

ADIABATIC AIR COOLERS

IC & ePUR Fresh range
Mobile & Patented Filtration



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1. Introduction

Evaporative cooling is a natural principle that is gaining in popularity thanks to its many advantages.

As environmental concerns grow in importance and energy costs rise, evaporative cooling (also known as biological cooling or adiabatic cooling) comes into its own.

Adiabatic cooling is 15 times more economical than traditional air-conditioning solutions. Evaporative coolers are easy to maintain and require no installation (mobile versions). Simply connect them to a power and water supply, or manually fill the reservoir, and users benefit instantly from efficient cooling.

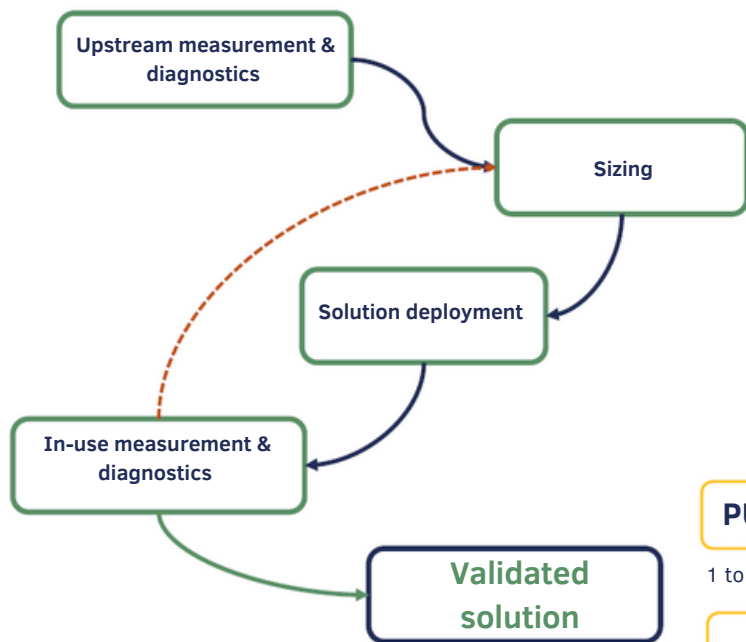
Year after year, temperatures rise, and laws designed to prevent heat stress in the workplace become stricter. Over the past few years, record-breaking temperatures have continued to rise, and are unlikely to fall in either number or duration.

This combination of factors is of concern to many companies, both in terms of employee safety and reduced productivity.

As a result, many are looking for efficient cooling solutions for their large industrial warehouses, hangars or workshops.



Our methodology



**Minimize the risk of
your investment**

Buy a result!

PURCHASE

1 to 3-month test deductible from the purchase price of your device

RENT

Long-term leasing from 12 to 62 months with purchase option

THEY TRUST US!

AIRBUS

GAGGENAU

SAFRAN

Nexans



XPO Logistics



arvato
BERTELSMANN

Tefal

NAVAL
GROUP



siniat
Shaping the way people build



AB InBev



2. Adiabatic cooling

History of evaporative cooling

The Egyptians, Greeks and Romans used damp mats (what we now call “honeycomb panels”) to cool the indoor air. They hung these mats in front of tent openings and windows. The wind blowing through these mats caused the water to evaporate, cooling the air inside.

In the 15th century, the first mechanical fans were built to provide ventilation. In the 18th century, textile manufacturers in New England began using water evaporation systems to condition the air in their mills. The system consisted of large “cooling towers” with fans that carried water-cooled air inside their buildings.

What is evaporative cooling?

Remember how cool it feels after a hot swim, when the warm, dry wind brushes against your wet skin. This is evaporative cooling.

Try the same thing when there's no wind or moving air. The surrounding air is quickly saturated with moisture, there's no evaporation and the cooling effect is gone. disappeared.



Evaporative cooling units use this natural process to provide a constant flow of cool, pleasant air in a hot, uncomfortable environment.

