Wir sind heller®

Light for professionals

3000K 4000K 5000K 6000K
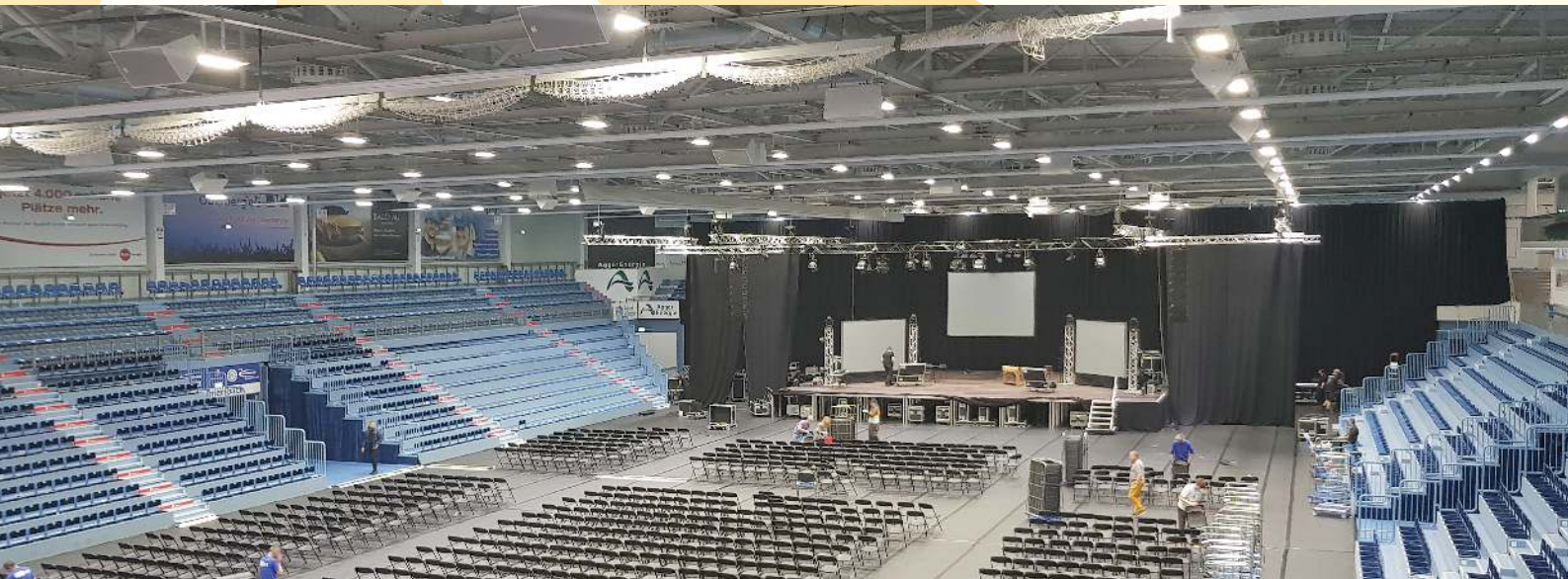
Catalog 2019

www.Wirsindheller.de

![Wir sind heller® logo]

About Wir sind heller.

We are specialized in light planning and lighting solutions with the latest LED technology.

The saving of energy is only one aspect. The flexible, robust and extremely versatile light sources create space to rediscover light. Whether hall lighting, office lighting, shop lighting or private lighting we realize your lighting project with state of the art LED technology.

We accompany you from the brainstorming, the visualization of the lighting concept to the financing and installation by competent partners.

The creation of an individual lighting atmosphere in harmony with perfect technology, tailored to your wishes and the requirements of the room is our company goal.

Contact us we will be happy to assist you.

Your Wir sind heller (´We are Brighter´) Team

LED - Why a renovation is worthwhile.

LED Luminaires are energy saving.

Everyone associates this with LED lamps and luminaires and it's true. A 5 Watt LED bulb effortlessly replaces a conventional 40 Watt light bulb, a 17 Watt LED tube provides the same light output as a conventional 38 Watt fluorescent tube and the energy saving effect is by far not the only advantage of LEDs.

LED Lighting is Durable.

With lifetime over 60,000 (L80) hours, a good LED lamp is far more durable than conventional lighting solutions. Maintenance costs are therefore completely eliminated. Modern luminaires no longer require a change of light source due to the long service life of the LED. In general, the service life of LEDs is given as L70 this means that the LED does not usually fail, but that at the end of the specified hours 70% of the initial brightness is still present.

LED Lighting is flexible.

Would you like to illuminate a shelf or the wall behind a small projection? That's not a problem for the LED. The small light sources are even available as adhesive strips, which you can cut to size with scissors. Outdoor lighting and underwater lighting? No problem either the LEDs can be cast completely waterproof.

LED Lighting is strong.

No other light source is more resistant to shock and impact than LEDs. Fluorescent tubes and energy-saving lamps should be treated with caution through the glass body in which the luminous gas is located the LED lighting is much more vibrationsafe and break resistant.

LED Lighting is more gentle.

Since the light spectrum of the LED is only in the visible range, there is no UV and infrared radiation. However, UV radiation in particular makes plastics and colours brittle. LED light is therefore more gentle on the illuminated goods. A further point is that insects are attracted by the UV light component of the lighting. This is an advantage of LEDs that should not be underestimated, especially for hall and street lighting.

LED Lighting is environmentally compatible.

Energy saving lamps and fluorescent tubes contain mercury and must therefore be disposed of as hazardous waste. The danger of a broken energy-saving lamp lies in the mercury vapours, which spread rapidly. The LED can also score here.

Many advantages but we don't want to hide one characteristic from you.

LED Lighting is slightly more expensive than regular solutions.
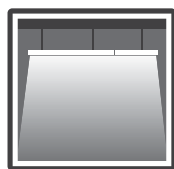
High quality LED lighting is slightly bit more expensive than e.g. energy saving lamps or fluorescent tubes. However, this only applies to the purchase price. If you offset energy costs and maintenance costs, service life and the other positive aspects of LEDs, you can quickly save costs with LEDs.

LED Line Light sytem   **Highbay**   **Office Lighting**

Light Control

Company Network

Industry 4.0

Increasing digitalization offers ever greater opportunities for industry. All devices from production machines to hall spotlights (industrial lighting 4.0) are equipped with processors that not only control internal processes, but can also process and pass on external information.

In production, the most diverse areas are networked by machine intelligence. Information from one area can thus be evaluated by other areas and included in intelligent, independent decisions.

This networking enables intelligent programming to make independent decisions. Production thus becomes an overall task for all areas involved.
Production processes become leaner and more flexible, costs are reduced. Lighting is also integrated into this network of interlinked processes.
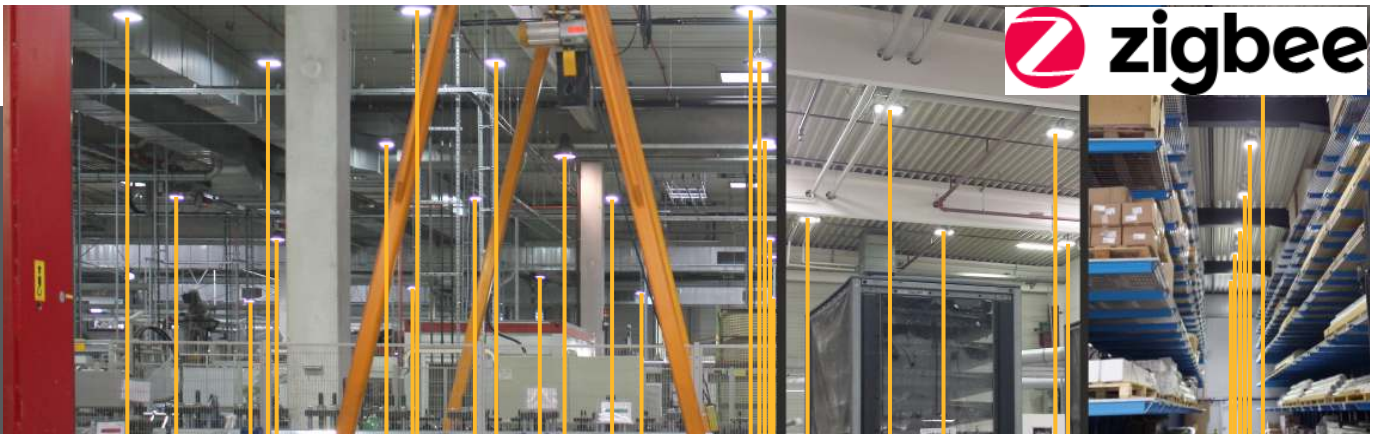
Industrial Lighting 4.0

Even lighting is no longer a self contained installation that is switched off manually. It reacts to sensors and probes, evaluates, switches and dims independently, interacts with the company network and provides information. The aim is to provide optimum lighting for the respective work process without having the need to intervene and to reduce costs through targeted switching. Lighting thus becomes a part of self-managed building management.

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Wir sind heller - ZigBee PRO Building

Industrial Lighting control WSH (wirsindheller) PRO building Industry 4.0

More complex lighting control simple to configure and easy to assemble

WSH ZigBee PRO Building Lighting control system

The Wir sind heller ZigBee PRO Building lighting control system is designed to meet the requirements of industrial lighting. From hall lighting to office lighting, all possibilities of flexible lighting control can be fulfilled.

Structure of the „Wir sind heller" ZigBee Pro Building lighting control system

The „Wir sind heller" ZigBee light control starts at the 1-10V interface of the lights. Here the light module serves as transmitter as well as receiver. Based on the ZigBee Industrial Standard, a network is set up in this way, in which commands from luminaire to luminaire (fixture). In addition to the luminaire modules, there are pushbutton and sensor modules, which can also be connected to the network. Circuits of the buttons and information from different sensors (e.g. light sensors or PIR sensors) are passed on to the network and can be processed. This network can now be adapted and configured to a wide variety of requirements. The configuration is done by means of a radio dongle and the configuration software.

Once the network has been set up, it runs completely independently. No server and no installation in the control cabinet are necessary. Luminaires can be assigned to groups and scenes, push buttons can trigger various events and luminaires can react to the information from the sensors. Signals and information are transmitted from module to module so the network can also overcome long distances and unite to form a luminaire installation.

The Luminaire Modules

Based on the 1-10V interface of the luminaire whether hall spotlight or LED panel the luminaire module controls the luminaire, connects it to the ZigBee network and sends metering data to the gateway. The luminaire module directly stores the programming for the luminaire and transmits incoming signals from buttons, sensors or the programming software as repeaters to the respective receiver. Metering luminaire modules are IP65 and can therefore also be used in humid environments.

Push Button Modules

These modules can be used to connect various buttons and switches to the ZigBee network. Whether simple switching commands or dimming commands are transmitted to the ZigBee network and assigned to luminaires or zones.

Sensor Modules

In a lighting control system there are various sensors. Light sensors measure the proportion of natural and artificial lighting. PIR sensors detect whether someone is in the detection area or moving. This information is sent by the sensor modules to the ZigBee network and processed there. For example, all luminaires in the industrial hall can then be dimmed to match the light entering the hall, thus providing only as much artificial lighting as is required to achieve the required illuminance. If a PIR signal is received and the PIR sensor is assigned to a group, this group is switched so that the light is always on when work is carried out in the area.

The central contact point - the WSH ZigBee PRO Building Gateway

The WSH ZigBee PRO Building Gateway serves to connect the ZigBee network to the company network or building automation network. Installed in the fuse box, it is available via the company network using a browser. It receives the metering data of the luminaire modules and provides a detailed evaluation. Luminaires and luminaire groups can be localised in a hall plan. The control of luminaires and luminaire groups is also possible here. This can be easily done using a tablet or computer, for example. In internal user management, rights can be assigned to different users - from simple viewing of the evaluation to simple or general control and installation administration. An export of the evaluation for processing in other programs is also possible.

Safety & Security

Based on the ZigBee Industrial Standard, the Wir sind heller ZigBee PRO Building Network was designed as a high-security backup concept for the needs of industrial lighting. It meets the requirements of industrial companies in terms of stability and security.By dispensing with a central control point, programming is available in practically every luminaire module. A failure does not affect the entire lighting system, but only one luminaire or parts of it.

The ZigBee Industrial Standard is encrypted in all areas. In addition, the ZigBee PRO Building network is only accessible via an individual „installation file", even during installation.

The Installation

The Wir sind heller ZigBee PRO Building lighting control system relies on a transmission of signals by radio. This makes a control line to the luminaires unnecessary. The luminaire modules are simply installed or retrofitted later.

Switches, push-buttons and sensors can be placed individually in the room. Later, the individual modules are „collected" and programmed in the network. The installation can also be easily changed at a later date.

Whether luminaires, push-buttons or sensors are to be relocated, new switches or luminaires added to the installation or luminaires regrouped - Wir sind heller ZigBee PRO Building lighting control offers the greatest possible level of flexibility.

Configurate the system

Wir sind heller ®

The WAGO building control/lighting control system

All the threads gather in the switch cabinet: Simply modularise your lighting control system. The WAGO system controls all functions of the lighting system from the control cabinets. It is not a stand alone system, but the central switching point for your lighting control. The advantages of all systems are combined here. Manage your entire lighting system conveniently using the WAGO building control system.

Whether DALI, KNX, DMX or EnOcean WAGO picks up all the threads and brings them together in one control system. Settings and connections to luminaires, switches and sensors can be easily installed and configured here. The controller provides a web server that can be accessed both via LAN and WLAN. All settings on the lighting system are made via the user interface, sensors are integrated and switches are assigned.

Installation of the building control system: In the control cabinet, the WAGO system is simply installed in the mounting rail and wired. An extension via the different modules is also possible. Installation in the control cabinet always starts with a WAGO Power Module. The complete system is supplied with power from this module.

The Switchboard: The controller is the central switching point. The complete system is configured via this ETHERNET PLC. This is where all information gathered, evaluated and visualized. All luminaires, sensors and switches are recognised here and can be used in a wide variety of combinations. Scenes, groups, daylight dependent and presence controlled circuits can be set up here. The controller supports MODBUS/TCP and EtherNet/IP for use in industry. It can be reached via HTTP, BootP, DHCP, DNS, SNTP, SNMP, FTP. The integrated web server provides the convenient switch point. You can access it from your desktop PC, tablet or mobile phone.

The interfaces: The various Interfaces of the supported lighting controllers are now docked to the controller.

DALI: The DALI interface complies with the DALI standard IEC 62386. The 12 mm wide Bus Terminal is a DALI interface and supports 64 addresses for ECGs (electronic ballasts) and 64 addresses for various sensors. Each DALI device can be assigned to up to 16 groups and 16 scenes. In addition, a further 16 virtual groups are provided.

EnOcean: A serial interface terminal enables the connection of devices with RS-485, RS-422 or RS-232 interface to the controller. This enables EnOcean wireless switches and sensors to be addressed and incorporated.

KNX: WAGO also offers various options for connection to a KNX system. In conjunction with the WAGO SYSTEM, the KNX controller can be used as a freely programmable application controller. It is suitable for data transmissions of 10/100 Mbit/s and is programmable according to IEC 61131-3. KNX objects of any type (EIS/DPT) can be created via programming. Prefabricated function blocks are available in libraries for setup. The controller supports a maximum of 253 communication objects and 254 group addresses/associations.

Cross-system
One advantage of WAGO building control is the cross-system integration of luminaires, sensors and switches. For example, a DALI-controlled lighting system can be switched via an EnOcean switch. DALI sensors can be assigned to EnOcean-controlled luminaires and so on.

Lux

1-10V

DALI

ZigBee®

KNX

enocean

DMX

Dimmable
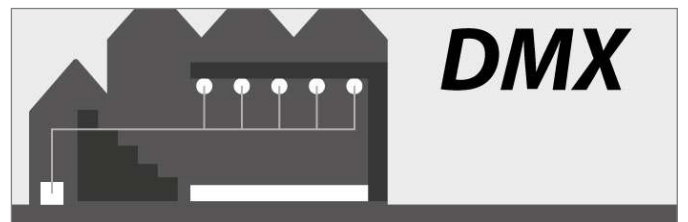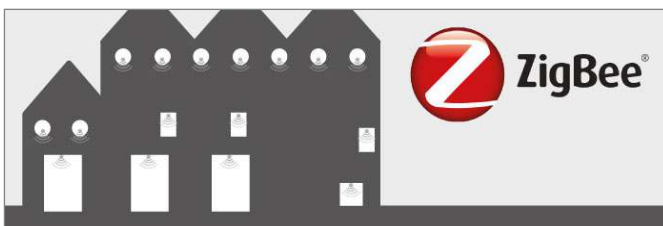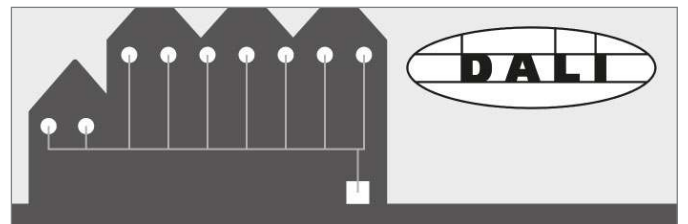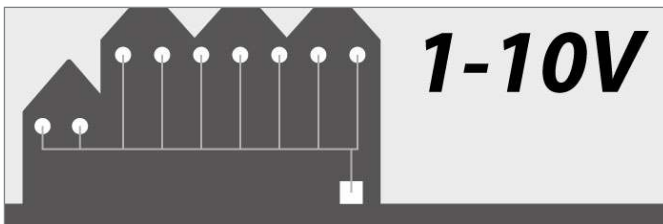
Modular LED Highbay MH SL series

The MH SL series is a modular solution for every lighting situation. adaptable, highly effective hall reinforcement series..

The LED industrial spotlight series is suitable both for large industrial halls, for smaller commercial halls as well as for outdoor use.

Individual LED modules with 40W each are combined to form a single spotlight with up to 7 modules providing 45500 lumens of light output.
The LED modules can be equipped with different optics that provide beam angles of 12°, 25°, 40°, 60°, 90°, 90°x40° and opal (120°).
Thanks to sophisticated cooling, the modules have a service life of over 50,000 hours L70.
The spotlights that can be assembled in this way can be used extremely flexibly and can overcome almost with every lighting situation.

Due to the quality of the components we use, we are able to offer the LED indoor spotlight a warranty of 5 years.

The spotlights are equipped with dimmable power supply units. This offers, for example, the possibility of daylight-dependent control.

Another advantage of the modular design: Individual modules are connected to each other and to the drivers by means of a waterproof double coupling and can be connected at any time - also during operation can be replaced.

MH SL 1 Modul = 40W | 6500lm | 350mm x 340mm x 335mm
MH SL 2 Module = 80W | 13000lm | 430mm x 340mm x 335mm
MH SL 3 Module = 120W | 19500lm | 510mm x 340mm x 335mm
MH SL 4 Module = 160W | 26000lm | 590mm x 340mm x 335mm
MH SL 5 Module = 200W | 32500lm | 670mm x 340mm x 335mm
MH SL 6 Module = 240W | 39000lm | 750mm x 340mm x 335mm
MH SL 7 Module = 280W | 45500lm | 830mm x 340mm x 335mm

Can be used in the food industry according to DIN 10500,
Ball proof according to DIN 18032 part 3, suitable for HD recordings
Protection classes IP68 modules, IP67 power supplies, IK09 complete system

HALL LIGHTING

Dimmable
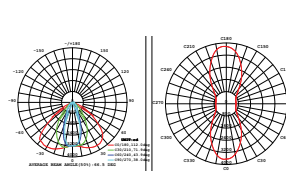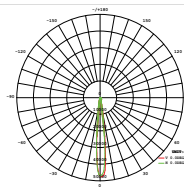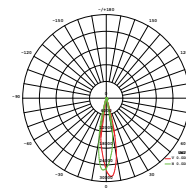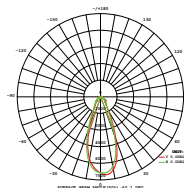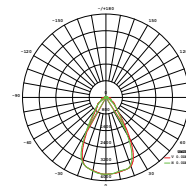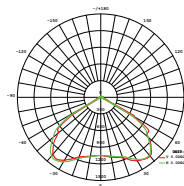
LED Highbay Series WH SL und SL2

The more energy the LEDs convert into light, the lower the running costs of lighting. This depends on the actual luminous efficiency of the complete spotlight system. Since the optics also swallow light, they must also be optimally adapted to the LED.

