

## **PŘÍLOHA č.4**

Katalog - přehled používaných svítidel



**PHILIPS**

*Stela+ gen2*

Public lighting

Product guide

The  
revolution  
**continues**



# Stela+ gen2

## Improvements that count

The original Philips Stela range was the first dedicated LED luminaire that was suitable – in both price and performance – for general street-lighting applications. It is still one of the best performers on the market. We have now combined recent developments in LED technology and the experience we have gained with this new technology to create an all-new line of Stela products. This offers you new and exiting possibilities to further improve your operations. We are proud to present: generation 2.



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Wide choice to suit any residential project



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Tailor the distribution exactly to the circumstances and requirements of your project

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# The revolution continues

Protecting our climate and environment has become an increasingly important social and political priority. And since almost 20% of the world's electricity consumption goes to powering lighting products, we are constantly seeking ways to achieve further energy savings in public lighting. We have set ambitious goals for reducing CO<sub>2</sub> emissions worldwide as we continue to pursue our aim of contributing to a sustainable society.

In 2008, we launched the original Stela range with the tagline "Revolutionary success on your doorstep". We now present the next generation: Stela+ gen2. The improvements are remarkable, as we have reached a new level of efficiency by applying LED innovations and programmable drivers. As before, REVOLED cooling and light distribution enable enormous energy savings and CO<sub>2</sub> reductions, while meeting current lighting standards.

Excellent thermal management of the LED units ensures a very long product lifetime, essentially eliminating the need for lamp replacement.

Stela+ gen2 makes it possible to either reduce the number of LEDs needed (for a lower cost per light point) or reduce the power consumption and therefore TCO (total cost of ownership) – even with the same number of LEDs as before. This is achieved through higher flux per LED, flux tuning (using L-Tune) and the use of optional CLO. A selection of seven lens types is available to give the best photometric results, depending on the situation. This mix-and-match versatility, combined with the choice of four shapes, makes the Stela+ gen2 family suitable for virtually all applications in residential areas.

Enormous  
energy savings  
and CO<sub>2</sub> reduction



REVOLED technology  
for maximum efficiency.



Fully programmable  
to suit required  
flux (consult L-Tune).



Wide choice of lens  
optics to match street  
geometries.



Fit-and-forget solution:  
up to 100,000 hours' lifetime  
(consult L-Tune).





# Family range

Public lighting  
.....  
Stela+ gen2  
.....  
**Family range**  
.....

Take one glance at Stela+ gen2 and it is immediately clear that it is totally different from any other public lighting system on the market.

The use of LEDs in functional public lighting provides luminaire designers with new design opportunities to beautify public spaces. Instead of seeing the luminaire simply as the "packaging" of the lamp, the light source and housing are now closely integrated into a clear and unified design concept. With the four distinct designs, the Stela+ gen2 family has a shape to suit any specific application in a residential environment.

“

My town is serious about conserving the environment. The new street lighting really shows our commitment. **We lead by example.”**



**Stela+ gen2  
Square**

10/14/18 LEDs:  
post-top Ø 60 – 76 mm



**Stela+ gen2  
Wide**

24/36/52 LEDs:  
post-top Ø 60 – 76 mm



**Stela+ gen2  
Long**

10/14/18/24/30 LEDs:  
side-entry Ø 32 – 60 mm  
post-top Ø 60 mm



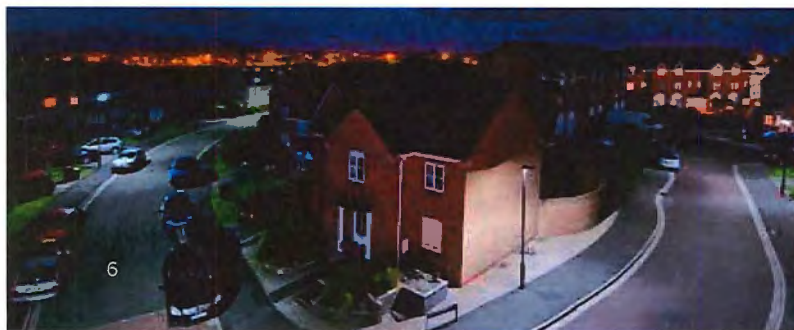
**Stela+ gen2  
Long**

10/14/18/24/30 LEDs:  
post-top Ø 60 – 76 mm



**Stela+ gen2  
Round**

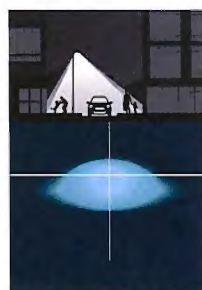
12/18/24/36/48 LEDs:  
post-top Ø 76 mm,  
incl. adapter Ø 60 mm



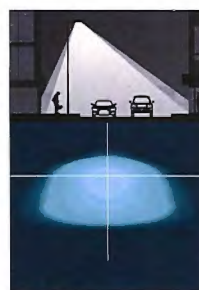
# Lighting performance

Stela+ gen2 offers great flexibility in terms of the lighting distributions and luminous flux used in different applications.

**Stela+ gen2 Wide and Square**



**NRN Distribution  
Narrow**



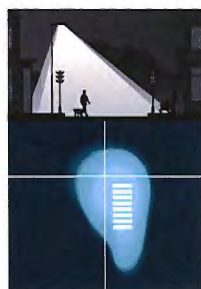
**SRN Distribution  
Medium**



**WRN Distribution  
Wide**



**DP-R Pedestrian  
crossing RHD**  
• Right-hand drive



**DP-L Pedestrian  
crossing LHD**  
• Left-hand drive



**MRN Distribution  
ME5-6**

**Stela+ gen2 Long**



**NRN Distribution  
Narrow**



**SRN Distribution  
Medium**



**WRN Distribution  
Wide**

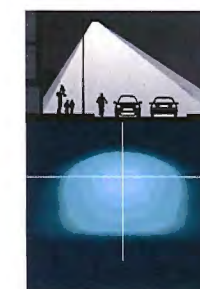


**DP-R Pedestrian  
crossing RHD**  
• Right-hand drive

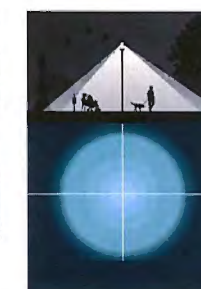


**DP-L Pedestrian  
crossing LHD**  
• Left-hand drive

**Stela+ gen2 Round**



**WRN Distribution  
Wide**  
• Road distribution



**WRN Distribution  
Wide**  
• Area distribution



# Applications

## A high degree of flexibility

The Stela+ gen2 family incorporates four different luminaire shapes that offer design continuity throughout the area. This creates a harmonious and consistent image in a town or city. Even at night, we help to enhance this urban image – the different lens optics work together to create a powerful light

distribution that suits a variety of areas and is still uniform and comfortable. Specialized optics are available for applications such as pedestrian crossings, further maximizing the harmonious city lighting. In summary, through its integrated design, Stela+ gen2 effectively offers a one-stop solution for city lighting:

### Traffic route

- Boulevard & avenue
- Main urban/access road
- Roundabout

### City Center

- Boulevard & avenue
- Side street
- Square, park & playground
- Roundabout
- Cycle path & footpath
- Shopping & pedestrian area
- Parking area
- Public transport area

### Residential area

- Residential street
- Cycle path & footpath
- Roundabout
- Square, park & playground
- Parking area



With easy-to-use L-Tune software, you can tailor the flux to whatever is required for the job in hand. Valuable energy is saved by avoiding overlighting. Constant Light Output (CLO) maintains the required flux over the lifetime of the luminaire, significantly increasing energy savings. And when dimming options are included, the annual running costs are reduced even further. Stela+ gen2 offers you the possibility of optimizing your TCO and investment according to your requirements.

The Stela+ gen2 family is part of our functional lighting solutions portfolio for urban streets and areas. This application focuses primarily on minor traffic routes and the outdoor places where we live, spend our time, socialize, etc. Stela+ gen2 offers cities sustainable and energy-efficient lighting that also improves safety and visual comfort along streets and in residential areas – and it does this with minimal environmental impact.

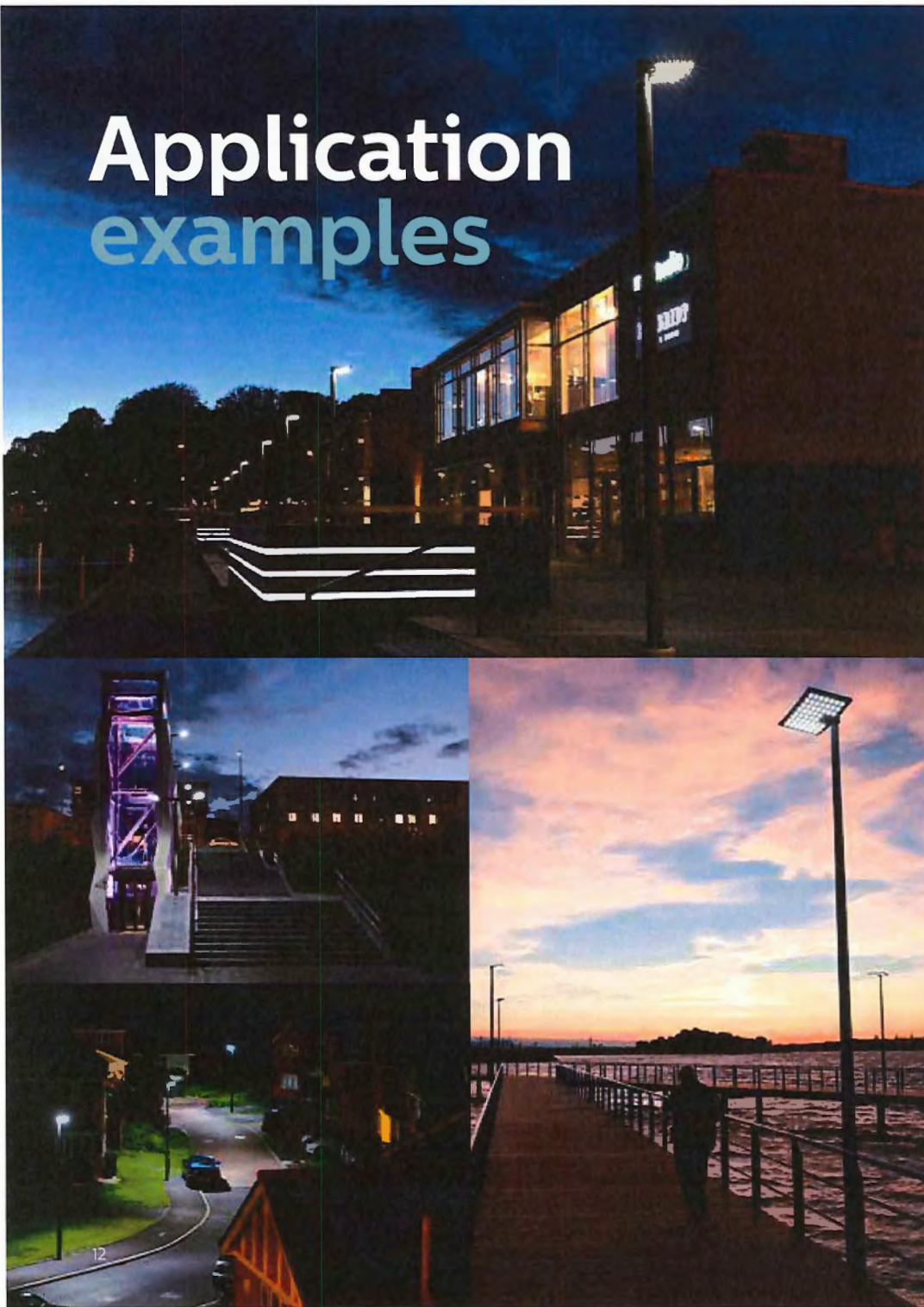
Public lighting

Stela+ gen2

Applications



# Application examples



Public lighting

Stela+ gen2

Applications examples

The situations shown represent some typical applications in the outdoor environment. The road geometry used in these examples is shown in the sketches. In the event of point-for-point replacement of luminaires in an existing installation, the Philips TCO calculator is a valuable tool for getting a first impression of potential savings. You can access the TCO tool via the Philips website or consult your Philips representative to see what savings Stela+ gen2 can offer you. Using L-Tune will provide important input that can be applied in the TCO tool.