What's more, equipped with an upstream G4 pre-filter, you benefit from a clean, coarse-dust-free environment.



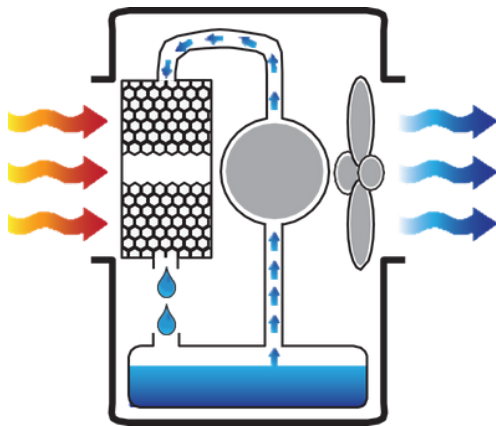
How does it work?

The heart of the evaporative cooling system is the cooling medium where the water evaporates, refreshing the air circulating inside.

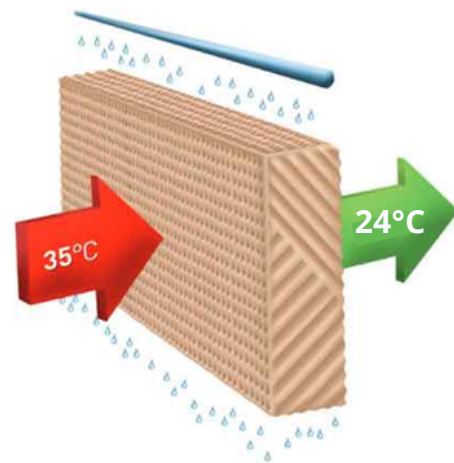
Evaporative cooling media are made from fluted cellulose sheets.

The integrated water distribution system distributes water evenly over the cooling exchangers to ensure that the entire surface is kept moist. This maximizes the cooling effect.

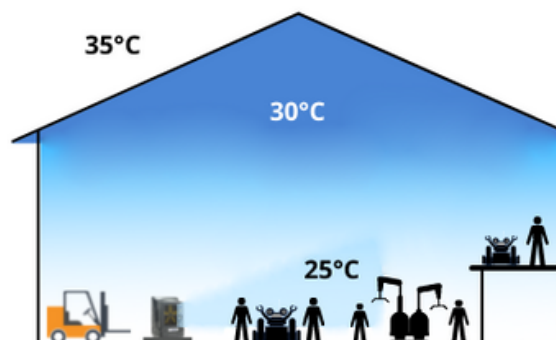
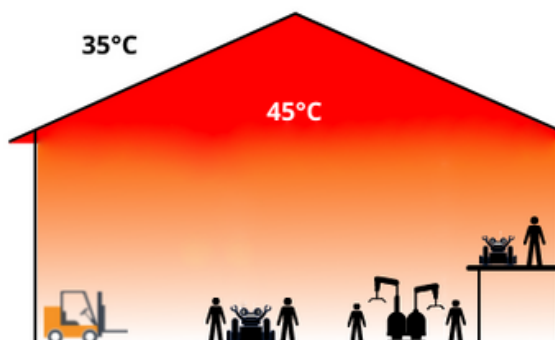
The fans create a negative pressure, drawing the air through the exchangers.



Water evaporates on contact with hot air



A control system manages media humidification



Evaporative cooling and humidity

A given volume of air at a certain temperature and pressure is capable of absorbing and retaining a certain quantity of water vapor. If this volume of air contains 50% of its maximum humidity, we say it is at 50% relative humidity.

The hotter the day, the drier the air, the more cooling can be achieved by evaporation. In other words, the cooling effect is at its best when you need it most.

Our adiabatic coolers are designed to operate normally in humid environments, and will always be much more efficient than a fan that simply stirs up warm air.

Our coolers will increase humidity by 2 to 5%, depending on the temperature and humidity of the environment you wish to cool. The slight increase is not perceptible.




