1	778 x 321 x 99
HLA1113DFEE	762 x 610 x 68	H13	750	120	13.7	1	778 x 626 x 99
HLA1113DFFE	762 x 762 x 68	H13	950	120	17.1	1	778 x 778 x 99
HLA1113DFGE	762 x 915 x 68	H13	1125	120	20.6	1	778 x 931 x 99
HLA1113DFHE	762 x 1220 x 68	H13	1500	120	27.5	1	778 x 1236 x 99
HLA1113DFIE	762 x 1524 x 68	H13	1875	120	34.4	1	778 x 1540 x 99
HLA1113DFJE	762 x 1830 x 68	H13	2250	120	41.2	1	778 x 1846 x 99
HLA1113DGBE	915 x 305 x 68	H13	450	120	8.2	1	931 x 321 x 99
HLA1113DGGE	915 x 915 x 68	H13	1350	120	24.8	1	931 x 931 x 99
HLA1113DGHE	915 x 1220 x 68	H13	1800	120	33.0	1	931 x 1236 x 99
HLA1113DGIE	915 x 1524 x 68	H13	2250	120	41.3	1	931 x 1540 x 99
HLA1113DGJE	915 x 1830 x 68	H13	2700	120	49.5	1	931 x 1846 x 99
HLA1114DBBE	305 x 305 x 68	H14	150	140	2.7	1	321 x 321 x 99
HLA1114DCCE	457 x 457 x 68	H14	335	140	6.2	1	473 x 473 x 99
HLA1114DBEE	305 x 610 x 68	H14	300	140	5.5	1	321 x 626 x 99
HLA1114DCEE	457 x 610 x 68	H14	450	140	8.2	1	473 x 626 x 99
HLA1114DCBE	457 x 305 x 68	H14	225	140	4.1	1	473 x 321 x 99
HLA1114DEEE	610 x 610 x 68	H14	600	140	11.0	1	626 x 626 x 99
HLA1114DEGE	610 x 915 x 68	H14	900	140	16.5	1	626 x 931 x 99
HLA1114DEHE	610 x 1220 x 68	H14	1200	140	22.0	1	626 x 1236 x 99
HLA1114DEIE	610 x 1524 x 68	H14	1500	140	27.5	1	626 x 1540 x 99
HLA1114DEJE	610 x 1830 x 68	H14	1800	140	33.0	1	626 x 1846 x 99
HLA1114DFBE	762 x 305 x 68	H14	375	140	6.9	1	778 x 321 x 99
HLA1114DFEE	762 x 610 x 68	H14	750	140	13.7	1	778 x 626 x 99
HLA1114DFFE	762 x 762 x 68	H14	950	140	17.1	1	778 x 778 x 99
HLA1114DFGE	762 x 915 x 68	H14	1125	140	20.6	1	778 x 931 x 99
HLA1114DFHE	762 x 1220 x 68	H14	1500	140	27.5	1	778 x 1236 x 99
HLA1114DFIE	762 x 1524 x 68	H14	1875	140	34.4	1	778 x 1540 x 99
HLA1114DFJE	762 x 1830 x 68	H14	2250	140	41.2	1	778 x 1846 x 99
HLA1114DGBE	915 x 305 x 68	H14	450	140	8.2	1	931 x 321 x 99
HLA1114DGGE	915 x 915 x 68	H14	1350	140	24.8	1	931 x 931 x 99
HLA1114DGHE	915 x 1220 x 68	H14	1800	140	33.0	1	931 x 1236 x 99
HLA1114DGIE	915 x 1524 x 68	H14	2250	140	41.3	1	931 x 1540 x 99
HLA1114DGJE	915 x 1830 x 68	H14	2700	140	49.5	1	931 x 1846 x 99

HEPA filters

HEPA HLA-G Series

H13 H14



SPECIFICATIONS

Application: cleanrooms, operating rooms

Frame: extruded aluminum

Spacers: Hotmelt

Bonding: 2 component polyurethane

Media: glasfibre paper

Gasket: frothed polyerethane

Filterclass according to EN1822: H13, H14

Maximum/recommended final pressure drop: 500

PaMaximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

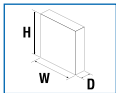
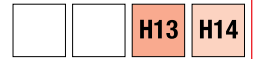
- Lightweight construction
- Lower resistance than 68mm implementation
- Every filter is delivered with a test certificate
- HLA HEPA are fitted with 2 protection grids

The HEPA filters are checked for leak proofness at the end of the production proces. It is advised to validate the functioning of the airhandling unit after installation of the new HEPA filters, because of possible damages during transport or installation.

