

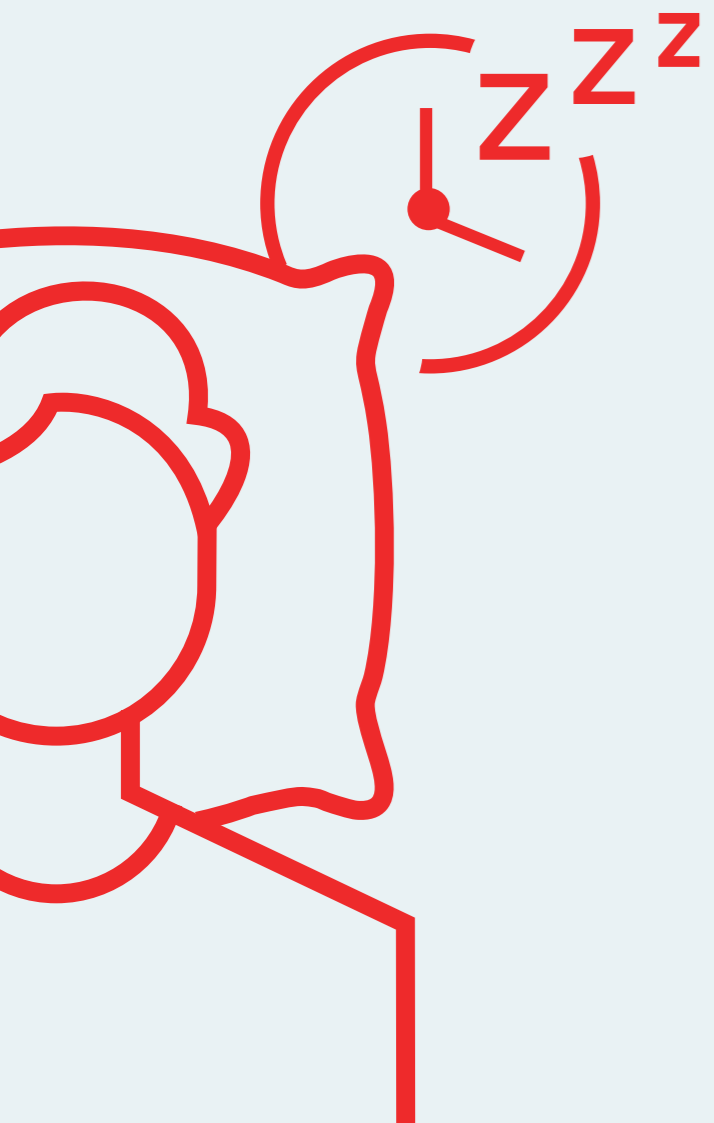
Human Centric Lighting

The powerful effect of light



Light has a great effect on us humans

All living beings have an “inner clock” called the circadian rhythm, and humans are no exception. In short, this means that we rise with the sun and go to sleep when it sets. The right light at the right time can influence everything from our sleep to how we feel and perform. That is why Human Centric Lighting (HCL) is beneficial for schools, healthcare facilities, offices, and industrial buildings.





Life on earth has always depended on light. Humans have evolved to rise with the sun and rest when it sets. That powerful light – dark cycle drives our biological clock and shapes all life here on earth. And even if artificial light can't compete with natural daylight, we've all become dependent on sources other than the sun. We need the right light at the right time to be focused and alert. To take care of our health and sleep well at night.



Most of us
actually spend as
much as 90% of
our time indoors,
some even more.





The benefits of a Human Centric Lighting solution

The powerful effect of light

Humans are affected by light not only on a visual level, but also on a biological one. When installing a Human Centric Lighting solution (HCL), you reinforce your circadian rhythm, enhancing your cognitive skills and sense of wellbeing. It is also used to provide the ideal visual working conditions in challenging environments.