		Relative humidity (%)															
		2%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	
24°C		12°C	13°C	14°C	14°C	15°C	16°C	17°C	17°C	18°C	18°C	19°C	19°C	20°C	21°C	21°C	
27°C		14°C	14°C	16°C	17°C	17°C	18°C	19°C	19°C	20°C	21°C	22°C	22°C	23°C	23°C	24°C	
29°C		16°C	17°C	17°C	18°C	19°C	20°C	21°C	21°C	22°C	23°C	23°C	24°C	24°C	25°C	26°C	
32°C		18°C	18°C	19°C	21°C	21°C	22°C	23°C	24°C	25°C	26°C	26°C	27°C	28°C	29°C	29°C	
35°C		19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	29°C	30°C			
38°C		21°C	22°C	23°C	24°C	26°C	27°C	28°C	28°C	29°C	31°C	31°C					
41°C		22°C	23°C	25°C	26°C	27°C	29°C	30°C	31°C	32°C							
43°C		24°C	25°C	27°C	28°C	29°C	31°C	32°C	33°C								
46°C		26°C	27°C	28°C	30°C	32°C	33°C	34°C									
49°C		27°C	28°C	30°C	32°C	34°C	35°C										
52°C		28°C	30°C	32°C	34°C	36°C											

This table shows the theoretical temperature of the air leaving a cooler as a function of the temperature and relative humidity of the incoming air.

The theoretical outlet air temperature depends on the incoming air temperature and relative humidity.

Example:
 Incoming air temperature = 35°C Relative humidity = 30%
 Outgoing air temperature = 25°C

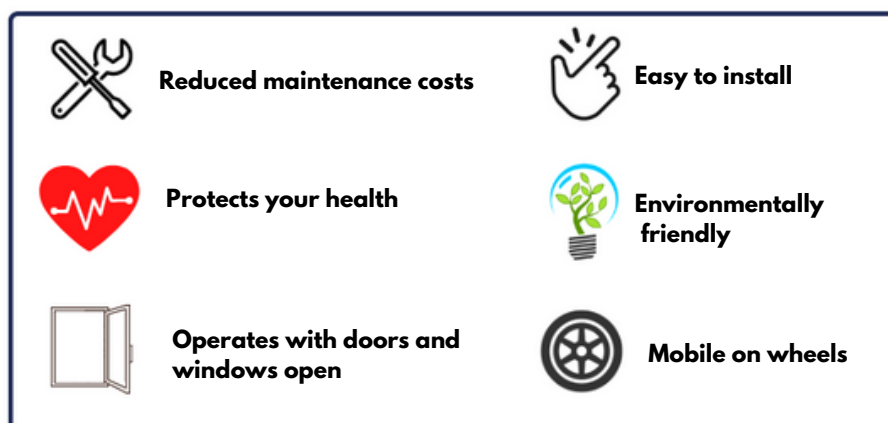
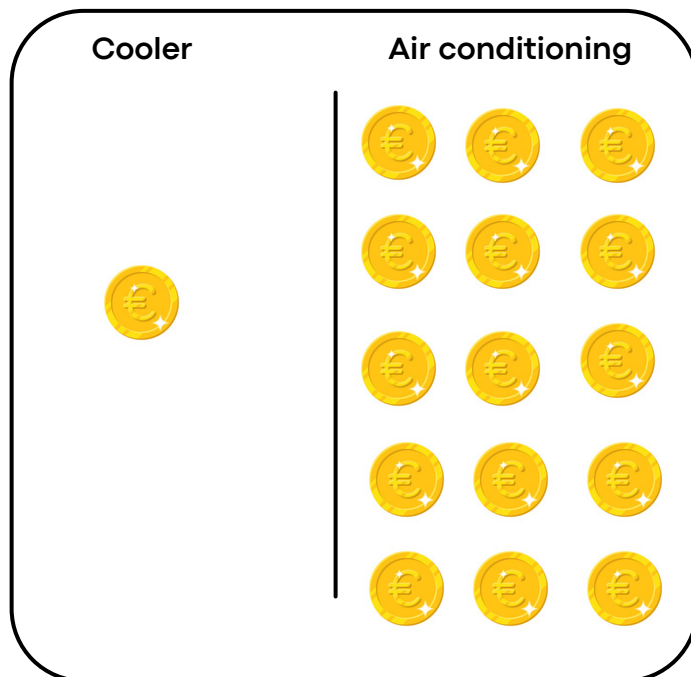
Evaporative cooling vs. air conditioning

