

# ISOLAIR

Chilled Room Air Curtain

**Biddle**



# CLIMATE SEPARATION WITHOUT HEATING

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The Biddle IsolAir chilled room air curtain is the perfect solution for internal climate separation where heating is not required. When a building consists of several climate zones, an open inside door leads to air displacement and as a consequence energy loss. An IsolAir above an open door provides a very efficient climate separation between the two areas at the lowest energy consumption.

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## APPLICATION AREAS

The air curtain is specifically designed for internal climate separation, where climate zones are more or less constant. The IsolAir is applied in chilled rooms of production companies and distribution centres and in small cold stores in supermarkets.

The IsolAir has a trendy design in line with the latest developments in the sector.

The narrow shape of the IsolAir makes the air curtain very suitable for smaller applications.

## FEATURES AND BENEFITS:

- 🕒 Optimal climate separation
- 🕒 Efficient separation between rooms
- 🕒 Comfortable working conditions
- 🕒 Energy savings

## EASY LOGISTICS

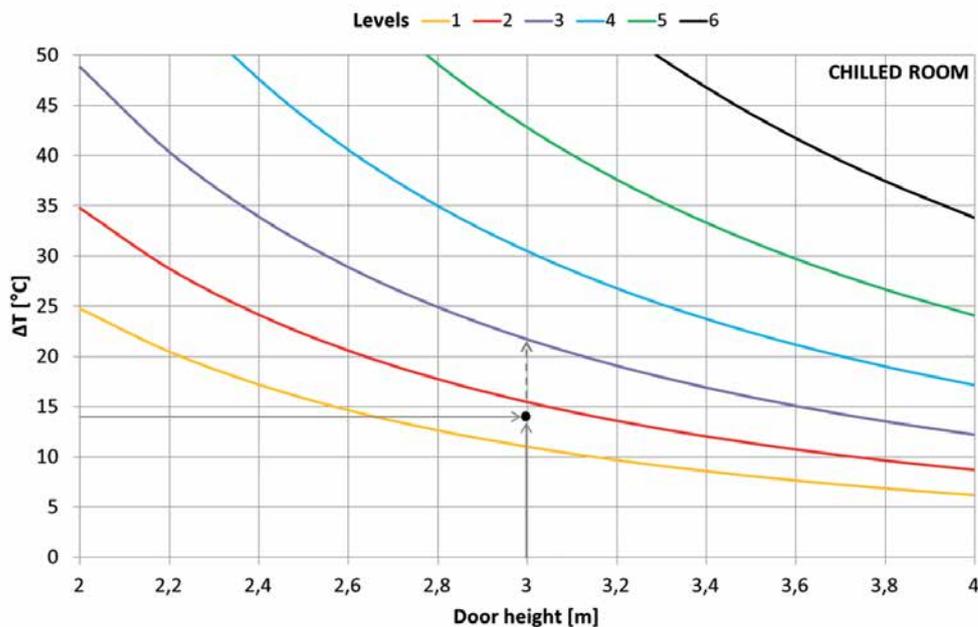
By separating the climate zones, the IsolAir makes it possible to keep the door open whilst maintaining the temperatures in each climate zone at a constant level. The air curtain will contribute to comfortable working conditions because it prevents air displacement.

The IsolAir can maintain the room temperature without the need for a strip curtain or a roller shutter door. The entrance is kept accessible for transport with safer and faster logistics and easy traffic movements as a result.

# SEMI-AUTOMATIC CONTROL

The IsolAir air curtain is sited above an inside door with minimal temperature fluctuations between the two areas. These fluctuations can be controlled properly with two positions of the control. The control consists of an external control box, a room thermostat and a door switch. The thermostat is always mounted on the warm side. Depending on the temperature difference measured by the room thermostat, the control box automatically switches between the two positions. The IsolAir always operates at the optimum output, with a high separation efficiency as a result.

The IsolAir makes it possible to switch between two of the six positions. These two positions are pre-set. The choice of the position is based on the door height and the temperature difference ( $\Delta T$ ) of the areas. For an optimal separation efficiency, the IsolAir should always be set to a higher position than the point based on the calculation.



