

**ETHERMA<sup>®</sup>**

EFFICIENT. ELECTRIC. HEATING.

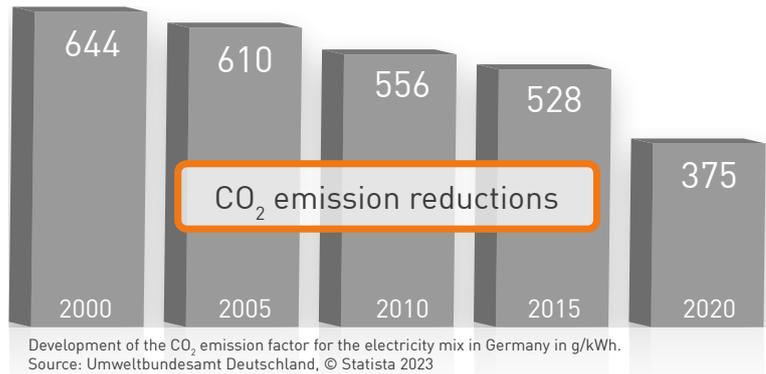
Warm your  
**WORKPLACE.**  
Not the earth.

# The MEGA-TREND ENERGY TRANSITION.

Need to **act**?  
We are the **solution**.

ETHERMA is here to help.

The energy transition is in full swing, partly due to political requirements. By 2030, at least 80 % of the gross electricity consumption in Germany must come from renewable energies. In Austria, that number is 100 %. The reduction of CO<sub>2</sub> emissions from fossil fuels is a part of that process. When it comes to sustainability, ETHERMA has been a pioneer since the 1980s: combined with environmentally friendly electricity, electric ETHERMA heating systems help lower CO<sub>2</sub> emissions.



## Required by law: minimum temperatures at the workplace.

In Germany and Austria, there must be a minimum temperature at workstations. This includes everything from offices to factories. These values are between 17 °C and 25 °C for normal or light workloads. If this is not possible with conventional technology, additional steps must be taken,

e.g. radiant heating, heating mats and the like. In this respect, too, the infrared radiant heat systems from ETHERMA are the optimal solution. Ideally in combination with solar energy in close proximity.

**With ETHERMA and environmentally friendly electricity, you can increase the proportion of renewable energies in the overall system while still using your existing heating system for the time being.**

## Move away from oil and gas, **step by step**.



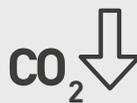
### Legal requirements

for more energy efficiency and a gradual exit from fossil fuels



### Newly upgraded oil/gas heating systems

may still operate for a certain amount of time



### Decarbonize your operations gradually

by installing infrared radiant heating systems from ETHERMA



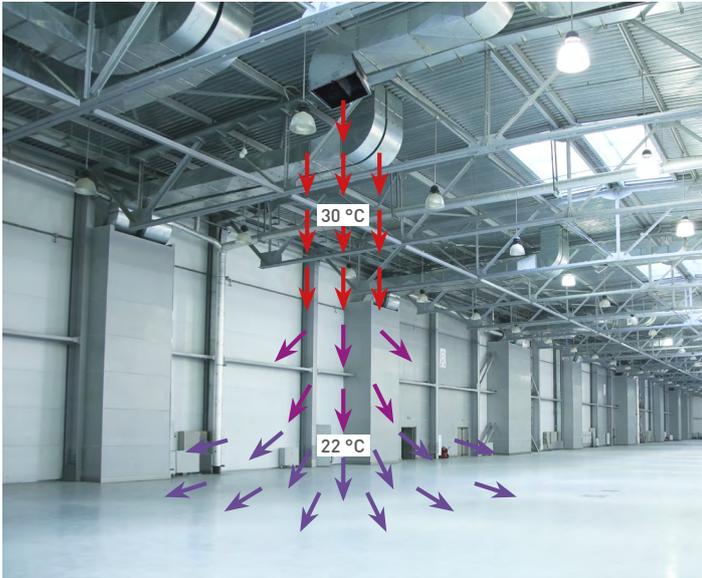
### Simultaneous reduction in energy consumption

