



Lighting Tools for the future

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DL® 20 LED for all urban applications

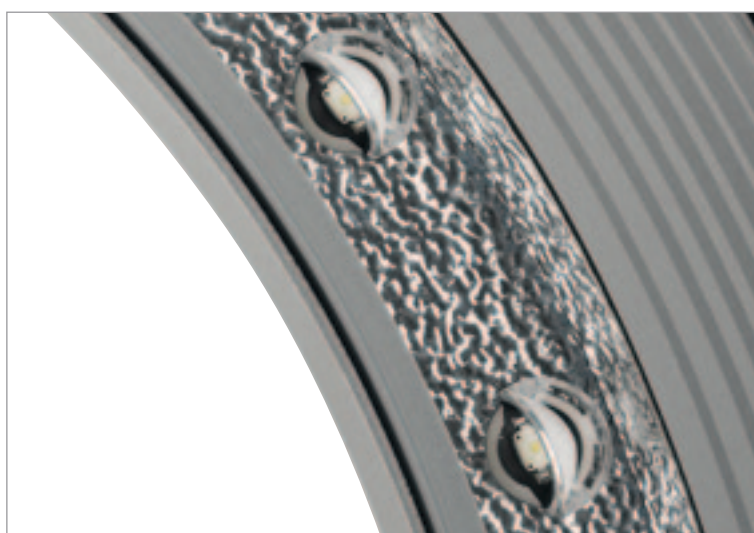
Convincing in form and function

Designed for the modern, future-oriented lighting of town environments and road situations, the DL® 20 LED meets both representative requirements and the varying needs of day and night. Integrating well into either environment, the decorative luminaire harmonizes well with its surrounding architecture and is convincing in both form and function succeeding in every way in terms of ecology and economy. Optimised light and control technology give enormous potential for energy savings with identical functional requirements in terms of visual comfort and safety as well as the perception of atmosphere. The DL® 20 LED impressively shows how innovative LED lighting technology can be combined with high quality materials and outstanding design, an approach in fact that has been confirmed by winning the iF Product Design Award for 2011.



product
design
award

2011 ■

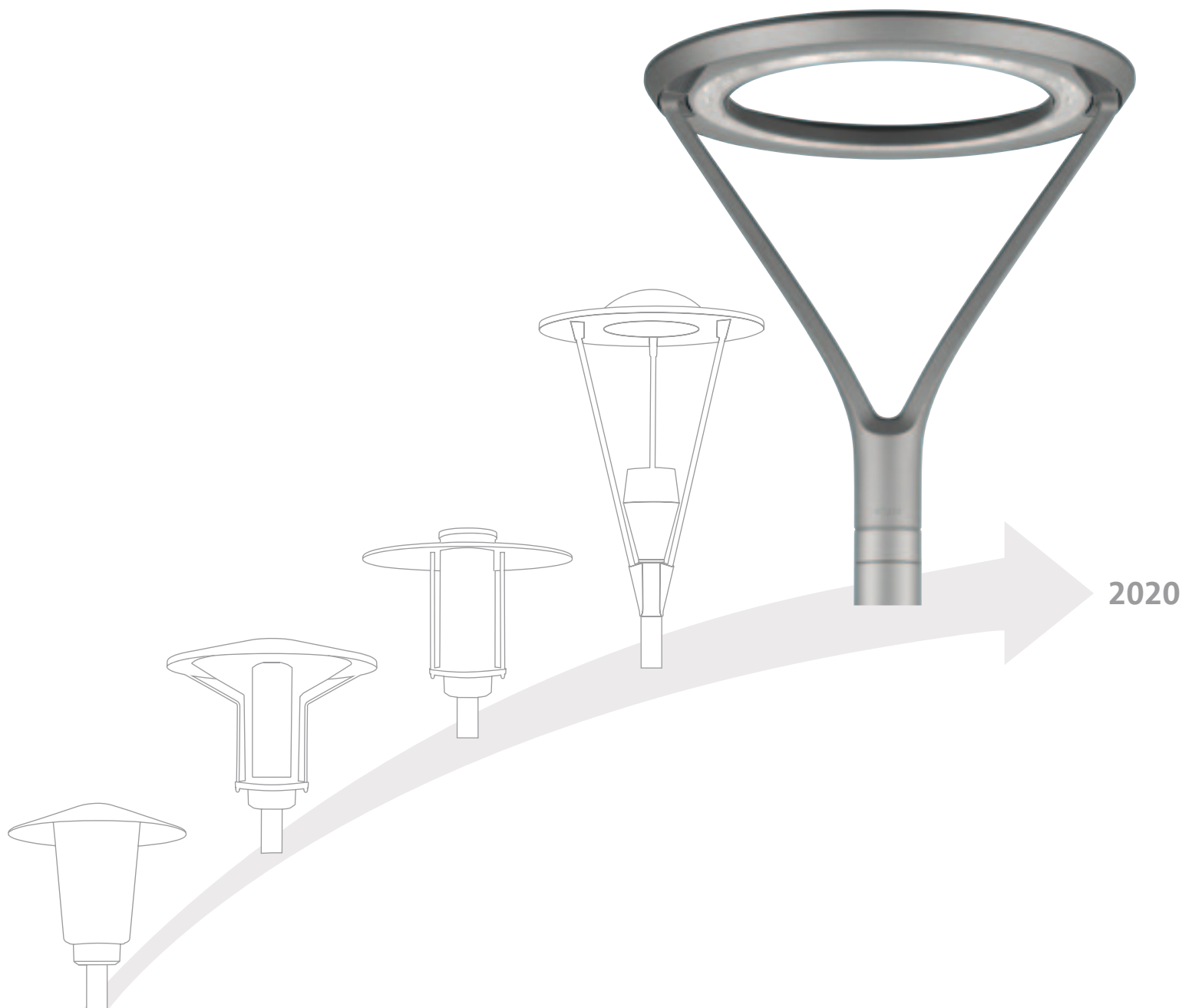


New flexibility for design thanks to LED technology

Proportions and dimensions of the essential design have been matched to form a harmonious whole. The user-friendly and intelligent modular principle of ring, bracket arms and mast ensures energy-efficient, economic and design-oriented luminaire applications. During daylight hours the DL® 20 LED comes to full effect in terms of reduced design and a filigree appearance, while at night it comes alive with the discreet illuminating corona of the LED ring. Light distribution is implemented with a maturely developed system that prevents light immission upwards, avoids disturbing glare and in addition only emits light to those areas requiring illumination according to specific requirements.