## EXAMPLE:

The door height is 3 meters, the temperature in the chilled area is 6 °C and the temperature in the hall is 20 °C. In this case, the temperature difference is 14 °C ( $\Delta T$  14 °C). At a  $\Delta T$  14 °C, the correct position is 2 (red line). When the temperature difference gets higher than  $\Delta T$  16 °C, and thus rises above the red line, the air curtain will be switched to position 3 (purple line). For small cold stores, please contact our sales department.

## AUTOMATICALLY ON AND OFF

With the door switch the IsolAir can be switched on or off automatically when the door opens or closes.

## CONTROL OF MULTIPLE UNITS

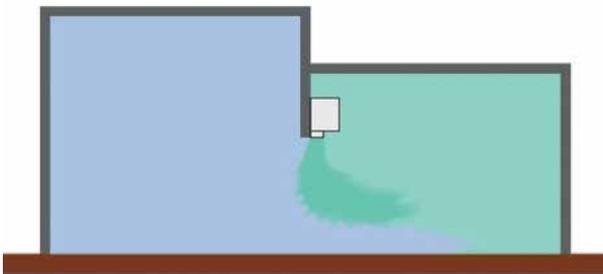
With one control box a door width of 4 meters can be covered.

# DOUBLE RECTIFIER

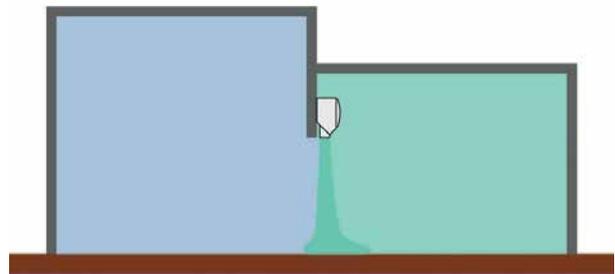
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An air curtain above an open inside door provides climate separation of the two rooms. Whilst developing the IsolAir, Biddle chose to use its well-known outlet discharge pattern, the Double Rectifier. The IsolAir is equipped with radial backward curved fans which homogeneously distribute the air across the whole discharge opening, producing high efficiency and comfort levels.

If a conventional air curtain without a rectifier discharges air at the same velocity as a unit with a Double Rectifier, the downward penetration is tangibly less. The air stream does not reach the floor, and the open door is not covered off properly. Consequences include draught, loss of energy and comfort complaints.



Ambient air curtain without rectifier

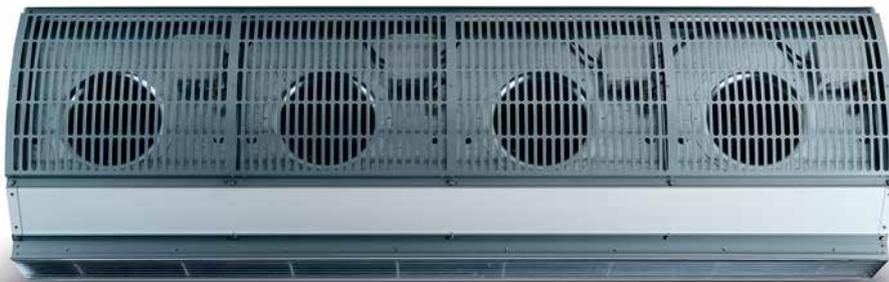


Ambient air curtain with rectifier

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## EXCELLENT DOWNWARD PENETRATION

The Double Rectifier has vertical fins mounted on top of the horizontal fins to streamline the air flow in a better way, resulting in an excellent downward penetration. The IsolAir makes sure the air, which is about to flow out through the open door, stays in the room. The Double Rectifier, which minimizes turbulence in the discharge air stream and surrounding air, ensures that the air movement generated by the fans, is directed downward in a deeply penetrating laminar air stream. As a consequence the energy consumption is reduced and comfort levels are increased.



# OPTIONS

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## LENGTHS

The IsolAir is available in the lengths: 150, 200 and 250cm.

## CONTROL OPTIONS

The IsolAir is supplied with a two-step control. With the twostep control two units can be controlled with a maximum door width of 4 meters.

## INSTALLATION POSITION

The air curtain is installed horizontally above the door, covering the full width of the doorway. The unit should always be positioned as close to the door as possible. In case the situation does not allow a position close to the door, Biddle offers optional side shields.

## MODULAR DESIGN

The modular design of the IsolAir facilitates the installation of multiple devices next to each other, in order to cover all door widths.

