

# Protecting the Environment - Saving Energy

Innovative Schwank Technology:  
Economical Heat and Active Reduction  
of CO<sub>2</sub>



**Schwank**  
INNOVATIVE HEATING SOLUTIONS



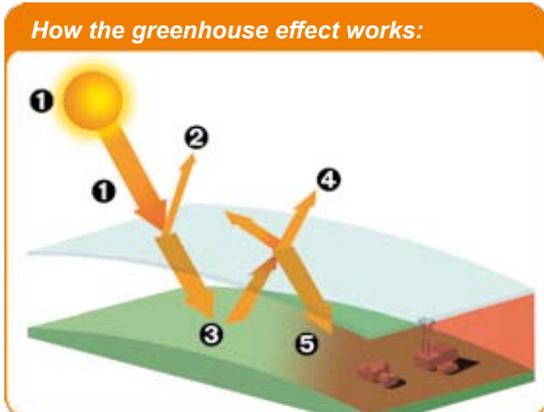
# Schwank reduces your CO<sub>2</sub> output thanks to energy efficiency

Heating accounts for about one third of all CO<sub>2</sub> emissions. Reducing the energy requirements of heating systems by increasing their efficiency is thus decisive in countering the consequences of global warming. This brochure shows how you can actively help to protect our environment and save money by using innovative infrared technology from Schwank.

## CO<sub>2</sub> and the Greenhouse Effect

Carbon dioxide [CO<sub>2</sub>] is a natural component of the atmosphere. CO<sub>2</sub> keeps the radiation phenomena on our planet in balance. It is a so-called greenhouse gas, permeable for solar radiation ①, and helps to prevent the thermal radiation ③ reflected by the surface of the Earth ② being sent back to space ④

How the greenhouse effect works:



completely. This has the effect of warming the Earth just like the interior of a greenhouse ⑤ thus making the planet habitable. When additional CO<sub>2</sub> is released into the atmosphere, the heating effect is reinforced, and the natural conditions become imbalanced. It is an accepted fact that global warming

of recent decades is linked to the increase in greenhouse gases. For this reason, an efficient use of energy resources and the reduction of CO<sub>2</sub> emissions are essential for sustainable economic activity.

## Schwank technology means less CO<sub>2</sub>

Schwank technology borrows from the sun. Modern, decentralised infrared heaters are used to heat halls and other large enclosed spaces in accordance with the requirements. Infrared radiation warms the occupied interiors without directly raising the temperature of the air. Wasteful and expensive accumulations of hot air beneath buildings' ceilings are prevented. A cosy interior climate is established thanks to the additional radiation temperature while the air temperature lies approx. 3°C below the desired room temperature. A decrease of one degree Celsius in the air temperature leads to an energy saving of 7%, and equates to an energy saving of over 20%.

$$t_E = \frac{t_L + t_S}{2}$$

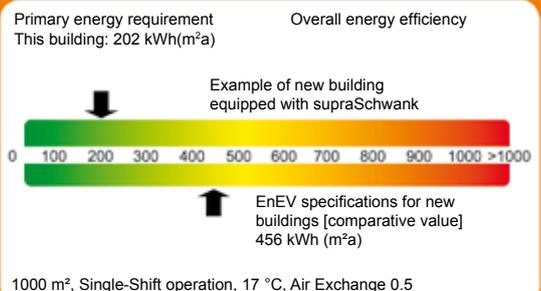
Transmission and ventilation losses are also drastically reduced. In addition to uniform overall space heating, this technology makes it possible to heat different workplaces and areas specifically or to create different temperature zones within a building. As a result: Schwank infrared heaters cut CO<sub>2</sub> emissions by up to 50%, at the same time reducing energy consumption by up to 50%.

## Energy Performance in Buildings Directive

With the Energy in Buildings Directive (EPBD) Performance, the Government is aiming to reduce the amount of energy used to heat buildings, and thus to cut CO<sub>2</sub> emissions. With this new directive it is the first time that standards are established for the comprehensive evaluation of the energy requirements of buildings for heating, cooling, lighting, ventilation and water heating as well as primary energy requirements.

An energy certificate will become mandatory for non-residential buildings, i.e., commercial and industrial buildings. Schwank infrared heaters with luminous and radiant tube heaters perform superbly when it comes to the energy balance of buildings applying the new regulations. The principle of infrared heaters keeps the thermal heat losses of buildings low. There are no distribution losses, as is the case with central heating systems. The auxiliary energy [electricity] required by the heaters is minimal. The excellent energy efficiency of Schwank luminous and radiant tube heaters from Schwank is an additional bonus.

