



Clean air solutions

CAMFIL – MORE THAN A CLEAN AIR SOLUTIONS PROVIDER

Camfil is a world leader in clean air technology and air filter production. Our organization is a specialist in the field of air filtration solutions. We are focused on research and development, state-of-the-art manufacturing, and marketing of air filtration products solutions and services on a global basis.

The Camfil group of companies is the world's largest designer and manufacturer of air filters with currently 25 manufacturing facilities and plans to invest in more production units around the globe as our customer

base continues to grow. Camfil takes great pride in the fact that our products are of the highest quality, offering our customers air filters with the longest life, and lowest operating and maintenance costs.

For the past 50+ years we have been a leading supplier of air filtration solutions and services to the Life Science Industry. Many of our clients have multiple facilities located around the world. Camfil is viewed by many of the largest Life Science manufacturers as a partner and well positioned to support their

air filtration demands on a local and global basis. Major investments have been made in our R&D departments located around the world to develop products specifically for the Life Science industry. It is common for us to 'partner' with our customers to meet and often exceed their most demanding air filtration requirements.

SEGMENT FOCUS

In many of our chosen market segments we have Subject Matter Experts (SME's) in all major geographic regions in order to support our customers needs.

Camfil's global network of Segment managers are fully aligned internally and externally. Our role is to ensure we communicate the latest technology that meets the application requirements to the most current local, regional and international standards.

The Camfil safe change filter housing system, CamSafe 2, is for use wherever containment and operator safety is essential.

Field of application:

- Hospital
- Pharmaceutical
- Safety laboratories
- Industries (chemical)
- Biotech
- Biosafety
- Animal facilities



CAMSAFE 2 NOT ONLY A TIGHT HOUSING

CamSafe 2 is more than a tight housing for contamination-free filter change, because it goes beyond the technical specifications. Allowing you to focus on your business rather than your equipment.

DESIGN

Camsafe housings can provide a filter change free of contamination. They are available as single modules or multimodules systems depending on filtration stage required and air volume.

GASTIGHT CONSTRUCTION

The housings consist of a gastight welded robust construction of sheet metal and has door, which is secured by 4 star grip screws.

Each housing has separate safe change facility for each filter, PVC bag is secured onto it by means of a rubber locking ring.

FILTER HOUSING

The CamSafe 2 housing can be fitted with a wide range of particulate filter class or with molecular filters.

By means of a quick clamping device the gasket of the filter is pressed against the receiving face. To do this the lever must be turned 180 degrees.

TESTING

The CamSafe 2 has been tested and qualified in our laboratory. Mechanical resistance and global and local leak have been checked under positive and negative pressure of 6000 Pa.

Mechanical resistance

- (EN 1886:2003), Classified : class D1

Local and global leak

- EUROVENT 2/2, classified class C
- EN 1886, classified class L1
- ISO 10648, classified class 3
- EN 11237, classified class D

Penetration between filter and support frame ISO 14644-3

At the nominal air-flow with an Camfil ABSOLUTE H14 filter at its final pressure drop the penetration is lower than the 0,01% admissible.



CAMSAFE 2

WITH UNIQUE FEATURES

We would like to present 12 unique features demonstrating that our development, in partnership with some intensive users, has been highly driven with SAFETY & USER FRIENDLESS in focus.

1 TIGHTNESS

Perfect permanent tightness continuous welded. Pressure tested up to 6000 Pa (5000Pa => 6000Pa)

2 GASKET FRAME

Very rigid gasket frame. Bent and on the 4 corners it is fully welded

3 CLAMPING DEVICE

TRIPPLE THE SECURITY

Filter safety positioning device **PATENTED!** A new construction makes it impossible to clamp the filter unless it's fitted correctly. This is a unique Camfil feature which increases the safety level by eliminating incorrect filter installments.

4 POKA YOKE (MISTAKE PROOFING)

Secured filter clamping device. Impossible to close the door if the shaft is not in the locked position.

5 DIN GASKET

Leak tight test device can be used to test all HEPA/ULPA filter cells for perfect seal position in the housing, even during operation.

