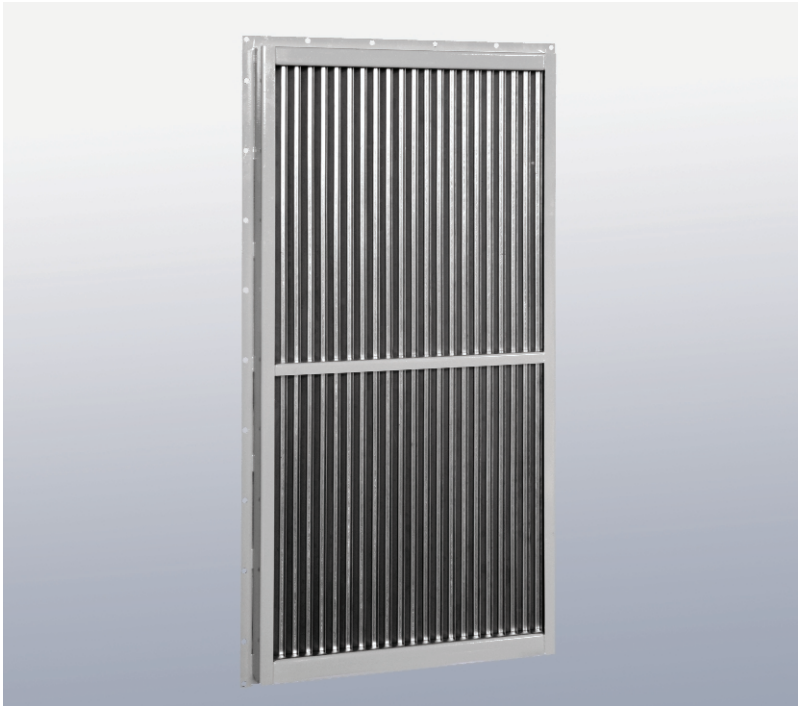
DF 3500
Droplet Separator



EQUIPMENT

DF 3500

- High separation efficiency
- Very low pressure drop leading to lower operating costs
- Corrosion resistant
- Simple installation
- Low maintenance cost due to simple operating principle and long lifetime
- Wide face velocity range
- Tailor made sizes and designs
- Hygienic design
- Wide range of highest quality material
- In house ISO 9001 certified manufacturing

DF 3500 is a ready-to-install droplet separator for use as air intakes in marine and offshore applications. It is available in various material combinations and configurations to fit a wide range of operating conditions.

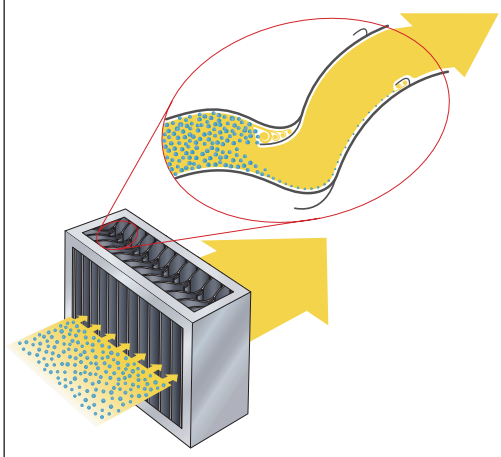
DF 3500 droplet separator provides high efficiency droplet separation and low pressure drop even at high face velocity. The droplet separator can be configured to most individual performance and installation situations, providing a cost effective solution. Alternative material choices and drainage systems, as well as add-on features like flanges and protection mesh are just some of the configuration options.

DF 3500 droplet separator is an excellent choice air intakes in marine and offshore applications. It is best suited for keeping splashwater, sea spray, mist and larger fog water droplets out of a ventilation system. Whenever the natural operating conditions are very harsh, the DF 3500 provides excellent protection from water. This helps to reduce corrosion, to increase filter lifetime and to reduce moisture throughout the system. The unit is suitable for use at face velocities of up to 6 m/s.

Separation technology

The streamlined separator deflects the droplet laden gas stream, as a result the momentum of the droplets causes them to impinge onto the profile surface. The droplets coalesce together and form a liquid film, the influence of gravity causes the liquid to drain to the bottom of the profiles. Specially shaped separation chambers improve performance by enhancing the separation of finer droplets and ensuring problem free discharge of liquid.

To avoid “flooding” of the profiles and the possibility of re-entrainment of the separated liquid, the height of the profile sections, droplet separators is normally limited to 2,500 mm.



Principle illustration.

