

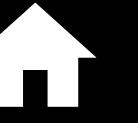
TRILUX
SIMPLIFY YOUR LIGHT.

HUMAN CENTRIC
LIGHTING

EXPERIENCING NATURAL LIGHT
HUMAN CENTRIC LIGHTING



CONTENT



DYNAMIC AND INDIVIDUAL LIGHT

What is HCL?
What does TRILUX understand by good lighting?



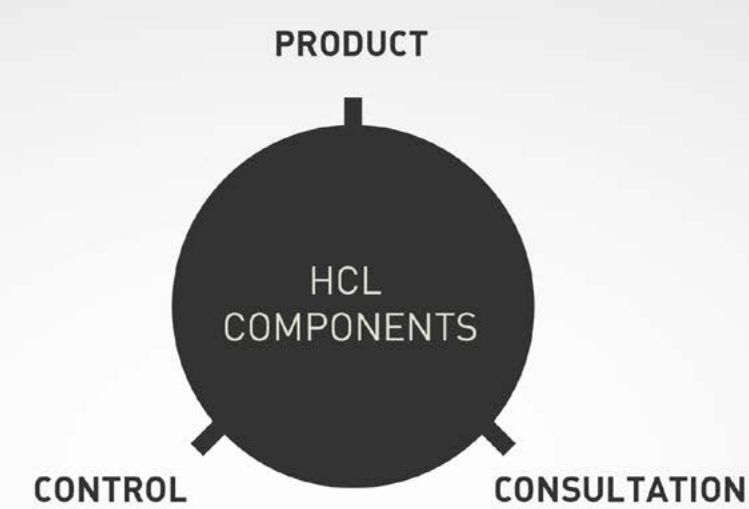
BENEFITS

The advantages of HCL lighting systems



HCL SOLUTIONS & PLANNING

Solution variants: Basic, Comfort, Comfort+;
planning examples



HCL COMPONENTS

Consultation, control & products



GENERAL INFORMATION

Akademie, notes on the use & certificates

HUMAN CENTRIC LIGHTING

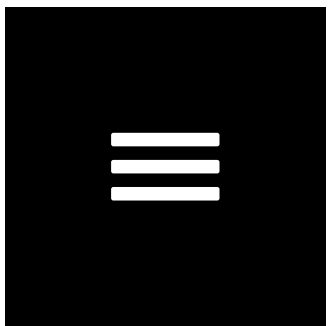
DYNAMIC LIGHT

DYNAMIC LIGHT

Good lighting must provide more than just optimum visual conditions complying with the appropriate standards. Light colour and lighting intensity, for example, can influence mood and well-being. The biological rhythm of people can also be improved by orienting the lighting solution to the natural course of daylight.

A Human Centric Lighting solution is always based on a professionally planned lighting concept where all components are precisely matched to the requirements of the client and the specific application. This customised approach will support the performance of people in their range of tasks. In accordance with our brand promise of Simplify Your Light, TRILUX ensures that using such solutions is as simple as possible.





HUMAN CENTRIC
LIGHTING

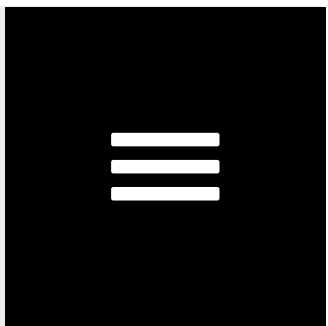
INDIVIDUAL LIGHT



INDIVIDUAL LIGHT

In this context, in addition to supplying high quality products, TRILUX understands that the complete system must work seamlessly together. In this way customers get the best advice and perfect light matched to their requirements. To ensure this, TRILUX offers a wide portfolio of the latest technologies within our products and combines single components to create custom-designed complete solutions – always carefully chosen to customer requirements and specific applications.

The same principle also applies for HCL lighting systems because a winning HCL solution needs professional lighting design and perfectly matched components.



HUMAN CENTRIC LIGHTING

THE ADVANTAGES OF HCL LIGHTING SYSTEMS



TRILUX HCL SOLUTIONS



OFFICE



EDUCATION



HEALTH & CARE



SHOP & RETAIL

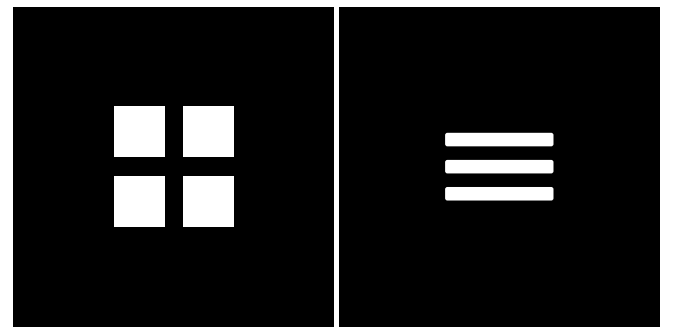


INDUSTRY



HUMAN CENTRIC
LIGHTING

TRILUX HCL SOLUTIONS



HCL SOLUTIONS MADE BY TRILUX

Perfectly matched complete solutions

TRILUX combines high quality single components to become customised complete solutions that are perfectly matched to the customer needs and specific application.

Holistic concepts

With TRILUX, holistic lighting concepts for the complete building, including outdoor areas near the building, can be implemented from a single source. The wide portfolio enables precisely the right solutions for all areas.

An innovation and technology driver

It bundles its complete photometric expertise in its in-house Innovation and Technology Centre (ITZ) – and actively shapes the future of the lighting market via research and development.

Extensive services

TRILUX offers its customers a wide portfolio of services. The spectrum ranges from support with lighting design and applying for subsidies to practical online tools and extensive technical literature.

Long-term lighting expertise

TRILUX has been developing innovative and pioneering lighting solutions for over 100 years, where quality and cost efficiency, simple lighting design, easy installation user-friendliness is focused on.

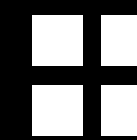
Many references

With several recent reference projects, TRILUX shows the advantages provided by HCL lighting solutions in very diverse applications.



HUMAN CENTRIC LIGHTING

APPLICATION OFFICE



BENEFITS OF HCL IN OFFICES

HCL – higher quality of light for better work

An intelligent HCL lighting solution adapts illuminance and light colour precisely to the individual needs of the user – thereby improving personal work conditions.

Flexibility – custom-designed light for well-being

Depending on age, mood and health, the „optimum“ light means different things for different people. With an HCL lighting solution, central lighting parameters such as light colour and illuminance can be individually varied to provide exactly the right light for the particular user.

The biological rhythm – healthy light for internal spaces

With a circadian lighting solution the spectral composition of the lighting dynamically changes, analogue to natural sunlight, over the course of the day – this strengthens the biological rhythm and improves well-being.

Future safety – intelligent light for New Work

Flexible areas of work, networked working in a team and zonal work areas – typical office work has changed dramatically in recent years. With a lighting solution that can be adapted to the specific situation, optimum visual conditions are ensured everywhere through such high flexibility.