You sleep better

Improve your sleep quality by adjusting the hormone balance in your body. This is something everyone can benefit from, but it is especially important for adolescents, shift workers, psychiatric patients, and people with dementia.



You perform better

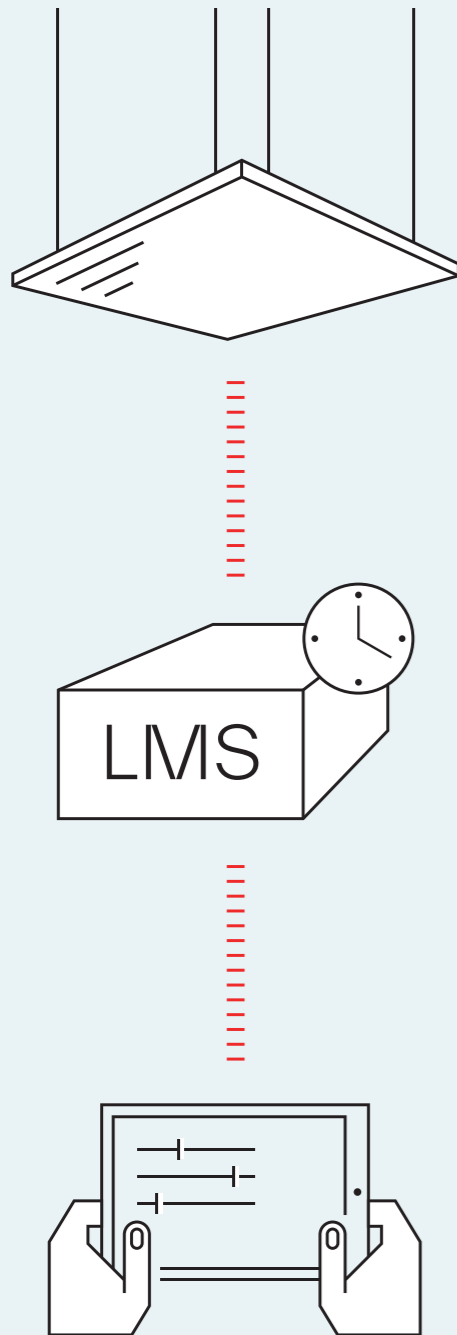
Glamox Human Centric Lighting can improve performance by enhancing the ability to concentrate, increasing alertness and reducing fatigue, which, in turn, can lessen the number of errors made at work.



You feel better

Users of Glamox Human Centric Lighting solutions report that they feel healthier, happier, and more energetic. This is because human-centric lighting stimulates the natural circadian rhythm, and hence increases your wellbeing.

Human Centric Lighting is created through the use of luminaires and controls that mimic the dynamic changes in daylight



Luminaires compatible with a Human Centric Lighting solution

Tunable White technology (CCT or TCE) enables variations in the colour temperature and intensity of the light. This includes luminaires that can adjust light colours (RGBW) or variants with blue-blocked light (CCT RGB / CCT BBL) technology.

Type of control system

A lighting control system that allows you to design and set a time cycle that adjusts the light intensity and colour temperature throughout the day.

