



**ColdAIR**

EVAPORATIVE COOLING SYSTEMS



 **AMBI RAD**

# ColdAIR

## EVAPORATIVE COOLING SYSTEMS

### Introduction

ColdAIR evaporative cooling systems is the low cost environmentally friendly alternative to costly air conditioning.

ColdAIR evaporative cooling systems are fast becoming the standard way to cool industrial and commercial premises, by drawing air through continually wetted pads that surround the unit. The evaporation of the moisture into the air reduces its temperature, whilst the process also filters it, removing airborne contaminants.

Evaporative cooling systems are designed with energy efficiency in mind, typically consuming only 20% of the energy used by traditional air conditioning systems and with the ability to install without any structural alterations to your existing building.



### Features and Benefits

- Consumes 80% less energy than conventional air conditioning systems
- Door and windows can be left open with no loss in efficiency
- 100% fresh filtered air
- Low installation, operating and maintenance costs
- Low energy consumption
- No refrigerant chemicals, no environmental damage
- Improvement of the working conditions increase productivity
- Spot cooling capability
- Wall / window / roof mounting
- Possibility to only ventilate in the cooler seasons

### Evaporative Cooling Systems



## The Problem

To improve the air quality of a working area on a hot summer day, it is necessary to have a large number of air changes, preferably with filtered cooled air.

In the case of large factories and warehouses, installation and running costs often prohibit the option of air conditioning systems.

Moreover, the frequent opening of doors due to routine activity have a detrimental effect on the efficiency of an air conditioning system.

## The Solution

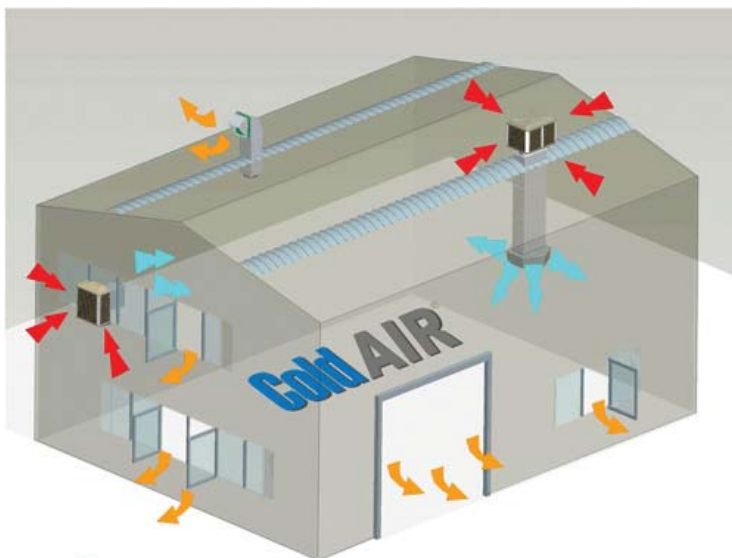
The solution is to install a ColdAIR evaporative cooling system that cools the air using a natural principle and is on average 75% cheaper to install than air conditioning.

As the air passes through special wet filters, it loses part of its heat due to the evaporation of the water and thus the air temperature is reduced.

The absence of refrigerants, associated with an air conditioning plant, produces a system with minimal energy requirements and many air changes for a very low cost.

## Prevention of Legionella

- System design to maximise the evaporation of the water into the air without the water atomising
- Low air velocity over the evaporative filters - this avoids formation of water droplets
- Automatic control managing the water supply and discharge
- Automatic cleaning cycle, replacing the complete reservoir of water
- The water in the cooler operates at temperatures below the level for the formation of bacteria
- The cooler automatically discharges the complete reservoir if power fails



