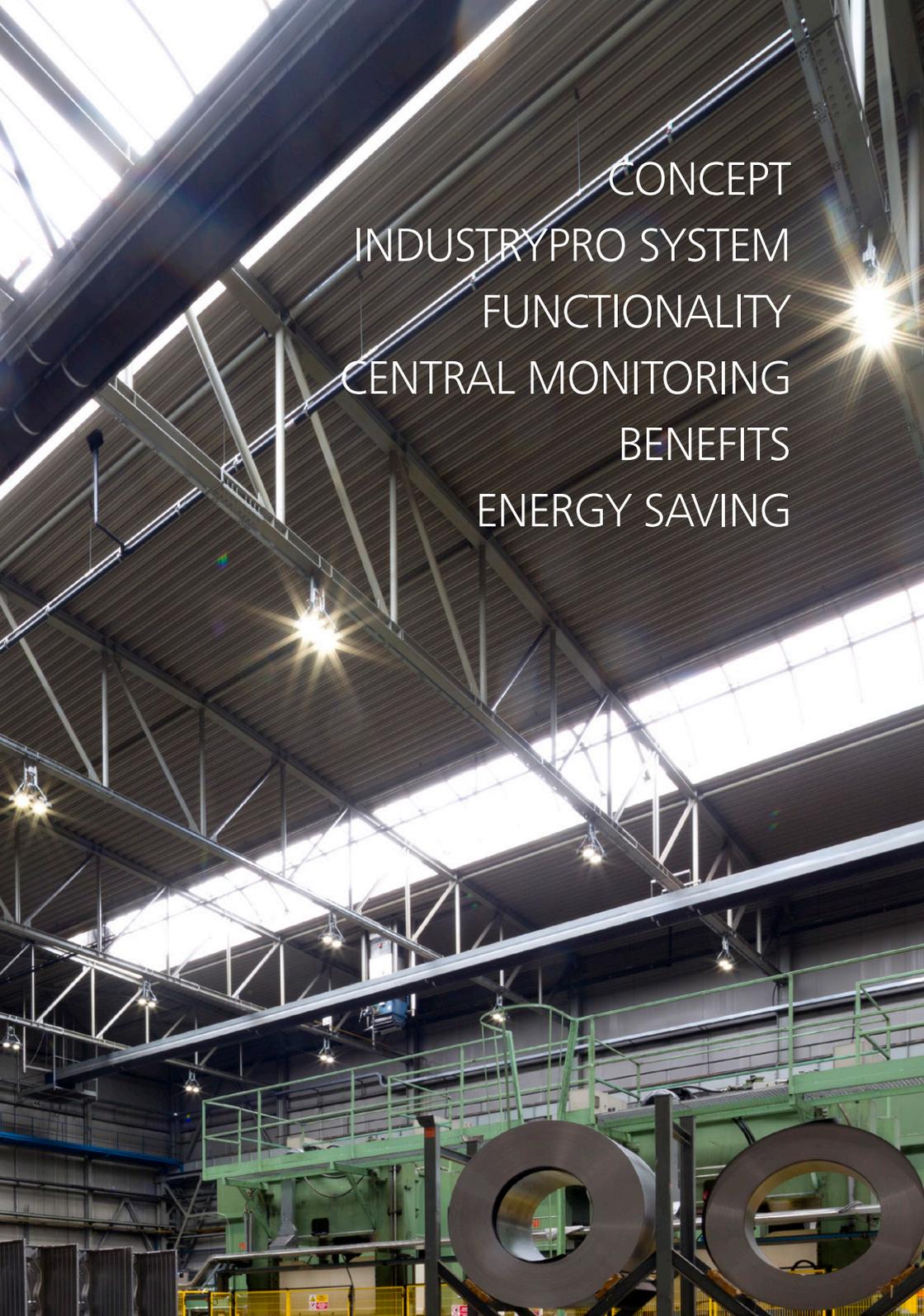




INDUSTRY LIGHTING SOLUTION

SUSTAINABLE FACTORY & WAREHOUSE

SLO[®]
smart lighting engineering



CONCEPT
INDUSTRYPRO SYSTEM
FUNCTIONALITY
CENTRAL MONITORING
BENEFITS
ENERGY SAVING

SUSTAINABLE FACTORY & WAREHOUSE INDUSTRY LIGHTING SOLUTION

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 and in following also the productivity of people.

On the other hand, 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. Choose a tailor-made solution with responsive lighting system and automated data collection.

Make your business in industry safer and **more sustainable with SLE.**

CONCEPT

100%
EXPERTISE

LED TECHNOLOGY

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.