Under similar conditions, the acquisition and running costs of an adiabatic cooler are considerably lower than those of a conventional air conditioner. The latter are often bulky and costly, making them unsuitable for large spaces where doors are frequently open. By contrast, adiabatic cooling is perfectly suited to these environments, thanks to its ease of installation.

What's more, this method is environmentally friendly, using neither refrigerant gases nor a lot of electricity. On average, it costs 15 times less to run than a conventional air conditioner.

For spaces such as hangars or workshops, air conditioners are expensive and can cause health problems, while fans do not contribute to cooling. OberA adiabatic coolers, with their efficient cooling media, can reduce temperatures even in high humidity. Their robust, portable design makes them easy to move around in factories, hangars and workshops.

These mobile units are ideal for targeted cooling, providing comfort where it's needed most.



Ventilation

Fresh, clean air is necessary to provide a comfortable, healthy environment that also promotes employee work efficiency.

To ensure healthy air, it is essential to clean it by eliminating or reducing the concentration of dirt it contains. Ventilating work environments with fresh, filtered air improves air quality.

OberA adiabatic coolers can be combined with OberA air purifiers.



Thermal stress

Climatic conditions at work have a direct impact on employee comfort and efficiency. An American study indicates that ideal conditions are between 23 and 25°C with 45 to 60% humidity. Above 33°C, productivity falls by 85%.

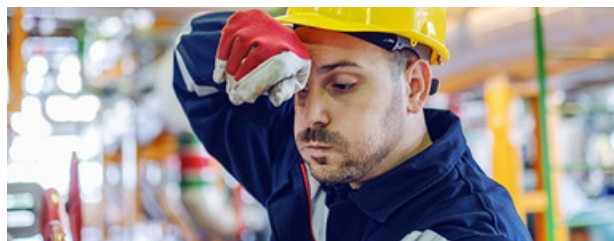
In industrial environments, temperatures can reach 27°C, and often exceed this threshold, particularly in sectors such as foundry and glassmaking. This increases the risk of heat stress, which can lead to accidents.

Workers exposed to high temperatures for too long can experience concentration difficulties, dehydration, cramps, dizziness and even fainting.

Traditional air-conditioning systems are not efficient in large spaces such as factories or warehouses, and they consume a lot of energy.

We recommend adiabatic coolers, which create a cool, comfortable working environment at low investment and running costs.

With our range, productivity can be maintained in safe working conditions. OberA coolers balance humidity and cooling, avoiding large temperature variations.



3. IC Range

OPERATING PRINCIPLE

The IC tank features a pump that humidifies a cellulose honeycomb panel. The fan draws warm ambient air through this panel, causing the water to evaporate and cooling the air. In this way, the ICs diffuse cool, droplet-free air, providing comfort even in areas that are difficult to air-condition. The drier and warmer the intake air, the lower the temperature of the supply air. However, they should not be used in small, enclosed spaces.

A PATENTED INNOVATION

G4 pre-filtration on our coolers ensures effective air purification before cooling. This high-performance filter captures fine particles such as dust, pollen and other impurities, improving the quality of the air delivered.

MOBILE

Compact and lightweight, IC coolers are easy to move and fit through narrow doorways. Their anti-corrosion, UV-treated plastic bodywork is robust, withstanding frequent movement without damage.