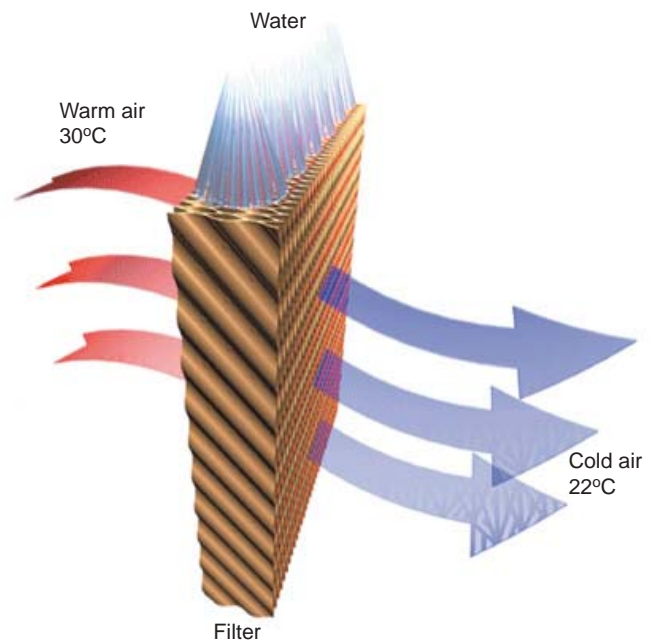
External Warm Air



Inlet Cold Air



Expelled Stale Warm Air



### OUTLET AIR TEMPERATURES WITH DIFFERENT INLET CONDITIONS

Relative Humidity	20%	30%	40%	50%	60%	70%	80%
°C Ext	°C Int.						
20°C	12.0°C	13.0°C	14.5°C	15.5°C	16.5°C	17.5°C	18.5°C
25°C	16.0°C	17.0°C	18.5°C	20.0°C	21.0°C	22.0°C	23.0°C
30°C	19.5°C	21.0°C	22.5°C	24.0°C	25.0°C	26.5°C	28.0°C
35°C	23.0°C	25.0°C	26.5°C	28.5°C	30.0°C	31.5°C	32.5°C

TECHNICAL DATA						
Model		WA 100	RC 100	RA 150	RA 200	RC 200
Flowrate	Max	10000	10000	13000	20000	19000
	Med	7500		9700	15000	
	Min	5000	6500	6500	10000	10000
Equivalent refrigerating capacity	kW	15	15	19	30	xx
Voltage supply	V	230V - 50Hz	400V - 50Hz	230V - 50Hz	230V - 50Hz	400V - 50Hz
Current	A	4.1	3.5	4.8	8.2	7
Total electrical power	kW	0.85	1.6	1.1	1.9	3.2
Water consumption (average) <sup>(1)</sup>	l/h	37	43	48	74	64
Input water connection	Ø "	3/8	3/8	3/8	3/8	3/8
Drain water connection	Ø mm	63	63	63	63	xx
Air duct dimensions L x W	mm	600 x 600	600 x 600	600 x 600	1150 x 600	850 x 470
Duct maximum length	m	5+ 1 bend	See manual	5+ 1 bend	5+ 1 bend	See manual
Cellulose pads:						
Thickness	mm	100	100	100	100	100
Area	m <sup>2</sup>	2	2.7	2.7	3.4	3.4
Average saturation efficiency		88%	88%	88%	88%	88%
Dimensions: L x W x H	mm	1300 x 670 x 1300	1150 x 1150 x 1050	1150 x 1150 x 1050	1650 x 1150 x 1050	1650 x 1150 x 1050
Weight (empty - full)	kg	60 - 75	110 - 130	67 - 88	120 - 146	200 - 220
Noise:						
Outdoor <sup>(2)</sup>	dBA	Min / Max speed 49 / 65	Min / Max speed 55 / 61	Min / Max speed 50 / 66	Min / Max speed 53 / 68	Min / Max speed 58 / 65
Indoor		49 / 66	56 / 62	50 / 67	53 / 70	60 / 66

(1) Test conditions: E. Temp. = 33°C - R.Hum 60%

(2) Open field test, 4m distance



The Carbon Trust is an independent company funded by the Government. Its role is to help the UK move to a low carbon economy by helping business and the public sector reduce carbon emissions now and capture the commercial opportunities of low carbon technologies.

One activity is the Interest Free Loan Scheme which supports Small to Medium Enterprises (SMEs) to finance carbon saving projects.

Evaporative cooling projects can qualify because the energy consumed is normally only 15% of an air conditioning system. The electricity savings can result in significant carbon savings. Up to £5,000 of interest free loan per cooler can be applied for.

The Loan

- The loan can cover both new and replacement equipment.
- The maximum loan period is four years.
- Unsecured, Interest free loans from £5,000 to £100,000 to SMEs to fund carbon saving projects.
- Loan can cover the cost of equipment and installation.

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