through selective, efficient heating in the workplace



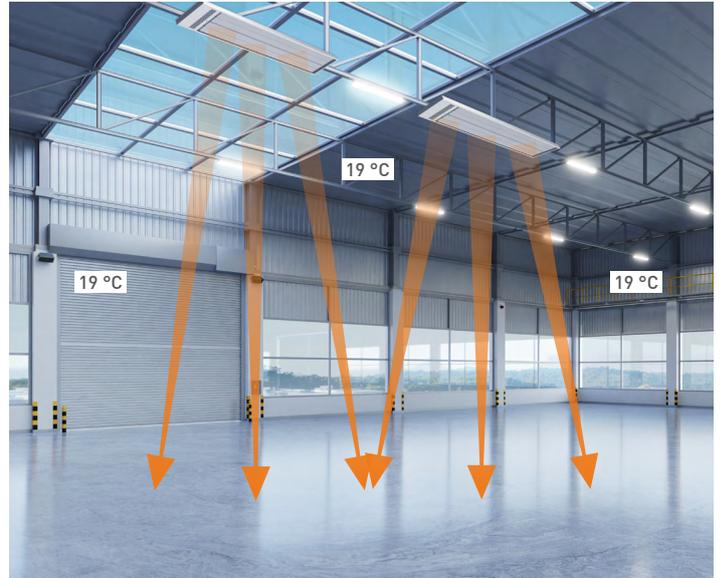
### Hybrid heating (oil/gas + ETHERMA)

reduces dependency on just one energy source and lowers the cost risk



## GAS CONVECTION HEATING

High energy consumption due to heat losses between the factory ceiling and the floor.



## INFRARED HEATING

Targeted heating of the workplaces while lowering the overall room temperature to 19 °C, for example.

# Heat more precisely and efficiently with infrared heating.

**With ETHERMA you can comply with all regulations while reducing the room air temperature and costs. Your employees feel completely comfortable thanks to pleasant radiant heat.**

### Noticeably more comfortable.

Conventional heating in industrial spaces typically uses convection. Hot air is blown from the ceiling to achieve comfortable warmth near the floor. Due to the heat loss to the floor, the temperature must be significantly higher, which means more energy expenditure. Added to this is the turbulence of dust and bacteria. Infrared heat is different: when infrared rays hit solid matter (e.g. bodies or walls), they are immediately heated. There is an immediate, pleasant feeling of warmth – comparable to a sunny winter day: if clouds cover the sun, you feel cold. As soon as the sun comes out, it is warm, although the ambient temperature has not changed.

### Scientifically proven.

The experiment by Bedford and Liese confirms: when the walls are warm, people feel the same level of comfort despite the lower room temperature. The subjectively felt temperature is 2 °C to 3 °C higher than actual. In this way, the room temperature can be reduced without affecting the sense of comfort. Every single degree of reduced room temperature amounts to

energy savings of approximately 6%. This means that infrared heat can save you up to 18% in energy consumption.

### Extra efficient.

Workplaces in industrial spaces and offices can be heated in a much more targeted manner with infrared than with conventional heating systems. Particularly in industrial settings, cold draughts through open gates prevent a comfortable working atmosphere. Infrared heat solves this problem, since the indoor climate is not created by warm air, but by heat radiation. This heat is not subject to change by draughts.

### Versatile and beneficial.

Thanks to selective infrared heat, you can warm up your workplace to the level you find comfortable. And only when people are present. Additional advantages: fast heating-up time, low investment costs, no maintenance, no utility room, no fuel storage, no complex line installation.

