



LED Lighting Tools
Exterior

siteco
AN OSRAM BUSINESS



Streetlight 10 mini | ... midi LED

Streetlight 10 LED sets the standard for an LED outdoor luminaire designed completely according to energy efficiency and lighting quality requirements. Purist, functional design comes together with high power LEDs and outstanding photometrics. Thanks to two construction sizes, mini and midi, Streetlight 10 LED eminently complies with the requirements of DIN EN 13201 for S and ME lighting classes. The concept of the replaceable optical module is also highly future-fit: it can be simply upgraded and thus ensures a sustainable and future proof use of the high quality luminaire housing. The microprocessor-controlled LED operating electronics allow even more potential for efficiency.

Luminance levels can be individually set according to needs for the performance packages 'Plus' (with Siteco® Servicebox) and 'Premium' (with Siteco® Light Control). By installing a supplementary mast controller, the luminaire can be simply integrated into the Siteco Control system.

Anwendung

- service roads, collecting roads, squares
- mounting heights: 4 – 6m
- mast spacing: 30 – 40 m
- lighting class: S3 – S6, ME5

Product variants

- neutral white or warm white light colour
Streetlight 10 mini for S and ME lighting classes
Streetlight 10 midi for ME lighting classes
- with optic for cycle paths or pedestrian crossings
- with 'Basic', 'Plus' or 'Premium' control functions
via high quality LED engine

- + newly developed reflector technology
optimised for the specific application sector
- + optical module with high power LEDs ensures sustainability,
fitness for the future and easy maintenance via simple
replacement
- + capsuled LED module, ready to plug in (IP66)
- + constant luminous flux control ('Plus') for accurate
and highly efficient road lighting
- + easy programming and configuration via the Siteco
Servicebox ('Plus') proven gear tray with electrical and elec-
tronic components is easily accessible and replaceable
- + adjustable luminaire inclination for optimal adaptation
to lighting situations and road geometries
- + integrative, future-fit luminaire design
- + minimized light spill long
- + lifetime and low loss of luminous flux via optimised
thermal management (>50,000 h, 88%)
- + low power consumption with very good photometric
results ensures efficient and cost-effective road lighting
- + 3-zone reflectors for optimal, homogeneous road lighting



DL® 20 LED

The DL® 20 LED impressively demonstrates how high performance LED technology can be combined with outstanding design. The town and park luminaire with state-of-the-art High-Power LED technology fulfils DIN EN 13201 for S and ME lighting classes so that standard-compliant road and town square lighting can be achieved with high energy efficiency and a high design appeal.

The microprocessor-controlled LED operating electronics enable even more efficiency potential. With the 'Plus' performance package, luminance can be individually set according to needs.

By installing an additional mast controller, the luminaire can be integrated simply into the central Siteco® Light Control system.





Application

- residential areas, ancillary roads, squares, parks, local transit roads and town centres
- mounting heights: 4 – 6m
- mast spacing: 25 – 40m
- lighting classes: S and ME

Product variants:

- warm white or neutral white light colour
 - symmetrical or asymmetrical distribution
 - asymmetrical wide light distribution with cycle path optic
 - with 'Plus' control functions via high quality LED engine
 - upgrading to 'Premium' luminaire via additional mast controller possible at any time
-
- + patented glare-free multiple light deflection with high power LEDs
 - + combination of micro LED reflector of aluminum vapor-coated plastic and luminaire reflector in MIRO® quality with high quality white glass
 - + Dark Sky: 0% light spill
 - + 2-component construction: (arm, ring with LED module)
 - + optimised storage and reduced installation time
 - + optimised thermal management: driver recessed in mast mounting element, luminaire housing acts as heat sink for the LED module technology
 - + poles: for standard 76mm steel pole
 - + SM 300 series design pole
 - + long lifetime (>50,000h)
 - + IP66, insulation class II



BELL LED

A classic, decorative design, simultaneously better light, and with outstanding optics and significantly lower costs. The BELL in the LED variant is the future-fit solution for decorative lighting tasks in outdoor areas. Two construction sizes, two light colours, several control variants and various covers make it the flexible allrounder for all applications.

The BELL LED and the special BELL LED module are ideally suited for the modernising or expanding of existing installations with their low effort and simple handling. And without compromises, because concealed in the BELL LED is the only slightly modified module of the highly efficient road luminaire, the Streetlight 10 from Siteco.