## Overall evaluation



Extract from the new energy certificate: This figure compares and contrasts the EnEV specifications for new buildings against the significantly better performance of a building heated with supraSchwank.

# Schwank Protects the Environment - and Cuts Costs

## Innovative Schwank Technologies

The energy efficiency presented by Schwank infrared heaters is unparalleled worldwide. The higher the radiation ratio [radiation factor] of a device, the lower the CO<sub>2</sub> emissions, thus leading to higher energy savings.

The special expertise deployed in the Schwank heaters comprises a patented, specially-perforated burner plates. The luminous heater is furthermore characterised by the patented combined principle of the Schwank mixing chamber with integrated utilisation of

**CO<sub>2</sub> emission cut by more than 5,550 tonnes!**  
[Please adapt to local references]

*“At the BMW plant in Swindon, Wiltshire an outdated centralised boiler system was replaced with over 400 Schwank luminous and tube high efficiency radiant heaters. These heaters were configured in over 50 individual heating zones.*

*Energy savings amounted to 47%, meaning the ROI was reached earlier than forecast - between 2 and 3 years.”*

Philip Plowman, Energy & Contracts Manager, BMW UK, stated that a reduction of more than 5,500 tonnes of CO<sub>2</sub> was achieved in the first year. This equates to a little over 2,000 Olympic size swimming pools.

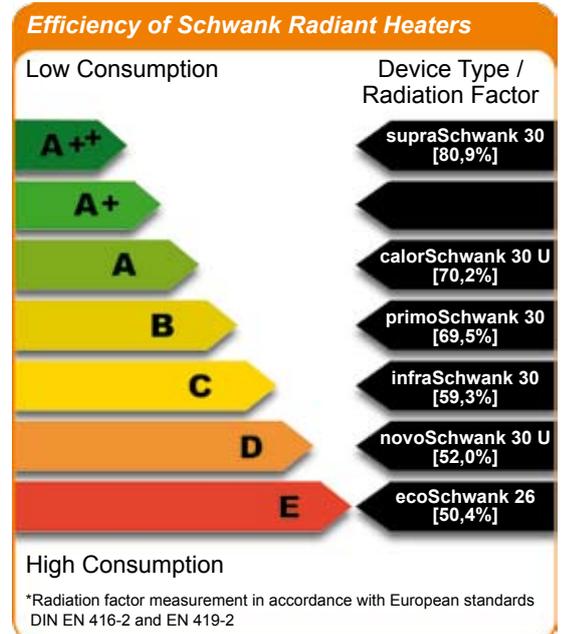


waste gas heat to boost the performance of the device. Optimised materials and production processes ensure the highest possible quality. The supraSchwank series achieves a radiation factor between 76,3% and 80,9%. [Radiation factor measurement in accordance with European standard DIN EN 419-2]

In addition to the burner plate, the centrepiece of all Schwank radiant tube heaters is the innovative and energy-saving low-noise burner technology [Whisper Jet]. This ensures an excellent energy distribution on the floor surface, and consequently exceptional energy efficiency. Reflectors with high-quality insulation reduce convection and radiation losses towards the ceiling. The calorSchwank series sets international standards with radiation factors between 65,3% and 70,6%. [Radiation factor measurement in accordance with European standard DIN EN 416-2]

## System Comparisons

The radiation factor presented by infrared heaters is the parameter used to calculate energy consumption for heating large enclosed spaces: the higher this factor, the greater the CO<sub>2</sub> and energy savings, and thus the lower the operating costs. Highly efficient devices, e.g. supraSchwank, help save substantial amounts of resources and costs. The chart below serves as a guide for your purchase decision. It presents the energy efficiency of the various Schwank heaters. High energy efficiency is required to reduce the overall costs, that is to say the investment and the operating costs. The purchase of the powerful supraSchwank device quickly pays off as a result of the drastic reduction in energy costs – for you and for the environment.



# Schwank combines innovation and tradition

## Your Contribution to the Environment

Think about your heating system now. The new energy certificate makes this necessary. And it often makes sense to review older systems even if they are working fine. Schwank energy experts will provide you with system-neutral advice in this respect. On the basis of key parameters, your precise CO<sub>2</sub> and energy savings can be calculated. Do a free energy check, and save energy, CO<sub>2</sub> and operating costs at the same time.

## Customer Confidence and Experience

Our references speak for themselves: satisfied customers such as Amazon, BMW, UPS, VW, Tchibo, Bosch, Porsche, Aventis, DHL, Nestlé, TNT, Siemens and many more already trust our technology. As the worldwide market leader, we are ideally positioned with 12 wholly owned subsidiaries and 30 international distribution partners around the world.



Distributed in over 40 countries with 12 wholly owned subsidiaries

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