

# Lighting tools for the future



SQ 50 LED

Efficient LED lighting technology for the standard-compliant lighting of residential areas, ancillary roads, service roads and collection roads.

office | industry | traffic | retail | public | sports

## SQ 50 LED – efficient lighting technology with high visual comfort



Robust housing, a timelessly classic design and innovative and efficient lighting technology make up the SQ 50 LED, combining all the benefits of the new LED technology for the tried-and-true SQ luminaire principle:

- high levels of economy due to efficient LED technology and precise light control
- high visual comfort due to sophisticated optical systems
- intelligent cost optimisation due to control of luminous flux according to requirements (variants with Basic, Plus and Premium functional packages)
- minimal effort for maintenance and upkeep due to long system service life (Plus variant: > 60,000 hrs.)
- Future-fit and innovation-safe with LED module based on the reliable Siteco gear tray technology

This makes the SQ 50 LED the ideal solution for upgrading existing installations with conventional lamps to high levels of energy efficiency and to modernise according to standards, and the familiar visual appearance of the installation is maintained. A further advantage that the LED variant shares with other luminaires from the SQ family: fitness for the future and convenience with upkeep and maintenance thanks to the tried-and-trusted Siteco gear tray principle. This guarantees that future, more efficient module generations can be integrated into the housing with simplicity.

- + ideal for expanding existing installations: the visual appearance of the town is maintained
- + innovative LED gear tray technology with precisely matched lenses and reflectors for energy-efficient lighting
- + LED insert for standardised lighting of roads according to DIN EN 13201, for wider luminaire spacing with uniform illumination of the road
- + optical enclosure of clear glass with excellent transmission factor, structured and reflection-reduced for excellent glare elimination and very good homogeneity
- + constant luminous flux control for efficient road lighting (Plus control package)
- + highly simple mounting and maintenance: modular gear tray concept, can be simply replaced for upgrading SQ 50 LED versions
- + high system service life (Plus variant: > 60,000 hrs.)
- + IP66, insulation class II