Application

- residential areas, parking facilities, service and collection roads
- mounting heights:
3.5 – 5m (SMALL BELL), 4 – 6m (LARGE BELL)
- mast spacing: 30 – 40m
- lighting classes: S4 – S6, ME5

Product variants

- LARGE BELL LED/SMALL BELL LED
- asymmetric wide light distribution
- colour temperatures warm white or neutral white for design with light colours

- + with 'Basic', 'Plus' or 'Premium' control functions via high quality LED control unit
- + LED module including optical enclosure for especially fast, simple modernisation of existing systems while maintaining the uniform appearance
- + highly efficient Streetlight 10 reflector technology for ideal, homogeneous, standard-compliant lighting of squares, parking lots, residential areas, residential and collection roads according to DIN EN 13201
- + extremely simple maintenance due to BELL LED module
- + modular gear tray concept, upgrade to later more efficient LED generations possible
- + low power consumption with very good optical results
- + additional savings potential due to intelligent light control
- + energy savings of up to 75% compared to luminaires with conventional lamps, thus rapid amortisation
- + long system service life (>50,000h) and low loss of luminous flux
- + IP54, insulation class II



Bergmeister LED luminaires

With Bergmeister luminaires, technical expertise is combined with innovative optics and traditional workmanship with outstanding materials.

The luminaires are hand-made of bronze. Exclusive luminaires for the highest demands, also in terms of energy efficiency.

The slightly modified LED module of the Streetlight 10 renders the models Rosenheim, Ingolstadt, Kurting, Poing, Markt Schwaben and Vagen highly future-fit, and is also a guarantee of maximum efficiency and optimal quality of light. Older systems can thus be modernised or expanded with simplicity. The luminaire appearance itself is maintained.





Application

- urban and residential areas, parking facilities, service roads
- mounting heights: 3.5 – 5m
- mast spacing: approx. 30m
- lighting classes: S4 – S6

Product variants

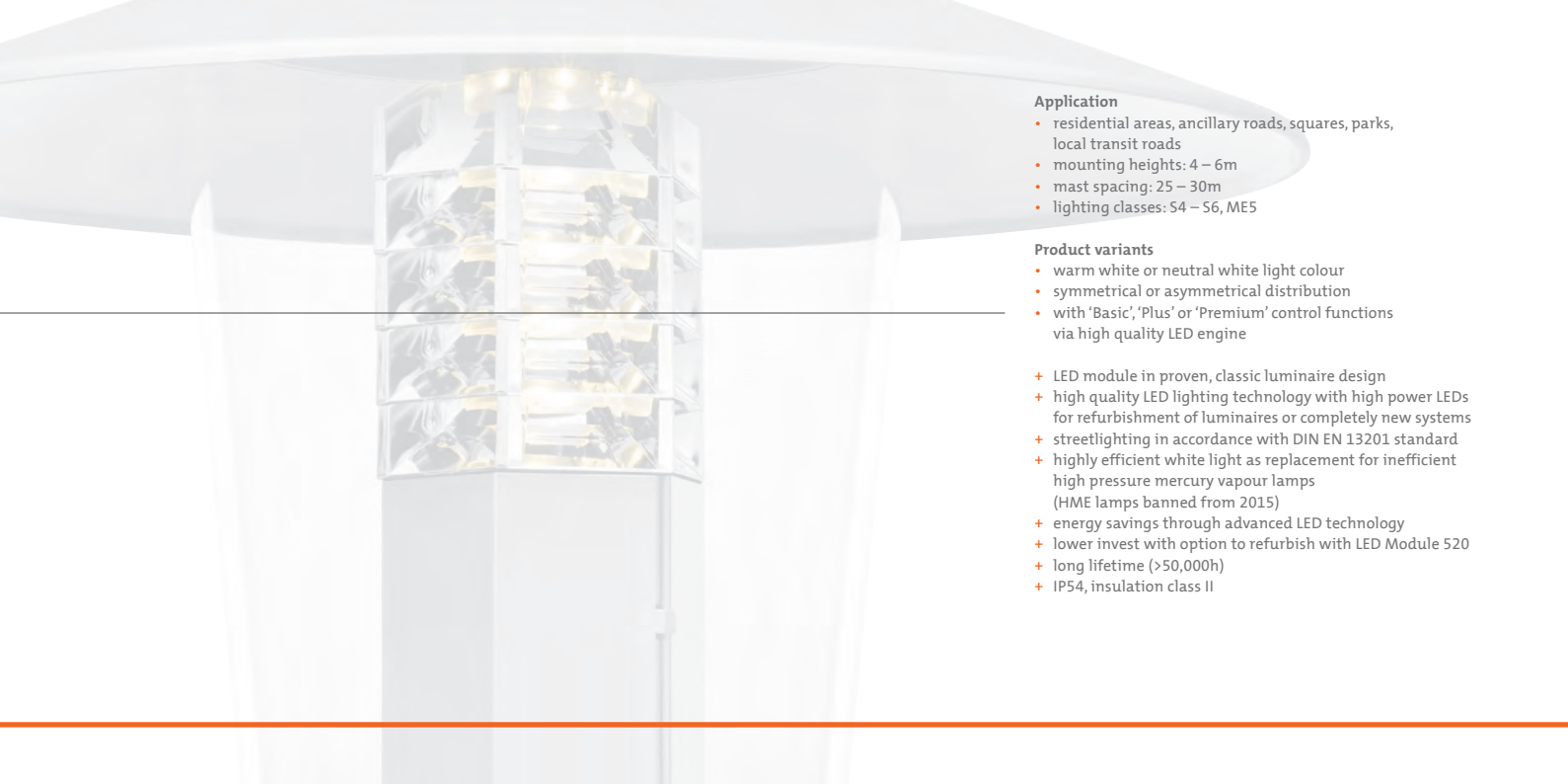
- LED module for the modernising of Bergmeister luminaires: Rosenheim, Ingolstadt, Kurting, Markt Schwaben, Vagen
 - asymmetric wide light distribution
 - colour temperatures warm white or neutral white for design with light colours
 - with 'Basic' or 'Plus' control functions via high quality LED control unit
-
- + LED module for especially fast, simple modernisation of existing systems while maintaining the uniform appearance
 - + highly efficient Streetlight 10 reflector technology for ideal, homogeneous, standard-compliant lighting of squares, parking lots, residential areas and service roads according to DIN EN 13201
 - + extremely simple maintenance due to the LED module for Bergmeister luminaires
 - + modular gear tray concept, upgrade to later more efficient LED generations possible
 - + low power consumption with very good optical results
 - + additional savings potential due to intelligent light control
 - + energy savings of up to 75% compared to luminaires with conventional lamps, thus rapid amortisation
 - + long system service life (>50,000h) and low loss of luminous flux



