



## LED STREET LIGHTING LEADING THE WAY

### SWARCO | FIRST IN TRAFFIC SOLUTIONS.

**SWARCO** is a growing international group providing the complete range of products, systems, services and solutions for road safety and intelligent traffic management.

With almost five decades of experience in the industry, the corporation supports the growing mobility needs of society with turnkey systems and solutions in road marking, urban and interurban traffic control, parking, public transport, infomobility and street lighting. Cooperative systems, V2I communication, electromobility, and integrated software solutions for the Smart City are latest, future-oriented fields in the group's portfolio.

[www.swarco.com](http://www.swarco.com)



**SWARCO** | The Better Way. Every Day.



# INSPIRED BY NATURE

## INNOVATION INSPIRED BY GLOW-WORMS

Amazing performance delivered by fireflies. The quantity of light radiated is very large compared to the size of the bioluminescent source. This is due to the outer state of the lighting elements. Researchers from a number of countries have come together to work on a study delivering findings which are also reflected in FUTURLUX. By applying an outer coating, inspired by that in glow-worms, the luminous efficacy of conventional gallium nitride light-emitting diodes can be increased by up to 55 %.

## FUTURLUX STREET LIGHTING STATE OF THE ART

The street lighting systems „made in Austria“ are outstanding in terms of reliability, cost efficiency and aesthetics. State-of-the-art LED technology is combined with perfected lens systems and sophisticated designs to create internationally popular lighting solutions under the FUTURLUX brand.

- Reliable and long-lasting
- Sustainable
- Attractive in design
- Smart city-ready





## LONG-LASTING AND OPTIMIZED PERFORMANCE

THE FUTURLUX QUALITY ETHOS

### Pioneers in LED technology

SWARCO FUTURT is a reliable partner in signaling and lighting technology, with over two decades of expertise in the use of LEDs and over 50 years of experience in the processing of polycarbonates.

The products in the FUTURLUX lighting family satisfy with high levels of luminous intensity throughout their life cycles of many, many years. FUTURLUX lights are not off-the-peg solutions, but are tailored to meet the needs of customers and to comply with prevailing national standards.

### Customer satisfaction, thanks in part to optimized production processes

FUTURLUX does not compromise on the quality of any of its components. Strict quality assurance measures and checks throughout the entire production process ensure that we produce perfected products which consistently satisfy the needs of national and international customers.

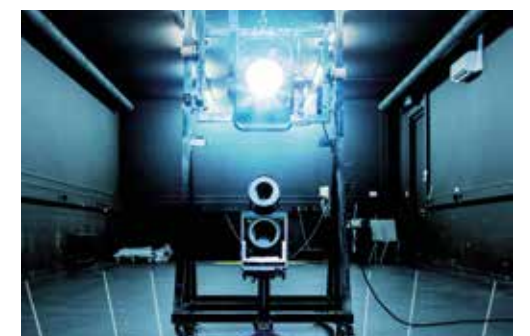
### PRODUCTION IN AUSTRIA

Quality made in Austria – FUTURLUX street-lighting systems are high class Austrian solutions.



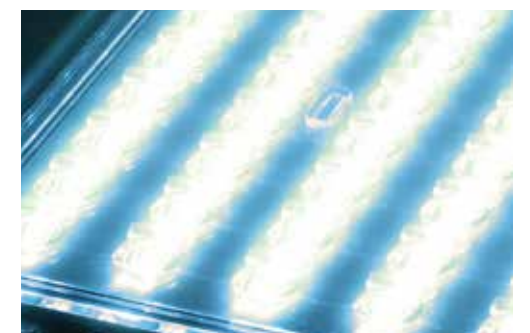
### CONSISTENT QUALITY TESTING

Thanks to ongoing quality checks, our own lighting laboratory, the fulfillment of all necessary certifications and specific national standards, FUTURLUX lighting systems leave nothing to chance.



### OVER 20 YEARS OF LED KNOW-HOW

FUTURLUX LED solutions guarantee optimum energy efficiency coupled with lighting efficiency throughout the entire life cycle.





## FUTURLUX is profitable

FUTURLUX street lighting is a genuine highlight when you consider the total cost of ownership. State-of-the-art LEDs and cleverly designed optical systems create a symbiosis, combining optimum lighting quality and the very best in energy efficiency. Up to 70% energy saving compared to conventional light sources significantly reduce the pressure on your operating costs. The investment in switching over to LED street lighting will have paid for itself in about three or four years. The long-lasting LEDs ensure that you will have reliable, optimum lighting quality for more than two decades.

The simple and quick installation of the lights, their service friendliness and the extremely low maintenance requirements will also be a welcome relief to local authority budgets.



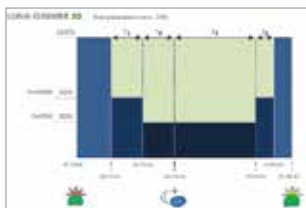
### LENS-REFLECTOR SYSTEM

State-of-the-art LED technology couples optimized lighting efficiency with minimized energy consumption.



### LENS TECHNOLOGY

Anti-glare light distribution without reflector technology.



### DIMMING

A control unit integrated into the luminaire allows the lighting level to be reduced at night to suit the surroundings, thus achieving further energy savings.