REAL-TIME SYSTEM MONITORING

Central monitoring systems (CMS) help in improving safety by showing alerts and notifications in real-time as well as letting users know when a luminaire or light source is nearing the end of its life, which means any lighting issues can be resolved very quickly, or even before they happen. It also supports real-time system monitoring including luminaire, group and system power consumption, and even device temperatures.

PERFORMANCE AND SAFETY

Bright light that feels natural and aids concentration and wakefulness not only improves safety, but also raises worker performance. Other ergonomic lighting parameters also play a role in better performance, including good colour rendition that enhances visibility and optimised lighting uniformity and brightness distribution that reduces visual fatigue.

SAVE ENERGY

Achieve considerable energy savings through installing presence detectors and harvesting daylight. 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. At the same time, for the maximum usage of daylight, light intensity is kept on the optimal level by the daylight sensors.

“ Increase performance and safety,
improve efficiency



“ Eliminate the waste of lighting in areas without activities

INDUSTRY PRO SYSTEM

MOVEMENT DETECTION

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. Make use of pre-designated functions such as creating zones, time schedule, or setting up delay for dimming.

LIGHT INTENSITY

The effectiveness of lighting management based on light intensity sensing is determined by the availability of daylight and illumination rate of the given space. The illumination rate depends on the geographical position, window and skylight size and orientation.

COMBINED CONTROL

If the situation allows, we recommend the combination of both motion detection and light intensity control. This combined control will provide higher savings than one alone. The table clearly shows that the highest savings can be made in corridors with low frequency of activities combined with a high level of available daylight. In such cases up to 80 % can be saved on operating costs and the lifespan of LED is increased.

INPUT SIGNALS

Input type transducers or sensors, produce a voltage or signal output response which is proportional to the change in the quantity that they are measuring (the stimulus). The type or amount of the output signal depends upon the type of sensor being used (temperature, pressure, sound, speed, position etc).

CONTROL BY RADIO FREQUENCY

To apply control with RF system a small antenna is implemented in each luminaire through which data is transmitted in a mesh network topology. Data can be transmitted from different luminaires simultaneously. No additional cabling for control is needed.

RELAY UNITS

For controlling switched loads such as blinds, non-dimmable luminaires and various non-lighting devices.

types of control	combined control system								
	♂	♂♂	♂♂♂	♂♂♂♂	♂♂♂♂♂	♂♂♂♂♂♂	♂♂♂♂♂♂♂	♂♂♂♂♂♂♂♂	♂♂♂♂♂♂♂♂♂
intensity	♂	♂♂	♂♂♂	♂♂♂♂	♂♂♂♂♂	♂♂♂♂♂♂	♂♂♂♂♂♂♂	♂♂♂♂♂♂♂♂	♂♂♂♂♂♂♂♂♂
manufactory	38	53	60	35	51	58	31	48	56
warehouses	43	59	80	40	58	65	35	54	60

- ♂ occasional movement
- ♂♂ normal movement
- ♂♂♂ greater movement

- ♂ low light intensity
- ♂♂ medium light intensity
- ♂♂♂ high light intensity

ENERGY SAVING
26-50%
51-80%

FUNCTIONALITY

IndustryPro control and monitoring system

Real time management

electric distribution box



electric distribution box

IndustryPro RF control and monitoring system

Real time management

- Industrial LED Line luminaires 
- Industrial LED luminaires 
- Industrial exterior luminaires 
- Daylight sensor 
- Movement sensor 
- Manual control 
- Control unit 
- Power measurement 
- Web controller 
- Relay 
- RF transmitter 
- RF reciever 
- 230V 
- 230V + DALI 
- Line control 
- Blind control 
- Ethernet / Internet 

CENTRAL MONITORING

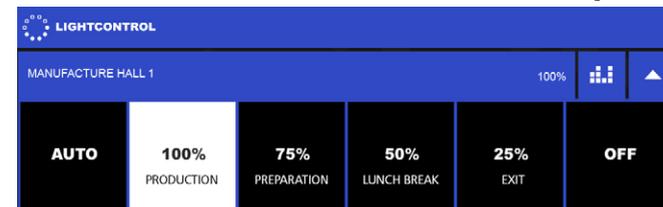
GRAPHIC USER INTERFACE

The Light Management System (LMS) is controlled through the Graphic User Interface that is customised according to the specific industry solution. This advanced platform is designed to monitor and manage the system. 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.