LED town- an park luminaires

MUSHROOM LUMINAIRE LED, LANTERN LED, CITY-LIGHT LED, CITY-LIGHT Bollard LED and CITY-LIGHT Pillar LED are contemporary and highly efficient solutions for refurbishment of existing lighting installations. The LED Module 520 allows an easy upgrading of out dated luminaires to a state-of-the-art technology. The microprocessor-controlled LED operating electronics enable even more efficiency. Luminance levels can be individually set according to needs for the performance packages 'Plus' (with Siteco® Servicebox) and 'Premium' (with Siteco® Light Control).





Application

- residential areas, ancillary roads, squares, parks, local transit roads
- mounting heights: 4 – 6m
- mast spacing: 25 – 30m
- lighting classes: S4 – S6, ME5

Product variants

- warm white or neutral white light colour
 - symmetrical or asymmetrical distribution
 - with 'Basic', 'Plus' or 'Premium' control functions via high quality LED engine
-
- + LED module in proven, classic luminaire design
 - + high quality LED lighting technology with high power LEDs for refurbishment of luminaires or completely new systems
 - + streetlighting in accordance with DIN EN 13201 standard
 - + highly efficient white light as replacement for inefficient high pressure mercury vapour lamps (HME lamps banned from 2015)
 - + energy savings through advanced LED technology
 - + lower invest with option to refurbish with LED Module 520
 - + long lifetime (>50,000h)
 - + IP54, insulation class II



CL LED series – design and technology

Coherent light for coherent architecture: the CL LED series consists of spotlights, wall and ceiling surface-mounted luminaires, a linear system and bollard luminaires for the illumination of facades and paths. The series uses state-of-the-art LED modules.

The quality construction is characterised by flush surfaces and perfect joins. A clear and homogenous appearance for all CL variations typifies the design. During the day the series blends unobtrusively within its architectural surroundings, and during nocturnal hours it optimally fulfils its specific lighting demands. In this way CL LED luminaires connect interior to exterior, creating a flowing, harmonious transition.