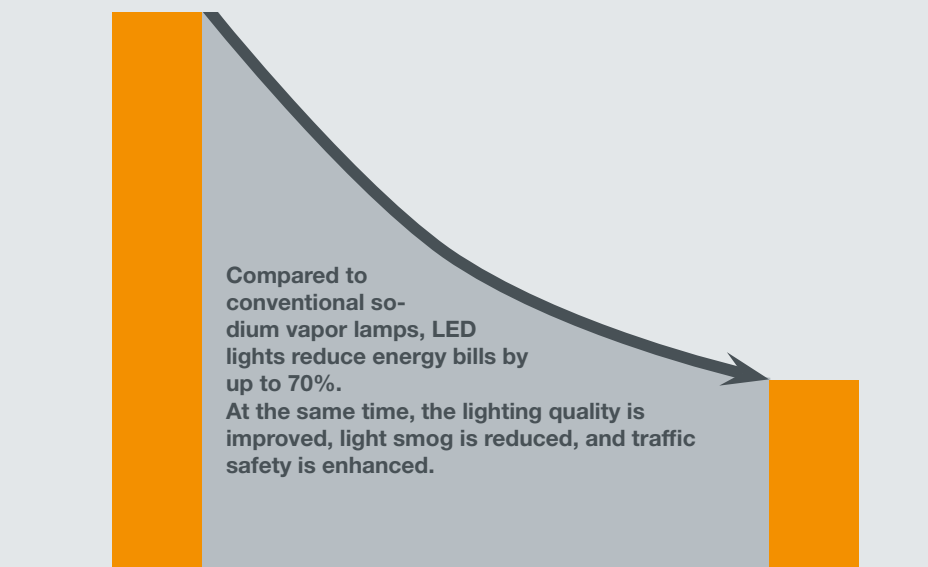


### HOUSING

The sophisticated construction of the luminaire housing with sealed light source considerably reduces installation and maintenance costs and offers the opportunity for a wide variety of smart city solutions.

## COST EFFICIENT AND HIGH PERFORMANCE

THE FUTURLUX COST EFFICIENCY CONCEPT







## TREND-SETTING AND FUTURE-SAFE

### THE FUTURLUX VISION

The development engineers of FUTURLUX have not only implemented the latest state of the art technology, they are thinking beyond that.

FUTURLUX LED lights are future-safe and designed with the needs of smart cities in mind. By being integrated into modern, in part web-based communication technologies, street lighting is able to perform additional functions, offering additional benefits for road safety and general convenience.

FUTURLUX can warn road users about hazards such as accidents and traffic jams through different light colors, light intensities, flashing effects and such like, or guide them towards free parking spaces and charge points for electric vehicles. This makes street lighting part of the traffic infrastructure, turning it into a guidance and communication system.

## SOLUTIONS FOR TOMORROW

### FUTURE-ORIENTED

FUTURLUX LED street lights are ready for the smart-lighting solutions of tomorrow. They can be integrated easily into smart communication systems in order to perform additional functions besides simple lighting.



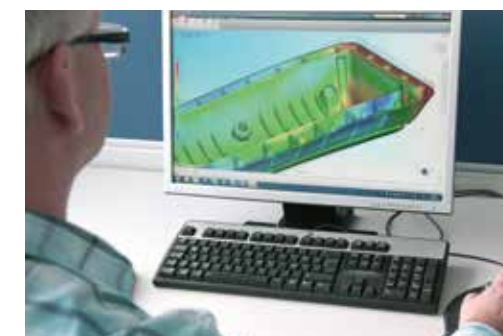
### SYSTEM-COMPATIBILITY

The future-safe lighting systems already meet all the necessary requirements for remote diagnostics systems, automated control of lighting intensity, and much else.



### RESEARCH LABORATORY

Experts in the Research & Development Department are working on future options for FUTURLUX LED street lighting, which has proved to be a success right around the world.



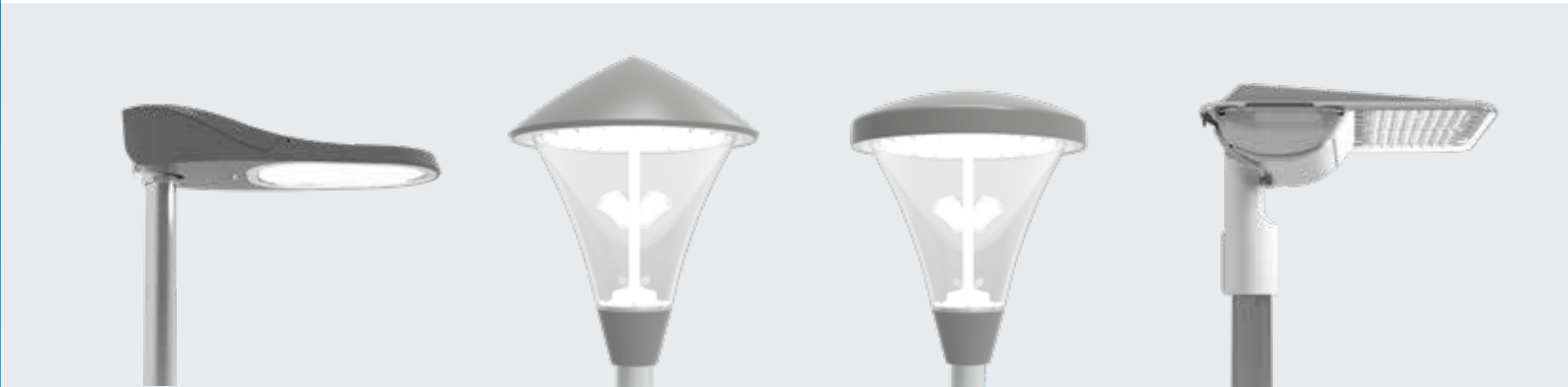




# VERSATILE AND INDIVIDUAL

## THE FUTURLUX PRODUCT RANGE

Optimized solutions are used for all applications and design preferences in FUTURLUX LED street lights. Each model has its own specific advantages. However, all of them have SWARCO FUTURIT's globally acclaimed quality, performance and cost-efficiency in common.



### AREDO

The futuristic solution with integrated communication module and adapted illuminance to suit the surroundings.

### CITERA

Residential area lighting with a traditional look, but with long-lasting and sustainable LED technology.