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	Filter surface (m ²)	# Filters / box	Dimensions box (mm)
HLA1113DBBG	305 x 305 x 80	H13	150	90	2.9	1	321 x 321 x 111
HLA1113DCCG	457 x 457 x 80	H13	335	90	6.7	1	473 x 473 x 111
HLA1113DBEG	305 x 610 x 80	H13	300	90	6.0	1	321 x 626 x 111
HLA1113DCEG	457 x 610 x 80	H13	450	90	9.0	1	473 x 626 x 111
HLA1113DCBG	457 x 305 x 80	H13	225	90	4.5	1	473 x 321 x 111
HLA1113DEEG	610 x 610 x 80	H13	600	90	12.0	1	626 x 626 x 111
HLA1113DEGG	610 x 915 x 80	H13	900	90	18.0	1	626 x 931 x 111
HLA1113DEHG	610 x 1220 x 80	H13	1200	90	24.0	1	626 x 1236 x 111
HLA1113DEIG	610 x 1524 x 80	H13	1500	90	30.0	1	626 x 1540 x 111
HLA1113DEJG	610 x 1830 x 80	H13	1800	90	36.0	1	626 x 1846 x 111
HLA1113DFBG	762 x 305 x 80	H13	375	90	7.5	1	778 x 321 x 111
HLA1113DFEG	762 x 610 x 80	H13	750	90	14.9	1	778 x 626 x 111
HLA1113DFFG	762 x 762 x 80	H13	950	90	18.6	1	778 x 778 x 111
HLA1113DFGG	762 x 915 x 80	H13	1125	90	22.5	1	778 x 931 x 111
HLA1113DFHG	762 x 1220 x 80	H13	1500	90	30.0	1	778 x 1236 x 111
HLA1113DFIG	762 x 1524 x 80	H13	1875	90	37.5	1	778 x 1540 x 111
HLA1113DFJG	762 x 1830 x 80	H13	2250	90	45.0	1	778 x 1846 x 111
HLA1113DGBG	915 x 305 x 80	H13	450	90	8.9	1	931 x 321 x 111
HLA1113DGGG	915 x 915 x 80	H13	1350	90	27.0	1	931 x 931 x 111
HLA1113DGHG	915 x 1220 x 80	H13	1800	90	36.0	1	931 x 1236 x 111
HLA1113DGIG	915 x 1524 x 80	H13	2250	90	45.0	1	931 x 1540 x 111
HLA1113DGJG	915 x 1830 x 80	H13	2700	90	54.0	1	931 x 1846 x 111
HLA1114DBBG	305 x 305 x 80	H14	150	100	2.9	1	321 x 321 x 111
HLA1114DCCG	457 x 457 x 80	H14	335	100	6.7	1	473 x 473 x 111
HLA1114DBEG	305 x 610 x 80	H14	300	100	6.0	1	321 x 626 x 111
HLA1114DCEG	457 x 610 x 80	H14	450	100	9.0	1	473 x 626 x 111
HLA1114DCBG	457 x 305 x 80	H14	225	100	4.5	1	473 x 321 x 111
HLA1114DEEG	610 x 610 x 80	H14	600	100	12.0	1	626 x 626 x 111
HLA1114DEGG	610 x 915 x 80	H14	900	100	18.0	1	626 x 931 x 111
HLA1114DEHG	610 x 1220 x 80	H14	1200	100	24.0	1	626 x 1236 x 111
HLA1114DEIG	610 x 1524 x 80	H14	1500	100	30.0	1	626 x 1540 x 111
HLA1114DEJG	610 x 1830 x 80	H14	1800	100	36.0	1	626 x 1846 x 111
HLA1114DFBG	762 x 305 x 80	H14	375	100	7.5	1	778 x 321 x 111
HLA1114DFEG	762 x 610 x 80	H14	750	100	14.9	1	778 x 626 x 111
HLA1114DFFG	762 x 762 x 80	H14	950	100	18.6	1	778 x 778 x 111
HLA1114DFGG	762 x 915 x 80	H14	1125	100	22.5	1	778 x 931 x 111
HLA1114DFHG	762 x 1220 x 80	H14	1500	100	30	1	778 x 1236 x 111
HLA1114DFIG	762 x 1524 x 80	H14	1875	100	37.5	1	778 x 1540 x 111
HLA1114DFJG	762 x 1830 x 80	H14	2250	100	45.0	1	778 x 1846 x 111
HLA1114DGBG	915 x 305 x 80	H14	450	100	8.9	1	931 x 321 x 111
HLA1114DGGG	915 x 915 x 80	H14	1350	100	27.0	1	931 x 931 x 111
HLA1114DGHG	915 x 1220 x 80	H14	1800	100	36.0	1	931 x 1236 x 111
HLA1114DGIG	915 x 1524 x 80	H14	2250	100	45.0	1	931 x 1540 x 111
HLA1114DGJG	915 x 1830 x 80	H14	2700	100	54.0	1	931 x 1846 x 111

HEPA filters

HEPA HLA-L series



SPECIFICATIONS

Application: cleanrooms, operating rooms

Frame: extruded aluminum

Spacers: Hotmelt

Bonding: 2 component polyurethane

Media: glasfibre paper

Gasket: frothed polyerethane

Filterclass according to EN1822: H13, H14

Maximum/recommended final pressure drop: 500 Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- Lightweight construction
- Every filter is delivered with a test certificate
- HLA HEPA are fitted with 2 protection grids

The HEPA filters are checked for leak proofness at the end of the production proces. It is advised to validate the functioning of the airhandling unit after installation of the new HEPA filters, because of possible damages during transport or installation.

