

ISOLAIR₂

Chilled Room Air Curtain

Biddle



CLIMATE SEPARATION WITHOUT HEATING

The Biddle IsolAir₂ 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 IsolAir₂ above an open door provides a very efficient climate separation between the two areas at the lowest energy consumption.

APPLICATION AREAS

The air curtain is specifically designed for internal climate separation, where climate zones are more or less constant. The IsolAir₂ is applied in chilled rooms of production companies and distribution centres and in small cold stores in supermarkets.

The IsolAir₂ has a trendy design in line with the latest developments in the sector.

The narrow shape of the IsolAir₂ makes the air curtain very suitable for smaller applications.

FEATURES AND BENEFITS:

- 🔵 High efficiency backwards curved EC fans, with variable speed control.
- 🔵 Automatic controls
- 🔵 Units can be linked together
- 🔵 Double Rectifier discharge grille
- 🔵 Extra low voltage sit control wiring

EASY LOGISTICS

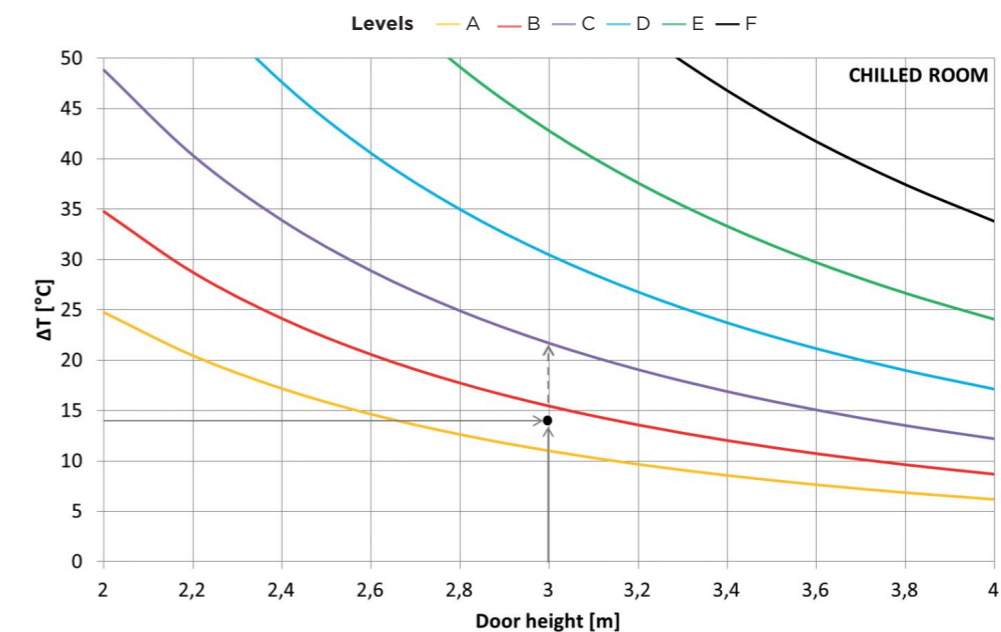
By separating the climate zones, the IsolAir₂ makes it possible to keep the door open whilst maintaining the temperatures in each climate zone at a constant level. The air curtain will contribute to comfortable working conditions because it prevents air displacement.

The IsolAir₂ 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.

AUTOMATIC CONTROL

The IsolAir₂ 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 IsolAir₂ always operates at the optimum output, with a high separation efficiency as a result.

The IsolAir₂ 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 (ΔT) of the areas. For an optimal separation efficiency, the IsolAir₂ should always be set to a higher position than the point based on the calculation.



EXAMPLE:

The door height is 3 metres, 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 (ΔT 14 °C). At a ΔT 14 °C, the correct position is B (red line). When the temperature difference gets higher than ΔT 16 °C, and thus rises above the red line, the air curtain will be switched to position C (purple line). For small cold stores, please contact our sales department.

🔵 AUTOMATICALLY ON AND OFF

With the door switch, the IsolAir₂ can be switched on or off automatically when the door opens or closes.