HUMAN CENTRIC LIGHTING

SOLUTION IDEAS

BASIC

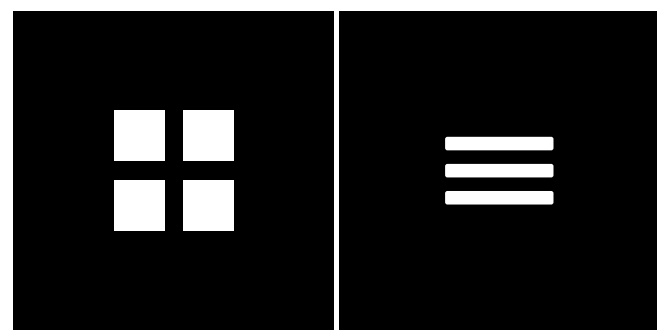
COMFORT

COMFORT^{PLUS}

TRILUX Human Centric Lighting – solution ideas to embrace the HCL concept on three levels.

HCL offers users an enormous diversity of functions and possibilities. TRILUX has created different scenarios so that anyone can simply find the most suitable HCL solution for their individual needs. Whether taking a first step to integrate active lighting or to fully utilise all aspects of lighting design with a focus on the human,

this overview gives information on the performance spectrum, and as part of HCL lighting consultation can also be fully adapted to the individual wishes and needs of the user.

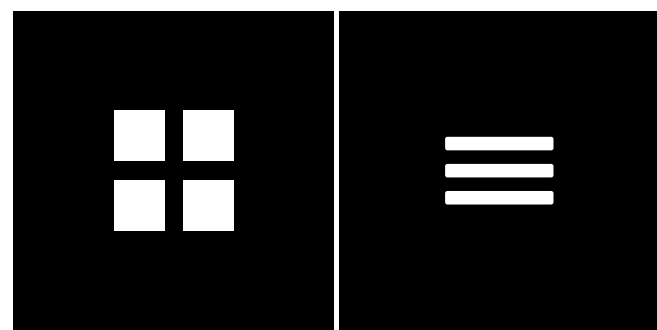


- BASIC**
- COMFORT
- COMFORT^{PLUS}

HCL Basic – a simple start to intelligent light

HCL Basic as an optimum refurbishment solution lays the basis for standard-compliant, individual and customised light. The central HCL feature is light oriented to the natural course of the day. Levels of energy consumption can also be minimised via presence sensors and daylight sensors. Operation can be via push-button, sensors or by using an app on smart devices.

	Basic	Comfort	Comfort ^{Plus}
Occupational safety Standard-compliant, good lighting	●	●	●
Natural light Circadian lighting tracks the course of natural daylight	●	●	●
Potential savings Minimising energy costs via daylight- and presence sensors	●	●	●
Operating possibilities Either manually via push-button and/or automatically via sensors	●	●	●
App control Modification via an app (Android or IOS)	●	●	●
Visual comfort Workplace lighting with indirect component for good quality of light		●	●
Individuality Users can configure individual light scenes via an app		●	●
Consultation and design Conceptual support for especially high quality of light			●
Sustainability and well-being Supports compliance to evaluation standards, e.g. DGNB, Green Building or the WELL-Building Standard			●
Customised Modification to individual framework conditions, e.g. special work times, work situations and shift structures			●

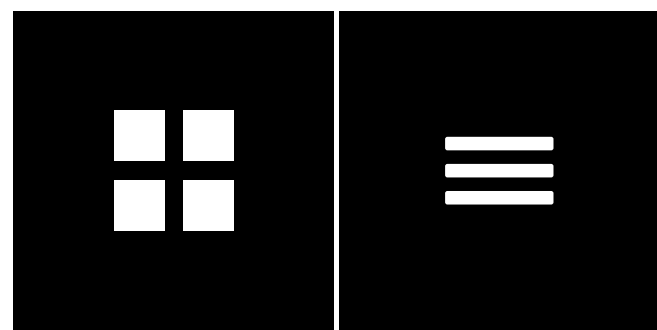


BASIC COMFORT COMFORT^{PLUS}

HCL Comfort – individual scenes for perfect workplaces

HCL Comfort has all the functions of HCL-Basic and also offers perfect workplace-oriented lighting with good quality light. Users can also create and call up their own lighting scenes and lighting curves via an app.

	Basic	Comfort	Comfort ^{PLUS}
Occupational safety Standard-compliant, good lighting	●	●	●
Natural light Circadian lighting tracks the course of natural daylight	●	●	●
Potential savings Minimising energy costs via daylight- and presence sensors	●	●	●
Operating possibilities Either manually via push-button and/or automatically via sensors	●	●	●
App control Modification via an app (Android or IOS)	●	●	●
Visual comfort Workplace lighting with indirect component for good quality of light		●	●
Individuality Users can configure individual light scenes via an app		●	●
Consultation and design Conceptual support for especially high quality of light			●
Sustainability and well-being Supports compliance to evaluation standards, e.g. DGNB, Green Building or the WELL-Building Standard			●
Customised Modification to individual framework conditions, e.g. special work times, work situations and shift structures			●

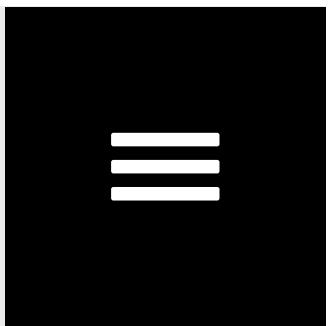


BASIC
COMFORT
COMFORT^{PLUS}

HCL Comfort^{Plus} – individual consultation for outstanding quality of light

HCL Comfort^{Plus} achieves unusually high quality of light thanks to excellent conceptual consultation services. The complete solution is ideally adapted to individual needs, e.g. specific work times, shift structures or work situations. Upon request TRILUX also supports customers with the certification of buildings in accordance with a diversity of standards including DGNB, BREEAM and WELL Building.

	Basic	Comfort	Comfort ^{Plus}
Occupational safety Standard-compliant, good lighting	●	●	●
Natural light Circadian lighting tracks the course of natural daylight	●	●	●
Potential savings Minimising energy costs via daylight- and presence sensors	●	●	●
Operating possibilities Either manually via push-button and/or automatically via sensors	●	●	●
App control Modification via an app (Android or IOS)	●	●	●
Visual comfort Workplace lighting with indirect component for good quality of light		●	●
Individuality Users can configure individual light scenes via an app		●	●
Consultation and design Conceptual support for especially high quality of light			●
Sustainability and well-being Supports compliance to evaluation standards, e.g. DGNB, Green Building or the WELL-Building Standard			●
Customised Modification to individual framework conditions, e.g. special work times, work situations and shift structures			●



HUMAN CENTRIC LIGHTING

PLANNING EXAMPLES



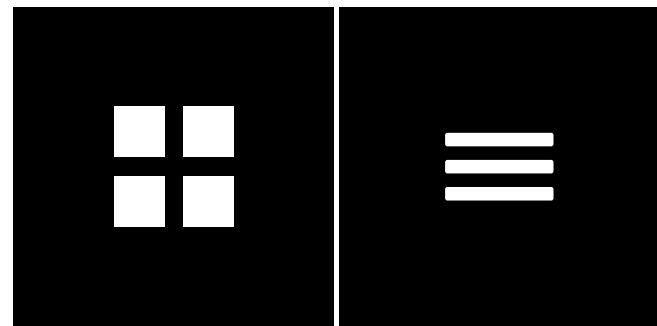
SINGLE OFFICE



DOUBLE OFFICE



CONFERENCE ROOMS



BASIC

COMFORT

COMFORT^{PLUS}

SINGLE OFFICE BASIC

Light management system:

