Simple, Safe, Efficient
Cooling Solutions

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Save up to 90%
on your cooling
running costs

The **solution**

An effective alternative to air conditioning that will keep your building and processes cool even on the hottest days of the year.

Evaporative cooling provides a simple, safe and low-cost solution to the cooling of people, processes and products. This technology can replace a 50kW air conditioning system with a cooler that uses only 1kW of power.

The EcoCooling range of evaporative coolers have been specifically designed to take into account the UK's climate, water quality, and health & safety regulations. Installed as part of a balanced ventilation system, EcoCoolers provide a constant flow of fresh and cooled air to provide comfortable conditions and a healthy environment.

Why evaporative cooling?

Simple With a straightforward design that involves far fewer mechanical parts than air conditioning and runs on simple local services, the EcoCooling system delivers cool, fresh air with minimal fuss.

Safe Sophisticated process controls together with low water operating temperatures make this a legionella safe solution. Being a fresh air solution, levels of bacteria are naturally lower than recirculated air, making the air inside safer.

Efficient This is a simple and robust device that can cool an area the size of a tennis court using half the energy of a domestic kettle. The operational cost is just 10% of refrigeration-based air conditioning and is typically less than 50% of the capital spend.

A viable **alternative to AC**

EcoCooling solution	Vs	Traditional air conditioning
Typically uses less than 10% of the electricity than conventional air conditioning		High electrical use due to refrigerant circuit compressor
No refrigerants		Uses environmentally damaging refrigerants
Supplies 100% fresh cooled air		Uses mainly recycled air
Low carbon dioxide footprint		High carbon dioxide impact
Simple engineering		Complex engineering
Lower capital and significantly lower operational cost		High capital and operational cost
Can accommodate the very hottest days		Performance reduces at high ambient temperatures
Low maintenance costs		High maintenance costs
No mandatory checks required		All industrial refrigeration systems require F Gas testing
Ventilation only (free cooling) option for cooler days, which helps save energy		Energy usage is high due to the constant need for mechanical refrigeration
Open doors and windows have no adverse effect on performance		Doors and windows must be kept shut at all times to ensure effective cooling

The EcoCooling difference

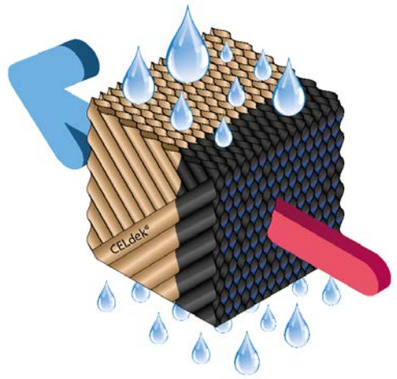
1. **Access** to a large network of trained and trusted installers across the UK and beyond.
2. **Installers** have a direct relationship with the EcoCooling team who are always on hand to advise on the most efficient system.
3. **Stock** is held at our UK warehouse in Bury St Edmunds, so your installer can start on your project as soon as you are ready.
4. **Our in-house design** advice service supports installers and means that they can capitalise on our vast industry experience across a wide range of sectors.

How does it work?

The EcoCooling units have two operation modes, pure ventilation and cooling. Units form part of a balanced ventilation system that supports the requirements of the building and its application.

In cooler weather, the units operate in **ventilation mode**, which will be most days of the year in the UK. In this mode, the fan within the EcoCooler is used to bring fresh air into the premises.

On warmer days, the units operate in **cooling mode**. The cooling takes place as the warm air is drawn over wetted filter pads and the water naturally evaporates



into the air as it gives up the heat required to evaporate the water. This simple, yet effective process cools air naturally and in the UK the temperature in buildings using these units typically doesn't exceed 25C, even on record hot days.

EcoCooler performance

The cooling effect of an EcoCooler is relative to the ambient temperature and humidity. See the below table for the calculated supply temperature from EcoCoolers on the hottest day of year in July 2019.