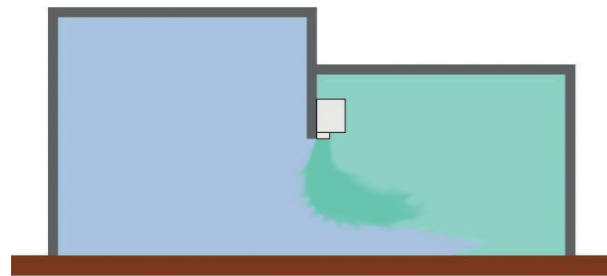
🔵 CONTROL OF MULTIPLE UNITS

With one control box a door width of 5 metres can be covered.

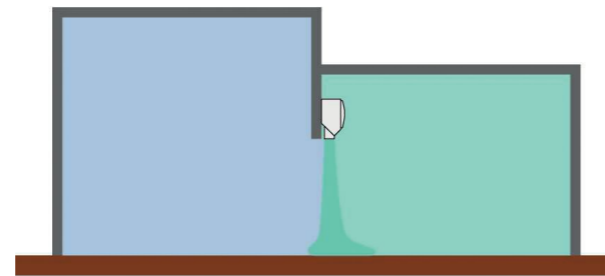
DOUBLE RECTIFIER

An air curtain above an open inside door provides climate separation of the two rooms. Whilst developing the IsolAir₂, Biddle chose to use its well-known outlet discharge pattern, the Double Rectifier. The IsolAir₂ 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.



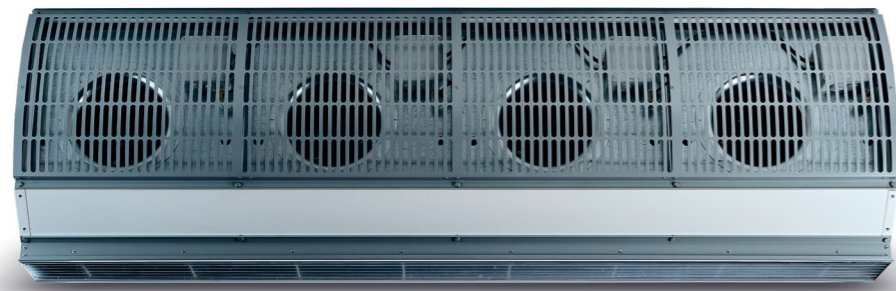
Ambient air curtain without rectifier



Ambient air curtain with rectifier

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 IsolAir₂ makes sure the air, which is about to flow out through the open door, stays in the room. The Double Rectifier, which minimises 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

LENGTHS

The IsolAir₂ is available in the lengths: 150, 200 and 250cm.

CONTROL OPTIONS

The IsolAir₂ is supplied with a two-step control. With the two-step control two units can be controlled with a maximum door width of 5 metres.

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 IsolAir₂ 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 IsolAir₂ 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 IsolAir₂ air curtain is standard available in two color combinations (RAL 5011/RAL 9006 and RAL 9016/RAL 9006) and in Stainless Steel. Other RAL colours are available upon request.

STANDARD DELIVERY

- Two suspension brackets for horizontal installation
- Control box

OPTIONAL ACCESSORIES

- Coupling plate and coupling bracket
- Room thermostat
- Door contact switch (Optional; Side shields)

