



**COMFORT AIR CURTAIN**

DoorFlow



# Maintenance-friendly air curtain

## Energy-efficient and comfortable

Outside doors of shops and public buildings are often left open for commercial reasons. An open door arouses curiosity and makes the building more accessible, which contributes to the customer-friendly approach. But when the door is open, incoming colder air will disturb the indoor climate. For customers as well as staff, draughts feel very unpleasant. Besides, precious warm air can freely escape to the outside.

The comfort air curtain, DoorFlow model, warms the cold air before it enters the building and prevents the escape of warm air through the open door. Installing the DoorFlow above the door means increased energy efficiency and the prevention of draught problems. The DoorFlow proves that an open door and a comfortable indoor climate can coexist perfectly well.



*The DoorFlow air curtain ensures a highly comfortable climate inside the shop.*

## Low maintenance

The comfort air curtain, DoorFlow model, is extremely easy to maintain. Cleaning and replacing filters is a thing of the past, because the DoorFlow has no filters.

## Stylish design

The DoorFlow is an asset to any interior, because of its stylish look. The recessed and cassette model can be integrated discreetly into a suspended ceiling. The unit is finished as standard in neutral colours. By installing multiple units next to each other in one line, the attractive design is further emphasized.



## Advantages

### Energy-efficient and comfortable

- Efficient climate separation
- Stable and comfortable indoor climate
- Automatic room temperature control

### Fast and easy installation

- Delivered ready to plug in
- Maintenance-friendly; no filters

### Stylish design

- White and sleek

### And there's more...

- Low noise level
- Easy to operate
- Outstanding price-quality ratio

### Fast and easy to install

The DoorFlow air curtain is installed by means of threaded rods and is delivered as standard ready to plug in, including a built-in three-way valve. This makes the unit easy to install. Low voltage cables connect the control panel “plug and play” to the unit. It is also possible to interlink different units in this way.

### Multiple heating sources

The DoorFlow air curtain comes with either a water or electrical coil. An ambient model (without heating coil) is also available. This model is ideal with high outside temperatures or in other specific situations, such as cooled spaces.



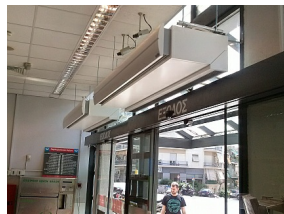
Water-Electric-Ambient

### Applications

The DoorFlow is suitable for door heights up to 3.0 m (120") for use above door openings in shops, supermarkets and public buildings.

### References

- AKO
- Utrecht Central Station
- Burger King





# Air curtains and revolving doors: the perfect combination



Tourniquet air curtain

A revolving door in the entrance is an architectural step towards creating a comfortable climate in a shop or a public building. But every time a customer goes through a revolving door, cold air flows into the building. For both customers and staff, the draught is very unpleasant. Besides, heating the cold external air uses up extra energy. For this reason, Biddle has developed a solution specifically for revolving doors: the tourniquet model. The striking feature of this model is that it is supplied with a curved discharge grille, precisely in line with the curve of the revolving door. This protects the entire door opening. The smooth discharge grille fits nicely and the air curtain is hidden out of sight in the ceiling or upper part of the revolving door. The result is a perfect, energy-efficient climate separation.



*The tourniquet air curtain prevents draughts and therefore maintains an extremely pleasant indoor temperature.*



The curved discharge grille is precisely in line with the door opening.

## Maintenance-friendly (no filters)

Air curtains in combination with revolving doors are hard to access, because they are built into the ceiling. Therefore filters are often not replaced or cleaned. The great advantage of the tourniquet DoorFlow air curtain is that it does not contain any filters. This means that maintaining and cleaning filters is a thing of the past.

## Custom work

The Biddle tourniquet air curtains are suitable for all types of revolving doors. The curve of the door (radius) and type vary per project, so the discharge grille is custom made. For more details and comprehensive advice, please contact the sales department at Biddle.

# Cool indoor climate



The ambient DoorFlow ensures a cool indoor climate on hot summer days.

