

# ERCO, The Light Factory; Lüdenscheid, Germany

Developing a New Reflector Generation Using LightTools

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~Dr. Matthias Bremerich, Chief Illumination Engineer, ERCO

## ERCO

### The Goal

ERCO, headquartered in Lüdenscheid, Germany, specializes in producing engineering hardware and software for architectural lighting. ERCO's indoor luminaires, outdoor luminaires, and lighting control systems comprise an extensive range of lighting equipment for architectural lighting solutions. ERCO set out to create a breakthrough reflector design that would allow easy and flexible adaptations to be made to a variety of architectural lighting applications, including narrow spot, flood, and accent lighting.

ERCO used LightTools® to create the innovative Spherolit reflectors, which are distinguished from conventional reflectors by their three-dimensional spherical curvature that can be shaped for specific light distributions.

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### The Design

The Spherolit technology supplies various light distributions from a series of reflectors with identical footprints.

Accurate source modeling was crucial for the development of the Spherolit reflectors. In LightTools, ERCO defined a source model that shows all details of measurements of an HIT (metal halide) lamp in the near field and far field.

The symmetric and asymmetric light distributions were achieved by a dedicated layout of cushion-shaped reflector facets. Parametric design and macro programming in LightTools made this possible.

### The Results

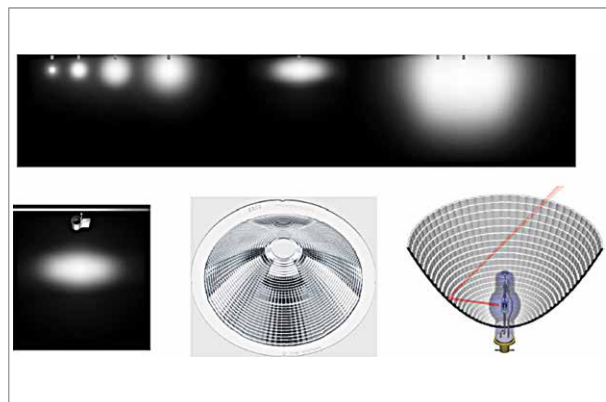
The breakthrough and exclusive technology in ERCO's Spherolit reflectors presents an ideal light quality and offers many practical advantages to lighting designers and users. The Spherolit reflectors are now successfully used in several new product lines. ERCO has effectively invented an entirely new, central element of lighting technology.

“Developing this generation of Spherolit products was a tough challenge,” said Dr. Bremerich. “Without LightTools software by Synopsys, we would have had a lot more work, effort and money to reach this important goal. ERCO is a highly successful company in the area of developing, building and trading luminaires, and we are quite happy to be able to rely on LightTools for the design of innovative new products.

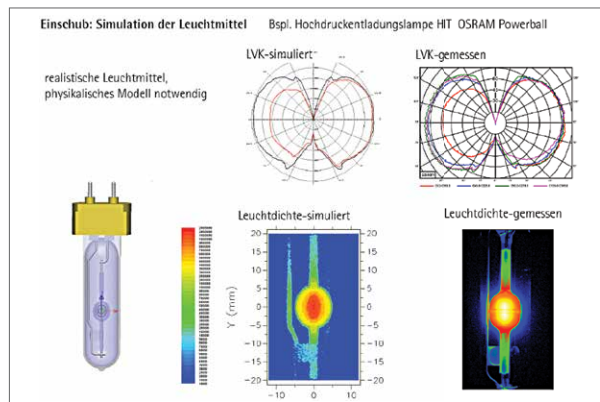
To learn more about LightTools, visit <https://www.synopsys.com/optical-solutions/lighttools.html>. To learn more about ERCO, The Light Factory, visit [www.erco.com](http://www.erco.com). All images courtesy of ERCO.

## Synopsys Distributor

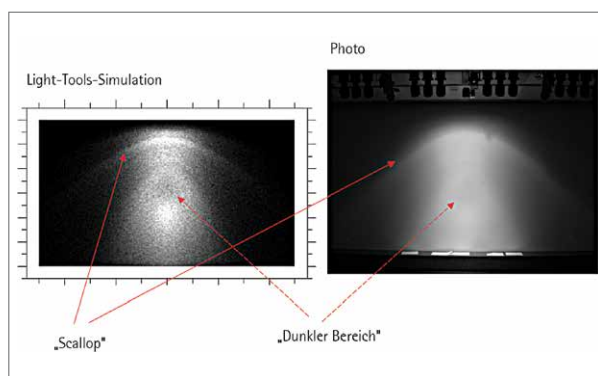
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The Spherolit light distributions are achieved with cushion-shaped reflector facets



Spherolit source model and analysis results in LightTools



LightTools simulated results versus actual results

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