6 CORNER SCREWS

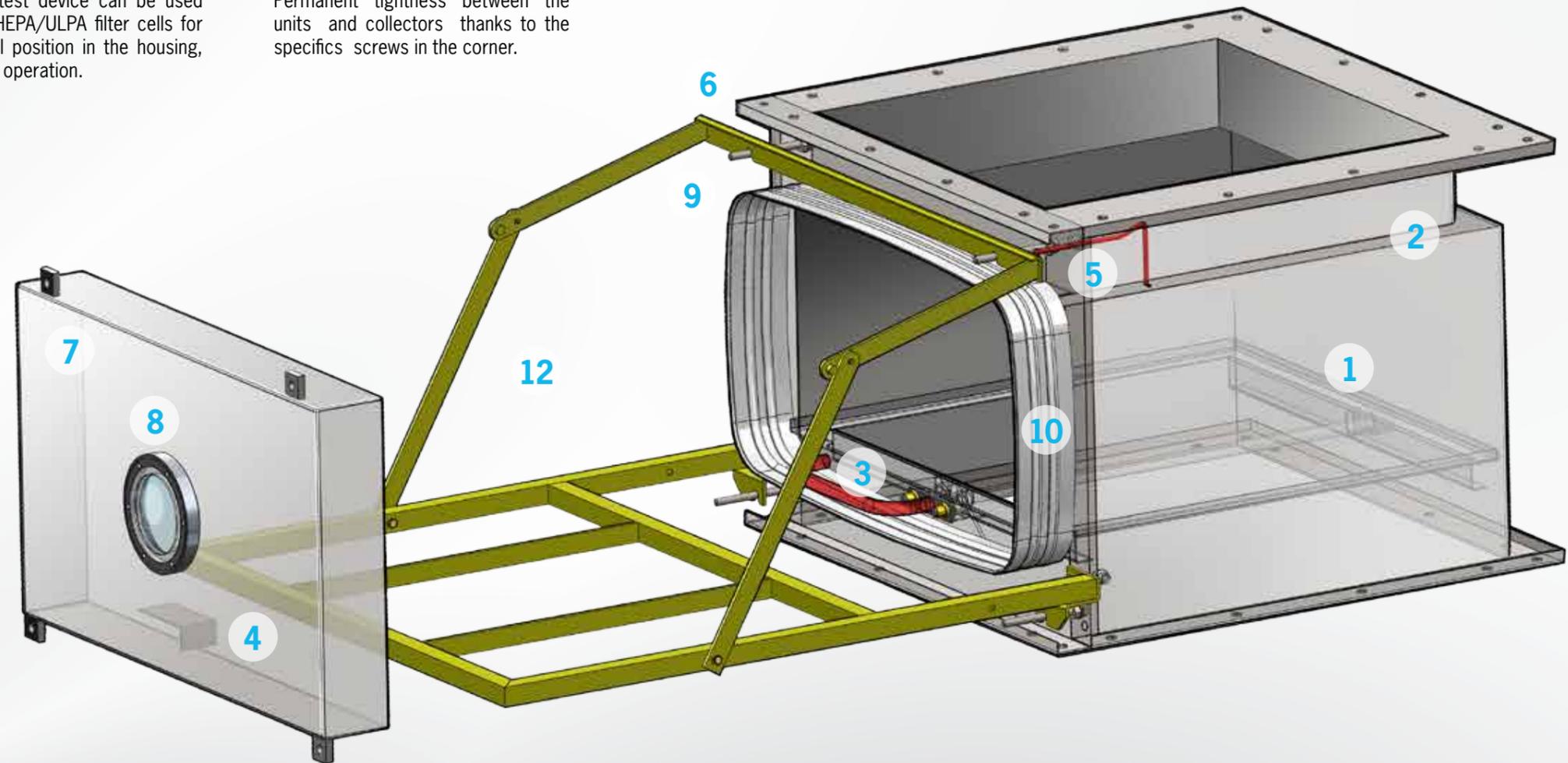
Permanent tightness between the units and collectors thanks to the specific screws in the corner.

9 DOOR FIXATION

Keep housing integrity. Easy maintenance. The rods which fastens the door to the housing are bolted outside the pressurized area.

10 LARGE GROOVE

Thanks to the large groove and the integrated O-ring it's easy to attach the bag. One person can do it – even with gloves on - quickly and without compromising safety. Just a few simple steps and the bag fits tightly to the housing



7 LIGHT WEIGHT DESIGN

A easy installation and maintenance. Although the robustness of the CamSafe, all component are still light for example during maintenance the door is removable just by 1 person.