## EASY TO MOUNT AND CLEAN

The various parts of the IsolAir are very easy to access, making it easy to install, maintain and clean. The unit contains a minimum of 'internal obstacles', resulting in a smooth air flow through the unit in which dust has little chance of collecting.

## COLOURS

The IsolAir air curtain is standard available in two color combinations (RAL5011/RAL9006 and RAL 9016/RAL9006) and in Stainless Steel. Other RALcolours are available upon request.

## STANDARD DELIVERY:

- Two suspension brackets for horizontal installation
- Coupling plate and coupling bracket
- Control box
- Room thermostat
- Door contact switch
- Optional; Side shields

# SPECIFICATIONS

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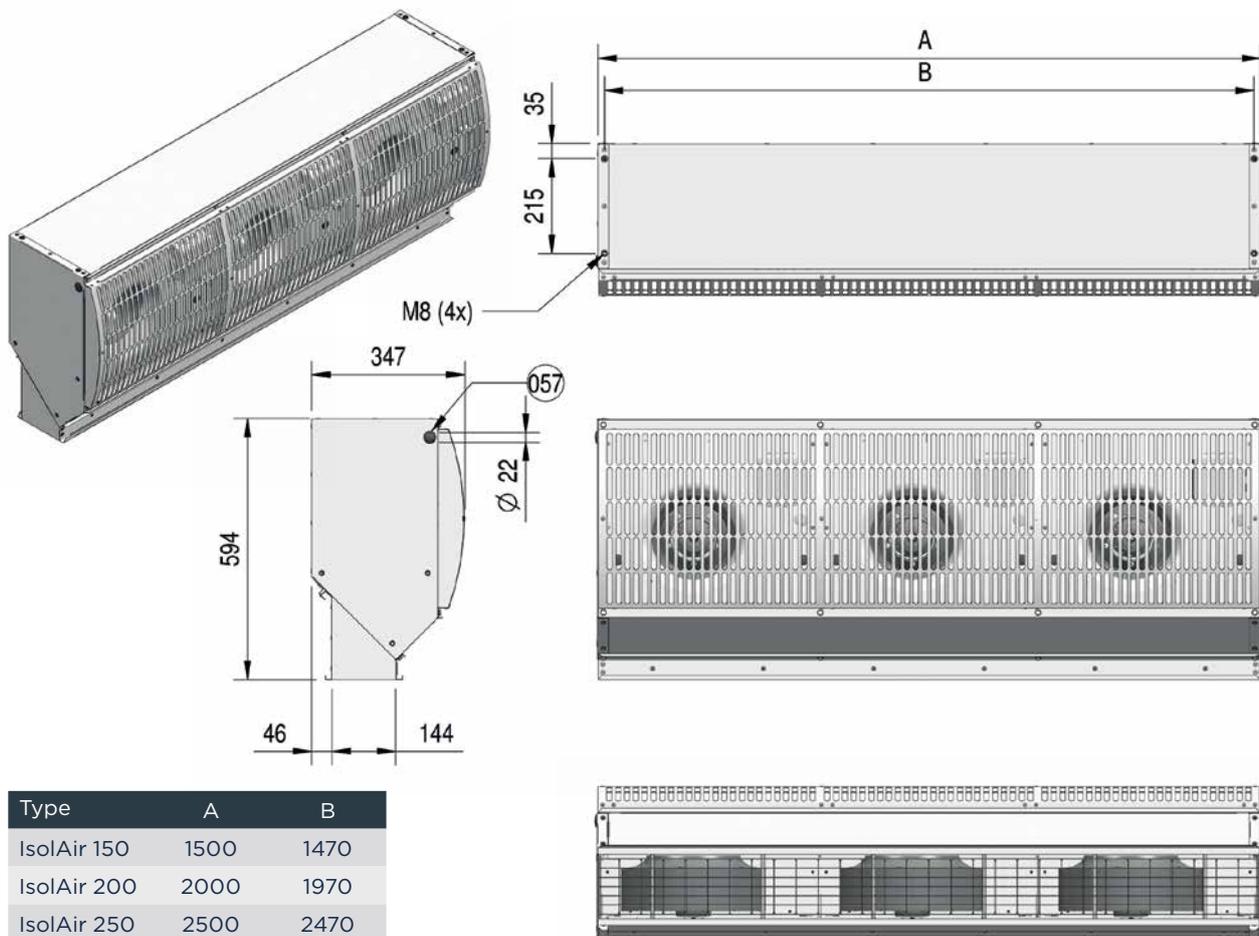
## ○ CASING

The casing and the inlet grille are manufactured from zinc-plated sheet steel, extra strengthened to minimise deformations and vibrations, and have a full-polyester powder coating.