Lighting tools for the future



The success story continues

If you consider the development of town and park luminaires since the introduction of the characteristic mushroom-shaped luminaires in 1960, then all models, ranging from the classic mushroom form, the lantern, CITY LIGHT, FANTASiE and GALAXSiE, have had their reasons for existence. As a continuation of the success story of the lantern-shaped luminaires with their high recognition factors, the DL® 20 LED represents a new interpretation of these outdoor luminaires and the transition to a new era. The quantum leap from modern conventional luminaires to LED technology opens up maximum flexibility for the designing of light, and the DL® 20 LED can be specifically used as a design object and for increasing the appeal of urban environments. Conscious presentation or the discreet integration into existing ensembles meets the highly diverse demands for light in outdoor applications with a high degree of flexibility.

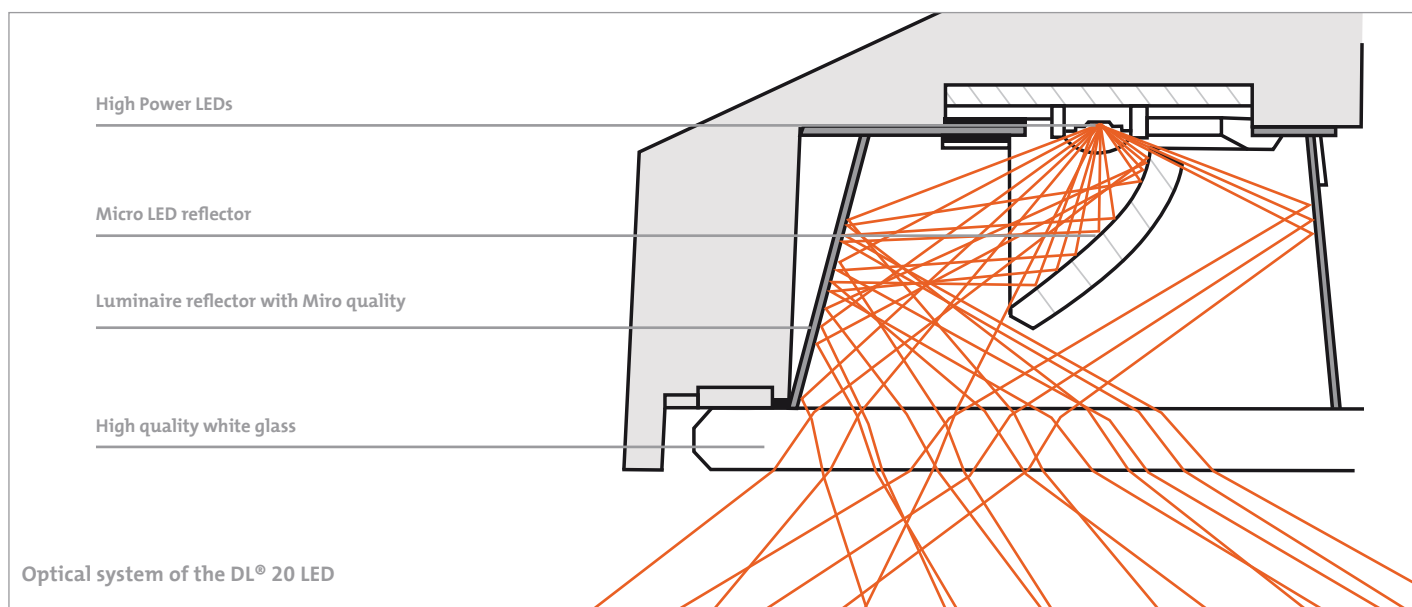


Perfection down to the last detail

Innovative LED lighting technology

State-of-the-art LED lighting technology and the targeted design of reflector geometries and materials represent the high claim to perfection, and an innovative optical system ensures outstanding light distribution characteristics coupled with very good luminous efficacy.