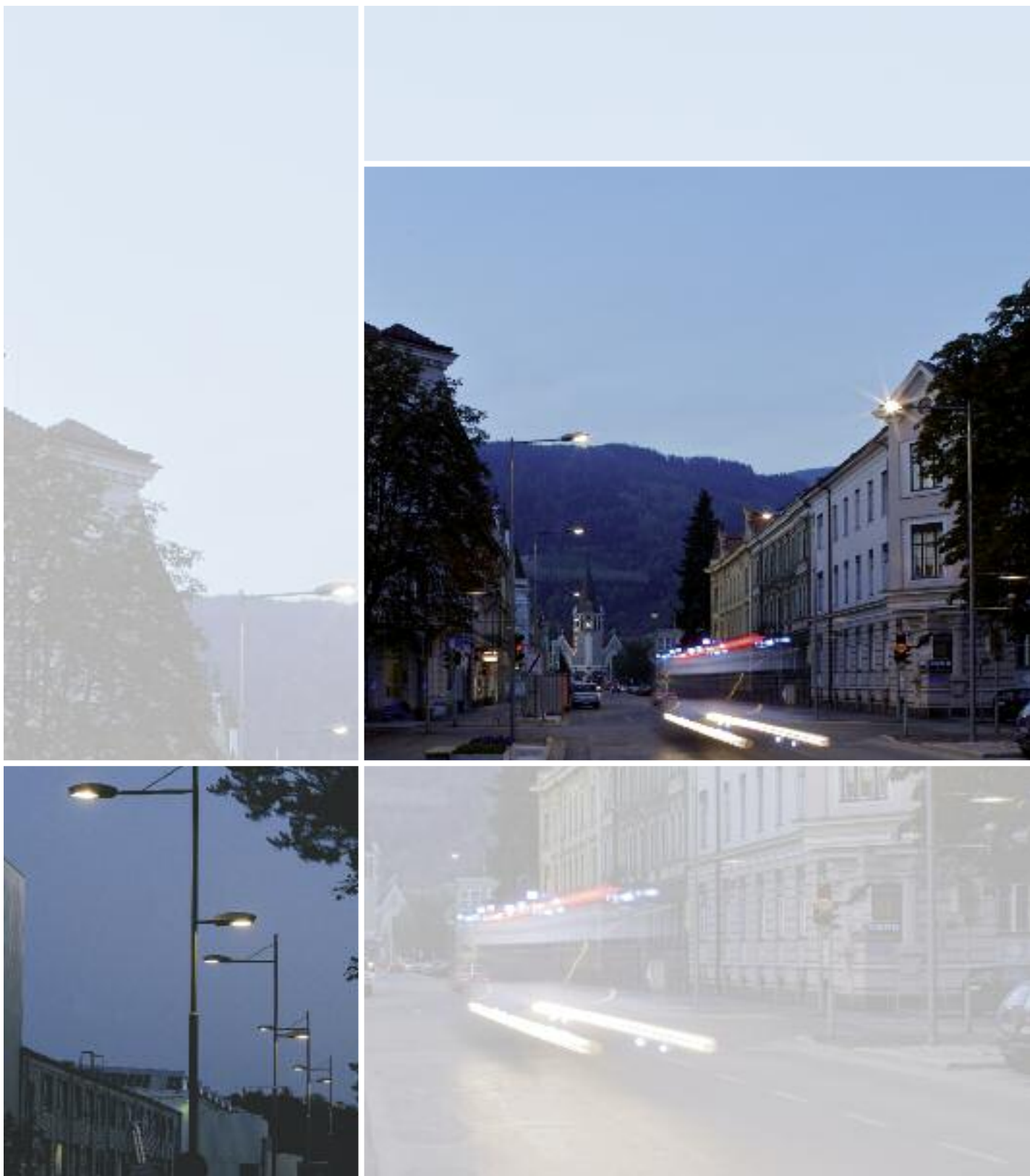
### Application

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

### Product variants

- neutral white light colour
- asymmetric wide distribution
- variants with two LED modules or three LED modules
- Basic, Plus or Premium functional packages for control according to needs

## Ideal for new systems and refurbishments



*The SQ 50 LED is ideal for the efficient and standard-compliant (DIN EN 13201) illumination of residential areas, ancillary roads, service roads and collection roads. At mounting heights of between 4 and 6 metres the SQ 50 LED makes full use of its potential and convinces with high light quality and low energy consumption. With an average system service life of 60,000 hours with the Plus variant and Siteco-typical housing quality, the luminaire provides reliable performance for decades.*

## Modular principle for a radiant future

Efficient and flexible, with simple mounting and fitness for the future. The Siteco LED gear tray module is the core of the SQ 50 LED, incorporating all requisite components for efficient and low-maintenance operation of the luminaire: the LED unit with two or three modules; the precisely matched optical system of oval attachment lenses and precise reflectors; cooling elements for effective thermal management and a long service life, and the ECG with control electronics that give the luminaire its intelligence and enables control of the LEDs

according to requirements. All components are optimally matched to each other and form a sustainable, future-oriented lighting system, ensuring both high light quality and impressive energy- and cost-efficiency. And all with maximum capability for the future: with the Siteco gear tray principle, upgrading to future, higher-performance LED generations is already guaranteed today.



### Precise light control

via a balanced optical system of LEDs with oval attachment lenses and reflectors.



### High homogeneity, minimised glare

via an optical enclosure of structured, reflection-reduced clear glass with a very high transmission factor.