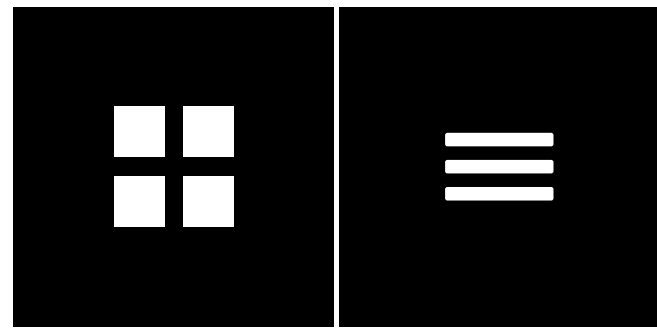
- Standard-compliant, good lighting
- Circadian lighting tracks the course of natural daylight
- Energy costs are minimised via daylight- and presence sensors
- Either manually via push-button and/or automatically via sensors
- Modification via an app (Android or IOS)

Example offer:

ArimoS Act M84 CDP LED4000 ETDD	4	69 759 51	531.10 €* [*]
LiveLink Comfort HCL	1	65 662 00	512.90 €* [*]
TOTAL			2,637.30 €*[*]

* Gross list price

The specified planning examples are intended for orientation purposes and are no substitute for expert consulting.



- BASIC
- COMFORT**
- COMFORT^{PLUS}

SINGLE OFFICE COMFORT

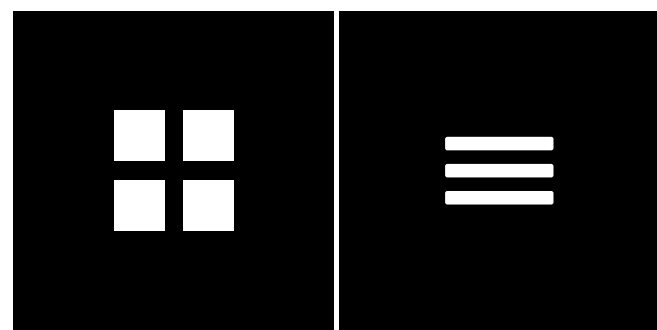
Light management system:

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- Circadian lighting tracks the course of natural daylight
- Energy costs are minimised via daylight- and presence sensors
- Either manually via push-button and/or automatically via sensors
- Modification via an app (Android or IOS)
- Workplace lighting with indirect component for good quality of light
- Users can configure individual light scenes via an app

Example offer:

InplanaAct C09 OTA25 3000 ETDD 01	2	68 538 51	536.70 €* [*]
LunexoAct H1 CDP-I 6500 ETDD 01	1	68 273 51	1,239.10 €* [*]
LiveLink Comfort HCL	1	65 662 00	512.90 €* [*]
TOTAL			2,825.40 €*[*]

*** Gross list price**
 The specified planning examples are intended for orientation purposes and are no substitute for expert consulting.



BASIC	COMFORT	COMFORT^{PLUS}
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SINGLE OFFICE COMFORT^{PLUS}

Light management system:

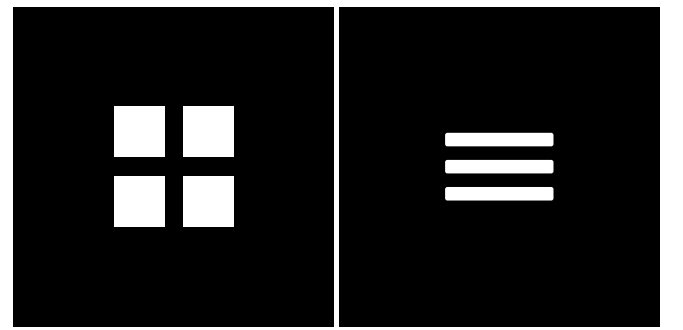
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- Users can configure individual light scenes via an app
- Conceptual support for especially high quality of light
- Support with compliance to evaluation standards, e.g. DGNB, Green Building or the WELL-Building Standard
- Modification to individual framework conditions, e.g. special work times, work situations and shift structures
- Balance of lit vertical surfaces to soften contrast with exterior conditions

Example offer:

InplanaAct C09 OTA25 3000 ETDD 01	2	68 538 51	536.70 €* [*]
LunexoAct H2 CDP-I 8800 ETDD 01	1	68 275 51	1,455.90 €* [*]
Less G2 C01-T HR13° LED 830	3	65 751 50	109.00 €* [*]
Less G2 ZVE LED 14W 700mA ETDD	3	67 711 51	124.50 €* [*]
LiveLink Comfort HCL	1	65 662 00	512.90 €* [*]
TOTAL			3,742.70 €*[*]

* Gross list price

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- BASIC**
- COMFORT
- COMFORT^{PLUS}

DOUBLE OFFICE BASIC

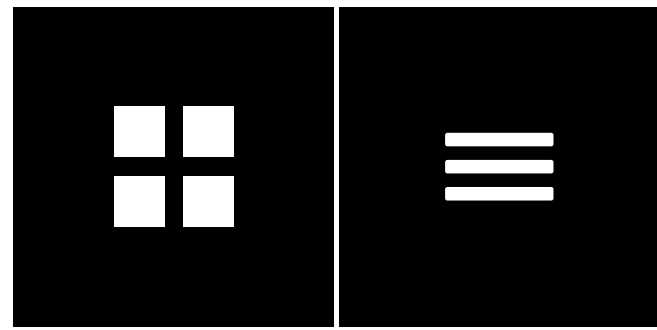
Light management system:

- Standard-compliant, good lighting
- Circadian lighting tracks the course of natural daylight
- Minimising energy costs via daylight- and presence sensors
- Either manually via push-button and/or automatically via sensors
- Modification via an app (Android or IOS)

Example offer:

ArimoS Act M84 CDP LED4000 ETDD	4	69 759 51	531.10 €* <hr/>
LiveLink Comfort HCL	1	65 662 00	512.90 €* <hr/>
TOTAL			2,637.30 €* <hr/>

*** Gross list price**
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BASIC **COMFORT** COMFORT^{PLUS}

DOUBLE OFFICE COMFORT

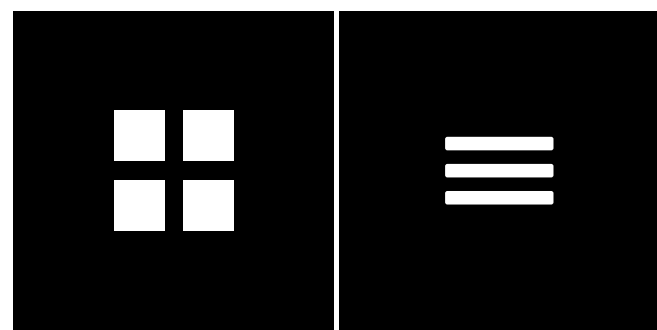
Light management system:

- Standard-compliant, good lighting
- Circadian lighting tracks the course of natural daylight
- Energy costs are minimised via daylight- and presence sensors
- Either manually via push-button and/or automatically via sensors
- Modification via an app (Android or IOS)
- Workplace lighting with indirect component for good quality of light
- Users can configure individual light scenes via an app

Example offer:

OnplanaAct D09 OTA25 3000 ETDD 01	2	68 535 51	636.20 €*
LunexoAct H1 CDP-I 6500 ETDD 01	1	68 273 51	1,239.10 €*
LiveLink Comfort HCL	1	65 662 00	512.90 €*
TOTAL			3,024.40 €*

*** Gross list price**
 The specified planning examples are intended for orientation purposes and are no substitute for expert consulting.