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	Filter surface (m ²)	# Filters / box	Dimensions box (mm)
HLA1113DBBL	305 x 305 x 150	H13	150	120	2.7	1	321 x 321 x 181
HLA1113DCCL	457 x 457 x 150	H13	335	120	6.2	1	473 x 473 x 181
HLA1113DBEL	305 x 610 x 150	H13	300	120	5.5	1	321 x 626 x 181
HLA1113DCEL	457 x 610 x 150	H13	450	120	8.2	1	473 x 626 x 181
HLA1113DCBL	457 x 305 x 150	H13	225	120	4.1	1	473 x 321 x 181
HLA1113DEEL	610 x 610 x 150	H13	600	120	11.0	1	626 x 626 x 181
HLA1113DEGL	610 x 915 x 150	H13	900	120	16.5	1	626 x 931 x 181
HLA1113DEHL	610 x 1220 x 150	H13	1200	120	22.0	1	626 x 1236 x 181
HLA1113DEIL	610 x 1524 x 150	H13	1500	120	27.5	1	626 x 1540 x 181
HLA1113DEJL	610 x 1830 x 150	H13	1800	120	33.0	1	626 x 1846 x 181
HLA1113DFBL	762 x 305 x 150	H13	375	120	6.9	1	778 x 321 x 181
HLA1113DFEL	762 x 610 x 150	H13	750	120	13.7	1	778 x 626 x 181
HLA1113DFFL	762 x 762 x 150	H13	950	120	17.1	1	778 x 778 x 181
HLA1113DFGL	762 x 915 x 150	H13	1125	120	20.6	1	778 x 931 x 181
HLA1113DFHL	762 x 1220 x 150	H13	1500	120	27.5	1	778 x 1236 x 181
HLA1113DFIL	762 x 1524 x 150	H13	1875	120	34.4	1	778 x 1540 x 181
HLA1113DFJL	762 x 1830 x 150	H13	2250	120	41.2	1	778 x 1846 x 181
HLA1113DGBL	915 x 305 x 150	H13	450	120	8.2	1	931 x 321 x 181
HLA1113DGGL	915 x 915 x 150	H13	1350	120	24.8	1	931 x 931 x 181
HLA1113DGHL	915 x 1220 x 150	H13	1800	120	33.0	1	931 x 1236 x 11
HLA1113DGIL	915 x 1524 x 150	H13	2250	120	41.3	1	931 x 1540 x 11
HLA1113DGJL	915 x 1830 x 150	H13	2700	120	49.5	1	931 x 1846 x 11
HLA1114DBBL	305 x 305 x 150	H14	150	140	2.7	1	321 x 321 x 181
HLA1114DCCL	457 x 457 x 150	H14	335	140	6.2	1	473 x 473 x 181
HLA1114DBEL	305 x 610 x 150	H14	300	140	5.5	1	321 x 626 x 181
HLA1114DCEL	457 x 610 x 150	H14	450	140	8.2	1	473 x 626 x 181
HLA1114DCBL	457 x 305 x 150	H14	225	140	4.1	1	473 x 321 x 181
HLA1114DEEL	610 x 610 x 150	H14	600	140	11.0	1	626 x 626 x 181
HLA1114DEGL	610 x 915 x 150	H14	900	140	16.5	1	626 x 931 x 181
HLA1114DEHL	610 x 1220 x 150	H14	1200	140	22.0	1	626 x 1236 x 181
HLA1114DEIL	610 x 1524 x 150	H14	1500	140	27.5	1	626 x 1540 x 181
HLA1114DEJL	610 x 1830 x 150	H14	1800	140	33.0	1	626 x 1846 x 181
HLA1114DFBL	762 x 305 x 150	H14	375	140	6.9	1	778 x 321 x 181
HLA1114DFEL	762 x 610 x 150	H14	750	140	13.7	1	778 x 626 x 181
HLA1114DFFL	762 x 762 x 150	H14	950	140	17.1	1	778 x 778 x 181
HLA1114DFGL	762 x 915 x 150	H14	1125	140	20.6	1	778 x 931 x 181
HLA1114DFHL	762 x 1220 x 150	H14	1500	140	27.5	1	778 x 1236 x 181
HLA1114DFIL	762 x 1524 x 150	H14	1875	140	34.4	1	778 x 1540 x 181
HLA1114DFJL	762 x 1830 x 150	H14	2250	140	41.2	1	778 x 1846 x 181
HLA1114DGBL	915 x 305 x 150	H14	450	140	8.2	1	931 x 321 x 181
HLA1114DGGL	915 x 915 x 150	H14	1350	140	24.8	1	931 x 931 x 181
HLA1114DGHL	915 x 1220 x 150	H14	1800	140	33.0	1	931 x 1236 x 181
HLA1114DGIL	915 x 1524 x 150	H14	2250	140	41.3	1	931 x 1540 x 181
HLA1114DGJL	915 x 1830 x 150	H14	2700	140	49.5	1	931 x 1846 x 181

Activated carbon filters

Our carbon filters are used for the filtration of gaseous particles. The use of either loose charcoal or media impregnated with activated carbon enables high efficiency for gases. Various types of carbon filter are used, depending on the application, contamination and concentration in question. The filters can be largely split into three fields of application:

- Organic gases
- Acidic gases
- Alkaline gases

Although various types of carbon filter are used, depending on the field of application, it should be noted that the carbon does have to be impregnated to guarantee suitable efficiency for both acidic and alkaline gases. Furthermore, the optimum product variant has to be selected on the basis of the concentration in question. In the case of high concentrations of gas, for instance, a cylinder containing loose carbon pellets is used, as it has a higher adsorption capacity than a pleated filter element.

Selecting the appropriate carbon filter nevertheless remains a complicated process. However, our sales staff are pleased to assist you in doing so. Furthermore, we can test existing filters to establish their remaining adsorption capacity and service life, then advise you when they will have to be replaced.

Construction

Our activated carbon filters are available in the form of elements, which can be filled with loose activated carbon pellets. These filters are usually refillable and are further characterised by their combination of high adsorption capacity and low flow rate. In addition, AFPRO has an extensive range of filters which comprise a relatively small amount of activated carbon sandwiched between two layers of filter media. The flow rate of these filters is particularly high, while their adsorption capacity is low. In the case of extremely high concentrations of gases, it is also advisable to use stainless steel.