Munters

Performance

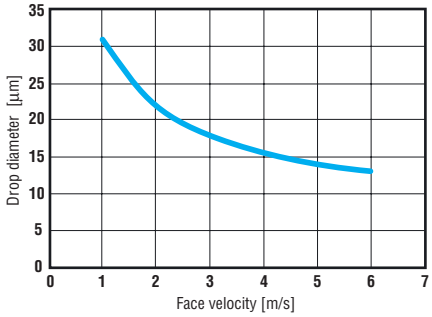
The limit drop size represents a performance characteristic of the profile, at the relevant velocity and operating conditions it is the size of the smallest droplet that is completely separated. The diagram showing limit drop size has been calculated for an air/water system at 20 °C and 1 bar.

The pressure drop is measured at ambient conditions (20 °C and 1 bar) through a number of assembled profiles and under ideal conditions.

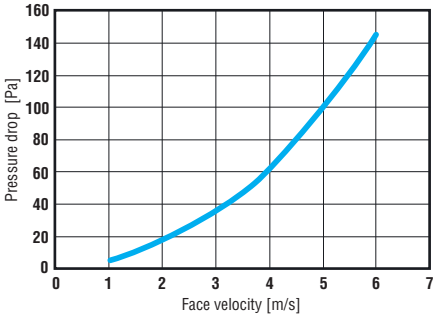
Liquid load

Maximum liquid load; 250 gram water/kg air, measured under ideal conditions at 20 °C, 1 bar and a face velocity of 4.5 m/s with a pitch/spacing of 25 mm between the profiles.

Limit drop size DF 3500

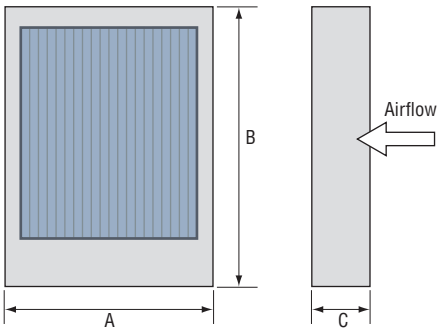


Pressure drop DF 3500



25 mm pitch/spacing between profiles

For any data outside the specified range, please contact your nearest Munters representative.



Type, material and dimension specifications

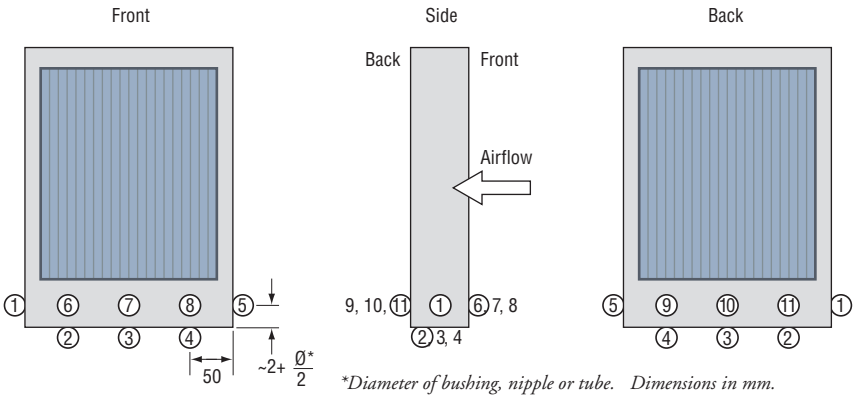
Type code	Material		Pitch/ spacing between profiles mm	Width*** A mm min–max	Height*** B mm min–max	Depth C mm	Operating temp °C min–max
	Frame**	Profile					
2b	316L	PPTVb****	25	300–2,500	300–2,500	165	+5 – +100
3b	316Ti	PPTVb****	25	300–2,500	300–2,500	165	+5 – +100
4b	AlMg3*	PPTVb****	25	300–2,500	300–2,500	165	+5 – +100
8a	AlMg3*	AlMgSi0.5	25	300–2,500	300–2,500	165	+5 – +100

PPTV = Talcum reinforced polypropylene (b = black)
316L = Stainless steel (AISI 316L, DIN 1.4404)
316Ti = Stainless steel (AISI 316Ti, DIN 1.4571)
AlMg3 = Aluminium alloy
AlMgSi0.5 = Aluminium alloy

* *Anodised or coloured material on request.*
** *All frames can be painted on request (specify RAL code).*
All frames powder coated on request.
Aluminium frames of other aluminium alloys on request.
All frames can be brushed to give a frosted appearance, stainless steel can be obtained polished.
*** *Standard tolerance on width and height: +0, –5 mm.*
**** *Special polypropylene compound for min temperature –40 °C on request.*

Drainage positions

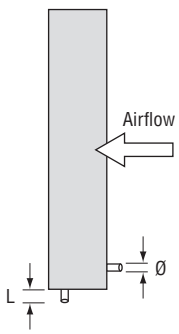
Code for drainige position, put P before the position number, e.g., P9 or P6,8,9,10 if more outlets are to be used.



