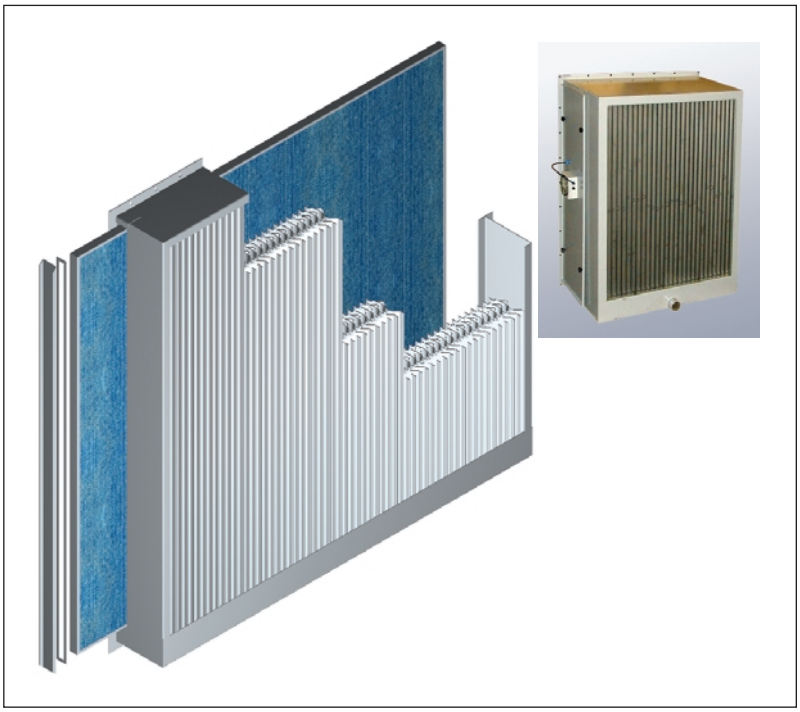
DCF

Air intake systems
Two-stage



EQUIPMENT

DCF

- High separation efficiency; removes heavy rain, fog and high loads of sea spray
- Anti-icing devices
- Wide face velocity ranges
- Marine grade materials
- Easy maintenance; only cleaning or exchange of filter/coalescers (no special tools required)
- High corrosion resistance
- Tailor made sizes and designs
- In house ISO9001 certified manufacturing

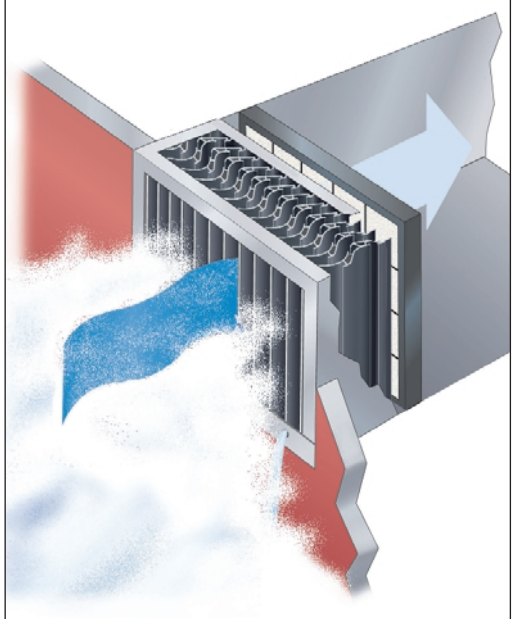
DCF is a series of advanced tailor made ready-to-install air intake systems for use in many application areas. They provide excellent protection against all types of droplets as well as particle filtration throughout a broad range of face velocities.

DCF is comprised of a range of mist elimination profile designs and filter types to meet application requirements more precisely and to give optimum balance in between required efficiency, water loading capacity and pressure drop to ensure energy efficient operation. In particular extremely small but harmful droplets that cannot be totally removed by any single stage mist elimination system are eliminated by DCF systems. The efficiency is fully independent of wind direction and the occurrence of so-called secondary droplets.

DCF air intake systems are an excellent choice to keep marine- and off-shorebased ventilation systems protected against all kinds of weather such as rain, fog, splash water and especially spray containing harmful sea-salt. They are also perfect for use in ventilation systems for buildings in coastal areas.