The WH SL series is available in two efficiency classes
The WH SL2 indoor spotlights are equipped with highly efficient 5050 LEDs, which effectively achieve a luminous efficacy of the spotlight of up to 165 lumens per watt

The WH SL series is equipped with 3030 LEDs that reach up to 140 lumens per watt. Due to the lower luminous efficiency, the investment costs for this variant are lower. Which version is suitable for your project results from careful planning and comparison of running expenditure and investment.

Uniform illumination: The beam angle
Different hall sizes require different beam angles. The WH series takes this into account with three different light distribution characteristics. The beam angles of 60° for low-beam planning, 90° and 120° for wide-beam light distributions cover all requirements in hall lighting.

Lifespan
Due to excellent wear resistance and high performance, the WHSL achieves an above-average service life of 60,000 hours, the WH SL2 even an incredible 70,000 hours.

States of protection
LED indoor spotlights are often used in harsh environments. Moisture and vibrations may not affect the system. This is why the WH series is extremely robust and protected against moisture. With an impact protection of IK08 and a protection class of IP65, there is a wide range of applications even outside protected halls.

Light control
Lighting controls make a lighting solution flexible. Here, the hall lighting can be adapted to the needs of the work and the workers. In addition, appropriate switching and dimming reduces energy costs drastically. The LED indoor spotlight series WH SL is delivered with a 1-10V dimming as standard and is therefore optimally prepared for use, for example, with the Wir sind heller PRO Building lighting control system. A DALI version of the spotlight is also available for use in DALI controlled projects.
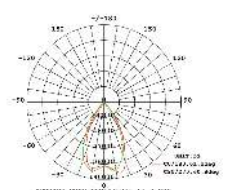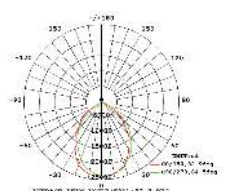
WH SL Serie	WH SL2 Serie
100W 14500lm	100W 16500lm
150W 21750lm	150W 24750lm
200W 29000lm	200W 33000lm
240W 35000lm	240W 39600lm

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Dimmable

Modular LED Highbay MC series

HS-MC208
Module: 8 | Power: 320 W
Lumen: 52.000 lm
Dimensions: 665 x 360 mm x 415 mm
Weight: 13,1 kg

HS-MC210
Module: 10 | Power: 400 W
Lumen: 65.000
Dimensions: 410 x 680 mm x 395 mm
Weight: 28,9 kg

HS-MC212
Module: 12 | Power: 480 W
Lumen: 78.000
Dimensions: 490 x 680 mm x 395 mm
Weight: 31,3 kg

HS-MC214
Module: 14 | Power: 560 W
Lumen: 65.000
Dimensions: 570 x 680 mm x 395 mm
Weight: 34,3 kg

HS-MC216
Module: 16 | Power: 640 W
Lumen: 104.000
Dimension: 650 x 680 mm x 395 mm
Weight: 36,4 kg

General Technical Data

Beam angle	25°	40°	60°	90°	90°x40°| opal-milky
Colour temperatures	5000K (optional 3000K | 4000K | 5700K)
Overvoltage protection	6 kV
Dimming	1-10V, DALI
Protection levels	IP68 Module, IP 67 Power supplies, IK09 Complete system
Warranty	5 years

Dimmable
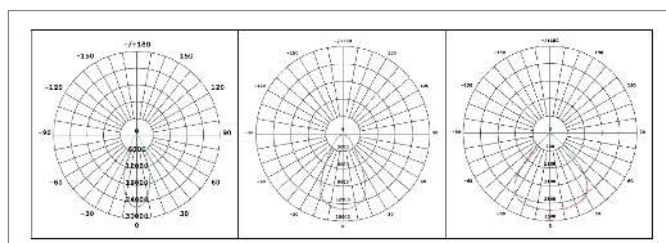
Industrial LED Highbay IB2

In the IB2 the sophisticated Philips Lumiled LED technology does its job and provides an excellent lumen yield.
The heat is conducted via heat pipes from the LEDs to the heat sink and is thus responsible for a service life of > 50,000 hours (L70).
The reflectors distribute the light without losses from the LEDs to the surface to be illuminated. It is perfectly distributed by the embossing of the reflector.

A TÜV-tested Meanwell power supply unit is responsible in the spotlight for the reliable supply of the LEDs throughout their entire service life.
The high protection class of IP65 makes the IB2 a good choice even for rough working environments.

The spotlight is equipped with a dimmable power supply (1-10V optional DALI). This offers, for example, the possibility of daylight-dependent control.

5 Year Manufacturer Warranty.

Operating voltage	AC 200-277V, 50-60 Hz
system consumption	90W, 150W, 200W, 240W, 300W
Lumen/Watt Spotlight	110lm/W
Beam angle	45°	60°	90°	120°	Polycarbonat
Colour temperature	3000K, 4000K, 5000K, 6000K
CRI	RA > 80
LEDs	Philips Lumiled
Working environment	Zwischen -40°C und +50°C
LED Lifetime	> 50.000 Stunden
Housing material	Aluminium - schwarz
Weight (net)	5,7 kg	7,6 kg	9,2 kg	9,8 kg
Reflector diameter	45°=370x185, 60/90°=350x140/160, 120°=440x115
Certificates	CE, ROHS, Power supply TÜV Rheinland
Protection level	IP65
Warranty	5 years
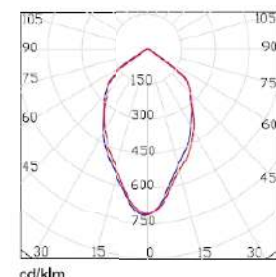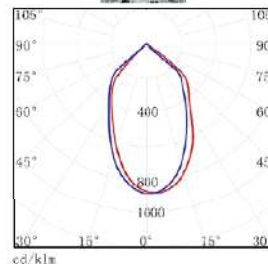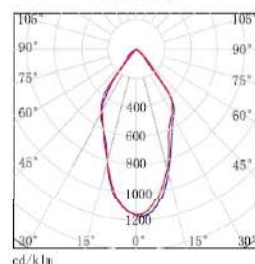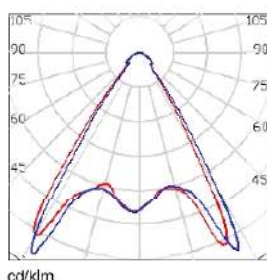
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LED Lowbay HPT

Blendarme Industrial lighting

The robust LED spotlight series HPT is designed for industrial lighting.
and lighting for sales and presentation rooms.
The wide beam angle of 120° makes the HPT also suitable for
lower ceiling heights. The diffuse optic reduces
Glare to a minimum.

A suspended mounting is possible as well as the
direct cultivation or the
Mounting under a rail system.

Warranty 5 years

Technical data

Article number	Power (Watt)	Nominal luminous flux (Lumen)	Dimensions (mm)
1HPT400SL-60-v	60W	7800-9000lm	600*150*67mm
1HPT600SL-60-v	60W	7800-9000lm	600*166*77mm
1HPT400SL-80-v	80W	9500-10500 lm	600*150*67mm
1HPT400SL-100-v	100W	12100-13400lm	900*150*67mm
1HPT400SL-120-v	120W	14700-16300lm	900*150*67mm
1HPT600SL-120-v	120W	14700-16300lm	1200*166*77mm
1HPT400SL-160-v	160W	19000-21000lm	1200*150*67mm
1HPT400SL-200-v	200W	23600-26200lm	1500*150*67mm

Colour temperature: 3000-3500K, 4000-4500K, 5000-5500K, 6000-6500K
LED: SMD 5630
Power supply: Meanwell ELG/ HLG
Beam angle: 120°
Protection level: IP65
Colour rendering: CRI>80
Input voltage: 100-277V AC | 142-431VDC, 50-60 Hz
Optional: Dimmable (1-10V) oder DALI

DIN 10500 certified

UNIT:cd
— C0/180,114.5deg
— C30/210,113.7deg
— C60/240,112.1deg
— C90/270,111.2deg

AVERAGE BEAM ANGLE(50%):112.9 DEG

LED Line Light system LS20 and LS66

LS20 and LS66 are highly efficient LED line line system, ideally suited for state-of-the-art LED hall lighting.
The integrated luminaire concept convinces at all points:

Easy installation due to self supporting luminaires
The line light system impresses with fast, tool-free installation. Everything here is geared to efficiency through to the last detail. The line lighting syste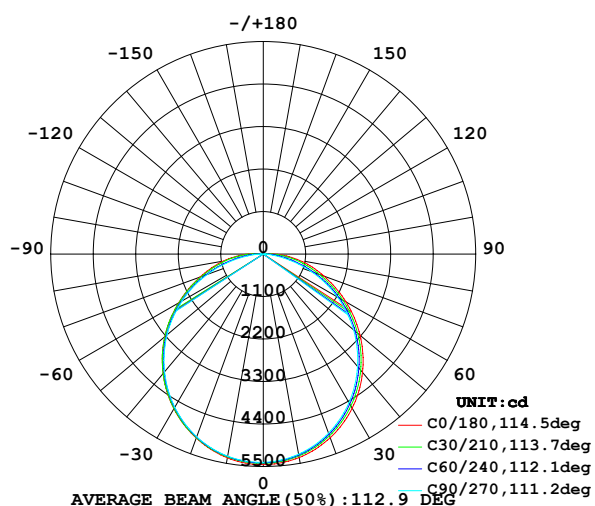m is self-supporting. If a line light system first has to be suspended for other LED arcade rooflights, into which the LED modules are then mounted, it is much simpler here. LS20 and LS66 are both based on a complete system, which is simply clicked into each other. Without tools, safe from wiring errors. The luminaires are available in 1.5 metres and 4.5 metres and can be installed in continuous light lines of up to 60 metres. Save costs with extremely reduced installation times

Highest efficiency
Thanks to optimally matched components and top quality, the line light system effectively achieves an efficiency of 160 lumens per watt.

Flexibility
Single or double flame, wide angle, narrow beam, asymmetrical or double asymmetrical the line lighting system can be adapted to any hall lighting. The wide beam pattern ensures absolutely uniform illumination even from lower ceiling heights. Higher halls, on the other hand, can be illuminated with the narrow beam version. The asymmetrical light distribution is used to illuminate walls or single-sided shelving. Goods aisles in supermarkets or shelf aisles in warehouses are illuminated with the double asymmetrical version. All luminaires are also available in 2 different wattages. LS20 and LS66 offer all the beam characteristics required for perfect illumination of a wide variety of halls.

Light control
In addition to the nondimmable standard version, there are various options for controlling the light system. A DALI version integrates the luminaire series into state-of-the-art lighting control systems. This allows the luminaire series to be safely controlled with sensors, push-buttons, tablets or other input devices. We recommend the WAGO or DALI controller for easy configuration.

Optional Accessories
For the luminaire series there is a multitude of additional accessories available.
An emergency lighting module is available both with a decentralised rechargeable battery and for a central battery. A module with a built-in Eutrac 3-phase track system can be inserted into the LS20. Here it is possible to include 3-phase rail spotlights for targeted illumination of goods and exhibits.

Certificates
The line light system is ENEC certified. Both systems are impact-resistant for use in sports halls and other sports facilities. The luminaires are also IFS, BRC and HACCP certified for use in the food industry. All LED light strips are impact-resistant (IK08).

light distribution

double flame

single flame

25
12

8

6

3

m
exp.

symmetrical   double asymetric   deep/narrow beam   asymetric
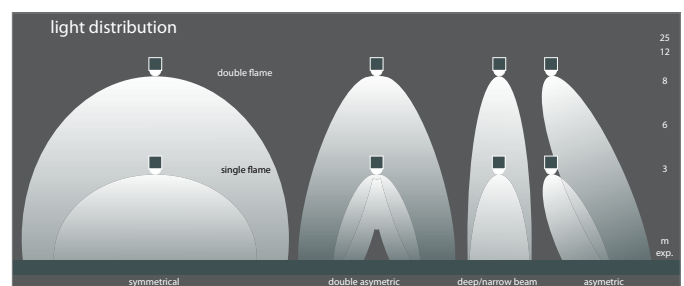
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LED line light system LS20

26 W | 1 Flammig | IP20 | 1,5 m | 4000 Lumen
52 W | 2 Flammig | IP20 | 1,5 m | 8000 Lumen
78 W | 1 Flammig | IP20 | 4,5 m | 12000 Lumen
156 W | 2 Flammig | IP20 | 4,5 m | 24000 Lumen

Differences between LS20 and LS66
The basic features of both systems are the same. The difference lies in the IP class.
If the LS20 can be classified in protection class IP20, the LS66 achieves protection class IP66.
This naturally results in some differences in the components such as plug connections and housings. This in turn results in different areas of application.

Technical data

Photometric data:
Colour temperature [Kelvin]: 4000K, 5000K, 6000K
Colour rendering index [Ra]: > 80
Light colour: neutral white, daylight white
Beam angle: symmetrical, asymmetrical, d.-asymmetrical, narrow beam
Warm-up time (60 %) [s]: < 0.50 s
Start time [s]: < 0.5 s

LED data:
Efficiency: 160lm/Watt, CRI>80

Electrical data
Nominal voltage [Volt]: 100-240V (AC), 50-60 Hz
Nominal service life [h]: > 50,000 h L80/B10
Rated service life [h]: > 50,000 h
Switching cycles: > 25,000
Luminous flux maintenance Nominal service life end: > 0.80
Luminous flux maintenance Service life end: > 0.80
Power factor (PF): > 0.90
Operating temperature [°C]: -40°C to 45°C

LED line light system LS66

26 W | 1 Flammig | IP66 | 1,5 m | 4000 Lumen
52 W | 2 Flammig | IP66 | 1,5 m | 8000 Lumen
78 W | 1 Flammig | IP66 | 4,5 m | 12000 Lumen
156 W | 2 Flammig | IP66 | 4,5 m | 24000 Lumen

If the LS20 is ideal for most applications, the LS66 can be used in environments with higher requirements:

Special features of the LS66
Dust + Moisture + NH3 Ammonia
The LS66 with D marking is approved for use in fire-hazard operating facilities in accordance with EN 60598-2-24. It is also suitable for areas with high dust exposure such as carpentry workshops and other wood processing plants. Wet conditions are no problem for the IP66 line light system. It can also be used in cold stores and other halls with humid or partially humid climates.
In the NH3 version, this strip light is also resistant to ammoniacal stable air and is therefore suitable as an LED strip light for use in agricultural operations

Storage temperature [°C]: -40°C to 45°C
Dimmable: nondimm, 50%, DALI
Control signal: optional

Material
Housing: silver E6-EV1 anodised aluminium profile
Housing colour: grey, aluminium, anodised
Cover: Polycarbonate
Cover colour: opal diffuser
Mercury-free: Yes

Certificates and Standards
Certificates luminaire: CE, RoHS, ENEC
Protection class: I
Energy efficiency class (A - E) A++ (EEI = 0.1)

Package contains
Light strip incl. power supply unit [pcs]: 1
Plug connector: 1
Warranty: 5 years

LED Universal Luminaire TP3

The TP3 series can be used for a wide range of applications thanks to its integrated luminaire concept. Whether as a work light, diffuser light, car park light or simple line lighting system the TP3 can be used universally. With its efficient LEDs, low glare, robust housing, simple installation and wide beam angle, the TP3 offers a wide range of possibilities. The TP3 is also available in a 24V version for use in 24V systems. Thus nothing stands in the way of use in machines, in vehicles or in connection with solar systems. Furthermore, the TP3 is also available in an emergency version.

Technical data

Photometric data
Color temperature [Kelvin]:
3000K\4000K\5000K\6000K
Colour rendering index [Ra]: > 80
Light colour: warm white\neutral white\day-light white
Beam angle [°]: < 120
Warm-up time (60 %) [s]: < 0.50 s
Start time [s]: < 0.5 s

LED Data:
LED type: SMD 2835

Electrical data
Rated voltage [Volt]: 200-240V AC/DC (without MS) (wired through)
Rated voltage 24V version [Volt]: 24V (DC)
Nominal service life [h]: > L70/B10 50,000
Rated service life [h]: > L70/B10 50,000
Switching cycles: > 100,000
Power factor (PF): > 0.95 / THD < 15%
Operating temperature [℃]: -25℃ to 50℃ (short-term service temperature +55℃)
Storage temperature [℃]: -25℃ to 55℃

Dimmable: 1-10V standard ,DALI, optional with microwave sensor
Control signal: 1-10V ,DALI

Material
Housing: Aluminium
Housing colour: white
Cover: Polycarbonate
Cover colour: opal, diffuse
Mercury-free: Yes

Certificates and Standards
Certificates Luminaire: CE, TÜV, EMC, RoHS, IFS, ENEC, CB, SAA, UL
Degree of protection/impact resistance: IP65/IK10
Protection level: I
Energy efficiency class (A - E) A+
Weighted energy consumption [kWh]: 22/40/60 kWh/1000 h

Specifications
Orientation: fixed, socket/socket: integrated light source (through-wired)

Other:
Wired through: Connection via terminal block with cable gland

Other:
Wired through: Connection via terminal block with cable gland

According to DIN 10500 of IFS Vers.6 and/or BRC Global Standard Food Vers.7 to certified companies in the food and beverage industry.

Scope of delivery
Luminaire: 1 x luminaire
Power supply unit: 1 x integrated 1-10V or DALI driver (optional + sensor)
Mounting material [pcs]: 2 x mounting clips
Accessories : 1 x waterproof cable connector for through-wiring
Warranty: 5 years

Emergency light variation with battery
Battery charging time: 24h
Emergency power: 6W
Emergency power period: 3h
Output voltage emergency operation: 50-80VDC
Battery type: Li-ion 11.1V 2500mAh
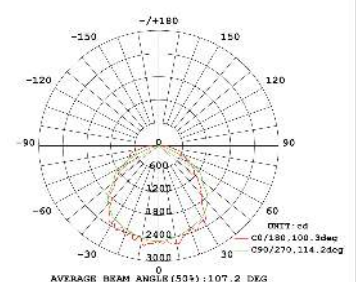
Light	Power (Watt)	Nominal luminous flux (Lumen)	Length (mm)	Weight (net)
TP3-60-22	22 W (21,1 W)	2700 lm	600 mm	1,95 kg
TP3-120-40	40 W (39,9 W)	5300 lm	1200 mm	3,15 kg
TP3-120-60	60 W (58,6 W)	8200 lm	1200 mm	3,15 kg
TP3-150-60	60 W (58,6 W)	8200 lm	1500 mm	3,875 kg

AVERAGE BEAM ANGLE (50%) : 107.2 DEG

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WORKLIGHTS

LED Worklights Series MATE

The LED work lamp MATE is your constant companion on every building site. The robust work light series illuminates flexibly in every situation, Working area glare free and bright. The MATE is designed for daily use and is your perfect partner for illuminating your work area. construction sites of all kinds, from steel construction to the painting trade

Battery operated variant With the battery powered, wireless MATE, hard to reach construction sites without power access can be perfectly illuminated. This version can be dimmed gradually to 100 %, 50 % or 35 %. So the lighting and the lighting duration can be can be optimally controlled with one battery charge. The battery life with up to 6 hours of illumination at 35% is above average long..

Cable variant the wired work light is equipped with a long supply cable and additionally offers sockets on the back for further construction site equipment (one socket for the 20 W version and two sockets for the 32 W version).

The large, wired Mate also has a backlight function on the rear.