**Diameter of bushing, nipple or tube. Dimensions in mm.*

⑫ *Slot throughout the entire bottom for use with separate housing/tray.*

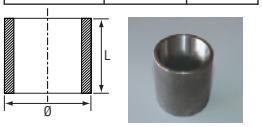
Drawing for fittings (see next page).



Fittings specifications

For aluminium frames
Tubes

Fitting code	Ø mm	L mm
A1	16	50
A2	20	50
A3	30	50
A4	42	50
A5	54	75
A6	65	75
A7	76	75

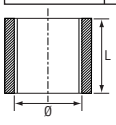


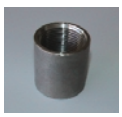
Fitting material AlMgSi0.5 aluminium alloy.

For stainless steel frames

Bushing Inside threads, both sides.

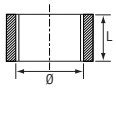
Fitting code	Ø inch	L mm
B1	1/2	34
B2	3/4	36
B3	1	43
B4	1 1/2	48
B5	2	56
B6	2 1/2	70
B7	3	95





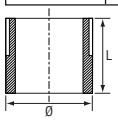
Half bushing Inside threads, both sides.

Fitting code	Ø inch	L mm
C1	1/2	15
C2	3/4	17
C3	1	19
C4	1 1/2	22
C5	2	26



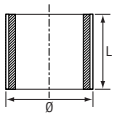
Weld-on nipple External threads, one side.

Fitting code	Ø inch	L mm
D1	1/2	35
D2	3/4	40
D3	1	40
D4	1 1/2	50
D5	2	50
D6	2 1/2	60
D7	3	65



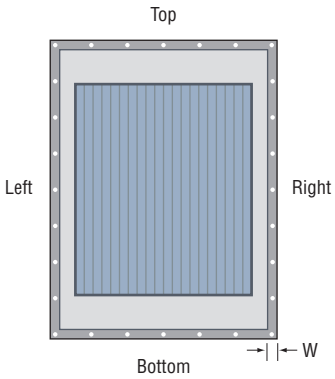
Nipple* External threads, entired length.

Fitting code	Ø inch	L mm
E1	1/2	25
E2	3/4	40
E3	1	35
E4	1 1/2	38
E5	2	45



Bushing according to DIN 2986, nipples DIN 2982, material 316Ti (AISI 316Ti, DIN 1.4571), witworth – thread according to DIN 259.
** In combination with bushing (fitting code B).*

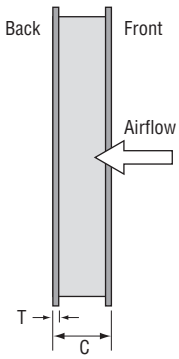
N.B. The required cross-section of the water outflow depends on both application and liquid load. Most frequently used fitting sizes are 3/4" and 1" and corresponding tube sizes.



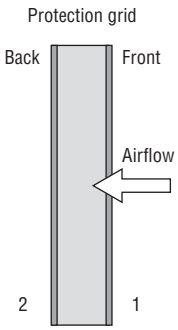
Hole configurations in flanges are delivered according to Eurovent, DIN 24193, Norsok or other trade, national or international standards (specify standard). Hole configuration according to individual requirements are also delivered (specify drill pattern and hole diameter, provide drawing or use sketch on last page).

Code	[mm] min–max
R	50–500

Code for radius, put R before the dimension, e.g. R150



N.B. Depths [C] is the same with or without flanges.



Flanges specifications

Flange code		Position
Continous welded	Spot welded	
F1	F11	Top & bottom front
F2	F12	Left & right front
F3	F13	All sides front
F4	F14	Top & bottom back
F5	F15	Left & right back
F6	F16	All sides back
F7	F17	Top & bottom, front & back
F8	F18	Left & right, front & back
F9	F19	All sides front & back

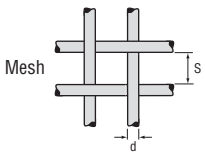
Thickness*, T	
code	mm
T2	2
T3	3
T5	5
T8	8

Width*, W	
code	mm
W30	30
W50	50
W60	60

Material: Aluminium and stainless steel in accordance with the frame material selected.
** Other thickness or width on request.*

