



# 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 Turkey and designed 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 DESIGN

A GROUP LIGHTING FUTURIT "designed by SWARCO" is a reliable partner in lighting technology, with over 10 years of expertise in the use of LEDs and over 10 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 TURKEY**

Quality made in Turkey – FUTURLUX streetlighting systems are high class Austrian design Turkish made inteligent solutions.

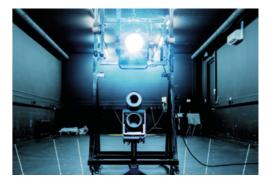


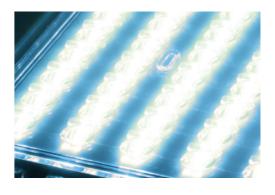
Thanks to ongoing quality checks, our own lighting laboratory, the fulfillment of all necessary certifications and specific national standards, FUTURLUX lighting systems leave nothing to chance.

#### **OVER 10 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 de- signed 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 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 wel- come relief to local authority budgets.



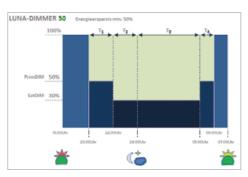
#### **LENS-REFLECTOR SYSTEM**

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.





# SOLUTIONS FOR TOMORROW



#### **FUTURE-ORIENTED**

future 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.

# 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.



#### **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 "designed by SWARCO"

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 AGL 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 light-ing 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 street-scape.

#### **HEAD**

Modern LED technology in an attractive luminaire, available in various dimensions as a compact alter-native 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 "designed by SWARCO" 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



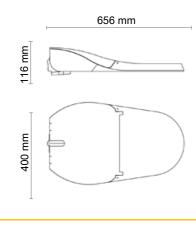
#### **AREDO Design L5**

- 12, 24 or 36 high-power LEDs
- Up to 12.000 lumens of lighting power.
- 4 to 12 meters installation height.
- <7 kg

# 350 mm 116 mm 2000 mm

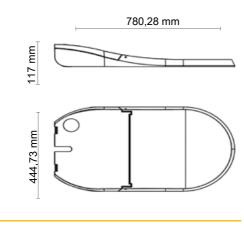
#### **AREDO Design L10**

- 48, 60, 76 high-power LEDs
- Light output22.000 lumens.
- 6 to 18 meters installation height.
- < 10 kg



#### **AREDO Design L20**

- 72, 96, 120, 140 high-power LEDs
- Up to 40.000 lumens of lighting power.
- 6 to 25 meters installation height.
- < 15 kg















# AREAS OF USE



#### **HIGHWAY**

#### AREDO Design L20

#### **AREDO Design L10**

AREDO Design L20 is produced with a special lens, suitable for 15 to 30 meter high poles on 3 or 4 lane highways, and can be used in toll collection areas and highway service facilities.



#### **MAIN ROAD**

#### AREDO Design L10

#### **AREDO Design L5**

Main roads and through roads. AREDO Design L10 can be installed at heights of up to 18 m high for all main roads with 48, 60 and 76 LED solutions.



#### 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 12 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 medium-size roads in residential areas, as well as for pedestrian zones AREDO Design L5 with a medium-width lens system and excellent EIR.



#### **CAR PARK**

#### **AREDO Design L10**

Large and medium-size surfaces. AREDO Design L10 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.

#### **FUNCTIONALLY CLEVER DESIGN**

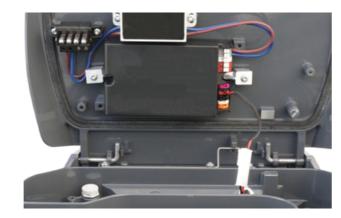
- Luminaire housing made from powdercoated die-cast aluminum LM 6 for optimum corrosion resistance
- Low weight
- LED light source (sealed 4 life)
- Top- and side-mounting with variable tilt angle (120°) at increments of 5°
- Housing construction allows the installation of individual smart city components



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



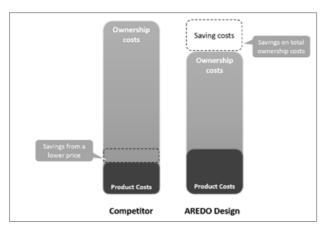
Driver unit can be changed without tools

#### **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 160 lm/W on the system
- Long service life: L80B10 > 150,000 h



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
- Smooth operation between -40 and +50 degrees



AREDO Design with O3, O7 or O13 lens system, optimized for M classes, with excellent edge illuminance and a pole height - and long pole spacing ratio of up to 1:6

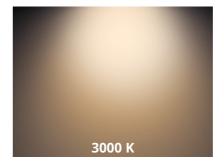


AREDO Design with O2, O7, O8 or O13 lens system, optimized for M classes, with excellent edge illuminance and pole height to pole spacing ratio up to 1:6