## Cycle path

**Stela+ gen2 Square 14 LEDs**

**Light distribution: NRN**

Class: S4

Source: 1,850 lm/NW CLO

Spacing: 43.5 m

System power: 17 W (average)



## Residential medium street

**Stela+ gen2 Long 30 LEDs**

**Light distribution: SRN**

Class: CE4

Source: 3,600 lm/NW CLO

Spacing: 26.5 m

System power: 31 W (average)



## Residential wide street

**Stela+ gen2 Square 18 LEDs**

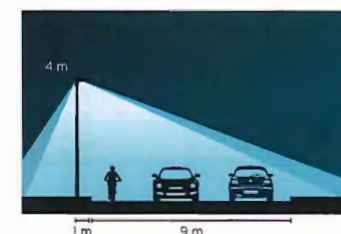
**Light distribution: WRN**

Class: S5

Source: 2,250 lm/NW CLO

Spacing: 34 m

System power: 20 W (average)



## Square

**Stela+ gen2 Round Area 36 LEDs**

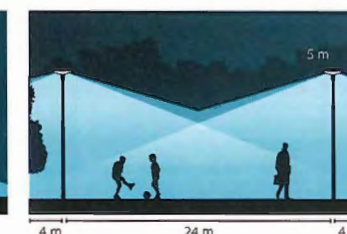
**Light distribution: WRN**

Class: CE5

Source: 4,450 lm/NW CLO

Spacing: 24 m

System power: 36 W (average)





















# Features

## Standard LED configuration patterns

We can use situation-based technical light calculations to define the required flux, using the many lens optics available to make the luminaire optimally suited for the job in hand. To determine the desired combination of product lifetime and power consumption, we use the flux values as input for the L-Tune software. This even applies when high maintenance factors are involved. Depending on your project's needs and requirements, the combination selected will be somewhere on the continuum from minimizing the initial investment to optimizing the TCO. L-Tune will show you all possible combinations in between.

Number of LEDs	Stela+ gen2 Square	Stela+ gen2 Wide	Stela+ gen2 Long	Stela+ gen2 Round
10 →				
12 →				
14 →				
18 →				
24 →				
30 →				
36 →				
48 →				
52 →				

## Mounting

### Stela+ gen2 Square / Wide

Suitable for post-top mounting Ø 60 mm and Ø 76 mm. When installed on a Ø 60 mm post-top, an aesthetically pleasing adapter is used.

Adapter for post-top Ø 60 mm



### Stela+ gen2 Long

Features a universal spigot for side-entry Ø 32-60 mm and post-top Ø 60 mm. The spigot can easily be put in either post-top or side-entry position by changing the fixation of the two spigot bolts. For post-top Ø 76 mm a dedicated spigot is available.



## Pole mounting

Simple attachment to the pole with two M10 bolts (optional anti-theft bolts available)

Simple attachment to the pole



## Tilt angle

### Stela+ gen2 Long

In Stela+ gen2 Long the DIRECTA lenses have a built-in tilt angle of 10° post-top and 0° side-entry. To optimize the light distribution for varying road geometrics, the tilt angle can be adjusted.

- Post-top +5° and +10°
- Side-entry +5°, +10°, +15° and +20°

The tilt angle can easily be adjusted by loosening the two bolts on the outside of the spigot, putting the spigot at the required angle and fastening the bolts.



### Stela+ gen2 Round

The standard spigot version is Ø 76 mm. When installed on a Ø 60 mm post-top, an aesthetically pleasing adapter is used. The playful design detail in the spigot (standard color Futura Gris 900 Sablé) hints at the classical T-shaped luminaires for conventional lamp sources.

The spigot can also be ordered in Futura Gris 150 Sablé to create a two-tone look.





# Technology

## The DIRECTA LED optical technology

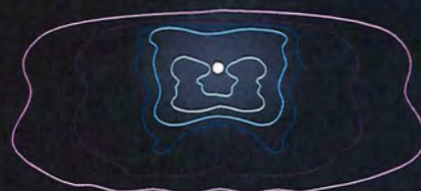
DIRECTA lens technology provides a much higher light output ratio than conventional luminaires.

### The DIRECTA lens

The DIRECTA lens is designed to distribute the light in a very effective way, exactly hitting the surface to be lit with low glare. It makes for a somewhat rectangular light distribution.

### Typical extra energy saving potential between original Stela and Stela+ gen2

Version	Flux (NW)	Stela (W)	Stela+ gen2 with CLO (W-Av)	Energy saving (%)
Square 10 LED	1,250	14	10	28%
Square 14 LED	1,750	18	13	27%
Square 18 LED	2,250	22	17	22%
Long 24 LED	3,000	29	22	24%
Long 30 LED	3,700	36	26	27%
Wide 36 LED	4,400	42	28	33%
Wide 52 LED	6,350	62	42	32%



The design of Stela+ gen2 and DIRECTA technology also ensure that barely any light is emitted above the horizon, so that unnecessary light pollution is prevented.

### Conventional luminaire

Existing light technology  
Reflector: loss 10% - 15%  
(Bowl) protection: loss 10%  
Shadow-producing parts: loss 10%

#### Result

Triple optics:  
Lamp + reflector + protection  
Luminaire output: 65% - 80% max.

### Stela+ gen2

DIRECTA lens technology  
REVOLED: loss 6% - 10%

#### Result

Dual optics:  
Lamp (LED) + lens  
Luminaire output: 90% - 94%

Less light pollution

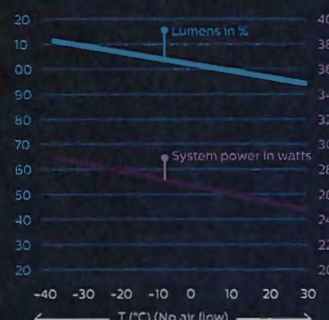


### DIRECTA light performance

All Stela+ gen2 luminaires except Stela+ gen2 Round are installed at an angle of 10° which makes for less obtrusive light to the rear. This is especially important in today's urban-designed profiles in which buildings and poles are often positioned closer together. For many existing buildings, this can also help reduce complaints about street light bleeding into dwellings.

## REVOLED technology

REVOLED technology has been developed to respond to the high importance society attaches to energy saving and reducing CO<sub>2</sub> emissions. The technology consists of the innovative COO-LED and DIRECTA technical concepts. The use of white high-power LEDs helps to achieve considerable energy savings and CO<sub>2</sub> reduction – not only in new installations but also in point-for-point replacement, all while meeting the required lighting standards. Further improvements can be achieved by using CLO and/or various dimming options, making Stela+ gen2 a highly versatile tool to help you achieve your targets.

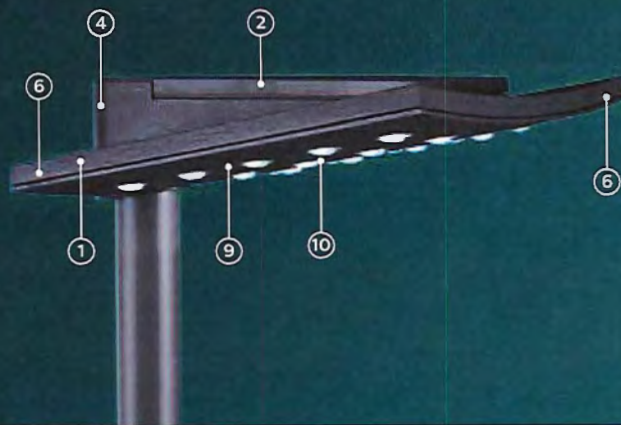


## COO-LED thermal management

As the light performance of LEDs depends heavily on their operating temperature, optimum cooling is key. This is why a large cooling surface is an integral part of the Stela+ gen2 design. The LEDs are installed directly in the luminaire housing. The smooth surface also provides excellent drainage and makes it easy to clean the luminaire, further optimizing the cooling process. LEDs operated at low drive currents offer the best efficiency (lumen/watt ratio). LEDs operated at high drive currents minimize investment. Either option, or a compromise depending on your specific needs, is possible with Stela+ gen2. Using the L-Tune software makes it possible to tune the luminaire properties by choosing the required flux, maintenance factor and life expectancy requirements for your project. As a result, the software suggests possible solutions to choose from, with a higher or lower number of LEDs and higher or lower power consumption.

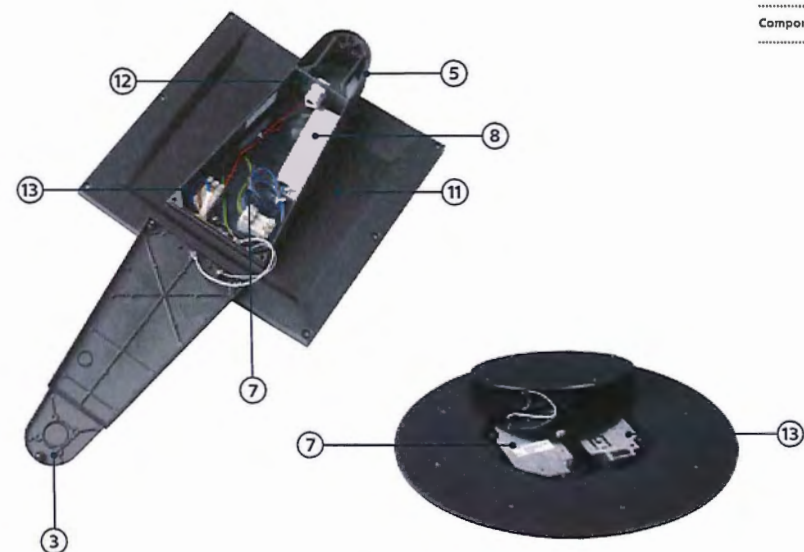


# Components



1. An extremely corrosion-resistant housing made of die-cast aluminum (LM6 quality), painted in Futura Gris 900 Sablé (anthracite) and fastened with stainless-steel screws.
2. The gear cover is made of die-cast aluminum (LM6 quality), painted in Futura Gris 900 Sablé. It is captively attached to the housing after opening.
3. Opening/closing is only needed for incidental driver replacement (the light source is sealed for life). The driver compartment is easily accessible once the screws in the gear cover are removed.
4. A spigot made of die-cast aluminum (LM6 quality), painted in Futura Gris 900 Sablé. Stela+ gen2 Square, Wide and Round post-top has Ø 76 mm; a special adapter for Ø 60 mm is available. Stela+ gen2 Long has Ø 60 mm for post-top or Ø 34-60 mm for universal side-entry. The dedicated spigot with Ø 76 mm is for post-top only.

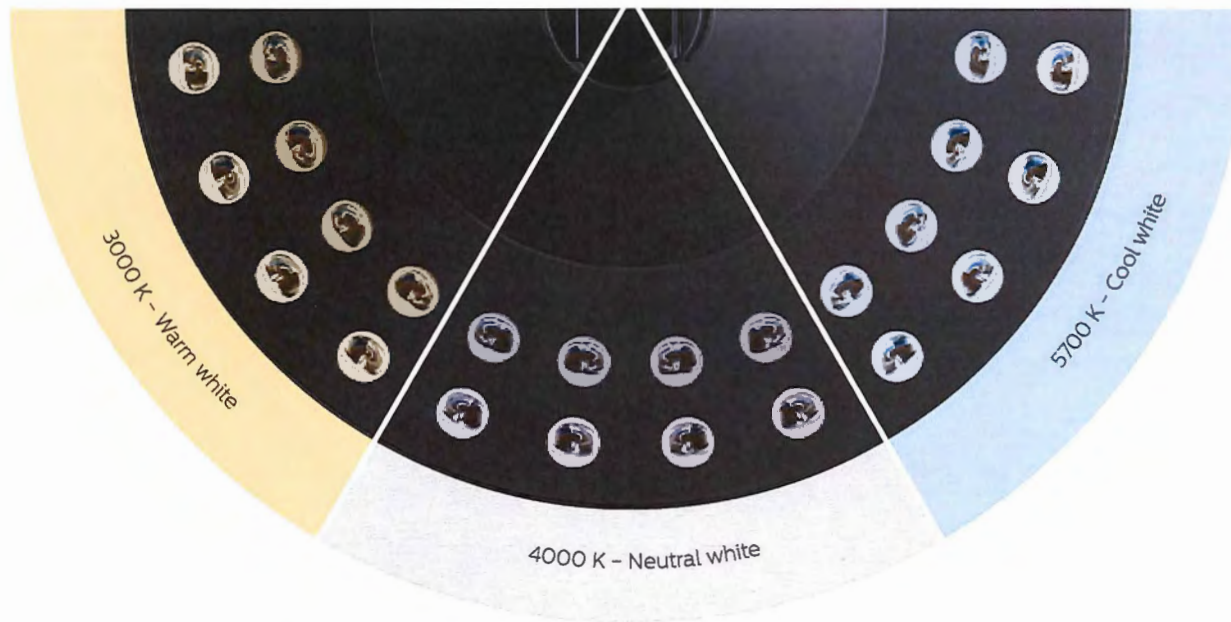
5. The mounting uses two M10 stainless-steel bolts. (Extra-long bolts for small-size side-entry diameters can be ordered with the luminaire).
6. The gaskets are made of weather-resistant material. This seals the upper and lower frames, and protects the driver compartment and lenses against ingress. Overall ingress protection is IP66. All screws for assembly of the upper/lower frame and driver compartment are outside the IP66 area.
7. The gear tray is made of galvanized steel plate, mounted to the bottom of the driver compartment, on top of the housing. Disconnection is easy, by plug and socket.
8. Programmable Philips LED driver(s) are mounted on the gear tray. Through the L-Tune software, you can choose an energy-saving CLO operation as well as flux tuning (to optimize operation). The dimming options include DynaDimmer, LineSwitch, CityTouch Ready and StarSense RF.