The future already integrated:  
this is how easy it is to upgrade to future LED generations



1. Unlock the cover



2. Open the cover



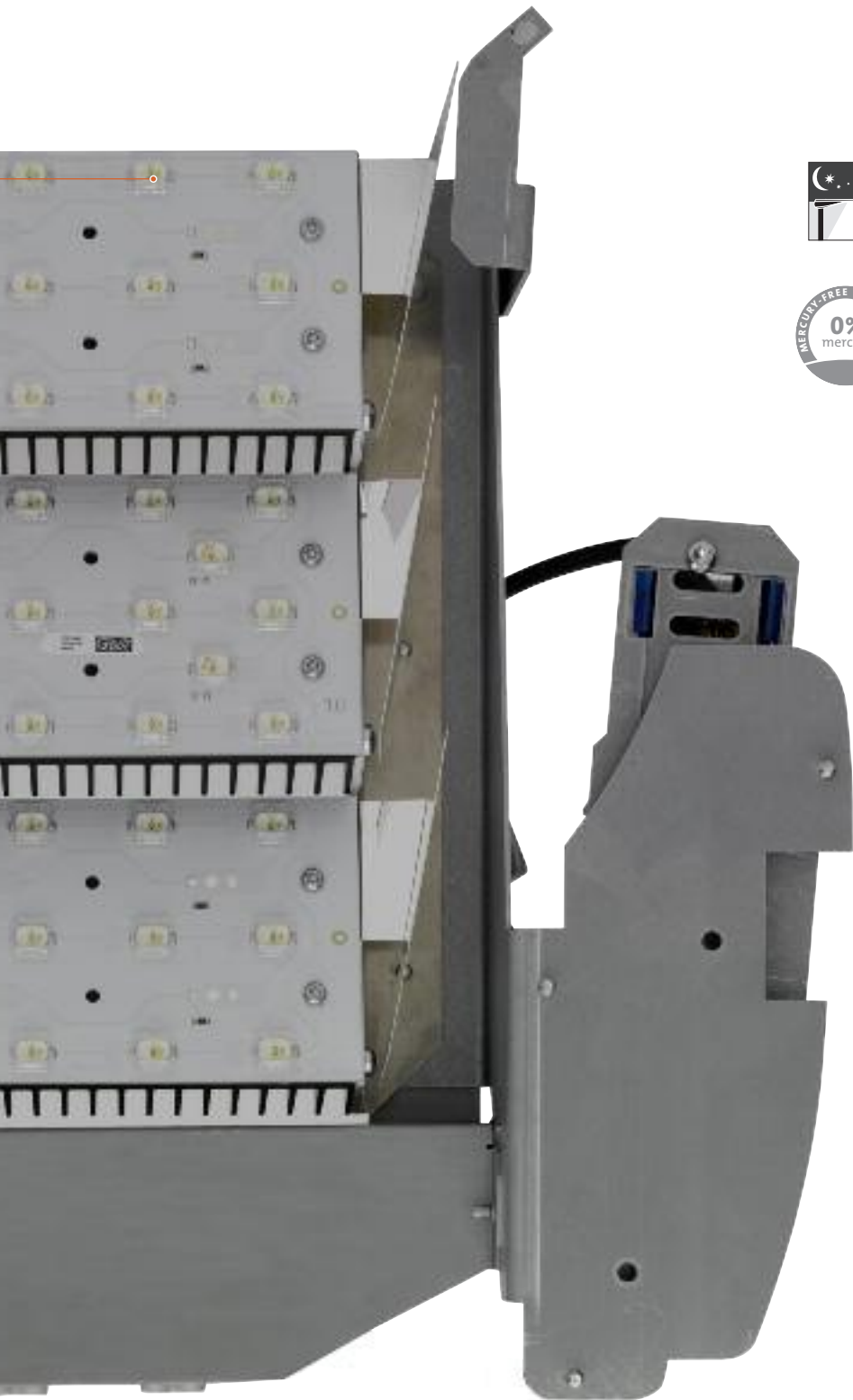
3. Disconnect the cable



4. Loosen the screws



5. Remove the gear tray and replace with a new LED generation gear tray.



### Excellent glare reduction and very high homogeneity

with use of structured, reflection-reduced clear glass with an excellent transmission factor.



### 0% light immission

via precise light control only into the lower hemisphere.



### Low environmental burden

via mercury-free LED technology.

### Future safety guaranteed

via modular luminaire design.

### Good colour rendering

via high power LEDs with neutral white light colour.