## The **benefits** of ETHERMA



Save up to 18% energy through targeted heating



More comfort at every workstation



The same level of comfort even with draughts from open doors or gates



Guaranteed supply



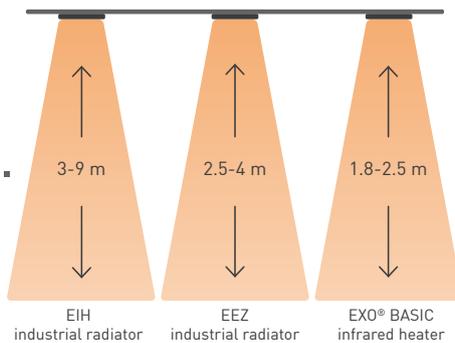
Reduction of CO<sub>2</sub> footprint



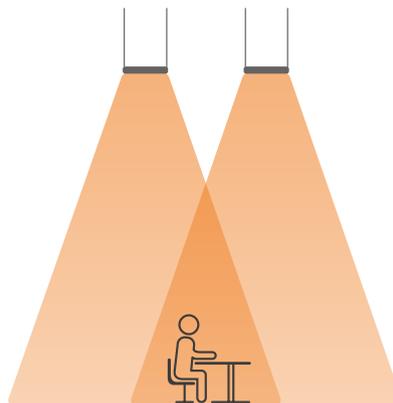
## Inefficient heating in industrial spaces is a thing of the past.

Often, heating the entirety of a large industrial space is not possible or economical.

ETHERMA has the perfect solution: spot or zone heating with infrared heating systems. In this way, you only heat the areas that are really necessary and your employees enjoy consistently comfortable, cosy warmth.

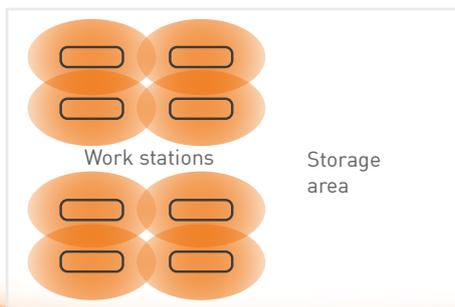


**The right heater for every room height**  
Depending on the height, furnishings and insulation of the building, ETHERMA offers ceiling heaters for room heights of up to 9 m, but also heaters for the wall. These represent efficient solutions for large rooms.



### Spot heating

- > For individual workstations in high spaces.
- > In the ideal situation, the thermal radiation comes from at least two directions (overlapping).
- > This results in higher heat intensity at a lower installation height.



### Zone heating

- > For larger areas in an industrial space.
- > The distance between the radiant heaters and to the outside walls should not be greater than half the installation height.
- > Ideal for large spaces that are divided into working and storage areas. Only the employee workstations are heated.

## In these **spaces**, ETHERMA ensures comfortable warmth.

### Case study

#### Van Velzen car repair shop, Uitgeest (NL)

ETHERMA EEZ infrared heaters with a high surface temperature are used here to heat the repair shop.

A total of 20 infrared heaters with 2 kW were installed in the upper area and four infrared heaters with 1.6 kW in the lower area. The system is controlled by two thermostats

that have a touch display and the option of remote control via a practical app, which makes heating even more convenient.