## Warm outdoor temperatures

Air curtains are generally used to separate a pleasant warm indoor climate from the cold outdoor climate. An air curtain is also very effective in the reverse situation, where the cool indoor climate has to be separated from the hot outdoor (summer) climate. The ambient model from the DoorFlow range (without heating element) is a suitable solution for this. It is also possible to switch off the heating of a heated air curtain.

Unheated air curtains therefore provide optimum climate separation during hot summer days. The air curtain blows out relatively cool air at a low speed, which provides an additional cooling effect alongside the cooling provided by the air conditioning. Because the air curtain takes in this conditioned air, this considerably improves the air circulation or refreshment rate, keeping the entire space pleasantly cool.

## Cooled spaces

An air curtain above an open door to a cooled space also offers great advantages. The door can remain open, without the room temperature rising. As well as offering advantages for processing, storage and transportation, this also promotes sales. For example in supermarkets customers are more likely to go in and out the cooled space. To keep the temperature constant, it is important to keep the cooled space closed to other air inflows.

*The ambient DoorFlow air curtain provides perfect climate separation in a cooled space.*



# Let the DoorFlow do the work!

## Automatic comfort

Due to changing weather conditions it often occurs that the air curtain is not correctly adjusted. The unit then blows too little or too much, with an air discharge temperature that is either too high or too low. Either one of these situations leads to energy loss, reduced comfort (draughts) and a needlessly high noise level. Biddle has developed the energy-efficient and standard built-in room temperature controller, because air curtains are intended to save energy and provide comfort. The room temperature controller automatically adjusts the discharge temperature according to the changing conditions around the door opening. Comfort is also ensured while the door is opened and closed. If a door contact switch is connected to the unit, it will automatically continue to run for a time after the door has been opened or closed.



## Easy to operate

The DoorFlow air curtain is easy to operate with the control panel. The LEDs on the control panel display the pre-set temperature from 18 °C (64.4 °F) to 25 °C (77 °F). The temperature can be set manually or automatically. The fan speed of the air curtain can also be set via the control panel. There are three fan speeds: low, medium and high.

To achieve maximal climate separation with minimal energy consumption, Biddle advises choosing the lowest fan speed at which no draughts arise. With this control set-up, the unit functions correctly, without the user having to do anything extra to achieve this.

## Air temperature control

### Automatic

The desired room temperature can be set via the control panel. The unit measures the room temperature and automatically selects the correct heating level to ensure and maintain the pre-set room temperature level. In doing so, the room temperature is constantly maintained at the previously set level.

### Manual

The heating can be switched manually to 100 or 50% of the unit's capacity. It is also possible to switch off the heating (ambient), to make climate separation possible during warm periods or in cooled spaces.





## Control options

### Water units

The water units of the DoorFlow model are fitted as standard with built-in room temperature control with a three-way valve. The model can optionally be ordered with an external two-way valve. The standard built-in three-way valve is then removed.

### Electric units

Electric units are delivered as standard with room temperature control.

### Other control options

It is also possible to connect a (week)timer, door contact switch, building management system or extra relay for controlling a boiler. With these options, automatic comfort is guaranteed.

### Multiple units

Multiple units (max. 8) can be controlled to one control panel.

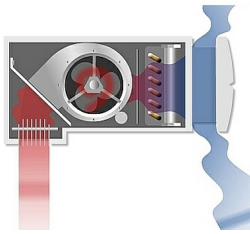


## Advantages

- Automatic comfort
- Easy operation
- Can be connected to (week)timer, door contact switch, building management system or extra relay for controlling a boiler.
- Control of multiple units

# Patented rectifier

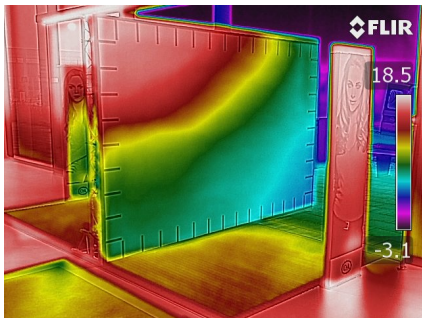
When a door is open, the difference between the indoor and outdoor temperatures means that air is exchanged, whereby heat is lost to the outside while, at the same time, cold outside air flows in. The DoorFlow above the open door prevents heat loss to the outside and warms the inflowing air to a comfortable temperature.