Applications

Activated carbon filters are widely used in airports, record offices, museums and the semiconductor industry. The filters can be installed in either standard holding frames or frames specially designed for the activated carbon cylinders. It is important that separate filters are fitted in front of and behind the carbon filters. A pre-filter is required to prevent the activated carbon filter from becoming clogged with dust particles. An after-filter is also required to avoid the possibility of activated carbon particles entering the airflow.

Installation

- Ensure that no leakage can occur (new gaskets can be supplied together with filters)
- Ensure that the frame and the cabinet in which the new filter is to be fitted are cleaned first
- Activated carbon pellets may be spilled either during installation or throughout the life span of the filter; ensure that these are removed before the system is turned on
- Maintain records of the filters installed; note the date, type and initial resistance

Activated carbon filters

Carbon cylinder



SPECIFICATIONS

Application: airports, industry, catering

Frame: galvanized steel or stainless steel

Activated carbon: Coal based carbon (pellets)

Gasket: Neopreen

Maximum/recommended final pressure drop: n.a.

Maximum relative humidity: 70%

Maximum temperature: 40°C

Comments: Possibility to apply impregnated carbon to filter specific gases

ADVANTAGES

- Refillable
- High dustholding capacity
- Straightforward assembly

This activated carbon filter is designed to adsorb small amounts of gaseous impurities (<100 ppm vol.) At higher concentrations, a risk of spontaneous creation. For instructions on using these filters, refer to enclosed installation and maintenance instructions.

Type	Dimensions WxHxD (mm)	Carbon type	Initial weight (kg)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
AC-2-12	Length 250 mm Thickness 25 mm Galvanized steel steel	M2-3	1.7	85	82	4	305x305x305
AC-2-26	Length 450 mm Thickness 25 mm Galvanized steel steel	M2-3	2.6	150	80	4	305x305x470
AC-2-26/SS	Length 450 mm Thickness 25 mm Stainless steel	M2-3	2.6	150	80	4	305x305x470
AC-2-60	Length 600 mm Thickness 25 mm Galvanized steel steel	M2-3	3.5	205	75	4	305x305x620

Gasket

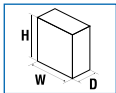
Type	Used for cylinders
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AC-P-25	AC-2-12 & AC-2-26
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Activated carbon filters

HPQ-AK

M6



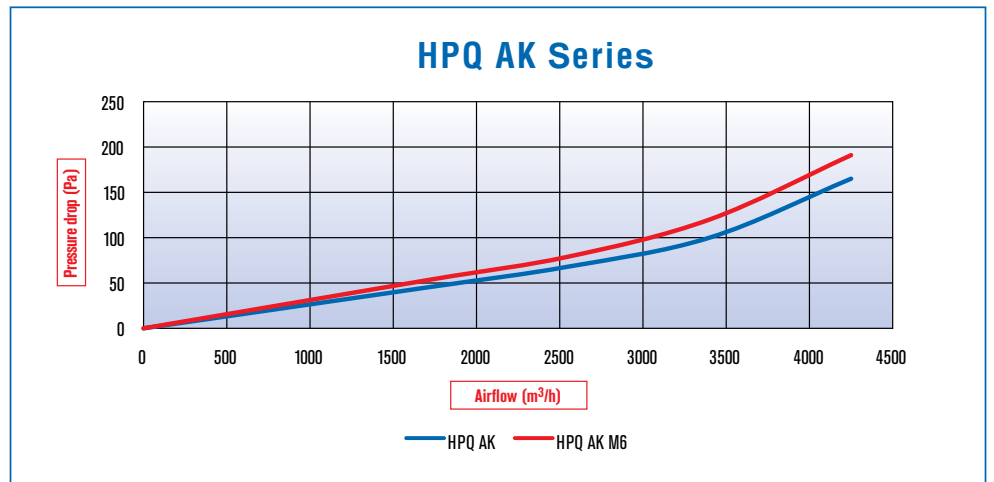
SPECIFICATIONS

Application: HVAC, Industry
Frame: plastic
Spacers: hotmelt
Bonding: 2 component polyurethane
Media: medium consisting of synthetic medium combined with activated carbon
Gasket: continuous poured gasket
Filterclass according to EN779:2012: M6
Maximum final pressure drop: 350
Maximum temperature: 65°C
Maximum relative humidity: 90%
Comments: It is preferred to use a prefilter with these products

ADVANTAGES

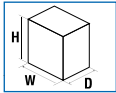
- Small construction space
- Low pressure drop

Type	Dimensions WxHxD (mm)	Filterclass	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)	Energy label
HPQ-AK-A	HPQ dim. 592x592x292	n.a.	3400	100	1	605x300x605	G
HPQ-AK-B	HPQ dim. 490x592x292	n.a.	2800	100	1	605x300x505	G
HPQ-AK-C	HPQ dim. 288x592x292	n.a.	1700	100	2	605x300x605	G
HPQ-AK-A-85	HPQ dim. 592x592x292	M6	3400	120	1	605x300x605	G
HPQ-AK-B-85	HPQ dim. 490x592x292	M6	2800	120	1	605x300x505	G
HPQ-AK-C-85	HPQ dim. 288x592x292	M6	1700	120	2	605x300x605	G



Activated carbon filters

AC12



SPECIFICATIONS

Application: museums, archives, industry

Frame: galvanized steel

Bonding: n.a.

Carbon: M-carb generic activated carbon. S-carb specific impregnated carbon used for museums and archives

Gasket: extruded rubber

Maximum/recommended final pressure drop: n.a.