Protection grid and mesh type specifications

Protection grid code	Position
G1	Front
G2	Back



Mesh width, S		Mesh type, wire diameter, d Ø [mm]			
inch	mm	1.0	1.2	1.5	2.0
1/4 × 1/4	5 × 5	Q1			
1/4 × 1/4	6 × 6	Q2	X2		
1/3 × 1/3	8 × 8	Q3	X3		
1/2 × 1/2	10 × 10	Q4	X4		
1/2 × 1/2	12 × 12	Q5		Y5	
3/4 × 3/4	16 × 16	Q6	X6	Y6	
3/4 × 3/4	20 × 20	Q7		Y7	Z7
1 × 1	25 × 25			Y8	Z8

Material: Stainless steel 304 (AISI 304, DIN 1.4301).
N.B. Protection grid is mainly used as trash screen on air inlets. Pressure drop over wire mesh is negligible.

DF 3500

DF 3500 droplet separator is developed to suit a wide range of applications. The various outfit options cover the most typically occurring installation variations. However, tailor made droplet separators are frequently delivered based on customers' individual specifications.

Material certificates can be delivered for most materials upon request. Fractional efficiency curves for given face velocities are delivered on special request.

For hygienic-proof HVAC equipment DF 3500 droplet separator can be delivered in accordance with the standards VDI 6022, VDI 3803, DIN 1946 (specify H in order code).

DF 3500 is developed and produced by Munters Euroform GmbH, Germany.

Order information

DF 3500-X-X-X-X-X-X-X-X-X-X-X-X-X

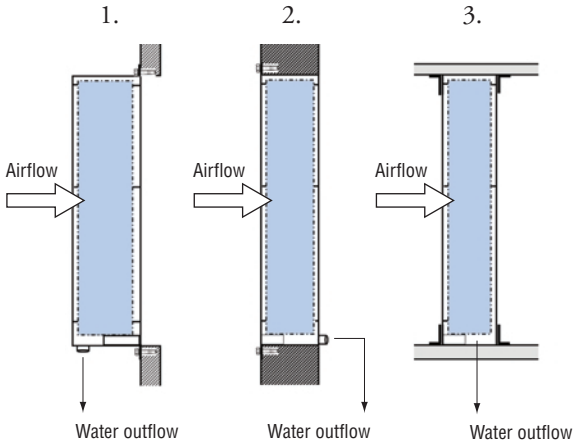
- Type code
- Pitch/spacing, mm
- Width, mm
- Height, mm

Options:
- Drainage position(s) code
- Fitting code
- Flange position code
- Flange thickness code
- Flange width code
- Protection grid position(s) code
- Mesh type code
- Radius code

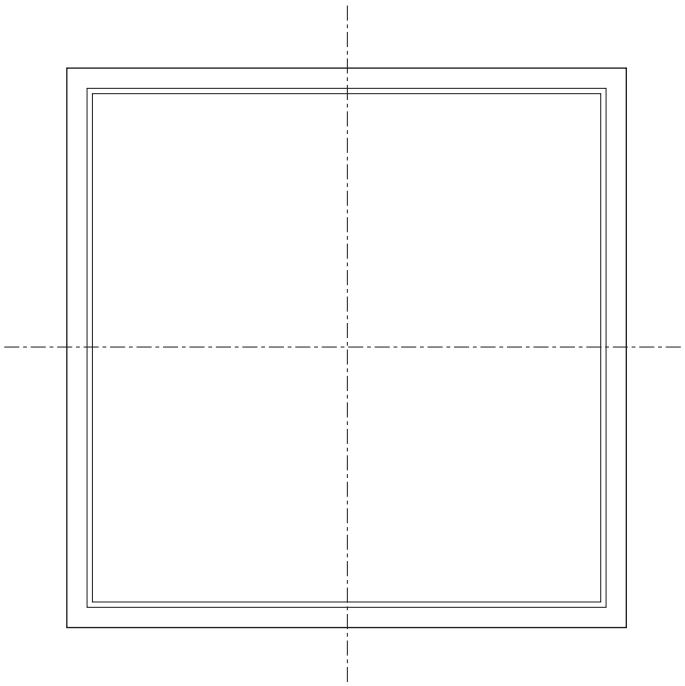
e.g., DF 3500-2b-25-1820-1200-P9-B5-F2-T2-W30-G2-Q4-R150

Examples of installation

1. The droplet separator is flanged onto a wall opening and the water drains vertically outside of the wall.
2. The droplet separator is flanged into a wall opening and the water drains controlled into an internal tray (not shown in the drawing)
3. The droplet separator is installed in an air duct and stands in between angled profiles that are connected to the air duct. The water drains through the bottom into a tray that is below the air duct.



Drill pattern sketch



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