



Product summary

## emcoklima – new products 2009

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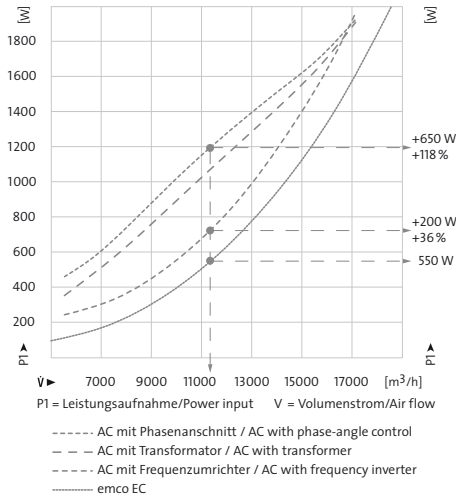
emcobau

emcoklima

emcoklima creates a good atmosphere

**EMCO**

## energy-efficient air-conditioning solutions



For decades, emco klima has been providing air-conditioning solutions which are good for both the balance sheet and the environment. emco products and systems also lead the way when it comes to energy efficiency. Thanks to our targeted research and development programmes our current product range already provides the ideal platform for helping those involved in new build and renovation projects to feel more confident and better able to meet legal requirements for reducing primary energy consumption. This applies in the case of the German energy-saving regulation (Energieeinsparverordnung - EnEV) 2009, which envisages a reduction of 30% and whose implementation has already been officially confirmed. Our modern devices will also make a substantial contribution towards meeting the requirements of the planned 2012 EnEV, which is expected to stipulate a further 30% reduction.

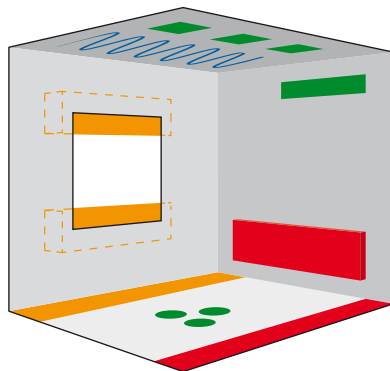
The best example is the ongoing process of incorporating the energy-efficient EC fan into all emco klima products. Unlike conventional fans, this achieves significantly higher rates of electrical efficiency ranging from 65% to over 90% (the highest level of electrical efficiency for any electrical motor). These fans are even safer in view of the low voltage when operated with emcotherm convectors. They offer a winning combination of low energy consumption, reduced CO<sub>2</sub> emissions and operating costs, and low levels of noise without having to reduce the motor output. As the EC technology is brushless, savings can be made by eliminating the problem of worn brushes.

### emco klima products can help you become more efficient:

- > Significant contribution towards meeting current and future legal requirements for reducing primary energy consumption in buildings (EnEV 2009 and 2012)
- > EC fan: Highest level of electrical efficiency of any electrical motor, Reduced energy consumption, CO<sub>2</sub> emissions and operating costs

## cost-effective system developments

**Energy efficiency can be increased to an even greater extent by creating the perfect combination of air-conditioning technology products.** As a system specialist, emco klima is able to offer you a choice of perfect solutions. Choose your air-conditioning system from our four product groups:



- > **emcoair** (diffusers, ventilation system equipment, valves and controllers)
- > **emcotherm** (convectors for floors and walls)
- > **emcovent** (decentralised ventilation systems, PCM) and
- > **emcocool** (cooling ceilings, radiant ceiling panels, ceiling cooling convectors)

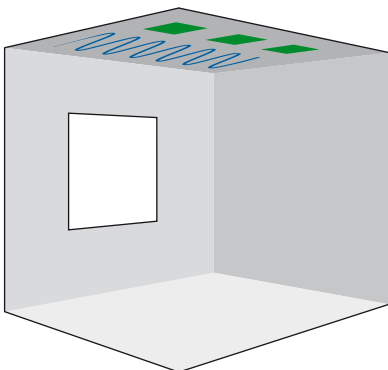
These product groups can be used to put together perfectly integrated solutions for almost all types of space, whatever the individual requirements may be. Apart from product quality, design diversity and energy efficiency, we also place particular emphasis on providing our project partners with expert assistance and long-term support right from the outset. Naturally, the new products presented in this brochure can also be combined to create efficient systems.

The following pages will help you discover a few examples of the intelligent systems emcoklima has to offer.