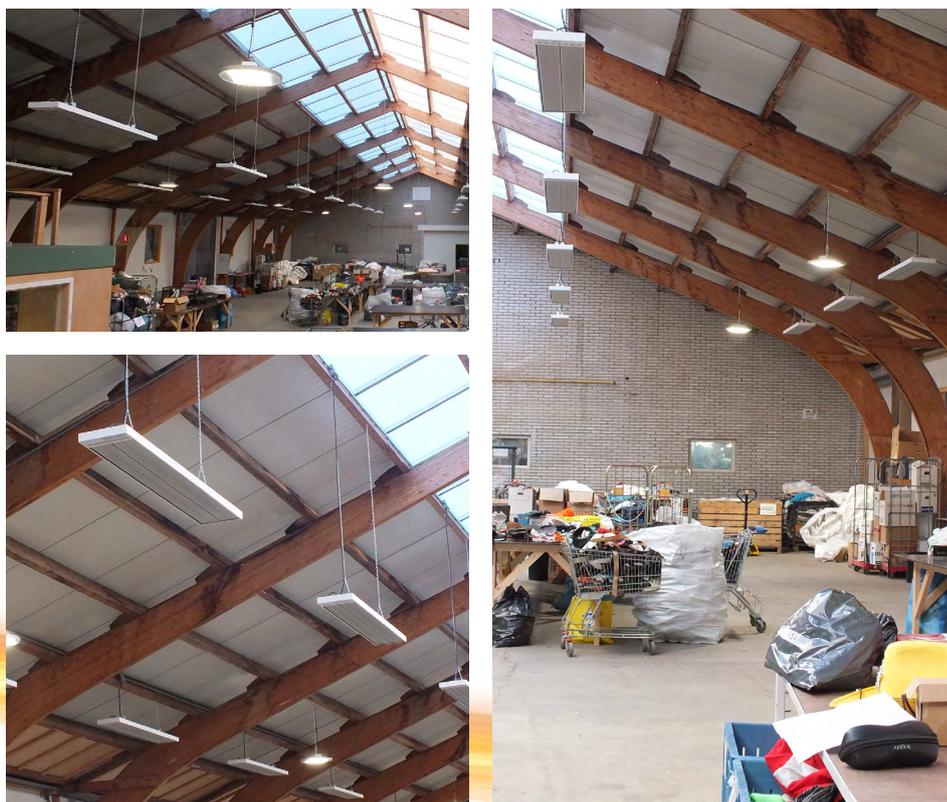
### Case study

#### Textile sorting centre, Steenwijk (NL)

In this regional textile sorting centre, the dust spread by the gas heating repeatedly led to health problems among the employees.

ETHERMA's solution was to install 28 EEZ-2000 infrared heaters with a total output of 56 kW. This keeps the room temperature comfortable for all employees without the dust circulating in the space.

In addition, ETHERMA designed both the control cabinet and a detailed installation drawing to ensure smooth and quick assembly.





It pays off:  
**20% LESS**  
 gas consumption.

Icon image

## Practical example: lowering the room temperature

Count on ETHERMA! And count on more energy efficiency and cost savings. Our example shows the savings that can result from lowering the room temperature in a production and logistics building, with added, simultaneous electrical ETHERMA

heating only for the actual work areas. The overall room temperature was reduced from 22 °C to around 18 °C. Gas consumption fell by about 20 %, in absolute figures around 39,080 kWh.

### Key project data

- > Total area: 1,552 m<sup>2</sup> (including 688 m<sup>2</sup> of production)
- > Construction period: 1985 – 1990
- > Height of the space: approx. 4.5 m
- > Production workstations: 12
- > Conversion 2021: six EEZ 800 W heaters
- > Heat requirement according to building type C: min. 210 W/m<sup>2</sup>

Simplified cost-benefit calculation	Austria	Germany
Savings by reducing gas consumption (- 39,080 kWh)	- € 2,736.00	- € 4,690.00
Additional electricity costs for infrared heating (+ 5,913.6 kWh)	+ € 1,419.00	+ € 1,774.00
Investment costs for infrared heating per year (service life 10 years)	+ € 360.00	+ € 360.00
<b>Net savings per year</b>	<b>- € 957.00</b>	<b>- € 2,556.00</b>

Average energy prices as of April 2023 excl. VAT. **AT:** gas: 7 ct/kWh, electricity: 24 ct/kWh; **DE:** gas: 12 ct/kWh, electricity: 30 ct/kWh

## Additional savings potential through solar power

Adding a photovoltaic system makes your heating even more efficient and sustainable.

Find out more at [industry.etherma.com](https://industry.etherma.com)



# Everything for the industrial space: INDUSTRIAL HEATERS by ETHERMA.



## ETHERMA EIH industrial heater

### Benefits of this product

- > Full area heating or zone heating
- > Hygienic room climate
- > Good warmth distribution
- > Robust design
- > Adjustable angle
- > Also for covered outdoor areas

CE

<b>Installation height</b>	3 m - 9 m
<b>Output</b>	3,000 W - 6,000 W
<b>Max. element temperature</b>	750 °C
<b>Protection class</b>	IP 44
<b>Wall installation</b>	✓*
<b>Ceiling installation</b>	✓
<b>Fixed connection</b>	✓

## ETHERMA EEZ industrial heater

### Benefits of this product

- > Full area heating or zone heating
- > Hygienic room climate
- > Surface structure optimises radiation
- > Also for covered outdoor areas

