Heat Pump Air Curtains

airtècnics

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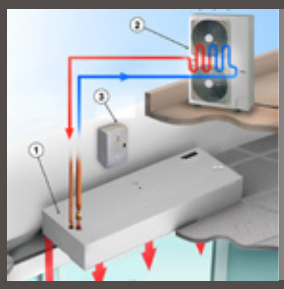
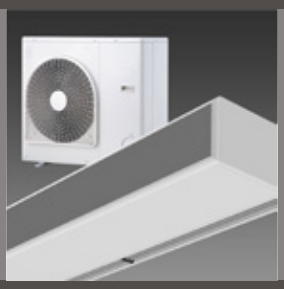
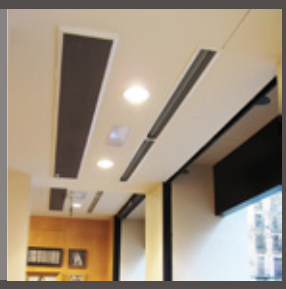





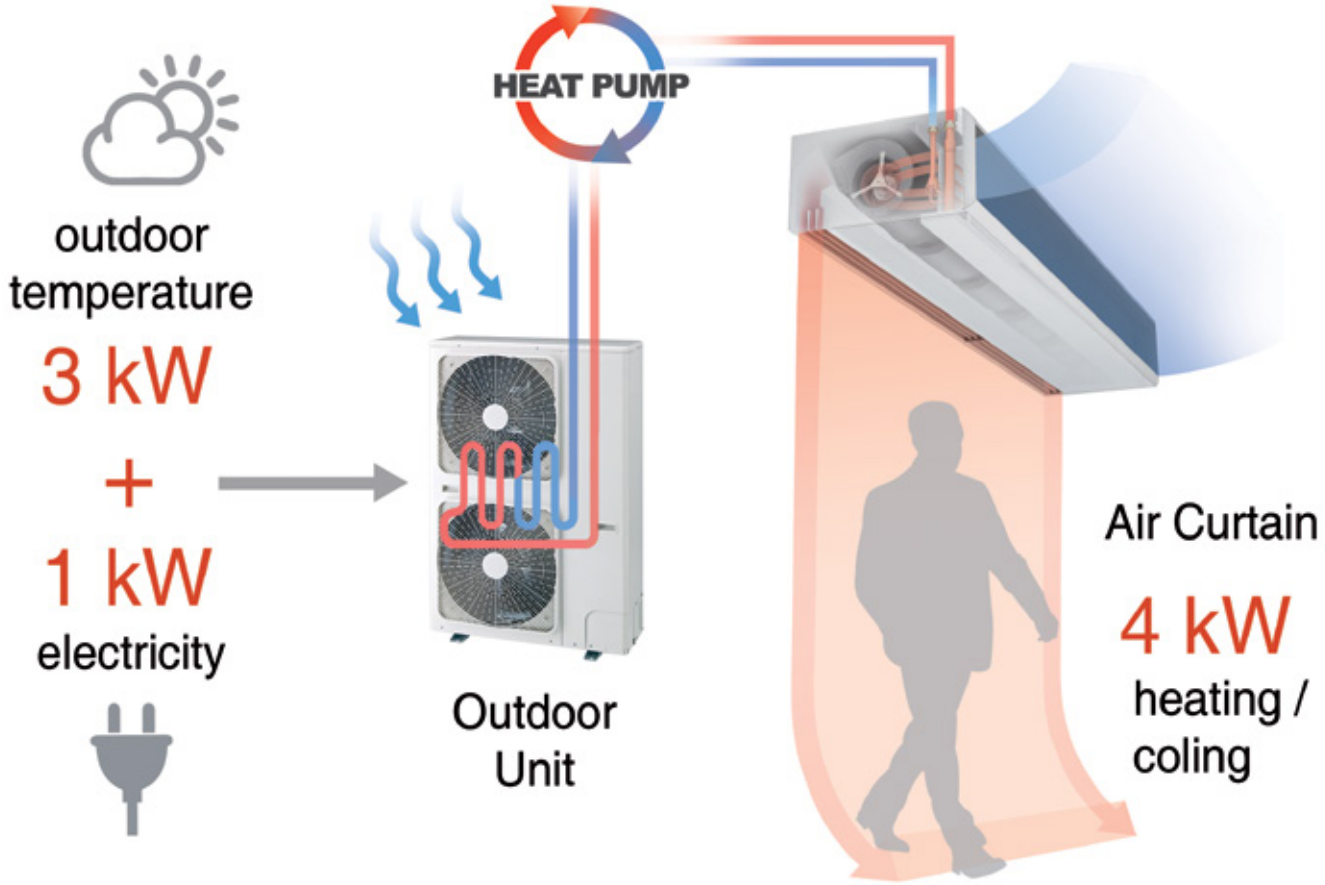
The Heat Pump Technology

THE ECOLOGICAL REVOLUTION

The heat pump is a machine that allows energy to be transferred in the form of heat from one environment to another using only a small amount of electrical power from the network.

It consists of a closed circuit through which a refrigerant flows, and depending on the temperature and pressure conditions, changes its state from liquid to gas or vice versa.
For each electrical kW consumed, the heat pump gets 4kW of heating / cooling capacity (gets free 3kW of outside air).
This system is so efficient that it is considered renewable energy.

Operating diagram of Heat Pump DX Air Curtains:



Advantages and benefits

Heat pump air curtains are absolutely efficient reducing the heating cost and CO_2 emissions up to 70%.