### Control and lighting according to needs

via intelligent LED operating electronics with the Basic, Plus and Premium functional packages.

### Simple, safe installation

via trusted Siteco gear tray principle.

### Long service life, minimised maintenance

via reliable cooling elements for efficient thermal management.

### Standard-compliant light from the beginning

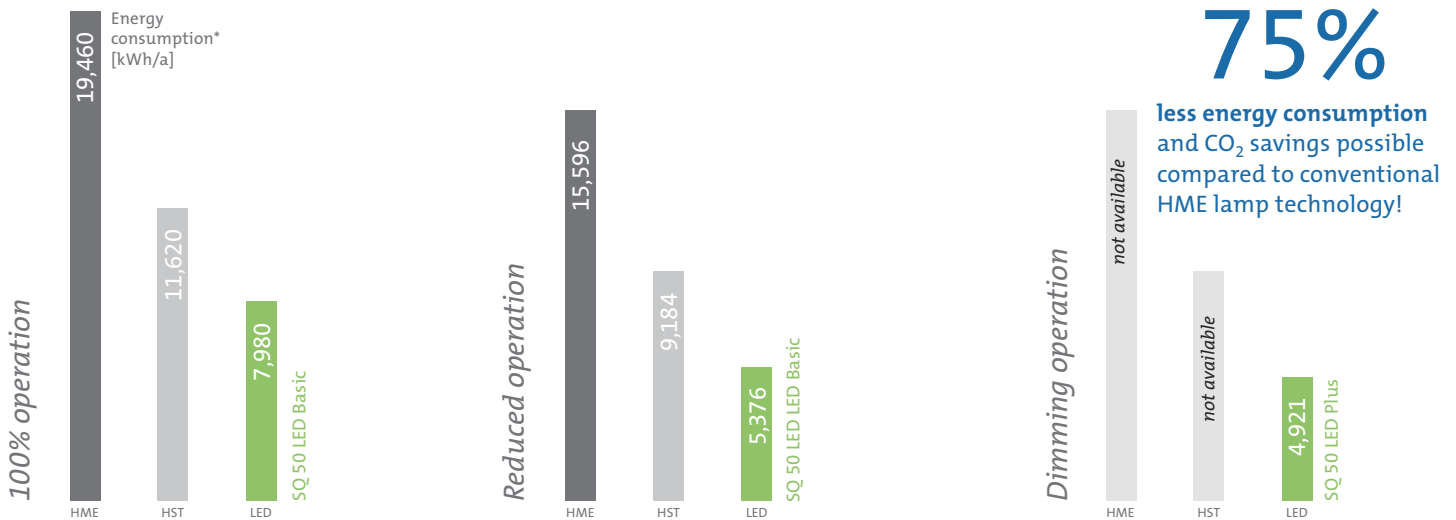
via immediate luminous flux directly after switch-on, and even after repeated switching.

## LED – already today the most efficient technology

Making the most of the complete savings potential based on the mature and intelligent LED technology SQ 50 LED. The LED module itself is highly efficient, and added to this is further savings potential with the Plus and Premium functional packages. One of the advantages is stepless, loss-free reduced operation. Here the SQ 50 LED with 50% luminous flux needs approximately 40% energy, and with constant luminous flux control for the SQ 50 LED Plus, even greater savings are achieved.

In contrast to planning with conventional lamps, where luminous flux cannot be precisely adapted according to on-site lighting requirements and as a result is usually planned with higher luminous flux, the luminous flux level of SQ 50 LED Plus can be set exactly according to needs. The control maintains the luminous flux at precisely this level over the complete service life, and in this way energy and cost savings of up to 75% can be achieved compared to luminaires with conventional lamps.

### Save efficiently in three steps!



**Advantage with SQ 50 LED Basic:**  
Best values due to better light control

#### 1 100 % operation

**Disadvantage with HME and HST:** in terms of luminous efficacy and optical efficiency these are inferior to LED technology.