SPECIFICATIONS

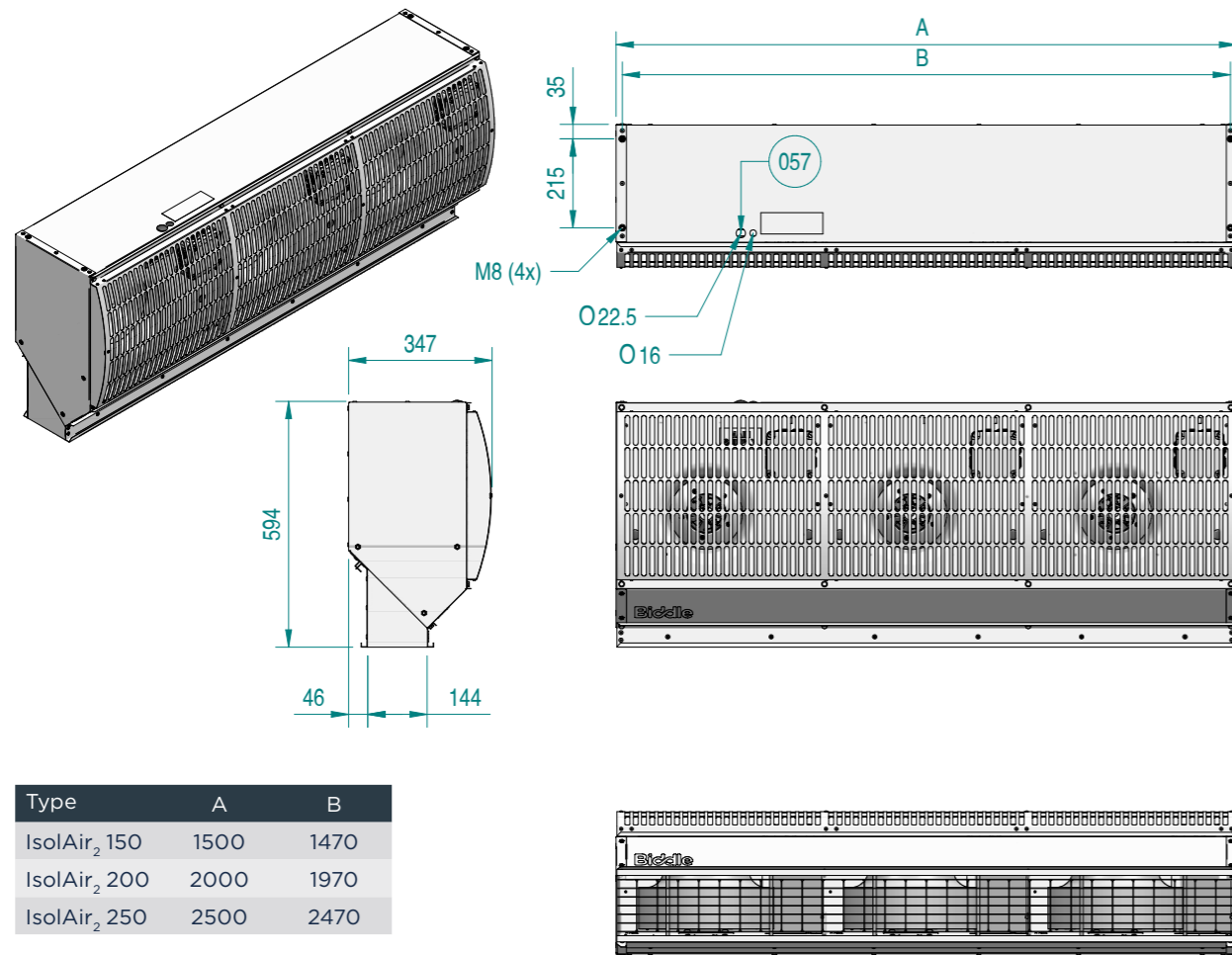
CASING

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 EC technology. The fan casing is manufactured from aluminium and the impeller is made of plastic. The motor of the IsolAir₂ is protected against overheating. The fan of the unit is IP 44 classified.

TECHNICAL DETAILS



Type	A	B
IsolAir ₂ 150	1500	1470
IsolAir ₂ 200	2000	1970
IsolAir ₂ 250	2500	2470

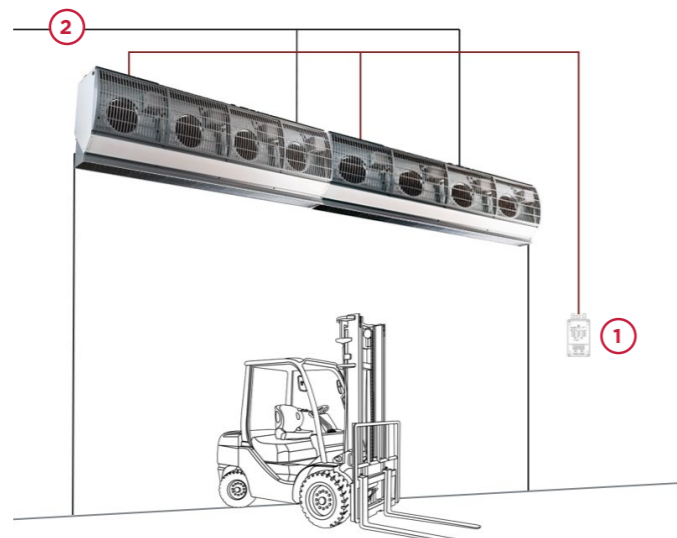
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The corresponding numbers in the dimensional sketches are explained here: 57-Lead-through electrical wiring.