Application

Facade and path illumination

Tasks:

Presenting and structuring | the wall surface-mounted luminaires and linear systems of the CL LED series set walls and architectural details perfectly in scene and define peripheral spatial surfaces. During the day the luminaires take a back seat and with their design integrate themselves unobtrusively within the architectural context.

Spatial proportions and interaction | during the hours of night the spotlights and ceiling surface-mounted luminaires of the CL LED series create an interplay of light and shadows. They lend bodies volume, surfaces character and determine the spatial relationship of objects. During the day CL LED luminaires again become exceptional lighting instruments that blend optimally into the architectural context.

Orientation and safety | the CL LED bollard luminaires structure, orient and lend space a sense of depth. Optimal light quality, adequate luminaire mounting heights and exactly calculated luminaire spacing are the most important features of the lighting solution. During the day the CL LED bollard luminaires emphasise visual axes at varying heights. At night they flank and delineate paths and routes.

Product variants:

- various construction sizes and lengths
 - LED modules
 - light colour warm white or neutral white
-
- + use of highly innovative, state-of-the-art modules
 - + efficient and future-safe lighting solutions
 - + maximum quality, long-life aluminium components
 - + no disturbance of light emission from screws
 - + highly simple installation
 - + lamella structure in housing for improved thermal characteristics and long service life
 - + IP65, insulation class I
 - + luminaire series accoladed with design award



DL® 500 MIDI LED

DL® 500 MIDI LED enables existing installations to be expanded with a high level of energy efficiency so that the familiar optical and harmonious appearance of the installation is maintained. The DL® 500 MIDI design classic, thanks to state-of-the-art LED technology and precisely matched optical systems, can of course be planned and installed for new installations according to DIN EN 13201. LED modules can be replaced simply in new LED versions due to Siteco gear tray technology. The module can also be individually set according to requirements via the microprocessor-controlled LED operating electronics with the 'Plus' (with Siteco® Servicebox) and 'Premium' (with Siteco® Light Control) performance packages.



Application

- residential areas, ancillary, service and collecting roads
- mounting heights: 4 – 6m
- mast spacing: 24 – 32m
- lighting classes: S5, ME5

Product variants

- neutral white light colour
- asymmetrical wide distribution
- with 2x LED module or with 3x LED module
- with 'Basic', 'Plus' or 'Premium' control functions via high quality LED engine

- + ideal for the expansion of existing installations - optical appearance of town lighting is maintained
- + innovative LED gear tray technology with precisely matched lenses and reflectors for energy-efficient lighting
- + LED insert for lighting of roads according to standard DIN EN 13201, for wider luminaire spacing with uniform illumination of the road
- + optical enclosure of toughened safety glass, structured and reflection-reduced for excellent glare elimination and very good homogeneity
- + Dark Sky: 0% light spill
- + constant luminous flux control ('Plus') for precise and highly efficient road lighting
- + very simple mounting and maintenance: gear tray can be easily replaced for later upgrading
- + high system service life (>50,000h)
- + IP65, insulation class II



SQ 50 LED

The SQ 50 LED road luminaire has been designed to modernise existing installations with high energy efficiency and to supply standard-compliant lighting for new installations.

The familiar, contemporary and functional housing accommodates a gear tray with state-of-the-art LED technology and precisely matched optical systems. This principle ensures that with the supplementing of existing road lighting systems with efficient SQ 50 LED light points, the harmonious overall appearance of the installation is maintained.

The LED luminaire can be individually set according to needs via the microprocessor-controlled LED operating electronics for the performance packages 'Plus' (with Siteco® Servicebox) and 'Premium' (with Siteco® Light Control).

Application

- residential areas, ancillary, service and collecting roads
- mounting heights: 4 – 6m
- mast spacing: 24 – 32m
- lighting classes: S5, ME5

Product variants

- neutral white light colour
- asymmetrical wide distribution
- with 2x LED module or with 3x LED module
- with 'Basic', 'Plus' or 'Premium' control functions via high quality LED engines

- + ideal for the expansion of existing installations - optical appearance of town lighting is maintained
- + innovative LED gear tray technology with precisely matched lenses and reflectors for energy-efficient lighting
- + LED insert for lighting of roads according to standard DIN EN 13201, for wider luminaire spacing with uniform illumination of the road
- + optical enclosure of white glass with excellent transmission factor, structured and reflection-reduced for excellent glare limitation and very good homogeneity
- + Dark Sky: 0% light spill
- + constant luminous flux control ('Plus') for precise and highly efficient road lighting
- + very simple mounting and maintenance: gear tray can easily be replaced for later upgrading
- + long system service life (>50,000h)
- + IP66, insulation class II



SR 50 LED

The SR 50 LED with its functional and classic road luminaire design is especially suitable for the expansion of existing systems with efficient LED technology.