**Advantage with SQ 50 LED Basic:** due to precise light control of Siteco LED technology this achieves the best values.

**Advantage with SQ 50 LED Basic:**  
Power reduction with efficiency bonus

#### 2 Reduced operation/ night-time reduction to 50%

**Disadvantage with HME and HST:** reduction to 50% luminous flux saves only 40% energy.

**Advantage with SQ 50 LED Basic:** the less LEDs are fed with current the more efficiently they function. With 50% luminous flux the system can be operated via control wires with only 45% power consumption.

**Advantage with SQ 50 LED Plus:**  
The 'plus' for intelligent efficiency

#### 3 Dimming without control wires

**Disadvantage with HME and HST:** they must be retrofitted with a control unit.

**Advantage with SQ 50 LED Plus:** luminous flux can be set according to requirements. The setting for maximum operating level and two reduction levels can be freely defined and programmed with the service box.

\*All luminaires fulfill the same photometric task. Basis for calculation: 1 km road; light points: 35; lighting class: ME5, mounting height: 6 m; mast spacing 30 m; 4000 operating hours/year; with reduced operation: 1600 h at 100% operation, 2400 h at 50% operation; CO<sub>2</sub> factor: 0.6 kg CO<sub>2</sub> /kWh. Connected load: HME: 125 W, power consumption 139 W (50%: 93 W); HST: 70 W, power consumption 83 W (50%: 54 W); SQ 50 LED Basic: power consumption 68 W (50%: 25 W); SQ 50 LED Plus: power consumption 44 W (50%: 20 W)

## Efficiency via intelligent control

Only LED technology can emit as much light as required by a specific traffic situation, the course of the day or the weather, and as much light as required by standard-compliant lighting. LED light can be dimmed and switched without loss and controlled with supplementary electronic components. The SQ 50 LED is equipped as standard with such LED operating electronics.

The control functions of SQ 50 LED are grouped in the functional packages Basic, Plus and Premium. The values for luminous flux are either factory-set (Basic), individually set with the Siteco Service Box (Plus) or centrally set via Siteco Light Control (Premium). The Plus and Premium versions offer the widest spectrum of efficient control according to requirements.



### Basic functional package

Luminous flux reduction, overheat protection

#### Benefits:

- wired power reduction (twilight switching)
- two factory-set luminous flux levels (100% / 50%)

### Plus functional package

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

#### Benefits:

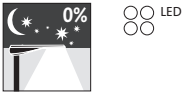
- precise parameterisation of the luminaire to the ambient conditions or application is possible
- additional functions for optimising light points can be set
- configured via the Siteco® Service Box
- no additional control components required

### Premium functional package

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

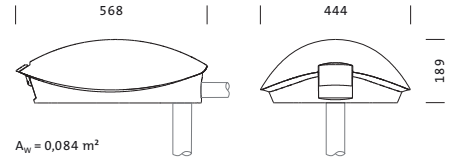
#### Benefits:

- control and automatic monitoring of each light point possible from a central control point
- no additional cabling or control wires required
- reduction of maintenance paths and costs
- improved safety via adaptation of lighting according to specific traffic situations



**SQ 50 LED | for post-top or side-entry mounting | asymmetric distribution**

SQ 50 LED mast luminaire for universal post-top or side-entry mounting | with white LED with lens, asymmetric wide distribution; with flat, structured and reflection-reduced white glass cover | microprocessor-controlled LED operating electronics; according to version with differing control function for lighting management and monitoring\* | housing of diecast aluminium; metallic grey aluminium frame (RAL 9006), grey aluminium canopy (RAL 9007); cover of toughened safety glass (ESG)



Protection rating: IP66  
Insulation class: II

Mast spigot with post-top mounting:  $d_a = 60/76 \times 100\text{mm}$

Mast spigot with side-entry mounting:  $d_a = 42/60 \times 120\text{mm}$

Recommended mounting height: MH= 4..6m

\* all versions with temperature monitoring for protection of LEDs from thermal overload  
Basic version: with luminous flux reduction via 230V control voltage | no luminous flux constancy | 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: 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 wire (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