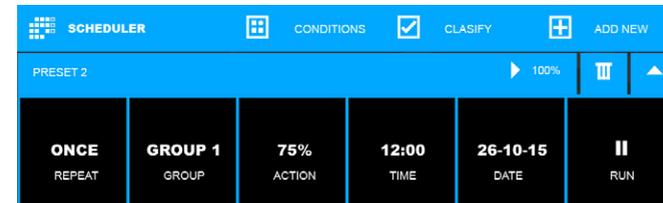
100%
UP TO DATE

BASIC SOFTWARE MODULES

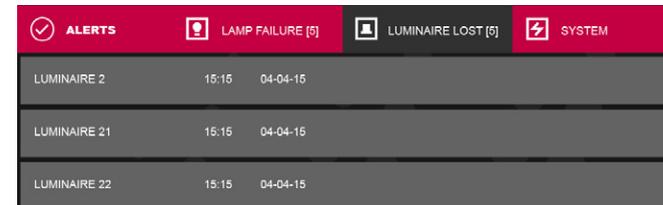
1. Light control



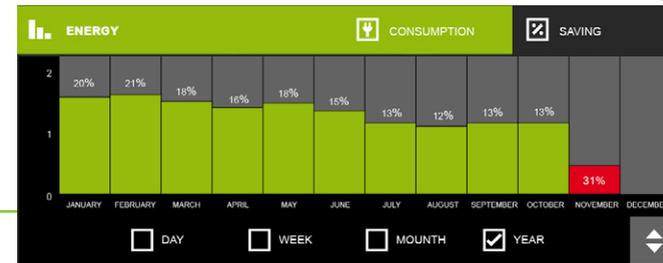
2. Scheduler



3. Alerts



4. Energy



“ Improve comfort and savings with central monitoring.



BENEFITS

100%
EFFICIENCY

NOTIFICATIONS AND REPORTS

The system provides notifications in case of power failure in a distribution box, communication error, and luminaire failure. Notifications are shown within the system and are sent to users via SMS or email.

The web-based solution offers a wide range of reporting options as well that can be selected according to time or event.

PROGRAMMES

The solution allows for the use of predefined lighting scenes, setting up schedules for the groups of luminaires and transparent graphic demonstration of the planned switching.