Corrosion and moisture are reduced throughout the entire ventilation system thanks to the high efficiency. DCF help to improve the climate for people, interior furnishing, cargo spaces as well as sensitive equipment.

The systems are fully configurable. Options include various marine grade materials, flange positions, drainage system, bird screens, coloured surfaces and many others.



Principle illustration.

Munters

Technology

DCF air intake systems are two-stage separation systems. High performance vane type mist eliminator are used in the first stage. Various types of filter/coalescers are used in the second stage.

The first stage removes the majority of entrained liquid droplets. A high efficiency in the first stage protects the filter/coalescer in the second and thereby prolongs its lifetime. The second stage filters solid particles and eliminates mist particles that have passed through the first stage.

Performance

DCF air intake systems are characterised by the following key performance criteria;

1. Liquid load

Liquid load is an air intake system's capacity to eliminate liquid from the air stream. It is stated in litre per square meter per hour. Depending on the application liquid loading can vary enormously, over an intake face from a few litres/m^2/hour up to several hundred litres/m^2/hour. The liquid load capacity is given for each individual DCF design.

2. Efficiency

The limit drop size defines the liquid separation efficiency, it is the smallest droplet that is completely removed. Fractional efficiency indicates the percentage removal of droplets smaller than the limit drop size from an air stream.

DCF removes droplets lager than 5µm completely and provides an excellent fractional efficiency level for droplets down to 1µm. Average particle filtration efficiency is given according to the EN779. Efficiency is given for each individual DCF design.

3. Pressure drop

Pressure drop is defined as the resistance to airflow measured in Pa. The lower the pressure drop, the lower the energy consumed. A typical pressure drop curve is shown in the diagram. The pressure drop is given for each individual DCF design.

Tested

Munters' air intake systems are tested under conditions of 100 % relative humidity and charged with multiple liquid loads smilar to those experienced under operating conditions.

DCF designs

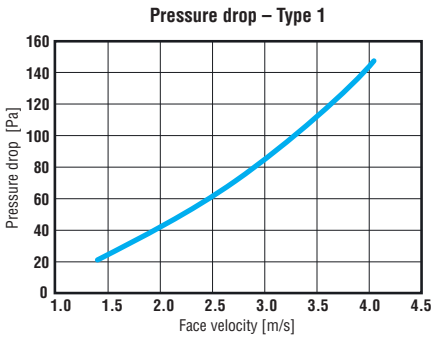
All DCF air intake systems are designed to meet individual environmental and application requirements. Therefore, the information concerning design given below should only be seen as basic alternatives.

Basic types

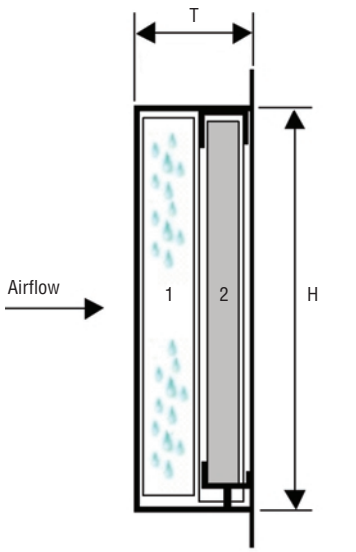
Type 1

For low to medium air volumes and limited installation depth.

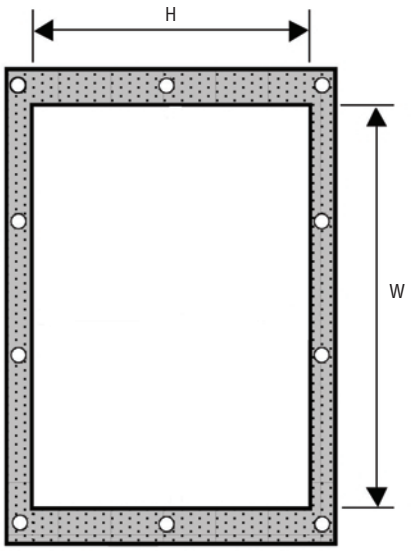
Vane type separator followed by extended surface panel filter/coalescers. Filter/coalescers are available in classes from G2 to F5 according to EN779.



