Big Dutchman®

Fresh air supply systems

Optimum fresh air supply for every type of poultry production

Fresh air supply systems – the right solution for every type of poultry house!

Big Dutchman offers a wide range of fresh air supply systems to ensure optimal provision of fresh air. Depending on structural conditions and special requirements – negative- or balanced-pressure ventilation – the following systems can be implemented:

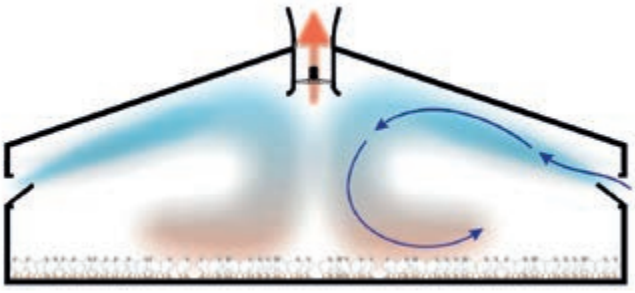
- ✔ fresh air inlets for installation into the wall or ceiling;
- ✔ FAC 2 and Fumus 2 fresh air chimneys;
- ✔ large air inlets for longitudinal ventilation.

Let our experts advise you on how to find the best solution for your individual requirements.

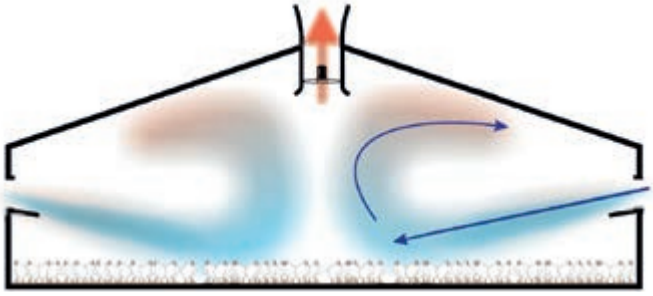
FRESH AIR INLETS FOR STABLE HIGH-VELOCITY VENTILATION

Wall inlets are well-suited for non-centralised air supply in poultry houses. Big Dutchman can offer the ideal inlet for any application: whether the inlet is to be embedded in thick wall structures, such as brick, or used as flange inlet for thin walls. All inlets create a good air circulation at both high and low outside temperatures.

Low outside temperature



High outside temperature



CL 1200, CL 1211 F, CL 1200 B/F and CL 1911 F

Fresh air inlets for the wall; the flap is pulled open

Our wall inlets are made of shock-proof, recyclable, non-deformable, UV-stabilised plastic and can easily be cleaned with a high-pressure cleaner. The insulated inlet flap is kept in a closed position by rustproof* steel springs, thus sealing the building airtight. The inlet flap opens through downward pull. This allows the farmer to regulate the inlet opening very precisely in each season. As an example from the winter season: the cold, outside air enters the building, immediately combining with the warm, inside air. This process helps create a more comfortable climate for the birds and can easily be managed with a control set.
This control set opens the fresh air inlets either all at once or individually.

CL 1200 – multi-purpose wall inlet

CL 1211 F – flange inlet for sandwich panels

CL 1200 B/F – economical flange inlet

CL 1911 F – flange inlet for sandwich panels, with high air rate

Due to the patented advanced inlet control (AIC)*, a single action at each inlet pre-defines which inlets open first and which open later.
If the number of opened inlets is reduced, especially during the cold season or while heating is necessary, the remaining inlets can be opened further, which makes for a more stable airflow.

* not applicable for inlets type B/F

Air performance in m³/h of fresh air inlets when fully opened

Type	CL 1211 F	CL 1200 B/F	CL 1220	CL1224	CL 1229	CL 1233	CL 1911 F	with light trap*
Code no.	60-44-3111	60-43-3009	60-44-3140	60-44-3144	60-44-3149	60-44-3153	60-43-4011	60-43-3064
-10 Pa	1 000	1 000	1 200	1 250	1 280	1 350	1750	990
-20 Pa	1 450	1 450	1 700	1 750	1 800	1 940	2500	1 420
-30 Pa	1 700	1 700	2 050	2 120	2 170	2 300	3050	1 680
-40 Pa	2 000	2 000	2 400	2 490	2 550	2 700	3550	2 000

* with light trap, all wall inlets of the CL 1200 series have the same air performance