Maximum temperature: 40°C

Maximum relative humidity: 70%

ADVANTAGES

- Compact design
- Refillable
- Low pressure drop
- High dustholding capacity

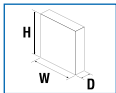
This activated carbon filter is designed to adsorb small amounts of gaseous impurities (<100 ppm vol.). At higher concentrations, a risk of spontaneous creation.

For instructions on using these filters, refer to enclosed installation and maintenance instructions.

Type	Dimensions WxHxD (mm)	Carbon Type	Initial weight (kg)	Airflow (m ³ /h)	Pressure drop (Pa)	# Filters / box	Dimensions box (mm)
AC12-4/M-CARB	296X296X292	M-CARB	4.5	425	70	1	305x305x305
AC12-4/R-CARB	296X296X292	R-CARB	4.5	425	70	1	305x305x305
AC12-4/R-CARB	296X296X292	S-CARB	4.5	425	70	1	305x305x305

Activated carbon filters

Activated Carbon panel



SPECIFICATIONS

Application: museums, archives, industry

Frame: stainless steel

Bonding: 2 component polyurethane

Carbon: M-carb generic activated carbon. S-carb specific impregnated carbon used for museums and archives

Gasket: Neopreen

Maximum/recommended final pressure drop: n.a.

Maximum temperature: 40°C

Maximum relative humidity: 70%


ADVANTAGES

- Firm construction
- High dustholding capacity

This activated carbon filter is designed to adsorb small amounts of gaseous impurities (<100 ppm vol.) At higher concentrations, a risk of spontaneous creation.

For instructions on using these filters, refer to enclosed installation and maintenance instructions.

Type	Dimensions WxHxD (mm)	Carbon Type	Initial weight (kg)	Volume (m ³)	# Filters / box	Dimensions box (mm)
ACP	592X592X45	M-CARB	5	0.012	3	610x610x100
ACP	592X592X45	R-CARB	5	0.012	3	610x610x100
ACP	592X592X45	S-CARB	5	0.012	3	610x610x100



Filter media

Qualities

Our filter media is made of high quality fibres, which are progressively built up to create a media with a high particle interception capacity. In addition to synthetic media, we have an extensive range of glass fibre media for specific applications, such as spray-painting booths. The filter medias are available both in loose sheets and on complete rolls, which can be conveniently cut to size. Depending on the particular application in question, the most appropriate media can be chosen from filter classes G2 to M5 with various particle interception capacities.

Advantages of our medium

- High particle interception capacities
- Easy installation
- Readily cut to size

Construction

Our filter media are supplied either on a roll or in pre-cut sheets

Application

Pre-filters for air treatment systems. Pre-filters for spray-painting booths.

Installation

- Ensure that the filter medium is fitted correctly (fine side – dirty air side)
- Ensure that the medium is installed flat
- Filter medium should be properly secured to prevent it from becoming dislodged or possibly leaking during its service life
- Filter installation records; note the date, type and initial resistance.

Filter media

Synthetic media

G2

G3

G4

M5



SPECIFICATIONS

Application: prefilters in HVAC and industry

Materiaal: polyester

Filterclass according to EN779:2012: G2, G3, G4, M5

Maximum final pressure drop: 250Pa

Maximum temperature: 70°C

Maximum relative humidity: 90%

ADVANTAGES

- High dustholding capacity
- Easily custom fitted

Type	Dimensions WxH (m)	Filterclass	Airflow (m ³ /h/m ²)	Pressure drop (Pa) bij 1.5 m/s	Weight (g/m ²)
T15/150	a m ²	G2	5400	26	
T15/150-40x2N	40x2	G2			110
T15/500	a m ²	G4	5400	42	
T15/500-20x2N	20x2	G4			220
PST290	a m ²	G3	5400	38	
PST290-20x2N	20x2	G3			180
F360*	a m ²	M5	900	15	
F360-20x2* 20x2		M5			315
F560G*	a m ²	M5	900	22	
F560G-20x2*	20x2	M5			380
Carbon media	3 mm	N.A.		35 @ 0.5 m/s	450
Carbon media	10 mm	N.A.			

*Air velocity 0.25 m/s

Spraybooth media

Glassmedia

G3



SPECIFICATIONS

Application: spray booth, prefilters gasturbines

Media: Glassfibre

Filterclass according to EN779:2012: G3

Maximum final pressure drop: 250 Pa

Maximum temperature: 80°C

Maximum relative humidity: 90%

ADVANTAGES

- Very high dustholding capacity

Type	Dimensions WxH (m)	Filterclass	Color	Airflow (m ³ /h)	Pressure drop (Pa)
PS25x0.5	25x0.5	G3	Green/white	2500-6300	4-12
PS25x0.6	25x0.6	G3	Green/White		
PS25x0.7	25x0.7	G3	Green/White		
PS25x0.8	25x0.8	G3	Green/White		
PS25x1.0	25x1.0	G3	Green/White		
PS25x1.2	25x1.2	G3	Green/White		
PS25x1.5	25x1.5	G3	Green/White		
PS25x2.0	25x2.0	G3	Green/White		
M57-20x0.5	20x0.5	G3	Yellow/White	9000-10800	35
M57-20x0.6	20x0.6	G3	Yellow/White		
M57-20x0.7	20x0.7	G3	Yellow/White		
M57-20x0.8	20x0.8	G3	Yellow/White		
M57-20x1.0	20x1.0	G3	Yellow/White		
M57-20x1.2	20x1.2	G3	Yellow/White		
M57-20x1.5	20x1.5	G3	Yellow/White		
M57-20x2.0	20x2.0	G3	Yellow/White		
Andreae	0.9x11	n.a.			
Andreae - Eco	0.9x11	n.a.			