LED work light MATE 3220 AC/DC

- for illuminating larger construction sites
- IP 54, very robust and impact resistant
- 32 watts
- Switch for switching on and off
- main operated variant : 2 safety plugs on the
  Rear side for further devices and backlight function for better
  Visibility on the back side

LED worklight MATE XS20 AC/DC

- for illuminating smaller construction sites
- IP 54 very robust and impact resistant
- 20 Watt
- mains-operated variant : 1 safety plug on the
  Rear side for another device - 20 Watt

Technical data

	MATE 3220 BAT	MATE 3220 ELECT	MATE XS20 AK	MATE XS ST	**Accessories**
Article number	WL-MATE-3220-40-4HM-DC	WL-MATE-3220-40-PLS2-AC	WL-MATE-XS20-40-4HM-DC	WL-MATE-XS20 -40-PLS1-AC	- made of galvanized steel - maximum height 2500mm - Hook for cable- mounting - 2 x M6 Screws for mounting
Energy source	battery-operated	line-powered	battery-operated	line-powered	
Operating voltage/ charger	AC 220 - 240 V (AKKU 18,5V DC 2000 mAh)	AC 220 - 240 V	AC 220 - 240 V (AKKU 18,5V DC 2000 mAh)	AC 220 - 240 V	
Rated / rated power	32 W	32 W	20 W	20 W	
Dimmable:	in steps: 100% , 50%, 35%	No	in steps: 100% , 50%, 35%	No	
Rated/rated luminous flux	3100 in the AC	3100 lm	2000 in the AC	2000 lm	
100%	2.000 lm (20 W)		2.000 lm (20 W)		
50 %	1.000 lm (10 W)		1.000 lm (10 W)		
35%	650 lm (7W)		650 lm (7W)		
Protection level	II	I	II	I	
Dimension (L/B/H) [mm]	L 400 x B 100 x H 300 mm	L400 x B100 x H300mm	L 193 x B 123 x H 192 mm	L 193 x B 123 x H 192 mm	
Package contains	light 1 charger 1 main plug	light 5 m cable supply line 1 protective connector 2 protective backside	light 1 charger 1 main plug	light 3 m cable supply line 1 protective connector 1 protective backside	
Weight net [kg]:	3,0 kg	3,0 kg	1,2 kg	1,2 kg	

LED Magnifying Lamp MAX-View

Our MAX-View magnifying lamp offers a comprehensive view of the work area. Depending on the lens size, a 1.75x magnification is achieved. The magnification can be increased by a factor of 3 (3 diopters) or even by a factor of 3 (8 diopters). Additional lenses with 2.25x magnification (5 dioptres) are available as optional accessories. The lenses are easy to replace even during work. 60 to max. 84 circularly arranged LEDs achieve a light intensity of up to 1600 lux at the workplace. The glare-free cover distributes the light equally throughout the workstation so that the work surface is illuminated without shadows.

The extremely low energy consumption of approx. 14 or 16 watts is also worth mentioning. The MAX-View LED magnifying glass light is therefore available in the energy efficiency class A+. A further advantage is the long service life of the LEDs with up to 50,000 hours. All this without changing the light source or other maintenance work. Our MAX-View is ideally designed for precise work in workshops, machine workstations, manufacturing, assembling areas, technical offices, laboratories, etc. The LED magnifier MAX-View is also suitable for use in electrostatically protected areas (ESD). Special conductive coatings guarantee ESD conformity over the entire service life of the luminaire.

WORKLIGHTS

Technical data

Article number:	WL-MAX-View2716		WL-MAX-View2214	
Lenses/Diopter	3D	5D (optional accessories)	8D	5D, 3D (optional accesseries)
Exchangeable lenses	for MAX-View2716		for MAX-View2214	
Power	16W		14W	
Luminous flux [lumen]	1600lm		1400lm	
Number of LEDs	84 ring-shaped		60 ring-shaped	
Dimensions luminaire head	Lense: Ø 178 mm, Lamp head: Ø 270 mm		Lense: Ø 127 mm, Lamp head: Ø 215 mm	
Dimensions (length x width x height with mounting clamp)	1270 mm x 270/35/15mm x 165/65 mm		1270 mm x 215/35/15mm x 165/65 mm	

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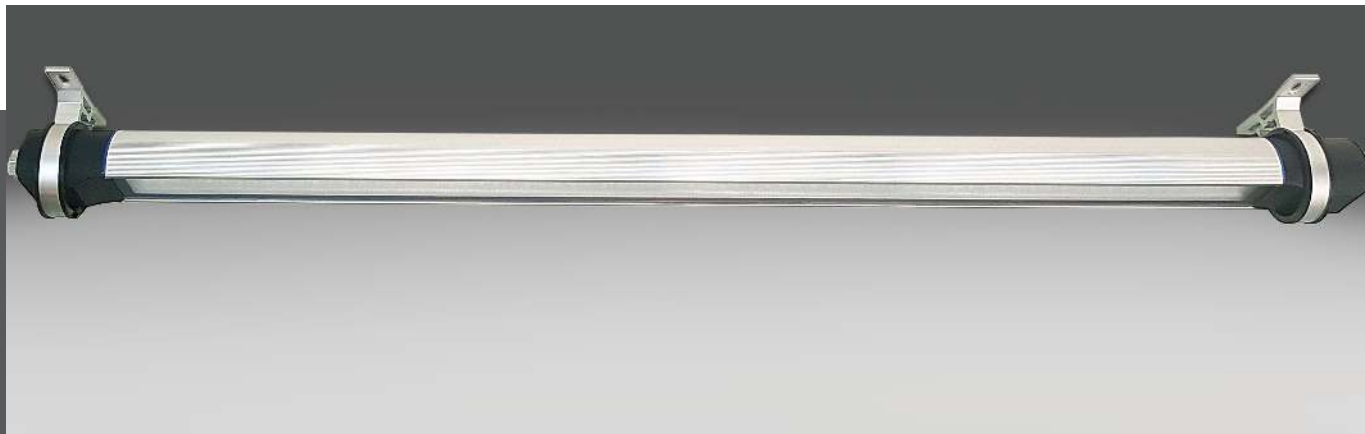
LED Machine Light PROTEC

The PROTEC was specifically designed for the permanent illumination of machines and plants in harsh production environments. Whether for lathes, automatic punching machines or similar systems which have little space: the robust PROTEC supplies all working environments with ideal lighting.

- Housing dustproof & protected against ingress of water.
- Glare-reducing glass cover
- ready for installation, built-in M12 connector
- 360° rotatable
- flicker-free (no stroboscope effect)
- IP 65
- Highly efficient 16 Watt with up to powerful 1600 lumens
- 120 ° for uniform, wide light output
- little shadowing

Technical data

Nominal luminous flux [lumen]:	1600 lm
Color temperature [Kelvin]:	4000K
Light colour [Color]:	Naturalwhite
Colour rendering index [CRI> Ra]:	CRI>80
Beam angle [>°]:	>120°
Warm-up - Start time / (60%) [s]:	< 0.50 - < 0.5
LED chip [type]:	SMD 2835 * 144
Efficiency [lm/w]:	>100 lm/W
Nominal power [Watt]:	16 W
Input voltage [Volt]:	100-240VAC or 24VDC
Frequency [Hertz]:	50/60Hz

Features
**M12 adapter socket (SERIES E) for attaching a
cable of any length is included in the scope of delivery!
360° rotatable via mounting rings**

Driver

Power factor :	> 0.95
Dimmable - Interface :	no
Operating temperature [°C]:	-40°C to +45°C
Storage temperature [°C]:	-25°C to +75°C
IP protection level:	IP65
Protection class :	I / III
Certifications:	CE, RoHS, TÜV
Energy efficiency class:	A+
Weighted energy consumption:	17.0 kWh/1,000h
Nominal service life:	50,000
Switching cycles:	100,000

Material
**Housing - colour: aluminium, stainless steel, glass - black, silver
on request
Optics - Color / color : Glass - clear, glare reduced
Mercury-free: yes
Luminaire type : Universal lighting - Design: oblong, round - rotatable
Base type: integrated light source
Product LxWxH-HxØ [mm]: 700x40x35 mm (with mounting clamp)
Other LxWxH-HxØ / [mm]: 760x70x70mm (with connection cable)
Net weight [kg]: 0.85
Gross weight [kg]: 1.40**

Package contains
**Luminaire [piece]: 1
Power supply unit [piece]: 1
Accessories [pieces]: 1 x M12 plug system installed on luminaire*
Miscellaneous: 1 x M12 adapter socket is included
Mounting material [pieces]: 1 x pipe brackets for direct mounting (rotatable)
Operating instructions [piece]: 1
Warranty [year]: 2**

Important Information :
***1.0m cable protective conduit PVC is included in package. Cable material for the supply line is not included and offcourse cable confectioning is possible on request**

LED Machine Light PL20

The PL20 is a powerful line light to be used in machines and above workstations. It illuminates the workstation optimally with 18 high performance LEDs. The aluminium housing is simply screwed on and can then be rotated 90° to illuminate the working environment.
The LEDs are protected by a glass cover that can also withstand cleaning agents containing a solvent.
The 20 Watt lamp is connected to 24 Volt DC either by means of a high-quality power supply unit from „Wir sind heller" - or directly to an existing connection.

Technical data

Photometric data

Nominal luminous flux [lumen]:	1500 Lumen
Rated luminous flux [lumen]:	1500 Lumen
Color temperature [Kelvin]:	6500K (optional 4000K)
Colour rendering index [Ra]:	> 70

Electrical data

Nominal power [Watt]:	20 W
Rated power [Watt]:	20 W
Nominal voltage [Volt]:	24V (DC)
Input current (mA):	840 mA
Nominal service life [h]:	> 50.000 h
Rated service life [h]:	> 50.000 h
Switching cycles:	> 20.000
Luminous flux maintenance Service life end:	> 0,70
Power factor (PF):	> 0,90
Operating temperature [°C]:	-20°C bis 45°C

Storage temperature [°C]:	-20°C upto 75°C
Dimmable:	No

Material

Housing:	Aluminium
Housing colour:	Black
Cover:	Glass
Cover colour:	Clear
Mercury-free:	Yes

Certificates and Standards

Certificate-lamp:	CE, RoHS
level of protection:	IP65
Protection class:	I
Energy efficiency class (A - E)	A
weighted energy consumption:	20 kWh/1000 h

Specifications

Adjustment:	Adjustable 90°
Base/socket:	No
Form:	long-luminaire

Dimensions

Dimension [mm]:	580mm x 41mm x 28mm
Weight [kg]:	0,65

Package contains

Light source [pcs]:	integrated lamp
Leuchte [Stk}:	1
Warranty:	2 Years

Power supply is not included in package
1PB-ML-PL-20-24-v

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LED Petrol station lighting

Specially designed for the illumination of petrol stations, the WSH series of petrol station lights is equipped with state of the art LED technology. The fuel pumps and their surroundings are illuminated in an energy saving and ideal way.

Installation and assembly variants

The LED petrol station light is easy to install, as the housing is adapted to the dimensions of the standard installed lights.

The assembly variant is intended for installation under a continuous filling station ceiling. It is simply screwed on and then wired. LED modules and power supply units can be easily maintained by means of an easy-opening cover. .

The recessed version is installed like a downlight in the existing ceiling. If possible, existing diffusers can be used here. In this way it adapts to the design of the petrol station roof. With different wattages and beam angles, targeted, standardised illumination is easy to achieve.

With IP68 protection, the LED spotlights are ideally suited for outdoor use and with IK09 can also withstand impacts very well. Thanks to their compact and modular design, both individual LED modules and the driver can be easily replaced during servicing.

With different wattages and beam angles is a targeted, standard-compliant illumination easy to realise.
The complete system is guaranteed by the manufacturer for 5 years.

The petrol station light is available in three different wattages:
 80 Watt (HS-TL202)
120 watts (HS-TL203)
160 Watt (HS-TL204)

Surface mounted luminaire

Recessed luminaire

Technical data
Nominal voltage [Volt]: 100-240 VAC
Beam angle 25°, 40°, 60°, 90°, 40x90°, opal-milky
Colour temperature [Kelvin] 4000K, 5000K, 5700K
Colour rendering RA70+-5
LED (type): Lumileds Luxeon 5050 (18 pieces)
Nominal service life [h]: >50,000 h - L70
Rated service life [h]: 50,000 h
Switching cycles: > 50,000
Operating temperature [°C]: -40°C to 50°C
Dimmable: 1-10V

LED Sports ground floodlight WP Serie

The compact sports field floodlight from the WP series stands out with the latest LED technology. Highly efficient Lumiled 5050 LED chips ensure high luminous efficiency. Flexibly applicable for sports fields, tennis courts, campgrounds, riding arenas or related field lighting.

Our sports ground floodlights WP series are available in three different wattages between 300 Watt, 400 Watt or 460 Watt and can achieve up to 165 lumens per watt. Different field sizes require different beam angles, therefore the WP series offers beam angles of 15°, 30° and 60°. The power supply unit can be mounted directly into the luminaire or externally. Professional HD recording of games sequences are possible due to the absolutely flicker-free light of the WP spotlight.
The floodlight is equipped with a DALI control as standard.
The floodlight is protected with IP65 and is therefore ideal for outdoor use in all weathers. With IK08, the spotlight is also protected against shocks and other external effects.

With the help of the adjustable bracket and the corresponding glare shield, you can place the floodlight in the desired position and aim the light precisely where it is needed without light pollution and glare..

Sports field floodlights	300 Watt	400 Watt	460 Watt
Type/Article number:	WP301	WP401	WP460
Beam angle 15°: Nominal luminous flux	45920 lm	56220 lm	61110 lm
Beam angle 30°: Nominal luminous flux	51530 lm	65910 lm	73000 lm
Beam angle 60 Nominal luminous flux	50487 lm	65030 lm	74130 lm
equivalents conventional radiators	900W HQI	1200W HQI	1500W HQI
Energy consumption [Ec]	300 kWh/1.000h	400 kWh/1.000h	460 kWh/1.000h

The indoor floodlights series MH
- Ideally suited for all sports halls (see page 14)

LED SOLAR Street light

SolLed

LED SOLAR Street light SolLed

Our solar street light SolLed with mounted solar collector offers tailor-made, programmable outdoor lighting for streets, footpaths, cycle paths, car parks and gardens. Without electricity connection - completely self-sufficient through solar power.
The long-lasting lithium battery with up to 2000 charging cycles, permanently charge proof and heat resistant, supplies the light with 100% battery charge approx. 10 hours of energy at 60 W LED power or 60 hours at 10 watts LED power. Different illuminance levels are required depending on the lighting project. Here SolLed offers a highly sophisticated, programmable control management system in conjunction with motion and light sensors, in which it is precisely determined how the luminaire will behave during the course of the day.

Technical data
Nominal luminous flux [lumen]: 7200 lumen
Color temperature [Kelvin]: 6000K
Light colour [Color]: daylight
Colour rendering index [CRI> Ra]: CRI>83
Beam angle [>°]: 140°x70°
Warm up start time (60%) [s] < 0,50 - < 0,5
LED chip [type]: Philips SMD3030 * 90
Efficiency [lm/w]: <120lm/w
Nominal power [Watt]: 60.0 W
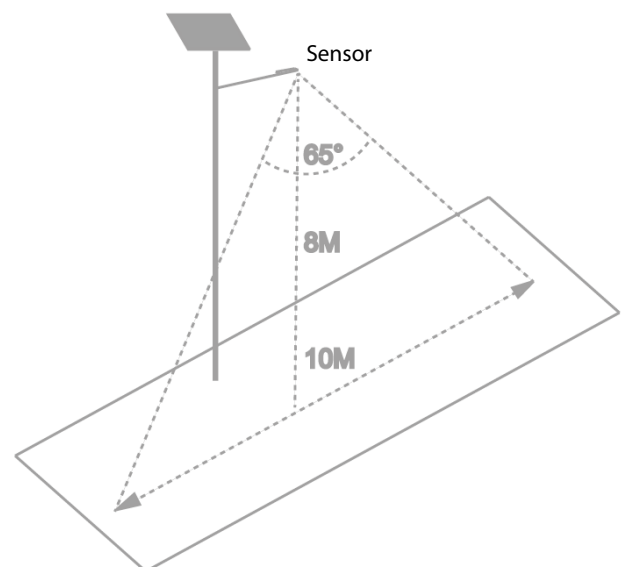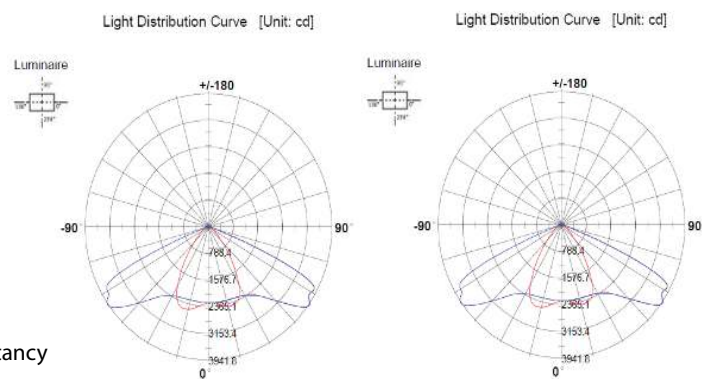Input voltage [Volt]: Solar operation
Frequency [Hertz]: -

Lithium battery pack with up to 2000 recharge cycles Life expectancy (DOD 70 %). Smart BMS (Battery Management System) integrated (MPPT). Sensor detection range: (65°, 10m / Ø-12m). Battery operation at 100% battery charge approx. 10h depending on sunshine hours and weather conditions.
Greater charging efficiency through clever MPPT Solar Controller.
UV and corrosion resistant. Adjustable adapter to luminaire built in. Recommended light point height 4-8 metres. Recommended Solar panel: P.max(W) 110W with 18V, 6,12A (SP-CV18). 635Wh Battery capacity.

Solar panel - EXKL. SOLAR PANEL
Output voltage solar panel [Volt]: 18V
P.max (W) / kWp - Maximum power [Watt]: 110 W
Dimmable / Interface: yes/yes - MPPT Controller
(Brightness & Timer settings) + Microwave sensor (Light &
(motion sensor) Operating temperature [°C]: -35°C to +75°C

System information
IP protection level [IP]: IP67 (luminaire + solar panel)
IK Impact strength [IK]: IK08 (luminaire)
Protection class [SKL]: III
Certifications : CE, EMC/EMV, RoHS
 Energy efficiency class [EEK]: A++
Weighted energy consumption [Ec]: 60 kWh/1,000h
Nominal life [h]: L70/B10 50,000
Switching cycles [x]: >100,000
Warranty [year]: 2

Light Distribution Curve [Unit: cd]   Light Distribution Curve [Unit: cd]

Sensor

65°

8M

10M

The microwave motion sensor has a detection range of 65°, which results in a secured range of 12 meters in diameter at a mounting height of 10 meters

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The LED Street light LX-S

A modular and therefore versatile outdoor lighting system.
5 different power levels, different light distributions and a wide range of dimming
result in a street lighting system with which all lighting situations for public lighti
implemented.

The LX-S is approved for IESNA Type II and III, ME2,3,4,5 and Class S.