- High energy efficiency ratings to save big amounts of money on your energy bill
- Short payback period thanks to very high level of energy saving
- Heating and cooling included in the same system (reverse cycle)
- Environmentally friendly thanks to low consumption (it is considered renewable energy)

Heat Pump vs Electrical Air Curtain

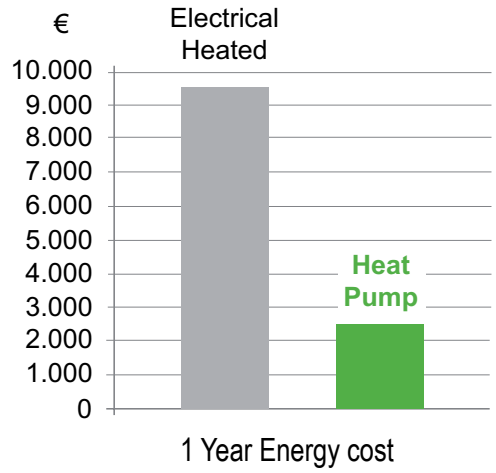
Energy Saving Example:

- Door dimensions:
2,5 m width x 4 m height
- Running time:
12 hours/day, 6 days/week, 27 weeks (~ 1/2 years)
- Energy cost:
0,17 €/kW/h (EU-27 average cost)
- Selected unit:
ECG 2500 of 25kW
- COP: 4,09 (Coefficient of Performance)

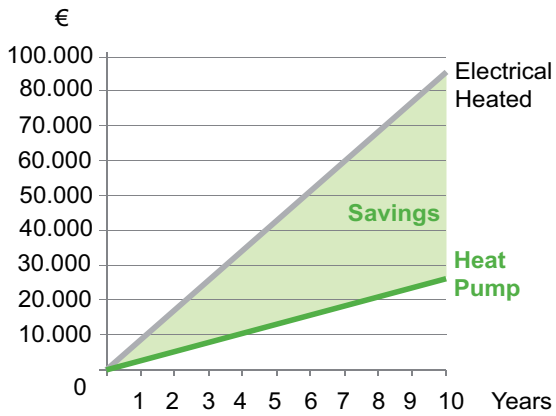
	Electrical air curtain		Heat pump air curtain		Difference
Total heating power	25	kW	25	kW	0 kW
Air curtain price	5.616	€/unit	13.933	€/unit	+ 8.317 €
Energy consumption	56.376	kW/h	13.783	kW/h	- 42.593 kW/h
Energy cost	9.583	€	2.343	€	- 7.240 €
CO_2 Emissions	22.550	kg	5.513	kg	- 17.037 kg

