

LIGHT QUALITY
COLOUR RENDERING
SAFETY
DEMANDING CONDITIONS
ENERGY SAVING
LIGHT LEVELS
FLICKERING
DAYLIGHT SIMULATION
CENTRAL MANAGEMENT SYSTEM



interactive industry model

PLAYFACTORY

innovative lighting solutions

SLE[®]
smart lighting engineering

INDUSTRY LIGHTING SOLUTION

Make your business in industry safer and more sustainable with lighting solutions by SLE.

Industry accounts for a considerable portion of all consumed energy. To make a change, modern industrial lighting needs to be efficient, using smart control systems in effective lighting designs and implement technologies that consume minimal amount of energy.



Health & Safety should have top priority at all workplaces. The right light level helps in reducing the number of injuries, while good CRI and lighting uniformity increase visual comfort, thus positively influences the productivity of workers.

Utilising LED technology in industry lighting means improved light distribution, good visual acuity, color consistency and optical control with less power consumption, less waste and less time and costs for maintenance.

PLAYFACTORY

To visualize all the possibilities within the field of modern industry lighting, we developed the PlayFactory concept:

a factory and warehouse model that is mobile, interactive and implies various industry lighting solutions by SLE. Within this intuitively controlled exhibit, all the lighting possibilities offered by the latest technologies are illustrated to great effect.



Read further to learn about all the aspects lighting can improve the safety and productivity of an industrial plant.



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INTERACTIVE ENVIRONMENTS

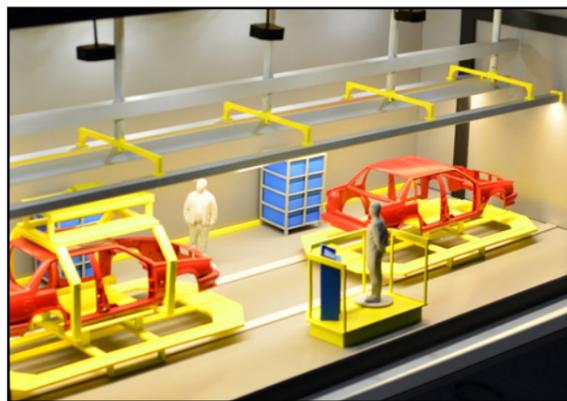
Discover each section of an industrial plant under different lighting scenes. The mock-up is controlled by a Central Management System via a Graphic User Interface, showcasing how the control system functions when installed in a real factory.



VERTICAL LIGHT LIGHT QUALITY

In industrial areas, the importance of adequate vertical illuminance increases in terms of safety and smooth implementation of the work.

By using luminaires emphasising the vertical surfaces, we achieve optical brightening of the space and appropriate visibility in production halls with oversized production machines or at workplaces where constant surveillance is required. It enables employees to recognise shapes and faces better and faster, while making their orientation in the space and reading numerical values easier.



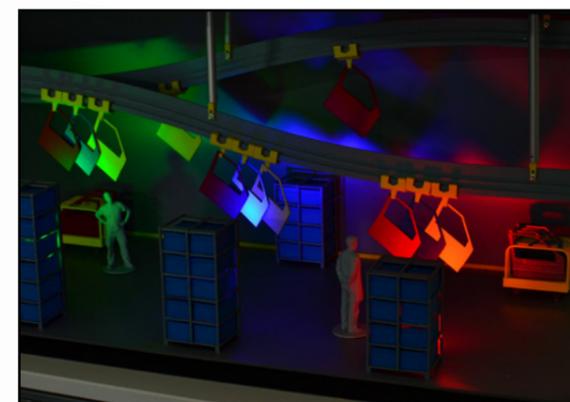
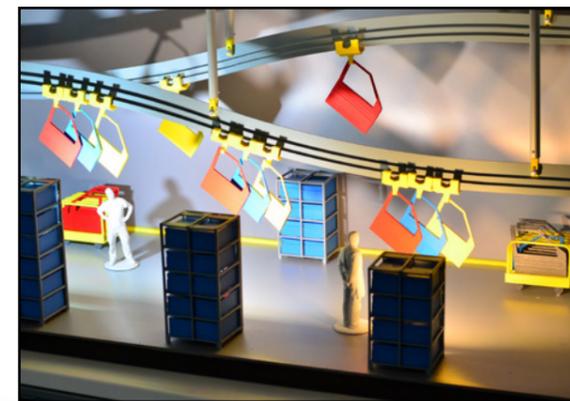
iPad control with SLE Graphical User Interface