CE

<b>Installation height</b>	2.5 m - 4 m
<b>Output</b>	800 W - 3,600 W
<b>Max. element temperature</b>	340 °C
<b>Protection class</b>	IP 44
<b>Wall installation</b>	✓*
<b>Ceiling installation</b>	✓
<b>Fixed connection</b>	✓

## ETHERMA EXO<sup>®</sup> BASIC infrared heater

### Benefits of this product

- > Zone heating
- > Hygienic room climate
- > Robust design
- > Sleek design
- > Also for outdoor use

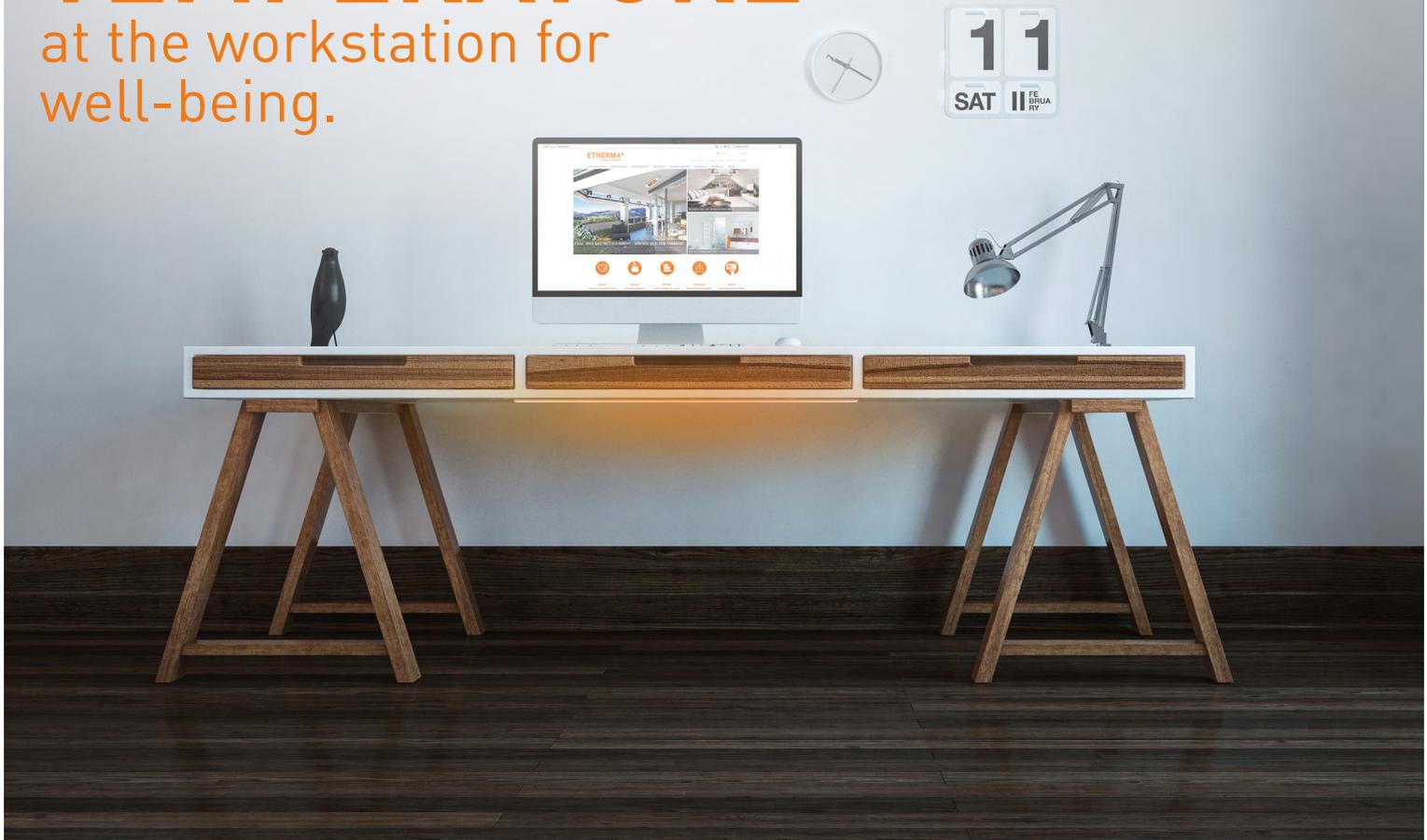
CE

<b>Installation height</b>	1.8 m - 2.5 m
<b>Output</b>	1,800 W
<b>Max. element temperature</b>	800 °C
<b>Protection class</b>	IP 65
<b>Wall installation</b>	✓
<b>Ceiling installation</b>	✓
<b>Fixed connection</b>	✓

\*Requires separate accessory

# THE RIGHT TEMPERATURE

at the workstation for well-being.



## A warm recommendation: **infrared panels** by ETHERMA.

### **Microclimates are crucial to well-being at work.**

A microclimate is the totality of all environmental influences in a room that affect the heat exchange between people and the environment.

In addition to humidity and ventilation, the room temperature is THE decisive criterion. If the workplace is at a comfortable temperature, the body does not have to make any effort to maintain its normal temperature of approx. 37 °C.

This is where ETHERMA heating systems come in. They provide more customised and efficient heating than conventional convection heaters, which unnecessarily heat up the entire room and also whirl up dust particles and bacteria.

### **Regulate heat individually instead of wasting energy.**

ETHERMA has the right heating systems for more comfort and cosiness, not only for industrial spaces, but also for offices and other rooms. In open-plan offices, at reception or in exhibition rooms, it is difficult to maintain a constant, comfortable temperature for all employees.