Result:

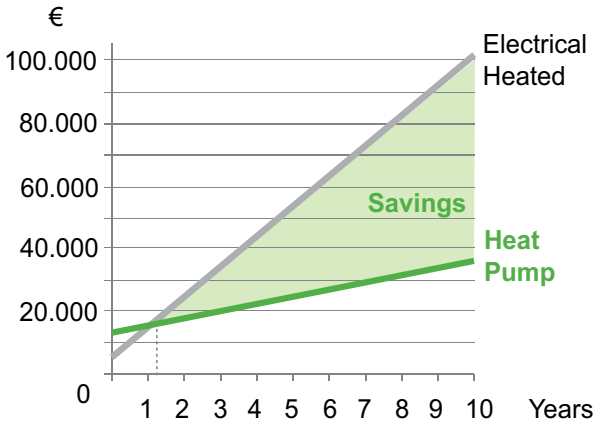
The payback period is 1 year and 2 months. In addition, 70% of energy and CO_2 emissions to the environment are saved every year.



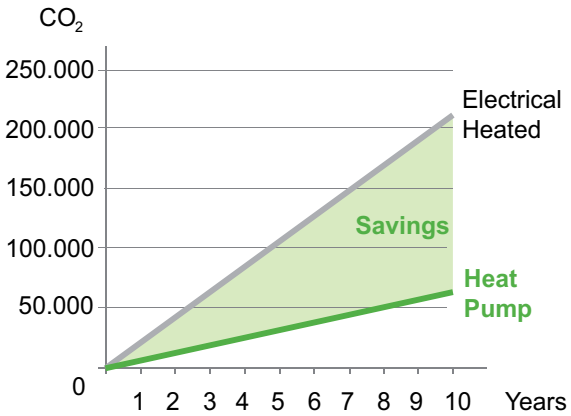
1 Year Energy cost



10 Years Energy Cost

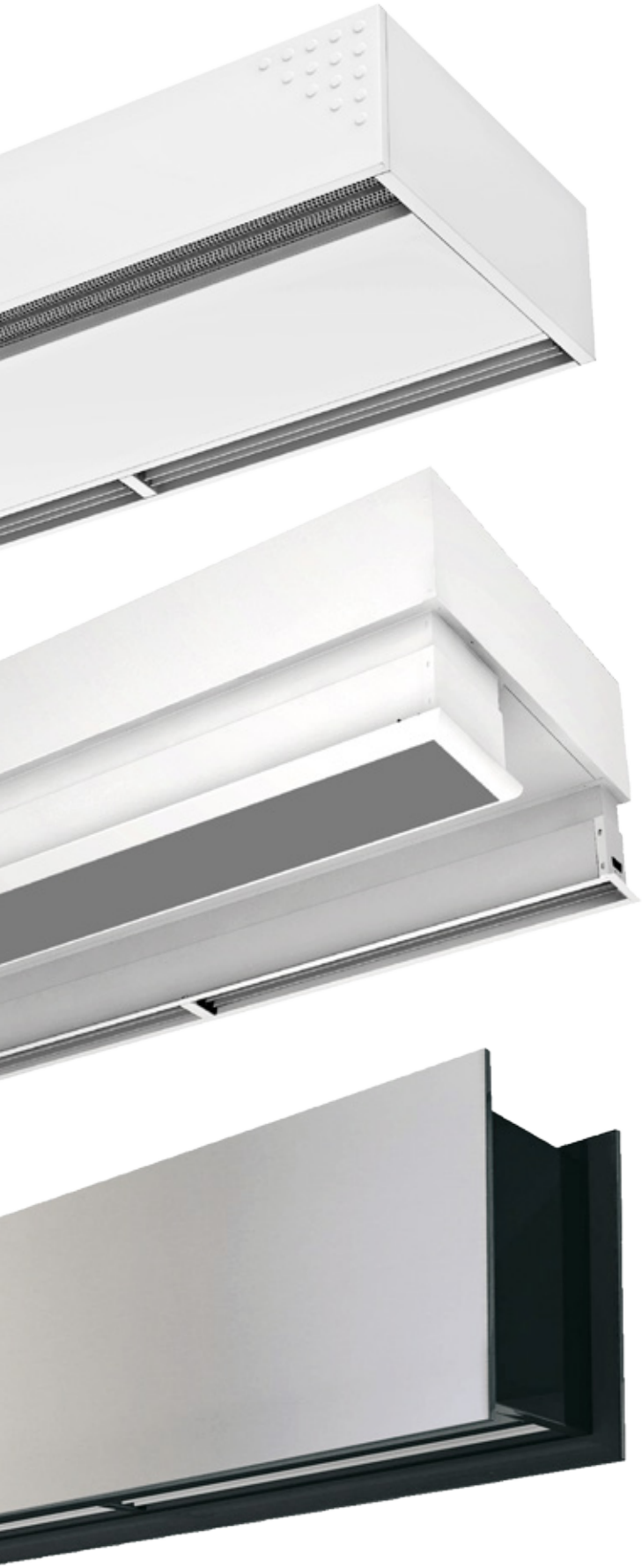


Payback Periode



10 Years CO_2 Emissions

DX Air Curtains: Available models



Our DX air curtains incorporate a direct expansion coil that, connected to a heat pump, offer the low consumption alternative to the classical electrical heating or water heated coils

Airtècnics DX air curtains available:

- Windbox M,G
- Recessed Windbox
- Smart
- Zen
- Rund
- Dam
- Recessed Dam
- Invisair
- Rotowind
- Windbox BB
- Recessed Windbox BB
- Zen BB