8 GLASS WINDOW

Visual security thru the Window You don't have to open the door to check if there is a filter in the CamSafe2. Just look through the inspection window. This feature helps you avoid the risk of contamination due to not having a filter installed and a bag.

11 SECURE BAG

The CamSafe 2 safety bag is designed to offer highest possible protection and convenience for the operator. It is made of an 200 micrometer (0,2 millimeter) thick plastic material, which makes it really strong and tear proof. It has an integrated O-ring for quick and easy mounting. And the safety bag also has a special sleeve function which securely removes any residue from the previous bag.



12 HANDLING TABLE

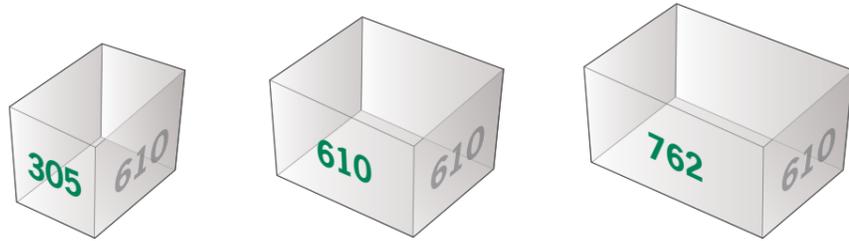
The CamSafe 2 has its very own handling table, to facilitate the filter change in a smooth way.

MODULE MODEL CONFIGURATION SYSTEM

1 PRODUCT: CamSafe 2 (CS2)

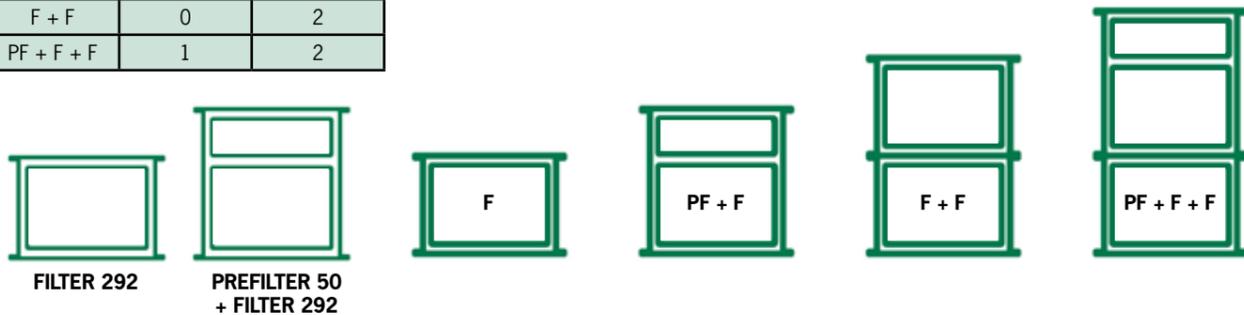
2 MODEL SIZE:

	FILTER SIZE (mm x mm)
305	305 x 610
610	610 x 610
762	762 x 610
* 610 is always on the front side	



3 MODEL STAGE:

	PRE FILTER Height: 50 mm	FILTER Height: 292 mm
F	0	1
PF + F	1	1
F + F	0	2
PF + F + F	1	2



4 MATERIAL:

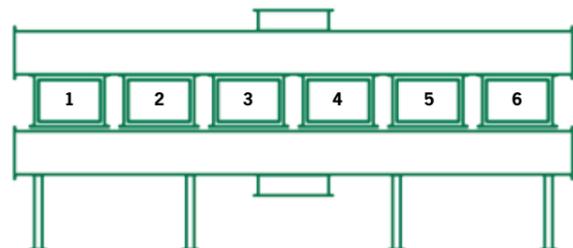
- Painted
- SS (stainless steel 304 L)

5 OPTIONS:

- DIN (test)
- WIN (Windows)
- ATEX (Atex)

