



## Press release

### **Sustainable living: using the power of the sun**

Automatic sun shading helps to save energy for heat, light and cooling

**The lights and the heating are on – the atmosphere in the room has to be perfect if we want to be comfortable in our four walls. So it comes as no surprise to hear that some 36 percent of Germany's energy consumption goes on the building<sup>1</sup>. However, it is possible to be far more energy efficient. Thanks to smart home automation, a pleasant room climate can be achieved while saving energy for heating and electricity at the same time. Automatic sun shading plays no small part in this.**

"Those who think that internal and external sun shading products with intelligent controls are only used for shading and as pretty design elements underestimate the many different benefits they offer. Because with the individual sunlight management, they make a measurable contribution to energy efficiency in buildings," explains Ulrich Lang, expert in building physics and energy efficiency at Warema, the European market leader for technical sun shading products. A current<sup>2</sup> study by the industry association Industrievereinigung Rollladen-Sonnenschutz-Automation (IVRSA) confirms that with the right combination of window and automatic sun shading, up to 50 percent of the energy required for cooling and up to 30 percent of that required for heating can be saved (depending on the building) in comparison with windows without sun shading.

#### **Use solar energy as required**

This is how it works: in winter, the sun's rays are guided into rooms during the day to warm them up. By night, the air pockets between tightly closing external sun shading systems, such as roller shutters, and the windows cause the heat insulation to warm up so that the heat is unable to escape to the outside. In summer, the sun shading system prevents the rooms from heating up. External sun shading systems are particularly efficient here because they catch the sun's rays before they get to the window. By night, external venetian blinds, for instance, allow the windows to be opened for cooling while at the same time providing visual privacy.

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<sup>1</sup> dena building report Kompakt 2018

<sup>2</sup> Project study on the energetic year-round balance of windows with closures as part of renovations carried out by Prof. Dr. Hauser GmbH (Kassel) under the management of Dr. Stephan Schlitzberger on behalf of the industry association Industrievereinigung Rollladen-Sonnenschutz-Automation (IVRSA), 2018



Automatic control systems such as the bi-directional remote system WMS by Warema, which can also be operated by an app, are key for optimum energy savings. That's because the automatic system is more sensitive and responds more quickly than a person will. By the time the occupants of a room find that they are getting too warm, it is already too late to use the sun shading system to prevent the room from heating up further. However, the automatic sun shading system responds independently and promptly to changes in temperature and climate, ensuring there is always a feel-good ambience with the appropriate use of solar energy. Another advantage is that the occupants do not have to be at home in order to provide the right shading themselves – everything works automatically.

### **Capture or reflect the sun's rays**

And finally, internal sun shading is also part of an efficient system. A light, highly reflective curtain such as a roller blind or pleated blinds will brighten the room pleasantly and without dazzle while reflecting the sun's rays back to the outside. Compared with glazing without sun shading, the heat from the sun can be reduced by up to 60 percent. By the same token, a dark curtain will support the heating in winter since it absorbs the sun's rays and so increases the heat input from the sun. However, it also allows less daylight into the room.

"What is not so well known, and perhaps a little surprising, is that electricity for lighting can also be saved as well as the energy for heating and cooling. By our calculations, sun shading with slats in combination with a good automatic control can reduce the energy required for artificial light by at least 20 percent. Slat tracking opens the slat angles so far that no direct sun is able to enter the room. At the same time, the partially opened slats allow the maximum diffuse daylight into the room. Which means that much less artificial light is required for lighting," says Ulrich Lang.



## **Two nuclear power stations less**

An automatic sun shading control system can be used to save heat and electricity all year round. If every single home in Germany were fitted with the perfect combination of windows and automatic sun shading, the annual savings for heating energy would be comparable with the annual energy production of about two medium-sized nuclear power stations. It would also prevent up to six million tonnes of CO<sub>2</sub> emissions in comparison with buildings without automatic sun shading, according to the findings of the IVRSA study.

10.09.2018

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