COLOUR RENDERING LIGHT QUALITY

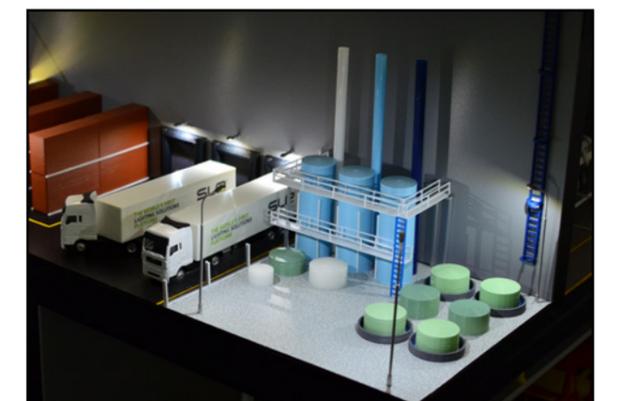
Correct perception of colours plays a key role in many industry segments. The colour rendering index (CRI) indicates how truthfully are individual light sources able to copy an object's colouring compared to daylight.

The European standard EN 12464-1 requires light sources with a minimum CRI 80 for a common workplaces, while for workplaces where the right assessment of colours is essential e.g. colour inspection in chemical, plastics, automotive, food industry or in multicoloured printing, jewellery manufacturing, painting and touch-up of vehicles, and in some wood working activities, the standard requires to use light sources with at least CRI 90.



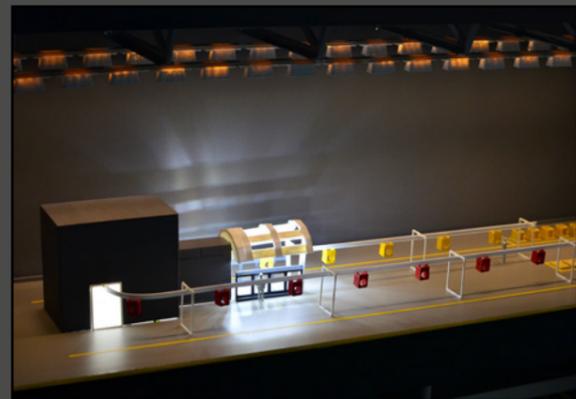
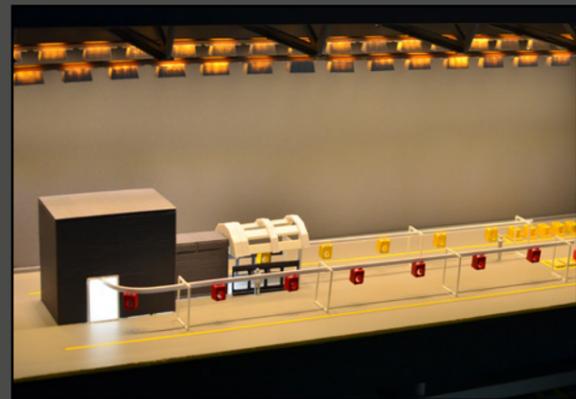
SAFETY LIGHT QUALITY

In industrial objects, especially in certain warehouse areas there are spaces without permanent use. With control based on movement sensing the waste of lighting these unused areas can be eliminated easily. A luminous flux level of 10% is used constantly for safety reasons for spaces without any detected movement, which next to less consumption also prolongs the lifespan of the light sources.