Tailor-made solutions

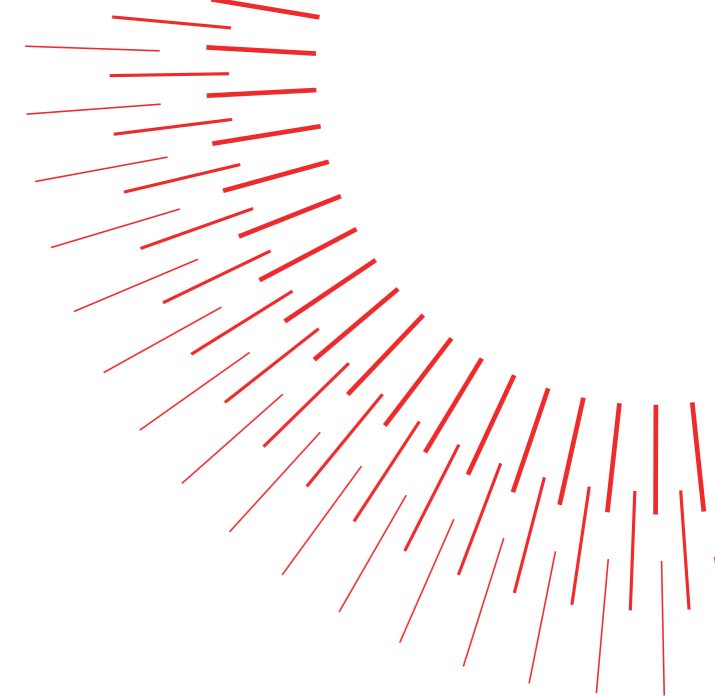
Each project is unique. Therefore, we'll help you design the time cycle, user hierarchies, and interface to suit your specific needs.



Efficient and cost-effective lighting control systems

Human Centric Lighting solutions require a sophisticated lighting control system to set and adjust the time cycles for the light intensity and colour temperature. Glamox offers lighting control systems with different levels of complexity and will help you tailor a solution that is both functional and user-friendly.

You define. We connect.



Every project is unique!

Because each project is unique, we will help you tailor the best approach and Human Centric Lighting solution to your specific needs. Our solutions are divided into three different approaches, depending on the application and user needs.

Glamox has extensive experience in tailoring Human Centric Lighting solutions in cooperation with our clients, and we have delivered more than 200 projects. We believe that successful projects stem from successful teams. Together, we can achieve an optimal lighting system for your facility. Glamox Human Centric Lighting solutions are WELL Building Standard™-compliant.



Therapeutic lighting

Solutions that can play a part in the treatment and wellbeing of patients suffering from psychiatric illnesses or dementia.