The luminaire allows DIN EN 13201-compliant installations to be achieved with large luminaire spacings. The LED module based on Siteco gear tray technology can be replaced in the new LED versions, ensuring subsequent upgrading to even more efficient LED modules in the future. The microprocessor-controlled LED operating electronics ensure additional sustainability. Luminance levels can be individually set according to needs for the performance packages 'Plus' (with Siteco® Servicebox) and 'Premium' (with Siteco® Light Control).



Application

- residential areas, ancillary, service and collecting roads
- mounting heights: 4 – 6m
- mast spacing: 24 – 32m
- lighting classes: S5, ME5

Product variants

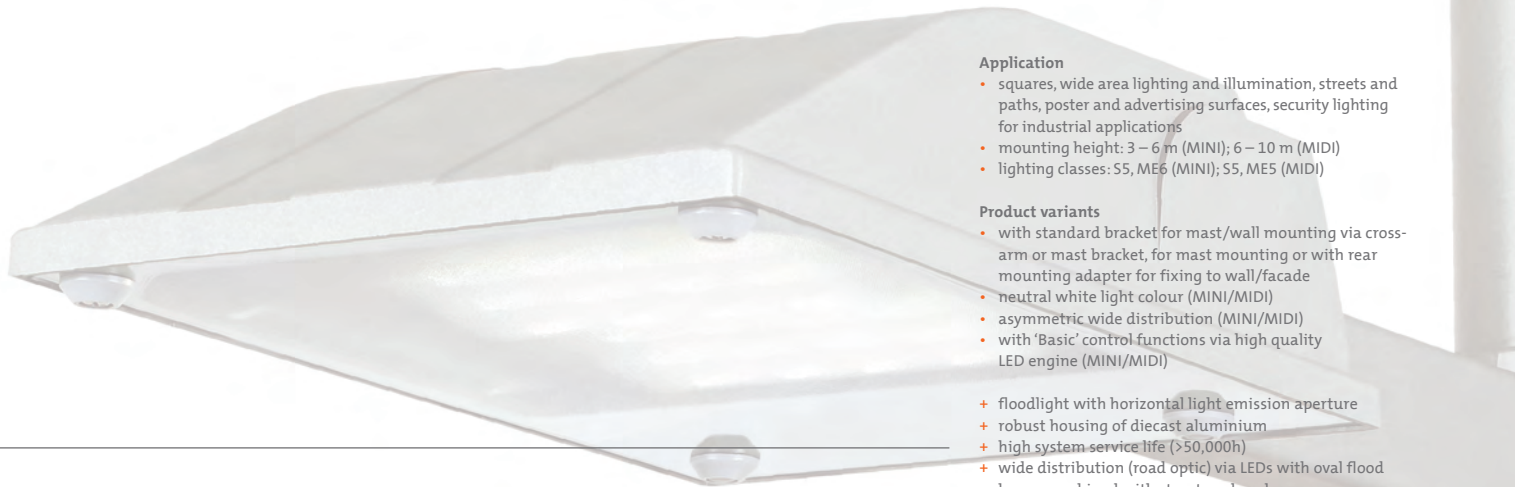
- neutral white light colour
- asymmetrical wide distribution
- with 2x LED module or with 3x LED module
- with 'Basic', 'Plus' or 'Premium' control functions via high quality LED engine

- + ideal for the expansion of existing installations – optical appearance of town lighting is maintained
- + innovative LED gear tray technology with precisely matched lenses and reflectors for energy-efficient lighting
- + LED insert for lighting of roads according to standard DIN EN 13201, for wider luminaire spacing with uniform illumination of the road
- + optical enclosure structured and reflection-reduced for excellent glare control and very good homogeneity
- + Dark Sky: 0% light spill
- + constant luminous flux control ('Plus') for precise and highly efficient road lighting
- + very simple mounting and maintenance: gear tray can easily be replaced for later upgrading
- + for post-top and side entry mounting, adjustable inclination 0...15°
- + long system service life (>50,000h)
- + IP65, insulation class II



SiCOMPACT® A2 MINI LED | ... MIDI LED

The SiCOMPACT® A2 MINI LED and SiCOMPACT® A2 MIDI LED floodlights are outstandingly suited to the standard-compliant lighting of town squares and also for the illumination of horizontal surfaces. The timeless, functionally designed luminaire housing accommodates a high performance LED module. 24 (MINI) or 84 (MIDI) white high power LEDs create pleasant, neutral white light. A sophisticated optical system of lenses and the optical enclosure minimises glare and spill light.