Colour temperature [Kelvin]: Standard: 4000K / on request: 3000K
Colour rendering index [Ra]: Standard = CRI > 70, on request = CRI > 80 or > 90
Light colour: Standard = neutral white / on request = warm white
Beam angle [>°]: C=class S, G=class ME, L=parking space
Nominal service life [h]: > 85,000 h L80
Switching cycles: > 200,000
Operating temperature [°C]: -40°C to 55°C
Dimmable: yes
Control signal: Standard: 1-10V, 50% control phase / on request: Dyna dimmer, Lu
& 8h, DALI
Impact resistance class: Aluminium housing = IK10
Energy efficiency class (A - E) A++
Alignment: Pole top fixed. incl. adjustment: -15° to+15° (5° steps)
Masthead-Ø: 42-60mm, 76-78mm
Warranty: 5 years
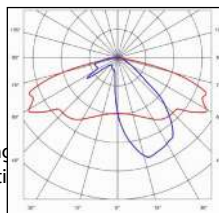
Optics C
Road categories S and narrow roads, IESNA
Type II/III Class S: mounting height 4-8 m, mast
spacing 25-45 m
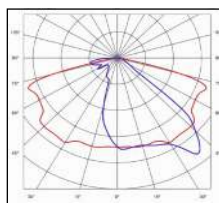
Optics G
Road categories ME and wider roads, IESNA
Type III, Class ME: installation height 7-12 m,
mast spacing 25-45 m
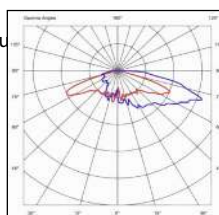
Optics L
Parking spaces, wide outdoor areas, IESNA Type IV
Mounting height 6-12 m, forward beam optics

Modell/LED Chips	LX-S12-v/ 12 LED Chips	LX-S24-v/ 24 LED	LX-S36-v/ 36 LED	LX-S48-v/ 48 LED	LX-S60-v/ 60 LED
Power (ideal)	20-31W	38-60W	66-101W	87-132W	72-146W
Luminaire luminous flux	2900-5150lm	6700-10100lm	11450-15150lm	16600-19700lm	20300-23050lm
Overvoltage protection	10kV				
Supply voltage:	220V ... 240V / 50-60Hz				
Net weight	4,5 kg	6,5 kg	7,0 kg	10,5 kg	12,5 kg
Dimmings	Standard: 1-10V, 50% control phase / on request: DYNA dimmer, Lumi step 6h & 8h, DALI				
Protection class	II				
Protection level	IP66				
Zertifikate	CE, Made in Europe, RoHS, ENEC, TÜV, ida				

The LED Street light LX-O

With the LX-O series you can implement future-proof outdoor lighting. The highly efficient street and square luminaire meets all requirements for energy-saving and flexible lighting. The latest CREE LEDs achieve maximum efficiency. The optics bring the light to where it is needed, thus minimizing light pollution.

High-quality LEDs in combination with Philips Xitanium drivers and optimum heat removal give the LX-O a long service life with extremely low luminous flux drop. All the components are designed for long life and failure free operations.

LX-O is approved for IESNA Type II and III, ME2,3,4,5 and Class S

Colour temperature [Kelvin]: Standard: 4000K / on request: 3000K
Colour rendering index [Ra]: Standard = CRI > 70
Light colour: Standard = neutral white / on request = warm white
Beam angle [>°]: C=class S, G=class ME, L=parking space
Nominal service life [h]: > 85,000 h L80
Rated service life [h]: > 85,000 h
Switching cycles: > 200,000
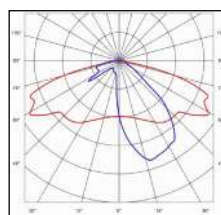Operating temperature [°C]: -40°C to 55°C
Control signal: Standard: 1-10V, 50% control phase / on request: Dyna dimmer, Lumi step 6h & 8h, DALI
Energy efficiency class (A - E) A++
Alignment: masthead mounted. incl. adjustment: -15° to+15° (5° steps)
Masthead-Ø: 42-60mm, 76-78mm
Warranty: 5 years

Optics C
Road categories S and narrow roads, IESNA Type II/III Class S: mounting height 4-8 m, mast spacing 25-45 m
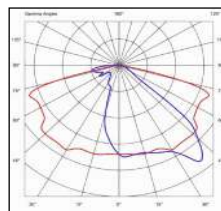
Optics G
Road categories ME and wider roads, IESNA Type III, Class ME: installation height 7-12 m, mast spacing 25-45 m
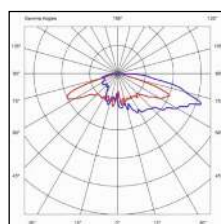
Optics L
Parking spaces, wide outdoor areas, IESNA Type IV Mounting height 6-12 m, forward beam optics

Model	LX-O08-v	LX-O12-v	LX-O24-v	LX-O36-v	LX-O72-v
Power	11-28W	27-40W	45-76W	78-113W	107-151W
Luminaire luminous flux	1600-3400lm	3600-5050lm	6350-10000lm	10750-14800lm	15300-21600lm
Dimensions (mm)	gewinkelt L 556/B 324/H 105, gestreckt L 621/B 324/H 77 , Anschluss 91				
Overvoltage protection	10kV				
Supply voltage:	220V ... 240V				
Net weight	7,2kg				
Dimmings	Standard: 1-10V, 50% control phase / on request: DYNA dimmer, Lumi step 6h & 8h, DALI				
Proctection class	II				
Schutzart	IP66				
Zertifikate	CE, TÜV, EMC, RoHS, ENEC, Made in Europe, ida				

LED Street light MStreet SL

The LED streetlight series MStreet is based on the concept of the MH series with its modular LED system.

Individual LED modules with 40W each are combined to form a single spotlight with up to 7 modules providing 45500 lumens of light output.
The LED modules can be equipped with different optics that provide beam angles of 25°, 40°, 60° 90°, 90° x 40° and the Batwing.
Thanks to a sophisticated cooling system, the modules have a service life of over 50,000 hours L70..
The spotlights that can be assembled in this way can be used extremely flexibly and can accommodate almost any lighting situation.

Due to the high quality of the components we use, we are able to offer the LED Floodlight a warranty of 5 years.

Another advantage of the modular design: Individual modules are connected to each other and to the drivers by means of waterproof double couplings and can be connected at any time even during operations - to a single module.

Technical data
1 - 7 modules
40 - 280 W
6500 - 45500 Lumen
Batwing 25°,40°,60°,90°, 90° x 40° Beam angle
5000K (optional 3000K/4000K/5700K) Colour temperature
TÜV Rhineland

Batwing light distribution curve

28

LED Street light One Mini

Street and square luminaire - very high light efficiency in a small, compact housing.

The LED street light One-Mini is the ideal lighting solution for parking lots, firm lighting, sidewalk lighting and similar applications.
Projects. The small street lamp with the shapely housing fits perfectly into the environment of your projects. It cuts a fine figure both when illuminating large parking areas and partial pathway lighting.

Energy efficient (150lm/w)
With wattages of 20, 40 and now also 60 watts, the One Mini illuminates your project perfectly with maximum efficiency. Latest LED chips Lumileds Luxeon 5050 provide a very good light yield. The lamp reaches 3000 lumens with 20 Watt, 6200 lumens with 40 Watt and 9000 lumens with 60 Watt. Combine your optimum illuminance with safety and good orientation with the lowest possible energy consumption.

Durable (50,000 hours L70, 100,000 switching cycles)
Outdoor luminaires are designed to be maintenance-free for long periods of time. That is why the One-Mini features a high-quality power supply unit designed for operation beyond the service life of the luminaire. The technology is supported by a housing designed for excellent heat absorption. This means that all components work optimally even in summer and the reduction in luminous flux is extremely low. With 100,000 switching cycles, the One Mini has a high switching stability and thus additionally promotes the longevity of the luminaire.

Simple assembly
Since the complete electronics are built into the luminaire, it only needs to be mounted and connected. The housing has been designed in such a way that this can be done easily and cost-effectively both on light poles and wall mounting. All components are easily and safely accessible.

The LED street light One-Mini is designed to realize your outdoor lighting optimally and energy saving.

Technical data

Nominal luminous flux [lumen]: 3000, 6200, 9000
Colour temperature [Kelvin]: 3000K, 4000K, 5000K, 5700K
Colour rendering index [Ra]: > 70
Light colour: warm white, neutral white, daylight white
Beam angle [°]: < 60 °
Warm-up time (60 %) [s]: < 0.50 s
Start time [s]: < 0.5 s
Input voltage [Volt]: 100-240 VAC
Output voltage driver [Volt]: -

Electrical data
Nominal power [Watt]: 20.0/40.0/60.0 W
Nominal service life [h]: > 50,000 h
Power factor (PF): > 0.95

Operating temperature [°C]: -20°C to 50°C
Dimmable: no
Switching cycles [x]: >100,000

Material
Housing: Aluminium
Housing colour: grey RAL7045

Certificates and Standards
Certificates Luminaire: CE, RoHS
Protection level: IP68, impact protection IK10
Protection class: I
Energy efficiency class (A - E) A+
Weighted energy consumption [kWh]: 20/40/60 kWh/1000 h

Specifications and specifications
Alignment: fixed
Socket/socket: integrated light source
Type/Form: Street lamp

Dimensions (mm)
Dimensions (L/W/H) [mm]: L 435 mm/ B 190 mm / H 80 mm
Net weight [kg]: 1.70 kg
Mast connection: 60mm

Warranty: 5 years

Item number: SPL-ONE-M1-v

OUTDOOR LIGHTING

High end LED spotlight CL-LQP
Waterproof up to 30 m

Designed for lighting in harsh climatic conditions,
this LED spotlight is ideal for the demanding illumination of
buildings, artworks and other exterior facilities.

Water can't impair it, the spotlight is waterproof to a depth of 30 metres.
All parts are completely sealed with special epoxy resin. An sophisticated
thermal management gives the radiator an extended service life - even in
prolonged use..
Due to its durable design, shocks and vibrations are no longer a problem.
In a high quality stainless steel housing 9 high-performance LEDs are at
their service. With a total output of 12 W, they deliver a luminous efficiency
of 1000 lumens. With its compact dimensions (122 x 154 x 135 mm), it can
be used practically anywhere.

The LED spotlight is available in various
Beam angles (10°, 30°, 40°, 10° x 45° - horizontal and vertical),
Light colours (neutral white 4700K, cold white 6300K) and
Drive modes (dimmable - PWM, DMX - and non-dimmable) available.
The spotlight is supplied with a 3m long connection cable, which can
however be customised. On request, we can also supply controls for various
lighting scenarios and the complete electrical system in the same durable
design.

CL-LQP-01 to CL-LQP-25 (depending on version)

LED Downlight Series MHB

With the LED downlight MHB you can set buildings in the limelight.
If buildings are of public importance or if the exterior is to be effectively highlighted, lighting is a key factor.
From the staging of modern facades to the lighting of listed buildings the areas of application are wide and diverse.
Churches, Mosques, Museums and Castles or similar buildings are usually furnished with discreet lighting.
The presentation of individual parts of a building can open up the architecture to the viewers.

With the appropriate lighting concept, corporate buildings also convey the corporate image via the façade and set it in the limelight with effective advertising. During the night, bridges and other architecture can become a centre of attention.
With the appropriate lighting concept, you can design architecture for everyone. The MHB downlight series contributes to this.
With highly efficient 40 Watt LED modules, the downlight also reaches higher façade areas. Different beam angles give the BA series an extremely high degree of flexibility. With one system, you can highlight individual architectural design elements as well as uniformly illuminate entire facades.

The LED module can be rotated in the durable housing. This allows the light to be directed in a targeted manner. In combination with a suitable beam angle, this is a feature that offers you many creative possibilities. Various architectural styles demand different light colours. Here, too, you can choose between warm white, neutral white and daylight white modules.
Thus, the LED downlight series BA can be adjusted exactly to the needs of building lighting.

For precise planning, light data of all beam angles are available.

5 years manufacturer warranty

Technical data

Nominal power:	40W
Lumen:	3600 - 6500lm
Colour temperature:	3000K, 4000K, 5000K, 6000K
Beam angle:	25°, 30 x 60°, 40°, 60°, 90°
Weighted energy consumption:	40kWh/1000h
Operating voltage:	AC 90V - 305V
Protection level:	Power supply IP67, module IP68
Colour rendering:	RA >70 (RA >80, RA >90 optional)
Energy class:	A+
LEDs:	Philips LUXEON T
Working environment:	Between -40°C and +50°C, 10% to 90%RH
Storage temperature:	Between -40°C and +50°C
LED lifetime:	> 50,000 hours L70
Start-up time:	< 0.5 s
Overvoltage protection:	4kV
Drivable with up to 5 tons	
Dimensions: 260 x 400 mm, installation depth 180 mm	

LED Illuminated Stones

Ambient lighting for outdoor areas

Terraces, paths, squares, parks put outdoor areas perfectly in the limelight! LED stones in various colours, shapes and sizes can be integrated specifically into outdoor areas and offer an enormous variety of designs. Create a pleasant atmosphere through the use of ground luminaires, set new highlights, support traffic management and defuse danger spots. Integrated into the pavement, the luminous stone is hardly noticeable during the day. The energy-efficient LED stones are absolutely glare-free. After installation, the stones can be loaded with 50 tons. The simple installation also makes more complex lighting possible. With a protection level of IP68, the installation is also protected against ground and surface water.

Technical data

| Stone Deluxe 12/24VDC | opal | clear | special designs on request | | |
|---|---|---|---|---|
| series | W (Natural stone) | SL (Paving stone) | LA (Linear stone) | RD (Round Stone) |
| Dimensions [mm]: | 60x55x45 | 45x45x45 | <1000x30x51 | Ø-47x50 |
| | 85x70x55 | 75x75x55 | <1000x50x51 | Ø-67x50 |
| | 95x90x55 | 95x95x55 | <1000x100x51 | |
| | | 130x130x55 | (with sleeve H=68mm) | |
| Light colours: | 4500-5500K | 3000K | red | green | blue | orange | amber | RGB | | | |
| Cable lengths [mm] | 350 mm (longer possible on request!) | | | |
| Delivery time approx: | 5-6 weeks after order has been placed or payment received | | | |
| Remarks: | Load capacity up to 50 tons | | | |

Light stone

Paving stone
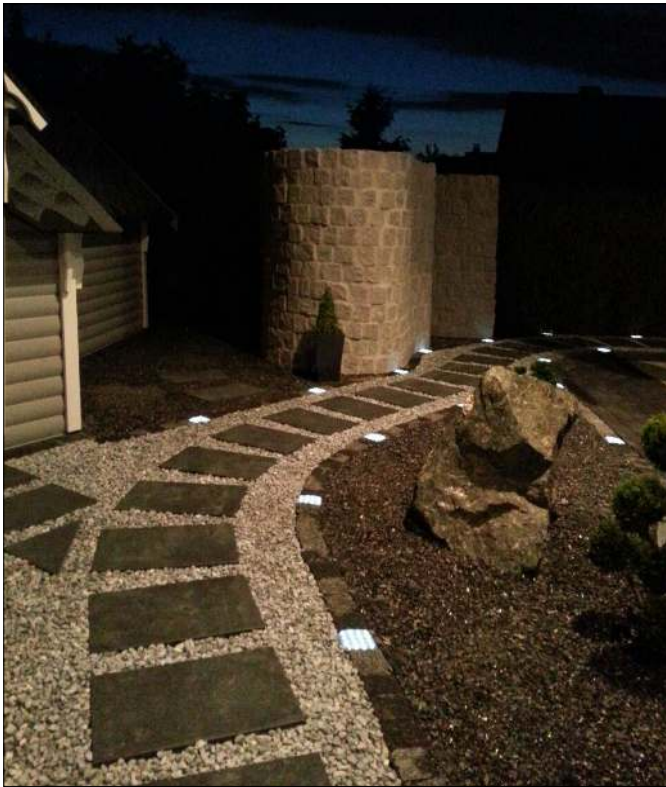
Exterior lighting | Ambience

LED luminous stones turn paved surfaces into a visual experience..

LED pavement stones turn any pavement into a real eye-catcher. The highlight: when switched off, you can't tell the difference between a light stone and a conventional stone. To the selection at standard stones LED stones can be adapted individually to the size and form of the existing stones. Thereby a stone is sent to wir sind heller. In this case the LED stone will be adjusted in shape and colour.

Technical data

| Stone nature 12VDC: | Granite (light grey, dark grey, yellow) | Basalt (black/dark grey) | Porphyry (reddish brown) | Sandstone (red or yellow) | | | | S5 |
|---|---|---|---|---|---|
| Series/Stages | S1 | S2 | S3 | S4 | |
| Dimensions [mm]: | 40x50 to 60x60 | 60x70 to 80x80 | 80x90 to 100x100 | 110x110 to 120x120 | Design modifications on request |
| Einbautiefe [mm]: | ~40mm | | | | |
| Light colours: | Cold white (approx. 5500K) | Warm white (approx. 3000K) | Green | Blue | Red | Yellow | | | | |
| Cable lengths [mm] | 1000 mm cable is included per stone (longer possible on request!) | | | | |
| Delivery time approx: | 2-3 weeks after order has been placed or payment received | | | | |
| Remarks: | Design adaptation of a sample stone possible | Loadable up to 1 ton | Self-luminous (phosphorescent) possible | | | | |
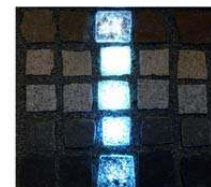
INTERIOR LIGHTING
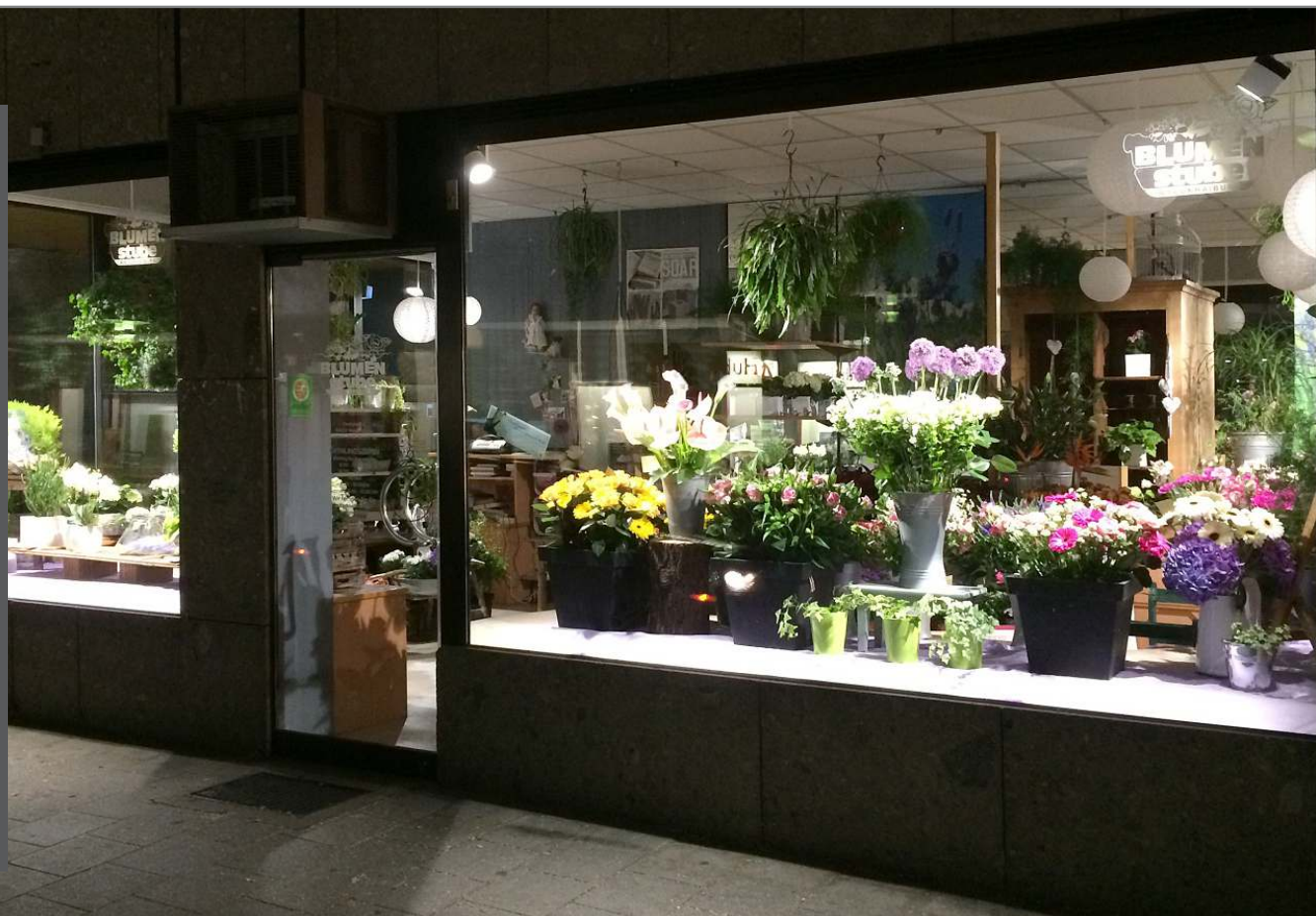
LeLux Pendant Office Light

The LeLux pendant luminaire can be used in offices, reception counters and conference rooms. Surprising - you perceive the light - but the light source remains hidden. The LeLux LEDs are further integrated into the housing and individually provided with glare protection. This results in an extremely low level of glare.