### CITERA Style

Residential area lighting in a visually sophisticated design for a timeless and modern cityscape.

### POLIFINA

The innovative combination of state-of-the-art LED technology and a UV-resistant polycarbonate housing.



### RIMANO

The weight-reduced luminaire with tried and tested FUTURLUX technology seamlessly fits into any streetscape.

### HEAD

Modern LED technology in an attractive luminaire, available in various dimensions as a compact alternative to classical street lighting.

### LUNIA

With sophisticated aesthetics and the highest class in light intensity, with reduced physiological glare; ideal for residential streets as well.



## AREDO Design

### THE SMART FUTURE-SAFE SOLUTION

The technical look in a compact design makes AREDO Design a versatile lighting solution with a wide range of applications. AREDO Design is designed for an intuitive, quick and efficient installation. And the driver unit service is also 100% toolless, which means that it can also be done quickly.

The AREDO Design combines state-of-the-art design with the latest technology, low acquisition costs and sophisticated construction for maximum service life, as well as fastest and simplest maintenance.

- Intuitive technology for quick installation and assembly
- long lifetime
- light unit „sealed 4 life“
- LED lens system with a multi-layer function
- Sensor and smart city-ready



# AREAS OF USE



**MAIN ROAD**  
**AREDO Design L10    AREDO Design L25**  
 Main roads and through roads.  
 AREDO Design L10 or L25 with an adapted lens system,  
 can be installed at heights of up to 12 m.



**SIDE ROAD**  
**AREDO Design L5**  
 Narrow side roads and one-way streets, as well as in  
 industrial zones. AREDO Design L5 including its  
 adapted P-class road lens systems for installation at  
 heights of between 4 and 6 m.



**CROSS-WALK**  
**AREDO Design L5    AREDO Design L10**  
 Pedestrian crossings and conflict zones.  
 AREDO Design L5 or L10 with a narrow-band cross-walk  
 lens system.



**RESIDENTIAL AND SERVICE STREETS**  
**AREDO Design L5**  
 Traffic-calmed zones such as service streets and medi-  
 um-size roads in residential areas, as well as for pedest-  
 rian zones. AREDO Design L5 with a medium-width lens  
 system and excellent EIR.



**CAR PARK**  
**AREDO Design L10    AREDO Design L25**  
 Large and medium-size surfaces.  
 AREDO Design L10 or L25 with a wide lens system  
 for large parking areas and an installation height of  
 up to 10 m.



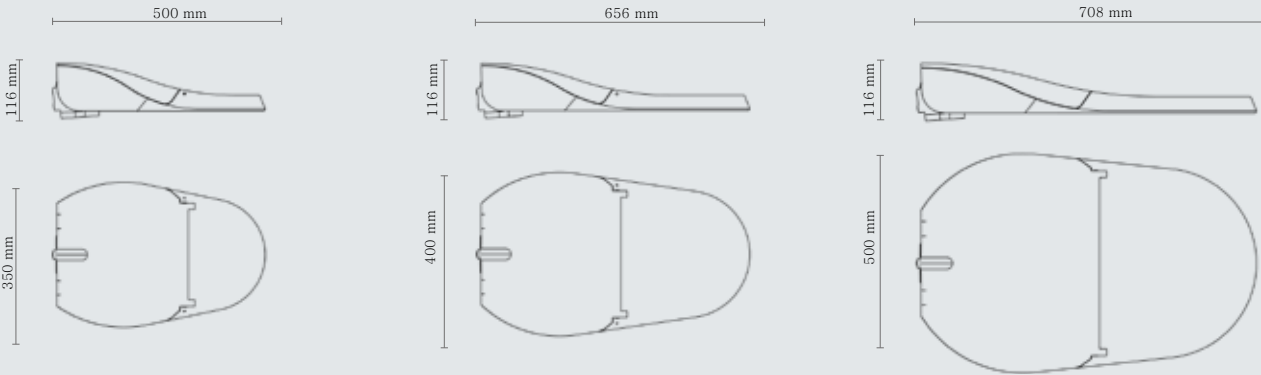
**CYCLE AND FOOTPATHS**  
**AREDO Design L5**  
 Narrow footpaths or cycle paths.  
 AREDO Design L5 with special lens system for wide pole  
 spacing and low pole heights of up to 4 m.

# VARIANTS



**AREDO Design L5                      AREDO Design L10                      AREDO Design L25  
 (in planning)**

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>■ Up to 24 high-power LEDs</li> <li>■ Light output of up to 5,000 lm</li> <li>■ Installation height of 4 to 8 m</li> <li>■ &lt; 7 kg</li> </ul> | <ul style="list-style-type: none"> <li>■ Up to 48 high-power LEDs</li> <li>■ Light output &gt; 10,500 lm</li> <li>■ Installation height of 6 to 12 m</li> <li>■ &lt; 10 kg</li> </ul> | <ul style="list-style-type: none"> <li>■ Up to 120 high-power LEDs</li> <li>■ Light output &gt; 25,000 lm</li> <li>■ Installation height of 10 to 20 m</li> <li>■ &lt; 15 kg</li> </ul> |
|--|---|---|





# DESIGN BENEFITS

## FUNCTIONALLY CLEVER DESIGN

- Luminaire housing made from powder-coated die-cast aluminum LM 6 for optimum corrosion resistance
- Low weight
- LED light source (sealed 4 life)
- Top- and side-mounting with variable tilt angle (120°) at increments of 5°
- Housing construction allows the installation of individual smart city components



Tilt range setting

## QUICK AND RELIABLE INSTALLATION

- Driver unit is accessible and changed without tools
- Integrated, universal top/side mounting piece for Ø 42, 60 or 76 mm
- Electrical isolating switch for immediate switch-off when it is opened
- Cover unit is locked securely with a stainless steel locking bolt