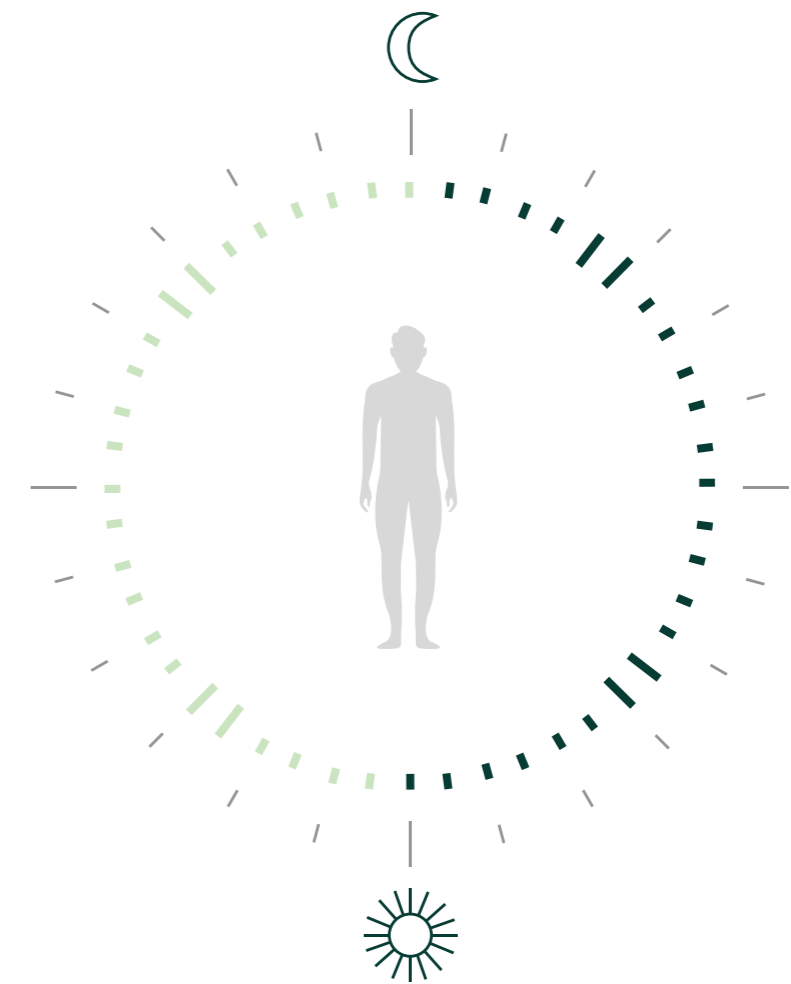
Ergonomic lighting

Solutions in which lighting technology is used to produce light of different colours in order to create the ideal visual working conditions.



Biological lighting

Solutions that mimic the qualities of daylight to enhance human performance, wellbeing, and to support a favourable circadian rhythm.



Light and human biology

Daylight is the most important “time giver” that controls our circadian rhythm. Light is therefore an important contributing factor to our wellbeing. Scientists have been studying the biological impact of light for decades. Learn more about how lighting is used to provide the best possible light for us.



How to implement Human Centric Lighting

In order to install and program an efficient Human Centric Lighting solution, four parameters require our careful attention: intensity, spectrum, timing and duration, and light distribution. Each parameter may be changed as long as one or more of the other parameters are adjusted accordingly.