Application

- squares, wide area lighting and illumination, streets and paths, poster and advertising surfaces, security lighting for industrial applications
- mounting height: 3 – 6 m (MINI); 6 – 10 m (MIDI)
- lighting classes: S5, ME6 (MINI); S5, ME5 (MIDI)

Product variants

- with standard bracket for mast/wall mounting via cross-arm or mast bracket, for mast mounting or with rear mounting adapter for fixing to wall/facade
 - neutral white light colour (MINI/MIDI)
 - asymmetric wide distribution (MINI/MIDI)
 - with 'Basic' control functions via high quality LED engine (MINI/MIDI)
-
- + floodlight with horizontal light emission aperture
 - + robust housing of diecast aluminium
 - + high system service life (>50,000h)
 - + wide distribution (road optic) via LEDs with oval flood lenses combined with structured enclosure (toughened safety glass)
 - + Dark Sky: 0% stray light with horizontal alignment
 - + minimal light spill with horizontal configuration
 - + lighting class for glare control and reduction of light spill: G6 according to EN 13201-2
 - + IP66, insulation class I (MIDI), insulation class II (MINI)



TL 20 LED tunnel luminaire

Optimised lighting technology, glare reduction and dereflection, homogeneous light. The TL 20 LED tunnel luminaire from Siteco offers vehicle drivers a high level of visual comfort and thus improves safety. At the same time, efficiency is the constructional principle. The heat sink of aluminium that complies with the stringent requirements of the ZTV ING guarantees maximum service life of the LEDs and optimal values for efficiency. The supporting elements of stainless steel ensure safe, stable fixing and render the luminaire resistant to corrosion. The tunnel luminaire is also ideally protected against humidity and dust loads. In addition to the illumination of tunnel transit zones, the TL 20 LED is also outstandingly suited to the standard-compliant lighting of underpasses.



Application

- transit zones in tunnels and underpasses
- mounting height: 4 – 6 m

Product variants

- neutral white light colour
 - symmetrical wide distribution
-
- + high-power LEDs with integrated and optimized optics for high visual comfort
 - + lighting cover of single pane safety glas, structured and non-reflective for excellent glare control and very good uniformity
 - + high corrosion resistance by using AlMg 2.5 and stainless steel 1.4571 (AS1316 Ti) pickled and passivated
 - + optimized thermal management: heat sink from aluminum extrusion AlMg 2.5 with cooling fins
 - + low maintenance costs due to longer maintenance intervals and easy changeability of all components: System life (LEDs: 100,000h, gear: 50,000h)
 - + reduction of CO₂ emissions and smaller operating costs due to reduced energy consumption
 - + use of Siteco® Light Control (SLC): Continuous dimming of the lighting system from 20%–100% over Powerline
 - + IP66, insulation class I and II

Premium



- Central control and automatic monitoring of each light point
- No additional cabling required
- Reduction of maintenance paths and costs
- Better security via adaptation of lighting according to needs

Plus



- Precise parameterisation of the luminaire to the ambient conditions or application
- Additional functions for optimising light points
- Can be activated via the Siteco® Servicebox
- No additional control components required

Basic

- Wired power reduction (twilight switching)
- Two lighting levels permanently at factory (complete darkness/twilight)

Light according to needs via intelligent control

- **Performance package 'Premium'** | Power reduction, Overheat protection, Constant luminous flux control, Flexible luminous flux parameterisation, Time-dependent luminous flux control, Digital communication interface, Siteco® Light Control
- **Performance package 'Plus'** | Power reduction, Overheat protection, Constant luminous flux control, Flexible luminous flux parameterisation, Digital communication interface, Digital communication interface
- **Performance package 'Basic'** | Power reduction, Overheat protection



Power reduction

with 230V control voltage via supplementary control wire. Factory pre-setting: control signal $L_{Si} = 0V \rightarrow$ approx. 50% luminous flux (approx. 40% consumption) control signal $L_{Si} = 230V \rightarrow$ 100% luminous flux (comparable with familiar „twilight switching“ for power reduction) With the 'Plus' version this process can be reversed if required.