9. LEDs  
In order to obtain the light output required to meet current and future lighting standards in road and amenity lighting, only LED binning of high-quality, high-power white LEDs with high lumen output from respected top-quality LED manufacturers is used. Please note that lumen output is subject to constant improvements. To meet the differentiated needs and preferences in road and amenity lighting applications, the Stela+ gen2 range offers three different Kelvin light colors:  
- Cool white: 5700 K (highest energy efficiency)  
- Neutral white: 4000 K  
- Warm white: 3000 K
10. Optics DIRECTA lens technology  
- Identical transparent impact-resistant lenses are used for each individual LED, guaranteeing that the original light distribution is maintained in the event of incidental LED failure (overlay principle).  
- The light distribution is optimized for road widths. This ranges from a standard medium distribution to lenses optimized for wide roads or narrow streets/paths – or, in the Stela+ gen2 Round Area version, for city squares (symmetrical distribution).

- Minimal backward obtrusive light, light pollution and glare (up to G3).
- The luminaire shape is slightly curved, for optimal orientation and guidance.

11. COO-LED thermal management principle  
- The flat, smooth and freely draining upper frame forms a large cooling area.  
- Tunable LED operation (through L-Tune) for optimal light output/power consumption ratio.  
- The prolonged LED life expectancy matches normal luminaire service lifetime (20-25 years), eliminating the need for lamp replacement.
12. Cable connection M20 gland  
(cable entry is 10-14 mm, with strain relief).
13. The standard electrical connection cable is connected to a plug/socket on the gear tray in the gear compartment. The NEMA versions (except Round) can optionally be connected in the spigot (the plug is included in delivery). Insulation Classes I and II are available (Class I operates through a connection to the earth terminal in the driver compartment).



Public lighting  
.....  
Stela+ gen2  
.....  
In perspective  
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#### Stela+ gen2 Square

10 - 18 LEDs  
Is suitable for mounting heights  
of 4-6 m post-top.

#### Stela+ gen2 Wide

24 - 52 LEDs  
Is suitable for mounting heights  
of 5-8 m post-top.

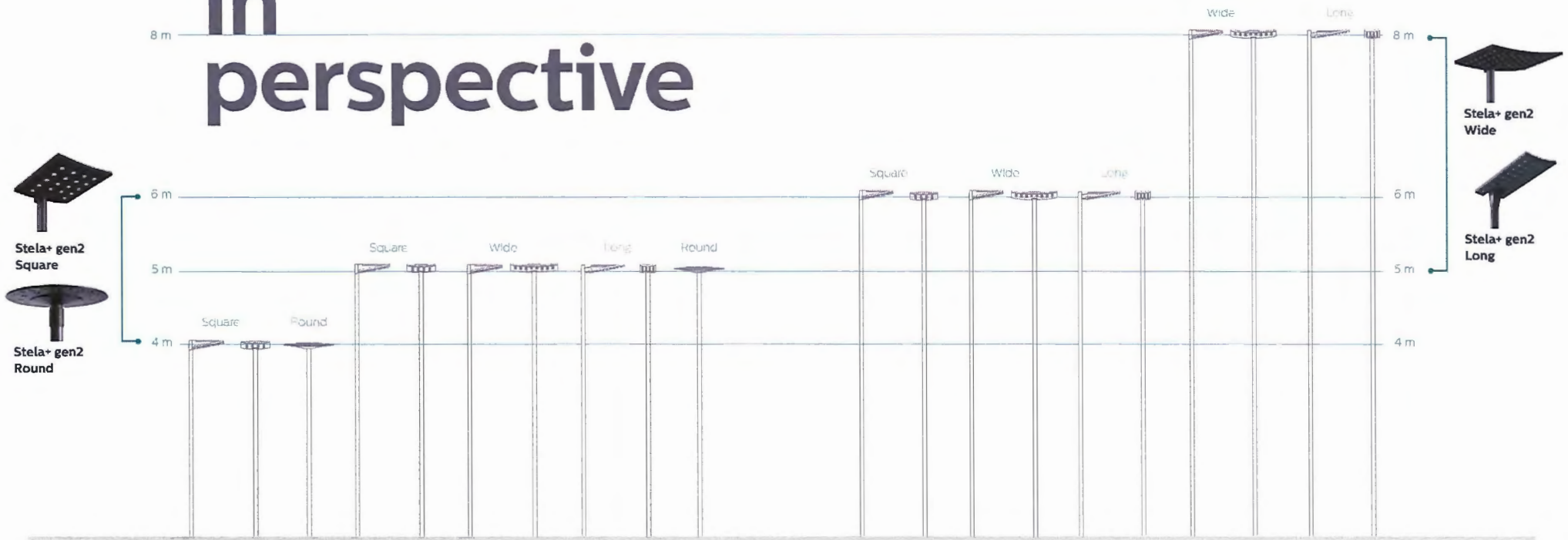
#### Stela+ gen2 Long

10 - 30 LEDs  
Is specifically suited for side-entry,  
but also for post-top mounting  
at heights of 5-8 m.

#### Stela+ gen2 Round

12 - 48 LEDs  
Is suitable for mounting heights  
4-5 m post-top.

# In perspective

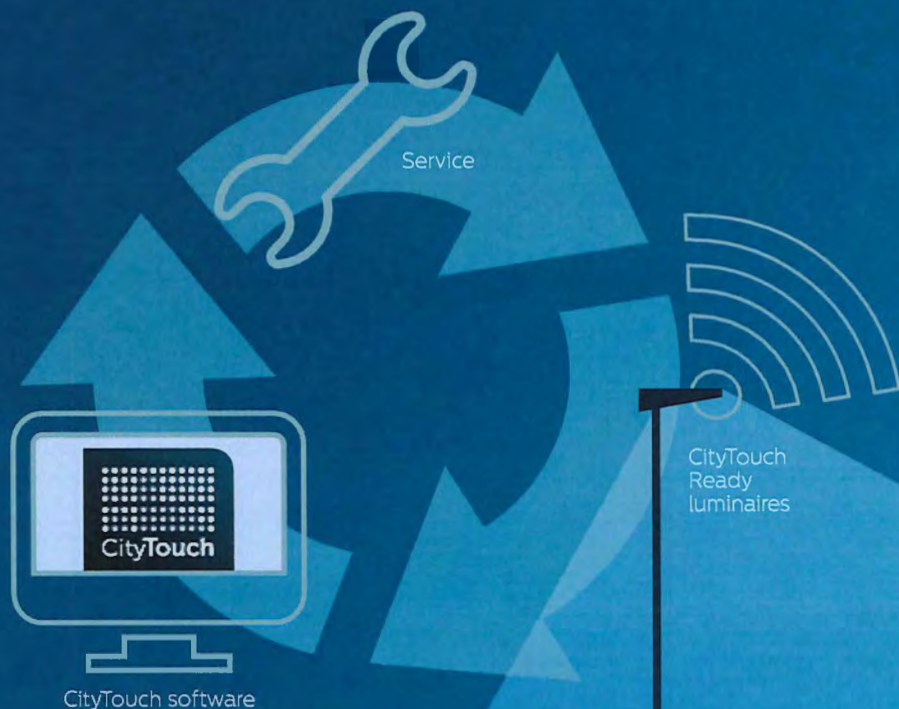




# Stela+ gen2 in control

Lighting city streets, roads and public spaces presents many challenges. Due to traffic density and different traffic levels, the dynamics of city life change constantly.

To respond to those changes and make the city feel safe, attractive and inviting, you need the right levels of lighting. But urban planners are also under pressure to reduce energy costs and maximize the city's green credentials. Philips offers you a complete intelligent lighting controls range that helps you overcome all those problems and makes the city more livable and sustainable.



## Connected lighting

### CityTouch Ready luminaires

Stela+ gen2 can be seamlessly connected to CityTouch software via CityTouch connect app (remote management), with all the intelligence being integrated into the luminaire without the need for any additional hardware. Communication runs directly via the public mobile network. An additional advantage is that you are not required to perform any maintenance. Furthermore, the entire connectivity management is covered by the service we provide, ensuring there is no hassle for you, the customer. Once connected to the power supply, a light point automatically

appears on the CityTouch map at the right location – with all the relevant technical parameters imported into the system.

CityTouch connect app is an intelligent, interactive remote management solution for street lighting. It brings your city lighting to life and offers you flexibility, information and accuracy. The system's flexibility enables you to respond easily to expected and unexpected situations by dimming or brightening any of the areas within your city to ensure safety and well-being. Information keeps you up to date on the

current status of every single luminaire, facilitating more effective maintenance and faster repairs. And accurate energy metering gives you a precise overview of actual energy consumption.

Stela+ gen2 Round is not available as CityTouch Ready luminaire.

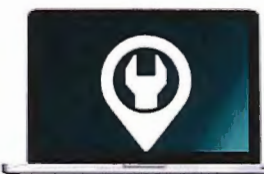


### CityTouch connect app key features



#### Control of each individual light point

You have the flexibility to adjust every single luminaire to changing situations or requirements at any time. You can adjust calendars to suit your individual needs simply by changing the switching points of each dimming profile via drag and drop.



#### Fault detection and notification

Faster and better provision of information about the current status of the lighting infrastructure enables you to address maintenance issues more quickly and to improve the maintenance service level.



#### Accurate energy metering

Accurate energy metering for each individual luminaire enables you to monitor your energy bills and to identify potential new savings.



# Network controls

## Starsense Wireless with RF antenna

Starsense Wireless is a networked control system based on two-way wireless communication using the latest in mesh network technology. The system enables individual light points to be controlled remotely and to be managed via online platforms like CityTouch.

Lighting operators can control the public lighting infrastructure remotely, setting dimming levels to achieve considerable energy savings. Also, they get real-time feedback from the luminaires, reducing operating and maintenance costs via accurate scheduling of on-site maintenance service tasks, while improving both the quality and reliability of public lighting.



# Stand alone controls

## LumiStep control

An integrated control system available in the Philips driver, which lowers the light source's flux and the power consumed over a period of 6 or 8 hours (two pre-programmed versions). The potential energy savings (on power system) are up to 25%, depending on the luminaires and light source used.



## DynaDimmer control

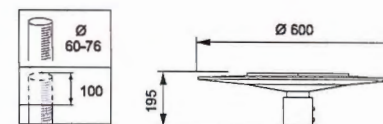
An integrated control system included in each light point. It is operated on electronic equipment and can be integrated into the Philips driver. It can apply 5 levels of power, (re)definable in terms of level and duration, per chosen light point. An average energy saving of approximately 50% per year can be realized.