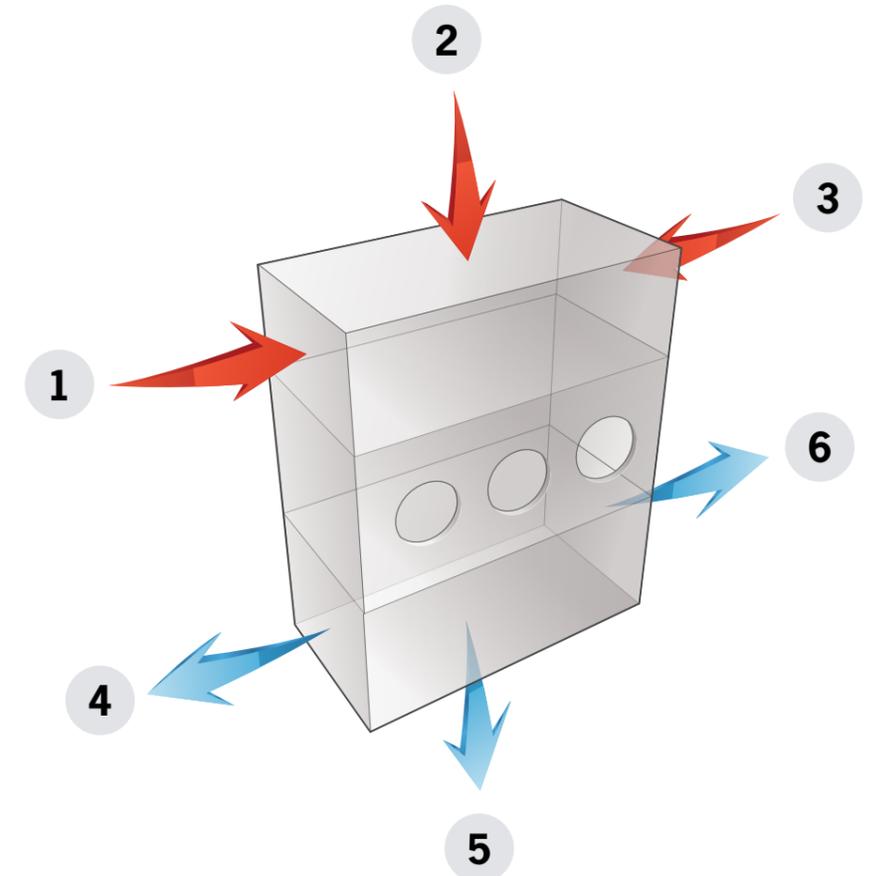
6 BANK:

1, 2, 3, 4, 5, 6



7 COLLECTORS:

NC	NO COLLECTORS
	INLET
1	TOP LEFT SIDE
2	TOP CENTRAL
3	TOP RIGHT SIDE
	OUTLET
4	BOTTOM LEFT SIDE
5	BOTTOM CENTRAL
6	BOTTOM RIGHT SIDE



EXAMPLE:

CS2 - designates the Camfil CamSafe 2 product line

CS2 - **610** - designates the filter size

CS2 - 610 - **PF+F** - designates the filter stages

CS2 - 610 - PF+F - **PAINTED** - designates the materials

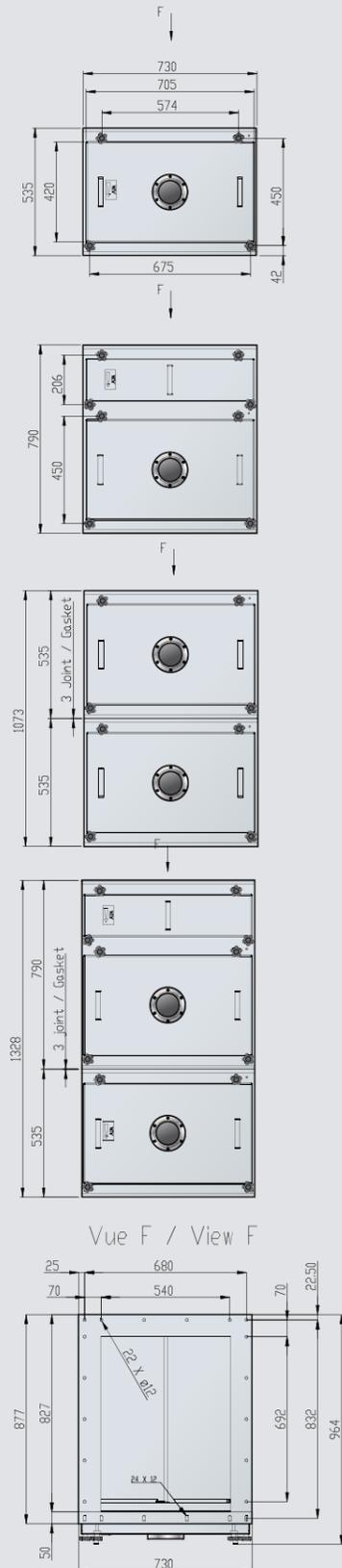
CS2 - 610 - PF+F - PAINTED - **DIN/WIN/ATEX** - designates the options