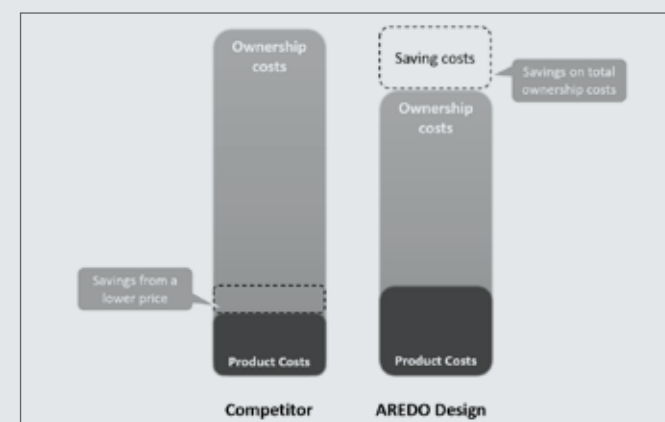
Driver unit can be changed without tools

## IMPRESSIVE DETAILS THROUGHOUT

- IP66 ingress protection
- IK09 flat safety glass
- Overvoltage protection up to 10 kV
- Safety class II (optionally safety class I)
- Low switch-on current

## SYSTEM EFFICIENCY & SERVICE LIFE

- up to 130 lm/W on the system
- Long service life: L80B10 > 150,000 h to reduce the total cost of ownership



Total Cost of Ownership

# TECHNOLOGICAL HIGHLIGHTS

## OPTIC AND LIGHT DISTRIBUTION

- LED lens system with a multi-layer function
- Homogeneous light distribution for optimized lighting quality
- Constant lumen management throughout the entire service life
- Adapted design for optimized thermal connection



Main road



Side road



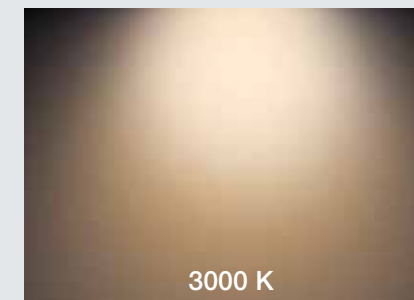
Residential street

AREDO Design with an O3 or O7 lens system, optimized for M-classes and very good EIR, pole height to pole spacing ratio of up to 1:6

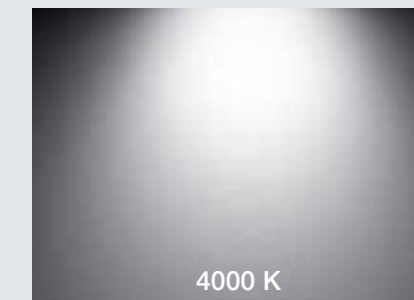
AREDO Design with an O2, O7 or O8 lens system, optimized for M-classes and very good EIR, pole height to pole spacing ratio of up to 1:6

AREDO Design with an O2 or O4 lens system, perfect solution for very wide applications

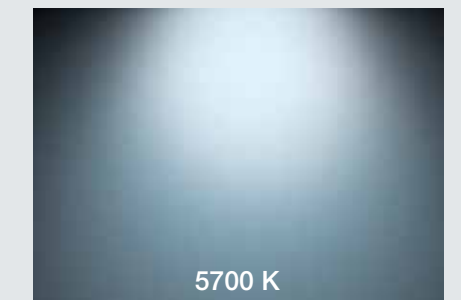
## LUMINOUS COLORS



3000 K



4000 K



5700 K



## BRIGHT WARM WHITE

The color temperature is similar to that of an incandescent light bulb, which gives it a calming and cosy feel. Therefore, it radiates a sense of well-being, in particular in car parks and on residential streets.



## NEUTRAL WHITE

The shade of light with a balanced distribution of blue and red light components for discreet outdoor lighting solutions.



## SIMILAR TO DAYLIGHT WHITE

With an increased blue component in the color spectrum, this luminous color delivers a better contrast ratio. This boosts safety on the road.





## CITERA

### STYLISH EFFICIENCY

The CITERA is a decorative, energy-saving and timelessly elegant solution for low pole heights. It is primarily used for lighting solutions on residential and service streets, cycle paths, in parking areas and public parks. Optimized for vertical lighting classes in conformity with EN13201. The classical design coupled with state-of-the-art LED technology guarantees optimized lighting for decades.

- Intelligent technology for quick installation and assembly
- Optimized die-cast aluminum for less weight
- LED lens system with a multi-layer function
- Expandable with diffuser for pleasant light atmosphere (Comfortlight)
- Alternative available as a variant in modern design with identical photometric parameters (CITERA Style)



## AREAS OF USE



### SIDE ROAD

**CITERA 12      CITERA 16**

Narrow side roads and one-way streets. CITERA 12 and 16 with their perfect S-class road lens for an optimized installation height of 4 m.



### CYCLE AND FOOTPATHS

**CITERA 16      CITERA 24**

Narrow footpaths or cycle paths. CITERA 16 or CITERA 24, the stylish solution for narrow footpaths and cycle paths, for very wide spacing between lamp posts and low pole heights.



### RESIDENTIAL AND SERVICE ROADS

**CITERA 16      CITERA 24**

Traffic-calmed zones such as service streets and medium-size roads in residential areas, as well as for pedestrian zones. CITERA 16 or CITERA 24 with a medium-width lens and excellent EIR.



### CAR PARK

**CITERA 24**

Large and medium-size surfaces. CITERA 24 with a wide symmetrical optic for perfect illumination of park paths or parking areas.

