

With PLEXIGLAS® molding compounds, the light goes where it's needed

Workplaces need uniform, pleasant light. This is ensured by a diffuser made of PLEXIGLAS® Satinice df23 in the re-designed LED lamp heads from Jakob MAUL GmbH.

“The quality of light in a workplace has a distinct influence on the motivation and performance curve,” says Uwe Hartmann, development engineer at Jakob MAUL GmbH. In the worst case, improper lighting or a lack of light can even lead to health impairments. “Therefore, the most important thing for a desk luminaire is that the light provides pleasant visibility – for instance, not cause glare or cast annoying shadows,” explains Hartmann.

Energy-efficient office lighting

Particularly when a company needs a lot of lights, however, the energy efficiency of the office lighting also plays an increasingly important role. Jakob MAUL GmbH in Bad König has therefore added LED luminaires to its product range. “The advantages of these modern lighting systems are obvious,” says Hartmann. “They are far superior to conventional lighting in regard to light yield, efficiency, and service life, and, thanks to their smaller size, permit a slim design.” However, when LEDs are used, there are also increased requirements upon the lamp materials. For example, they require better thermal management than other types of lighting. In addition, they depend on a light-diffusing element, which distributes their punctiform light in an optimal way. “LEDs alone do not create pleasant lighting,” says Hartmann.

In the latest generation of LED table luminaires, Jakob MAUL GmbH has therefore not only adapted the cooling ribs, but for the first time is also using a diffuser cover. It is installed in front of the LEDs and, combined with a reflector, provides a greater surface of illumination. “Overlapping shadows are thus avoided; the edge of the illuminated area is not demarcated so abruptly, and the infinitely adjustable color temperature is rendered accurately,” explains Hartmann.

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High diffusion and transmittance

The company produces the diffuser cover sheet in an injection-molding process using the light-diffusing molding compound PLEXIGLAS® Satinice df23. This is a special molding compound from Evonik that is particularly well adapted to the requirements of lighting systems. Because light has different functions: It not only provides proper lighting for offices, industrial halls, or streets; it also creates atmosphere or sets the scene for various objects. “Every function that light can perform places its own requirements upon the light-diffusing or guiding material,” explains René Kogler, product manager at Evonik. “Therefore, we have developed separate formulations of our branded polymethyl methacrylate (PMMA) for the different requirements.”

Combining function with design

Among them, Jakob MAUL GmbH also found the right product: “We decided upon PLEXIGLAS® Satinice df23 because the material offers us the optimal light-diffusing effect along with low transmittance loss,” explains Hartmann. “It is only through this combination that we are able to provide efficient workplace lighting.” The re-designed lamp head, which is used in all the models of the MAUL series “Made in Germany” is a convincing solution; including its design, as decided by the jury of the German Design Award 2018: A model with the new lamphead, the MAULoptimus, has been nominated for the prestigious design prize.



Caption:

The re-designed lamp head, which is used in all the models of the MAUL series “Made in Germany” has a diffuser cover sheet made of PLEXIGLAS® Satinice (photo: Maul).



Caption:

It is only through the combination of optimal light-diffusing effect along with low transmittance loss that provides efficient workplace lighting. (photo: Maul)

Evonik is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

Company information

Evonik is one of the world leaders in specialty chemicals. The focus on more specialty businesses, customer-orientated innovative prowess and a trustful and performance-oriented corporate culture form the heart of Evonik's corporate strategy. They are the lever for profitable growth and a sustained increase in the value of the company. Evonik benefits specifically from its customer proximity and leading market positions. Evonik is active in over 100 countries around the world with more than 36,000 employees. In fiscal 2016, the enterprise generated sales of around €12.7 billion and an operating profit (adjusted EBITDA) of about €2.165 billion.

Evonik's international activities are organized into six regions. The Asia Pacific North region consists of China, Taiwan, Japan & Korea, and is headquartered in Shanghai. Sales in Asia Pacific North reached 1,947 million euros in 2016. Evonik regards China as one of the driving forces of the global economy and we consequently endeavor to grow our business here. The company now employs about 3,000 employees and has in total of 10 production sites in China.

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