Digital communication interface

Interface for parameterising luminaire with the Siteco® Servicebox.



Constant luminous flux control

The luminous flux is kept constant over the complete service life, the age-dependent reduction of luminous flux is permanently controlled; optimal energy consumption, reduced consumption costs, extension of the LED service life via lower thermal load.



Time-dependent luminous flux control

Power reduction without a control wire. An integrated timer adjusts the luminous flux of the luminaire according to time. Switching times and luminous flux can be individually set. Four switching times and luminous flux for the maximum operating level and two reduction levels can be freely defined (comparable with the familiar switching for power reduction with high pressure lamps).



Flexible luminous flux parameterisation

The luminous flux of each luminaire can be set individually and almost continuously. Luminous flux for the maximum operating level and for two reduction levels can be defined at random:

- Efficient operation of each luminaire via adaptation of basic settings according to requirements
- With the replacement of individual light points with LED modules these can be matched precisely to the lighting level of the remaining light points



Overheat protection

Permanent monitoring of the LED temperature. With critical temperatures, power consumption is automatically reduced and only returns to the ori-

ginal level when an uncritical temperature is regained. This function is purely a protective function for the luminaire to secure the long service life despite operating errors (e.g. unintended daytime switching with very high ambient temperatures). During operation within the predefined specifications, luminaire temperatures remain safe.



Siteco® Light Control

Control and monitoring of luminaires from a control centre without additional control wires:

- Data transmission via standardised LON protocol via the lighting cable (Powerline)
- Central, networked control
- Precise planning and recording of energy consumption and maintenance
- Optimisation of maintenance paths and costs
- Precise output adaptation
- Absorption of energy peaks
- Optimisation of operating costs
- Switching and dimming of each individual luminaire according to the immediate situation and according to needs
- Automatic monitoring of each individual light point, and automatic messaging via e-mail or SMS with faults

Questions and answers concerning Siteco LED outdoor luminaires

LED technology will play an increasingly important role in lighting technology as it has the potential to shape a future with less carbon dioxide immissions, lower costs and a better quality of light. For many consumers this technology is still new and there exists a high need for explanatory information. Siteco is a team of lighting experts that understands LED technology, and we have resultingly answered a range of important questions about the topic.

For which application segments does Siteco currently offer LED luminaires, and which priorities does Siteco set with the development of LED luminaires?

In the outdoor sector, Siteco focuses upon technical road luminaires and decorative mast luminaires for town and park lighting. Building vicinity lighting (facade illumination) also plays an important role.

Which application segment is currently the most promising?

The use of LED technology is of interest where long burning times are typical, for example with road lighting. In addition, the size of the lumen package and the specific lighting task should be considered. Because lumen packages are lamp-de-

pendent, the question of which lamp type is to be replaced by LED must first be answered. Siteco offers two options for the use of LED technology in road lighting.

- 'Retrofit' modules based on the gear tray as a substitute for conventional lamps in existing luminaire housings (e.g. Module 520).
- LED luminaires where in ideal cases the complete luminaire is matched to LEDs to create a perfect symbiosis of energy efficiency and lighting task. (e.g. Streetlight 10 mini and midi).

For road lighting, 70W high pressure sodium vapour lamps (HST) for example can be sensibly replaced by LED. The precondition for this is that photometrics and luminaire technology are optimised for the use of LED. Our LED Module 520 retrofit inserts comply with this requirement. For larger lumen packages, retrofit modules are no longer suitable, and in such cases pure LED luminaires such as the Streetlight 10 mini or midi make the most of their innate technical advantages.

LEDs are also a good solution where special demands are placed on the lighting, for example where light is to be used for presentation. The control possibilities and the colour mixing of LEDs make them especially suitable for presenting as well as for dynamic, coloured lighting design outdoors, predominantly for facade illumination. Where properties such as stepless dim-

ming and highly saturated colours (without the requirement for a supplementary filter) are of importance, LEDs are also a highly suitable light source. From the point of view of dimming and control, for Siteco there is particularly interesting potential with road lighting. Here enormous possibilities for saving come about in terms of energy consumption.

Already today, Siteco LED luminaires enable saving up to three quarters of energy consumption in comparison with conventional mercury vapour lamps, and in many European countries, around one third of light points in outdoor applications are still equipped with these inefficient lamps.

Can trends be seen in luminaire development and engineering that enable replacement of conventional technology in existing installations with LED light sources?