## VARIANTS

### CITERA 12

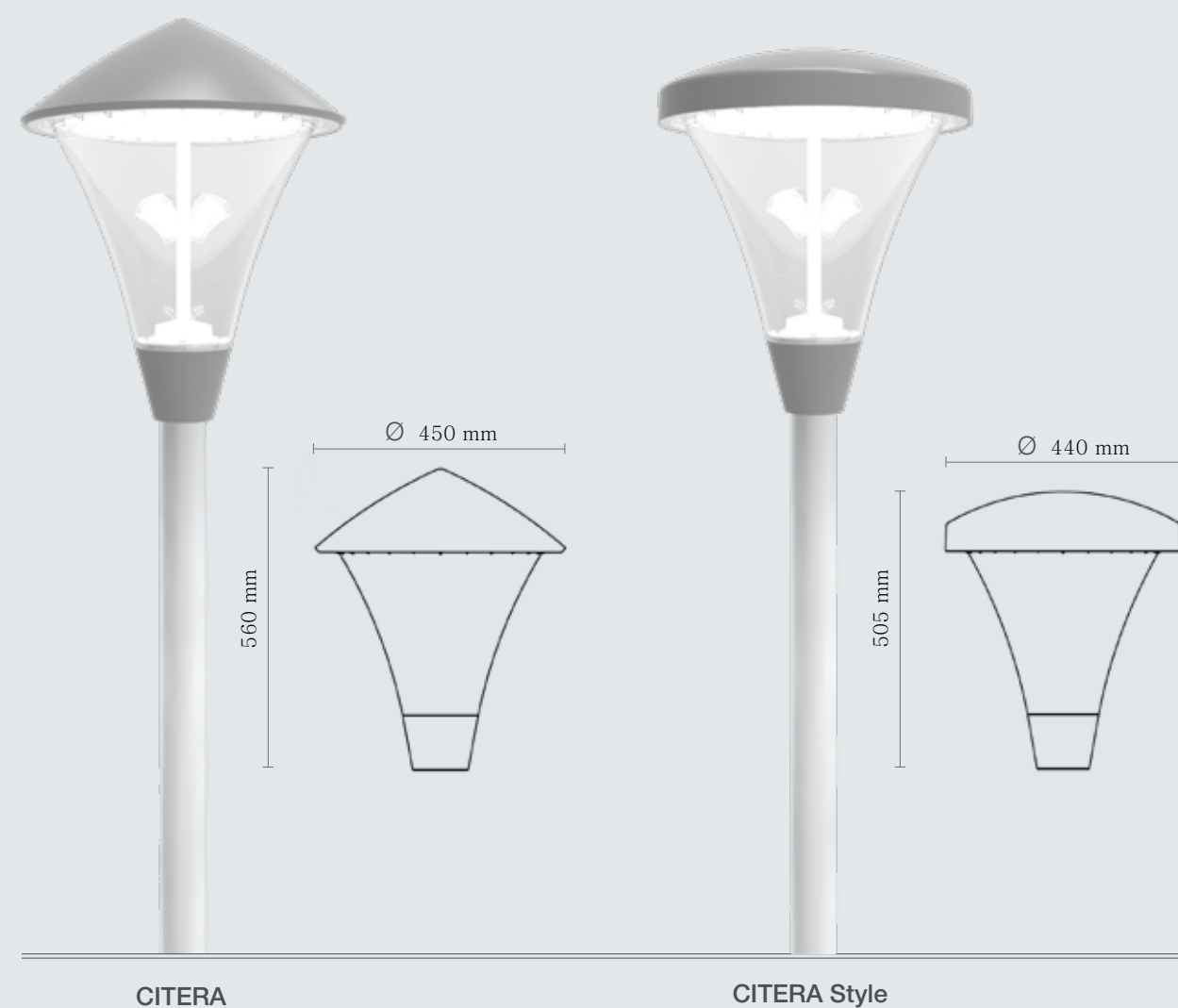
- 12 high-power LEDs
- Light output up to 2000 lm
- Installation height up to 6 m (3 – 5 m recommended)

### CITERA 16

- 16 high-power LEDs
- Light output of 2000 to 3000 lm
- Installation height up to 6 m (3 – 5 m recommended)

### CITERA 24

- 24 high-power LEDs
- Light output of 3000 to 5000 lm
- Installation height up to 6 m (3 – 5 m recommended)





# DESIGN BENEFITS

## FUNCTIONALLY CLEVER DESIGN

- Powder-coated die-cast aluminum
- Weighs less than 8 kg
- Exchangeable, enclosed LED light source
- Tool-less retrofittable diffuser (Comfortlight)
- Very high impact resistance IK10

## QUICK AND RELIABLE INSTALLATION

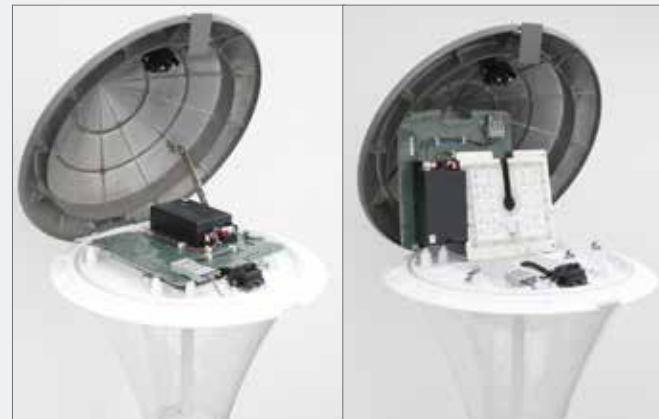
- Connecting cable included
- Top-mounting piece for Ø 60 mm or 76 mm
- Electrical isolating switch for immediate switch-off when it is opened
- Secure locking of the cover by stainless steel interlock
- Quick and easy pole mounting by two screws
- Opened without tools
- Toolless exchange of driver unit
- Toolless light source replacement (optional)

## IMPRESSIVE DETAILS THROUGHOUT

- IP66 ingress protection
- Overvoltage protection up to 10 kV
- Safety class II
- Low switch-on current