Location	Relative Humidity (Hottest day)	Maximum Temp (Hottest day)	Cooled Air (Supply temperature)	Cooling Effect
Newquay	57%	25C	20C	-5C
London	32%	37C	25C	-12C
Cardiff	43%	30C	22C	-9C
Manchester	43%	33C	24C	-8C
Edinburgh	58%	29C	23C	-6C

** Ambient relative humidity and temperature data is for the hottest hour of the day from wunderground.com

The lower the relative humidity, the higher the cooling effect, which makes this technology ideal for Northern Europe's climate.

Efficient
Cooling performance not affected by open doors.

Modular units
Phased installation possible with spot and zonal cooling.

Product
Effective cooling even at the tops of racks.

Process
Targeted cooling for hot spots.

Versatile
Multiple configurations for flexible installation.

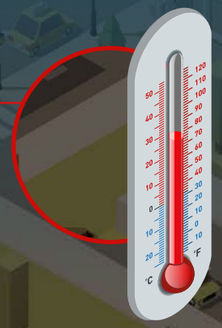
Types of cooling

Blanket cooling to keep large areas cool and provide workers with a more comfortable working environment.

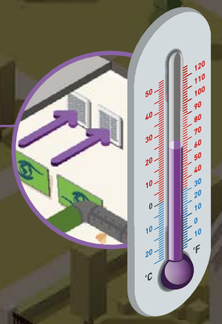
Spot cooling to cool specific areas, this is often used in areas with a high density of equipment or machinery.

A versatile solution that can provide cooling for your people, processes and products.

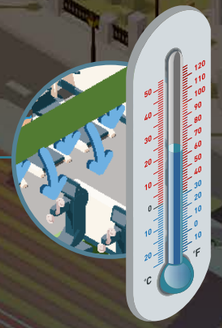
Tailored install
Air distribution options to suit all requirements.



Outside temperature
28C



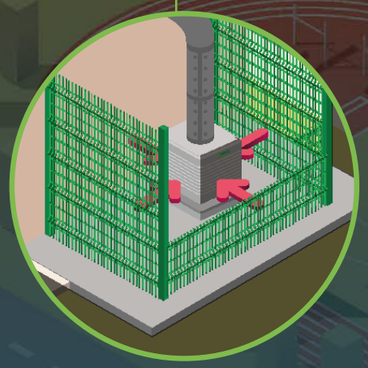
Point of extraction
23C



Point of supply from coolers
21C

Fresh air
Create a clean, healthy environment with no recirculated air.

Size options
Choose the optimum sized cooler for your space.



Achieve compliant conditions for product storage, IT equipment and more without the need for refrigeration.

Types of installation

Configurable The coolers come with three configuration options, making it a flexible solution that is adaptable to suit the requirements of any building. Down discharge is the standard configuration for coolers and is ideal for simple, space saving roof installations. Top and side discharge options are also available for situations where roof access or roof penetrations are not possible.

Passive coolers EcoCoolers can be supplied without the fan. Known as WetBoxes, these are used as pre-coolers for existing systems or where higher duty fans are required. Passive EcoCoolers can be supplied in down, top and side discharge configurations.

System sizing The number of coolers you will need depends on the required air changes per hour. The working volume of the building is calculated, multiplied by the air changes per hour, and this gives the total flow required by the coolers. Total flow divided by cooler output gives the number of coolers required.

Light duty 7 air changes per hour

- Light engineering
- Warehouse picking area
- Classroom

Medium duty 12 air changes per hour

- Factory
- Gym/sports centre

High duty 15 air changes per hour

- Heavy engineering
- Bakery

Extreme 25 air changes per hour

- High density data centre
- Foundry

Additional features

There are additional installation options that will ensure the correct distribution of air through the building such as metal and fabric ducting, plenums and suspended ceilings.

Humidistats can be fitted if humidity is critical to your operations.

Controls: There are various control options depending on what it is you require.

Stand-alone controls come as standard, with manual and automatic options. Automated options include thermostat, humidistat, timer and external alarm controls.

Group controls that allow you to manage all of your coolers from one place are available, with the same automatic options as the stand-alone control.

For more complex control options EcoCooling can provide Programmable Logic Controller (PLC) and touch screen based control systems tailored to your needs, which can integrate into your Building Management System (BMS).