Yes indeed. For applications where the luminaire service life is longer than the LED service life (for example in road lighting where economic service lives exceeding 30 years are achieved), Siteco has already developed replacement concepts. The key to this sustainability in the retrofit sector is found with Siteco LED gear tray technology: light sources, optics, thermal management and control gear are all accommodated by a central module (LED Module 520 for Siteco town and park luminaires such as the Mushroom and Lantern luminaires).

Technical LED road luminaires are entirely designed with modular constructions, which means that replacing the control gear or LED unit at the end of the service life is highly simple.

What are the benefits of this solution?

The Siteco LED gear tray technology enables light sources, optics and control gear to be accommodated by a central module, and so in this way existing systems with conventional lamps can be upgraded to the latest technological standards. Siteco for example offers such a solution with the LED Module 520 for common decorative town and park luminaires.

For outdoor sectors, the LED modules and the new innovative LED luminaires with sophisticated designs complement each other ideally in the market.

Retrofit modules are applied as energy-efficient lighting solutions in existing obsolete systems, especially with classic town and park luminaires with more traditional designs, as well as with system expansions with a view to maintaining the appearance of the town's lighting.

LED luminaires such as the DL® 10 or DL® 20 impress not only with their level of efficiency but also with their modern designs.

How are outdoor luminaires designed explicitly for the use of LED such as the DL® 20 and Streetlight 10 limited in their applications?

These luminaires are intended primarily for planning new installations or for the replacement of complete light points.

These luminaire concepts designed specifically for the use of LED exploit the full potential of the technology: all luminaire components are constructed to extract a maximum of efficiency and energy savings from the new technology. The constructions open the way for completely new design flexibility. These LED outdoor luminaires with new design approaches are intended for modern, future-oriented town and street landscapes with their optimised technology and maximum potential for energy savings.

Does the use of LED luminaires bring with it greater implementation of lighting control?

Yes. Compared to conventional light sources, LEDs offer outstanding possibilities for 'wear-free' switching and dimming. As such, applications with which a luminaire is controlled via a sensor for example will become more popular with the advance of LEDs. With the Siteco® Servicebox, Siteco offers a parameterising device that can adapt the functions of the Siteco LED outdoor luminaires and optimise these according to their actual lighting tasks. In addition, the settings of a luminaire can be transferred to other luminaires with low effort. Colour sequences such as with the DL® 10 for example are defined conveniently in the office and transferred via the Siteco® Servicebox to the luminaire. After parameterising, the Siteco® Servicebox is then removed. Customers are able to achieve maximum cost and energy savings by optimising settings for Siteco LED outdoor luminaires according to their specific project requirements without the need to invest in supplementary control components.

Which factors must be taken into account when comparing the performance evaluation of LEDs with conventional light sources? According to which criteria should the energy efficiency of LEDs be evaluated?

Until now it was normal to consider lumens per watt, meaning that measurements of how many lumens per watt emitted from the light sources were taken directly at the luminaire head. Merely considering the light sources is however only part of the truth. When evaluating LEDs it is necessary to take into account the complete chain of effects. This means that with LEDs the complete system must be considered, including optics/light guiding components, control and others. Of elementary importance when evaluating LED systems is the light that is actually emitted (for example onto the road). With streetlighting for example the power consumption (W) must be put into proportion with mean luminance (cd/m²), luminaire spacing (m) and width of carriageway (m). At the end of it all it's a matter of ensuring lighting with the least possible W per cd/m² and year.

Specifying lumens or lumens/watt is therefore not the whole truth. With highly efficient light control, Siteco LED luminaires achieve better lighting results with less lumens.

With the Street Lighting Energy Optimizer, Siteco offers an online calculation tool with which customers can simply and conveniently determine the most energy-efficient solution for a specific type of road. The tool is available at:

www.siteco.de/de/produkte/planungswerzeuge.html



Is it really energy-efficient to illuminate 100% during the complete phase of darkness?

Yes and no. Where traffic needs such illumination then yes, but there are still many situations where during the night the lighting level can be reduced for specific time periods. With Siteco LED luminaires in Plus and 'Premium' packages, customers can dim lighting according to periods of time to achieve optimum energy efficiency and fulfilment of lighting tasks.

Are guarantees offered by Siteco for their LED luminaires?

Yes. We of course place complete trust in the quality of our products and initially offer the guarantees that are standard in the industry. In addition though we also offer an extended manufacturer guarantee defined according to the specific product and application. Further details about this are available at www.siteco.de/de/service/garantie.html

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