## SYSTEM EFFICIENCY & SERVICE LIFE

- up to 130 lm/W on the system
- Long service life: L80B10 > 120,000 h



LED light source and driver unit exchangeable without tools



Tool-less opening



Secure locking of the cover



Tool-less retrofittable diffuser (Comfortlight)

# TECHNOLOGICAL HIGHLIGHTS

## OPTIC AND LIGHT DISTRIBUTION

- LED lens system with a multi-layer function
- Homogeneous light distribution for optimized lighting quality
- Constant lumen management throughout the entire service life
- Optimized thermal connection



Residential street



Car park



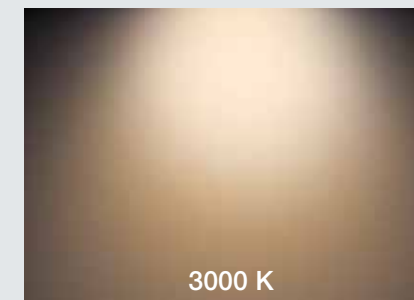
Footpath and cycle path

CITERA C1 lens system for P-classes, pole height to pole spacing ratio of up to 1:6 and pole height to road width ratio of 1:1.5

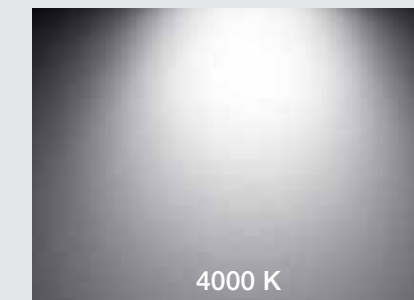
CITERA C3 lens system, symmetrical distribution for parks, footpaths and car parks

CITERA C2 lens system for narrow footpaths and cycle paths, pole height to pole spacing ratio of up to 1:7

## LUMINOUS COLORS



3000 K



4000 K



## BRIGHT WARM WHITE

The color temperature is similar to that of an incandescent light bulb, which gives it a calming and cosy feel. Therefore, it radiates a sense of well-being, in particular in car parks and on residential streets.



## NEUTRAL WHITE

The shade of light with a balanced distribution of blue and red light components for discreet outdoor lighting solutions.



# POLIFINA

## OPTIMIZED INNOVATION IN DESIGN AND FUNCTIONALITY

With POLIFINA, SWARCO has incorporated for the first time its decades of experience in plastics processing into street lighting production. Due to its polycarbonate housing, POLIFINA not only offers significantly reduced weight, but also scores points for its ease of installation and maintenance.

Its contemporary, timeless design allows it to blend in seamlessly into a wide range of different environmental scenarios. The design has deliberately gone for function over form which was developed in collaboration with a design agency.

- Significant reduction in life cycle costs and in the product carbon footprint (CO<sub>2</sub>-footprint)
- UV-stable, weather- and impact-resistant polycarbonate housing (more than 30 years in use)
- Less weight, innovative and easy-to-handle design
- Sensor and smart city-ready



# AREAS OF USE



**MAIN ROAD**  
**POLIFINA**

For main roads and through roads.  
POLIFINA P1 with an adapted lens system, can be installed at heights of up to 8 m and up to lighting class M4.



**SIDE ROAD**  
**POLIFINA**

For side roads and one-way streets, as well as industrial zones, with universal optics for P-classes



**RESIDENTIAL AND SERVICE STREETS**  
**POLIFINA**

Traffic-calmed zones such as service streets and medium-sized roads in residential areas, with medium optics and excellent EIR.

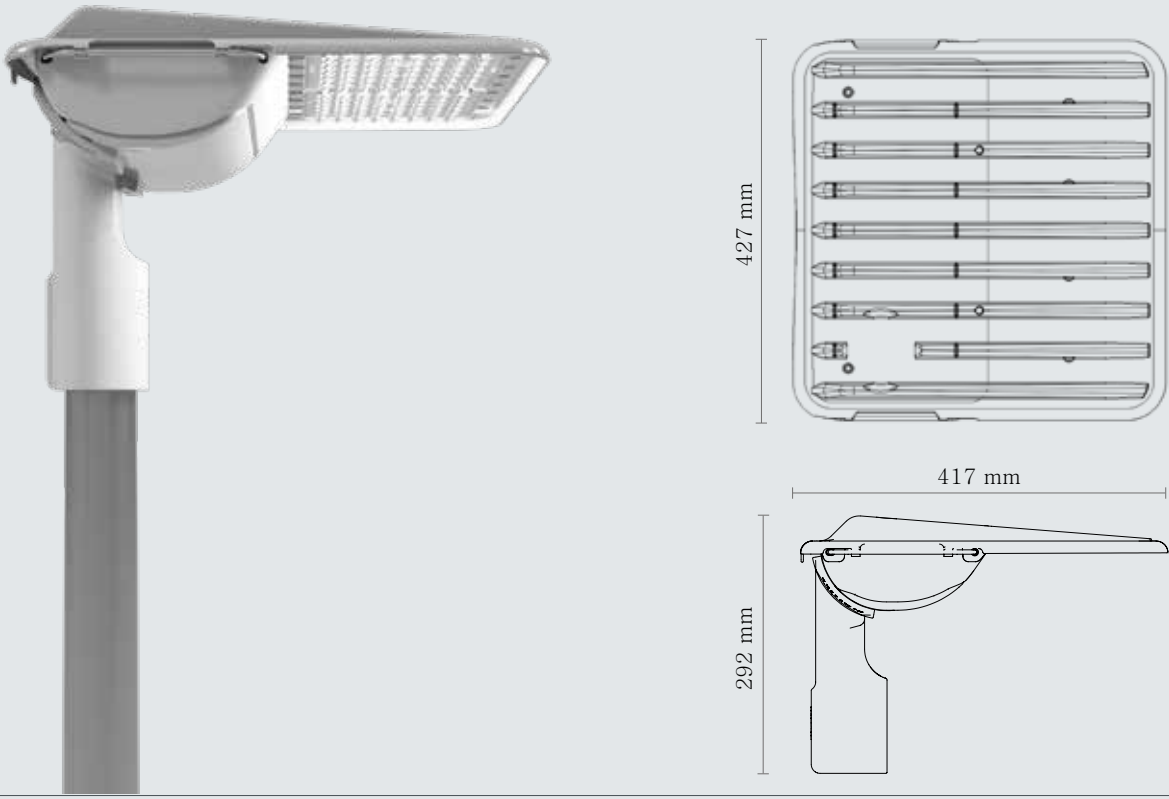


**CAR PARK**  
**POLIFINA**

Medium-size areas for installation heights of up to 10 m.