Example system 1

## emcoair DAL 358 diffuser + emcocool GK CUWT cooling ceiling



### Doubly effective

*This combined system offers you the following benefits:*

- > Basic cooling load coverage thanks to silent supply via the cooling ceiling
- > Delayed heating of rooms thanks to cooling of surrounding surfaces based on the principle of thermal mass
- > Reduced air volume flow required, as only minimum external air volume and peak cooling loads need to be covered
- > Reduced energy required for the transport and preparation of coolants

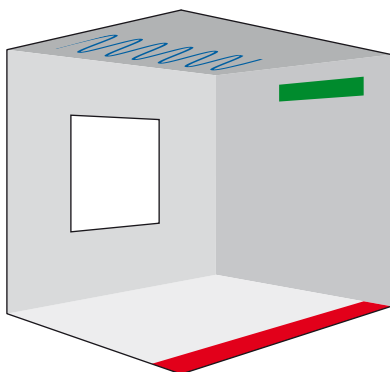
**We would also, of course, be only too pleased to arrange a system to suit your specific requirements. emco klima is a one-stop shop for everything you might need. Economical and safe.**





Example system 2

## emcoair SKG system air handling unit + emcotherm KQKM floor convector + emcocool GKWT cooling ceiling



**An ideal blend of efficiency and comfort**

***This combined system offers you the following benefits:***

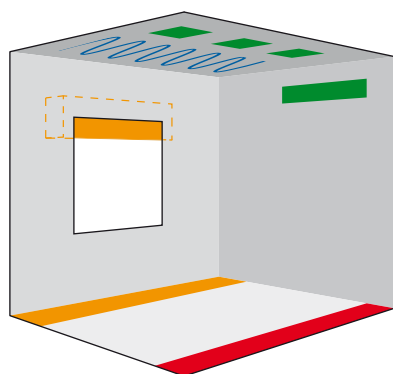
- > Basic cooling load coverage thanks to silent supply via the cooling ceiling
- > Delayed heating of rooms thanks to cooling of surrounding surfaces based on the principle of thermal mass
- > Decentralised external air supply with volume flows adjusted in line with requirements, as well as space-saving equipment and supply lines
- > Peak load coverage via emcotherm without restricting operation of the cooling ceiling
- > Ventilation and additional cooling based on real needs and room occupancy levels

Is this the type of all-round comfort you've been looking for? We would like to hear from you: given the wealth of possible combinations, emcklima products can satisfy almost any requirements.



Example system 3

## emcovent eco50, UZ and UZS models + emcocool GK cooling ceiling systems + emcotherm K, KQ and KQK floor convectors + emcoair KSD combined slot diffuser



### Good energy-saving potential

*This combined system offers you the following benefits:*

- > All components used interact with one another perfectly
- > Big energy savings by tailoring equipment to meet the needs of individual usage zones
- > Considerable improvements in comfort within the areas that are specifically being used thanks to local control and high levels of sound insulation
- > Specifically adapted for the local conditions and customer requirements
- > Low costs thanks to modular design and the exceptionally diverse components within the emco product range

What can we do for you? Our specialists can also plan your energy-efficient air-conditioning system for floors, walls and ceilings.



## electrical and energy-saving



### emcoair SKG electro system air handling unit

Equipped with an electrically-operated heat exchanger, the emcoair SKG electro is a version of the tried-and-tested emcoair SKG system air handling unit for ventilation and heating. The air heater is made of stainless steel ribbed heating rods with integrally moulded lamellae. Heat output can be tailored to meet requirements and save energy. TÜV Nord has certified that the emcoair SKG electro meets mechanical and electrical safety requirements, as laid down by the relevant European standards and directives.



#### Product benefits include:

- > Needs-driven, energy-saving operation
- > Safety-tested by TÜV
- > Flexible (can be used in false floors, suspended ceilings and visible locations)
- > Ready to plug in, so easy to install
- > Compact design (height 280 mm) saves space
- > Excellent retrofitting potential

## pleasant and durable

### emcoair SKG 1-3 system air handling unit featuring activated charcoal as a chemical adsorption filter

The chemical adsorption filter in the emcoair SKG 1-3 provides lasting protection by intercepting and eliminating a wide range of contaminants such as dust, germs, pollen, fungal spores, allergens or sulphur dioxide. This delivers noticeable improvements in terms of air quality and pollution control.