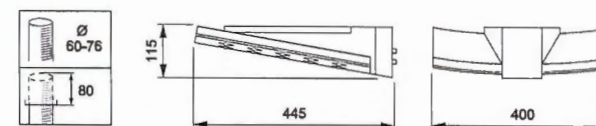
# Dimensional drawings

Public lighting  
Stela+ gen2  
Dimensional drawings

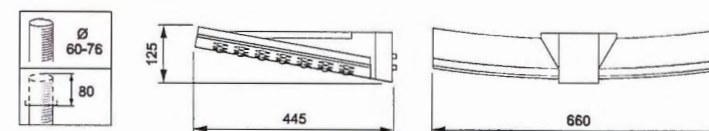
## Stela+ gen2 Round



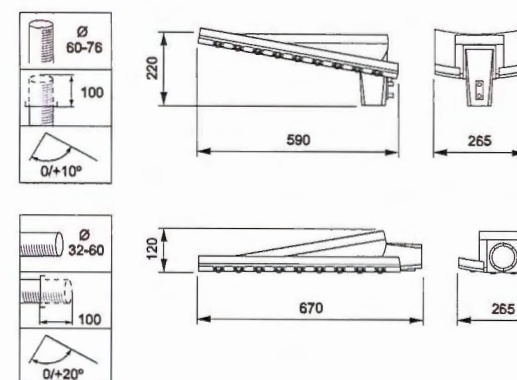
## Stela+ gen2 Square



## Stela+ gen2 Wide



## Stela+ gen2 Long





## Main specifications

Product features	Specifications
<b>Type</b>	BPP610 Stela+ gen2 Round Road BPP611 Stela+ gen2 Round Area BPP612 Stela+ gen2 Wide BPP614 Stela+ gen2 Square BPP616 Stela+ gen2 Long
<b>Light source</b>	Integrated LED module
<b>Power</b>	Variable, consult L-Tune Ranging from 8 to 119 W, depending on LED configuration and color temperatures
<b>Luminous flux</b>	Tunable, consult L-Tune Ranging from 750 lm (10 WW LEDs) to 13,250 (52 CW LEDs)
<b>Luminaire efficacy</b>	Variable, depending on tuning In NW, approximately between 102 and 125 lm/W
<b>Correlated color temperature</b>	3000 K (warm white, WW), 4000 K (neutral white, NW), 5700 K (cool white, CW) typical
<b>Color rendering Index</b>	WW: $\geq 80$ , NW: $\geq 75$ , CW: $\geq 70$
<b>Maintenance of lumen output-L80P10</b>	Variable, choice made via L-Tune calculation Typically between 70,000 and 100,000 hours at 25 °C
<b>Operating temperature range</b>	-20 to +35 °C
<b>Driver</b>	Integrated programmable LED driver
<b>Power/data supply</b>	Philips Xitanium Prog+
<b>Control system input</b>	1-10 V or DALI
<b>Intelligent control</b>	SDU-LineSwitch, LumiStep, DynaDimmer, Starsene RF Wireless, CityTouch Ready
<b>Options</b>	Constant Light Output (CLO), also possible in combination with dimming Class II versions: Mini photocell or NEMA socket Factory-fitted cable
<b>Optics</b>	NRN (Distribution Narrow) SRN (Distribution Medium) WRN (Distribution Wide) DP-R (Pedestrian crossing RHD) DP-L (Pedestrian crossing LHD) MRN (Distribution ME5-6)
<b>Optical cover</b>	PMMA clear
<b>Material</b>	High-pressure die-cast aluminum (LM 6)
<b>Color</b>	Standard: Akzo Futura Gris Sablé 900 Other RAL or Akzo Futura colors available on request
<b>Connection</b>	Plug & socket connector
<b>Maintenance</b>	Easily exchangeable gear tray including drivers
<b>Installation</b>	Square/Wide and Round: post-top mounting, $\varnothing$ 76 mm, suitable for $\varnothing$ 60 mm, including adapter Long: post-top mounting, spigot $\varnothing$ 76 mm or spigot $\varnothing$ 60 mm, side-entry mounting, universal $\varnothing$ 32-60 mm
<b>Surge protection</b>	4 kV as standard, 10 kV by optional SPD
<b>Cable gland</b>	M20 with strain relief, cable 10-14 mm
<b>Accessories</b>	Dedicated adapter for Square/Wide or Round reducing from $\varnothing$ 76 mm to $\varnothing$ 60 mm
<b>Warranty</b>	Silver 5 years as standard, extended warranty can be requested
<b>Inrush current driver</b>	40 W: 65 A/100 $\mu$ s; 75 W: 80 A/150 $\mu$ s; 100 W: 80 A/150 $\mu$ s; 150 W: 118 A/140 $\mu$ s
<b>IP</b>	IP66
<b>IK</b>	IK10 housing, IK06 lenses
<b>Weight &amp; windage (m²)</b>	Square: 5-6 kg - 0.04 m² Wide: 8-9 kg - 0.06 m² Long: 7-8 kg - 0.05 m² Round: 7-8 kg - 0.05 m²

## Specification table

Luminaire version	Product family code	No. LEDs	WW Source flux (lm) Min - Max	NW Source flux (lm) Min - Max	CW Source flux (lm) Min - Max	System power (W)
Stela+ gen2 Round	BPP610	12	900-2,550	1,000-2,900	1,100-3,100	10-29 W
	BPP611	18	1,350-3,800	1,500-4,350	1,650-4,650	14-43 W
		24	1,800-5,050	2,050-5,800	2,150-6,200	19-56 W
		36	2,650-7,600	3,050-8,650	3,250-9,250	24-82 W
Stela+ gen2 Square	BPP614	48	3,550-10,150	4,050-11,550	4,350-12,350	33-110 W
		10	750-2,100	850-2,400	900-2,550	8-25 W
		14	1,050-3,000	1,200-3,400	1,250-3,650	11-34 W
Stela+ gen2 Wide	BPP612	18	1,350-3,850	1,550-4,350	1,650-4,650	14-43 W
		24	1,750-5,000	2,000-5,750	2,150-6,150	18-56 W
		36	2,650-7,550	3,000-8,600	3,250-9,200	24-81 W
		52	3,800-10,900	4,350-12,400	4,650-13,250	35-119 W
Stela+ gen2 Long	BPP616	10	750-2,150	850-2,450	900-2,600	8-25 W
		14	1,050-2,950	1,200-3,350	1,250-3,600	11-34 W
		18	1,350-3,800	1,500-4,350	1,650-4,650	14-43 W
		24	1,800-5,050	2,050-5,800	2,150-6,200	18-56 W
		30	2,200-6,350	2,550-7,200	2,700-7,700	23-69 W





**PHILIPS**

*Luma*

Public lighting



Product guide

# Lighting on the move



# Luma

## Keeping up with the city's heartbeat

Cities change from hour to hour and day to day. Streets, roads and public spaces bustle with life 24/7. Street lighting presents special challenges when taking into account the often rapid changes in traffic density and traffic levels. The right lighting infrastructure makes it easier for you to keep up with city life's ever-changing dynamics, and gives you the opportunity to create an attractive urban environment where people feel safe and welcome. The Luma range provides all of this, and a little more. It allows you to keep up with your city's heartbeat.





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Complete sets

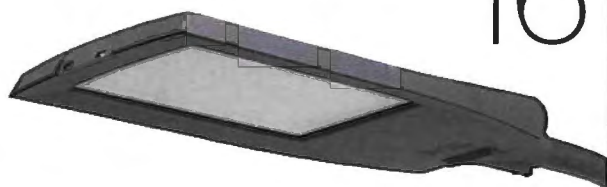
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Main specifications  
Specification table





“

Let the streets  
**come alive”**



# LED lights the way

City planners think big when it comes to lighting. In cities where human activity is everywhere it is important to guide traffic down well-lit roads. Technical infrastructure is a major long-term investment and when you're planning ahead the lifetime costs of the lighting system need to be considered. Additionally public lighting requires energy consumption, so the more energy-efficient and sustainable the better it is.

The Luma range by Philips checks all these boxes: compromise-free LED lighting that offers high-performance illumination for real-world lighting needs. This affordable alternative to existing conventional lighting solutions generates big energy savings and minimizes maintenance costs. It covers the complete field of illuminance (S) and luminance (ME) lighting classifications, up to ME1.

## Tailored to your needs

The Luma family includes five separate sub-ranges for specific applications, all of which work seamlessly together to give your city a coherent and consistent "light signature":

- Luma 3 is the largest (with up to 200 LEDs per luminaire) and is suitable for highways and other settings that require powerful high-elevation lighting
- Luma 2 is slightly smaller (up to 120 LEDs); it is the perfect solution for heavy-usage urban traffic routes

- Luma 1 (up to 80 LEDs) scales down to applications along smaller residential or suburban streets
- Luma Mini (up to 40 LEDs) had more compact and elegant design – a perfect fit for lower installation heights like footpaths and bicycle lanes
- Luma Micro (up to 20 LEDs) is the smallest and newest member of the family; it enables high-resolution lighting in very small spaces like alleyways and side streets

Each of these Luma versions can be outfitted with a variety of LED configurations and lens optics and has different tilt adjustment options. This built-in versatility can accommodate a variety of road and street geometries and adapt the distance between individual light posts to suit the environment, maximizing the spacing wherever possible. And as Luma uses Revolved technology, it has excellent thermal and optic characteristics, which further helps to reduce energy usage.



### Wide choice

Choice of lens optics to match international road and street geometries. Combination of lenses and tilt adjustment options ensure high project flexibility.



### Energy savings

Dedicated lumen packages deliver energy savings of over 50%, with a related reduction in CO<sub>2</sub> emissions.



### Fully programmable

To suit required lumen (consult L-Tune).



### Long lifetime

Low maintenance thanks to long life of LED light source.



# Family range

Luma features a completely flat design and Optiflux lens optics. This gives you perfect glare control and helps prevent vertical light pollution according to glare classifications up to G4.

## **Visual comfort along city streets**

The high-fidelity color rendering and exceptional lux uniformity will give your city streets a consistent look throughout. And to give the Luma family a more creative and inspirational appearance, you can combine it with the standard Philips pole and bracket portfolio.



“

I can create the perfect lighting  
**for every street –  
and it's all Luma!”**







## Luma Micro

Post-top Ø 76 mm



## Luma Micro

Side-entry Ø 32-60 mm  
 Post-top Ø 60 mm



## Luma Mini

Post-top Ø 76 mm



## Luma Mini

Side-entry Ø 32-60 mm  
 Post-top Ø 60 mm



## Luma 1

Post-top Ø 76 mm



## Luma 1

Side-entry Ø 32-60 mm  
 Post-top Ø 60 mm



## Luma 2

Post-top Ø 76 mm



## Luma 2

Side-entry Ø 42-60 mm  
 Post-top Ø 60 mm



## Luma 3

Post-top Ø 76 mm



## Luma 3

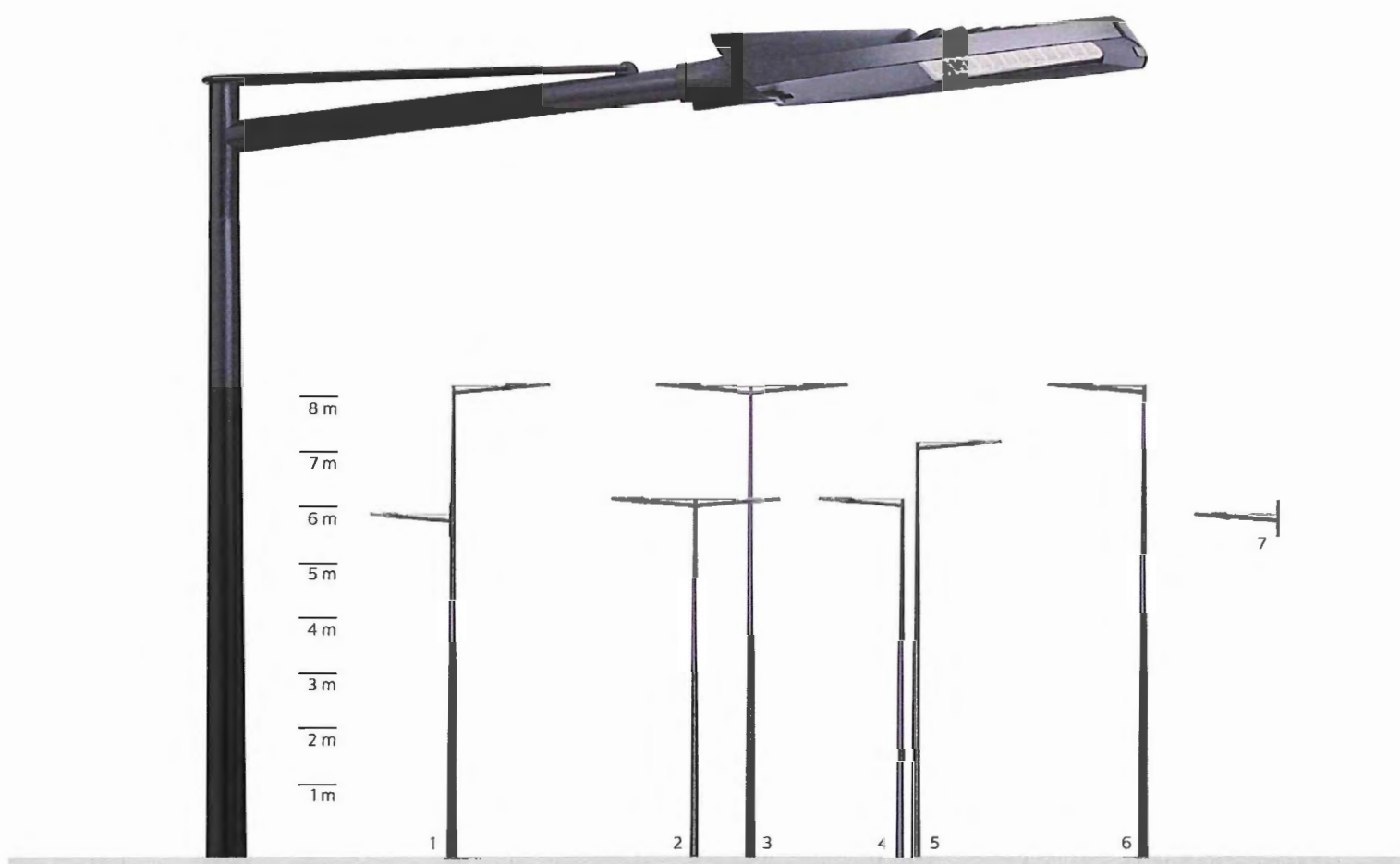
Side-entry Ø 42-60 mm  
 Post-top Ø 60 mm