BASIC	COMFORT	COMFORT^{PLUS}
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DOUBLE OFFICE COMFORT^{PLUS}

Light management system:

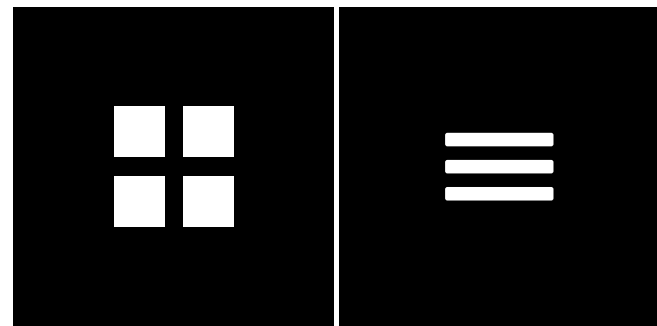
- Standard-compliant, good lighting
- Circadian lighting tracks the course of natural daylight
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- Balance of lit vertical surfaces to soften contrast with exterior conditions.

Example offer:

OnplanaAct D09 OTA25 3000 ETDD 01	2	68 535 51	636.20 €*
LunexoAct H2 CDP-I 8800 ETDD 01	1	68 275 51	1,455.90 €*
Less G2 C01-T HR13° LED 830	6	65 751 50	109.00 €*
Less G2 ZVE LED 14W 700mA ETDD	6	67 711 51	124.50 €*
LiveLink Comfort HCL	1	65 662 00	512.90 €*
TOTAL			4,642.20 €*

*** Gross list price**

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BASIC

COMFORT

COMFORT^{PLUS}

CONFERENCE ROOM BASIC

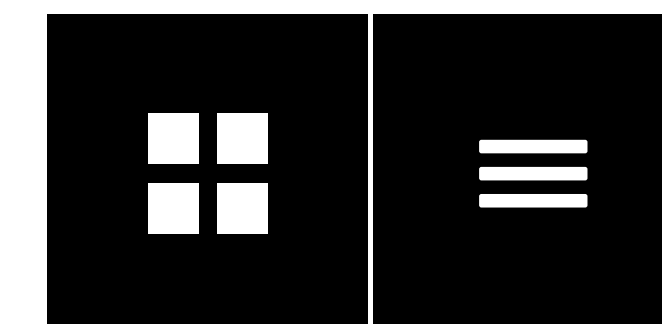
Light management system:

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- Minimising energy costs via daylight- and presence sensors
- Either manually via push-button and/or automatically via sensors
- Modification via an app (Android or IOS)

Example offer:

ArimoS Act M84 CDP LED4000 ETDD	6	69 759 51	531.10 €*
LiveLink Comfort HCL	1	65 662 00	512.90 €*
TOTAL			3,699.50 €*

* **Gross list price**
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BASIC

COMFORT

COMFORT^{PLUS}

CONFERENCE ROOM COMFORT

Light management system:

- Standard-compliant, good lighting
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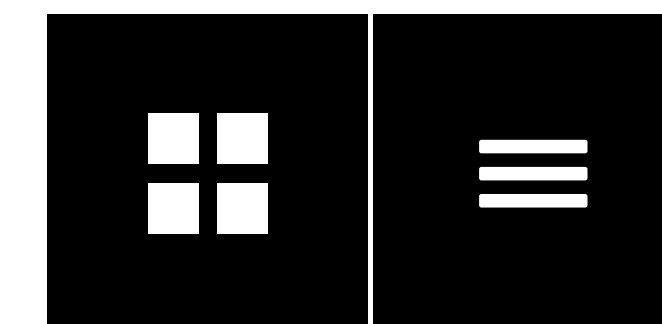
Example offer:

LunexoAct H1 CDP-I 6500 ETDD 01	2	68 273 51	1,239.10 €* [*]
Less G3 C03 HR30°LED830	8	70 697 50	169.90 €* [*]
Less G3 ZVE LED 28W 750mA ETDD LTA	8	70 692 51	90.30 €* [*]
LiveLink Comfort HCL	1	65 662 00	512.90 €* [*]
TOTAL			5,072.70 €*[*]

* Gross list price

The specified planning examples are intended for orientation purposes and are no substitute for expert consulting.





BASIC

COMFORT

COMFORT^{PLUS}

CONFERENCE ROOM COMFORT^{PLUS}

Light management system:

- Standard-compliant, good lighting
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- Balance of lit vertical surfaces to soften contrast with exterior conditions

Example offer:

LunexoAct H2 CDP-I 8800 ETDD 01	2	68 275 51	1,455.90 €* [*]
Less G2 C01-T HR13° LED 830	18	65 751 50	109.00 €* [*]
Less G2 ZVE LED 14W 700mA ETDD	18	67 711 51	124.50 €* [*]
LiveLink Comfort HCL	1	65 662 00	512.90 €* [*]
TOTAL			7,627.70 €*[*]