AREDO Design with O2, O4, O13 or O14 lens system: The perfect solution for a wide range of applications

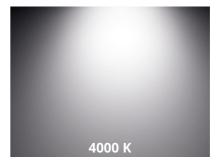
#### **LUMINOUS COLORS**







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

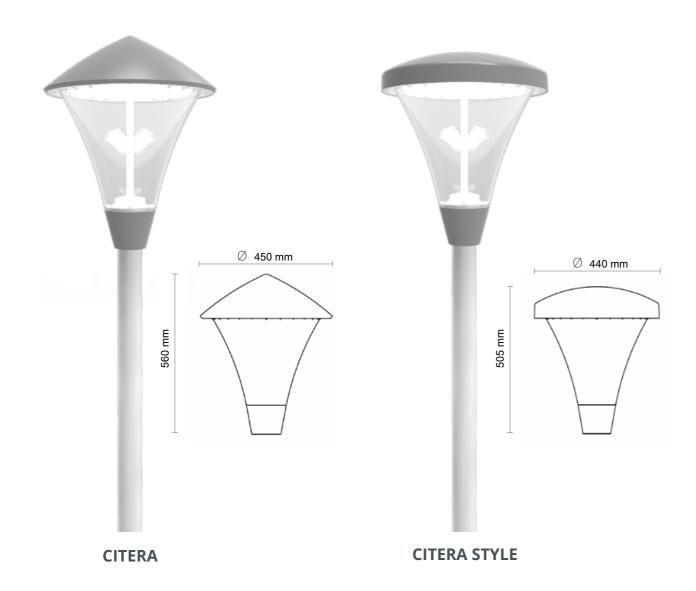
With an increased blue component in the color spectrum, this luminous color delivers a better contrast ratio. This boosts safety on the road.



#### STYLISH EFFICIENCY

The CITERA "designed by SWARCO" 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
- Design that provides a pleasant light atmosphere and prevents glare... Comfortlight...
- Alternative available as a variant in modern design with identical photometric parameters (CITERA Style)



#### CITERA 12

- 12 high-power LEDs
- up to 3000 lumens of lighting power.
- Installation height up to 6 m.
- (3-5 m recommended.)

#### CITERA 16

- 16 high power LEDs
- 3000 to 5000 lumens of lighting power
- Installation height up to 6 m.
- (4-6 m recommended.)

#### CITERA 24

- 24 high power LEDs
- 4000 to 8000 lm lighting power.
- Installation height up to 8 m.
- (4-8 m recommended.)













# 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.



#### **RESIDENTIAL AND SERVICE STREETS**

#### 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.

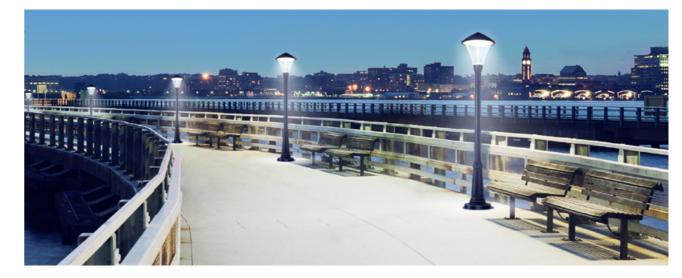


#### **CYCLE AND FOOTPATHS**

#### CITERA 12

#### 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.



#### **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**

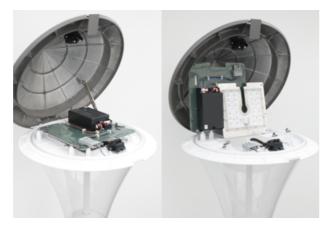
- Connecting cable included
- Top-mounting piece for Ø 60 mm or 76 mm
- Electrical isolating switch for immediate switch-off when it is opened
- Secure locking of the cover by stainless steel interlock
- Quick and easy pole mounting by two screws
- Opened without tools
- Tolless exchange of driver unit
- 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 160 lm/W on the system
- Long service life: L80B10 > 150,000 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

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



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

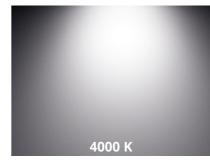
#### **LUMINOUS COLORS**





**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**

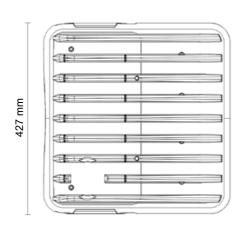
# OPTIMIZED INNOVATION IN DESIGN AND FUNCTIONALITY

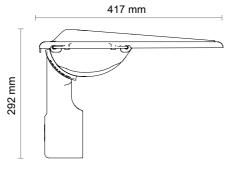
With POLIFINA, "designed by SWARCO" AGL has incorporated for the first time its experience in plastics processing into street lighting production. Due to its polycarbonate housing, POLIFINA not only offers significantly reduced weight, but also scores points for its ease of installation and maintenance.