ELECTRICAL CONNECTIONS

AUTOMATIC CONTROL

- 1 Control box
- 2 230V Live feed



ISOLAIR₂ 150

Unit Length	m	1.5								
Door Width	m	1.5 (1 unit), 3 (2 units)								
Door Height	m	Up to 4								
Electrical Supply	V/ph/Hz	230/1/50								
Max. Input Current	A	2.45								
Max. Input Power	W	390								
Max. Specific Fan Power	W/l/s (UK)	0.23								
Max. Specific Fan Power	kW/m ³ /s (Europe)	0.232								
Weight	kg	78								
Speed	V	2	3	4	5	6	7	8	9	10
Air Volume	m ³ /h	1200	1945	2659	3281	3970	4571	5095	5685	6054
Power Consumption	W	15.2	26.5	46	75	119	173	242	319	390
Max. Specific Fan Power	W/l/s (UK)	0.046	0.049	0.062	0.082	0.108	0.136	0.171	0.202	0.232
Max. Specific Fan Power	kW/m ³ /s (Europe)	0.046	0.049	0.062	0.082	0.108	0.136	0.171	0.202	0.232
Sound Pressure Level At 5m	dB(A)	30	37	43	48	53	57	60	63	65

ISOLAIR₂ 200

Unit Length	m	2								
Door Width	m	2 (1 unit), 4 (2 units)								
Door Height	m	Up to 4								
Electrical Supply	V/ph/Hz	230/1/50								
Max. Input Current	A	3.27								
Max. Input Power	W	520.00								
Max. Specific Fan Power	W/l/s (UK)	0.23								
Max. Specific Fan Power	kW/m ³ /s (Europe)	0.232								
Weight	kg	102								
Speed	V	2	3	4	5	6	7	8	9	10
Air Volume	m ³ /h	1600	2593	3545	4375	5293	6095	6793	7580	8072
Power Consumption	W	20	35	61	100	159	231	323	425	520
Max. Specific Fan Power	W/l/s (UK)	0.046	0.049	0.062	0.082	0.108	0.136	0.171	0.202	0.232
Max. Specific Fan Power	kW/m ³ /s (Europe)	0.046	0.049	0.062	0.082	0.108	0.136	0.171	0.202	0.232
Sound Pressure Level At 5m	dB(A)	32	39	44	49	54	58	61	64	66

ISOLAIR₂ 250

Unit Length	m	2.5								
Door Width	m	2.5 (1 unit), 5 (2 units)								
Door Height	m	Up to 4								
Electrical Supply	V/ph/Hz	230/1/50								
Max. Input Current	A	4.08								
Max. Input Power	W	650.00								
Max. Specific Fan Power	W/l/s (UK)	0.23								
Max. Specific Fan Power	kW/m ³ /s (Europe)	0.232								
Weight	kg	127								
Speed	V	2	3	4	5	6	7	8	9	10
Air Volume	m ³ /h	2000	3242	4432	5468	6617	7618	8492	9475	10090
Power Consumption	W	25	44	77	125	198	288	403	532	650
Max. Specific Fan Power	W/l/s (UK)	0.046	0.049	0.062	0.082	0.108	0.136	0.171	0.202	0.232
Max. Specific Fan Power	kW/m ³ /s (Europe)	0.046	0.049	0.062	0.082	0.108	0.136	0.171	0.202	0.232
Sound Pressure Level At 5m	dB(A)	33	40	45	50	55	59	62	65	67

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