Filters: Coolers come with an insect screen as standard. There are options for different levels of filtration and midge mesh wraps depending on your requirements.

Energy **usage**

Evaporative cooling is a completely natural way of cooling, which makes it a much more energy efficient solution as it doesn't require as much power as traditional refrigeration cooling. A single cooler uses a maximum of 1.5kW per hour, which is normally only 10% of the power used by an equivalent air conditioning unit.

When coupled with automatic controls that vary the fan speed based on thermostatic control, you can expect an average energy use of 1kW to replace a 35kW air conditioning unit.

Reduce your capital spend on cooling **by up to 50%**

Cost effective

An EcoCooling installation typically consumes less than 10% of the electricity of an equivalently rated refrigeration-based cooling system. These low running costs mean that the return on investment for industrial systems is usually between 2-5 years and can be as low as 6 months for environments such as data centres where cooling is required 24/7.

Hourly costs are below for a standard EcoCooler, which can cool a 15m diameter circle or 250sqm area.

Utility	Hourly running cost
Electricity	£0.13
Water	£0.012
Total cost	**£0.142**

Therefore the total cost for 168 hour continuous working week would be **£22.18**. To put it into perspective, the comparative air conditioning cassettes would cost around £170 a week to run.

The environmental impact of evaporative cooling and ventilation is much lower than refrigeration.

Using up to 90% less electricity reduces the carbon footprint of businesses, while the natural cooling process does not use harmful refrigerants, both of which support green initiatives and targets set up by some organisations.

Product ranges

We have two product ranges. The first is the EcoCooler range, which is designed for use in industrial settings and areas where large space cooling is required. The other is the CloudCooler range, which has been designed specifically for the data centre sector. An overview of each can be found over the next four pages.

EcoCooler Key Features

External installation: coolers are fitted externally or inside a plant room, as part of a mechanical ventilation system paired with an extract fan.

Versatile installation options: 'Active' and 'Passive' cooler options available in two sizes, with top, side and down discharge configurations.

Compact modular design: units can be stacked for installations where there is limited external space.

Flexible fitting: coolers can be fitted as part of a new build project or retrofitted to existing buildings. The 'Passive' EcoCooler has no fan so is ideal for retrofitting in buildings that have a separate pre-existing ventilation system.

Heat recovery: EcoCooling systems can include recirculation loops which allow for closer control of temperatures. The system can also be used for destratification in winter.

Hassle-free installation: minimal downtime and disruption during installation.

Ventilation based system: uses fresh external air and is not adversely affected by open doors and windows.

Popular products

ECP60-03 EcoCooler

Down Discharge • **Top Discharge** • Side Discharge

Flow rate	12,600m³/hr
Size (HxWxD)	1092 x 1150 x 1150mm
Warranty	2 year parts only

ECP80-01 EcoCooler

Down Discharge • Top Discharge • Side Discharge

Flow rate	18,000m³/hr
Size (HxWxD)	1300 x 1250 x 1250mm
Warranty	2 year parts only

630 Axial Fan

Airflow Volume	18,000m³/hr
Fan Speed Max	1600rpm
Weight	41.9kg

View full product range at **www.ecocooling.co.uk/products**

CloudCooler Key Features

Internal installation: designed for internal installation.

Fresh air: industry-leading, direct free cooling and evaporative/adiabatic cooling solution.

Configurable solution: ventilation only and evaporative cooling options available, along with various control and filtration choices. Multiple air-flow options mean air can be supplied either directly, through ductwork or raised floors.

Single box solution: filters, dampers, supply fan, sensors and control system are incorporated into the unit.

Peace of mind: a sophisticated leak detection and alarm system has been incorporated into all of our internal evaporative cooling products.

Humidification: units can be fitted with a humidification loop to avoid non-compliance due to low humidity. Nordic grade units come with this as standard.

Compliant and efficient: achieve ASHRAE Class 1 environmental conditions with a PUE of less than 1.1.

Remote commissioning: this facilities rapid deployment in remote locations.

Plug and play: simple set up and wiring, designed with easy installation in mind.

Low total cost of ownership: enabled by the modular-based design that is completely scalable.

