

# **Human Centric Lighting**

Lighting designed to benefit human health and well-being



There is a discrepancy between natural and artificial light with regard to intensity, color and dynamics of light



Artificial lighting is fixed from wake-up to go-to-sleep

Office



On a sunny day people outside get 100 000 lux

On a clouded day



Indoor in offices people get 500 lux

10 000 lux



and in schools only 300 lux



People spend 90% of their time indoor We need the right light for our activites at the right place at the right time



Cool light.

High intensity







Low intensity



Warm light,

Night No light

High intensity

Afternoon

White light.





Lighting applications





Elderly

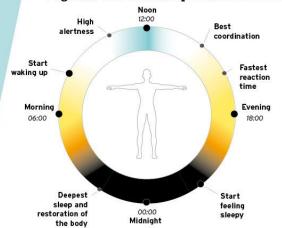




### We need light and darkness

There is a period of the day when we are active and a period when we are sleeping Light is the most important timer for our internal clock

Wake-ur



#### Light has an effect on



Vision Sight



Body Alertness, cognitive performance and sleep/wake cycle



Emotion Mood, energize and relaxation

## Look beyond energy efficiency

**Human Centric Lighting** increases the vision, well-being and performance of people

9% Rental costs



1% Energy costs

Examples of benefits



Absence

Source: Report 'Quantified Benefits of Human Centric Lighting' by LightingEurope & ZVEI, April 2015