Heat Pump:
Available manufacturers

DAIKIN

MITSUBISHI

TOSHIBA

HITACHI

LG

Midea

Carrier

Panasonic

DX Air Curtains with Heat Pump

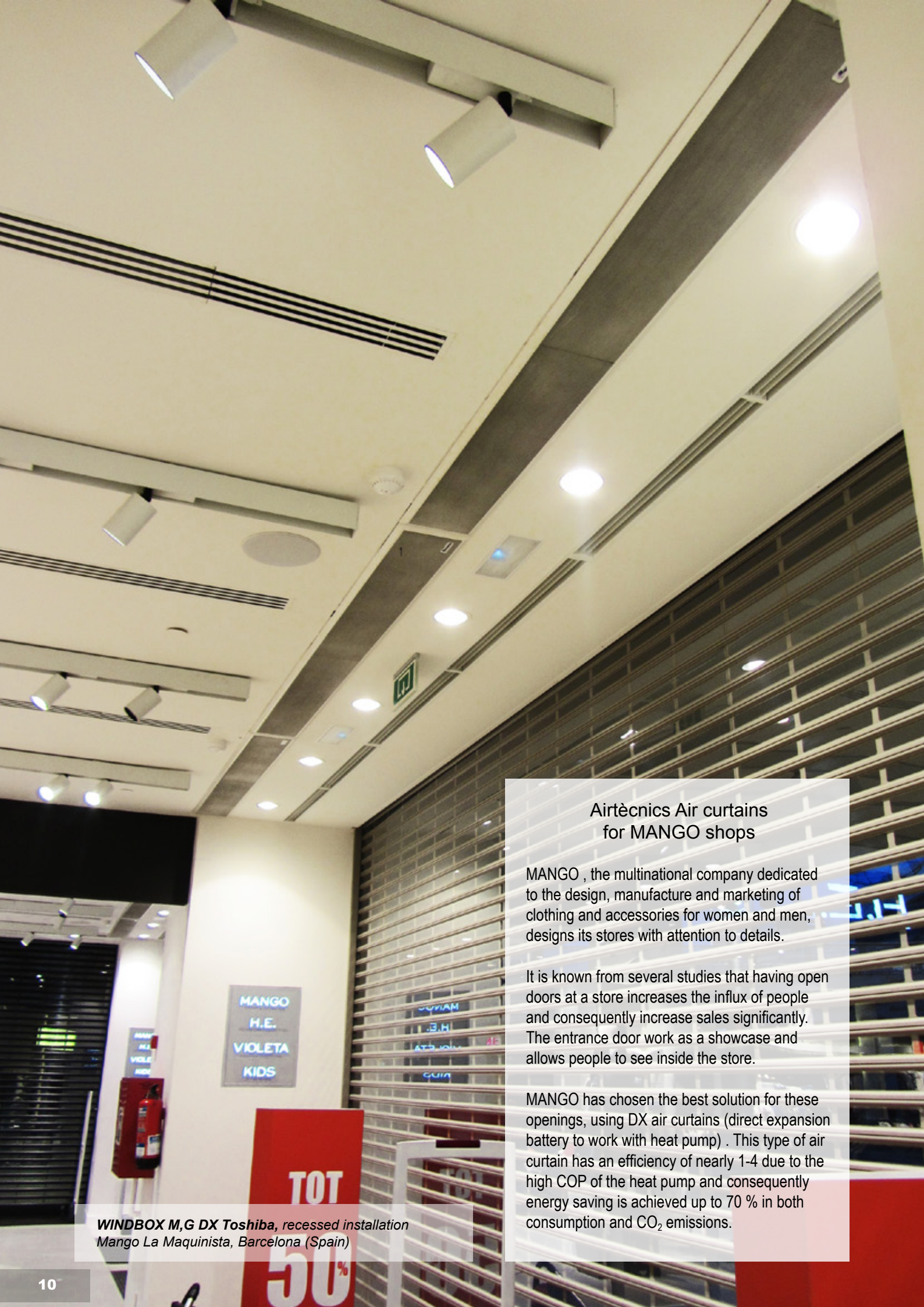
Installation Examples

Both in winter and summer air curtains avoid that much of the energy used to heat the premises escapes through the door. This can be up to 30/40% or even more, depending on the characteristics of the building and the weather situation in the area.

Airtècnics has developed a new range of DX air curtains in collaboration with several heat pump manufacturers, thus achieving efficiencies (COP) close to 4, that is to say that for each kW that is used in the network, we produce 4kW of heating.

The general interest in reducing energy costs and increase commitment to sustainability, together with the progressive increase in energy costs, make the DX air curtains a product increasingly attractive to commercial and industrial buildings.

WINDBOX M,G DX Toshiba
Mango Passeig de Gràcia shop, Barcelona (Spain)



Airtècnics Air curtains for MANGO shops

MANGO , the multinational company dedicated to the design, manufacture and marketing of clothing and accessories for women and men, designs its stores with attention to details.

It is known from several studies that having open doors at a store increases the influx of people and consequently increase sales significantly. The entrance door work as a showcase and allows people to see inside the store.

MANGO has chosen the best solution for these openings, using DX air curtains (direct expansion battery to work with heat pump) . This type of air curtain has an efficiency of nearly 1-4 due to the high COP of the heat pump and consequently energy saving is achieved up to 70 % in both consumption and CO_2 emissions.