## ○ MOTOR / FAN ASSEMBLY

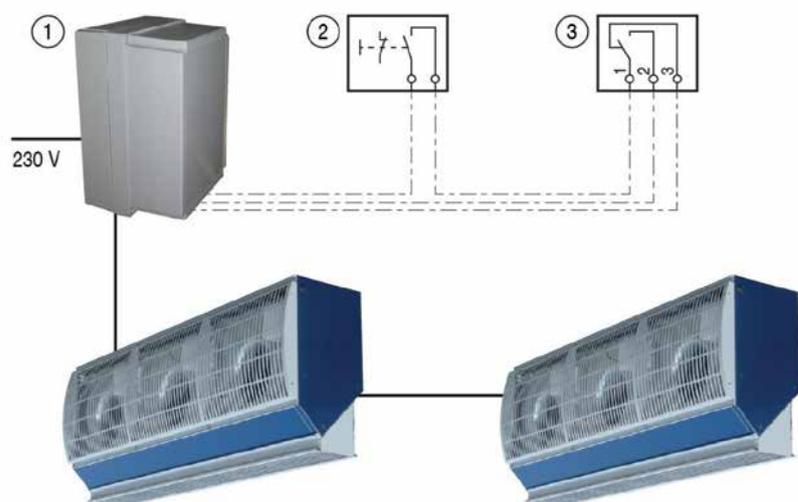
The radial backward curved fans are mounted in the casing such that they cause no vibration. Each fan is driven by a rotor motor with AC technology. The fan casing is manufactured from aluminium and the impeller is made of plastic. The motor of the IsolAir is protected against overheating. The fan of the unit is IP 44 classified.

# TECHNICAL DETAILS



# ELECTRICAL CONNECTIONS

## SEMI-AUTOMATIC CONTROL



## INDEX

The corresponding numbers in the dimensional sketches are explained here: **57**-Lead-through electrical wiring.

## ISOLAIR 150

Unit length	m	1.5					
Door width/height	m	3-6					
Electrical supply	V/ph/Hz	230/1/50					
Max. Input current	A	1.7					
Max. Input power	kW	0.38					
Max. Specific fan power	W/l/s	0.25					
Weight	kg	74					
Speed		1	2	3	4	5	6
Air volume	m <sup>3</sup> /h	2216	2630	3193	3840	4585	5490
Power consumption	kW	0.14	0.17	0.21	0.25	0.29	0.38
Sound pressure level at 5m	dB(A)	39	43	47	52	57	62

## ISOLAIR 200

Unit length	m	2					
Door width/height	m	3-6					
Electrical supply	V/ph/Hz	230/1/50					
Max. Input current	A	2.3					
Max. Input power	kW	0.5					
Max. Specific fan power	W/l/s	0.25					
Weight	kg	98					
Speed		1	2	3	4	5	6
Air volume	m <sup>3</sup> /h	2954	3506	4257	5120	6114	7319
Power consumption	kW	0.19	0.23	0.28	0.33	0.39	0.5
Sound pressure level at 5m	dB(A)	41	44	48	53	58	63

## ISOLAIR 250

Unit length	m	2.5					
Door width/height	m	3-6					
Electrical supply	V/ph/Hz	230/1/50					
Max. Input current	A	2.8					
Max. Input power	kW	0.63					
Max. Specific fan power	W/l/s	0.25					
Weight	kg	123					
Speed		1	2	3	4	5	6
Air volume	m <sup>3</sup> /h	3692	4382	5321	6400	7642	9149
Power consumption	kW	0.24	0.28	0.35	0.41	0.48	0.63
Sound pressure level at 5m	dB(A)	42	45	49	54	59	64

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**Biddle**

Every effort has been made to ensure descriptions are correct at the time of print.  
Errors and omissions excepted. ISOLAIR|V1|09|2019