LIGHT DIRECTION LIGHT QUALITY

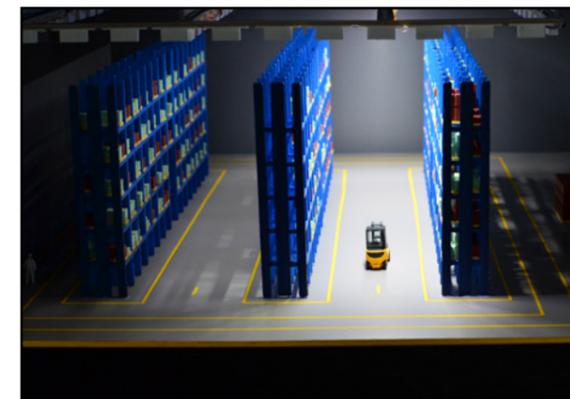
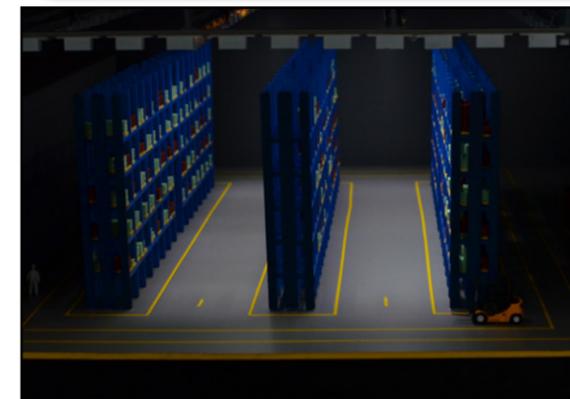
A clear demonstration of how low vs. high light intensity level and colour temperature can affect an industrial workspace: old lighting systems don't provide high enough levels to carry out visual tasks with ease. Good quality light is essential for high productivity and for the elimination of mistakes and injuries.



DEMANDING CONDITIONS

To guarantee security and safety at all industrial workplaces, the luminaires applied have to be resistant against increased strain, such as dust, humidity, water, extreme temperatures and flammable or explosive materials.

The code IP expresses the protection level of the interior or exterior luminaire against penetrating a foreign body or liquid. The code consists of two numbers IP XY – the first one assesses the protection level against a dangerous contact and penetrating of the foreign bodies (X) and the second one against penetrating water (Y).



MOVEMENT SCANNING ENERGY SAVING

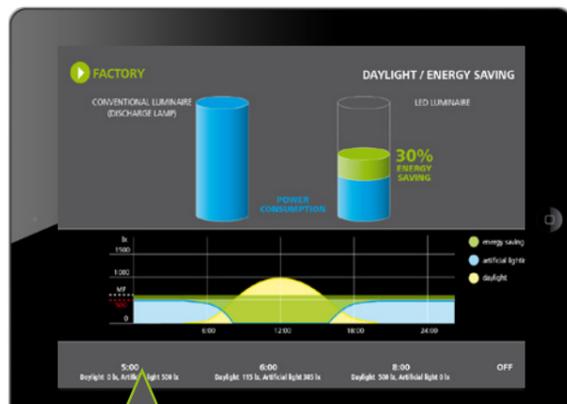
In industrial objects, especially in parking lots, certain warehouse areas and corridors, there are spaces without permanent use. With control based on movement detection the waste of lighting these unused areas can be eliminated completely. Make use of predesignated functions such as creating zones, time schedule, and setting up delay for dimming to save vast amount of energy.

LUMINAIRE EFFICIENCY ENERGY SAVING

Next to being ecological, our solutions focus on the latest lamp technology, system efficacy of the luminaires, dangerous material content, the thermal output of a lamp, and on product lifetime and maintenance costs.

With high efficacies, SLE developed LED luminaires for industry lighting solutions that provide the most efficient system on the market. Reach up to 44% saving on power consumption by modernising your lighting and achieve.