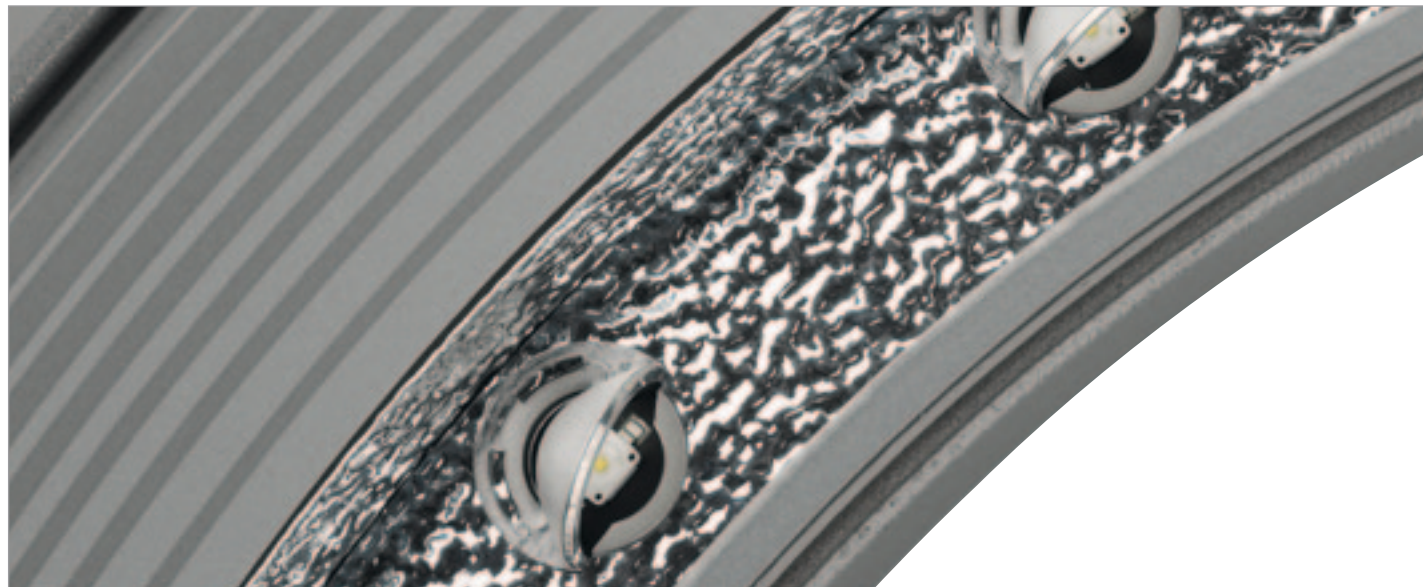
The combination of a micro LED reflector of aluminized plastic and a luminaire reflector in MIRO® quality with high quality white glass ensures glare-free, highly precise light control with a high level of visual comfort.



Reduction of the form

Clear, distinct lines and a constructional reduction to the essentials are what determine the discreet, timeless elegance of the DL® 20 LED. A filigree characteristic is achieved by the skillful processing of material and technology, and no visible catches and joints disturb the

harmonious appearance of the luminaire. Accommodation of the control unit in the mast mounting element and the functioning of the luminaire housing as a heat sink form the basis for optimal thermal management and the resulting extremely long service life.





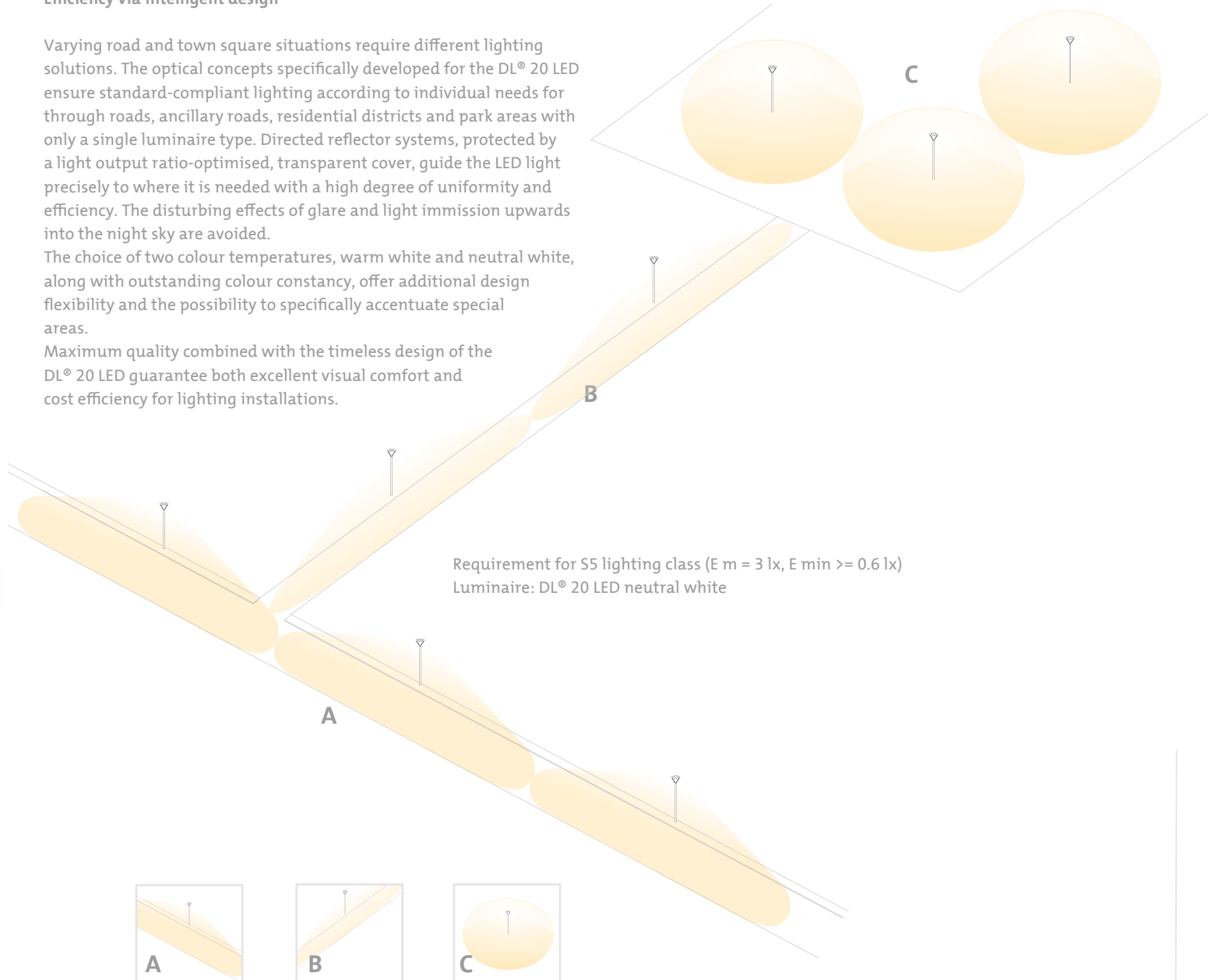
Designing with light distribution...