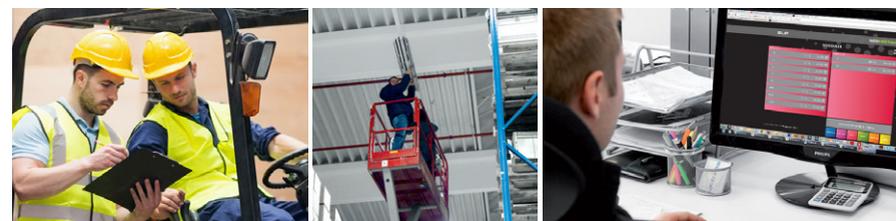
INDEPENDENT AND SAFETY

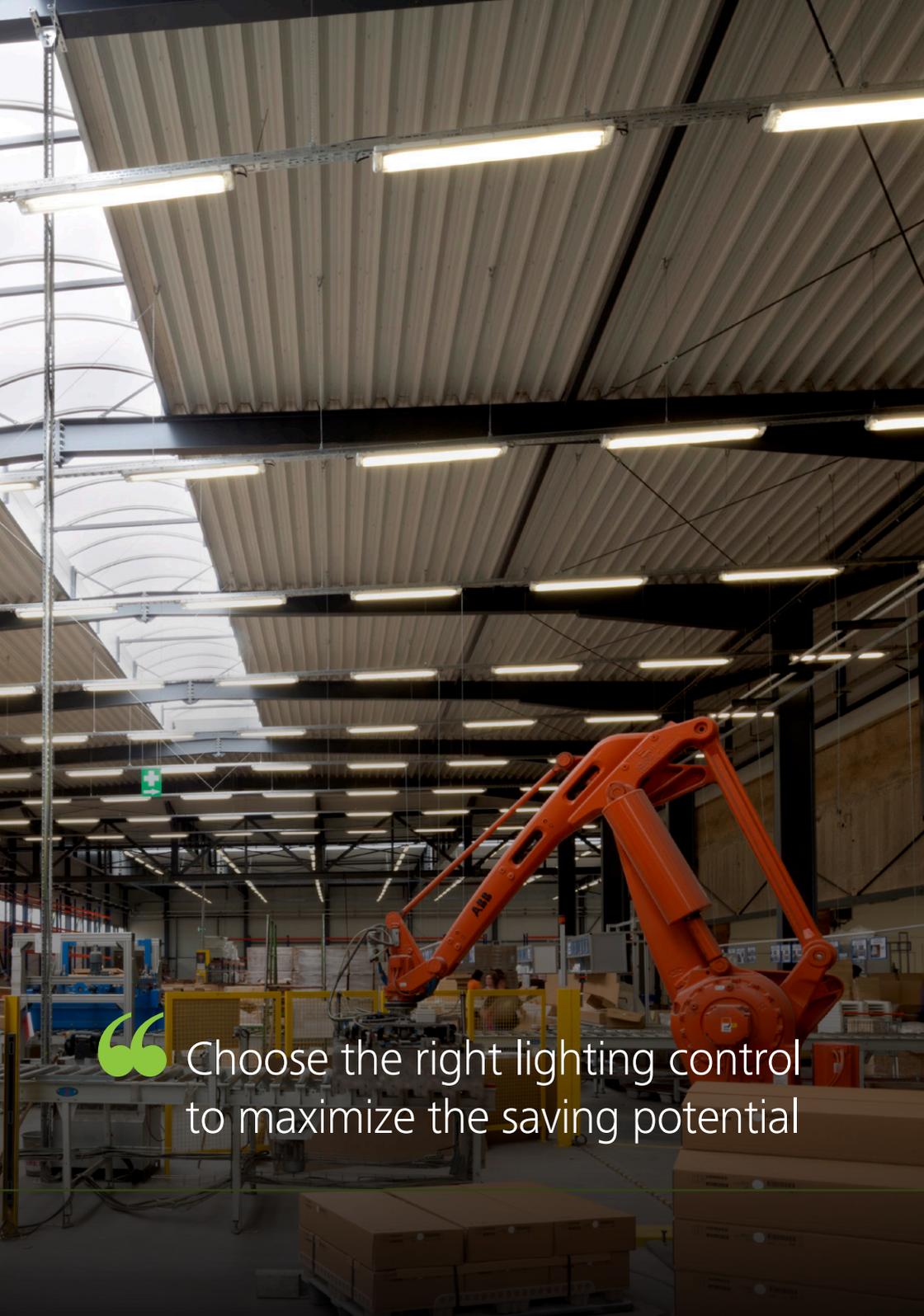
Using a separate server which is delivered with the system makes it an independent solution with maximum safety for existing IT networks.

FURTHER BENEFITS:

- Access the system from a computer, tablet, or smart phone
- Detailed overview of all information about each luminaire, current settings and measurements.
- Automated data collection reduces maintenance costs
- User-friendly remote and local control provides great autonomy
- Assessment of energy saving reports

“ High quality light in combination with clever control improve safety and performance





Choose the right lighting control to maximize the saving potential

ENERGY SAVING

FACTORY MODEL SITUATION

Point-to-point lighting for open areas combined with daylight sensor maintains the light level and reduces the power consumption.

GHADA
 Power consumption: **238 W**
 Lumen output: **28,800 lm**
 Lifetime: **100,000 hours**
 Efficacy: **121 lm/W**



Standard illumination Metalhalide 400 W	New solution: Dimmable LED luminaires	INVESTMENT: 18.26 €/m ²
Ground area: 4200 m ² (60 m x 70 m, height 8 m)	Modular system for LED module and driver	ENERGY SAVING: 9.22 €/m ² /year
Operations: 5,840 hours per year	Lighting management system: motion detector, lighting intensity sensor	MAINTENANCE SAVING*: 3,200 €
Price for electricity: 0.15 €/kWh	Central monitoring system: telemangement, consumption overview, real time savings, real time monitoring, signal service	PAYBACK TIME: 2.4 year
Ambient temperature: 35 °C		CO ₂ SAVING: 47.5 t/year
		TOTAL SAVING*: 103,882.4 €
		81%

* counted with 5 years running time / **warranty 7 years**

WAREHOUSE MODEL SITUATION

Continuous lighting line, mounted parallel with racks, including motion detection for provision of great autonomy, user-comfort and savings.

SMART L
 Power consumption: **80 W**
 Lumen output: **10,650 lm**
 Lifetime: **50,000 hours**
 Efficacy: **133 lm/W**



Standard illumination Line luminaire 2x58W	New solution: Dimmable LED luminaires	INVESTMENT: 18.24 €/m ²
Ground area: 3030 m ² (49 m x 63 m, height 8 m)	Modular system for LED module and driver	ENERGY SAVING: 7.16 €/m ² /year
Operations: 8,760 hours per year	Lighting management system: motion detector, lighting intensity sensor	MAINTENANCE SAVING*: 9,000 €
Price for electricity: 0.15 €/kWh	Central monitoring system: telemangement, consumption overview, real time savings, real time monitoring, signal service	PAYBACK TIME: 2.55 year
Ambient temperature: 35 °C		CO ₂ : 48.77 t/year
		TOTAL SAVING*: 62,152.3 €
		81%

* counted with 5 years running time / **warranty 5 years**



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