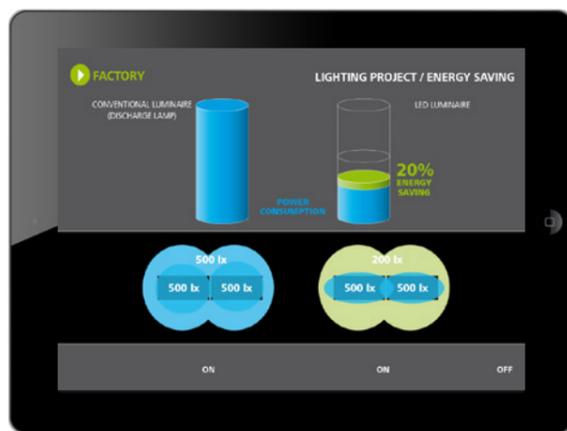


5:00 Daylight 0 lx, Artificial light 500 lx 6:00 Daylight 115 lx, Artificial light 385 lx 8:00 Daylight 500 lx, Artificial light 0 lx

DAYLIGHT ENERGY SAVING

Utilizing daylight at workplaces has several positive effects. It boosts the energy levels and ensures mental and physical wellbeing of workers, next to the significant energy saving potential. The effectiveness of lighting management based on **light intensity sensing** is determined by the availability of daylight and the illumination rate of a given space.

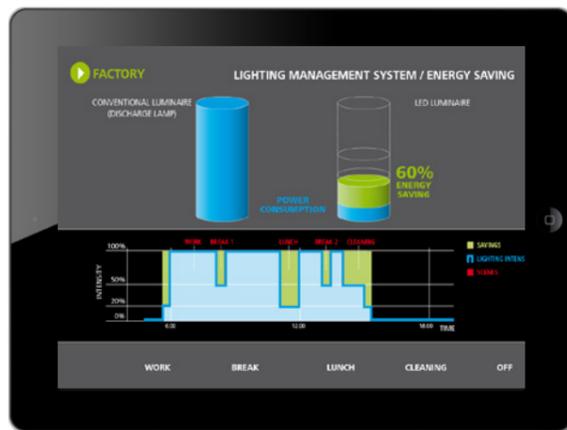
Besides making the workplace more comfortable, daylight harvesting can lead up to 30% energy saving.



FOCUSING ON TASK AREAS ENERGY SAVING

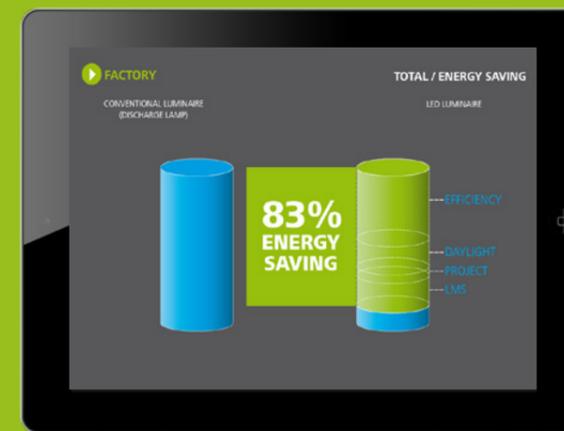
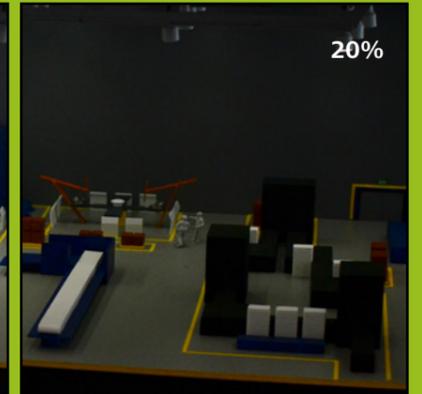
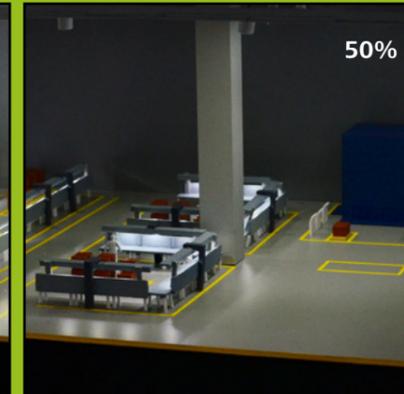
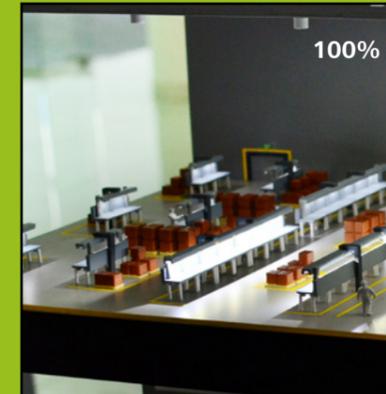
The main focus of illuminating industrial areas is clearly the desk or task area lighting. The European standard EN 12464-1 states the value of minimally 500 lux for common working activities and automatic processing. The same standard says that the illuminance of surrounding areas may be lower than the level at the task area but has to ensure the harmonious distribution of brightness in the field of vision.