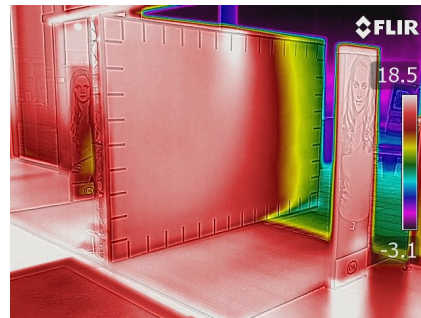
Like all the Biddle air curtains, the DoorFlow model contains the patented rectifier in the discharge grille. This rectifier ensures that the turbulent air flow from the fans is converted into a practically laminar air stream. This ensures the floor can be reached with far less air, and the door opening is well covered. The straight air stream prevents heated air from flowing outside, and ensures incoming cold air is heated. The comfort and energy efficiency is considerably higher compared with air curtains without rectifier.

## Thermographic evidence

The quality and performance of an air curtain can be shown with a thermographic camera. The heat stream, which is invisible to the naked eye, is recorded and depicted with the aid of a special measuring surface and a high resolution thermal imaging camera.



Air curtain off: high degree of air exchange



Air curtain on: optimal climate separation



*The images make the air stream visible and show how the air curtain perfectly separates the indoor and outdoor climates.*



# A solution for every situation



The water version of the DoorFlow can be connected to any hot water installation, as a suitable coil is available for all water ranges. The low water temperature coil (4 row) is suitable for water ranges between 45/35 °C (113/95 °F) and 70/50 °C (158/122 °F). For water ranges of 80/60 °C (176/140 °F) and 90/70 °C (194/158 °F) the commonly used 2 row coil is available.

## Type code: DF S-100-H2-F

<b>DF</b>	=	DoorFlow
<b>Capacity</b>		
S	=	Small (200 - 250 cm / 80" - 100")
M	=	Medium (250 - 300 cm / 100"-120")
<b>Length</b>		
100 - 150 - 200 - 250 cm / 40 - 60 - 80 - 100"		
<b>Coil type</b>		
H2	=	Hot water heating, 2-row
H4	=	Hot water heating, 4-row
E	=	Electrical heating
A	=	Ambient
<b>Model</b>		
F	=	Free hanging model
R	=	Recessed model
C	=	Cassette model
T	=	Tourniquet model

## For any width of door

By installing multiple units next to each other, door openings wider than 250 cm (100") can be protected. One control panel can be connected to and operate a maximum of eight units.

## Control options

- Room temperature control (automatic or manual)
- Air side control (water units)
- Building management system
- Door contact switch
- Timer (external)

## Standard colours

- RAL 9016
- RAL 9006
- Other RAL classic colours available on request



Tourniquet model for every type of revolving door

# Delivery and accessories



## Standard delivery

- Rectifier technology
- Discharge duct (model R)
- Built-in water side control: three-way valve and actuator (water units)
- Room temperature control

## Control package

- Push button control panel
- Biddle low voltage cables: variety of lengths

## Optional

- Two-way control valve (delivered separately)
- Door contact switch
- Wall brackets
- Relay for controlling boiler

# Selection

## Correct choice of unit essential for performance

For optimal functioning of the DoorFlow, selecting the right type of unit(s) is essential. If an air curtain has been selected well, it is able to protect the entire width and height of the door opening. The unit must have sufficient heating capacity to be able to bring incoming cold air to a comfortable temperature.

### 1. Installation height and width

Based on the installation height (from floor to the bottom of the unit) and the door width, it is easy to select the right air curtain (see selection table). By installing multiple units next to each other, door openings wider than 250 cm (100") can be protected.

### 2. Correct installation

For the air curtain to function properly, it is important that the distance between the air curtain and the door is as short as possible. Also, the air curtain must be at least as wide as the doorway to prevent cold air bypassing the unit's air stream at the sides.

## Selection table

type	door height	door width
S	200 - 250 cm / 80 - 100"	100 - 150 - 200 - 250 cm / 40 - 60 - 80 - 100"
M	250 - 300 cm / 100 - 120"	100 - 150 - 200 - 250 cm / 40 - 60 - 80 - 100"

# Notes





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