CS2 - 610 - PF+F - PAINTED - DIN/WIN/ATEX - **2** - designates the bank number

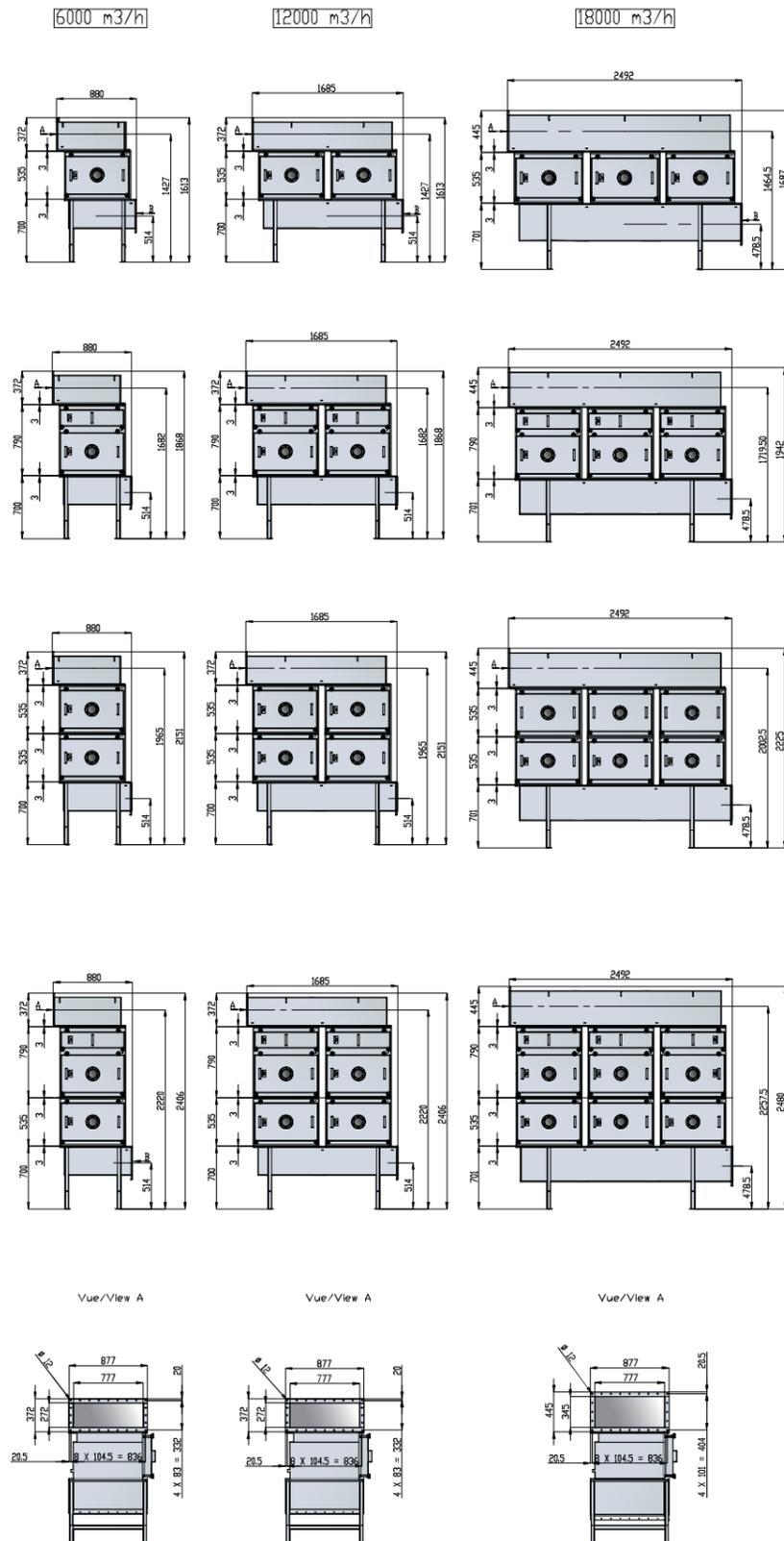
CS2 - 610 - PF+F - PAINTED - DIN/WIN /ATEX - 2 - **1/6** designates the collector and inlet/outlet positions