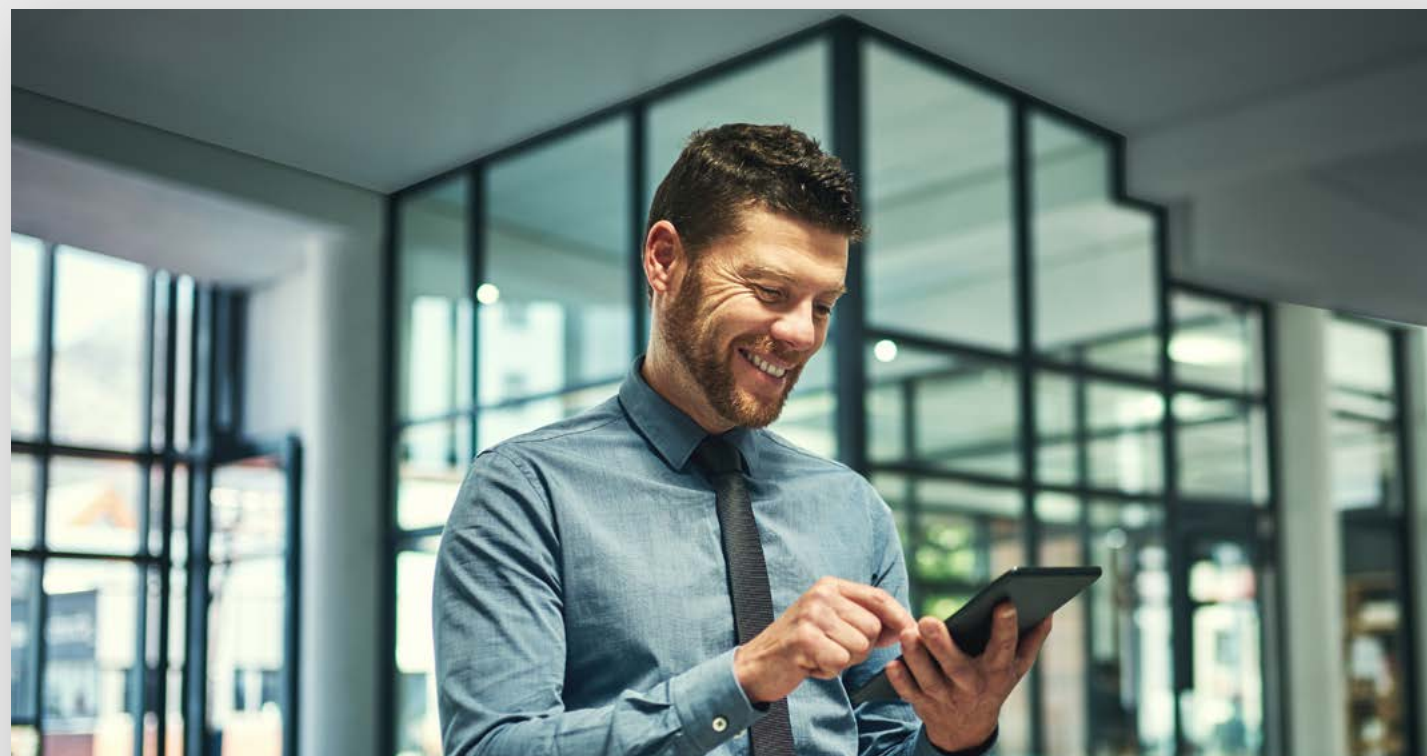
* Gross list price

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HUMAN CENTRIC LIGHTING

HCL COMPONENTS



CONSULTATION



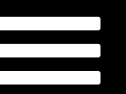
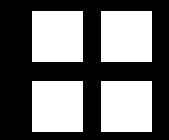
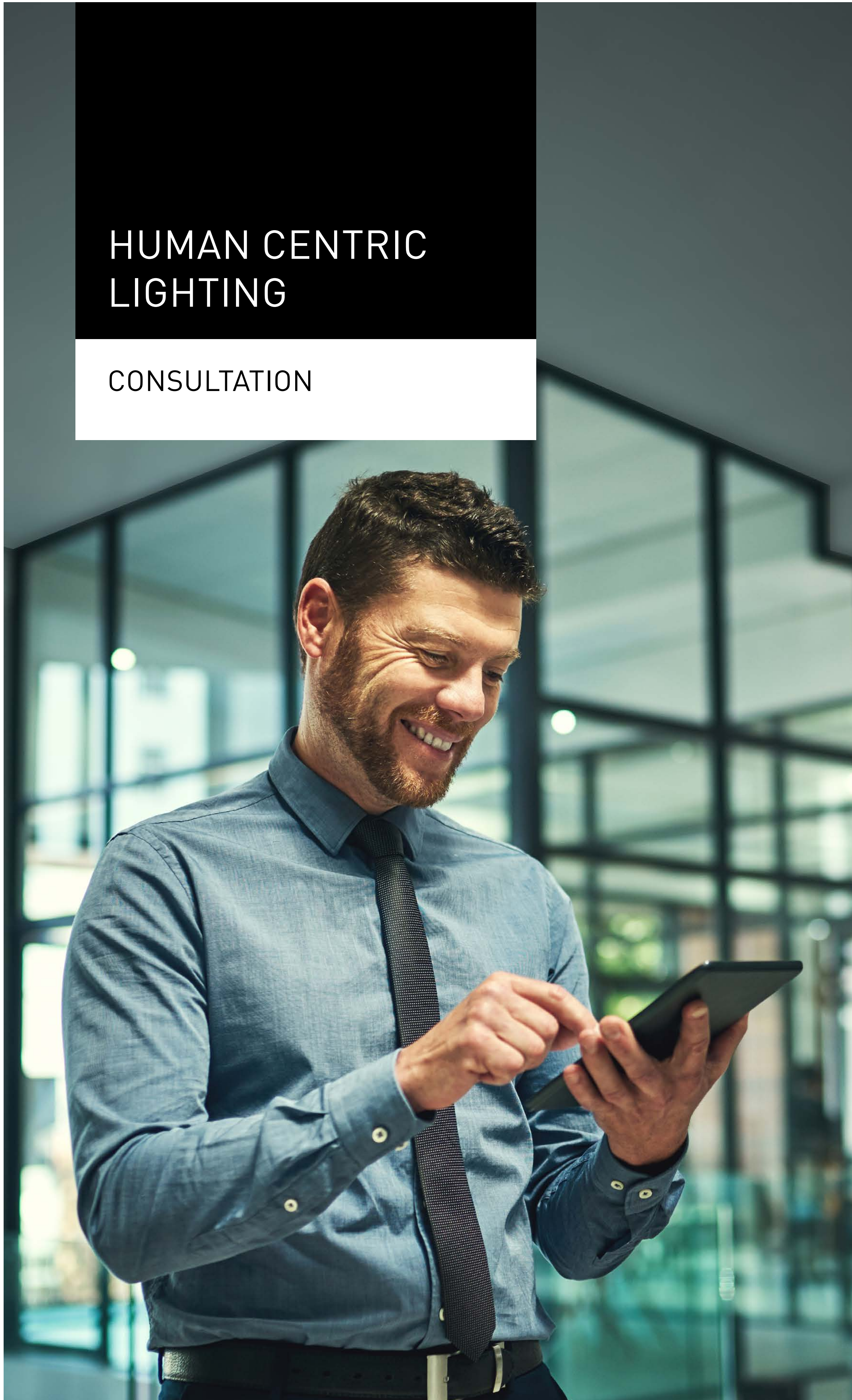
CONTROL