SIMPLE TO USE

Simply fill the water tank and connect the unit to a 230V power supply for refreshing air. Equipped with an integrated control panel and remote control, they offer ventilation only or cooling with 3 speeds. They also feature a sweep function to direct the airflow across the entire width of the area.

EASY FILLING

IC coolers feature large water tanks for long autonomy. A gauge makes it easy to check the water level. All models can be filled manually, but the IC 12, 22 and 30 have a connection for permanent filling via a water hose, with a float that automatically regulates the level.

IC 22



IC 12

IC 30

ECONOMICAL AND ENVIRONMENTALLY FRIENDLY

IC coolers require little water and electricity, consuming up to 80% less energy than gas air-conditioning. Installation is simple and economical, and they are easy to recycle. They offer an affordable, environmentally-friendly solution for efficiently cooling areas of over 400 m² during the hot season.

Mobile air cooler **IC12**



G4 Filtration

Application areas

- Suitable for all types of industry.
- Automatic or manual water supply.



Integrated UV LAMP

- Disinfection of bacteria, viruses, fungi and molds

Ideal for

Factories

Storage halls

Greenhouses

Events

Garages

Workshops

Warehouses

Technical data

Max. flow	m ³ /h	12 000
Power supply	V/Hz	220-240 / 50
Surface area	m ²	up to 150 m ²
Water capacity	L	70
Water consumption	L/h	8 to 10
Rated current	A	1.92
Water supply		auto or manualuelle
Dimensions (l x w x h)	mm	925 x 580 x 1440
Weight	kg	43
Power	W	440
Tank level control		YES
Max. noise level	dB	54/58/63

$\frac{1}{2}$ " water connection

Special features

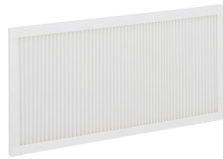
- Dust filtration (G4 filter)
- Evaporative cooling without misting
- Adjustable speed (3 speeds)
- Oscillating airflow mode
- Timer function for automatic start and stop

Benefits

- Quiet, compact and mobile
- Economical and environmentally friendly
- Easy cleaning and low maintenance
- High cooling efficiency
- Large air volume
- Plug & play

Mobile & filtering air cooler

IC22



G4 Filtration

Application areas

- Suitable for all types of industry.
- Automatic or manual water supply.



Integrated UV LAMP

- Disinfection of bacteria, viruses, fungi and molds

Ideal for

Factories

Storage halls

Greenhouses

Events

Garages

Workshops

Warehouses

Technical data

Max. flow	m ³ /h	22 000
Power supply	V/Hz	220-240 / 50
Surface area	m ²	up to 250m ²
Water capacity	L	130
Water consumption	L/h	10 to 15
Rated current	A	2.8
Water supply		auto or manualuelle
Dimensions (l x w x h)	mm	1120 x 640x 1600
Weight	kg	50
Power	W	640
Tank level control		YES
Max. noise level	dB	58/64/68

$\frac{1}{2}$ " water connection

Special features

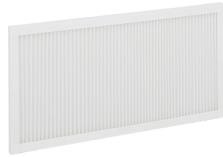
- Dust filtration (G4 filter)
- Evaporative cooling without misting
- Adjustable speed (3 speeds)
- Oscillating airflow mode
- Timer function for automatic start and stop

Benefits

- Quiet, compact and mobile
- Economical and environmentally friendly
- Easy cleaning and low maintenance
- High cooling efficiency
- Large air volume
- Plug & play

Mobile & filtering air cooler

IC30



G4 Filtration

Application areas

- Suitable for all types of industry.
- Automatic or manual water supply.