IP 66

Lamps	P <sub>nom</sub> begin service life	P <sub>nom</sub> end service life	P <sub>red</sub> at 50% lumin. flux	Wt. (kg)	Order No.
<b>with ECG Basic</b>					
2x LED module nw	37	37	16	9,0	5XA5577ANA7G
3x LED module nw	68	68	25	9,3	5XA5577CNA7G
<b>with ECG Plus</b>					
2x LED module nw	27	37	14	9,0	5XA5577ANA8G
3x LED module nw	44	68	20	9,3	5XA5577CNA8G
<b>with ECG Premium, with luminaire controller</b>					
2x LED module nw	27	37	14	9,2	5XA5577ANA9G
3x LED module nw	44	68	20	9,5	5XA5577CNA9G

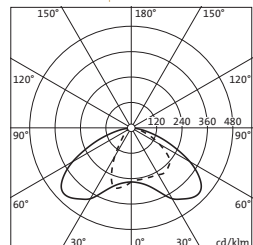
- please order the 'mast cable set' separately for configuration of the Plus version with installed luminaire  
- please order SLC lighting management components for the Premium version separately if required

**Accessories (for details see page 3.19)**

Article	Wt. (kg)	Order No.
cable set, for mast, L= 4 m, for Plus version	1.0	5EA6Y00L02
cable set, for mast, L= 5 m, for Plus version	1.0	5EA6Y00L03
cable set, for mast, L= 6 m, for Plus version	1.0	5EA6Y00L08
Siteco® Servicebox, for Plus version	2.4	5EA6TEF01

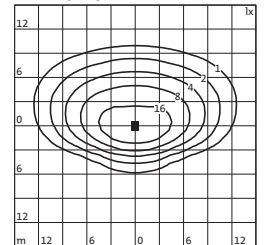
5XA5577ANA7G

1 x 28 LED NW  $\phi$ N 2200 lm



— C 0/180  
- - - C 90/270  
Luminous intensity class according to EN13201-2: G6

Mounting height 5 m Tilt 0°



**Siteco® Service Box electrical accessories**



**Siteco® Servicebox**

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 | setting of static colours and dynamic colour sequences with corresponding luminaires | 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	Wt. (kg)	Order No.
Siteco® Servicebox	2.4	5EA6TEF01

\* 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  
\* adoption of complete colour sequences and software updates possible via PC | incl. mini USB interface for connection to PC



**Siteco® Architainment Suite**

pre-installed on Siteco® Service Box; can be downloaded for free via the following link:  
[www.siteco.com](http://www.siteco.com) → Service → Download → Software → PC Tools → Architainment Suite

**SQ 50 LED electrical accessories**

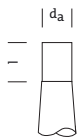
**Mast cable set**

for wiring of junction box in mast to luminaire, Plus version | with 5-pole plug-in coupling for integration of Siteco® Service Box, for manual parameterisation of luminaire (e.g. luminous flux, timer etc.)

Type	Order No.
Cable set, for luminaire, Plus version	
Mast cable set, L= 4.0m	5EA6Y00L02
Mast cable set, L= 5.0m	5EA6Y00L03
Mast cable set, L= 6.0m	5EA6Y00L08

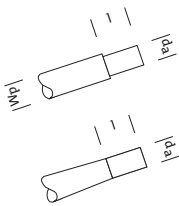
**SQ 50 LED mounting information**

**Mounting information for post-top mounting**



Mast spigot with steel mast:  $d_a \times l = 76 \times 100\text{mm}$   
 $d_a \times l = 60 \times 100\text{mm}$   
 Mast spigot with concrete mast (luminaire inclination 0°):  
 $d_a \times l = 76 \times 135\text{mm}$   
 $d_a \times l = 60 \times 135\text{mm}$   
 (luminaire inclination 15°):  $d_a \times l = 76 \times 145\text{mm}$   
 $d_a \times l = 60 \times 145\text{mm}$