Efficiency via intelligent design

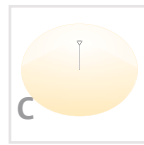
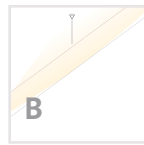
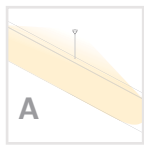
Varying road and town square situations require different lighting solutions. The optical concepts specifically developed for the DL® 20 LED ensure standard-compliant lighting according to individual needs for through roads, ancillary roads, residential districts and park areas with only a single luminaire type. Directed reflector systems, protected by a light output ratio-optimised, transparent cover, guide the LED light precisely to where it is needed with a high degree of uniformity and efficiency. The disturbing effects of glare and light immission upwards into the night sky are avoided.

The choice of two colour temperatures, warm white and neutral white, along with outstanding colour constancy, offer additional design flexibility and the possibility to specifically accentuate special areas.

Maximum quality combined with the timeless design of the DL® 20 LED guarantee both excellent visual comfort and cost efficiency for lighting installations.



Requirement for S5 lighting class ($E_m = 3 \text{ lx}$, $E_{\min} \geq 0.6 \text{ lx}$)
Luminaire: DL® 20 LED neutral white



MH	Road width = 55 m Overhang y = -1.0 m	Road width = 35 m Overhang y = -0.5 m	Town square
4.65 m	$E_m \Rightarrow 3.11 \text{ lx}$ $E_{\min} \Rightarrow 0.61 \text{ lx}$ $\Rightarrow 33 \text{ m}$	$E_m \Rightarrow 3.8 \text{ lx}$ $E_{\min} \Rightarrow 0.6 \text{ lx}$ $\Rightarrow 36 \text{ m}$	$E_m \Rightarrow 3.6 \text{ lx}$ $E_{\min} \Rightarrow 0.6 \text{ lx}$ $\Rightarrow 20 \times 20 \text{ m}$
5.65 m	$E_m \Rightarrow 3.05 \text{ lx}$ $E_{\min} \Rightarrow 0.81 \text{ lx}$ $\Rightarrow 33 \text{ m}$	$E_m \Rightarrow 3.5 \text{ lx}$ $E_{\min} \Rightarrow 0.66 \text{ lx}$ $\Rightarrow 37 \text{ m}$	$E_m \Rightarrow 3.24 \text{ lx}$ $E_{\min} \Rightarrow 0.79 \text{ lx}$ $\Rightarrow 21 \times 21 \text{ m}$
6.05 m	$E_m \Rightarrow 3.09 \text{ lx}$ $E_{\min} \Rightarrow 1.19 \text{ lx}$ $\Rightarrow 32 \text{ m}$	$E_m \Rightarrow 3.05 \text{ lx}$ $E_{\min} \Rightarrow 0.66 \text{ lx}$ $\Rightarrow 40 \text{ m}$	$E_m \Rightarrow 3.01 \text{ lx}$ $E_{\min} \Rightarrow 0.9 \text{ lx}$ $\Rightarrow 22 \times 22 \text{ m}$

... and light colour



Warm white light for light atmosphere and orientation

Perceived as being homely and pleasant, warm white light is suitable for locations where atmosphere is to be created, for example for town squares and paths as well as for establishing a sense of wellbeing in residential areas and streets.



The objective colour rendering of the neutral white light colour ensures an efficient basis for visual tasks in road traffic, and achieves greater functionality and safety. According to a field survey about the perception of LED lighting, functional lighting with neutral white light is seen as being especially pleasant.

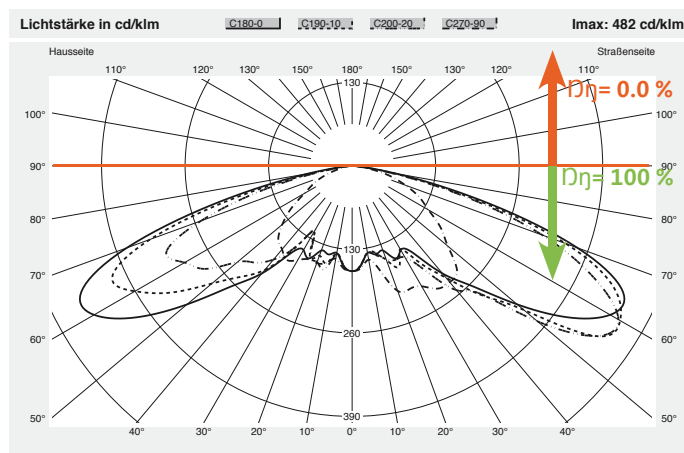


Dark Sky

The DL® 20 LED construction with flat glass prevents light immission into the atmosphere and the resulting brightening of the night sky.