# Complete sets

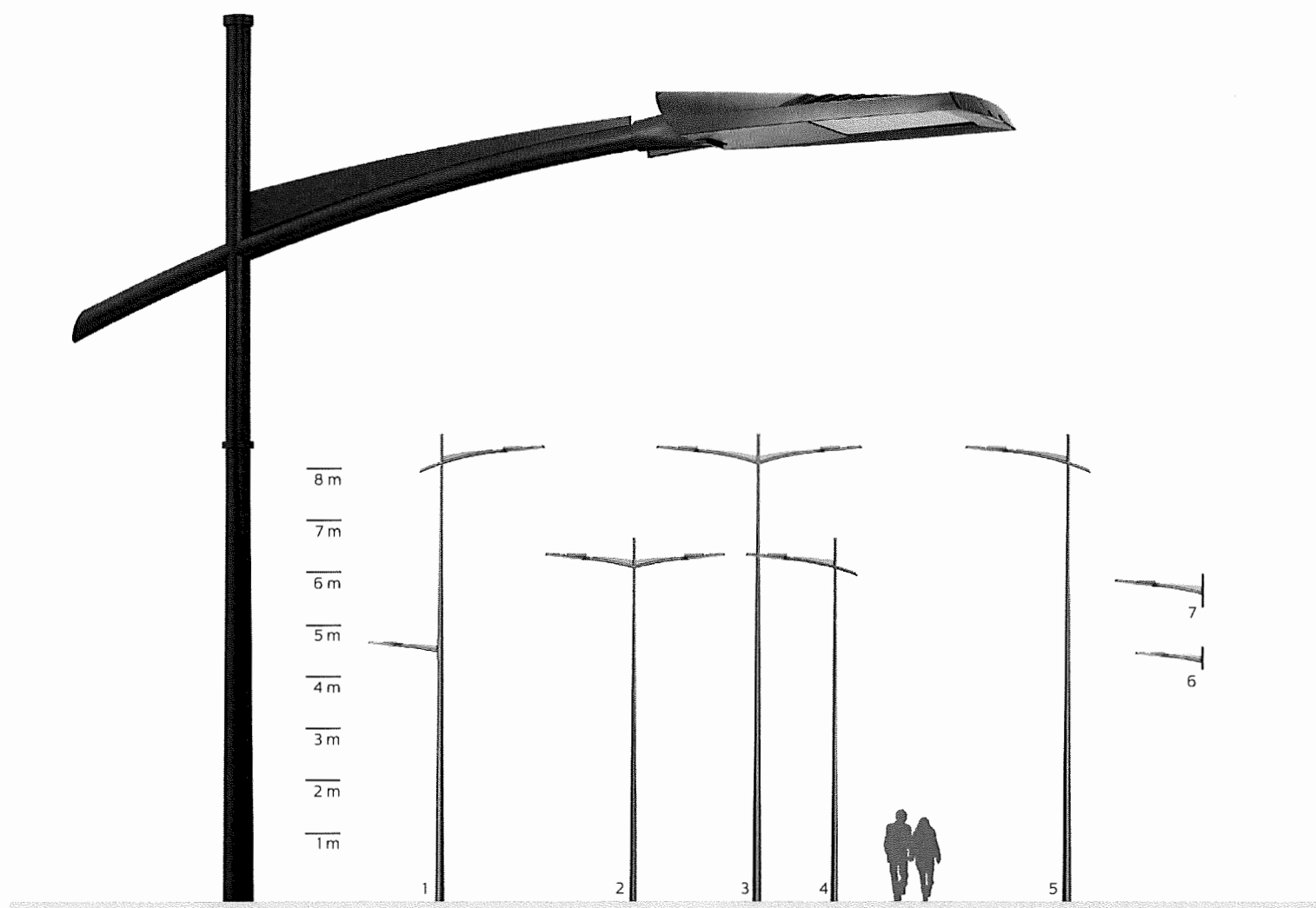
The Luma family can be combined with our standard pole and bracket portfolio to give it a more creative and inspirational appearance. Below some examples, but we have more complete set configurations available.



## Batio bracket

- 1** Luma 2 + Batio L980 bracket + Aloa/Accante pole + Luma Mini + Batio L660 rear bracket
- 2-4** Luma 1 + Batio L660 bracket + Aloa/Accante pole
- 3-6** Luma 2 + Batio L980 bracket + Aloa/Accante pole
- 5** Luma 1 + Batio L980 bracket + Aloa/Accante pole
- 7** Luma Mini + Batio L980 wall bracket





## Spline bracket

- 1** Luma 2 + Spline L1645 bracket + Aloa/Accante pole + Luma Mini + Spline L1485 rear bracket
- 2-4** Luma 1 + Spline L1485 bracket + Aloa/Accante pole
- 3-5** Luma 2 + Spline L1645 bracket + Aloa/Accante pole
- 6** Luma Mini + Spline L1485 wall bracket
- 7** Luma 2 + Spline L1645 wall bracket



# Lighting performance

The Luma range is flexible and can be used in many applications, thanks to its variety in lighting distributions and luminous flux.



**DM10 Distribution  
Medium**

- ME3 (to ME6) and CE class for road and street lighting



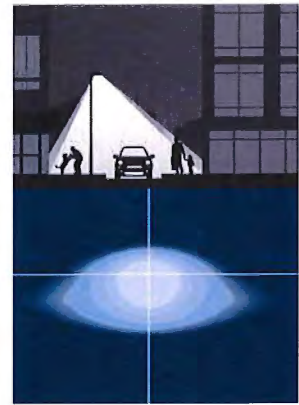
**DM11 Distribution  
Medium for larger areas**

- ME3 (to ME6) and CE class for road and street lighting



**DN10 Distribution  
Narrow**

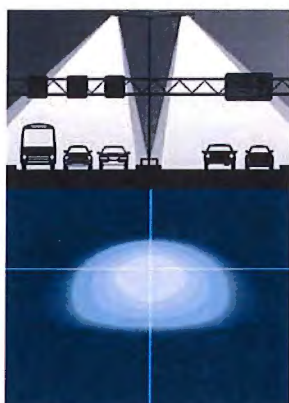
- ME class for road and street lighting



**DN11 Distribution Narrow  
for narrower areas**

- ME class for road and street lighting





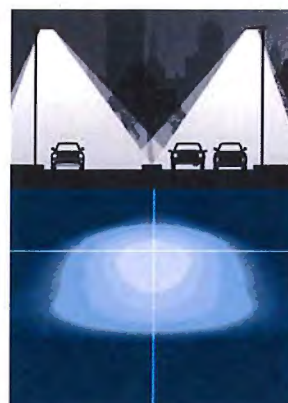
**R1 Distribution  
Medium for comfort**

- MEI-2 class for road lighting (TI<10)



**R2 Distribution  
Narrow**

- ME class for road and street lighting



**R3 Distribution  
Medium**

- ME3 (to ME6) class for road and street lighting



**R4 Distribution  
Medium**

- CE and S class for street and path lighting



**R5 Distribution  
Wide**

- CE and S class for street and path lighting



**R6 Distribution  
Extra Wide**

- S class for street and path lighting



**R7 Distribution  
Narrow**

- S class for street and path lighting



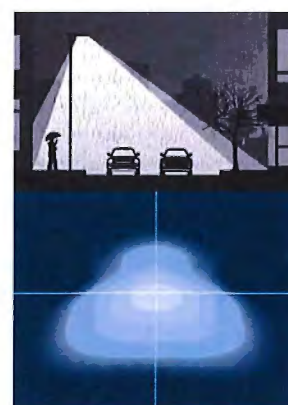
**R8 Distribution  
Pedestrian Crossing Right**

- Lighting of pedestrian crossing for right arrangement



**R9 Distribution  
Pedestrian Crossing Left**

- Lighting of pedestrian crossing for left arrangement



**R10 Distribution Medium  
for wet road conditions**

- MEW class for road lighting



# Applications

## A high degree of flexibility

The Luma Micro/Mini has a very elegant and compact appearance. This design character, combined with a range of optics, makes it very suitable for relatively lower installation heights on streets in residential areas and city centers.

Luma 1 combines the evident modern design of the Luma range with a relatively compact size for residential areas, industrial and transportation areas.

Luma 2 is clearly the modern LED alternative for all major urban traffic routes and larger industrial and transportation areas and Luma 3 is dedicated to major traffic routes outside the urban community, like highways and provincial roads.

### Sports

- Parking area

### City center

- Boulevard & avenue
- Pedestrian crossing
- Roundabout
- Side street
- Cycle path & footpath
- Parking area
- Public transport area

### Traffic route

- Boulevard & avenue
- Cycle path
- Parking area
- Provincial road
- Urban main/access road
- Highway & road lighting
- Countryside road
- Highway
- Pedestrian crossing
- Roundabout

### Area & Transportation

- Airport
- Harbor
- Parking area
- Public transport area
- Industrial area
- Petrol station
- Rail yard
- Waterway

### Residential area

- Cycle path & footpath
- Pedestrian crossing
- Roundabout
- Parking area
- Residential street













# Application examples

The situations shown represent some typical applications in the outdoor environment. The road geometry used in these examples is shown in the sketches.

In the event of point-for-point replacement of luminaires in an existing installation, the Philips TCO calculator is a valuable tool for getting a first impression of potential savings. The Total Cost of Ownership calculator tool from Philips allows you to easily compare the complete cost of alternative lighting solutions in comparison to your current lighting installation.

So that you are able to make well-considered decisions on long term sustainability and cost impact. You can access the TCO tool via the Philips website ([www.philips.com/outdoor-tco](http://www.philips.com/outdoor-tco)) or consult your Philips representative to see what savings Luma can offer you. Using L-Tune will provide important input that can be applied in the TCO tool.

## Highway

### High speed and traffic density

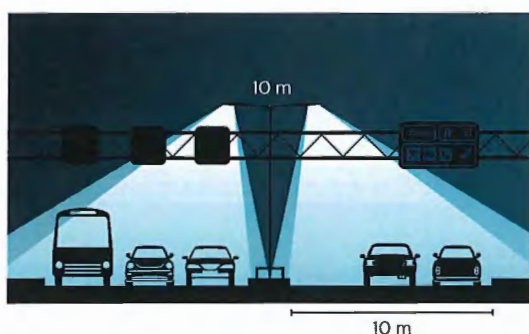
Light distribution: DM11

Class: M5

Source: GRN117

Spacing: 64 m

System power: 83 W



## Urban medium street

### Moderate density and mixed traffic

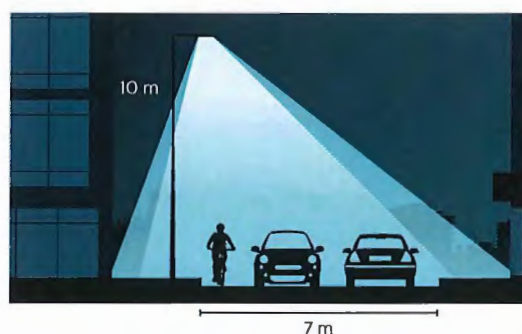
Light distribution: DN10

Class: M3

Source: GRN88

Spacing: 35 m

System power: 63 W





# Features

## LED configuration patterns

The Luma has an optimized lumen tuning performance which is build by different LED patterns in the LED board. This offers a wide range of lighting solutions.