The advantages at a glance

- ✔ BD wall inlets are very versatile and guarantee an optimum, non-centralised fresh air supply for negative-pressure ventilation;
- ✔ all BD wall inlets can be opened individually, creating stable air jets, even with minimum ventilation;
- ✔ the insulated and non-deformable inlet flap (with an integrated aluminium profile) seals the house airtight;
- ✔ the pulling mechanism allows a very exact control of the inlet opening for a stable air circulation all the way to the centre of the house, and very even temperatures at simultaneous low heating requirements;
- ✔ high-quality materials make for a long service life of the inlets: 15 years are not uncommon, but standard!;
- ✔ a high-pressure cleaner can be used without any concern.

Useful accessories to help you

1 Net protection against birds

This accessory is a self-supporting plastic net which is fastened to the inlet from the outside by means of a simple locking system.

2 Air deflector

The air deflector is mounted at the upper edge of the inlet and enables precise distribution of the incoming airflow, especially in cold weather. The direction of the airflow can be adjusted individually for each building by changing the angle between the deflector and the wall.

3 Spacer

Spacers are used when tension rods have to be guided around posts along the house wall. The maximum distance to the wall is 24 cm (one spacer per inlet).

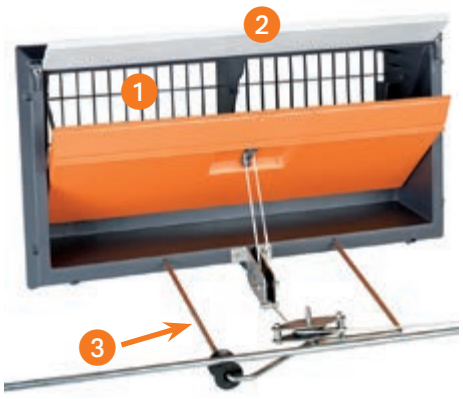
If you use special lighting programs in your poultry house, it is necessary to keep the light out entirely or partially during the dark phase, depending on the management type. We have the following products available for this purpose:

4 Light trap for CL 1200

The light trap is an ideal fit for the wall inlets of the CL 1200 series. This trap completely prevents daylight from entering the house through the inlet.

5 Anti-wind cap and light trap

The anti-wind/anti-weather cap is recommended especially for houses without eaves. The cover is a reliable protection against the weather. Combined with a light trap, it helps reduce the light while keeping losses in air performance to a minimum.



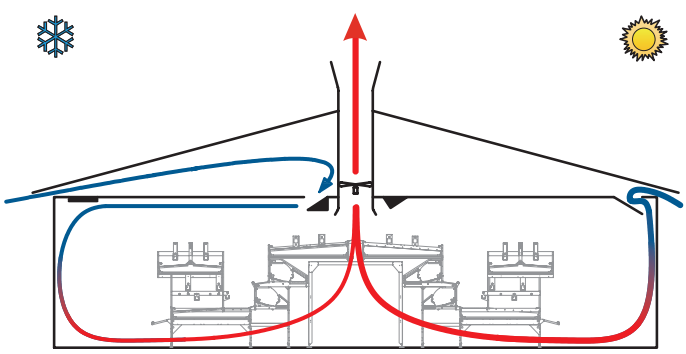
CL 1540 and CL 1800-N

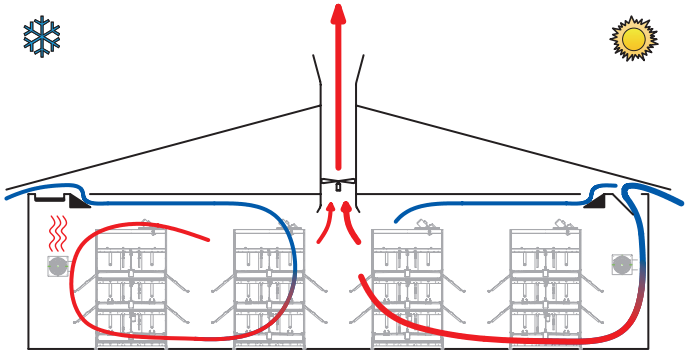
Fresh air inlets for the ceiling; the flap is either pulled open or pulled closed

Ceiling inlets are multi-purpose inlets specifically well-suited for installation into the ceiling with a roof slope of up to 15°.

They are made of recyclable, shock-proof, non-deformable, UV-stabilised plastic.