With the efficient LAVA® infrared heating panels from ETHERMA, the temperatures at the various workplaces can be easily adjusted individually.

This is an unbeatable advantage in times of flexible work, when not all employees are always present. In addition, the general room temperature can be lowered, saving energy and costs.

### **More comfort and efficiency, also in the home office.**

Our practical LAVA® infrared heating panels also guarantee the selective, cost-conscious use of energy when working at home.

Because it is not necessary to keep all the rooms in the entire house at a specific temperature. And it is neither sensible nor economical to continuously heat a study room that is not used every day to 23 °C, for example.

With the ETHERMA infrared heaters, you can feel the pleasant radiant heat within a few minutes – and only when you are actually at the workplace.

# In these **offices**, ETHERMA ensures comfortable warmth.

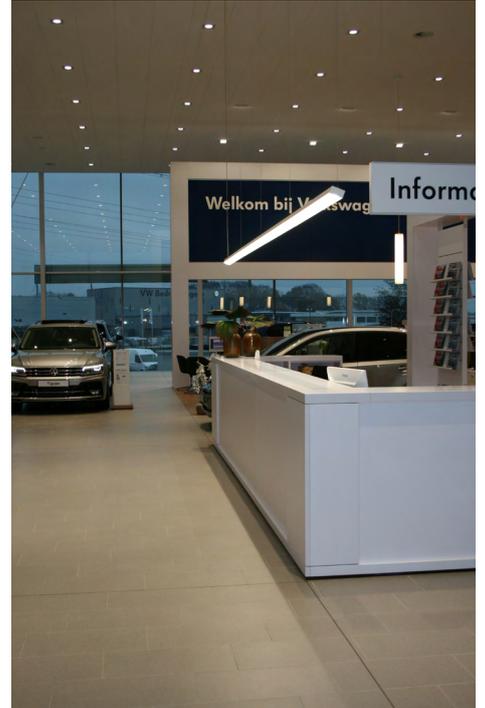
## Case study

### Huiskes-Kokkeler Autogroep (NL)

The Huiskes-Kokkeler Autogroep is a group of car dealerships with a total of around 250 employees.

LAVA® DESK infrared heaters from ETHERMA are used to heat workstations near external doors and open areas in showrooms. The heaters were installed on the underside of the desks.

The comfort of the employees is increased by selective and customised heating of the workstations. At the same time, energy costs are reduced because it is no longer necessary to heat the entire premises.