PRODUCTS

HUMAN CENTRIC LIGHTING

CONSULTATION



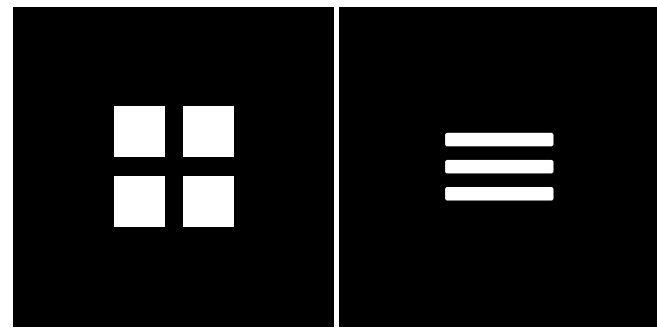
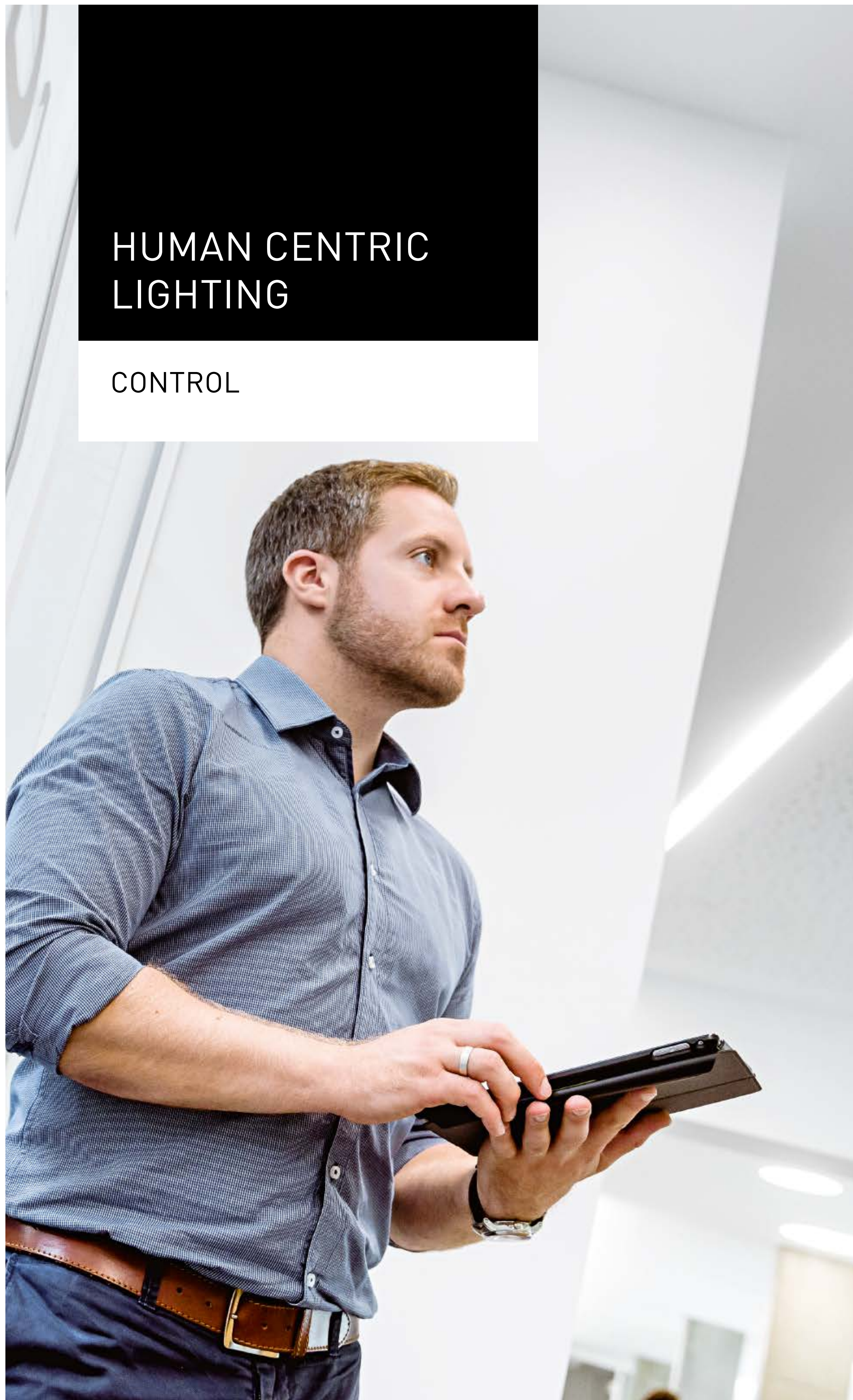
CONSULTATION

The complex interplay of various components such as the luminaire, control and lighting design demand careful consultation from a TRILUX expert who precisely analyses the room architecture and proposed lighting tasks. The reason for this is that only professionally planned HCL lighting systems can completely utilise the advantages of the light effect.

At TRILUX we offer various levels of lighting consultation. This starts with advice for a standard-compliant lighting calculation (**Basic**) and ranges to holistic room observation (**Comfort**) and the creation of an individual light situation and support with building certification (**Comfort^{Plus}**).

HUMAN CENTRIC LIGHTING

CONTROL



LIVELINK CONTROL

BASIC

Control of the HCL Basic variant contains a simple daylight sequence in the form of a fixed curve predefined by TRILUX. Energy consumption can also be reduced with use of daylight- and presence sensors. Operation is via push-button, sensor or app.

COMFORT

With the HCL Comfort variant, users can also create and save individual lighting scenes and the curve within specific limits with use of an app.

COMFORT^{PLUS}

The HCL Comfort^{Plus} control is the premium solution and can implement all individual customer requirements. Starting with the daylight sequence, all is possible with this variant including seasonal and geographic control. System monitoring can also be integrated. To adapt all solutions optimally and specifically to individual requirements, the Comfort^{Plus} control is always individually developed in close cooperation with TRILUX and then made available to the customer.

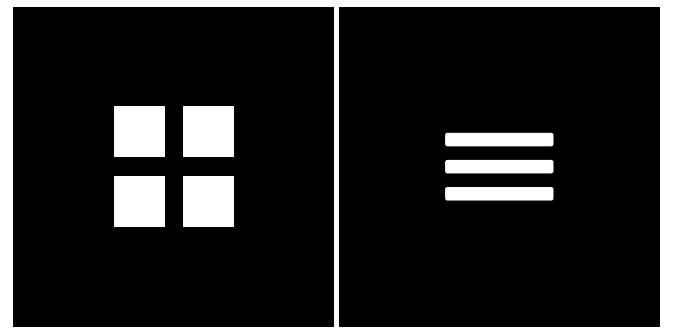
HUMAN CENTRIC LIGHTING

PRODUCTS

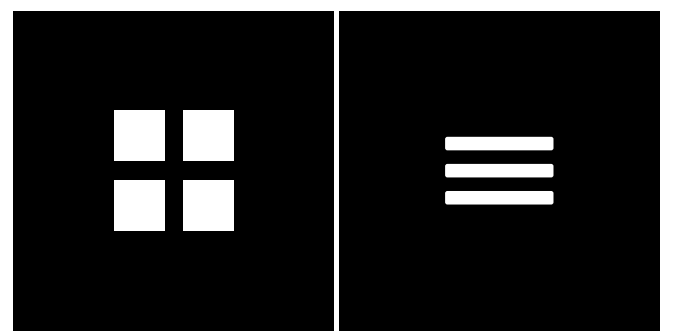
PRODUCTS

Active luminaires

Fundamentally, when installing an HCL system no special room-related or technical preconditions are needed – only a power supply is required. If the luminaire is to be controlled via DALI then two control lines must be available (as with any other DALI-compatible luminaire). The installation is also no more than a standard LED system. With commissioning, the electrical contractor is guided through the complete process with an intuitive graphic user interface.



PRODUCTS FOR OFFICE



SONNOS

Many functions and one world of design

[FIND OUT MORE](#)



ONPLANA

Radiance to get excited about

[FIND OUT MORE](#)



INPLANA

LED as a circular surface for prestigious room lighting

[FIND OUT MORE](#)



ATHENIK LIGRA PLUS

Light in a new league

[FIND OUT MORE](#)



INPERLA LIGRA PLUS

Light in a new league

[FIND OUT MORE](#)



BICULT

The light revolution on desks

[FIND OUT MORE](#)



74 R/Q

A redesigned classic

[FIND OUT MORE](#)



BELVISO

The standard for efficient and attractive light

[FIND OUT MORE](#)



3331

Diverse and with high protection rating

[FIND OUT MORE](#)

