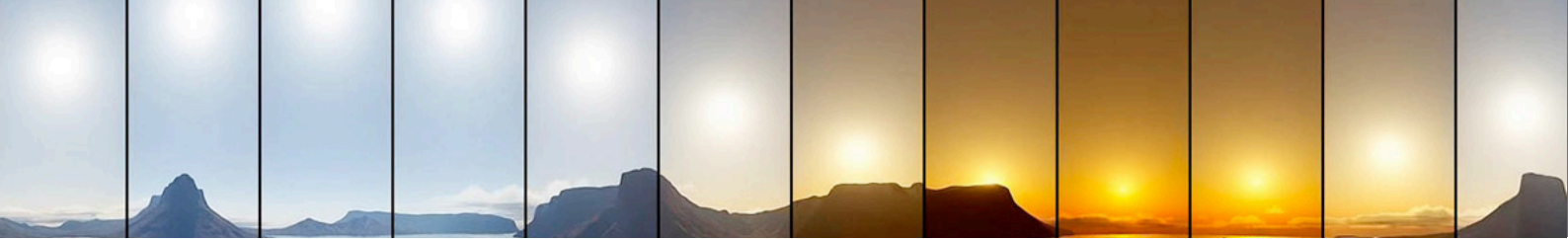


onework LUX

# THE FUTURE WITH HUMAN CENTRIC LIGHTING (HCL)

Advantages,  
Scientific findings & their effect  
Solutions

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# What is Human Centric Lighting?

Human Centric Lighting (HCL) is an intelligent lighting technology that is based on natural daylight and supports people's biorhythms. By dynamically adjusting light intensity and color temperature, HCL increases productivity, well-being and health.

**In the morning:** cool light promotes alertness & concentration.

**Midday:** Neutral white light ensures balanced performance.

**Evening:** Warm light supports relaxation & regeneration.

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## Special features of HCL

- »» Optimization of the biorhythm: Supports the natural day-night rhythm.
- »» Increase in productivity & concentration: studies show up to 30 % faster reading speed and 45% fewer errors.
- »» More well-being & less fatigue: Natural lighting conditions improve motivation & mood.
- »» Energy efficiency & fast amortization: Reduces energy costs and increases work performance.
- »» Flexible & smart control: Compatible with KNX, DALI-2 and IoT technologies for individual lighting solutions.

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Human Centric Lighting (HCL) is more than just lighting - it creates healthy, productive and future-proof working environments.

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# Introduction



Light affects far more than just our vision - it has a direct influence on our performance, concentration and general well-being. In modern working environments, intelligent lighting that is adapted to the biorhythm is essential in order to create optimal working conditions.

Human Centric Lighting (HCL) takes into account not only the visual task, but also the biological and emotional effects of light.

This is precisely where onework LUX comes in: With a DALI-2 controlled HCL solution that can be individually adapted, it optimizes the room ambience and supports both the cognitive and physical performance of users. Companies benefit from lighting that adapts dynamically to the course of the day and is geared to the respective work requirements.



# Scientific evidence on the effect of HCL

## **Increased productivity thanks to higher illuminance levels**

Higher illuminance can contribute directly to increasing productivity. Studies by Henri Juslén (2007) show that increased illuminance in industrial environments leads to significant productivity gains. Similarly, a study by Ambricht / LICHT 5 (2017) confirms that increasing illuminance from 500 lx to 1500 lx can increase productivity by up to 28%. These findings make it clear that well-designed lighting concepts can play a decisive role in increasing efficiency.

## **Improving concentration and work performance**

Research by AT Kearney (2015) shows that the use of HCL in office and industrial environments can achieve productivity increases of up to 20%. The study also points out that HCL offers high economic benefits thanks to a high return on investment (ROI) and short payback periods. Companies can not only optimize work processes through improved lighting control, but also save significant costs as fatigue-related errors and sickness-related absences are reduced.

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## **Effect of blue-enriched light on cognitive performance**

Studies by Figueiro et al. (2017) show that dynamic, blue-enriched light - especially in the morning - results in better circadian alignment, increased alertness and enhanced cognitive performance. Another study by Cajochen et al. (2011) confirms that blue light suppresses melatonin production, which increases attention and cognitive performance in the short term. This is particularly important in office environments and production facilities with shift work, as it stabilizes the performance level of employees.