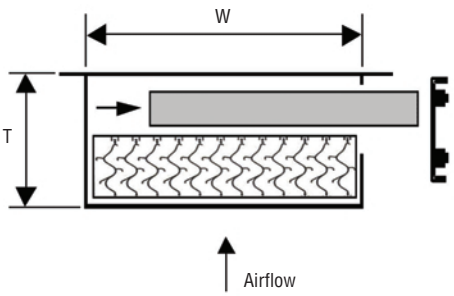
Typical pressure drop of a 2-stage system type 1.



First stage mist eliminator
Second stage filter/coalescer



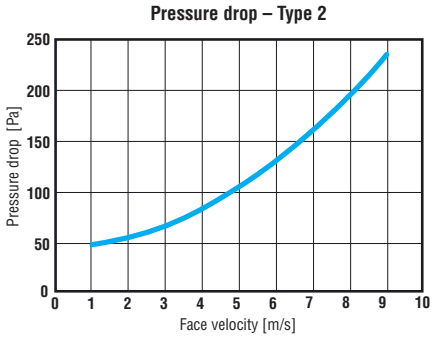
Side panel removable (example)



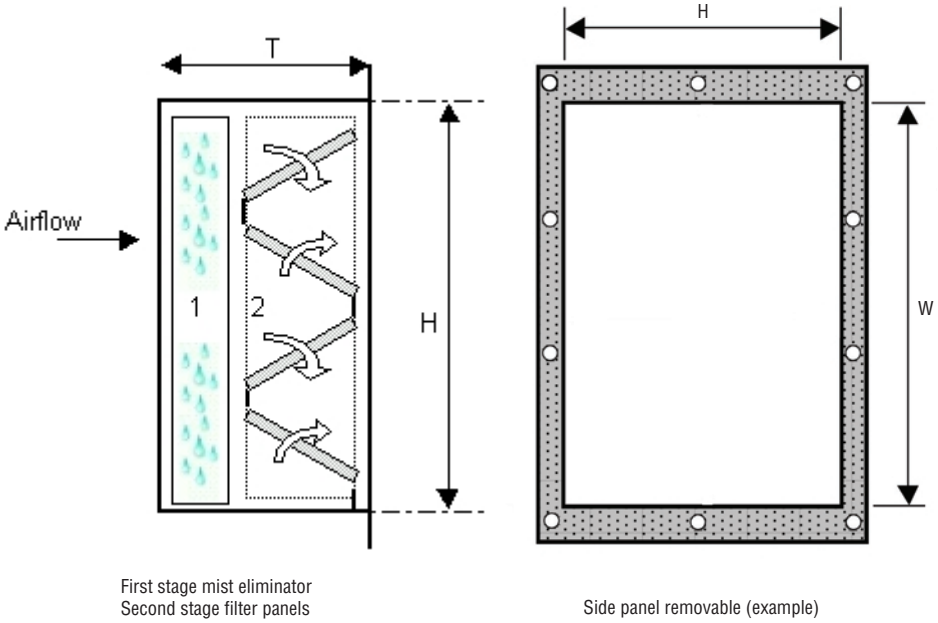
Principle drawings.

Type 2
For low to high air volumes.

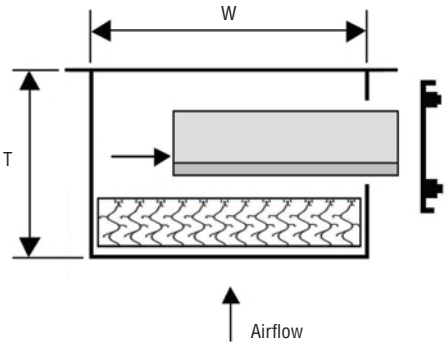
Vane type separator followed by zig-zag panels as second stage. Filter/coalescers are available in classes from G2 to F5 according to EN779.