Compact: if you're worried about getting the cooler into your room, some of our smaller units are designed to fit through a single door.

Popular products

ECV 18000 Internal Direct FreeCooler

Flow rate	18,000m³/hr
Size (HxWxD)	2250 x 1290 x 900mm
Warranty	2 year parts only

ECT 10800 Internal Evaporative Cooler

Front Discharge • Side Discharge • Down Discharge • Mixed Discharge

Max flow rate	10,800m³/hr
Size (HxWxD)	2494 x 1304 x 960mm
Warranty	2 year parts only

View full product range at **www.ecocooling.co.uk/products**

Key installation benefits

1. **Water supply** from the mains
2. **Lightweight units** that are configurable for multiple types of installation
3. **Minimal downtime** for installation due to the simple design of the coolers and the ability to drain the water straight onto the roof or into the stormwater runoff

Maintenance

It is recommended that the unit is cleaned every 6 months, which takes around 1 hour per unit and the pads should be replaced as necessary. Pads normally last up to five years and much longer in many cases.

Maintenance and pad replacement should be carried out by a qualified person, for which EcoCooling has a network of contacts that can provide this service or alternatively training can be provided.

All spare parts are stocked and available for delivery from our UK warehouse in Bury St Edmunds, Suffolk.

Next **steps**

Get in touch Call us or email us about your project.

Find your solution Discuss your cooling requirements with our technical team who will provide you with a tailored in-house design.

Installer introduction We'll work with your chosen installer or put you in touch with one of our approved network.

Quote The installer will provide you with a quote for the supply and installation of your chosen system.

Installation Your fresh air cooling system will be installed.

Maintenance You can set up an ongoing maintenance agreement with your installer or another from our approved network to keep your coolers performing at their best.

FAQs

Q: How many coolers do I need?

A: Typically a standard ECP down discharge until will provide you with cooling for a 15 meter diameter circle. For a technical evaluation of your specific application, speak to our technical team.

Q: How noisy are the units?

A: The noise from the coolers is not noticeable in an industrial environment. However, if you do have specific noise restrictions, we have options that can help.

Q: Is the air uncomfortable due to humidity?

A: A combination of cool fresh air and air movement leads to a comfortable work space. Controls ensure that the building is fully purged of cooled air at the end of the day to prevent any build up in humidity.

Q: Can you catch Legionnaires' disease from an EcoCooling Evaporative Cooler?

A: No, because the circulating water is less than 20C and no droplets are formed.

Q: Has anyone ever caught Legionnaires' disease from an evaporative cooler?

A: It is believed there are over 30 million installations worldwide. There have never been any cases of Legionnaires' disease attributed to a wetted media evaporative cooling, as used in EcoCoolers. EcoCooling has developed a sophisticated control system that includes a series of measures to reduce the risk of Legionnaire's disease, for more information and a risk assessment please contact EcoCooling.

Q: How much will it reduce the temperature?

A: This is dependent upon the ambient conditions but on hot days in the UK, the maximum temperature would be 25C.

Q: How much water and electricity does an evaporative cooler use?

A: A cooler will use an average of 40L per hour over a 24-hour period during hot weather and 1.5kW of electricity.

Q: How much does it cost to run?

A: A single ECP unit costs less than 15p per hour to run using 2019 UK commercial utility costs.

Q: Do the pads clean the air?

A: Coolers come with an insect screen as standard, with other filtration options available depending on your requirements.

Q: Will I get condensation in my building?

A: No, provided the design is based on a balanced ventilation scheme.

Q: Are the units CE marked?

A: Yes, the units are CE marked and fully comply with LV and EMC regulations.

Q: What is the warranty?

A: Two years parts only supply, provided that the unit is serviced by EcoCooling approved engineers.

Trusted by

DECATHLON · GREGGS Always Fresh. Always Tasty.™ · HermanMiller · SUBWAY

MERCK · BT · GO Outdoors · ROLLS ROYCE · Transport for London · Nestlé

MATALAN · Places Leisure · NET-A-PORTER · LM WIND POWER

PREMIER FOODS · TK maxx · Cummins · NHS

EcoCooling
FRESH AIR COOLING

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