WINDBOX M,G DX Toshiba, *recessed installation*
Mango La Maquinista, Barcelona (Spain)

Outdoor Unit Toshiba Inverter
Mango La Maquinista shop, Barcelona (Spain)

RECESSED WINDBOX DX Toshiba
Mango Passeig de Gràcia Shop, Barcelona (Spain)

Outdoor Unit Toshiba Carrier
Kiosk Shop, Amsterdam (Holland)

WINDBOX M,G DX Toshiba, *recessed installation*
Mango Portal de l'Àngel Shop, Barcelona (Spain)

Outdoor Unit Toshiba Inverter
Mango Shop in Instambul, (Turkey)

WINDBOX M,G DX Toshiba, *recessed installation*
Mango Kids shop, Barcelona (Spain)

WINDBOX M,G DX Toshiba, *recessed installation*
Mango Vialand shop, Istambul (Turkey)

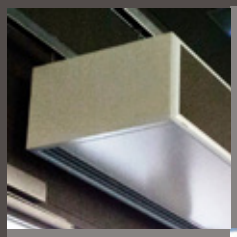
Our air curtains range

The new and attractive Airtècnics air curtains are the ideal solution to control the indoor climate in commercial or industrial premises that need to keep their doors open.

Air curtains create an invisible barrier that efficiently divides the internal atmosphere from the external one.
They substantially reduce energy losses through the door, up to 80%, while increasing employees and clients comfort.

For commercial premises, Airtècnics air curtains allow a clear view of the inside, welcoming the client to come in freely. The result is more customers and increase in sales. Moreover, they contribute to create a comfortable atmosphere at the entrances and indoor area, protect from cold and heat, repel insects and avoid dust, fumes and pollution entering the building.

The selection of the appropiate device is very important to obtain these advantages.
Factors such as interior drops, strong winds, the door's location, several communicated floors and/or opposite doors and the height of the installation, among others, have to be taken into consideration at the time of choice.



Decorative *air curtains*

Air curtains for ***Revolving doors***

Heat pump *air curtains*

Standard *air curtains*

Recessed *air curtains*

Industrial *air curtains*

Since year 1993, Airtècnics is fully integrated in the Rosenberg group, an organization specialised in the design, manufacture and distribution of ventilation equipments ,air-conditioning and its components, with production plants, subsidiary companies and partners in more than 50 countries.

Control & regulation

The control over air curtains is essential to avoid spending more energy than necessary.
Our latest generation controller CLEVER, allows the automatic control of the air curtains performance in each situation, maintaining the comfort with the maximum energy saving.

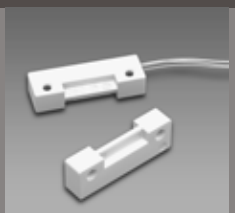
- Proactive and intelligent regulation
- Many advanced functions and programmes
- Maximum energy savings
- Friendly interface design
- “Plug & Play” installation
- BMS connection

Management: App PC / ANDROID / iOS:

BMS Windows

Compatibility ***PC / BMS ANDROID / iOS***

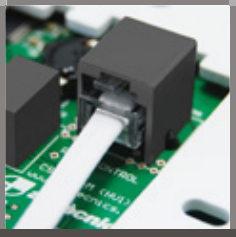
Simple installation ***Plug & Play***



Ambient ***Thermostat*** *and external temperature* ***sensors***

Intelligent ***Total Control*** *CLEVER*

Regulation with valves *thermostatic and solenoid*



Magnetical ***Door Contact***

Accesories

Temperature sensors, door contact, ambient thermostat, anti-freeze sensor, thermostatic valve and Modbus TCP Ethernet.

Airtècnics, as air curtains specialist, can produce units with special requirements under request.
We present some of the possibilities:

- External alarm signals: unit working, heating ON, airflow switch, dirty grille, electronic overheating signal, fans overheating thermo contact TK, electrical heating blocked, etc.
- Water or steam coils for higher temperatures or different power than standard
- Special heating elements at desired power and power supply
- Dummies (empty air curtains) to combine with working units
- Industrial air curtains with ATEX fans

Please consult us for further information or other options

airtècnics

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