762 GENERAL



762 WITH COLLECTORS



MANUAL SCAN SYSTEM

NON INTRUSIVE FILTER INTEGRITY TEST

To realize the filter integrity test, no material is removed (for example: any trap) All the connections ports are airtight. During the normal service of the filter the connection port are covered.

BETTER EFFICIENCY GUARANTY QUALIFICATION

During the test design, we noticed that individual scan device is much more restrictive related to the efficiency validation.

RELIABILITY WITH GOOD MIXING AEROSOL INJECTION

Aerosol is equally dispersed on the inlet surface of HEPA filter.

In case of multi cells, we all know that the airflow could be less of 15% in the first cell. That is reason why each cell is equipped with an individual mixing aerosol injection cell.

If the fan is located on the upstream site and the aerosol inject before the fan, then a Particle injection system is not required.

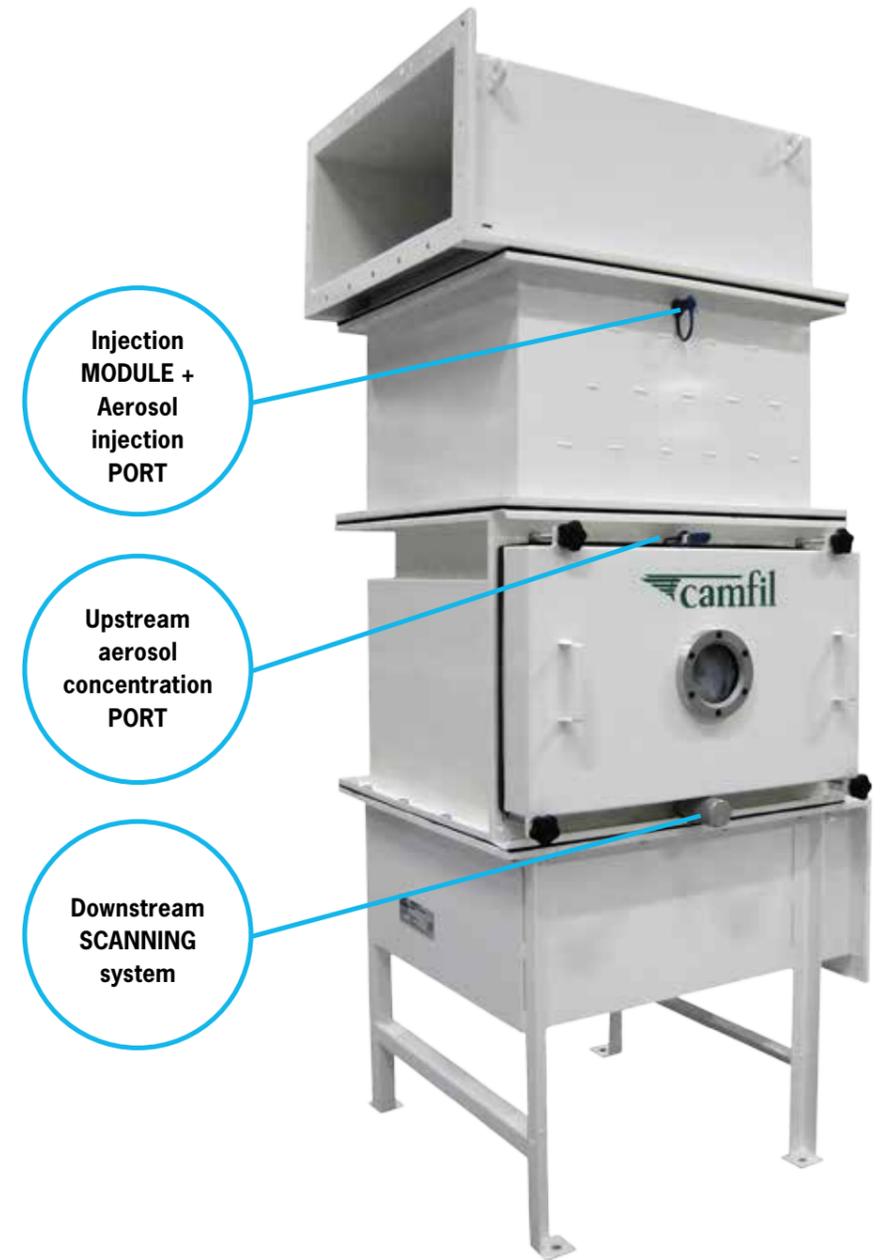
EASYNSS, QUICKNESS, CLEANLIENESS

All the protocol qualification is concentrated on the filtration equipment. No need to have access to the inlet and outlet duct area.

In the case of intrusive test on downstream duct, if a leak is detected, it's impossible to determine which filter is damage. The investigation is difficult and required too much time.

With the individual scan test the default is immediately detected.

The quantity of the aerosol used is less with the individual scan process. Moreover the entire upstream duct is not "contaminated" by the aerosol.



TECHNICAL DATA – FILTER CELLS

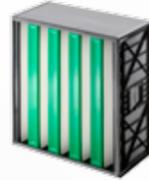
PRE FILTER



AeroPleat HP



EcoPleat

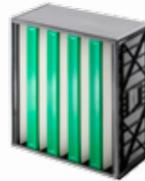


Opakair Green 2

Name	Filter class according to EN 779	Size W x H x D (mm)	Media surface (m ²)	Air flow (m ³ /h)	Pressure drop (Pa)
AeroPleat HP	G4	305 x 610 x 50	0.6	1800	100
AeroPleat HP	G4	610 x 610 x 50	1.1	3600	100
AeroPleat HP	G4	762 x 610 x 50	1.7	5400	100
EcoPleat	F7	305 x 610 x 5	2.9	1450	120
EcoPleat	F7	610 x 610 x 50	5.89	2900	120