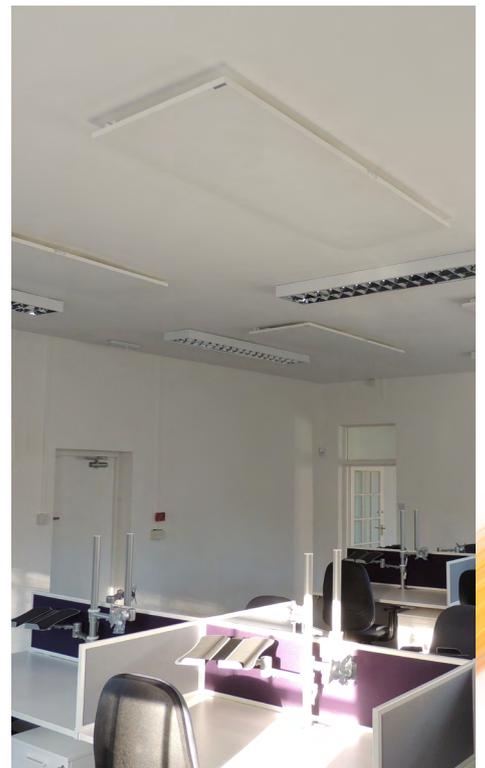
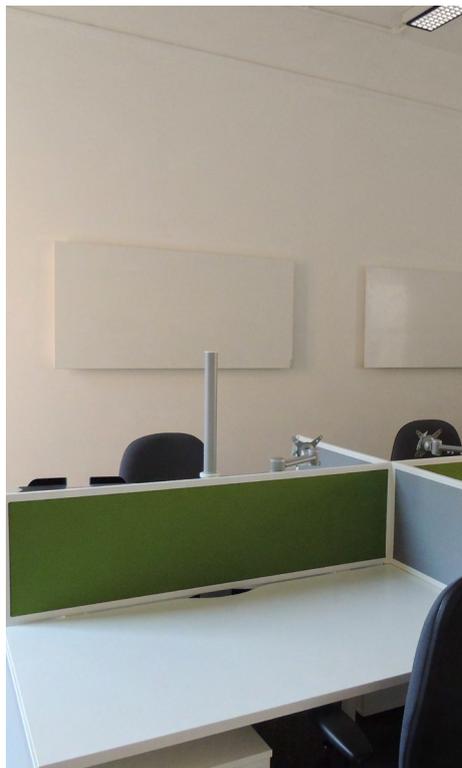
## Case study

### Office space (UK)

As a condition of a multi-year lease, the new tenant asked the landlord to replace the old convection heaters and night storage heaters with future-oriented, efficient heating.

A solution with more heating comfort and lower operating costs was required. The new heating system also had to be flexible in terms of installation location to leave more space for desks and shelves.

The old heaters were replaced by LAVA® STEEL and LAVA® BASIC-DM infrared heating panels. Each room is treated as a separate zone and controlled by a programmable thermostat. The rental company also benefits from the long service life and does not need to worry about maintenance or service costs.



# Savings potential through **LOWERING** the room temperature.



## Study confirms: **30% less total energy requirement.**

### The **benefits** of ETHERMA.



**Low running costs:**  
starting at 45 euros  
per workstation and year



**Especially accurate  
and efficient heating  
of office workplaces**

#### **Thermal comfort, easily within reach.**

A numerical study showed that the total energy requirement for an eight-person office in an older building can be reduced by 30 % by lowering the target room temperature from 22 °C to 18 °C – while at the same time using selective electrical heating for the work areas. In addition, according to a study by the TU Dresden,

thermal comfort was already achieved with an infrared heater with a heat output of approx. 120 W per workstation – despite the reduced room temperature. The pleasing result: the operating costs are just 45 euros per workstation and per year.\*