With the directed light of LED luminaires this can mean 20% energy saving.



LIGHTING MANAGEMENT SYSTEM ENERGY SAVING

With Centralised Management System attaining substantial savings is guaranteed by the automatic control that dims the lighting during breaks. It also has several beneficial functions such as remote manual control of luminaire groups, monitoring of consumption overview, real time savings, real time working paths, and immediate maintenance need signal. Up-to-date reports about energy savings and the assessment of these reports are also accessible within a few clicks.



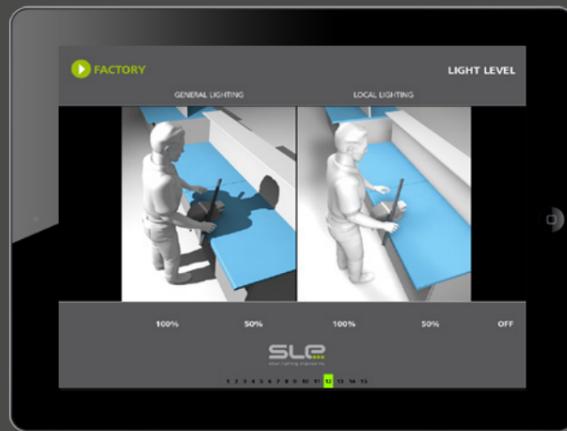
TOTAL ENERGY SAVING

A smart lighting design with efficient LED luminaires in an effective Lighting Management System with daylight harvesting can lead up to 83% savings on energy.

LIGHT LEVEL

The minimum values of **illumination level** for production areas are defined by the standard. The luminous flux is directed from above and moderately from the left hand side of the employee's view. This minimises the risk of creating sharp shadows and at the same time perfect visibility of the sharp edges of working tools is ensured.

Adequate illumination level also positively influences the performance of workers and their ability to concentrate, therefore decreases the mistake rate and the risk of injuries.



FLICKERING

From safety point of view it is essential to prevent the flickering of the artificial lighting. The stroboscopic effect poses an extraordinary danger especially to operations with rotational tools as the same value of frequency and the rotational speed can cause the impression that the tool is switched off, and it can cause serious injuries to the user.

Flickering can be avoided by installing high-frequency control gears.