# VARIANTS

- POLIFINA**
- 96 extremely robust mid-power LEDs
  - Light output of up to 5,000 lm
  - Installation height of 4 to 8 m
  - Low weight of only 4.5 kg



## DESIGN BENEFITS

### FUNCTIONALLY CLEVER DESIGN

- Housing made from high-strength, UV-resistant and long-life polycarbonate
- Integrated, universal top/side mounting piece for Ø 42, 60 and 76 mm
- Adjustable at increments of 5 degrees
- Labyrinth double-wall seal IP66
- LED light source hermetically (sealed 4 life)



Opened without tools

### QUICK AND RELIABLE INSTALLATION

- Driver unit is accessible and changed without tools
- Cover is anchored during removal
- Simple cable entry
- Guide pins for simple assembly
- Electrical isolating switch for immediate switch-off when it is opened



Mechanical suspension device and integrated fall protection

### IMPRESSIVE DETAILS THROUGHOUT

- Significant reduction in life cycle costs and in the product carbon footprint (CO<sub>2</sub>-footprint)
- Overvoltage protection up to 10 kV
- Safety class II
- Low switch-on current
- IK09 impact resistance



Exchange of driver unit without tools

### SYSTEM EFFICIENCY & SERVICE LIFE

- up to 140 lm/W on the system
- Long service life: L80B10 > 100,000 h

## TECHNOLOGICAL HIGHLIGHTS

### OPTIC AND LIGHT DISTRIBUTION

- Homogeneous, very large light array for high-quality and reduced physiological glare
- Highest color and contrast perception through a minimum CRI of 80 for all luminous colors



Side road

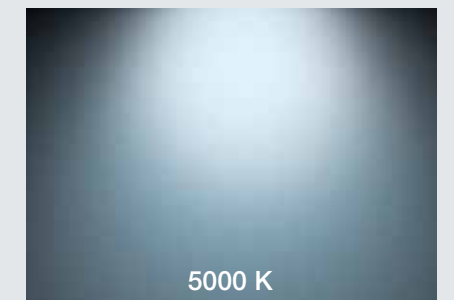
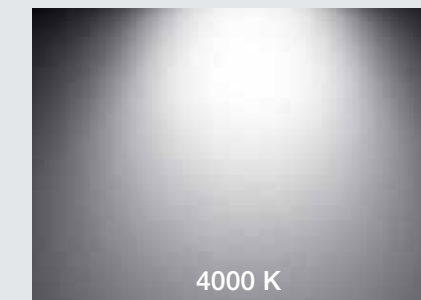
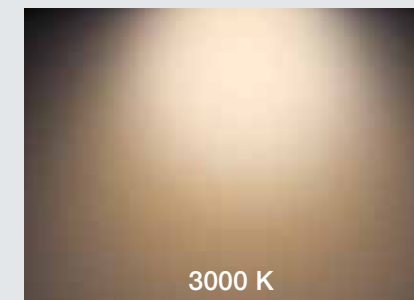


Residential street

POLIFINA optimized for M-classes and very good EIR, pole height to pole spacing ratio of up to 1:6

POLIFINA for P-classes and low M classes, pole height to pole spacing ratio of up to 1:6

### LUMINOUS COLORS



#### BRIGHT WARM WHITE

The color temperature is similar to that of an incandescent light bulb, which gives it a calming and cosy feel. Therefore, it radiates a sense of well-being, in particular in car parks and on residential streets.



#### NEUTRAL WHITE

The shade of light with a balanced distribution of blue and red light components for discreet outdoor lighting solutions.



#### SIMILAR TO DAYLIGHT WHITE

With an increased blue component in the color spectrum, this luminous color delivers a better contrast ratio. This boosts safety on the road.





## LUNIA

### TECHNICAL AND AESTHETIC VERSATILITY

LUNIA comes in a variety of light packages, making it a versatile LED street light. Its distinctive design gives it an aesthetic appeal, and it boasts a clever structural design, which reduces maintenance costs with its sealed LED unit and updatable drivers.

The characteristic features of LUNIA are its unmistakable shape, which is a perfect blend of simplicity and technical individuality. The design has been developed in collaboration with a renowned firm of architects. The product name plays on the gentle, round shape, which creates associations with the moon (luna in Italian) and refers to the long-life, luminiferous function.

- Aesthetic, sophisticated design
- LED lens technology or LED lens reflector system
- Durable design thanks to die-cast aluminum, stainless steel and flat safety glass cover
- Sensor and smart city-ready

## AREAS OF USE



### MAIN ROAD

**LUNIA 3      LUNIA L10**

Main roads and through roads.  
With an optimized lens system, can be installed at heights of up to 12 m, three lanes, up to lighting class M3.



### SIDE ROAD

**LUNIA 1      LUNIA 2      LUNIA L5**

Normal and narrow side roads or one-way streets and industrial zones.  
Optimized for installation at heights of up to 8 m.



### CROSS-WALK

**LUNIA 3      LUNIA L5      LUNIA L10**

Pedestrian crossings and conflict zones with an adapted, narrowband cross-walk optic.