The filter uses various interception mechanisms to separate pollutants from the air. It contains two layers of activated charcoal (one treated, the other untreated). Even when faced with extreme levels of contamination, the filter is able to provide good interception rates.



#### Product benefits include:

- > Reliable interception of unhealthy and unpleasant air pollutants
- > Two-layer, activated charcoal design for long-lasting adsorption
- > There is no interference with the standard components that make up clean air
- > Rooms feel much more comfortable



*Product benefits include (temperature adjustment element):*

- > No cables required
- > Low investment costs, as no need for wiring and connection control work
- > Maintenance-free
- > Cost-effective

**highly energy-efficient**

## cost-effective and wireless



**emcoair LDI industrial diffuser with temperature adjustment via thermocouple**

**emcoair LUWIRO displacement flow diffuser with adjustment via thermocouple**

The emcoair LDI diffuser is an industrial swirl diffuser. It is perfect for the tougher air-conditioning (heating/cooling) requirements associated with high-ceilinged spaces. It can also be installed on its own, without a ceiling cover, but with a downward-facing air outlet.

The emcoair LUWIRO displacement flow diffuser is a column displacement flow diffuser for work and production areas. It provides the perfect solution where air is required for either heating (hanging version) or cooling applications.

On the version with the adjustment via thermocouple, the diffuser is adjusted in line with the changing temperature of incoming air. In addition, this completely maintenance-free solution is a highly cost-effective form of technology, as the adjustment via thermocouple replaces the adjusting motor and so (as far as installation is concerned) there is no need for the usual wiring and connection control work.





## powerful yet quiet

### *Product benefits include:*

- > Special version of the emcotherm KQKL floor convector for heating and cooling
- > Max. sound pressure level of 32 dB (A) in this version
- > Centralised primary air supply between 45 and 90 m<sup>3</sup>/h
- > Secondary air supply of 250 m<sup>3</sup>/h in this version (max. 500 m<sup>3</sup>/h)
- > Compliance with comfort criteria laid down by DIN EN 13779

### **emcotherm KQKT floor convector**

A secondary air-conditioning device for heating and cooling that was specifically designed for the “Bügelbauten” construction project at Berlin central station. A further development of the emcotherm KQKL floor convector, it offers a high cooling capacity at very low sound pressure levels. This has been achieved by using special versions of the outlet and fan unit, and by adopting optimised sound-insulation measures. Air conditioning is based on the principle of mixed-source ventilation, whilst ensuring compliance with the comfort criteria imposed by DIN EN 13779.

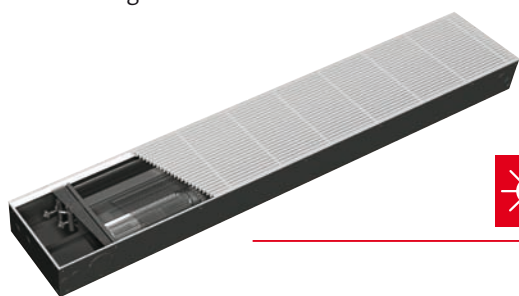




## infinitely variable and convenient

### emcotherm KQKM floor convector

The appeal of this floor convector is its combination of high cooling capacity with a compact design (only 150 mm high). An optional primary air connection enables you to benefit from cooling, heating and ventilation functions all in a single device. The floor convector works according to the principle of mixed-source ventilation, combining high performance with first-class levels of air-conditioning comfort.



#### Product benefits include:

- > Powerful system with very good acoustic properties
- > Available as an option: primary air connection for heating, cooling and ventilation functions within a single device
- > Infinitely adjustable control
- > Optimised for condensate-free cooling operation
- > Compact (height and width)
- > Suitable for use in false floors and/or screed floors

## centralised and economical

#### Product benefits include:

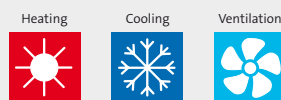
- > Centralised control via the building management system
- > Energy savings, as room temperatures are set centrally
- > Low installation costs
- > Only small effort for installation needed
- > Easy retrofitting

### LON® bus control technology for emcotherm convectors with EC technology

The new control concept has been specifically developed for the new generation of emcotherm convectors with EC technology.