EcoPleat	F7	762 x 610 x 50	8.8	4350	120
Opakair Green 2	F9	305 x 610 x 292	9.6	1700	135
Opakair Green 2	F9	610 x 610 x 292	24.4	3400	135
Opakair Green 2	F9	762 x 610 x 292	34	5100	135



Absolute DG



Absolute VGXL

FILTER

Name	Filter class according to EN 1822	Size W x H x D (mm)	Media surface (m ²)	Air flow (m ³ /h)	Pressure drop (Pa)
Absolute DG	H14	305 x 610 x 292	19.0	1350	290
Absolute DG	H14	610 x 610 x 292	39.9	3200	290
Absolute DG	H14	762 x 610 x 292	50.1	4100	290
Absolute VGXL	H14	305 x 610 x 292	15.0	1500	310
Absolute VGXL	H14	610 x 610 x 292	38.0	4000	310
Absolute VGXL	H14	762 x 610 x 292	46.0	6000	380



Acticarb

MOLECULAR FILTER

Name	Size W x H x D (mm)	Version	Active carbon volume (liter)	Recommended temperature (°C)	Recommended relative humidity (%)	Weight (kg)
Acticarb 4000		4 V version	32.5	0 - 40	30 - 70	45
Acticarb 4000	610 x 610 x 292	4 V version	65	0 - 40	30 - 70	82



CAMSAFE 2 – SUITED TO YOUR EXACT NEEDS

The highly modular concept of CamSafe 2 offers you the possibility to have a tailor-made solution suited to your exact needs and requirements. With our assistance, we can guarantee you a configuration that is safe, reliable and easy to use.

Whenever you need our expertise, you are always welcome to contact us - we are just a phone call or email away.

CAMFIL IS THE WORLD'S LARGEST AND LEADING MANUFACTURER OF FILTERS AND CLEAN AIR SOLUTIONS

Camfil is the global industry leader in clean air solutions with more than 50 years of experience. Our solutions protect people, processes and the environment to benefit human health, increase performance, and reduce and manage energy consumption. 23 manufacturing plants, 6 R&D sites and over 65 local sales offices worldwide provide service and support to our customers. The Camfil Group is headquartered in Sweden but more than 95% of sales are international. The Group has around 3,500 employees and sales in the range of SEK 4.9 billion.

www.camfil.com

For further information please contact your nearest Camfil office.