Nevertheless, the work surface is illuminated evenly and brightly. This creates an optimal working environment.

Standard 1-10V but also available in a DALI version, the LeLux can be easily integrated into existing lighting control systems or controlled via a Casambi module using a switch or smartphone. Light in accordance with your desires.

Technical Data:

Nominal luminous flux [lumen]:	3600 lumen
Color temperature [Kelvin]:	4000K
Light color[Color]:	Natural
Colour rendering index [CRI> Ra]:	CRI>80 (CRI>90*) *on request
Beam angle [angle >°]:	36
Equivalent[Watt]:	150W
Nominal service life [h]:	50,000 (DALI: 100,000h)
LED chip [type]:	OSRAM 3030 SMD
Efficiency [lm/w]:	>100lm/w
Nominal power/rated power [Watt]:	36 W
Input voltage/input voltage [Volt]:	200-240VAC
Frequency/frequencyzy [Hertz]:	50-60 Hz

Drivers

Output voltage [Volt]:	DC
Power factor [PF]:	> 0.95
Dimmable [Y/N]:	Y 0-10V *on request DALI
Interface [Type]:	0-10V *DALI

Nominal service life [h]:	50,000
Operating temperature [°C]:	-20°C to +40°C
Storage temperature [°C]:	-25°C to +50°C
Air humidity [%]:	10% ~ 90%
IP protection level [IP]:	IP20 (Driver IP20)
IK Impact strength [IK]:	IK03 (total system/hole system)
Protection level [SKL]:	II
Certifications:	CE, ROHS, EMC, LVD
Energy efficiency class [EEK]:	A+
Energy consumption [Ec]:	36.00 kWh/1,000h

Material

Housing:	Aluminium, flux-coated
Cover :	Polycarbonate
Housing colour:	white - available on request *black
Cover colour:	Opal/Milky
Mercury-free: Y/N]:	Y
Anti-glare factor [value]:	<13.5
Type of luminaire:	Linear pendant luminaire
Orientation:	compact, filigree, angular
Socket type:	integrated illuminant and driver

Dimensions (mm)

LxWxH: [mm]:	1276 x 35 x 80 mm
Wire rope length [mm]:	2 x 3000 mm
Net weight [kg]:	2.3
Gross weight [kg]:	2.5

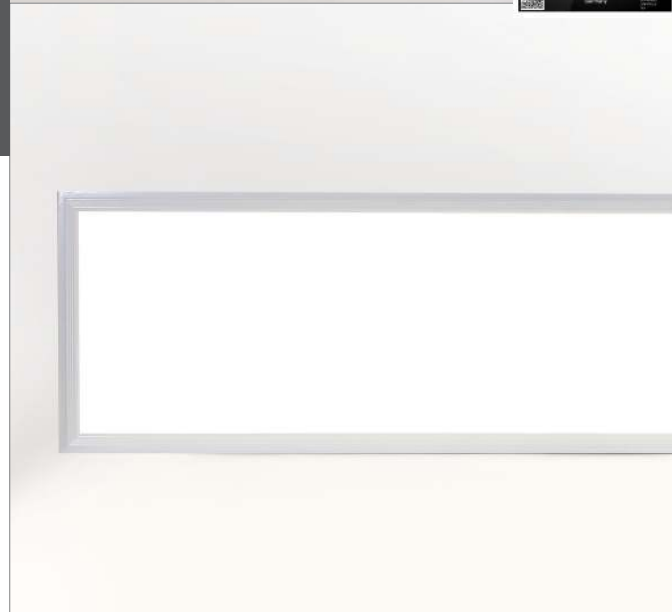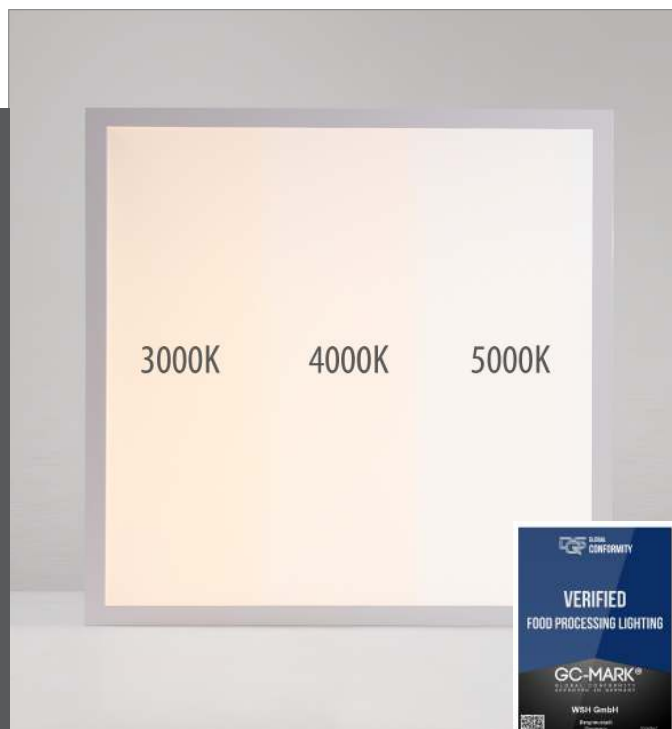Package contains

Lamp [piece/pcs]:	1
LED+driver integrated [piece]:	1
Operating instructions [piece]:	1
Wire rope [piece]:	2 pieces á 3000 mm
Supply cable [piece]:	1 piece á 3000 mm
Warranty [year]:	3

Important information: Anti-glare factor: UGR value <13.5

Wir sind heller ®

LED Panel LTOP ECO

Our LTOP panel of the ECO series combines brightness, efficiency and functionality. The LED panel can be set to three colour temperature levels (3000K-4000K-5000K) using DIP switches.

Due to the opal cover, the light is distributed uniformly and diffusely, glare is reduced and shadows are kept very soft, which is why the LED panels provide optimum illumination for workplaces.

Beam angle: 120°.
Aluminium frame in white
IP 20
5 years warranty
warm white, neutral white, daylight white
(3000K, 4000K, 5000K -> DIP switches adjustable)
Ra >80
Certificates: CE, IFS, RoHS
Dimmable: 1-10V or DALI (see variations)
Control signal: 1-10V or DALI interface, PUSH-DIM

62 x 62 cm- 30 Watt
LTOP-ECO30-6262
From 3000 lumen (up to 3400 lumen) dimensions 62 x 62 cm
1-10 V or DALI Dimmable
weight 3,5 kg

62 x 62 cm- 40 Watt
LTOP-ECO40-6262
From 4200 lumen (up to 4600 lumen) dimensions 62 x 62 cm
1-10 V or DALI Dimmable
weight 3,5 kg

60 x 60 cm- 40 Watt
LTOP-ECO40-6060-v
From 4200 lumen (up to 4600 lumen) dimensions 60 x 60 cm
1-10 V or DALI Dimmable
weight 3,5 kg

120 x 30 cm- 40 Watt
LTOP-ECO40-12030
From 4200 lumen (up to 4600 lumen) dimensions 120 x 30 cm
1-10 V or DALI Dimmable
weight 3,5 kg

60 x 60 cm- 40 Watt
LTOP-ECO40-6060-v
From 6400 lumen (up to 6800 lumen)dimensions 120 x 60 cm
1-10 V or DALI Dimmable
Weight 7,5 kg

120 x 60 cm- 60 Watt
LTOP-ECO40-12060
From 6400 lumen (up to 6800 lumen) dimensions 120 x 60 cm
1-10 V or DALI Dimmable
Weight 7,5 kg

Our LED panels are ideal for grid ceilings and can easily be used in standardised grid dimensions.

The installation is optionally possible by means of a mounting frame or a wire rope suspension. The CLICKFIX mounting frame can also be used for this LED panel.

3000K   4000K   5000K

VERIFIED
FOOD PROCESSING LIGHTING
GC-MARK®
WSH GmbH

LED Panel LTOP CCT

Save yourself the choice of light colour when buying your office lighting. With the LED panel LTOP CCT you can infinitely adjust the light colour from 2800K to 6500K.
Low glare, wide light distribution and high energy efficiency make this technology the number one office lighting and louvered ceiling luminaire. You can set the light colour individually and adjust it as required using a remote control.

Beam angle: 120°.
Aluminium frame in white
IP 20
5 years warranty
warm white, neutral white, daylight white (3000K to 6000K stepless)
Ra >80
Certificates: CE, IFS, RoHS
Dimmable
Interface without [-T], [-F] DALI DT8 [-D], RF radio controllable (closed system) Extension [Variations] -T, -F and -D = T(Driver) F(T+Remote Control) D(DALI DT8) CASAMBI Controller [LLS-CBU-ASD]
APP control not included!

62 x 62 cm
Nominal luminous flux [lumen]: 4000lm (max. 4400)
Nominal power [Watt]: 40 W
Length x width x height: [mm]: 620x620x12mm
Net weight [kg]: 4
Gross weight [kg]: 4.5
1LTOP-CCT-6262-v

60 x 30 cm
Nominal luminous flux [lumen]: 3600 lm (max. 4000)
Nominal power [Watt]: 36 W
length x width x height: [mm]: 595x295x12mm
Net weight [kg]: 3.0
Gross weight [kg]: 3.5
LTOP-CCT-6030-v

120 x 60 cm
Nominal luminous flux [lumen]: 5400 lm (max. 5950)
Nominal power [Watt]: 54 W
length x width x height: [mm]: 1195x595x12mm Net weight [kg]: 7.5 Gross weight [kg]: 8,0
1LTOP-CCT-12060-v

Rated power [Watt]: 18 W
length x width x height: [mm]: 295x295x12mm
Net weight [kg]: 2
Gross weight [kg]: 2.5
LTOP-CCT-3030-v

120 x 30 cm
Nominal luminous flux [lumen]: 4000 lm (max. 4400)
Nominal power [Watt]: 40 W
length x width x height [mm]: 1195x295x12mm
Net weight [kg]: 4
Gross weight [kg]: 4.5
1LTOP-CCT-12030-v

120 x 30 cm (DUO, double-sided)
light emission, ceiling & floor)
Nominal luminous flux [lm]: 800 lm UP
3200 lm DOWN
Nominal power [Watt]: 40 W
length x width x height [mm]: 1195x295x12mm
Net weight [kg]: 4
Gross weight [kg]: 4.5
1LTOP-CCT-12030-DUO-D-v

The remote control allows up to 100 panels to be operated simultaneously. In addition to the stepless selection of the light colour, the panel can be dimmed, a timer operated and two scenes programmed.
HCL - Human Centric Light - lighting corresponding to the course of the day from warm white to cold white and back again to warm white. This is either time-controlled or with the aid of light sensors which measure the natural light. For more information, visit our homepage

LED Panel LTOP Series RPL

The very slim, elegant housing made of high-quality aluminium with modern wire-rope suspension is a real eye-catcher in offices, restaurants, galleries or other representative exhibition spaces. By means of a remote control you can operate one panel, different panels or up to 100 panels at the same time. In addition to the stepless selection of the light colour from 2800K to 6500K, the panel can be dimmed (DALI-DT8), operated with a timer and programmed with two scenes.

Ø 60cm
Nominal luminous flux [lumen]: 5200 lumen
Nominal power [Watt]: 100W
Length x width x height/ Ø: [mm]: Ø 600 mm x 20mm
Net weight[kg]: 5kg
Gross weight [kg]: 7kg
LTOP-RPL060-v

Ø 80cm
Nominal luminous flux [lumen]: 6600 lumen
Nominal power [Watt]: 130 W
Length x width x height/ Ø: [mm]: Ø 800 mm x 20mm
Net weight [kg]: 7 kg
Gross weight [kg]: 8 kg
LTOP-RPL080-v

Ø 100cm
Nominal luminous flux [lumen]: 8800 lumen
Rated power [Watt]: 180 W
Length x width x height/ Ø: [mm]: Ø 1000 mm x 20mm
Net weight [kg]: 8
Gross weight [kg]: 9.5
LTOP-RPL100-v

Ø 120cm
Nominal luminous flux [lumen]: 11000 lumen
Rated power [Watt]: 210W
Length x width x height/ Ø: [mm]: Ø 1200 mm x 20mm
Net weight[kg]: 9.5
Gross weight [kg]: 11.5
LTOP-RPL120-v

Pendulum kit large for CCT RPL Ø -120 cm
Ceiling rosette incl. wire rope attachment

Pendulum kit small for CCT RPL 60 cm Ø -100 cm
Ceiling rosette incl. wire rope attachment

Remote control
1LTOP-CCT-F

Beam angle: 120°.
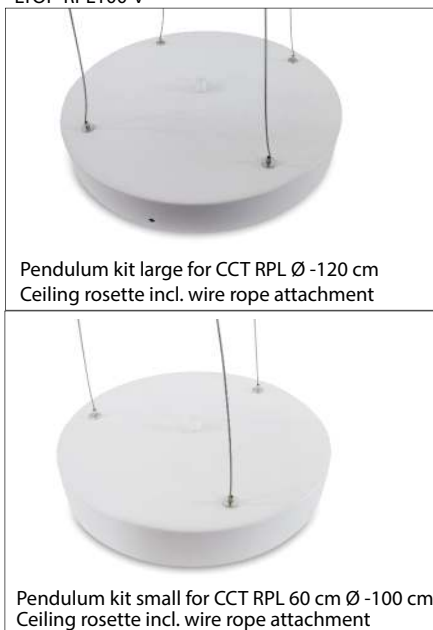Aluminium frame anodised in white
IP 20
5 years warranty
warm white, neutral white, daylight white
(2800K and 6500K on stepless)
Ra >80
Certificates: CE, EMC, IFS, RoHS
Dimmable
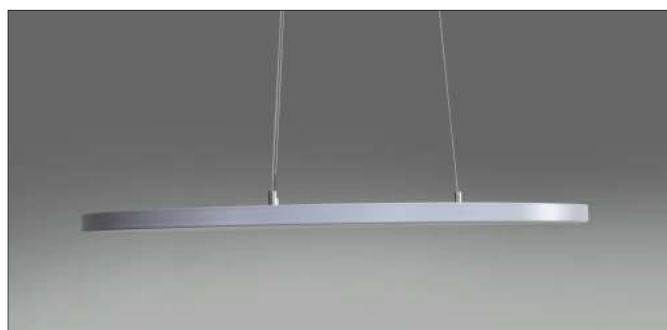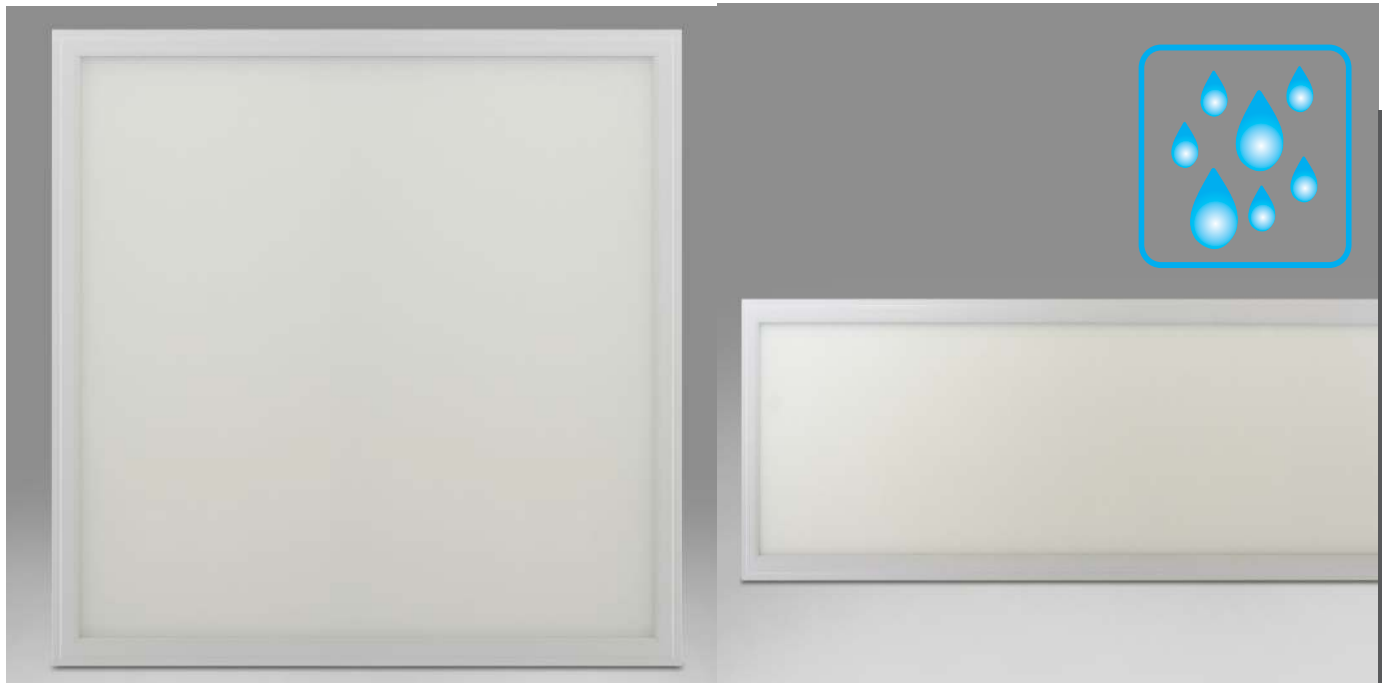Interface [Type]: DALI-DT8, RF signal

LED Panel LTOP Series IP64 for humid rooms

Traditional LED panels are not protected against dripping water. Water can penetrate into the frame and attack the LEDs there, even the rear. The connections and drivers on the side are not designed for these areas. The WSH LED Panel IP64 are specially manufactured for this purpose. The frames are sealed to protect the LEDs. The rear cabling and connectors to the power supply are also splash-proof. The power supply unit should be installed in a protected place (e.g. in a wet room box). Whether for use in the bathroom or outdoors - the IP64 LED panel is well prepared.