### Luma Micro

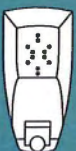


12 LEDs



20 LEDs

### Luma Mini



12 LEDs



20 LEDs

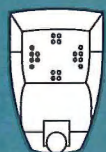


30 LEDs

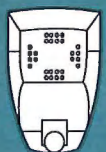


40 LEDs

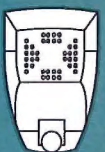
### Luma 1



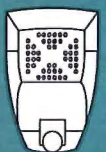
20 LEDs



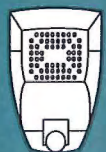
28 LEDs



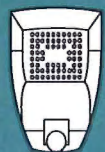
40 LEDs



48 LEDs



60 LEDs

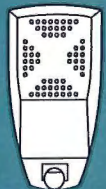


68 LEDs

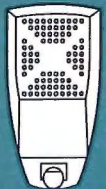


80 LEDs

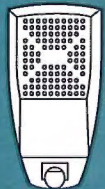
### Luma 2



60 LEDs



80 LEDs

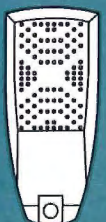


100 LEDs

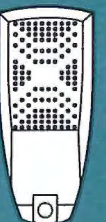


120 LEDs

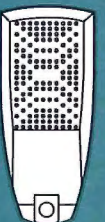
### Luma 3



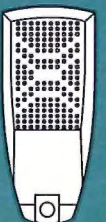
100 LEDs



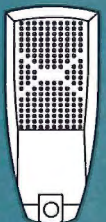
120 LEDs



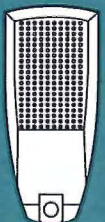
140 LEDs



160 LEDs



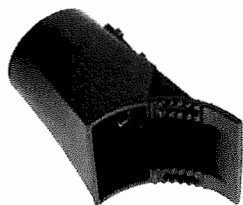
180 LEDs



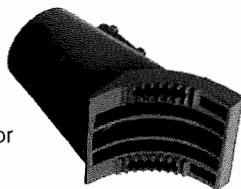
200 LEDs



## Spigot arrangements



Dedicated spigot for  
post-top Ø 76 mm.



Universal spigots for post-top Ø 42-60 (62) mm and side-entry Ø 42-60 mm. Easy to put in post-top or side-entry position by changing the spigot bolts fixation.

## Colors

Spigot as frame and closing clip as canopy. Other RAL or Futura colors on request, also possible to have duo-colors (spigot in same color as frame, closing clip in same color as canopy).



Futura Gris 900 Sablé



Futura Gris 150 Sablé

## Integral design

The real flat bottom view of the Luma is required to prevent any upward light. The curved lines of the luminaire together with the integrated closing clip and the post-top and side-entry spigots create a modern, robust though elegant character. The top of the

luminaire is an essential part of the thermal management concept. The rounded curved lines together with their deliberately chosen interdistance relative to their height, the drainage and cleaning of the luminaire is optimized.



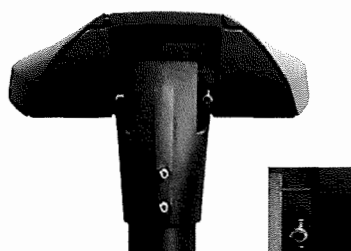
Top



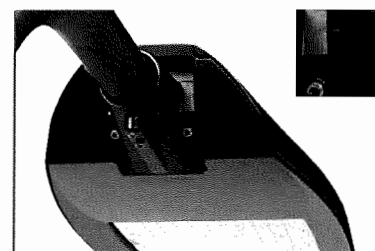
Bottom

## Tilt adjustments

To optimize the light distribution for varying road geometries and / or glare restrictions, various spigots are available on which the tilt angle can easily be adjusted, by positioning the two spigot bolts in the right setting (tilt angles clearly marked on the spigot).



**Post-top:**  
0, +5, +10 and +20 degrees



**Side-entry:**  
-20, -15, -10 and 0 degrees

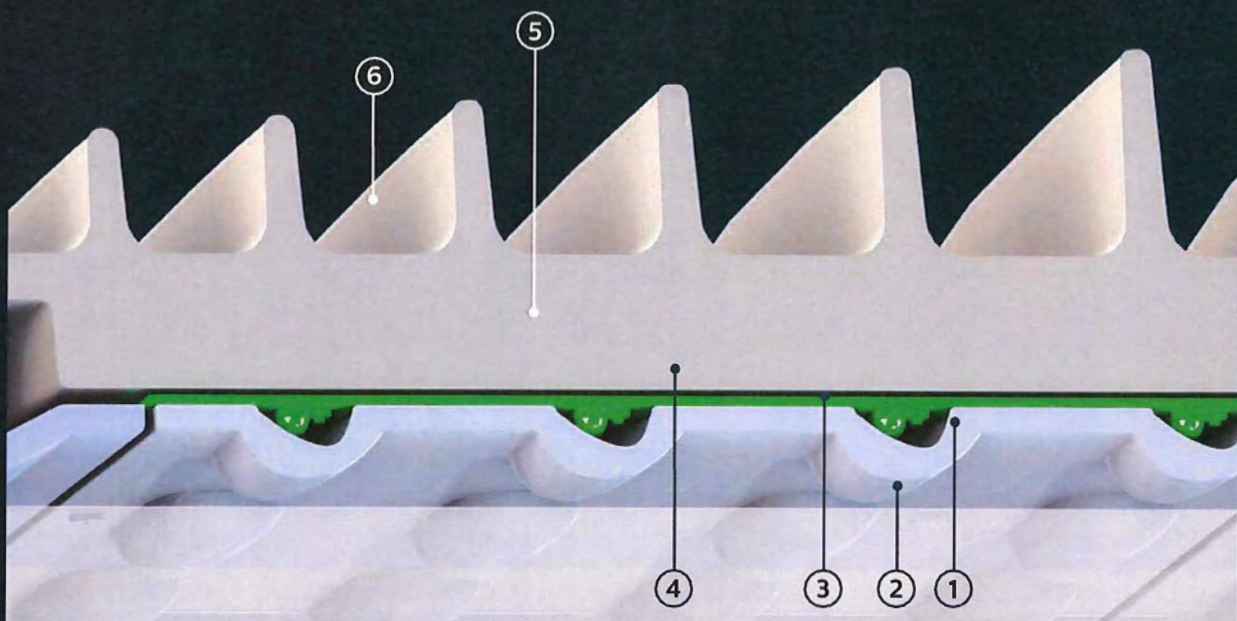


# Revoled technology

Revoled stands for an integrated non-compromised approach to LED luminaire design. Both thermal management (Coo-led) and optical management (Optiflux) form an integral part of that philosophy.

## Coo-led thermal management

By taking an integral design approach many luminaire parts can contribute to get the coolest and therefore most efficient lighting solution.



- 1 LEDs at relatively close interdistance, asking for accurate heat control.
- 2 Lenses are grouped in lens plates of 20 lenses; by using this controllable compact size and always placing all lens plates on the PCB, the result is an equalized pressure on the PCB, optimizing heat dissipation.
- 3 Lower LED quantities are placed on the PCB in configuration patterns that optimize heat control.
- 4 Thermal interface layer of special heat conducting material between PCB and luminaire housing further optimizes heat dissipation.
- 5 The aluminum luminaire housing has the capacity to spread and dissipate the heat to the ambient.
- 6 The curves on top of the housing further increase the dissipation capacity. The height of these curves and their interdistance follow a logical line from the back to the front of the luminaire, giving it its continuously fluent attractive appearance. Besides, the interdistance and height are also designed in such way that each LED has the optimal dissipation area, which is an important factor for the life time and flux of the total system. The curved shapes of both top surface of the luminaire housing and the vertical curves on top emphasize this elegant design and also contribute to an optimal drainage.



# L-Tune

As the solution drivers enabling the lighting solutions with Luma are mutually interrelating, the L-Tune tool was developed to render all possible solutions and rank them to outcomes in terms of energy efficiency and cost. For an extensive explanation of the L-Tune tool, please ask your Philips sales contact for further information.

Public lighting

Luma

Features

Solution	Requested	Calculated
Luma 3 140 LED	30000 lm	30000 lm
Luma 3 180 LED	30000 lm	30000 lm
Luma 3 200 LED	30000 lm	30000 lm

Option Blue: Luma 3 140 LED	Option Green: Luma 3 180 LED	Option Yellow: Luma 3 200 LED
Luminaire type	Luminaire type	Luminaire type
Number of LED	Number of LED	Number of LED
System power (maximum)	System power (maximum)	System power (maximum)
Consumed power over lifetime	Consumed power over lifetime	Consumed power over lifetime
Minimal realized flux	Minimal realized flux	Minimal realized flux
Power Factor (100%)	Power Factor (100%)	Power Factor (100%)
Driver Code	Driver Code	Driver Code
Program Code	Program Code	Program Code

L-Tune: the lighting optimization tool to find the Luma solution exactly matching your preferences.

The following steps have to be followed to come to a preferred solution for a project:

- 1 The required initial flux and maintenance factors to fulfil the project's light technical requirements is the outcome of the calculations in the lighting software. This data is used as input for L-Tune.
- 2 To define possible solutions in Luma the accepted lumen depreciation profile and the required LED lifetime has to be given.
- 3 Anticipated dimming regimes will define the energy consumption profile and also help to use the extended LED lifetime resulting from it, to find even more solutions in Luma.
- 4 Various solutions in Luma can be generated, from extremely energy efficient configurations to more cost effective options.
- 5 In Luma, the solution can be selected, custom programmed and configured meeting your priorities in the best way. Then you need to submit both the program code and driver code generated by L-Tune for ordering the correct Luma version.