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## **Natural lighting conditions for improved well-being**

Boyce et al. (2014) and Rea et al. (2005) came to the conclusion that daylight-simulated lighting systems improve well-being and increase cognitive performance. Natural lighting has been shown to increase satisfaction, improve the sleep-wake cycle and reduce fatigue. These factors lead to greater job satisfaction and improved employee morale.

# onework LUX: The smart HCL solution



**onework LUX** is an intelligent, DALI-2 controlled HCL panel that can be individually adapted to the needs of modern working environments. It combines state-of-the-art lighting control technology with scientifically based HCL concepts to create a perfect balance between productivity, well-being and energy efficiency.

onework LUX simulates the natural course of daylight by adapting the light intensity and color temperature to the human biorhythm. This means that the lighting changes dynamically throughout the day - from cooler, activating light colors in the morning to balanced lighting conditions at midday and warmer, relaxation-promoting light colors in the evening. This adaptation supports the sleep-wake rhythm, reduces fatigue and increases general performance.

For companies, this means creating an environment that is both performance-enhancing and health-promoting. onework LUX not only ensures optimum visual conditions, but also increases the cognitive performance and general well-being of employees.

# Main functions onework LUX in detail

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## **Dynamic adjustment of the color temperature (2700 K - 6500 K)**

The light color can be flexibly adjusted depending on the time of day and usage scenario. In the morning, cooler light ensures alertness, while warmer light colors promote relaxation in the evening hours.

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## **Integration in KNX & DALI-2 systems**

onework LUX can be seamlessly integrated into existing building automation systems. The DALI-2 interface enables precise lighting control, while KNX compatibility allows connection to smart buildings.



## **Individual scenes & light curves**

Thanks to predefined HCL curves, various lighting scenarios can be controlled automatically. These scenes can also be adapted to individual requirements to ensure optimum lighting conditions for every working environment.

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## **Automated control based on time of day & usage scenarios**

Using a combination of motion sensors and time control, onework LUX can automatically adapt the light to the respective room usage. Unused areas are thus controlled in an energy-efficient manner without the need for manual intervention.



# Advantages of onework LUX in the working environment

## Increase productivity & reduce error rates

As the studies show, HCL improves performance: the right lighting can increase reading speed by up to 30% (Hamburg-Eppendorf University, 2015) and reduce the error rate by up to 45%. This helps to make work processes more efficient and minimize the frequency of errors in complex work processes.

## Promote alertness & cognitive performance

The use of blue-enriched light in the morning increases natural alertness, which leads to better cognitive performance (Figueiro et al., 2017). This is particularly beneficial for creative activities or professions that require a high level of concentration.

## Economic efficiency & sustainability

onework LUX offers an energy-efficient solution that not only reduces operating costs, but also delivers a high ROI through a short payback period (AT Kearney, 2015). Companies can not only reduce operating costs through intelligent lighting control, but also achieve sustainable goals.





## Conclusion: Intelligent lighting control for the future

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The increasing awareness of the biological and psychological effects of light shows that HCL is far more than just a technological innovation - it is a necessary development for modern working environments. Studies show that a well-coordinated lighting solution not only promotes productivity and the ability to concentrate, but also supports employees' health in the long term.

onework LUX provides companies with a lighting solution that integrates seamlessly into modern working and production environments by intelligently adapting to people's circadian biorhythms. This not only increases well-being, but also achieves a sustainable reduction in downtime and fatigue.

In addition, the high energy efficiency of LED technology combined with the intelligent control of onework LUX ensures long-term cost savings and rapid amortization of the investment. Companies therefore benefit twice over: through an increase in productivity and a sustainable optimization of energy consumption.

onework LUX is therefore not only a forward-looking lighting solution, but also a decisive building block for modern, healthy and economically efficient workplaces.


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**building  
better  
workplaces**

 onework

## Contact

onework GmbH  
Koboldstr. 4  
24118 Kiel



[info@onework.de](mailto:info@onework.de)



[www.onework.de](http://www.onework.de)