62 x 62 cm
Nominal luminous flux [lumen]: 3900-4000lm (max. 4000K)
Colour temperature [Kelvin]: 4000K - 5000K and 6000K on request
Nominal power [Watt]: 40 W
dimmable (1-10V/DALI driver)
Length x width x height: [mm]: 620x620x12mm
Net weight [kg]: 4
Gross weight [kg]: 4.5
1LTOP-IP64-6262-v

120 x 30 cm
Nominal luminous flux [lumen]: 3900-4000lm (max. 4000K)
Colour temperature [Kelvin]: 4000K - 5000K and 6000K on request
Nominal power [Watt]: 40 W
dimmable (1-10V/DALI driver)
length x width x height: [mm]: 1195x2950x12mm
Net weight [kg]: 4
Gross weight [kg]: 4.5
1LTOP-IP64-12030-v

60 x 30 cm
Nominal luminous flux [lumen]: 1900-2000lm (max. 4000K)
Colour temperature [Kelvin]: 4000K - 5000K and 6000K on request
Nominal power [Watt]: 20 W
not dimmable
length x width x height: [mm]: 595x295x12mm
Net weight [kg]: 2.3
Gross weight [kg]: 2.7
1LTOP-IP64-6030-v

Technical data:
Beam angle: 120°.
Aluminium frame in white
IP 64, protection level II
2 years warranty
neutral white 4000K (5000K/6000k on request)
Ra >80
Certificates: CE, IFS, RoHS
Power supply: nondimm, 1-10V or DALI driver (IP20)

LED Panel LTOP RGB-W

The LED panel can be powered by a 24VDC input voltage and a separately available LED controller for 4-channel applications. RGB-W (4000K) can be set. By mixing red, green, blue and white up to 16 million different colours are possible. Installation is simple thanks to the optional mounting frame or wire rope suspension. Ideally suited for standardised grid ceilings. The opal diffuser provides evenly distributed, diffuse light, and glare is reduced. Not compatible with the CLICKFIX series.
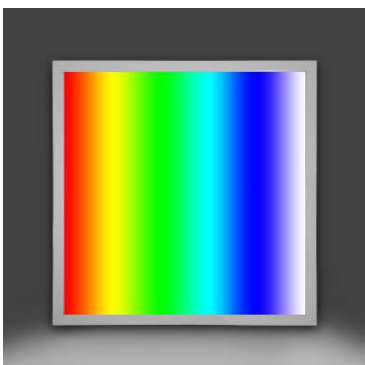
The LTOP RGB-W series is available in the following sizes:
  30 x 30 cm - LTOP-RGBW-3030-v
  62 x 62 cm - LTOP-RGBW-6262-v
 120 x 30 cm - LTOP-RGBW-12030-v
 120 x 60 cm - LTOP-RGBW-12060-v

Beam angle: 120°.
Aluminium frame in white
IP 20, protection level II
3 years warranty
Ra >80
Certificates: CE, IFS, RoHS
Power supply : -P (Panel 24VDC input only), -PN (Panel + 24VDC driver)
Accessories: -PNC (panel incl. 24VDC driver and CASAMBI CBU-PWM4)

The LED light panel customized according to your needs

From the rearlit counter display / picture, to the illuminated houses front from area light to large format advertising. The possibilities for LED panels in customized sizes are endless. LED technology makes uniform backlighting possible, even for large areas. The application possibilities are almost endless.
We design your projects from rearlit displays, illuminated walls, illuminated ceilings, sales displays, backlighting of products and counters to large format displays. For the implementation we have the complete project workflow in perspective for you. We will accompany your project from conception to implementation.

Since every project in this segment is different, we consider each request carefully. We work with LED panel technology, which makes it possible to produce LED panels in special sizes up to 3 x 1.5 meters. For the rear illumination of large areas, these panels are combined as modules. There is practically no limit to the size of a rear-lit surface..

In particular, it depends on the extremely uniform illumination of the illuminated surface up to the edge. Particularly unprinted surfaces are very sensitive here. A drop in light towards the edges or a visible transition between the individual LED elements quickly disturbs the visual appearance of the surface. . The special LED panel technology, which transmits the light from the edges into the surface and distributes it there, achieves a perfectly uniform lighting area.

In the advertising sector and as a retail companion, backlighting usually lasts a long time. In addition, the display should also stand out and the luminance must therefore be relatively high. In contrast, low energy costs are required for reasons of cost-efficiency. All points can be well combined with the latest LED technology.

Whether dimming after daylight, a time-controlled switching - even the adjustment of the color temperature is possible. We use a wide variety of control technologies to adapt the lighting to your requirements or to facilitate integration into existing control systems.

Almost all backlighting projects are difficult to access later. Since maintenance can quickly add up to enormous costs, it is not only the quality of the LED modules used that matters. We rely on high-quality components for the complete product and thus reduce maintenance work and service costs to a minimum.

Accessories for LED Panel

When designing office lighting, the question arises as how installation can be carried out most effectively and quickly. Grid ceilings are often used in offices. Here the installation efforts for LED panels are extremely low.

If grid ceilings are not available, there are further installation options: suspended installation using a suspension cable system. Here the panel is suspended individually on 3 or 4 wire ropes. The modern wire rope suspension and the very narrow, puristic panel housing made of high-quality aluminium ensure an eye-catcher in offices, restaurants, galleries or other representative exhibition rooms.

Direct ceiling mounting is easily possible using a mounting frame. Here the power supply unit can be placed in the frame. A possibility that is often used on concrete ceilings. Gypsum ceilings can be fitted with LED panels using a mounting frame.

Regardless of which panel installation you choose, you will find the know-how and accessories at Wir sind heller!

INTERIOR LIGHTING | Panel
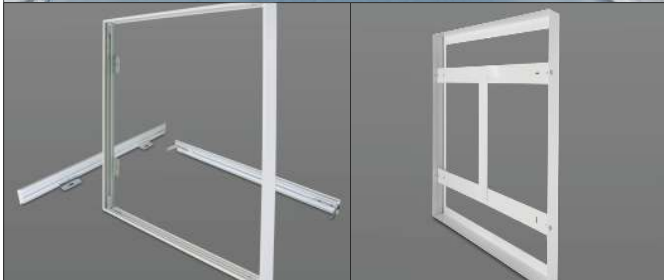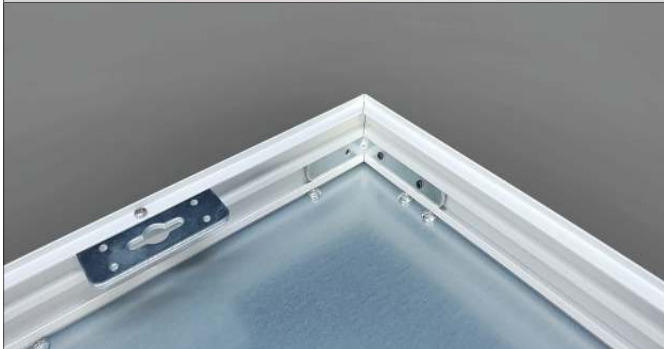
Flat Recessed Downlight

RPL Series

LED recessed ceiling light 6 W,
Installation Ø 105 mm, external Ø 115 mm,
Nominal luminous flux [lumen]: 500, 520, 540 lumen
Colour temperature [Kelvin]: 3000K, 4000K, 6000K
IP44
DE-RPL06-44-v

LED recessed ceiling light 10 W,
Installation Ø 135 mm, external Ø 145 mm,
Nominal luminous flux [lumen]: 780, 790, 800 lumen
Colour temperature [Kelvin]: 3000K, 4000K, 6000K
IP44
DE-RPL10-44-v

LED recessed ceiling light 18 W,
Installation Ø 210 mm, external Ø 220 mm,
Nominal luminous flux [lumen]: 1300, 1370, 1440 lumen
Colour temperature [Kelvin]: 3000K, 4000K, 6000K
IP44
DE-RPL18-44-v

LED Downlight
BD Series CCT

INTERIOR LIGHTING | Downlights

Wir sind heller ®

LED Downlight BD Series CCT

With the BD Series CCT, the desired light colour can be switched very quickly in retail and exhibition areas, offices or multi-purpose venues. By means of a remote control or DALI-DT8 control, the light colour can be varied steplessly between 2700 - 5700 Kelvin, or - if sufficient - gradually between 2700K, 4000K and 5700 Kelvin via a DIP switch. All light variations are possible thanks to the swivelling luminaire head for more targeted illumination and the infinitely variable dimming characteristic of the spotlight - this is what makes the BD CCT series so versatile.

Technical data

Article number	DE-BD12075-CCT	DE-BD20095-CCT	DE-BD30125-CCT	DE-BD40145-CCT	DE-BD50200-CCT
Installation Ø	75 mm	95 mm	125 mm	145mm	200 mm
LxWxH-LxØ/LxWxH-LxØ: [mm]: E = Installation G= Total	E-Ø 75x48mm / G-Ø 96x48mm	E-Ø 95x48mm / G-Ø 120x65mm	E-Ø125x75mm G-Ø 150x75mm	E-Ø 145x82mm G-Ø 180x82mm	E-Ø 200x115mm G-Ø 250x115mm
Nominal power Watt	12 W	20 W	30 W	40 W	50 W
Luminaires Lumen depending on colour temperature	1050-1250 lm	1800-2100 lm	2900-3550 lm	3850-4150 lm	4650-5000 lm
Weight net kg	0,7	1,1	1,6	2,6	2,9
Luminaire head can be tilted on both sides	20°	20°	25°	25°	30°
Input voltage	AC 220-240VAC				
Frequency	50-60Hz				
CRI	RA > 90				
Beam angle	38°, 110° (opal -20% Lumen)				
Colour temperatures (Kelvin) depending on variant	- stepless: from 2.700K - 5700K (via Dali-DT8, 0/1-10V control, remote control) - stepwise 2700K ,4000K and 5700 K (via DIP switches)				

The new BD series is equipped with a 2 channel driver as standard. When selected with DIP switch, the luminaire is equipped with a a 1 channel driver.

1-channel: 0/1-10V, DALI |
2-channel: RF radio 2.4G, DT8 standard according to IEC62386. Dimmable
Interface: DALI-DT8, RF remote control, DIP switches
IP protection class [IP]: IP33
Protection level [SKL]: II
Certifications : CE, EMC, RoHS
Energy efficiency class [EEK]: A+
Nominal life [h]: L70/B10 50,000
Switching cycles [x]: 100,000
Warranty [year]: 5
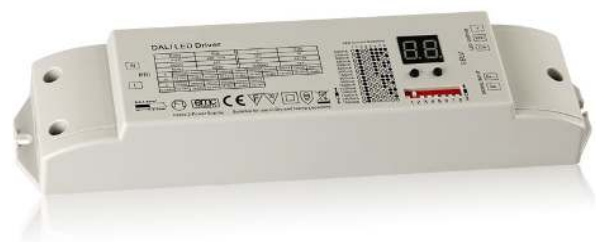
Stepless adjustment of colour temperature/dimming with DALI-DT8 power supply unit

Step-by-step colour temperature adjustment with DIP switch (2700K,4000K or 5700K), dimming control infinitely variable

LED Downlight CS Series

Downlight Series CS

	DE-CS-153-43-v	DE-CS-180-17-v	DE-CS-180-34-v	DE-CS-180-43-v	DE-CS-225-17-v	DE-CS-225-34-v	DE-CS-225-43-v
Power	43W	17W	34W	43W	17W	34W	43W
Luminous flux	> 4200 Lumen	> 1550 Lumen	> 3300 Lumen	> 4200 Lumen	> 1550 Lumen	> 3300 Lumen	> 4200 Lumen
Beam angle	45°	70°	70°	70°	50°	50°	50°
Dimensions (mounting diameter / height)	E-Ø 140 mm / 124 mm	E-Ø 170 mm / 125 mm	E-Ø 170 mm / 125 mm	E-Ø 170 mm / 125 mm	E-Ø 210 mm / 140 mm	E-Ø 210 mm / 140 mm	E-Ø 210 mm / 140 mm
Weight (kg)	1,5 kg	1,5 kg	1,5 kg	1,5 kg	2 kg	2 kg	2 kg

Technical Data

Photometric data
Colour temperature [Kelvin]: 3000K, 4000K, 5000K
Colour rendering index [Ra]: > 80, on request: CRI >90 (-25% lumen)
Light colour: warm white, neutral white, daylight white
Warmup time (60 %) [s]: < 0.50 s
Start time [s]: < 0.5 s

LED data:
LED (type): COB
Quantity [pcs]: 1

Electrical data
Nominal voltage [Volt]: 230V (AC) 50-60 Hz
Nominal service life [h]: > 50,000 h
Rated service life [h]: > 50,000 h
Switching cycles: > 25,000
luminous flux maintenance
Nominal end of life: > 0.70

luminous flux maintenance
End of useful life: > 0.70
Power factor (PF): > 0.95
Operating temperature [°C]: -20°C to 50°C
Storage temperature [°C]: -20°C to 75°C
Dimmable: Yes, optional: Not dimmable
Control signal: DALI, 1-10V, TRIAC

Material
Housing: Aluminium
Housing colour: white, grey, black
cover: tempered glass
Cover colour: clear
Mercury-free: Yes
Certificates and Standards
Certificates Luminaire: CE, RoHS
Protection level: IP20
Protection class: I
Energy efficiency class (A - E): A+

Specifications
Alignment: fixed
Socket: no, integrated light source
Type/Form: round, downlight

Package contains
Light source [pcs]: integrated light source
Mounting material: included
Lamp [pcs]: 1
Warranty: 5 years

LED Downlight CC Series

Square downlight CC Series

	DE-CC-205-145-v	DE-CC-380-245-v	DE-CC-557-345-v
Power	45W	2 x 45W	3 x 45W
Luminous flux	> 5500 Lumen	2x > 5500 Lumen	3x > 5500 Lumen
Dimensions (mounting diameter / height)	190x190 mm / 157 mm	365x190 mm / 158 mm	540x190 mm / 158 mm
Weight	1,9 kg	3,15 kg	4,8 kg

Technical data

Photometric data
Colour temperature [Kelvin]: 3000K, 4000K
Colour rendering index [Ra]: > 80, on request: CRI >90
Light colour: warm white, neutral white
Beam angle [°]: < 45°, on request: 30°, 15
Warm-up time (60 %) [s]: < 0.50 s
Start time [s]: < 0.5 s
Incandescent lamps equivalent: 200 W

LED data:
LED (type): COB

Electrical data
Nominal voltage [Volt]: 230V (AC) 50-60 Hz
Nominal service life [h]: > 50,000 h
Rated service life [h]: > 50,000 h
Switching cycles: > 25,000
luminous flux maintenance

Nominal end of life: > 0.70
luminous flux maintenance

End of useful life: > 0.70
Power factor (PF): > 0.95
Operating temperature [°C]: -20°C to 50°C
Storage temperature [°C]: -20°C to 75°C
Dimmable: Yes
Control signal: DALI, 1-10V, TRIAC

Material
Housing: Aluminium
Housing colour: white, grey, black
cover: tempered glass
Cover colour: clear
Mercury-free: Yes

Certificates and Standards
Certificates Luminaire: CE, RoHS
Protection class: IP20
Protection class: I
Energy efficiency class (A - E) A+

Specifications
Alignment: fixed, tilting
Socket: no, integrated light source
Type/Form: square

Package contains
Light source [pcs]: integrated light source
Mounting material: included (holder)
Lamp [pcs}: 1
Warranty: 3 years

INTERIOR LIGHTING | Track lightS

LED 3 Phase rail Track Light
VARIO

LED 3 Phase rail track light

The VARIO LED Track light is the perfect lighting element for rooms that require varied lighting that adapts precisely to the needs of the presentation. Because the beam angle of the LED 3-phase track light VARIO is manually adjustable from 15° to 50° as standard. Simple, fast and in the twinkling of an eye. Whether wide-area illumination at 50° or targeted illumination of individual, smaller objects at 15° - there are no limits to your creativity.

The colour temperature is also adjustable on the VARIO Track light: Depending on the sales presentation, you can adjust the Track light continuously between 2700 - 5000K. If, for example, a cosy atmosphere is created by warm white light around 3000 Kelvin, a neutral white light colour around 5000K is more likely to be perceived as cool.

The brightness of the track light can also be dimmed flicker-free from 0-100%. This makes additional lighting scenarios in the retail sector possible. The compact luminaire head can be rotated up to 270° and swivelled up to 350° so that the lighting settings can be changed at any time depending on the presentation. The VARIO track light is suitable for all 3-phase Eutrac rails. With 15 watts, the rail track light is particularly energy-efficient but nevertheless powerful. Reduce your energy costs with maximum flexibility.

Technical data

Nominal luminous flux [lumen]:	800-1000 lumen	**Norms and Standards**
Colour rendering index [CRI> Ra]:	CRI>80 (CRI>90*) *on request	Certifications: CE, ROHS, EMC, LVD
Beam angle [angle >°]:	15° to 50° adjustable	
Warm-up time (60%) [s] [s]:	< 0.50 s	Energy efficiency class [EEK]: A+
Start time [s]:	< 0.5 s	Energy consumption [Ec]: 15 kWh/1.000h
Equivalent [Watt]:	100W	
Nominal service life [h]:	50,000	**Material**
LED chip [type]:	Bridgelux COB	Housing: aluminium, powder-coated
Efficiency [lm/w]:	>100lm/w	Cover: Polycarbonate
Quantity:	1 COB Chip	Housing colour: white - on request possible black or grey
		Cover colour: Lens, adjustable 15-50°.
Electrical data		Mercury-free: Yes
Nominal power [Watt]:	15 W	Luminaire type: Rail spotlight
Input voltage [Volt]:	220-240VAC	Alignment: compact, rotatable & swivelling 270°x350°
Frequency [Hertz]:	50-60 Hz	Socket type: integrated illuminant and driver
Driver		**Dimensions (mm)**
Output voltage [Volt]:	3~38VDC	LxWxH/LxWxH: [mm]: 191xØ81x181 mm (total)
Power factor [PF]:	> 0.90	Adapter length [mm]: 87x33x54 mm (adapter only)
Dimmable:	Yes	Net weight [kg]: 1.05
Interface [Type]:	0-10V potentiometer integrated	Gross weight [kg]: 1.35
Drivers are SELV certified		
		Package contains
Operating temperature [°C]:	-20°C to +40°C	Luminaire [piece]: 1
Storage temperature [°C]:	-25°C to +50°C	LED+driver integrated [piece]: 1
Air humidity [%]:	10% ~ 90%	Operating instructions [piece]: 1
IP protection level [IP]:	IP20 (driver IP20)	Warranty [years]: 3
IK Impact strength [IK]:	IK03 (whole system)	
Protection class [SKL]:	II	

LED Track Light CS Series

Recessed track light series CS

	3PS-CSA-15-v	3PS-CSI-22-v	3PS-CSL-43-v
Power	15 W	22 W	43W
luminous flux	from 1450 lm (C8)	from 2150 lm (C8)	from 4150 lm (C8
Beam angle	55°	45°	60°
Dimensions (mounting diameter / height)	E-Ø 95 mm / H1108 mm Driver box: 150x90mm	E-Ø 106 mm / H 112 mm Driver box: 150x80mm	E-Ø 106 mm / H 219 mm Driver box 168x90mm
Weight	0,75 kg	0,75 kg	0,75 kg

Technical data

Photometric data
Color temperature [Kelvin] Standard:
3000K, 4000K, 5000K
Colour temperature [Kelvin] on request:
2700K, 3100K, 3200K, 3500K
Colour rendering index [Ra]: Standard: > 80
on request > 90
Light colour: warm white, neutral white, daylight
white
Beam angle [°]: see table,
optional on request: 15°, 20°, 30°, 60
Warm-up time (60 %) [s]: < 0.50 s
Start time [s]: < 0.5 s

LED data
LED type: VS, 500mA COB
Number of LEDs: 1 piece

Electrical data
Nominal voltage [Volt]: 230V (AC)
Nominal service life [h]: > 50,000 h (L70)
Rated service life [h]: > 50,000 h
Switching cycles: > 25,000
Luminous flux maintenance Nominal service life
end: > 0.70
Power factor (PF): > 0.95
Operating temperature [°C]: -20°C to 50°C
Storage temperature [°C]: -20°C to 55°C
Dimmable: no
Control signal: not available

Material
Housing: Aluminium, PCV
Housing colour Standard: white RAL 9010
Housing colour Optional: black 9005
Cover: lens, reflector
Cover colour: clear with reflector
Mercury-free: Yes

Certifications: CE, RoHS, IEC 62717
Protection level: IP20
Protection class: I
Energy efficiency class (A - E) A+

Specifications
Orientation: rail plug fixed, cylinder swivelling
Socket/socket: integrated light source
Type/Form: Cylinder, compact with reflector

Package contains
Light source [pcs]: integrated light source
Luminaire incl. power supply unit [pcs]: 1
Warranty: 5 years

Professional LED Tubes -

in the frame rotatable!

High-quality LED tube with particularly high light efficiency - this is the only way to replace fluorescent tubes with LED tubes without incurring a loss in illuminance..

Various sizes (60cm, 90cm, 120cm and 150cm) and light colours (warm white, neutral white and daylight white) make this system an ideal replacement for conventional fluorescent tubes.

Since LED tubes radiate on one side as standard, the connections were designed to be rotatable. This allows the tube to be rotated in the socket and thus angled in a targeted direction.

