

The Blue Angel

Companies write environmental history



Bright minds at Carus go for LED technology

Most consumers know it: LEDs consume far less electricity than conventional lamps. Yet only a few know that these modern lamps differ significantly in environmental performance and quality. The Marburg-based high-tech firm of Carus which ranks among the market leaders in the manufacturing of sustainable LEDs meets the highest environmental and social standards in production: an innovative structural concept as well as thin-walled aluminium and plastic components help to reduce the material usage by 60 percent. In addition, doing without adhesives and, all in all, using only a few materials increases recyclability enormously. Since 2014, the German Federal Ministry for the Environment has promoted the material-efficient manufacturing of LEDs by providing funds from the Environment Innovation Programme. And on top of that, a Carus product has now been awarded the first Blue Angel eco-label for LED Lamps.

First Blue Angel for LED lamps

The LED lamps made by the Marburg company have been the only LED lamps to be awarded the Blue Angel eco-label - as of 2016. They meet the Blue Angel's stringent criteria for lamps (RAL-UZ 151). These

criteria require not only high energy efficiency and excellent light quality but, for example, also high luminosity and long lifetime as well as low electro-magnetic fields. All lamp data must be reliably verified by tests and measurements. The Blue Angel eco-label is awarded to only the best goods or services of a product group.

Carus sets a mark for sustainability

The lamp manufacturer's strategy is obvious: By placing innovations "Made in Germany" on the market that are manufactured with a view to conserving resources the technology firm focuses on a sustainable business orientation. Carus LED lamps even provide double benefit to the climate: LED lamps offer energy savings of 85 percent compared with conventional incandescent lamps. What makes this energy-saving potential possible is the direct conversion of electric energy into light instead of heat. These high-tech lamps may be considered as real climate protectors and that is because they are exclusively made in Germany.

Hence, there are no long sea transports from overseas and, hence, there is no CO₂-intensive container ship operation needed.

Another unique selling point: Carus LED lamps are about 60 percent lighter than



Production site of Seidel und Carus in Fronhausen near Marburg. Carus has manufactured LED illuminants under the roof of these factory buildings since 2014.

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other LED lamps because innovative production processes enable Carus to use smaller amounts of the different constituents. This shows in the weight of the lamps but it also bears another positive environmental effect: Less natural resources and less raw materials are needed and the greenhouse gases released during manufacture are reduced. By the time the lamps have exceeded their half life (they last 25 times longer than ordinary bulbs) they can be easily recycled. This is possible because neither adhesives nor composite materials are used in the manufacturing of lamps. The lamps can be easily taken apart and then disposed of. The annual savings in the production processes amount to almost 260 metric tons of aluminium, 40 metric tons of copper, 20 metric tons of tin and 10 metric tons of plastics and adhesives.

What counts for Carus is climate protection

In 2014, Dr Andreas Ritzenhoff, owner of Carus GmbH & Co. KG., was awarded the title of "Entrepreneur of the Year" by the Harvard Business Club of Germany for his pioneering work in the manufacturing of LED products. In addition, in 2016, the company was awarded the Rudolf Diesel Medal - Germany's oldest innovation prize - for the company's innovative, ecological and fully automatic production of LEDs in Germany. In 2012, Carus - whose predecessor had been the long-established Seidel company - decides to enter into the development and production of retrofit LED lamps. A short time later the company finds a way to produce LED lamps in a more environmentally friendly way than with traditional methods. The idea behind it was the motivation to start something totally new. And so it was - the company achieved its goal. In a short time, the Hessian company

develops a sustainable product range. It was even the company's first LED lamp that demonstrated a high degree of resource efficiency. A consequent automation of technical processes enables Carus to offer an ever-growing range of environmentally friendly quality products „Made in Germany“. By entering into the LED technology the young company has developed for itself a wide spectrum of new innovation opportunities.



Dr Andreas Ritzenhoff, owner of Carus GmbH & Co. KG, on the occasion of the award ceremony with German Federal Minister for the Environment Barbara Hendricks

Links:

[Blue Angel website](#)

[YouTube-video „Materialeffiziente Produktion von LED-Lampen“](#)

[A short description of the Environment Innovation Programme](#)

[Carus website](#)

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