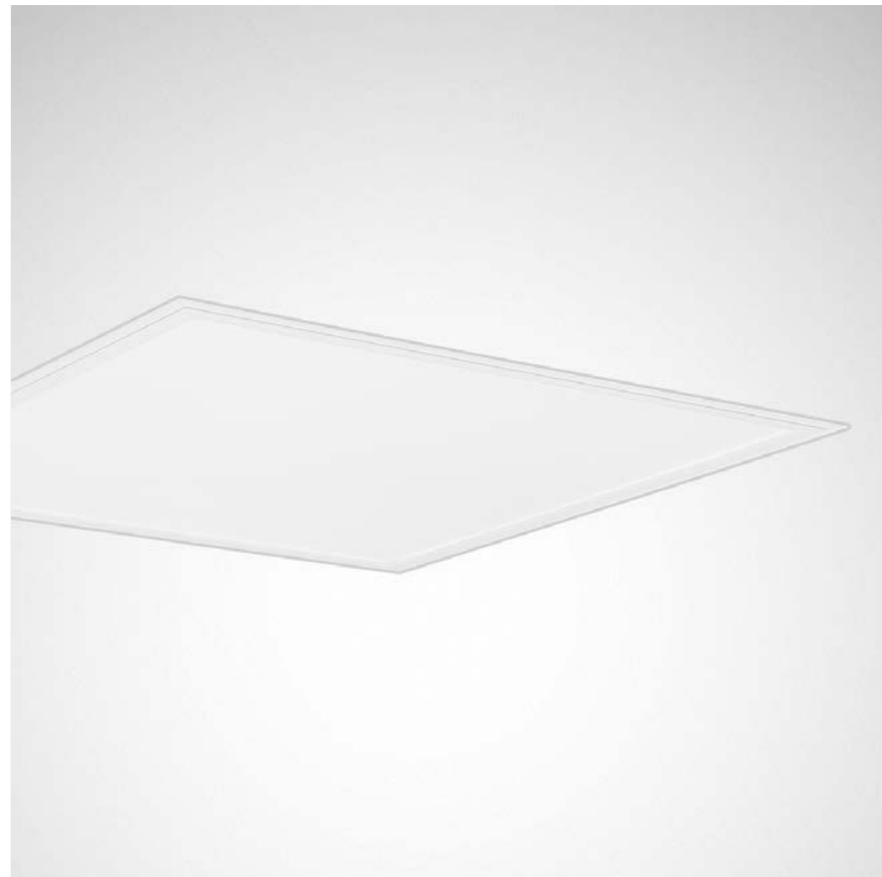
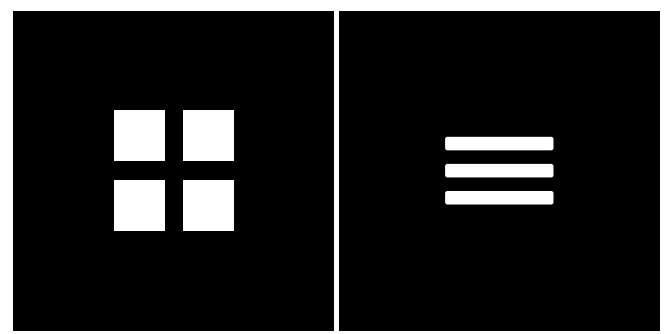


ACURO

Set in the right light

[FIND OUT MORE](#)

PRODUCTS FOR OFFICE



ARIMO SLIM

The ultra-flat refurbishment solution for planar light

[FIND OUT MORE](#)



ARIMO SKY

A single family as diverse as the office landscape light

[FIND OUT MORE](#)



LIVENTY

When dependable and progressive create something unique

[FIND OUT MORE](#)



PARELIA ACT

Parallel light for lateral thinkers

[FIND OUT MORE](#)



LUCEO SLIM

A modular multi-talent for office and education

[FIND OUT MORE](#)



LUNEXO

The cleverer light for more comfort

[FIND OUT MORE](#)