DAYLIGHT SIMULATION

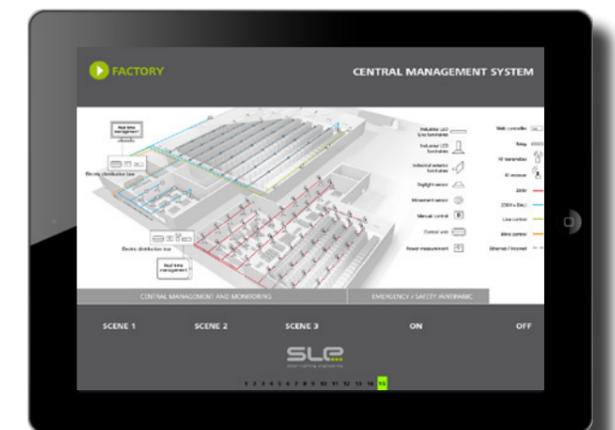
Lighting that is adapted to the natural rhythm of the human body is able to improve vitality and concentration. The development of human centric lighting has led to a modern indoor solution that simulates daylight as the day progresses. It is based on the smart use of brightness, colour temperature and light direction to positively influence the human body.

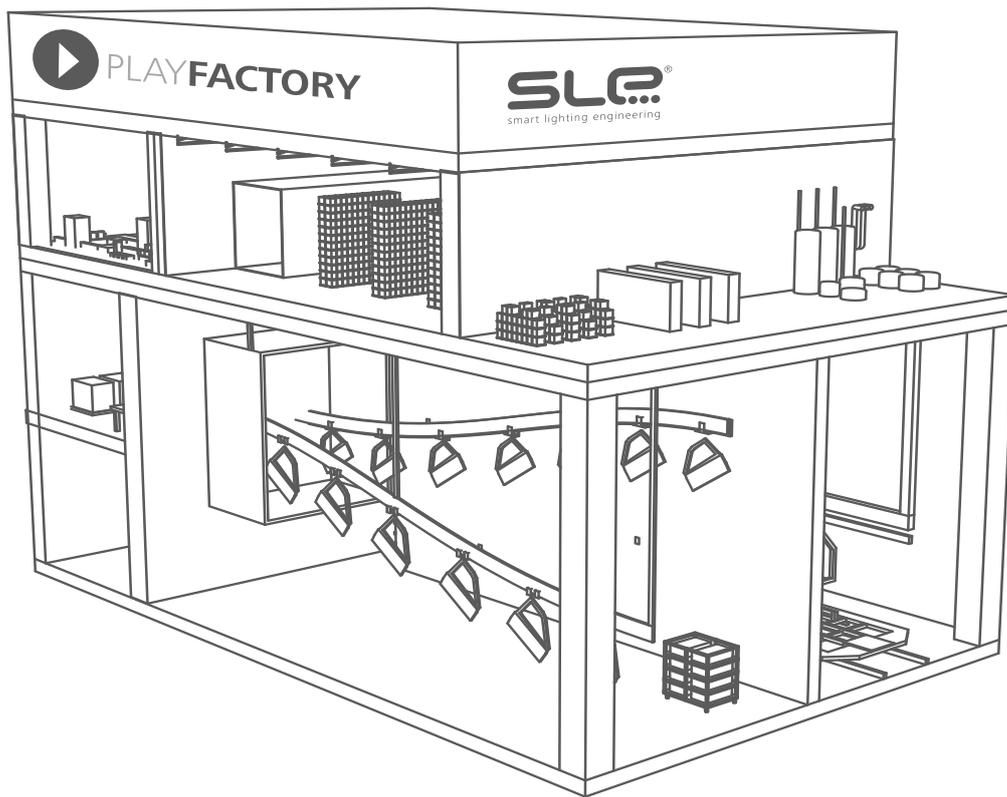
Office use can enhance concentration and performance during working time and aid relaxation and rejuvenation at the end of the day.



CENTRAL MANAGEMENT SYSTEM

Central Management System (CMS) is controlled through a customised Graphic User Interface that incorporates the management of each solution. This advanced platform is designed to monitor and manage the system easily. Its key modules make it possible to automatically collect, store and process data, schedule switching, generate reports about the system status and savings, and send notifications about failures and system errors. The software is a reliable and effective tool that helps to reduce operational costs and improve system performance.





interactive industry model - lighting solutions for our partners

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