# Components



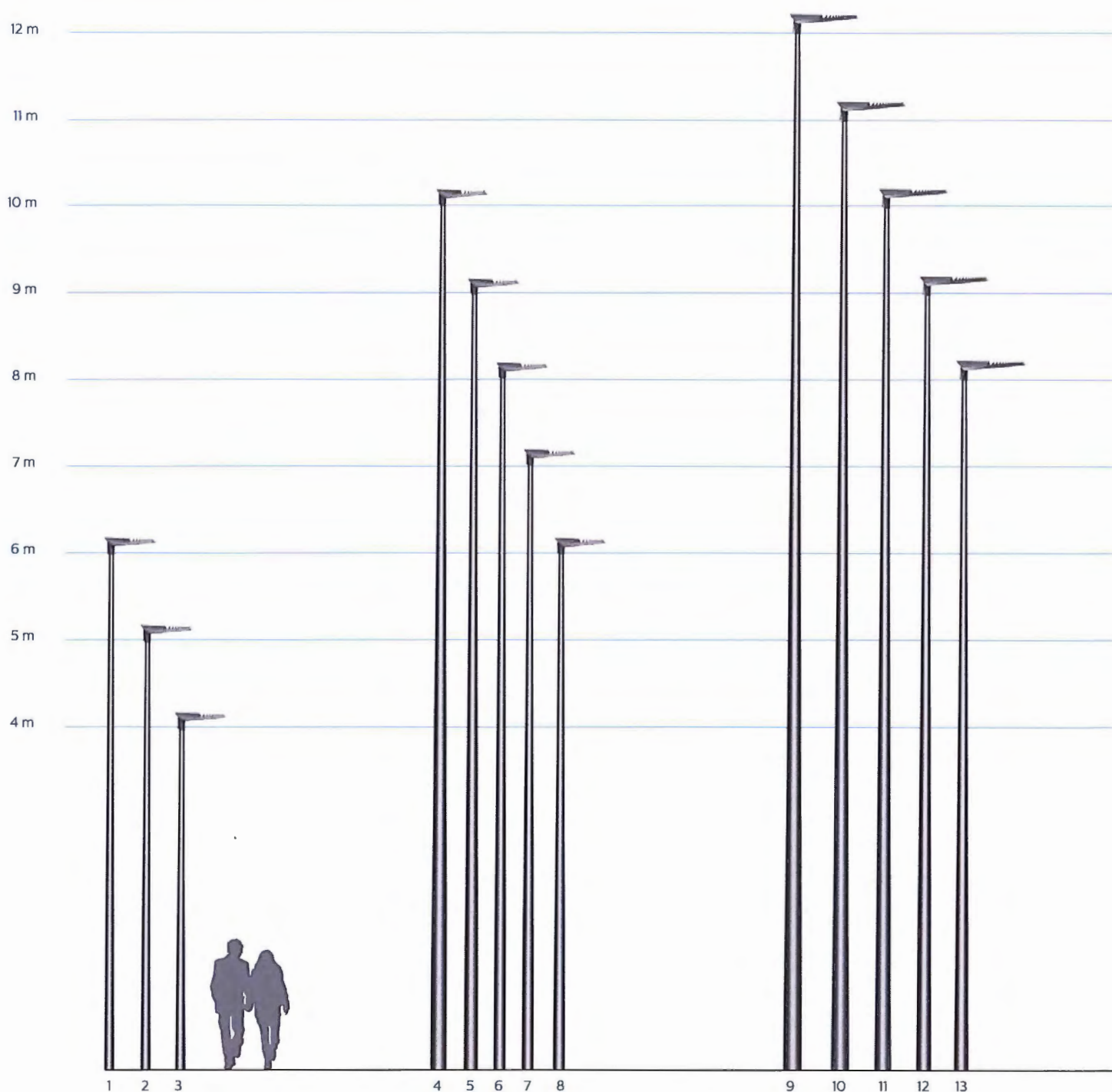


- 1 **Housing** the canopy (1a) and frame (1b) are made of very corrosion resistant die-cast (LM6-quality) aluminum in Futura Gris 900 Sablé (anthracite) or in Futura Gris 150 Sablé (light grey), other colors on request.
- 2 **Bowl** in flat toughened glass to prevent upward light according glare classification G4-G6. Fixed to the frame with metal clips for easy replaceability. Very high light transmission to optimise the Light Output Ratio.
- 3 **Spigot** made of die-cast (LM6-quality) aluminum, standard in same color as canopy / frame. Universal post-top / side-entry spigot for Ø 42-60 mm or separate spigot for post-top Ø 76 mm.
- 4 **Mounting** with two stainless steel M10 bolts (extra long bolts for small pole can be ordered with luminaire).
- 5 **Opening / closing** (only for cable connection and in case of LED module or driver replacement). Closing clip made of very corrosion resistant die-cast (LM6-quality) aluminum, standard in same color as canopy / frame, fixed to the frame with stainless steel spring, for easy and tool-less operation (5a). Canopy with LED module and gear tray hinges upwards and is secured by a stainless steel locking bar (2 positions), making the LED module and gear tray safely accessible from below (5b). Safe Maintenance Technology (SMT) safety switch disconnects power on opening (5c).
- 6 **Gear tray** made of aluminum, downward hingeable for easy access to components, toolless removable after disconnecting the plug.
- 7 **Gear** maximum two LED drivers in Luma 2 and maximum three in Luma 3 (depending on LED quantity and operating current). The drivers are programmed, based on L-Tune defined and optimized lighting solution: **Tuned flux** to match required lighting level within the preferred service life and luminaire size. **CLO** constant lumen output throughout service life, taking away over-lighting from the start of installation, giving extra energy savings. **Dimming** options available.
- 8 **Gasket** IP66 for complete luminaire, by silicon gaskets between frame and canopy (8a) and between frame and glass (8b). Extra ingress protection (XIP) by silicon gasket around the LED module (8c, not available for Luma Micro). Cable gland double breathing (10).
- 9 **Temperature protection** in case of temperature reaching predefined critical levels, both LEDs and drivers have a built-in protection, which initially dims down and eventually switches off the light.
- 10 **Cable connection** M20 cable gland with strain relief, for cable Ø 10-14 mm.
- 11 **Electrical connection**  
Class II: neutral / phase are connected to safety switch; for Class I earth wire to be connected on earth stud in housing. 1-10V or DALI incoming wiring is connected to a separate termination block.
- 12 **Serviceability**  
in case of incidental LED board failure, the LED board with reflector frame can easily be replaced after disconnecting the plug and removal of the lens blocks.
- 13 **Lighting control systems**
  - DynaDimmer or LumiStep stand alone scenarios (various dim percentages and time settings).
  - 1-10 V with dim switch for extra incoming pilot line, for one step dimming.
  - 1-10 V or DALI dim prepared for incoming communication.
  - CityTouch Ready
  - StarSense RF Wireless

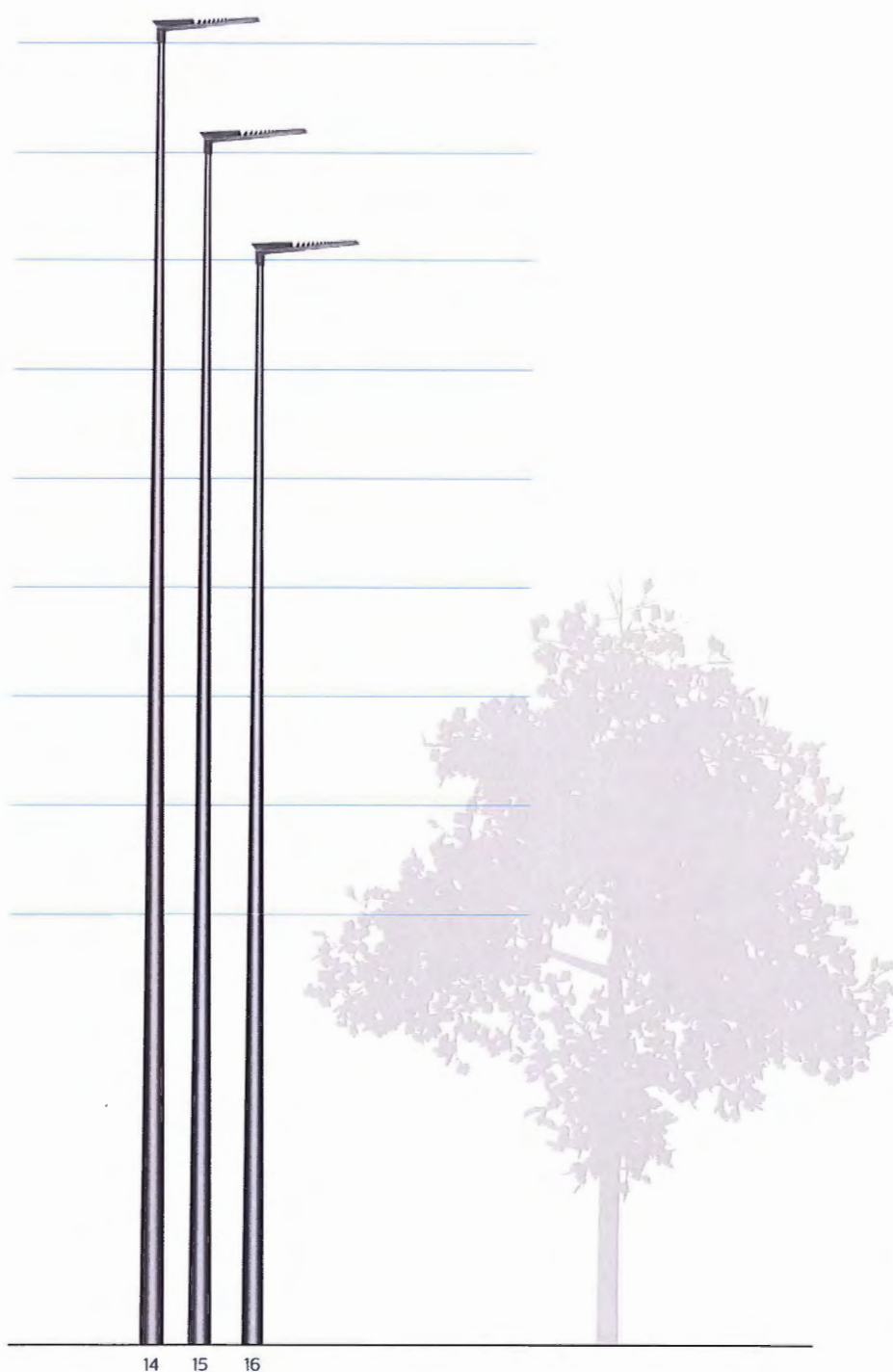


# In perspective

The Luma range has been designed to offer perfect solutions, also in terms of the proportion of the luminaire to its mounting height or a specific environment.







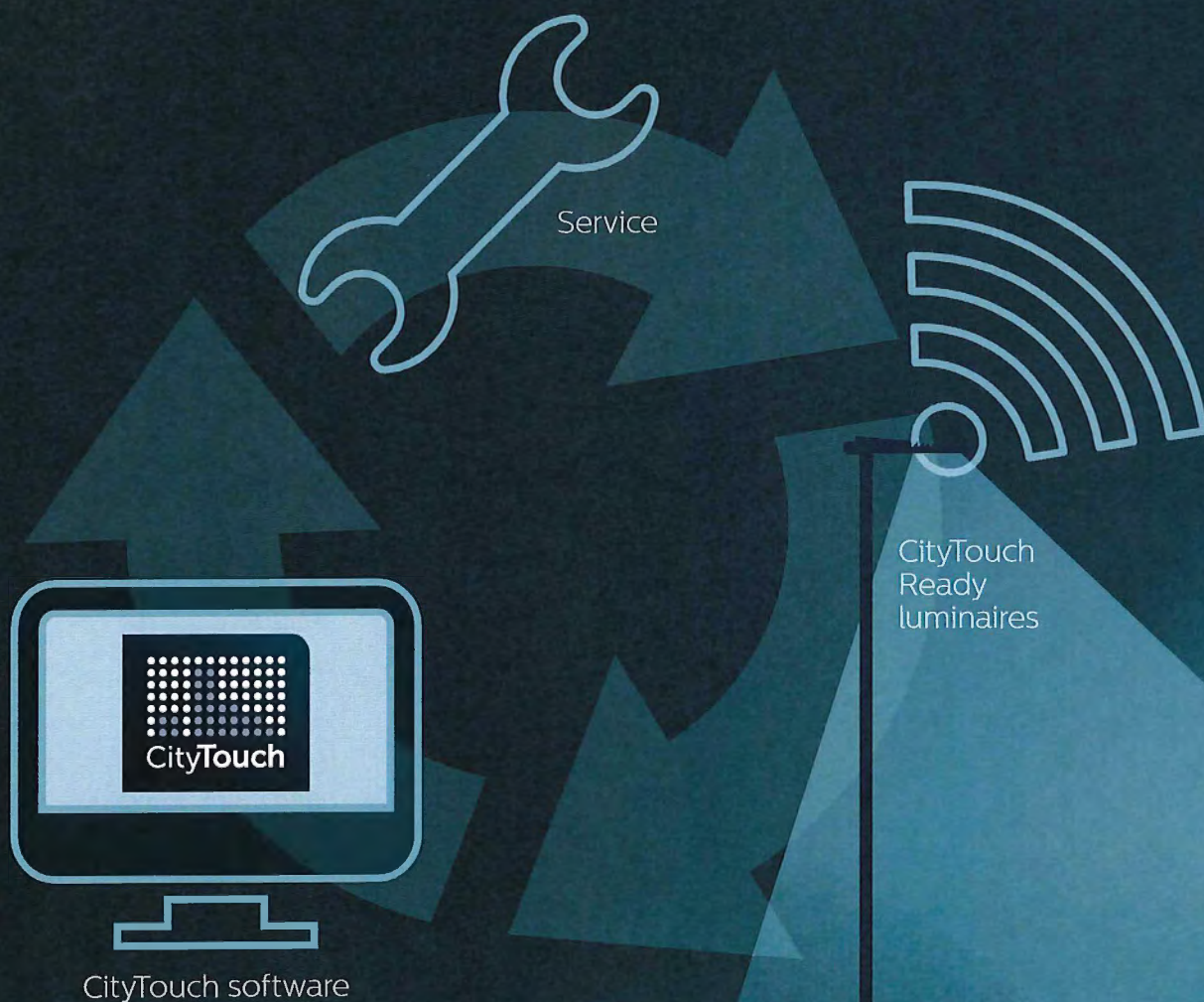
- 1-3 Luma Micro/Mini suitable for mounting heights of 4-5-6 m, for instance on residential streets or cycle paths.
- 4-8 Luma 1 suitable for mounting heights of 6-8-10 m, for instance on main residential streets or urban traffic roads.
- 9-13 Luma 2 suitable for mounting heights of 8-10-12-15-18 m, for instance on main urban traffic roads or highways.
- 14-16 Luma 3 suitable for mounting heights of 10-12-15-18 m, for instance on highways.



# Luma in control

Lighting city streets, roads and public spaces presents many challenges. Due to traffic density and different traffic levels, the dynamics of city life change constantly.