**Mounting information for side-entry mounting**



Mast spigot with steel mast\*:  $d_a \times l = 60 \times 120\text{mm}$   
 $d_a \times l = 48 \times 120\text{mm}$   
 Mast spigot with concrete mast:  
 $d_a \times l = 42 \times 120\text{mm}$   
 $d_a \times l = 60 \times 135\text{mm}$   
 $d_a \times l = 42 \times 135\text{mm}$

\*Mast diameter with stepped offset mast:  $d_M \leq 7600$

**SQ 50 LED spare parts**

**Optical enclosure**

flat cover of toughened safety glass | partly screenprinted | structured

Type	Wt. (kg)	Order No.
Enclosure	2.0	5NA5570LXG

## Tools for the calculation of outdoor lighting systems

The modernisation of obsolete streetlighting systems certainly pays off. Around 2.7 billion kWh of energy, 1.6 million tons of CO<sub>2</sub> and therefore 400 million euros are available for this in Germany alone. The quickest way to implement this is the refurbishment of old lighting installations with new, energy-efficient luminaires and lighting technologies.

With Siteco's online calculation programs you can easily find out which energetic savings potential is available, and our website has tools such as the SLEO and the cost efficiency calculator for such purposes:



### SLEO – Street Lighting Energy Optimiser

The SLEO (Street Lighting Energy Optimiser) is a road lighting optimisation program for existing and new standard road geometries, selected luminaire types and standard lamp configurations. SLEO enables the rapid location of efficient and standard-compliant road lighting solutions without detailed knowledge of lighting calculations.

SLEO makes available the following information:

- energy consumption of the old system
- CO<sub>2</sub> immission of the old system
- energy consumption of the new system
- energy savings compared to the old system in kWh and %
- CO<sub>2</sub> reduction compared to the old system
- SLEEC factor as a new standard for evaluating economy in road lighting

Further information and direct to the SLEO calculation program at [www.siteco.de/sleo](http://www.siteco.de/sleo)

### Cost Efficiency Calculator

The Siteco Cost Efficiency Calculator is a web application for evaluating the cost efficiency of two outdoor lighting installations. The installations ('comparison installation' and 'new installation') can be compared over a variable service life in terms of investment costs and operating costs. For evaluating cost efficiency, the amortisation of an investment over the service life is calculated both statically and dynamically and displayed in figures and tables.

The cost efficiency calculator makes available the following information and services:

- a clear comparison of the old and new system
- precise data for investment, operating and energy costs
- reliable amortisation calculations
- tabular and graphical display of results
- simple step-by-step user guidance
- creation and saving of individual projects
- documentation and download of results as PDF files

Further information or direct to the cost efficiency calculator at [www.siteco.de/wirtschaftlichkeitsberechnung](http://www.siteco.de/wirtschaftlichkeitsberechnung)

## Subsidy programs for energy-efficient lighting solutions

Save energy, protect resources, minimise carbon dioxide: this is most simply and quickly achieved with efficient refurbishments. Innovative, energy-saving lighting solutions, for example in road lighting, are an important part of this.

Refurbishments are positive for everyone - something is done for the environment and at the same time operating costs are lowered. But money needs to be invested at the start, and these are expenses that local councils and companies do not have to bear alone. The installation of efficient lighting tools is supported by a variety of subsidy programs. A wide selection of these programs is listed on the Siteco website on the internet. The subsidy database contains the following information:

- subsidy programs for lighting solutions in outdoor areas, and mainly road lighting
- subsidy programs for indoor areas as part of energy refurbishments
- country-specific subsidy programs
- detailed information: what and who is supported  
Which subsidy amounts and application times are valid?
- links to further information and application forms
- contacts to providers of subsidy programs

Please note: the list applies to the current situation and does not claim to be complete. Siteco makes every effort to expand and update the subsidy database.

Further information and direct to the subsidy programs at <http://www.siteco.de/foerderprogramme>



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All innovative Siteco lighting tools for the  
realisation of your projects can be found in  
our current product catalogues:

- Siteco Indoor Lighting Tools
- Siteco Outdoor Lighting Tools

or at [www.siteco.com](http://www.siteco.com)

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