Technical data
- Light colour: 3250K, 4250K, 6000K (optional other light colours available)
- Beam angle: 120°.
- Housing: Alu/PC
- Colour rendering: RA > 70 to > 80 (depending on light colour)
- Optics: clear / milky
- Certificates: CE, Rohs, VDE
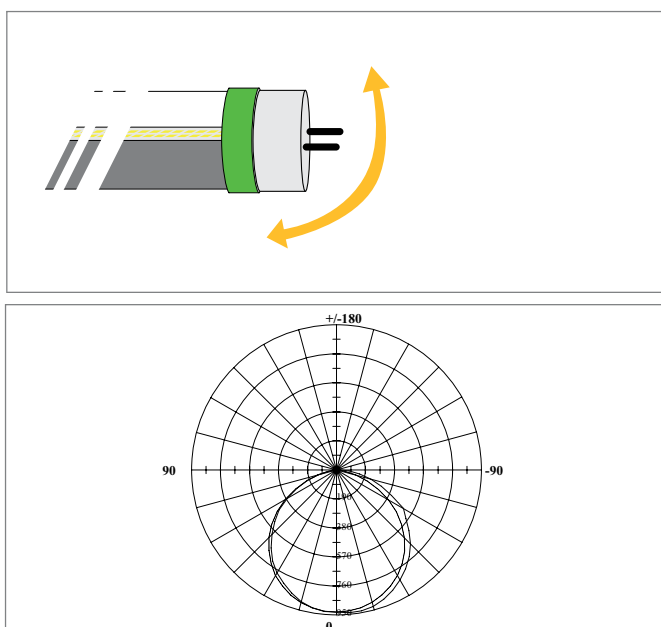
Article number	Length (mm)	Watts	Lumens
1T8-SL2-1500-30-v	1500	30	4500lm
1T8-1500-30-SL-v	1500	30	3850lm
1T8-1500-22-SL-v	1500	22	2850lm
1T8-SL2-1200-20-v	1200	20	3000lm
1T8-1200-20-SL-v	1200	20	2600lm
1T8-900-12-SL-v	900	12	1550lm
1T8-900-12-K-v	900	12	1250lm
1T8-SL2-600-10-v	600	10	1500lm
1T8-600-10-SL-v	600	10	1300lm

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LED Modules for retrofitting with existing luminaires with magnetic holder

LED retrofit module Light-Fix

Photometric data

Colour temperature [Kelvin]:	3000K, 4000K
Colour rendering index [Ra]:	>80
Light colour:	warm white, neutral white (note variations!)
Beam angle [°]:	140°.
Warm-up time (60 %) [s]:	< 0.50 s
Start time [s]:	< 0.5 s
Incandescent lamps equivalent:	80 W

LED data:

LED (type):	Epistar SMD2835
Number [pcs]:	24 x ~0.5W CHIP BCBL

Electrical data

|	
Nominal voltage [Volt]:	100-230 V AC (driver output: <27VDC)
Nominal service life [h]:	> 30,000 h
Rated service life [h]:	> 30,000 h
Switching cycles:	> 15,000
Luminous flux maintenance Nominal service life end: > 0.70	
Luminous flux maintenance Service life end: > 0.70	
Power factor (PF):	> 0.50
Operating temperature [°C]:	-20°C to 40°C
Storage temperature [°C]:	-20°C to 60°C
Dimmable:	No
Control signal:	Not available

Material
Housing: aluminium, magnet, PMMA
Housing colour: transparent white PCB
Cover: lens optics, wide beam
Cover colour: transparent
Mercury-free: Yes

Certificates and Standards
Certificates Luminaire: CE, RoHS
Energy efficiency class (A - E) A+
Protection class / protection level II/IP44
Specifications
Alignment: fixed, magnetic holder
Socket/socket: none (LED retrofit kit for surface-mounted luminaires!)
Type/Form: flat, LED board incl. optics and driver
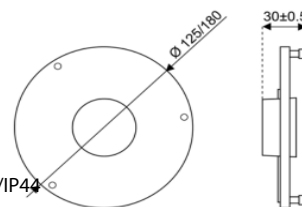
Dimensions (mm)
Dimensions (Ø) [mm]: Ø 125 mm
Height (H) [mm]: 30 mm (plus magnetic holder and spacers)
Weight [kg]: 0.150 kg

Package contains
LED module [pcs]: 1 module incl. driver
Magnetic mounting incl. spacers [pcs]: 3 magnetic holders
Warranty: 3 years

Article number	Dimensions	Beam angle	Light colour	Lumen	Nominal power	Efficiency
LM-RM12125-30	125 x 30 mm	140°	3000K	1100	12W	100LM/W
LM-RM12125-40	125 x 30 mm	140°	4000K	1200	12W	105LM/W
LM-RM18180-30	180 x 30 mm	140°	3000K	1800	18W	100LM/W
LM-RM18180-40	180 x 30 mm	140°	4000K	1900	18W	105LM/W
LM-RM24180-30	180 x 30 mm	140°	3000K	2400	24W	100LM/W
LM-RM24180-40	180 x 30 mm	140°	4000K	2500	24W	105LM/W

E27-Corn bulb, 4000K, beam angle: 360°, 15W, 2300 lumen,

Ø-64 x 145 mm

Nominal luminous flux:	2300 Lumen
Nominal power [Watt]:	15 W
Nominal service life [h]:	> 50,000 h (L80 B10)
Switching cycles:	> 25,000
Color temperature [Kelvin]:	4000K
Warm-up time (60 %) [s]:	< 2.00 s
Dimmable:	No
Dimensions (Ø/L) [mm]:	Ø-64/145 mm
Energy efficiency class (A - E):	A+

LM-E27-CL8-15-40

E27-Corn bulb, 3000K,

Nominal luminous flux:	2300, 2950, 3700, 4150, 5550, 6950, 8350 Lumen
Nominal power [Watt]:	15, 19, 24, 27, 36, 45, 54 W
Nominal service life [h]:	> 50,000 h (L80 B10)
Switching cycles:	> 25,000
Color temperature [Kelvin]:	3000K
Warm-up time (60 %) [s]:	< 2.00 s
Dimmable:	No
Dimensions (Ø/L) [mm]:	Ø-64/93 mm / 145 / 155 / 170 / 188 / 218 / 248 / 248 mm
Energy efficiency class (A - E):	A+

LM-E27-CL8-19-30

E27-Corn bulb, 4000K, beam angle: 360°, 24W, 3700 lumen,

Ø-64 x 170 mm

Nominal luminous flux:	3700 Lumen
Nominal power [Watt]:	24 W
Nominal service life [h]:	> 50,000 h (L80 B10)
Switching cycles:	> 25,000
Color temperature [Kelvin]:	4000K
Warm-up time (60 %) [s]:	< 2.00 s
Dimmable:	no
Dimensions (Ø/L) [mm]:	Ø-64/170 mm
Energy efficiency class (A - E):	A+

LM-E27-CL8-24-40

LED retrofit lamps are available in all common sizes and variants. They replace conventional light sources and often offer a greater variety of luminous intensities, light colours, appearance and beam angles.

LED Strip # LST-1F40-24-22-v

single color - 180lm/w - 128 LED's/m - SMD2835

Nominal luminous flux:	3700, 3850, 4000 lumen/m
Colour rendering index:	CRI>80
IP protection level:	IP20
Rated power [Watt]:	22.0 W
Power supply: 24V DC	
Nominal service life [h]:	> 40,000 h
Switching cycles: > 20,000 x	
Colour temperature [Kelvin]:	3000K, 4000K, 6000K
Dimmable:	yes via LED controller
Dimensions (L/W/H) [mm]:	1000 mm/12 mm/5 mm
Energy efficiency class (A - E):	A++

LED-Strip # LST-1F20-24-12-v

single color • 180lm/w • 64 LED's/m • SMD2835

Nominal luminous flux:	1900, 2000, 2100 lumen/m
Colour rendering index:	CRI>80
IP protection level:	IP20
Nominal power [Watt]:	11.50 W
Power supply:	24V DC
Nominal service life [h]:	> 40,000 h
Switching cycles:	> 20,000 x
Colour temperature [Kelvin]:	3000K, 4000K, 6000K
Dimmable:	yes via LED controller
Dimensions (L/W/H) [mm]:	1000 mm/10 mm/5 mm
Energy efficiency class (A - E):	A++

LED-Strip # 1LST0035-v
single color • high density • 240 LED's/m • SMD2835

Nominal luminous flux:	1400, 1450, 1500, 1600, 1700 lumen/m
Colour rendering index:	CRI>80
IP protection level:	IP20
Nominal power [Watt]:	19,2 W
Power supply:	24V DC
Nominal service life [h]:	> 30,000 h
Switching cycles:	> 15,000 x
Colour temperature [Kelvin]:	2200K, 2700K, 3000K, 4500K, 6000K
Dimmable:	yes (PWM LED controller)
Dimensions (L/W/H) [mm]:	1000 mm/10 mm/5 mm
Energy efficiency class (A - E):	A

LED-Strip # LST-2F45-24-38

two-coloured • 118lm/w • 140 LED's/m • SMD5630

Nominal luminous flux:	4500 Lumen
Colour rendering index:	CRI>80
IP protection level:	IP20
Nominal power [Watt]:	38,0 W
Power supply: 24V DC	
Nominal service life [h]:	> 40,000 h
Switching cycles:	> 20,000 x
Color temperature [Kelvin]:	3000K-6000K flexibly adjustable
Dimmable:	yes via LED controller
Dimensions (L/W/H) [mm]:	1000 mm/12 mm/3 mm
Energy efficiency class (A - E):	A++

LED-Strip # 1LST0034-v

four-coloured • AIO-CHIP • 60 LED's/m • SMD5050

Rated luminous flux:	850, 880, 930 lumen
Colour rendering index:	CRI>80
IP protection level:	IP20
Nominal power [Watt]:	19,2 W
Power supply:	24V DC
Nominal service life [h]:	> 30,000 h
Switching cycles:	> 15,000 x
Color temperature [Kelvin]:	RGB + (3000K, 4000K, 6500K)
Dimmable:	yes via LED controller
Dimensions (L/W/H) [mm]:	1000 mm/12 mm/3 mm
Energy efficiency class (A - E):	A

LED-Strip # 9LST-RGB-24-14

three-coloured • RGB • 60 LED's/m • SMD5050

Nominal luminous flux:	550 Lumen
Colour rendering index:	CRI>80
IP protection level:	IP20
Nominal power [Watt]:	14.4 W
Power supply:	24V DC
Nominal service life [h]:	> 30,000 h
Switching cycles:	> 15,000 x
Color temperature [Kelvin]:	RGB = red, green, blue
Dimmable:	yes via LED controller
Dimensions (L/W/H) [mm]:	1000 mm/10 mm/5 mm
Energy efficiency class (A - E):	A

We offer our customers the opportunity to produce solutions specifically tailored to their projects (OEM). These can be cast in-house or produced as finished luminaires. They can also be produced ready for connection and commissioned for higher demands with regard to humidity or as a profile solution with connectors.

Currently we have 704 different models in our portfolio

Colour temperatures [Kelvin]:	2200K, 2500K, 2600K, 3000K, 3500K, 4000K, 4500K, 5000K, 5500K, AMBER, R, G, B, Y, RGB, RGB-W, CW-TW - special solutions available on request
Colour rendering index:	CRI>80 | CRI>90 | CRI>95
Width [mm] :	5mm | 8mm | 10mm | 12mm | 14mm | 15mm | 15+ mm
IP protection levels:	IP20, IP54 (silicone encapsulation), IP67 silicone hose (without encapsulation), IP68 silicone encapsulation in silicone hose
Number of LEDs:	<228 LEDs/m
Luminous flux:	<180lm/w

Power: <38.0 W/m

Digital incl. integrated IC (WS2811 or WS2814)

We also offer special solutions, such as Machinery lighting, lighting for food industry, production plant control lights. So if you have any questions, we would be delighted to hear from you.

We have an extensive range of additional accessories at our fingertips e.g: Aluminium profiles (heat sinks), end caps, covers (diffusers), brackets and cast systems or special paints to ensure protection against accidental contact on the circuit boards.

We are happy to support you in the selection, production and implementation of your lighting project. An exact light planning as well as installation documentation (positioning, wiring and supply of the systems) will be provided by us..

LED strip connections, control and assembly

LED strips are available in 12 Volt and 24 Volt versions. The result is the same for both versions. 24 Volt strips need a 24 Volt, 12 Volt strips a 12 Volt power supply. The difference lies in the length a strip with a supply line to the power supply may have. At 12 volts the length must not exceed 5 meters, at 24 volts the length is 10 meters. Then the other pieces need their own supply line to the power supply module.

The power supply unit must reach at least the power of the strip. For example, if you use a 24 volt strip at 19.2 watts per meter, the power supply must reach at least 192 watts at 10 meters. Various LED pieces can be supplied with a power supply unit as long as there is a separate supply line to the strip.

Note: Every LED requires cooling. For this purpose, LED strips are usually glued onto an aluminium profile. Our LED strips are therefore provided with an adhesive surface on the back

Controls

Controls must be placed between the strip and the power supply unit. If you have different supply lines, each must be equipped with its own controller. These can then be controlled within a system via a remote control.

Controls for single color LED strips
In addition to switching the strips on and off, you can dim the LEDs smoothly here. This ensures that you always achieve the desired illuminance.

Controls for CCT (adjustable color temperature) strips
For switching and dimming you can adjust the cold white and the warm white LED smoothly against each other. In this way, a wide variety of lighting moods can be created in the room. From cosy lighting with warm light to active lighting with fresh, daylight.

Control for RGB and RGBW LED strips
Here you can switch and dim each light colour (red, green, blue) individually, in addition to switching and dimming. Of course, mixed colors can also be achieved in this way. With RGBW stripes and controls a white LED is added here, which takes over their visualisation with the desired white light colour.

Components lighting control PRO Building, DALI, Casambi

Lighting controls make lighting more flexible and energy-efficient. Basically, a lighting control system connects luminaires with sensors and switches. Processes that would otherwise have to be carried out manually are controlled automatically. Everything from switching to dimming can be automated. But lighting controls can do much more. Feedback from the luminaires is also possible. Data such as the required energy can be evaluated or defective luminaires can be displayed. Networking with a house control system is also possible.

WSH PRO Building Light control system

A radio-based ZigBee® control requires no control cable. Here, the luminaires are combined in a network which transmits commands. There are two ZigBee variants. The most common is „home automation". As the name suggests, electronic devices can be controlled here in residential buildings. In the industrial sector, you should set to „industrial standard". This system meets the safety requirements of industrial production firms.

Luminaires with 1-10V power supply are used for control. The WSH ZigBee modules are used here to build a stable, secure and self-contained network as receiver and transmitter. The corresponding programming is stored in the luminaire modules so that there is no need for a central control unit. The push-button is also integrated into this network by means of a ZigBee push-button module.

The system is set up one-time via the WSH Pro Building Software with the help of a radio dongle.

The optional gateway serves as an output point for statistics. In other cases, the radiators can be controlled and configured from the PC or tablet via the gateway or a web interface.

DALI lighting control

DALI is based on a control cable between control cabinet and luminaires. The LED hall spotlights have to be equipped with a DALI power supply unit. If a converter is used which converts the DALI signals into 1-10V, it should support „dimming to off". The LED indoor spotlight series WH is directly available with a DALI power supply. A two-wire control cable is laid from the spotlight to the control cabinet. This can be done either separately from the power line or in a cable. If all cables are combined in one cable, they should be isolated from each other (5x2.5mm² NYM with max. 300m length in one switching row). The individual components (see list) are then installed in the control cabinet. The WAGO components are simple to install for this purpose. Pushbuttons are also installed in these cabinets. With the new parameterizable WAGO controller, the controller can then be set up via a clear menu navigation.

Casambi lighting control

Casambi is suitable for all areas in which you want to control up to 127 luminaires simply, safely and conveniently. The application areas range from office lighting, conference rooms, lighting in the catering trade, events and event technology to residential buildings.
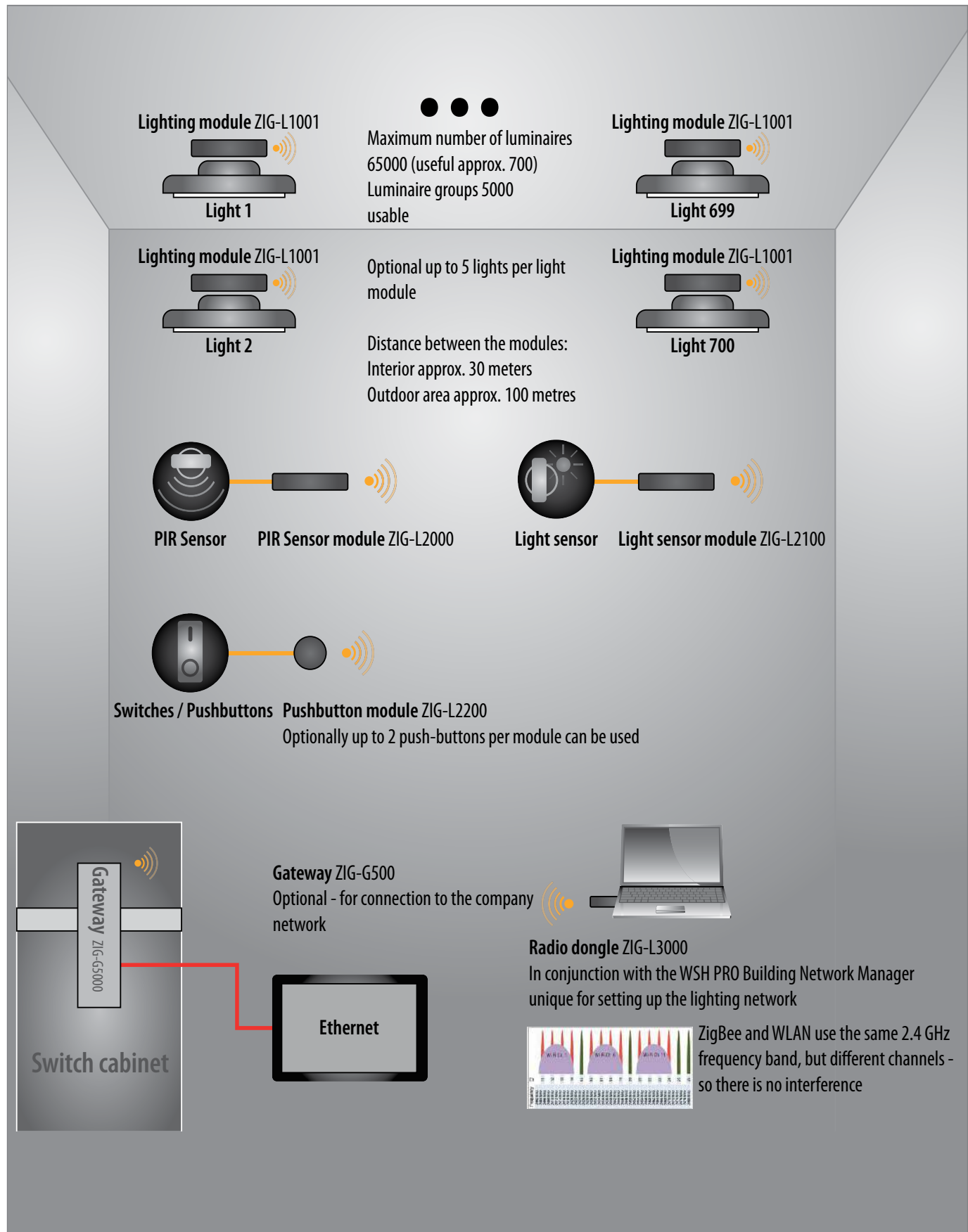
With the Casambi system, lighting is controlled comfortably, simply and comprehensively. You can access it using a tablet, PC, smartphone, Casambi XPRESS switch or conventional light switch and integrate all luminaires - regardless of whether the phases are start and stop, pulse width modulation, 1-10V or Dali dimmable (also without gateway). The system is based on Bluetooth 4.0. Each luminaire is equipped with a Casambi controller. The Casambi controllers and all other devices such as light sensors, motion detectors or push-buttons are both transmitters and receivers. Thus, all devices form a complex network in which the commands are passed on. This network functions without central control.