PS pressure drop - 4-12 Pa - Volume 2500-6300 m³/h/m²

M57 pressure drop 35 Pa - Volume 9000 m³/h/m²

Ceiling Media 560G

F5



SPECIFICATIONS

Technical Data
 Filter class F5 acc. TO EN779:2002
 Fire resistance class: F1 acc. To DIN 53438
 Temperature resistance: max. 100 C
 Humidity resistance: up to 100%

ADVANTAGES

- High dustholding capacity
- Easily custom fitted

Product	F560G
Air flow (m /h/m)	900
Media velocity (m/s)	0.25
Initial pressure drop (Pa)	25
Final pressure drop (Pa)	450
Average Efficiency at 0.4 µm (%)	40-60
Filter classification	F5
Maximum temperature (°C)	70
Maximum rel. Humidity (%)	90





Holding Frames

Qualities

Our holding frames make the correct installation of a filter a simple task. The standard clips provided facilitate the swift and leak-tight installation of filters in frames. All bag-filter holding frames comprise an endless spray-on gasket, which renders leakage literally impossible, provided the frame is installed correctly. The special pre-drilled holes make it a simple task to fit the frames. In the event that a large filter wall is to be constructed, it is advisable to fit additional reinforcing. In addition to the standard 2" model, there is a 3" model available, which facilitates the installation of a 2" pre-filter and a 1" bag filter in a single frame. This solution is particularly useful in air treatment cabinets which are rather cramped, but nevertheless required the upgrade to an additional filter.

We have devised a number of innovative solutions for the swift and convenient installation of filters in its HEPA holding frames. As leak-tightness is a crucial requirement in the case of a HEPA filter frame, star nuts can be fitted to ensure a tight fit between the filter and the gasket.

Advantages

- Easy fitting using clips
- Endless gasket
- Option of fitting several filters in a single frame
- Robust frame
- Swift fitting of frames, thanks to pre-drilled holes

Construction

The holding frames are made of either galvanized or stainless steel 304 or 316. On request, an epoxy coating can be applied to frames as well. High quality steel is used in manufacturing the frames to ensure ample rigidity. Furthermore, the construction design pays consideration to optimum frame stability and ease of installation.

Application

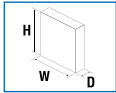
These holding frames are widely used in air treatment cabinets and air inlet systems for equipment such as gas turbines. The frames have standard dimensions and are a good replacement for the used holding frames removed during the renovation of air treatment cabinets.

Installation

- In the event that several frames are to be fitted next to one another, it is advisable to also fit additional reinforcing
- Once the frames are fitted, sealant should be applied around the edges to prevent any leakage
- The frames should be correctly installed; the clips should be fitted on the dirty air side.

Holding Frames

HF bag filters



SPECIFICATIONS

Application: HVAC
Frame: Stainless steel
Gasket: frothed polyerethane
Maximum temperature: na
Maximum relative humidity: na
Comments: When 3 or more frames are mounted together, the frames need to be reinforced

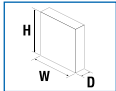
ADVANTAGES

- Very quick and Straightforward assembly
- Continuous poured gasket

Type	Dimensions frame WxHxD (mm)	Dimensions filter			Material	Frames / box
Hold.Fr. A/Stainless steel-3	610x610x97	592x592x25	592x592x48	592x592x75	Stainless steel	3
Hold.Fr. B/Stainless steel-3	508x610x97	490x592x25	492x592x48	490x592x75	Stainless steel	3
Hold.Fr. C/Stainless steel-3	305x610x97	288x592x25	288x592x48	288x592x75	Stainless steel	6
Hold.Fr. CC/Stainless steel-3	305x305x97	288x288x25	288x288x48	288x288x75	Stainless steel	12

Holding Frames

HF HEPA



SPECIFICATIONS

Application: cleanrooms, hospitals

Frame: stainless steel

Filterclass according to EN779:2012: n.a.

Maximum temperature: na

Maximum relative humidity: na

Comments: Assembly tools for filters with a depth of 292 mm are included standard.

Assembly tools for filters with a depth of 60-150 mm can be delivered on request

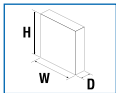
ADVANTAGES

- Straightforward assembly
- Good seal between filter and frame by mounting accessories

Type	Dimensions frame WxHxD (mm)	montage Dimensions filter	Material	Frames / box
HP.HOLD.FR.EE/SS	625x625x125	610x610x292	Stainless steel	1
HP.HOLD.FR.BE/SS	320x625x125	305x610x292	Stainless steel	2
HP.HOLD.FR.DD/SS	607x607x125	592x592x292	Stainless steel	1
HP.HOLD.FR.AD/SS	303x607x125	288x592x292	Stainless steel	2

Holding Frames

HF Activated Carbon



SPECIFICATIONS

Application: airports, industry
Frame: galvanized steel, Stainless steel
Filterclass according to EN779:2012: n.a.
Maximum temperature: na
Maximum relative humidity: na
Comments: When 3 or more frames are mounted together, the frames need to be reinforced

ADVANTAGES

- Straightforward assembly

Holding frame

Type	Dimensions	Material	Number of holes	Frames/box
AC.H.FR.A	610x610x70 mm	galvanized steel	16	4
AC.H.FR.B	508x610x70 mm	galvanized steel	12	4
AC.H.FR.C	305x610x70 mm	galvanized steel	8	8
AC.H.FR.CC	305x305x70 mm	galvanized steel	4	16