Integrated UV LAMP

- Disinfection of bacteria, viruses, fungi and molds

Ideal for

Factories

Storage halls

Greenhouses

Events

Garages

Workshops

Warehouses

Technical data

Max. flow	m ³ /h	30 000
Power supply	V/Hz	220-240 / 50
Surface area	m ²	up to 400 m ²
Water capacity	L	200
Water consumption	L/h	20 to 30
Rated current	A	3.7
Water supply		auto or manual
Dimensions (l x w x h)	mm	1565 x 725 x 1760
Weight	kg	110
Power	W	850
Tank level control		YES
Max. noise level	dB	66/68/70

$\frac{1}{2}$ " water connection

Special features

- Dust filtration (G4 filter)
- Evaporative cooling without misting
- Adjustable speed (3 speeds)
- Timer function for automatic start and stop

Benefits

- Quiet, compact and mobile
- Economical and environmentally friendly
- Easy cleaning and low maintenance
- High cooling efficiency
- Large air volume
- Plug & play

4. ePUR150 FRESH



For surfaces up to 400 m².

ePUR150 Fresh

Application areas

Particularly dusty areas

- Production workshops
- Storage halls
- Laboratories
- Sheet metal and boiler works
- Food industry
- Assembly halls
- Process lines
- Manufacturing lines

ePUR150 FRESH mobile industrial air purifiers / evaporative coolers are ideal for purifying and cooling all types of work areas, industrial halls and logistics facilities in a totally natural, ecological and sustainable way (very low energy consumption).

The industrial evaporative cooler purifier offers an air flow rate of 15,000 m³/h with an available pressure of 100 Pa at maximum flow. Its capacity is suitable for rooms from 70 m² to 400 m².

Technical data

Max. flow	m ³ /h	15,000
Power supply	V/Hz	220-240 / 50
Surface area	m ²	up to 400m ²
Water capacity	L	0 - connected to the water network
Water consumption	L/h	10 to 15
Rated current	A	3,3
Water supply		auto or manual
Dimensions (l x w x h)	mm	1130 x 1130x 2110
Weight		
Power	kg	230
Tank level control	W	2200
Max. noise level	dB	62

Ideal for

Dusts

Fumes

4. Frequently asked questions

Noise level

Can the noise level of evaporative coolers be reduced ?

The noise level is 70dB at full power (less than a domestic vacuum cleaner). However, if required, our units have at least three speeds to reduce the noise level even further.

Disinfection

Can adiabatic coolers disinfect against viruses ?

IC coolers are equipped with a UV lamp, which eliminates bacteria, viruses, fungi and molds present in the cooler water.

Infectious risks

Do adiabatic coolers increase the risk of infections and other health problems ?

No, on the contrary! This question is often based on the misconception that evaporative coolers can cause a slight rise in humidity, thereby increasing the risk of viruses spreading and promoting bacterial and fungal growth. However, the benefits of using evaporation have been clearly demonstrated.

Risks of legionellosis

Does evaporative cooling increase the risk of Legionella because it uses water ?

No, the water used by our coolers is constantly on the move and kept at a very low temperature. This creates a hostile environment for legionella.

Our adiabatic coolers are a real economic and ecological solution!

Cooling capacity

How far can adiabatic coolers reduce the temperature ?

Generally between 8 and 15°C, but this depends on many external factors, such as temperature, humidity and available ventilation. The higher the temperature, the greater the cooling effect. The lower the humidity, the more our coolers can evaporate, and the more efficient the ventilation, the better they work. So the more you need, the greater the drop in temperature.

Air flow problem

What can I do to adapt the airflow to my needs ?

Most of our coolers have louvers, so you can control the airflow and its direction. What's more, our coolers feature a multi-speed motor so you can reduce the air speed. Another solution is to raise the air cooler so that it is not directed directly at people (the cool air always flows downwards, so cooling is also guaranteed with this solution).

Energy consumption

	Coolers	Air conditioning
Water cons.	4.60€ (120L of water)	-
Elec. conso.	1.84€ (8 kWh)	27.6€ (120kWh)
<i>Maintenance Annual</i>	30 € (Filter)	Several hundreds of €.

Calculation conditions :

1000 m² - 8m height - Cooling to -10°C over an 8-hour period

NOTES

[illegible]



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