Distribution of light



Intensity



Spectrum



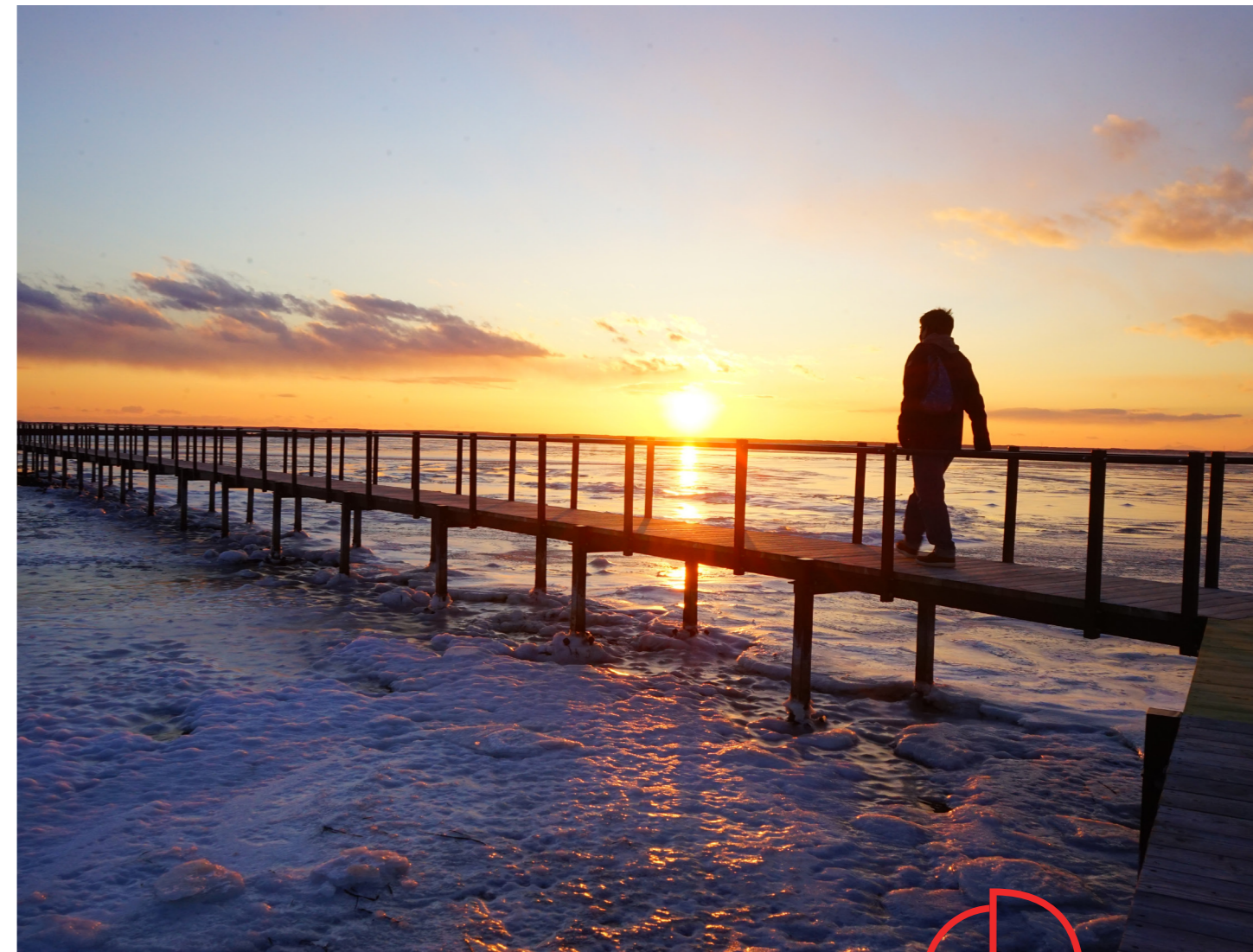
Timing and duration



Intensity

/ Understanding the effect of light intensity

Research has taught us how much light is needed to influence the biological processes in the human body. When planning and designing a lighting solution, enough light must be emitted to achieve this, while addressing issues such as unwanted glare and energy consumption.



Spectrum

/ Understanding the effect of colour temperature

The blue wavelengths of light are its biologically active parts. This means we can use cool white light with wavelengths in the blue spectrum to stimulate the body in the morning, and as a boost when we need to focus and stay alert. In the evening, warm white light can help us relax and unwind.



Timing and duration

/ Understanding the effects of the right timing and duration

The morning light tells our biological clock that the day has begun, helping to activate our bodily functions. In contrast, light exposure at night makes it harder to fall asleep. These factors must be considered when planning a Human Centric Lighting solution with a 24-hour cycle.



Distribution of light

/ Understanding the importance of correct light distribution

For light to have a biological effect, our eyes must perceive it effectively. The receptors that affect our circadian rhythm are most sensitive in the lower and nasal part of the eye, so how the luminaire distributes the light is of great importance.



Application areas

Human Centric Lighting has a wide variety of applications and every solution needs to be tailored to the specific needs of the client.



Education



Office



Healthcare



Industry



/ Education

Improved learning

Schools can benefit from Human Centric Lighting (HCL) in several ways. This type of lighting can not only be used to stimulate the circadian rhythms of pupils and staff, but also to improve alertness during tests and high-focus tasks. With biologically optimised lighting systems in educational environments, natural lighting conditions can be achieved more effectively.



/ Office

Improve your workday

Humans spend most of their time awake indoors, especially during the wintertime. That makes office areas excellent places to implement Human Centric Lighting solutions.



/ Healthcare

Improved healthcare

Healthcare environments are perfect for implementing lighting cycles with sunrise, sunset and daylight simulations. Long term residents in particular can benefit greatly from the natural light/dark cycles that stimulate a healthy circadian rhythm.



/ Industry

Improved performance

Lighting installations with higher light intensity and possibilities for tuning the light spectrum may increase performance and reduce fatigue, errors and accidents at the working place.