Typical pressure drop of a 2-stage system type 2.
Figures are valid for face velocity at operating point and for clean filters

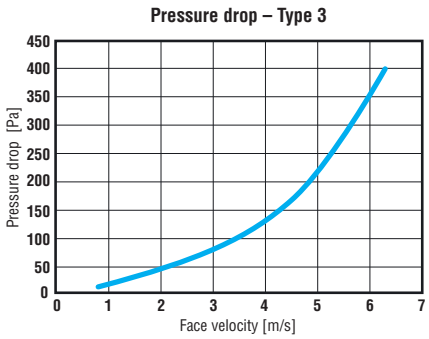


Principle drawings.

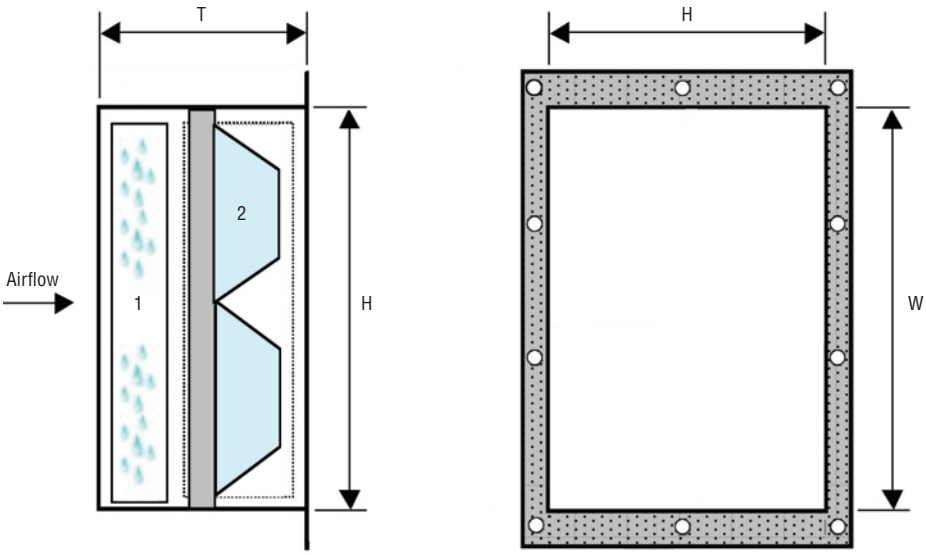


Type 3
For low to high air volumes.

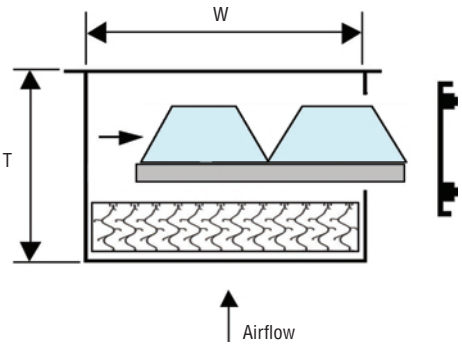
Vane type separator followed by a compact filter section. Filter/coalescers are available in classes from F6 to F9.



Typical pressure drop of a 2-stage system type 3.



Principle drawings.



Material
Standard material (other alternatives on request)
- Marine grade aluminium alloys (AlMg3, AlMgMn4.5 and AlMgSi0.5).
- Optional anodising of aluminium
- Marine grade stainless steel (AISI 316L, DIN 1.4404).
- Optional powder coating or painting in most RAL colours.
- Optional brushed or polished surface.

Other standard options
Examples only
- Different water drainage designs are available.
- Flanges according to Eurovent, DIN 24193, Norsok or other trade, national or international standards.
- Pre protection of the air intake system according to customer requirements (examples; wire mesh, horisontal jalousie-louver, hatch).
- Air intake performance according to ISO 15138 – 2000.
- Optional entry side (left, right, top, bottom) for maintenance access door for service of filter/coalescer.
- Differential pressure gauges (magnehelic type).
- Different certification options.
- Special naval shock-load resistant equipment.

DCF
DCF tailor made air intake systems are supplied for a wide range of applications. They are typically used for protection of HVAC/ventilation in the marine and offshore sectors. Also for the protection of ventilation systems and diesel engines for commercial applications.

Product nomenclature
DCF – type - material – filter class – width – height.

DCF are developed and produced by Munters Euroform GmbH, Germany.

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