- Saves energy and protects the environment
- Protects living beings and surroundings from stray light
- Protects night-active insects
- Reduces operating costs
- Future-safe in terms of future legislation



Light according to needs via intelligent control

DL® 20 LED is available with the following control packages for optimal light and energy management:

Plus performance package:

power reduction, overheat protection, constant luminous flux control, flexible luminous flux parameterisation, time-dependent luminous flux control, digital communication interface

Connection:

with 5-pole connection terminal, max. 2.5mm² (2-pole for mains supply + 1-pole for 230V control voltage for power reduction + 2-pole for Siteco® Digital Interface (SDI) for parameterising of the luminaire with the Service Box and integration into a digital control system)

Premium performance package:

power reduction, overheat protection, constant luminous flux control, flexible luminous flux parameterisation, time-dependent luminous flux control, Siteco Light Control

Connection:

(implemented with a supplementary luminaire controller in the mast) with 2-pole connection terminal, max. 2.5mm² (control and monitoring of the luminaire from a central control point without supplementary control wires; data transmission according to standard LON protocol)



Power reduction
with 230V control voltage via supplementary control wire.
Factory pre-setting:
Control signal LSt= 0V → approx. 50% luminous flux (approx. 40% consumption)
Control signal LSt= 230V → 100% luminous flux (comparable with familiar 'twilight switching' for power reduction).
With the Plus version this logic can be reversed if required.



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).



Overheat protection
Permanent monitoring of LED temperature. With critical temperatures, power consumption is automatically reduced and only returns to the original level when the safe 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.



Digital communication interface
Interface for parameterising luminaire with the SERVICE BOX.



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 by adapting the basic setting according to needs
- When replacing individual light points with LED modules these can be matched precisely to the lighting level of the other light points.

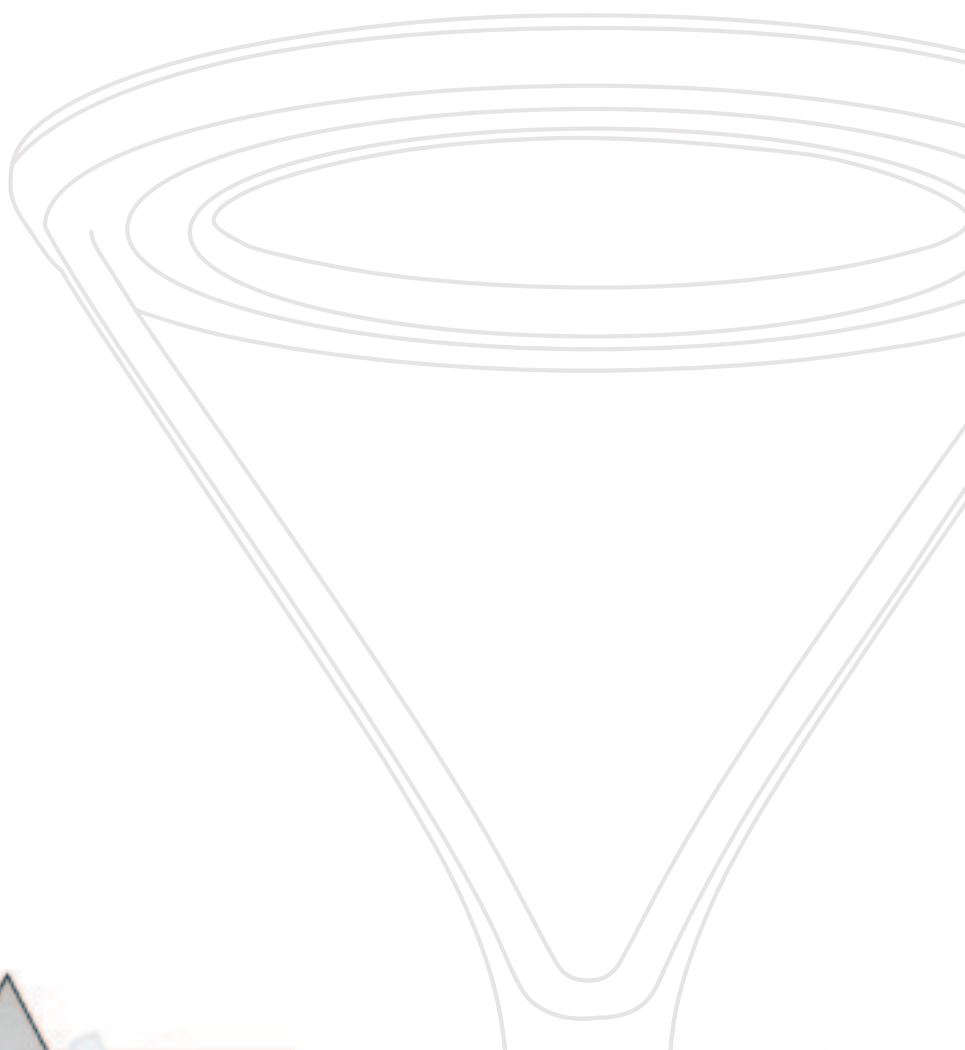


Siteco Light Control
Control and monitoring of luminaires from a central control centre without additional control wire:

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



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.



Premium



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

Plus



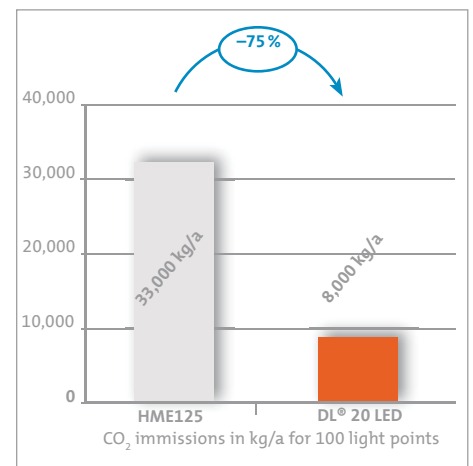
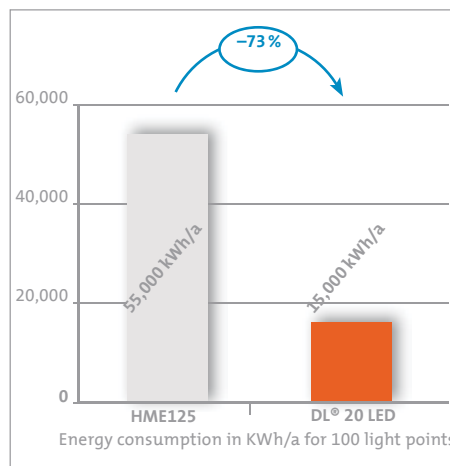
- Precise parameterisation of the luminaire to the ambient conditions or application possible
- Additional functions for optimising light points
- Can be activated via the Siteco Service Box
- No additional control components required
- Wired power reduction (twilight switching)
- Two illuminance levels factory-set (complete darkness / twilight)
- Time-controlled reduction if no control wires exist