#### Potential savings depending on building type and office size

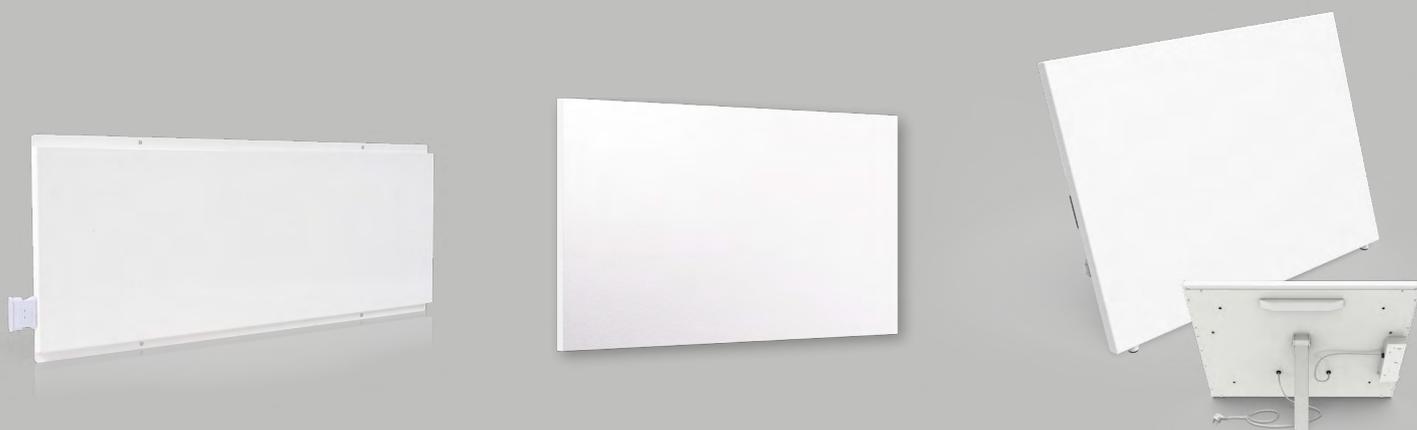
Version	Savings potential per day**
Two-person office, old building, radiator under the window, ventilation via window and outside air vents	4.36 kWh
Two-person office, new building as per EnEv09, radiator under the window, window ventilation at intervals	1.6 kWh
Eight-person office, old building, radiator under the window, ventilation via window and outside air vents	12.38 kWh

\*Assumption: October-April heating period, 22 heating days per month, one-shift operation, eight hour heating time per shift, electricity price: 30 ct/kWh (excl. VAT), test conditions: climatic chamber with a room temperature of 18 °C

\*\*Pure savings potential by lowering the target temperature of conventional heating, without additional electric heating

# Heating quickly and individually: LAVA® PANELS

for the office and home office.



## LAVA® DESK 2.0

The practical table infrared heater.

### Benefits of this product

- > Customised and comfortable microclimate at the desk
- > Optional timer function and three-step regulation
- > No moving parts, i.e. absolutely silent
- > Straightforward installation
- > Maintenance-free
- > Made in Austria

## LAVA® BASIC-DM

Infrared heating for ceilings and walls.

### Benefits of this product

- > Very low investment costs
- > Simple and flexible installation on the ceiling and wall, without any demolition work
- > Needs-based heating
- > Hardly any heat loss and maximum radiation
- > Modern, frameless design
- > Ideal for allergy sufferers (no dust turbulence)
- > Maintenance-free
- > Made in Austria

## LAVA® STAND

The mobile infrared heater.

### Benefits of this product

- > Flexible positioning
- > Integrated electronic control on the device
- > Targeted heat radiation
- > Modern, frameless design
- > Integrated fold-out stand
- > Carrying handle on the device for easy transport
- > Maintenance-free
- > Made in Austria

	CE	GS CE	CE
<b>Device/ installation depth</b>	15 mm	22/52 mm	22 mm
<b>Output</b>	80 W	350 W - 1,500 W	300 W, 450 W
<b>Surface temperature</b>	max. 70 °C	max. 120 °C	max. 95 °C
<b>Wall installation</b>	✓	✓	Optional wall installation set
<b>Ceiling installation</b>	Installation on underside of desk	✓	-
<b>Connection</b>	Schuko plug	Fixed connection	Schuko plug

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# LAVA® DESK TABLE INFRARED HEATER

Customised heat for every workstation.



[industry.etherma.com](http://industry.etherma.com)

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