LATERALO PLUS

Innovative optic for outstanding office light

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LATERALO RING

LED as a circular surface for prestigious room lighting

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SOLVAN FLOW

The all-round talent for more planning flexibility

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HUMAN CENTRIC LIGHTING

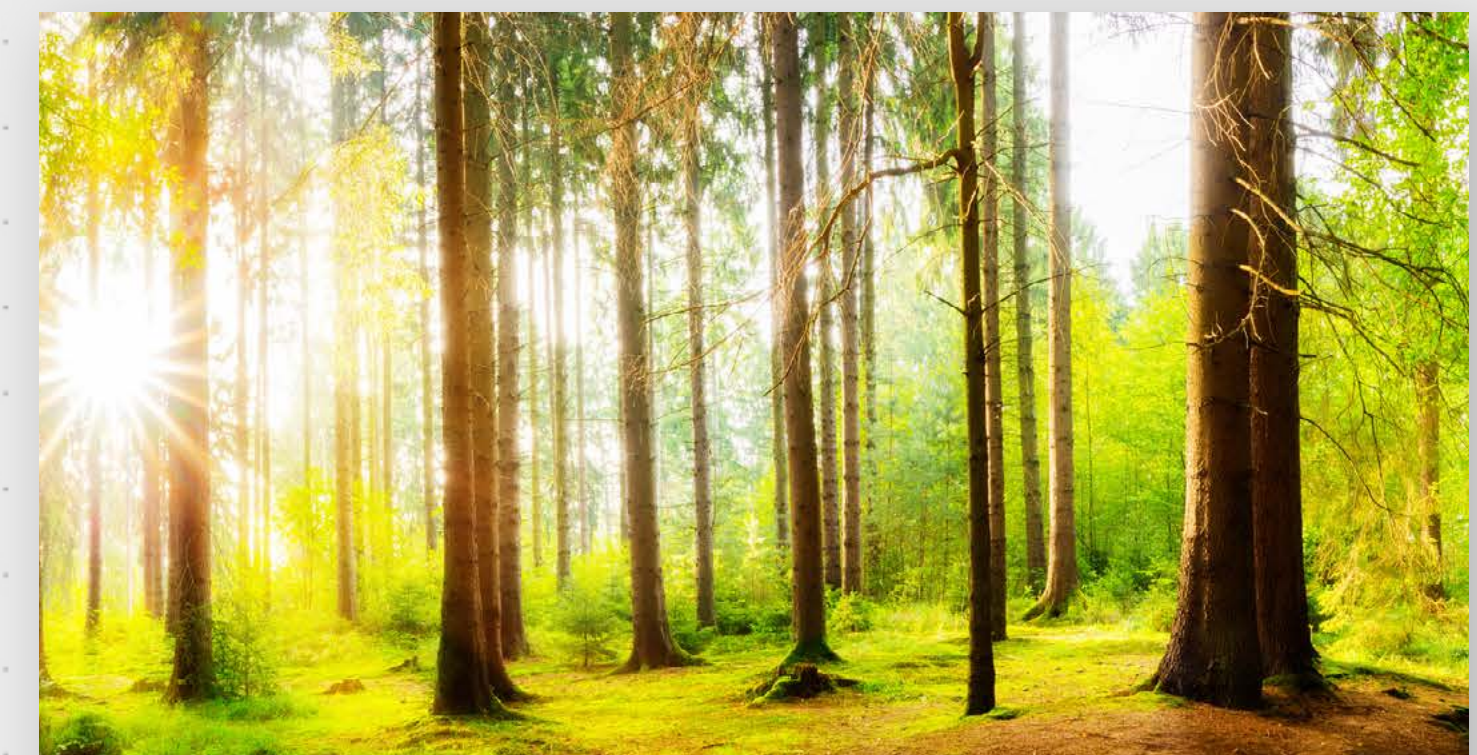
GENERAL INFORMATION



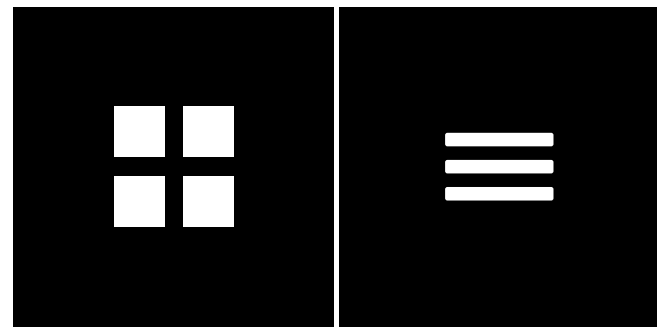
AKADEMIE



NOTES ON USE

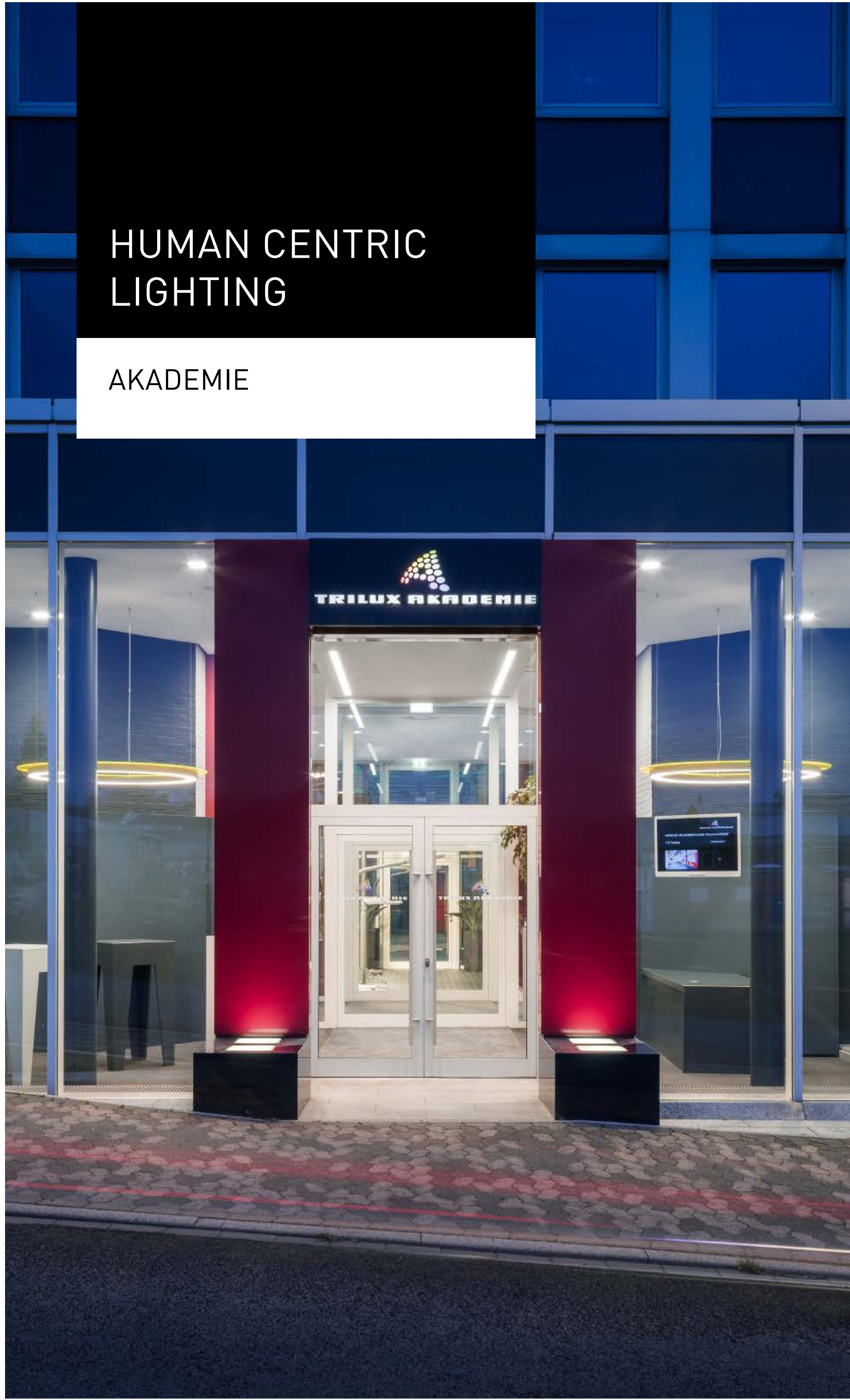


CERTIFICATES



HUMAN CENTRIC LIGHTING

AKADEMIE



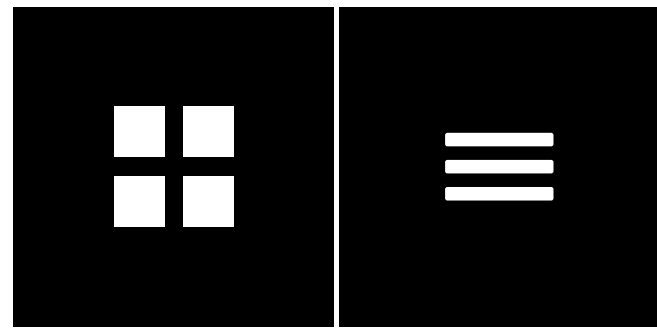
AKADEMIE

Human Centric Lighting is currently one of the most important topics in the lighting industry. How can light be specifically used to improve performance, safety and well-being at the place of work?

The TRILUX Akademie communicates the requisite technical knowledge for this area. Whether seminar, webinar or theme day – the TRILUX Akademie covers the complete information spectrum concerning scientific recognitions, the basics of lighting design and experience reports from practice.

Seminar offers:

HCL 2.0	Webinar	View event
Well Building Standard-PM: An Overview of the Requirements for Lighting	Webinar	View event



HUMAN CENTRIC LIGHTING

NOTES ON USE

NOTES ON USE

Current scientific findings demonstrate that all forms of lighting (artificial and natural), in addition to their visual impact, also have a biological effect on people. The benefits of this effect can only be optimally used and risks avoided with correct and responsible use.

The reference for TRILUX is always natural daylight with its colour temperature, dynamism and intensity. To use an HCL lighting system TRILUX suggests the following guideline:

Visual comfort, visual acuity and visual ambience: In the context of a holistic approach to lighting systems, a supportive, pleasant visual light situation must continue to be achieved in addition to the biological effect.

Light colour: TRILUX suggests warm white light during evening hours as colour temperatures above 3,000K later than 10pm would be counter productive in supporting the circadian rhythm in a normal 24 hour day/night cycle. A good, dark environment for the hours of sleep, followed by activating lighting with higher colour temperatures for the daytime, especially during the midday hours, will complete the cycle.

Intensity: Due to reasons of work safety and for optimum support of the work task, TRILUX recommends compliance to the specific minimum illuminance values as specified in ASR A3.4 and EN 12464. Activating modifications to the light intensity (e.g. by increasing illuminance) could also be applied during the daytime, and especially during the midday hours.



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• Light colour

Light colour: TRILUX suggests warm white light during evening hours and at night, as Daylight-white light colours may be counter-productive during these times with regard to the human (circadian) normal 24 hour rhythm. Activating lighting with higher colour temperatures can be beneficial during the day, and especially in the midday hours. However, for people working shift patterns their requirements will be different and we should always consider the individual – what they are doing and what their needs are.

• Intensity



HUMAN CENTRIC LIGHTING

CERTIFICATES

THE ADVANTAGES OF CERTIFICATION

- Improvement of building quality
- The real estate is better positioned in the market
- Lower operating costs thanks to proven sustainability
- Positive impact on health and well-being of building users
- An investment in the future
- Longer service life
- Greater intrinsic value



**MANY THANKS
FOR YOUR ATTENTION**



TRILUX
SIMPLIFY YOUR LIGHT.