Energy efficiency

More light, less energy and an improved CO₂ balance

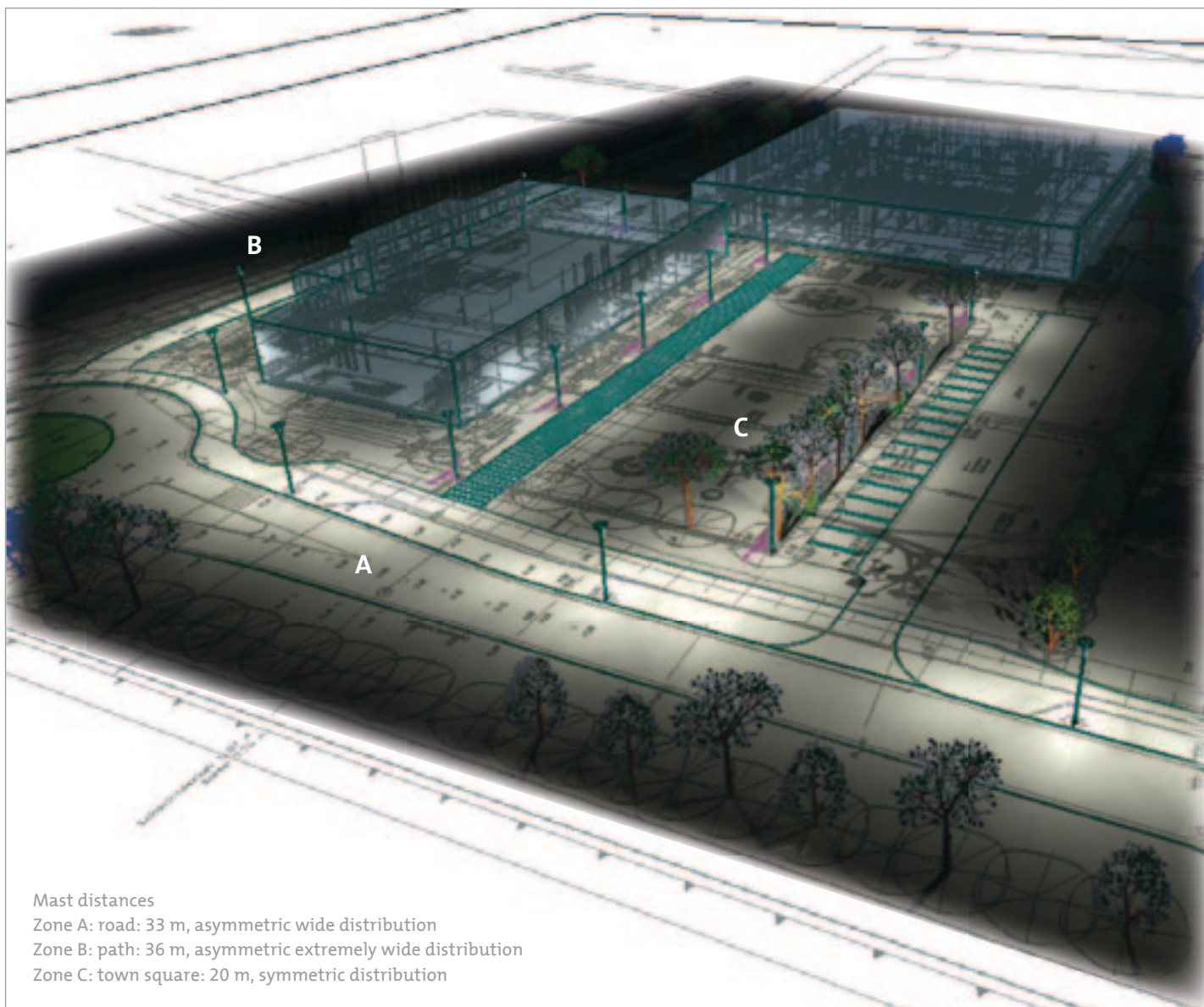
... with the aim of creating light according to needs with as little energy as possible. Compared to conventional technology, energy consumption can be reduced by as much as eight times, and with identical illuminance and less CO₂ immissions via dimming instead of switching off, with optimal luminous flux regulation and stepless control possibilities. The setting of various requirement scenarios prevents wastage of light during night times with low traffic loads and also conserves the environment.



Corresponds to the energy consumption of 100 light points per year
By using reduction mode, additional energy savings of 30% are achieved.

Basis for calculation:
4,000 operating hours/year (without reducing circuit) | CO₂ factor 0.6 | lighting class: S5 | luminaire spacing: 33 m
System according to DIN/EN 13201 | Emean 3.0 lx | Emin 0.6 lx





Project example

Iven-Agssen Primary School in Husum

Task:

Lighting of the complete school environment including the access roads.
 Lighting class: S 5; mounting height: 4.65 m

Solution:

The area surrounding the twin-storey Iven-Agssen primary school in Husum is equipped with DL® 20 LED luminaires. Despite varying requirements for lighting scenarios, for example the parking lot situation, access road, cycle paths and footpaths and lighting of the forecourt/playground, the complete area can be equipped with the same luminaire appearance that in terms of height and proportions integrates ideally into the heterogeneous context. Thanks to the targeted implementation of reflectors, light is guided to where it is needed, ranging from symmetric light distribution for the forecourt to asymmetric, extremely wide distribution for the footpaths and cycle paths.