### RESIDENTIAL AND SERVICE STREETS

**LUNIA 1      LUNIA 2      LUNIA L5**

Traffic-calmed zones such as service streets and medium-size roads in residential areas, as well as for pedestrian zones.



### CAR PARK

**LUNIA L10**

Large and medium-size surfaces.  
For an installation height of up to 10 m.



### CYCLE AND FOOTPATHS

**LUNIA 1      LUNIA 2      LUNIA L5**

Narrow footpaths or cycle paths.  
For wide pole spacing and low pole heights of up to 4 m.

## VARIANTS

### LUNIA

- Up to 48 LEDs
- Light output up to 9.500 lm
- Installation height of 3 to 12 m
- 9.5 kg post-mounting / 9.8 kg side-mounting

### LED lens system



LUNIA L5



LUNIA L10

### LED lens-reflector system



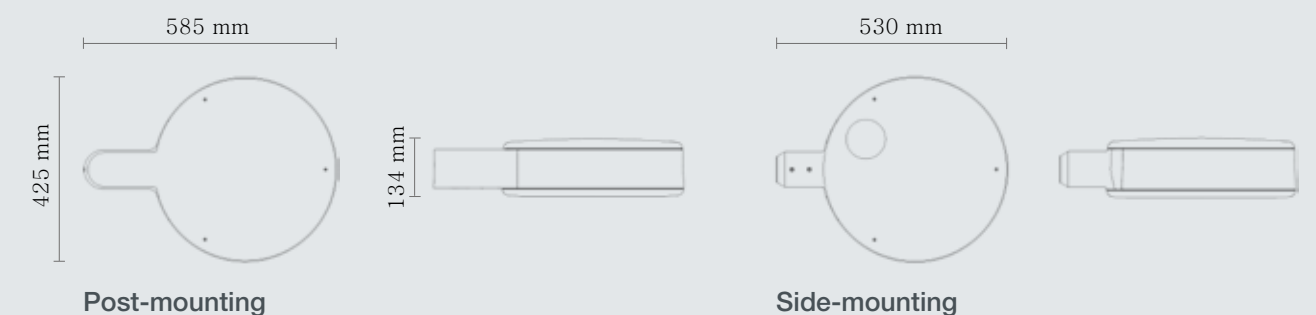
LUNIA 1



LUNIA 2



LUNIA 3





# DESIGN BENEFITS

## FUNCTIONALLY CLEVER DESIGN

- High quality long-life material combination
- The sealed LED unit prevents dirt ingress and keeps maintenance costs down
- Consistent luminaire design for different applications
- Reduced maintenance and long-lasting



Driver unit is easily replaced

## QUICK AND RELIABLE INSTALLATION

- Easy-to-replace driver unit
- Simple handling



Very simple handling

## IMPRESSIVE DETAILS THROUGHOUT

- One size for all applications
- Overvoltage protection up to 10 kV
- IP66 ingress protection
- IK08 impact resistance

## SYSTEM EFFICIENCY & SERVICE LIFE

- up to 130 lm/W on the system
- Long service life: L80B10 > 100,000 h



Innovative LED lens system

# TECHNOLOGICAL HIGHLIGHTS

## OPTIC AND LIGHT DISTRIBUTION

- Innovative multi-layer lighting technology prevents dark sections along the carriageway
- Optimized light guidance through a combined lens-reflector system
- Different dimming options
- Highly efficient brand-name LEDs with in excess of 160 lm/W



Main road



Side road



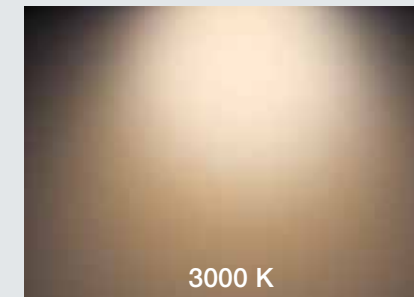
Residential street

LUNIA with R0, R3, O3 and O7 optic system optimized for M-classes and very good EIR, pole height to pole spacing ratio of up to 1:6

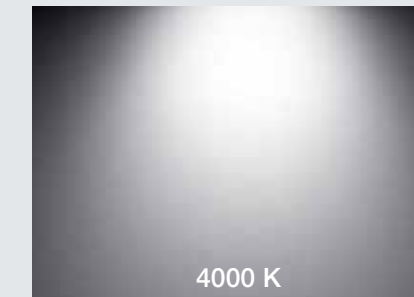
LUNIA with O2, O7 or O8 optic system, optimized for M-classes and very good EIR, pole height to pole spacing ratio of up to 1:6

LUNIA with R2, O2 and O4 optic system optimized for M-classes, pole height to pole spacing ratio of up to 1:5

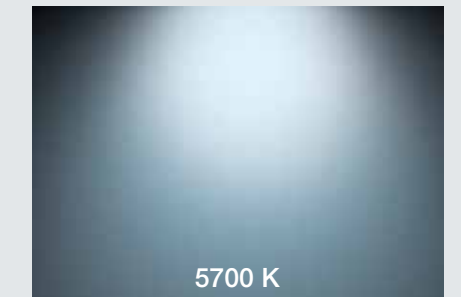
## LUMINOUS COLORS



3000 K



4000 K



5700 K



### BRIGHT WARM WHITE

The color temperature is similar to that of an incandescent light bulb, which gives it a calming and cosy feel. Therefore, it radiates a sense of well-being, in particular in car parks and on residential streets.



### NEUTRAL WHITE

The shade of light with a balanced distribution of blue and red light components for discreet outdoor lighting solutions.



### SIMILAR TO DAYLIGHT WHITE

With an increased blue component in the color spectrum, this luminous color delivers a better contrast ratio. This boosts safety on the road.