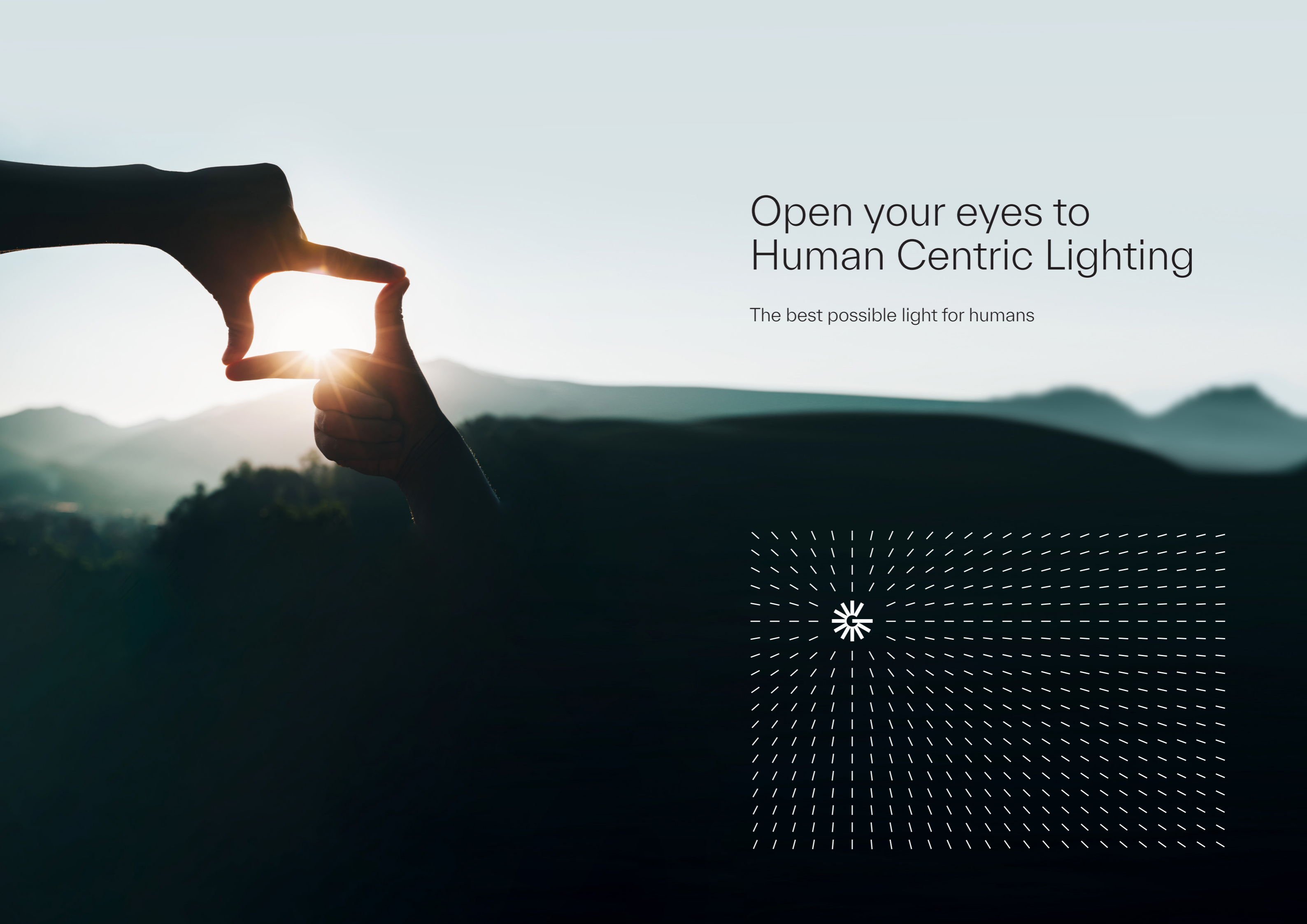


More than 200 projects delivered in Europe



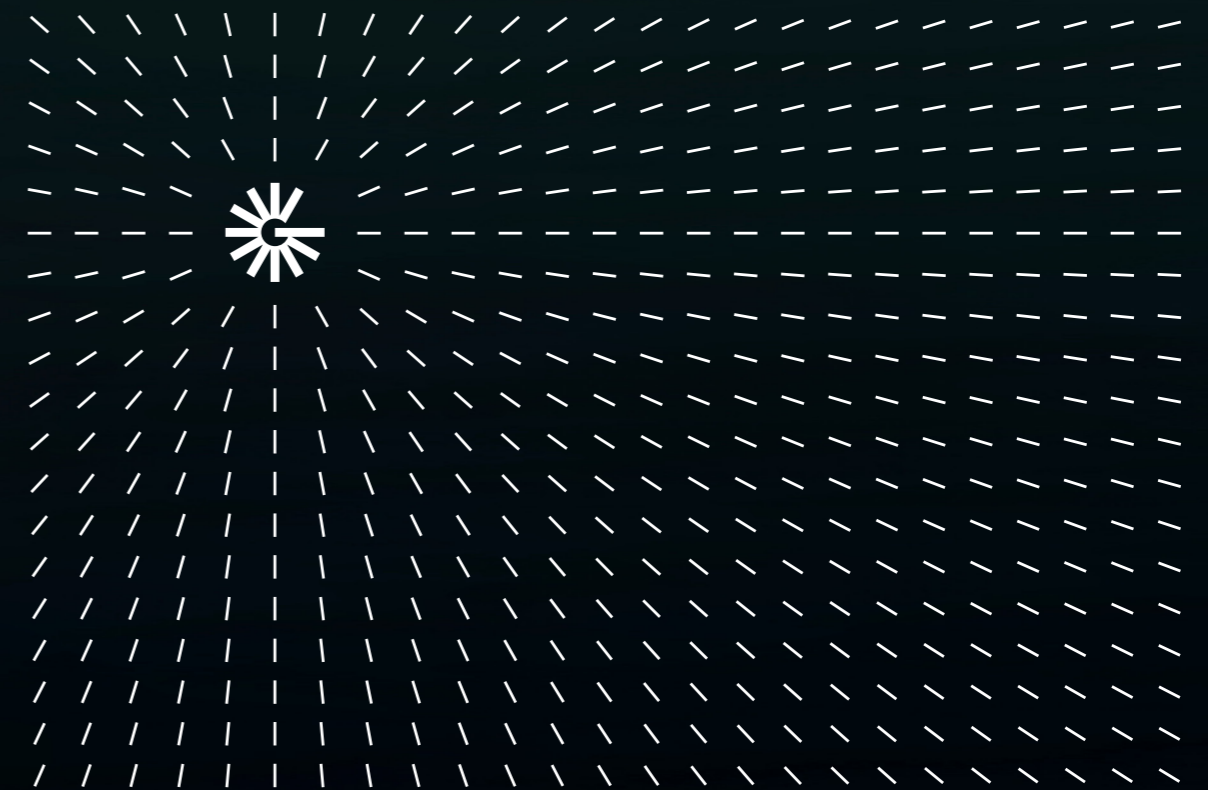
Research-based knowledge

Human Centric Lighting is a rapidly developing field of research, and at Glaxo, we seek to increase our insight accordingly. Since 2013, we have developed Human Centric Lighting solutions based on the latest research and standards available. To further improve the knowledge of how light can influence people, we are collaborating with a number of external research institutions, and support and contribute to a number of studies.



Open your eyes to Human Centric Lighting

The best possible light for humans



The Glamox Group

Glamox is a Norwegian industrial group that develops, manufactures and distributes professional lighting solutions for the global market. Our mission is to provide sustainable lighting solutions that improve the performance and wellbeing of people.

High performance and ease of use

Our solutions are designed to combine high performance and sustainability with simplicity and ease of use, offering a superior customer experience. We make smart use of the latest technology and supply it with generations of experience and true care for our customers and their people.

Quality brands and dedicated support

We offer our solutions through a range of quality lighting brands. Regardless of brand, the close follow-up of each customer is at the heart of our offering. Whether in a production facility, a fishing vessel or an office building, our ambition is to provide lighting that contributes to a better life for the businesses we serve and those who work there.

For more info, see www.glamox.com