Installation sequence as a download

at www.siteco.de/montagefilme
 or simply enter your QR code with
 your SmartPhone.





DL® 20 LED

DL® 20 LED

DL® 20 impressively demonstrates how high performance LED technology can be combined with outstanding design. The town and park luminaire with the latest high power LED technology illuminates streets and squares according to standards and with a high level of energy efficiency. The microprocessor-controlled LED operating electronics enable even more efficiency potential.

DL® 20 LED – a combination of design and technology

- achieves high acceptance with people due to its timeless design
- suitable for all urban applications, achieving a uniform appearance
- timeless, high grade design
- reduced glare
- a clean ecological balance via 100% recyclable aluminium
- awarded the iF product design award 2011

DL® 20 LED – rapid use

- simple mounting: mast fixing with two screws
- connection of ring and bracket arm with intelligent plug connection
- convenient electrical connection in junction box
- optimised inventory

DL® 20 LED – long life durability

- high system service life (>50,000h) for LED and control unit
- via thermic decoupling of the control unit
- with high IP66 protection rating
- low soiling due to defined dripping edge
- robust, maintenance-free materials used (aluminium, glass)

DL® 20 LED – brightness via technology

- greater visual comfort and perfect glare elimination via innovative LED light guidance with high power LEDs
- use of maximum quality materials for optimal results: micro LED reflectors of aluminized plastic, luminaire reflector in MIRO® quality and high grade white glass with 8% higher transmission factor

DL® 20 LED – safety for the future

- via a resource-conserving luminaire concept
- low energy consumption with up to 75 % saving
- with the high quality, upgradable, future-safe and open control systems Plus and Premium (control function via upgrade with controller accommodated in mast)



DL® 20 LED | for post-top mounting | asymmetric wide or extreme wide distribution

DL® 20 LED mast luminaire for post-top mounting | with white LED with reflectors, for uniform asymmetric wide or asymmetric extremely wide light distribution; with flat, reflection-reduced white glass cover | microprocessor-controlled LED operating electronics; with control functionality for lighting management and monitoring* | housing of cast aluminium, Siteco® metallic grey (DB 7025); cover of toughened safety glass (ESG)



Protection rating: IP66

Insulation class: II

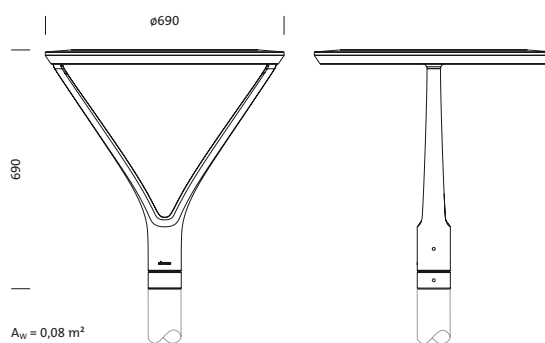
Mast spigot: $d_a = 76$; $l = 100..150$ mm | mast spigot inner diameter: $d_i \geq 68$ mm (suitable for design mast or standard steel mast)

Recommended mounting height: MH= 4..6m

(Luminaire including pre-assembled cable | please see accessories for suitable design masts)

* with temperature monitoring for protection of LEDs from thermal overload
 Plus version: with luminous flux constancy over complete service life | with integrated, programmable timer for luminous flux reduction at two levels | settable luminous flux for max. operation and for both reduction levels | all parameters settable via Service Box | on request: can be integrated via SDI into existing digital control systems and controlled from a central control point | alternative luminous flux reduction via 230V control voltage
 Premium version: (implemented with supplementary luminaire controller in mast): functional range as with Plus version, but for individual monitoring and control of the luminaire from a central control point from any distance via LON-PowerLine without supplementary control wires (instead of SDI)

Luminaire can be operated with factory pre-setting. The pre-setting with the Plus and Premium versions can be modified with the mounted and dismantled luminaire



Lamps	P_{nom} begin service life	P_{nom} end service life	P_{red} at 50% lumin. flux	Wt. (kg)	Order No.
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direct asymmetric wide distribution, with ECG Plus

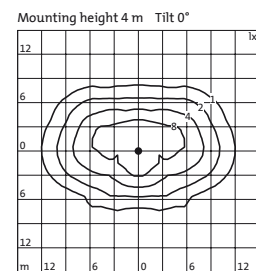
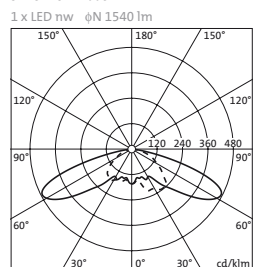
LED nw	29	39	12	18.1	5XA5128LNA008
LED ww	29	39	12	18.1	5XA5128LWA008

direct asymmetric extremely wide distribution, with ECG Plus

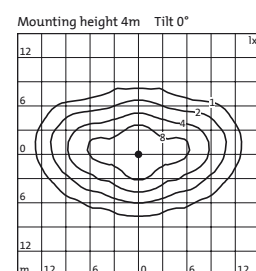
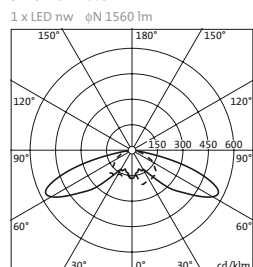
LED nw	29	39	12	18.1	5XA5128LNR008
LED ww	29	39	12	18.1	5XA5128LWR008