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 (CO2-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







#### **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













# 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.



#### **FUNCTIONALLY CLEVER DESIGN**

- Housing made from high-strength, UVresistant 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 (CO2-footprint)
- Overvoltage protection up to 10 kV
- Safety class II
- Low switch-on current
- IK09 impact resistance

#### **SYSTEM EFFICIENCY & SERVICE LIFE**

- Up to 160 lm/W on the system
- Long service life: L80B10 > 150,000 h



Exchange of driver unit without tools

# TECHNOLOGICAL HIGHLIGHTS

#### **OPTIC AND LIGHT DISTRIBUTION**

 Homogeneous, very large light array for high-quality and reduced physiological glare



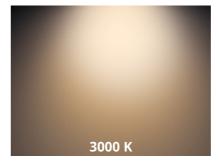
POLIFINA pole height to pole spacing ratio of up to 1:6 with excellent edge brightness ratio, optimized for class M

 Highest color and contrast perception through a minimum CRI of 80 for all luminous colors



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

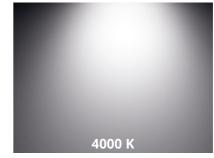
#### **LUMINOUS COLORS**





**BRIGHT WARM WHITE** 

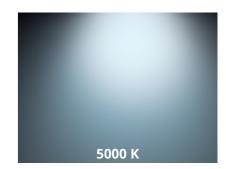
The color temperature is similar to that of an incandescent light bulb, which gives it a calming and cosy feel. Therefore, it radiates a sense of well-being, in particular in car parks and on residential streets.





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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.

www.agrouplighting.com



#### TECHNICAL AND AESTHETIC VERSATILITY

Lunia "designed by SWARCO" 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

#### **LED lens-reflector system**





LUNIA 2



#### **LED lens system**



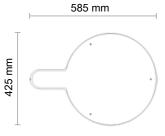


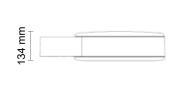
**LUNIA L10** 

LUNIA L5

**LUNIA** 

- 60 LEDs PCB design
- Lighting power up to 20,000 lumens
- Installation height of 3 to 18 m
- 9.5 kg post-mounting / 9.8 kg side-mounting









**Post-mounting** 

**Side-mounting** 













# 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 18 m, three lanes, up to lighting class M2.



SIDE ROAD

#### **LUNIA 1**

LUNIA 2

LUNIA 3

Normal and narrow side roads or one-way streets and industrial zones. Optimized for installation at heights of up to 12 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 3

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.

#### **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
- IK09 impact resistance

**SYSTEM EFFICIENCY & SERVICE LIFE** 

- Up to 160 lm/W on the system
- Long service life: L80B10 > 150,000 h

#### Innovative LED lens system

# TECHNOLOGICAL HIGHLIGHTS

#### OPTIC AND LIGHT DISTRIBUTION

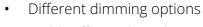
- Innovative multi-layer lighting technology prevents dark sections along the carriageway •
- Optimized light guidance through a combined lens-reflector system



LUNIA with R0, R3, O3 or O7 lens system, optimized for M classes, with excellent edge brightness and pole height to pole spacing ratio up to 1:6



LUNIA with O2, O7 or O8 lens system, optimized for M classes, with excellent edge brightness and pole height to pole spacing ratio up to 1:6







LUNIA with R2, O2 or O4 lens system, optimized for M classes, with excellent edge brightness and pole height to pole spacing ratio up to 1:5



Specially designed products for all indoor and outdoor tennis courts and golf courses using R2, O7, O14 and hybrid lenses.

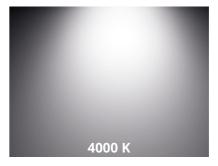
#### **LUMINOUS COLORS**





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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.

# CERTIFICATES

# 







# CERTIFICATES









# **CERTIFICATES**









#### INTELLIGENT LIGHTING SOLUTIONS,

#### "designed by SWARCO"

A GROUP LIGHTING (AGL) is a division of a growing international group providing the complete range of products, systems, services and solutions for road safety and lighting.

"AGL" is a part of "A GROUP" which has 20 years of experience in the industry, the group supports the growing mobility needs of society with systems and solutions in info-mobility and street lighting.

"AGL" has acquired from "SWARCO" its Street Lighting Division along with all rights for patents, trademarks and production. AGL are committed to continue in the footsteps of SWARCO in providing quality products and similar standards of service. Exporting to more than 30 countries, AGL manufactures LED luminaires in its modern production lines in Ankara.

www.agrouplighting.com

Factory Adress: Malıköy Anadolu OSB Mah. Anadolu OSB 15. Cad. No:18 Sincan – Ankara / TURKEY

Head Office: Beytepe Mah. Piri Reis Cad. No:2/15 Cankaya – Ankara / TURKEY