The fresh air enters the poultry house through the attic.





CL 1540 – multi-purpose ceiling inlet

The insulated inlet flap of the **CL 1540** inlet is kept in a closed position by means of rustproof steel springs. The inlet flap opens in a downward motion, helping create a forward-moving airflow in the direction the flap is facing. The air always flows along the ceiling, whether the inlet is opened fully or only sightly. This is done to avoid draughts in the bird area. The corresponding control set opens the ceiling inlets either at once or individually.

CL 1800-N – ceiling inlet with intake funnel (optional)

The **CL 1800-N** inlet opens when it is no longer pulled closed. This inlet is often used for additional summer ventilation in poultry houses.
If a ceiling has a thickness of more than 110 mm (for example, if mineral wool is used for insulation purposes) and/or to enhance the performance of both ceiling inlets, an optional intake funnel is available.

The advantages at a glance

- ✔ BD ceiling inlets are very versatile and supply fresh air through the attic for negative-pressure ventilation, in an optimum and non-centralised manner;
- ✔ all BD ceiling inlets can be opened individually, creating stable air jets, even with minimum ventilation;
- ✔ the insulated inlet flap seals the house airtight;
- ✔ the pulling mechanism allows a very exact control of the inlet opening for a stable air circulation, and maintains an even temperature at simultaneous low heating requirements;
- ✔ even for large throwing ranges, the negative pressure level must not be very high (air "sticks" to the ceiling).

Air performance in m^3/h of fresh air inlets when fully opened

Type	**CL 1540**		**CL 1800-N**	
Code no.	46-70-0717		60-40-1322	
-10 Pa	1 250	1 450*	1 250	1 950*
-20 Pa	1 750	2 100*	1 800	2 800*
-30 Pa	2 100	2 550*	2 200	3 400*
-40 Pa	2 400	2 850*	2 550	3 950*

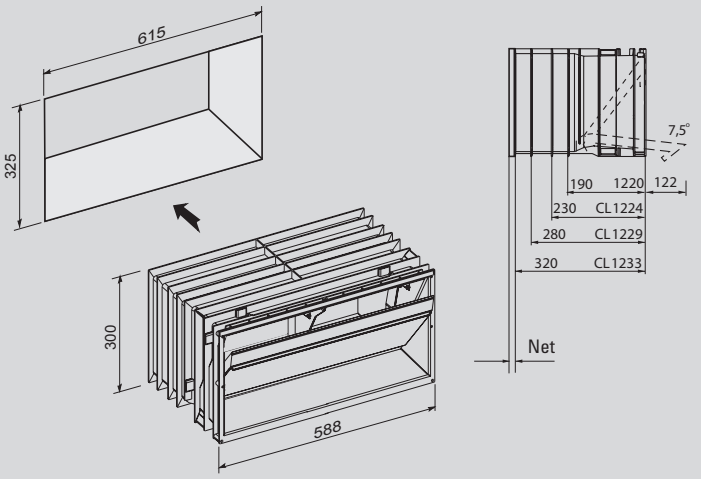
* with intake funnel code no. 60-40-1323 for CL 1540 and CL 1800-N

Dimensions and installation

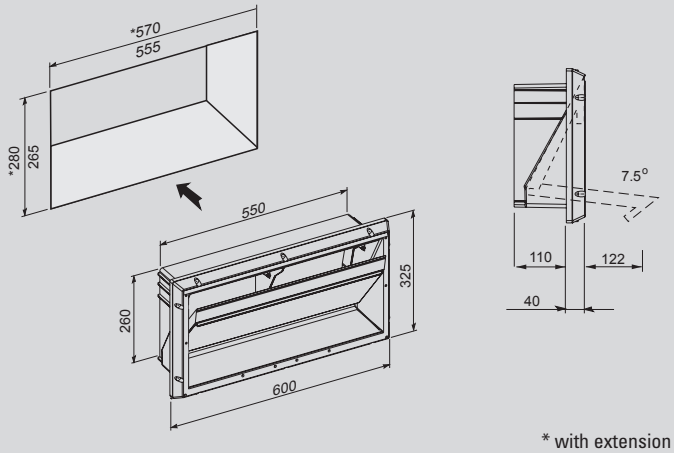
The installation height and number of the wall inlets depends on the type of building and production method. Both are planned individually for each project. The wall and ceiling inlets are designed to provide customised air rates, meeting the requirements of the specific number of birds very exactly.