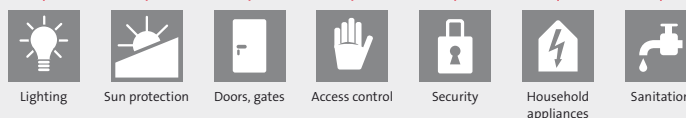
The option of having an LON® ADD-ON chip on the board makes it possible to establish a direct connection to the LON® network, thereby opening up all the various advantages of the building management system. Anyone choosing to link the convectors to the building management system will cut out much of the installation work normally associated with large-scale projects. All they will need is a power supply and a fieldbus connection. Convectors are adjusted and controlled centrally via the building management system and using the LON® bus. The adjustment and control operations can be targeted at individual devices, rooms or entire floors, paving the way for economical monitoring, energy-efficient control and cost-effective maintenance. In addition, the low-voltage operation (24 V technology) ensures excellent product safety.

Integrated emco klima applications:



LON®

Examples of other applications:



# hygienic and profitable

## emcovent eco50 window and sound-insulated ventilation module with hygiene certification

The eco50 has been awarded a hygiene certificate by the Institut für Lufthygiene (ILH – institute for hygienic air quality), demonstrating compliance with the relevant air quality requirements. All the components used, as well as the structural design of the ventilation module, satisfy the criteria laid down by the VDI 6022 directive (“Hygiene requirements for ventilation and air-conditioning systems and devices”).

Thanks to an F7 filter element and a class G3 coarse particulate air filter, rooms are kept free from contaminants and the device itself is kept clean. Any condensate which might occur is neatly captured by the stainless steel condensate trough and removed via an integrated drain.

The heat recovery function means the ventilation module is particularly efficient in terms of energy consumption and, by implication, cost. Consumption is also kept low by the EC radial fan, which ensures constant air flow, and by the free night cooling function.

### Product benefits include:

- > Hygienic, trouble-free operation
- > Compliance with VDI 6022
- > EC radial fan for constant air flow
- > Controlled, sound-insulated, filtered ventilation
- > Flexible installation, even for renovation projects

## highly energy-efficient





## innovative and low-maintenance

*Product benefits include:*

- > A range of sizes
- > Very good sound and heat-insulation properties
- > Low-maintenance
- > Suitable for new build and renovation projects
- > Easily incorporated into the structure of buildings

### **emcovent PCMeco decentralised ventilation system**

The emcovent PCMeco decentralised ventilation system has very good sound and heat-insulation properties. It is suitable for new build and renovation projects, and can be easily incorporated into the structure of buildings. Thanks to its controlled ventilation, the PCMeco makes a noticeable contribution to energy savings. Heat recovery also plays a significant role in improving energy efficiency.

The integrated PCM module is an active storage system for cooling purposes. It uses a supply of cold, external air to store cooling energy during night-time operation. The system also saves energy as a result of the free night cooling function.

**highly energy-efficient**





## compact and versatile

### **emcocool DKU ceiling cooling convector**

With its optimised heat exchanger and elements for circulating and feeding air, the DKU ceiling cooling convector is able to deliver very high cooling capacity. Thanks to its compact design (height 240 mm, width 285 mm, length 1200 mm), it can be integrated into almost any type of ceiling. The DKU sucks in warm room air and delivers draught-free cooled air back to the room.

As water is used for the transport medium, significantly less energy is required to remove heat compared to air-driven systems. An integrated junction box enables control of individual rooms, as well as central control via the building management system. When used in conjunction with a cooling ceiling, the DKU can be controlled with just one control element.



#### *Product benefits include:*

- > Cooling capacity between 260 and 680 W
- > Compact design supports integration into almost any type of ceiling
- > Lower energy consumption compared to air-driven systems
- > Choice of central or individual room control
- > Good retrofitting potential





## fresh and flexible

### **emcocool DKA ceiling cooling convector**

The DKA ceiling cooling convector is a combined diffuser and water-cooling system. The fresh-air connection guarantees an excellent supply and works with the exhaust-air system to control the level of air humidity within rooms. An internal induction system ensures a high cooling and heating capacity.

The DKA can be used both for new build projects and for renovating older buildings. In fact, it can be used anywhere where the required internal cooling load exceeds the cooling load provided by the primary ventilation system.

#### *Product benefits include:*

- > Available as a 2-pipe or 4-pipe system (heating and cooling)
- > Can be freely suspended or installed flush with the ceiling
- > Suitable for retrofitting and renovation projects
- > Low installation height (270 mm)
- > High specific cooling capacity



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