Components

On the following pages you will find the individual components required for the various systems.
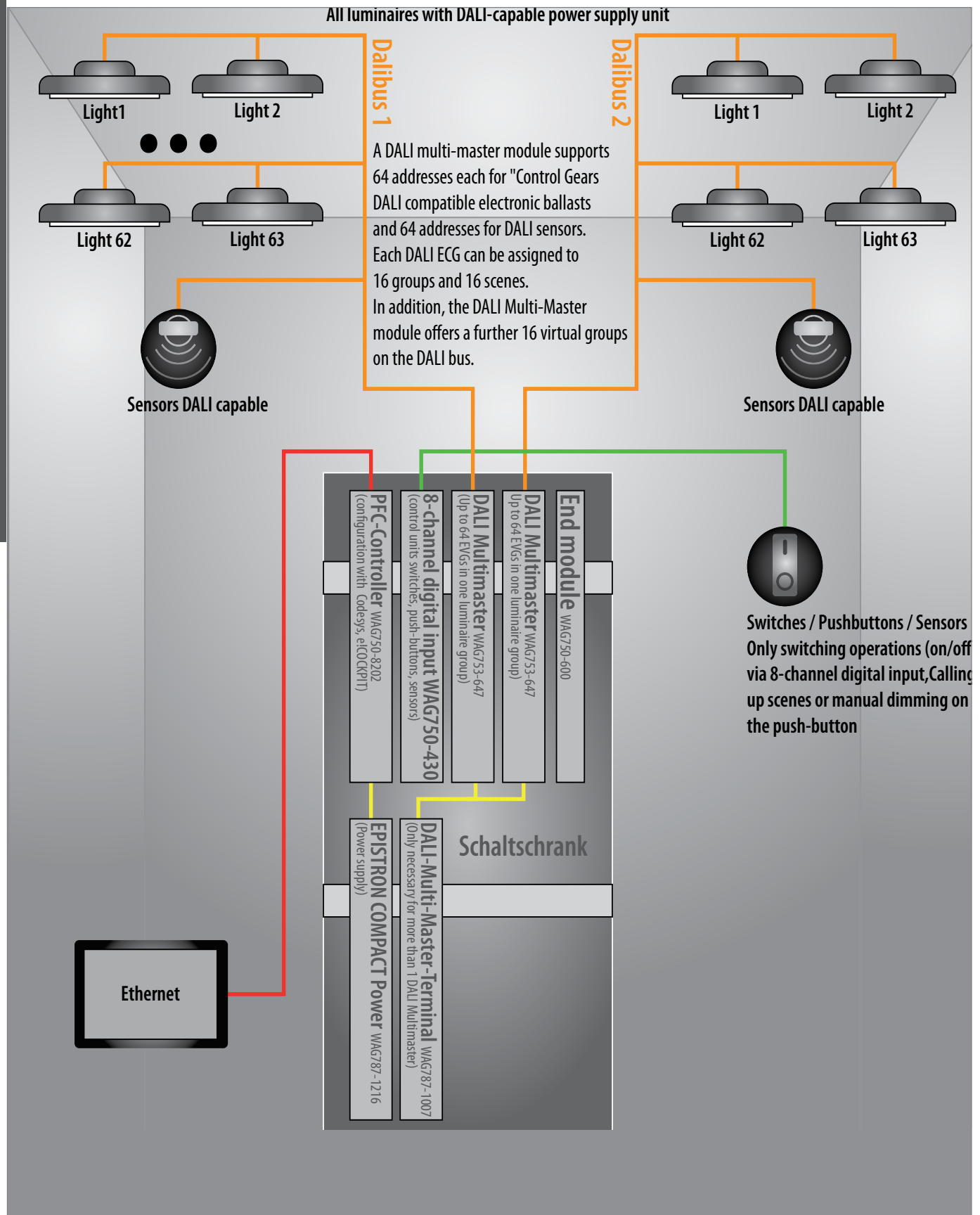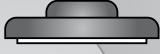
Components WSH PRO Building Industrial lighting control

Lighting module ZIG-L1001

Light 1

● ● ●

Maximum number of luminaires 65000 (useful approx. 700)
Luminaire groups 5000 usable

Lighting module ZIG-L1001

Light 699

Lighting module ZIG-L1001

Light 2

Optional up to 5 lights per light module

Distance between the modules:
Interior approx. 30 meters
Outdoor area approx. 100 metres

Lighting module ZIG-L1001

Light 700

PIR Sensor   **PIR Sensor module** ZIG-L2000

Light sensor   **Light sensor module** ZIG-L2100

Switches / Pushbuttons   **Pushbutton module** ZIG-L2200
Optionally up to 2 push-buttons per module can be used

Gateway ZIG-G5000

Switch cabinet

Gateway ZIG-G500
Optional - for connection to the company network

Ethernet

Radio dongle ZIG-L3000
In conjunction with the WSH PRO Building Network Manager unique for setting up the lighting network

ZigBee and WLAN use the same 2.4 GHz frequency band, but different channels - so there is no interference

LED components DALI lighting control

All luminaires with DALI-capable power supply unit

Dalibus 1

Dalibus 2

Light1   Light 2

Light 62   Light 63

Light 1   Light 2

Light 62   Light 63

A DALI multi-master module supports 64 addresses each for "Control Gears DALI compatible electronic ballasts and 64 addresses for DALI sensors. Each DALI ECG can be assigned to 16 groups and 16 scenes. In addition, the DALI Multi-Master module offers a further 16 virtual groups on the DALI bus.

Sensors DALI capable

Sensors DALI capable

PFC-Controler WAG750-8202
(configuration with Codesys, e!COCKPIT)

8-channel digital input WAG750-430
(control units switches, push-buttons, sensors)

DALI Multimaster WAG753-647
(Up to 64 EVGs in one luminaire group)

DALI Multimaster WAG753-647
Up to 64 EVGs in one luminaire group)

End module WAG750-600

EPISTRON COMPACT Power WAG787-1216
(Power supply)

DALI-Multi-Master-Terminal WAG787-1007
(Only necessary for more than 1 DALI Multimaster)

Schaltschrank

Ethernet

Switches / Pushbuttons / Sensors
Only switching operations (on/off) via 8-channel digital input, Calling up scenes or manual dimming on the push-button

LED components CASAMBI lighting control

Light control | Industry

Components for luminaires

Light
(1-10V Dimmable or DALI Dimmable)

CASAMBI Controller for 0/1-10V Control and DALI Control
LLS-CBU-ASD
1-10V (0/1-10VDC Operating current is 7mA)
DALI (Extension are possible with DALI REPEATER. Digital output: Standalone DALI)

Light12/24 VDC
(1-10V Dimmable or DALI Dimmable)

CASAMBI Controller for 0/1-10V Control and DALI Control
LLS-CBU-ASD
0/1-10VDC Operating current is 7mA
12/24VDC driver with 1-10V or DALI input can be controlled via the actuator

Light
(TRIAC Dimmable)

CASAMBI Controller for phase cut dimmer(TRIAC)
LLS-CBU-TED
Load upto 150W/230V

LED Strip
(Up to 4 colors)

CASAMBI Controller for up to 4-color LED strips (single color, CCT, RGB, RGBW)
LLS-CBU-PWM4
Load upto 12V/72W und 24V/144W
Channels can be used up to RGBW or 4 x 1 color or 2 x 2 color

LED Panel LTOP CCT

LED constant current source 250-1500mA, 15-48V, 50W, DALI 2-channel, CCT, DT6
ZN-DT6-CCT-50

CASAMBI Controller for 0/1-10V Control and DALI control
LLS-CBU-ASD
0/1-10VDC operating current is 7mA
12/24VDC driver with 1-10V or DALI input can be controlled via the actuator

Components Control

CASAMBI motion and light sensor,
LLS-CBU-BLS
Installation Ø 25 mm, Ø-7 m, IP44, white

CASAMBI Xpress-Wall switch,
LLS-CBU-XPRESS-W
Wireless and APP configurable, white

Casambi APP
Set up, manage,
Control the network,
Groups and luminaires

CASAMBI is based on Bluetooth 4.0
Up to 127 luminaires can be controlled over a network. Maximum distance between the individual participants is approx. 20 meters in the Indoor area (30 meters in the outdoor area)

61

LIGHT CONTROLERS | Industry

CASAMBI Controller for

Phase alignment dimmer (TRIAC)

Input voltage: 220-240 V AC
Max. Load: 230VAC=150W / 115VAC=75W
Dimming interface: Phase and segment dimming
Dimmable: Yes
Length [mm]: 40.40 mm
width [mm]: 36,30 mm
Height [mm]: 14 mm
LLS-CBU-TED

CASAMBI Controller for up to

4-colour LED strips, RGBW

Lamp type: LED 12/24V DC
Input voltage: 12-24 V
System power: 72,00-144,00 W
Output voltage: 12-24V
Output current: 0A to 6A
Output channels: 4
LLS-CBU-PWM4
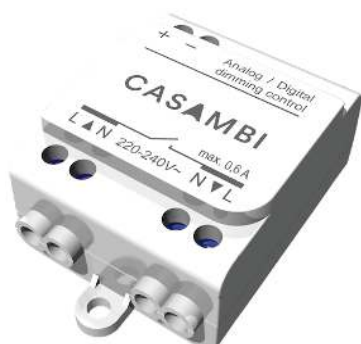
CASAMBI Controller for

0/1-10V control and DALI control

Input voltage: 220-240 V AC
Nominal frequency: 50/60 Hz
Dimming interface: 1 ...10V/ DALI (via smartphone)
Dimmable: Yes
L [mm]: 56.5 mm, B [mm]: 35.8 mm, H [mm]: 22.3 mm
Hole dimension [mm]: 50.0 mm
IP protection level: IP20 | Protection class: II
Ambient temperature (ta): -20 ...+70 °C
LLS-CBU-ASD

CASAMBI Xpress wall switch, wireless and APP configurable, black/white

Size: 90 x 90 x 12 mm
Colour variants: Black
Range: Up to 60 meters outdoors
Battery (included): CR2430 Lithium Button Cell
Battery life: 2-5 years, depending on use
LLS-CBU-XPRESS-B

We carry many more modules, switches and actuators in our comprehensive range.
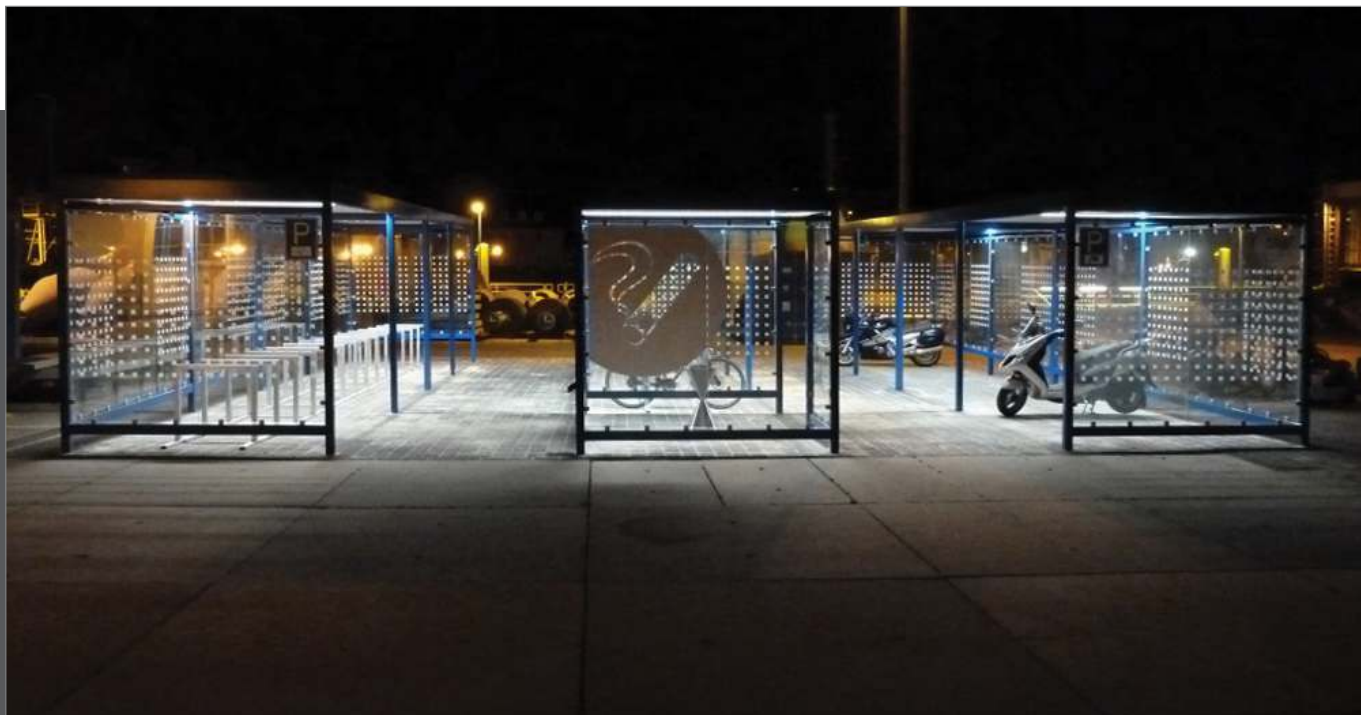
Luminaire design
by
Wir sind heller

Wir sind heller ®

Professional LED Lighting design from Wir sind heller

The lighting sector is booming - but as often happens, there are many standard fixtures, but not the perfect fixture for the intended application. Whether in industry the connections or brackets do not fit, whether no suitable design can be found for the application and special lighting requirements - having standard luminaires is not generally a good choice.

In such cases, the professional LED luminaire design is the ultimate in providing highly customized luminaires.

Wir sind heller designed together with you and construct for you the perfect fitting luminaire for your project.
In planning and designing, we bring in years of experience with lighting technology and especially LED technology.
Here the way is set for a successful lighting of your project.

Individually configurable LED luminaires

The luminaire housing is optimally tailored to existing or planned mounting options and connections, while being optimised for heat dissipation and light leakage.
Light colour, lumen and colour rendering can be individually adjusted.
We consider your desires for design, light and performance in every phase of the project.

You will also receive an individual and tailor-made illumination in larger quantities or as a small quantity.
No compromises, no need to search in vain for the right luminaire.

Find in Wir sind heller a LED lighting specialist as a partner on the way to the efficiency, functional and unique lighting of your project.

Please get in contact with us

The BLUECAT hygiene light is used in the field of cooling technology. Problems occurring in cold rooms or fermenting machines due to mould growth are eliminated by means of the LED light, the durability of the systems is prolonged and maintenance work is greatly reduced. The extremely narrow-band light spectrum emits light at a frequency that causes the protein molecules of the moulds to vibrate, thus reducing and/or preventing fungal and bacterial growth.

Additional UV LEDs installed in small numbers provide the possibility of a visual examination of the correct effect created by the special blue LED light. The BLUECAT® requires very little energy. Furthermore, the BLUECAT® is equipped with a lifetime indicator.

| Product	Length mm	Typ	Power input	Number of LEDs		Lifetime indicator LED
				BLUE	UV	
BL065-M-T	700	T	7 W	10	2	Yes
BL100-M-T	1000	T	10 W	15	3	Yes
BL160-M-T	1600	T	17 W	25	5	Yes
BL065-M-E	700	End	7 W	10	2	Yes
BL100-M-E	1000	End	10 W	15	3	Yes
BL160-M-E	1600	End	17 W	25	5	Yes

Technical data
Connection: 24VDC ±20 %
Cable: Ø5mm, oil flex rubber cable 2-wire, length 2m
Service life: 30,000h (service life indicator flashing red LED)
Protection level: IP65
Protective devices: Reverse polarity
Switchings/day: 10
operating conditions:
Ambient temperature during operation -18°C...+25°C
Relative humidity ..... 100% (+25°C)
Storage temperature of luminaire -30°C...+50°C

Terms of light measurement
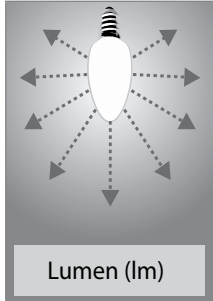
Lumens

Lumen is the luminous flux which is emitted by a lamp in all directions. In other words, the complete light emitted in all directions.
The LED has a small „stumbling block". The LED naturally beams its light in one direction.
With a conventional fluorescent tube, however, this is completely different.
It radiates the light equally in all directions. This is why the luminous flux is steered in the desired direction by means of reflectors, which can result in losses.
With the counterpart the ‚'LED tube" it is not necessary because the luminous flux exits in one direction. But as a guideline in the graphic combined with Watt, the consumption of the lamp, is at least an indication of the brightness.
For all our LED lamps and luminaires you will find the lumen indication.

Lumen (lm)

Lumen	100 lm		500 lm		1000 lm		1500 lm	2000 lm	2500 lm	3000 lm	3500 lm	4000 lm	4500 lm
	15W	40W	60W	75W		100W	150W		200W				
	3W 5W	7W	11W		15W	20W	23W						
	10W 20W		35W	50W	75W		100W						
					15W	18W		30W	36W				58W
	Output incl. ballast				19W	29W		38W	44W				68W
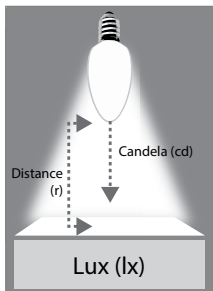
Lux

Illuminance (lux) is the light measured e.g. by means of a lux meter which effectively arrives at a surface. It is indicated in lux.

In other words, it measures how much light actually reaches your desk, regardless of how much lumen the luminaire emits. Compliance with standards and guidelines is also based on it.

But what does that mean effectively?

On parking lots, you often have 20-25 lux.
In the living area - of course depending on the lighting - 50 to 200 lux
Public spaces are often illuminated with 200 lux.
For concentrated work, you should have at least 500 lux on your desk.
Sunlight - on a sunny day - can have 40,000 to 50,000 lux.

Candela (cd)
Distance (r)
Lux (lx)

10 - 25 Lux	50 - 200 Lux	200 - 300 Lux	500 - 1000 Lux	40.000 Lux
Parking lots	Living area	General Lighting	Concentrated work	Sunlight

Kelvin

Light is emitted by illuminants in various colours. This does not mean colourful, but the „ appearance „ of the light. The colour temperature is given in Kelvin. Warm light colours cosy ones are between 2000 and 3300 Kelvin, neutral light colours the typical office lights are between 3300 and approx. 5300 Kelvin and daylight white lights in factory halls and bright shop lighting start at 5300 Kelvin and upwards.
LED can cover all these light colours.

2700 K   6500 K

Colour temperature

Warmwhite			Naturalwhite		Daylightwhite		
1000 K	2000 K	3000 K	4000 K	5000 K	6000 K	7000 K	8000 K
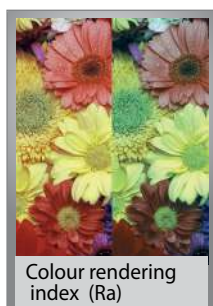
Colour rendering index

The colour rendering index describes how the light of a lamp reflects the colours to illuminated subjects. RA 100 is the colour rendering which reflects the colour rendering in daylight at its best.

The colour rendering index depends strongly on the spectral composition of the light from the luminaire.

Colour rendering index (Ra)
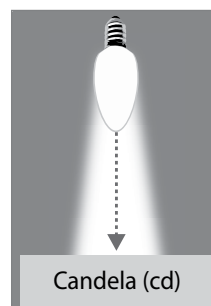
Candela

Candela is in contrast to lumen, the luminous flux in a specific
Angle.

Candela (cd)

Notes

Dear customer,
Our product range is continuously being updated, for interesting products please visit our website for more information or contact us directly.

Your Wir sind heller team

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