Fresh air inlets for installation into the wall

CL 1200

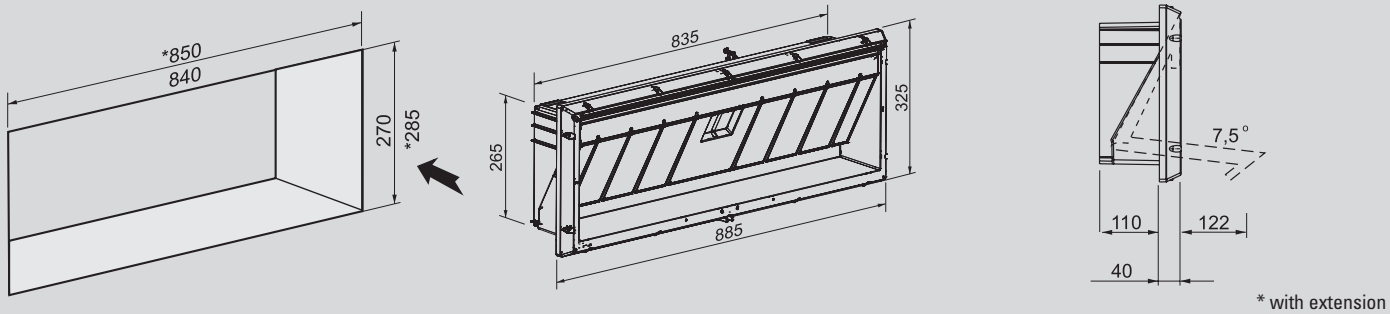


CL 1211 and CL 1200 B/F



* with extension

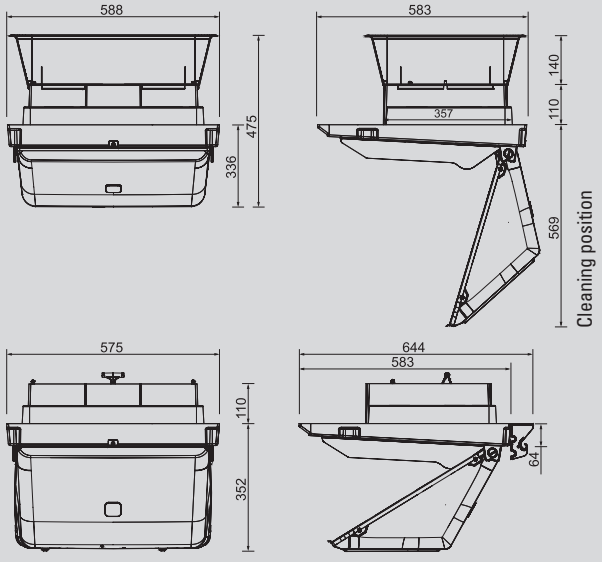
CL 1911 F



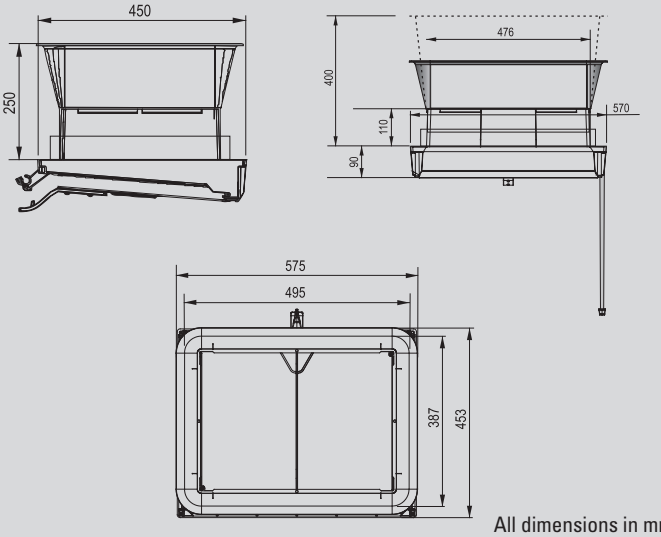
* with extension

Fresh air inlets for installation into the ceiling

CL 1540



CL 1800-N

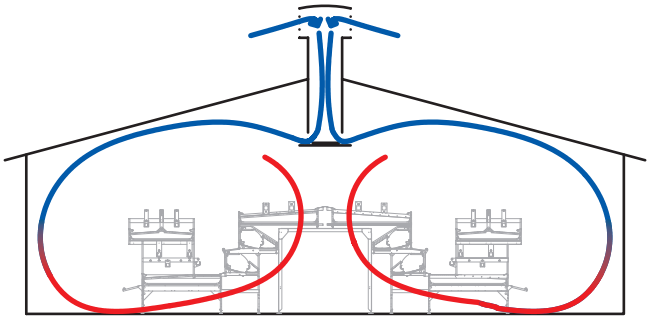


All dimensions in mm

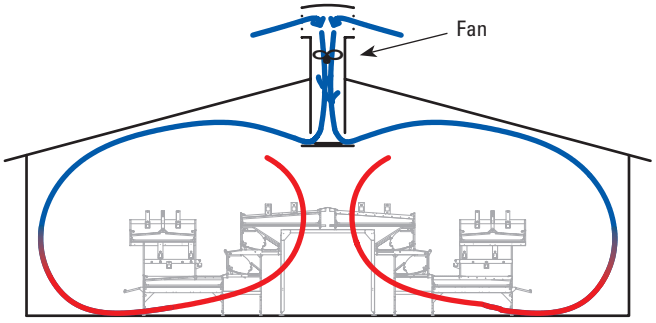
FRESH AIR CHIMNEYS FOR NEGATIVE- AND BALANCED-PRESSURE VENTILATION

FAC 2 (Fresh Air Chimney) and Fumus 2 are fresh air chimneys that distribute the fresh air from the roof into the house.
The stable pipe system is GRP coated on both the inside and the outside, and is well insulated with 30 mm of polyurethane. This gives the chimneys a long service life and makes cleaning easier.
FAC 2 and Fumus 2 are available with central and individual control. For individual control, the actuator is installed directly in the chimney. Central control is carried out with only one actuator, via cables and tension rods.
Both fresh air units can be equipped with an optional wire mesh guard to prevent birds and leaves from getting into the barn.
FAC 2 and Fumus 2 are especially well suited if:

- ✔ fresh air supply via the side walls or the intermediate ceiling is not possible due to structural conditions, or not requested;