Type	Dimensions	Material	Number of holes	Frames/box
AC.H.FR.A.SS	610x610x70 mm	Stainless steel	16	4
AC.H.FR.B.SS	508x610x70 mm	Stainless steel	12	4
AC.H.FR.C.SS	305x610x70 mm	Stainless steel	8	8
AC.H.FR.CC.SS	305x305x70 mm	Stainless steel	4	16

Gasket

Type	Used for cylinders
AC-P-25	AC-2-12 & AC-2-26

Evaporative Cooler Media

Evap-Pads



EQUIPMENT

- High evaporation efficiency
- Superb wetting properties
- Low pressure drop when wet, leading to lower operating costs
- No water carry over
- Low scaling
- Self cleaning
- Strong and self supporting
- Long life time
- Low running costs
- Quick and easy to install
- Environmentally friendly
- Consistent high quality

This unique design yields a cooling pad with a high evaporation efficiency while still operating with a very low pressure drop. In addition scaling is kept to a minimum and no water carry over occurs due to the fact that the water is directed to the air inlet side of the pad. This is where most of the evaporation takes place.

The impregnation procedure for the cellulose paper ensures a strong self supporting product, with high absorbance, which is protected against decomposition and rotting and therefore increasing longevity. The distribution pad constitutes a vital part of a complete system and should always be placed on top of the cooling pad it ensures a uniform supply of the water to the cooling pad and minimises the risk of dry spots.

The evaporative cooling technology

Water is circulated via a pump station and supplied to the top of the cooling. A distribution pad on the top of the cooling pad ensures an even water distribution. The water flows down the corrugated surface of the EVAP-Pad. Part of the water is evaporated by the warm and dry air that passes through the pad. The rest of the water assists in washing the pad, and is drained back to the pump. The heat that is needed for the evaporation is taken from the air itself. The air that leaves the pad is therefore cooled and humidified simultaneously without any external energy supply for the evaporation process.

This is nature's own cooling process.





Power Systems

**Air Intake Filtration
for GAS TURBINES**



FILTERS DIRECT

"You Breathe The Difference"



POWER SYSTEMS

AFPRO POWER SYSTEMS introduces a special range of products for air intake systems for rotary machinery. The range of products exists of Rigid Pocket Filters, Compact Cassette filters with modular pre filter systems and Off-shore systems well suited for extreme conditions. **AFPRO POWER SYSTEMS** has laboratories on several locations in which our products are developed and tested so that an optimal quality can be assured. **AFPRO POWER SYSTEMS** Filtration is able to test filters and perform real life testing and Life Cycle Costs assessment to calculate the optimum performance of your air intake system.



PRODUCTS

HEAVY DUTY Series

The RIGID POCKET FILTER SERIES "Heavy duty" are energy efficient and have been designed with high quality non breakable synthetic fibers with a progressive multilayer structure. This unique structure ensures a high dust holding capacities and optimum filter performance. The "heavy duty" filterrange has an optimal lowest pressure drop that results in a longer filter life and usage and low energy and maintenance costs. The "heavy duty" air filters are leak-free welded and foam sealed to guarantee the highest functional performance.

HEAVY DUTY SERIES

Dimensions (mm): 592x592x600

Media: Synthetic

Frame: 2 component polyurethane

Gasket: Continuous poured gasket

Spacer: Synthetic

Maximum temperature: 65°C

Maximum relative humidity: 90%

Burst pressure drop: 3000 Pa

PROTECTOR Series

The COMPACT CASSETTE FILTER SERIES "PT" and the COMPACT CASSETTE FILTER SERIES "PT-XL-400" are uniquely designed for Air intake systems for rotary machinery. The complete product is resistant to moisture and has unique grips that are designed for easy transport and handling. The high performance water resistant media is a composite of a gradient density melt blown of synthetic fibers laminated to a synthetic backing layer. This results in a extreme durable media pack with hot melt separators which is less sensitive to damages, compared to glass media. The frame is designed to drain out any redundant water to protect the filter media itself. The "PT" filterrange is perfectly suited for high levels of filtration.





PROTECTOR SERIES

Dimensions (mm): 592x592x292

Media: Synthetic / fiberglass

Frame: 2 component polyurethane

Gasket: Continuous poured gasket

Spacer: Synthetic

Maximum temperature: 65°C

Maximum relative humidity: 90%

Burst pressure drop: 6000 Pa

Modular filter system

The MODULAR FILTER SYSTEM "RB" is uniquely designed as pre-filter to assure the filter its lifetime of the Fine filter. The RB filter range is available in different depths and filter classes. The filter media is designed with high quality non breakable synthetic fibers with a progressive multilayer structure. This unique structure ensures high dust holding capacities and optimum filter performance.

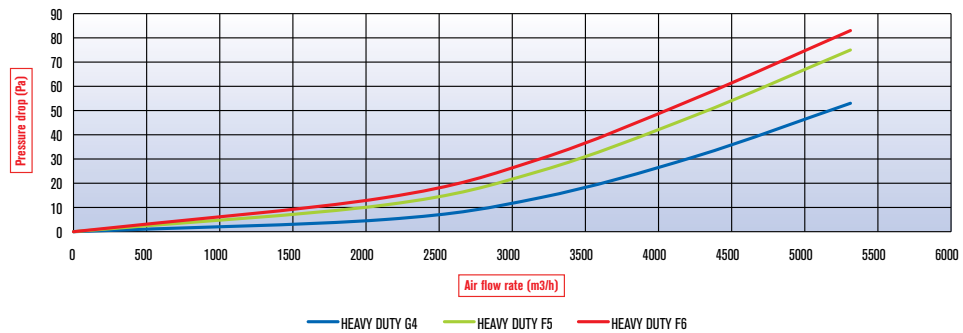
The RB-AQUASAFE is uniquely designed for coastal areas, marine intake systems or off-shore applications. The media is specially designed to eliminate any drainage of free water and air borne salt crystals. The RB-AQUASAFE protects the final filter stage from salt and water to ensure a long filter life and improves the total performance of the installation due to operational safety.