- for Premium version: please order luminaire controller additionally to luminaire 'Plus version' if required
- please order additional SLC lighting management components separately if required

5XA5128LNA008



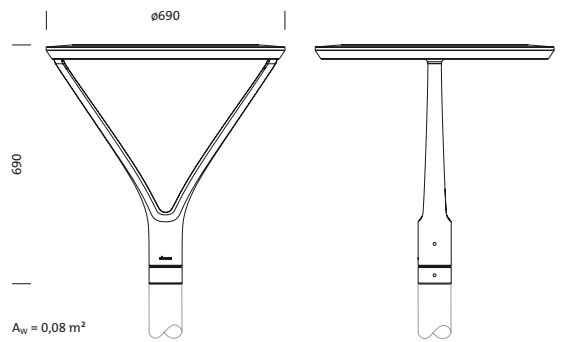
5XA5128LNR008





DL® 20 LED | for post-top mounting | symmetric distribution

DL® 20 LED mast luminaire for post-top mounting | with white LED with reflectors, symmetric light with homogeneous, wide distribution; with flat, reflection-reduced white glass cover | microprocessor-controlled LED operating electronics; with control functionality for lighting management and monitoring* | housing of cast aluminium, Siteco® metallic grey (DB 702S); cover of toughened safety glass (ESG)



Protection rating: IP66

Insulation class: II

Mast spigot: $d_a = 76\text{mm}$; $l = 100..150\text{mm}$ | mast spigot inner diameter: $d_i \geq 68\text{mm}$ (suitable for design mast or standard steel mast)

Recommended mounting height: $MH = 4..6\text{m}$

(Luminaire including pre-assembled cable | please see accessories for suitable design masts)

* with temperature monitoring for protection of LEDs from thermal overload
 Plus version: with luminous flux constancy over complete service life | with integrated, programmable timer for luminous flux reduction at two levels | settable luminous flux for max. operation and for both reduction levels | all parameters settable via Service Box | on request: can be integrated via SDI into existing digital control systems and controlled from a central control point | alternative luminous flux reduction via 230V control voltage
 Premium version: (implemented with supplementary luminaire controller in mast): functional range as with Plus version, but for individual monitoring and control of the luminaire from a central control point from any distance via LON-PowerLine without supplementary control wires (instead of SDI)

Luminaire can be operated with factory pre-setting. The pre-setting with the Plus and Premium versions can be modified with the mounted and dismantled luminaire



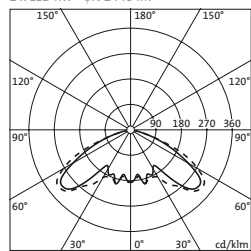
Lamps	P_{nom} begin service life	P_{nom} end service life	P_{red} at 50% lumin. flux	Wt. (kg)	Order No.
LED nw	29	39	12	18.1	5XA5128LNS008
LED ww	29	39	12	18.1	5XA5128LWS008

with ECG Plus

- for Premium version: please order luminaire controller additionally to luminaire 'Plus version' if required
- please order additional SLC lighting management components separately if required

5XA5128LNS008

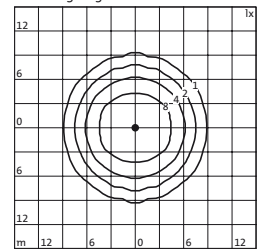
1 x LED nw $\phi N 1440 \text{lm}$



— C 0/180
 - - - C 90/270

Luminous intensity class according to EN13201-2: G6

Mounting height 4 m Tilt 0°



Electrical accessories



Siteco® Service Box

for parameterising the operating electronics of all Siteco LED 'Plus' version road luminaires | maximum energy efficiency via individual adaptation of lighting level, switching time and reduction level | Service Box includes software* | with plug-in coupling for connection of Y-cable | housing of plastic; plug-in coupling with protection cap
IP54 | insulation class II

Type	Weight (kg)	Order no.
Siteco® Service Box	2.4	5EA6Y00L01

* incl. Y-cable for looping the Service Box into luminaire supply cable | incl. 'workshop' cable set for parameterising the unmounted luminaire in the workshop; safety plug on one end
* software updates possible via PC | incl. mini USB interface for connection to PC



Luminaire controller

Siteco® Light Control (SLC) luminaire controller for recessing in mast | for upgrading Siteco 'Plus' version LED outdoor luminaires to 'Premium' versions | controlling of luminaire controller via LON PowerLine; with pre-assembled cables for connection at cable junction box in the mast and at luminaire control unit | housing of plastic, white
IP54 | insulation class II

Type	Weight (kg)	Order no.
Luminaire controller LON PowerLine protocol for mast recessing	0.2	5EA3CUD101

* power consumption: S= 6.7VA/1VA (transmission operation/standby) | surge voltage strength: U = 6 KV



Cable junction box

for 2 cables to 5 x 16 mm² or 3 cables to 5 x 10 mm² | two D01 fuse-bases with screw caps E14 | housing of plastic
IP44 | insulation class II

Type	Order no.
Cable junction box, terminals L1, L2, L3, N, PE(N)	5NY70012XK

* For further versions please see the accessories chapter of the Outdoor Lighting Tools catalogue

Design mast

Design mast

with offset spigot for flush-fitting connection of mast to luminaire | conical round mast | powder-coated in Siteco® metallic grey (DB 7025)

Type	h1 (m)	MH (m)	h2 (m)	d2 (mm)	Weight (kg)	Order no.
Mast	4.0	4.65	0.8	153	43	5NY318740KM08
Mast	5.0	5.65	0.8	165	56	5NY318750KM08
Mast	5.4	6.05	1.0	172	67	5NY318760KM08