- ✔ the barn is extremely wide and very low so that good air circulation with only wall inlets is not feasible;
- ✔ balanced- or positive-pressure ventilation is to be used, e.g. for free-range egg production.



FAC 2 for negative-pressure ventilation



FAC 2 for balanced-pressure ventilation

FAC 2

Fresh air chimney for negative- or balanced-pressure ventilation

FAC 2 supplies fresh air from the roof with a high air rate. The fresh air distributor at the lower end of the chimney ensures that the entering air is distributed evenly inside the house. This creates a stable airflow even with minimum ventilation.
As an option, FAC 2 can be equipped with a fan inside the chimney. This fan pushes the fresh air drawn in by the chimney through the fresh air distributor and into the house to create a balanced pressure system. Such a system is especially recommended where no negative pressure can be created due to constantly open pop holes.
FAC 2 is available in four diameters (650, 730, 820 and 920 mm).

FAC 2 with actuator for individual control

Air performance in m³/h of FAC 2 when fully opened

Pa / Ø	650 mm	730 mm	820 mm	920 mm
- 10 Pa	4 900	6 100	6 700	9 500
- 20 Pa	7 000	8 900	11 000	13 700
- 30 Pa	8 600	11 000	13 500	16 900
-40 Pa	10 000	12 700	16 000	19 500