To respond to those changes and make the city feel safe, attractive and inviting, you need the right levels of lighting. But urban planners are also under pressure to reduce energy costs and maximize the city's green credentials. Philips offers you a complete intelligent lighting controls range that helps you overcome all those problems and makes the city more livable and sustainable.





# Connected lighting

## CityTouch Ready luminaires

Luma can be seamlessly connected to CityTouch software via CityTouch connect app (remote management), with all the intelligence being integrated into the luminaire without the need for any additional hardware. Communication runs directly via the public mobile network. An additional advantage is that you are not required to perform any maintenance. Furthermore, the entire connectivity management is covered by the service we provide, ensuring there is no hassle for you, the customer. Once connected to the power supply, a light point automatically

appears on the CityTouch map at the right location – with all the relevant technical parameters imported into the system.

CityTouch connect app is an intelligent, interactive remote management solution for street lighting. It brings your city lighting to life and offers you flexibility, information and accuracy. The system's flexibility enables you to respond easily to expected and unexpected situations by dimming or brightening any of the areas within your city to ensure safety and well-being. Information keeps you up to date on the

current status of every single luminaire, facilitating more effective maintenance and faster repairs. And accurate energy metering gives you a precise overview of actual energy consumption.



## CityTouch connect app key features



### Control of each individual light point

You have the flexibility to adjust every single luminaire to changing situations or requirements at any time. You can adjust calendars to suit your individual needs simply by changing the switching points of each dimming profile via drag and drop.



### Fault detection and notification

Faster and better provision of information about the current status of the lighting infrastructure enables you to address maintenance issues more quickly and to improve the maintenance service level.



### Accurate energy metering

Accurate energy metering for each individual luminaire enables you to monitor your energy bills and to identify potential new savings.

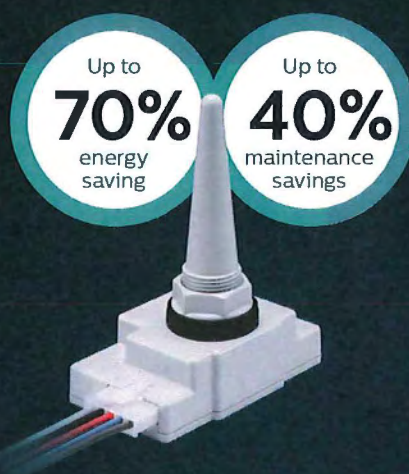


# Network controls

## StarSense Wireless with RF antenna

StarSense Wireless is a networked control system based on two-way wireless communication using the latest in mesh network technology. The system enables individual light points to be controlled remotely and to be managed via online platforms like CityTouch.

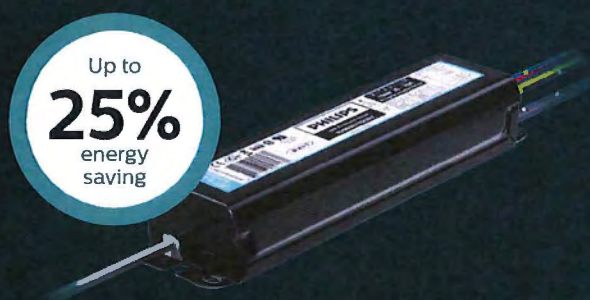
Lighting operators can control the public lighting infrastructure remotely, setting dimming levels to achieve considerable energy savings. Also, they get real-time feedback from the luminaires, reducing operating and maintenance costs via accurate scheduling of on-site maintenance service tasks, while improving both the quality and reliability of public lighting.



# Stand alone controls

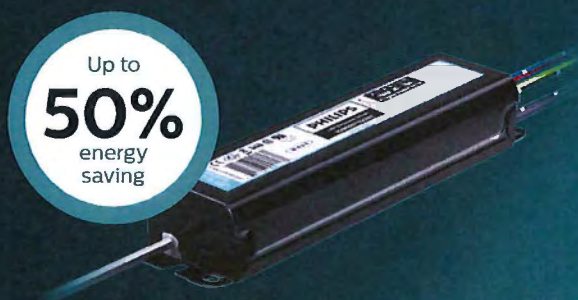
## LumiStep control

An integrated control system available in the Philips driver, which lowers the light source's flux and the power consumed over a period of 6 or 8 hours (two pre-programmed versions). The potential energy savings (on power system) are up to 25%, depending on the luminaires and light source used.



## DynaDimmer control

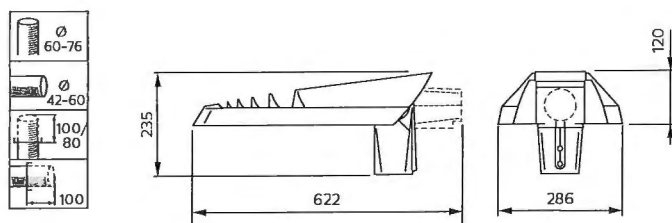
An integrated control system included in each light point. It is operated on electronic equipment and can be integrated into the Philips driver. It can apply 5 levels of power, (re)definable in terms of level and duration, per chosen light point. An average energy saving of approximately 50% per year can be realized.



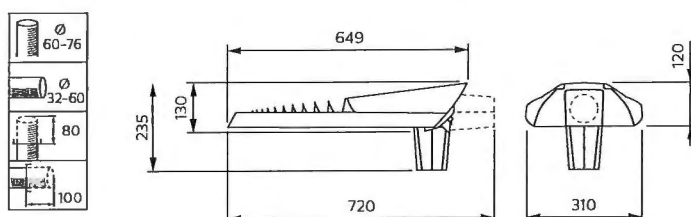


# Dimensional drawings

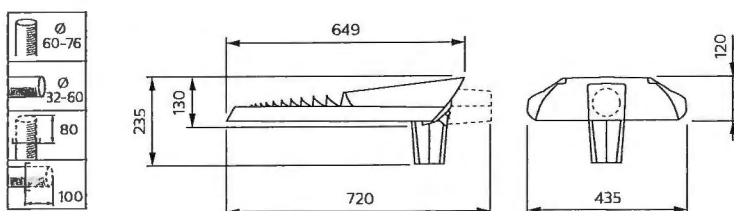
## Luma Micro BGP615



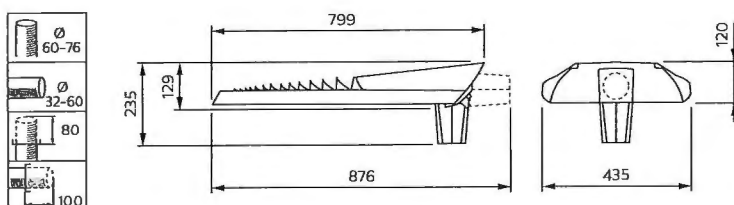
## Luma Mini BGP621



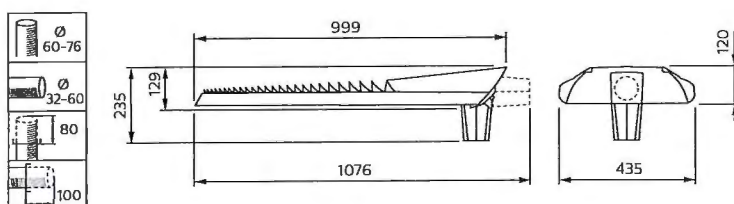
## Luma 1 BGP623



## Luma 2 BGP625



## Luma 3 BGP627





# Main specifications

Product features	Specifications
<b>Type</b>	Luma Micro (BGP615) Luma Mini (BGP621) Luma 1 (BGP623) Luma 2 (BGP625) Luma 3 (BGP627)
<b>Light source</b>	Built-in LED module
<b>Color temperature</b>	3000 K (warm white), 4000 K (neutral white), 5700 K (cool white), not available for Luma Micro
<b>Color Rendering Index</b>	70 (cool white and neutral white), 80 (warm white)
<b>Luminous flux</b>	850 to 54,400 lm depending on LED configuration and color temperature
<b>Power</b>	10 to 446 W depending on LED configuration and color temperature
<b>Luminaire efficacy</b>	Up to 129 lm/W
<b>Lumen maintenance</b>	Up to 100,000 hours at L80B10
<b>CLO</b>	CLO is available
<b>Warranty</b>	Gold > 100,000 hours, Silver < 100,000 hours
<b>Optic</b>	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, DM10, DM11, DN10, DN11
<b>Optical cover</b>	Flat Glass (FG)
<b>ULOR</b>	0%
<b>Installation</b>	Post-top Ø 60 mm (dedicated spigot for post-top Ø 76 mm only) Luma Micro/Mini, Luma 1: side-entry Ø 32-60 mm Luma 2, Luma 3: side-entry Ø 42-60 mm Standard tilt adjustments post-top 0, 5, 10° and side-entry -10, -5, 0° Special spigot for post-top +10, +15 and +20° and side-entry -20, -15, -10, -5, 0°
<b>Controls system input</b>	1-10 V and DALI
<b>Driver</b>	Philips Xitanium Driver
<b>Inrush current driver</b>	40 W: 65 A/100 µs; 75 W: 80 A/150 µs; 100 W: 80 A/150 µs; 150 W: 108 A/140 µs
<b>Intelligence control</b>	LumiStep (LS), DynaDimmer (DDF), SDU (D4), DALI (D9), StarSense RF Wireless, CityTouch Ready
<b>Mains voltage</b>	210-240 V / 50-60 Hz
<b>Electrical class</b>	Class I - II
<b>Material</b>	Housing: die-cast aluminum, non corrosive Cover: toughened glass Gear tray: aluminum Spigot: die-cast aluminum
<b>Color</b>	Futura Gris 900 Sablé or Futura Gris 150 Sablé Other RAL or Akzo Nobel Futura colors or duo-colors available on request
<b>IP-rating</b>	IP66
<b>IK-rating</b>	IK09
<b>Weight</b>	Luma Micro, 7.6 kg, Luma Mini, 9.5 kg, Luma 1, 11 kg, Luma 2, 15.5 kg, Luma 3, 19.5 to 20.5 kg depending on drivers
<b>ScX</b>	Luma Micro: 0.049 m², Luma Mini: 0.055 m², Luma 1: 0.057 m², Luma 2: 0.067 m², Luma 3: 0.079 m²
<b>Electrical connection</b>	M20 cable gland with strain relief, for cable Ø 10-14 mm
<b>Operating temperature range</b>	- 20°C < Ta < 35°C
<b>Surge protection</b>	4 kV, 10 kV optional
<b>Maintenance</b>	From below by opening the housing with a single quick-release clip
<b>Options</b>	Wired for cell (WFC), mini Photocell or NEMA socket - including cable



## Specification table

Luminaire version	Product family code	No. LEDs	CW Min/Max lumen	NW Min/Max lumen	WW Min/Max lumen	Power system (W) Min / Max
Luma Micro	BGP615	12	1,150-3,350	1,150-3,400	950-2,950	9-27
		20	1,850-5,550	1,850-5,700	1,600-4,850	14-45
Luma Mini	BGP621	12	1,150-3,350	1,150-3,400	950-2,950	9-27
		20	1,850-5,550	1,850-5,700	1,600-4,850	14-45
		30	2,750-8,350	2,800-8,500	2,400-7,350	22-70
		40	3,650-11,000	3,700-11,300	3,200-9,650	26-90
Luma 1	BGP623	20	1,850-5,550	1,850-5,700	1,600-4,900	14-45
		28	2,550-7,700	2,600-8,000	2,250-6,850	19-61
		40	3,650-11,100	3,700-11,350	3,200-9,750	26-87
		48	4,350-13,300	4,450-13,600	3,800-11,650	31-104
		60	5,450-16,600	5,550-16,950	4,750-14,500	38-129
		68	6,200-18,800	6,250-19,150	5,400-16,400	42-145
Luma 2	BGP625	80	7,300-22,000	7,350-22,400	6,300-17,950	49-172
		60	5,450-16,600	5,550-17,050	4,750-14,600	38-129
		80	7,300-22,000	7,400-22,500	6,300-19,300	50-174
		100	9,100-27,500	9,200-28,000	7,900-23,900	63-215
Luma 3	BGP627	120	11,000-32,900	11,150-33,350	9,450-26,150	76-254
		100	9,100-27,700	9,200-28,400	7,900-24,300	63-216
		120	11,000-33,200	11,150-33,850	9,450-29,000	75-257
		140	12,700-37,700	13,000-38,450	11,050-32,950	88-289
		160	14,600-43,500	14,650-44,700	12,600-37,700	99-342
		180	16,600-49,300	16,600-50,050	14,150-40,000	113-383
		200	18,300-54,400	18,480-53,600	15,750-40,400	125-406