The COMPACT CASSETTE FILTER SERIES – MODULAR FILTER SYSTEM "PT-(XL-400) RB" is uniquely designed for areas that have limited space to build, in several filtration steps, in Air intake systems for rotary machinery. The modular system can easily be combined to the "PT" both in different depths and filter classes. The RB can be placed directly on the flange of the PT without adapting the filter clamping system. The unique system does not need any modification and fits in all existing frames.

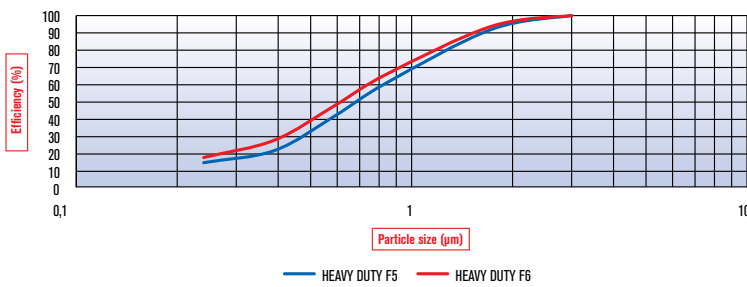
TEST DATA HEAVY DUTY SERIES AND PROTECTOR SERIES FILTERS

NAME PRODUCT	HD35	HD55	HD65
DIMENSIONS (mm)	592X592X600	592X592X600	592X592X600
NR. OF POCKETS	6	6	8
Test dust – ASHRAE – Aerosole – DEHS			
Air Flow rate (m3/h)	4250	4250	3400
Face velocity (m/s)	3,2	3,2	2,7
Initial pressure drop (Pa)	35	50	35
Final Pressure drop (Pa)	450	450	450
Initial Efficiency @ 0,4 µm DEHS (%)	-	22	27
Average Efficiency @ 0,4 µm DEHS (%)	-	50	64
Initial Arrestance (%)	88	94	96
Average Arrestance (%)	95	96	98
Dust holding capacity (g/unit)	1250	1150	1050
Filter class acc. EN779:2002	G4	F5	F6

INITIAL PRESSURE DROP



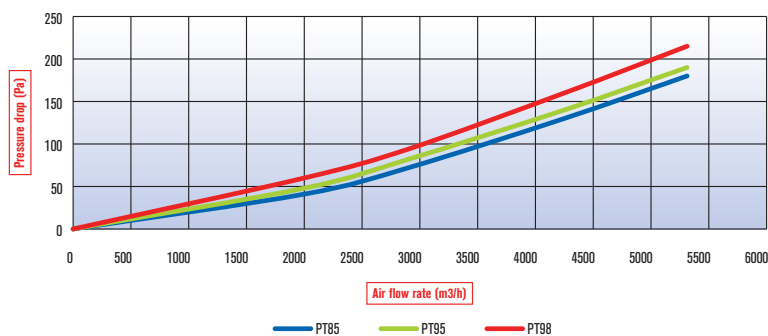
INITIAL EFFICIENCY



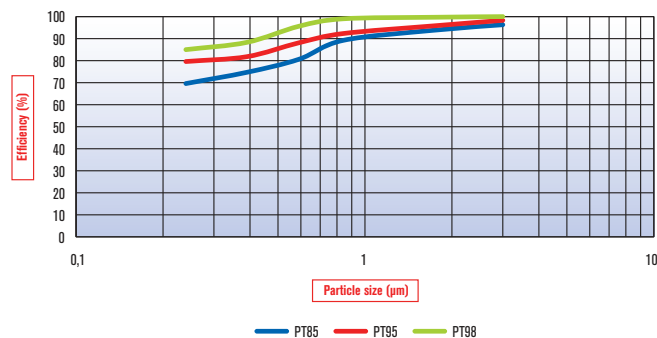
TEST DATA ACCORDING EN779:2002

NAME PRODUCT	PT85	PT95	PT98	PT-E10	PT-E11
DIMENSIONS (mm)	592X592X292	592X592X292	592X592X292	592X592X292	592X592X292
Test dust - AC FINE - Aerosole - DEHS					
Air Flow rate (m3/h)	4250	4250	3400	3400	3400
Face velocity (m/s)	3,2	3,2	2,7	2,5	2,7
Initial pressure drop (Pa)	130	140	160	171	190
Final Pressure drop (Pa)	450	450	450	<600	<600
Initial Efficiency @ 0,4 µm DEHS (%)	74	81	88		
Average Efficiency @ 0,4 µm DEHS (%)	85	92	97		
Initial Arrestance (%)	97	99	>99	>99	>99
Average Arrestance (%)	99	>99	>99	>99	>99
Dust holding capacity (g/unit)	610	450	350	250	220
Filter class acc. EN779:2002/EU1822:2010	F7	F8	F9	E10	E11

INITIAL PRESSURE DROP



INITIAL EFFICIENCY



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