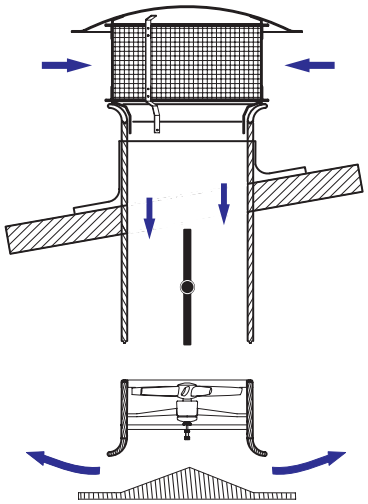
Fumus 2

Fresh air chimney for balanced-pressure ventilation

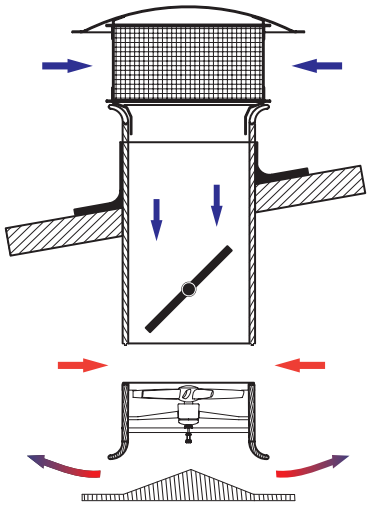
Fumus 2 is always equipped with a fan in the lower part of the chimney. This fan pushes the fresh air drawn in by the chimney through the fresh air distributor and into the house. The amount of air entering the barn is regulated by means of a butterfly valve above the fan. Depending on the position of the butterfly valve, anywhere between 100 percent fresh air (vertical position) and 100 percent recirculating air (horizontal position) enter the barn. Between these positions, a certain amount of fresh air is mixed with the house air, which is drawn in through the 10 cm wide opening at the chimney. This means that, depending on the ventilation requirements, the barn can be supplied with fresh air, mixed air or recirculating air. In case of minimum ventilation (during cold weather) Fumus 2 can also be operated with balanced pressure or slight positive pressure. Fumus 2 is available with the following diameters: 650, 730, 820 or 920 mm.

Principle of operation: fresh air, mixed air and recirculating air

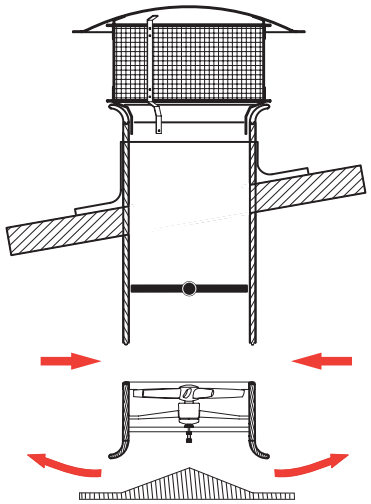
Fresh air
When the butterfly valve is fully open, the fan draws in 100 percent fresh air and distributes it into the barn.



Mixed air
When the butterfly valve is neither fully open nor fully closed, the fan sucks in fresh air and house air. This pre-heated air is then pushed into the barn.



Recirculating air
The fan continuously circulates house air inside the barn, using the fresh air distributor. The butterfly valve inside the fresh air chimney is closed.



Air performance in m³/h of Fumus 2 at 0 Pa, when fully opened

Diameter mm	Fan	Total air performance m³/h	Share of fresh air m³/h	Power watts
650	FN 063-6DT rev.	10 300	7 300	510
730	FN 071-8DT rev.	10 200	7 200	370
820	FN 080-8DT rev.	16 600	11 200	790
920	FN 091-8DT rev.	18 700	12 200	730

LARGE AIR INLETS FOR LONGITUDINAL VENTILATION

Large air inlets near the gable or in the gable are very useful to provide additional summer ventilation. They allow the fresh air to enter the house on a large surface, thus displacing the stale air without mixing with it. An even and high air speed at bird level (aim: 2 to 3 m/s) lowers the temperature perceived by the birds (windchill factor). In the winter, the inlet flaps close reliably. Temperature losses are prevented by the insulation of the flaps.

MultiVent 17 M, MultiVent 3, 4, 5 and SMT 50

Fresh air supply over a large surface

MultiVent 17 M – multiple-flap inlet made of PVC

PerforMacs – light trap for all MultiVent types

MultiVent 4 – multiple-flap inlet made of PU

MultiVent 17 M with its large air performance can be used for additional summer ventilation or as inlet for tunnel ventilation. Air flow and air direction can be controlled easily.

The PerforMacs light trap has been optimised aerodynamically, reducing the air performance by only approx. 10 percent. The light trap segments are made of plastic which makes them extremely durable and easy to clean.

SMT 50 – galvanized, motor-driven shutter

Air performance in m³/h of large air inlets when fully opened

Pa / Ø	MultiVent 17 M	MultiVent 3	MultiVent 4	MultiVent 5
- 10 Pa	19 450	10 100	13 400	17 000
- 20 Pa	27 300	13 900	18 800	23 800
- 30 Pa	34 250	17 100	23 000	29 000
-40 Pa	39 550	20 200	26 800	34 000

The air performance is reduced by approx. 18 percent where the PerforMacs light trap is used.

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