PHILIPS

Stela+ gen2

Public lighting

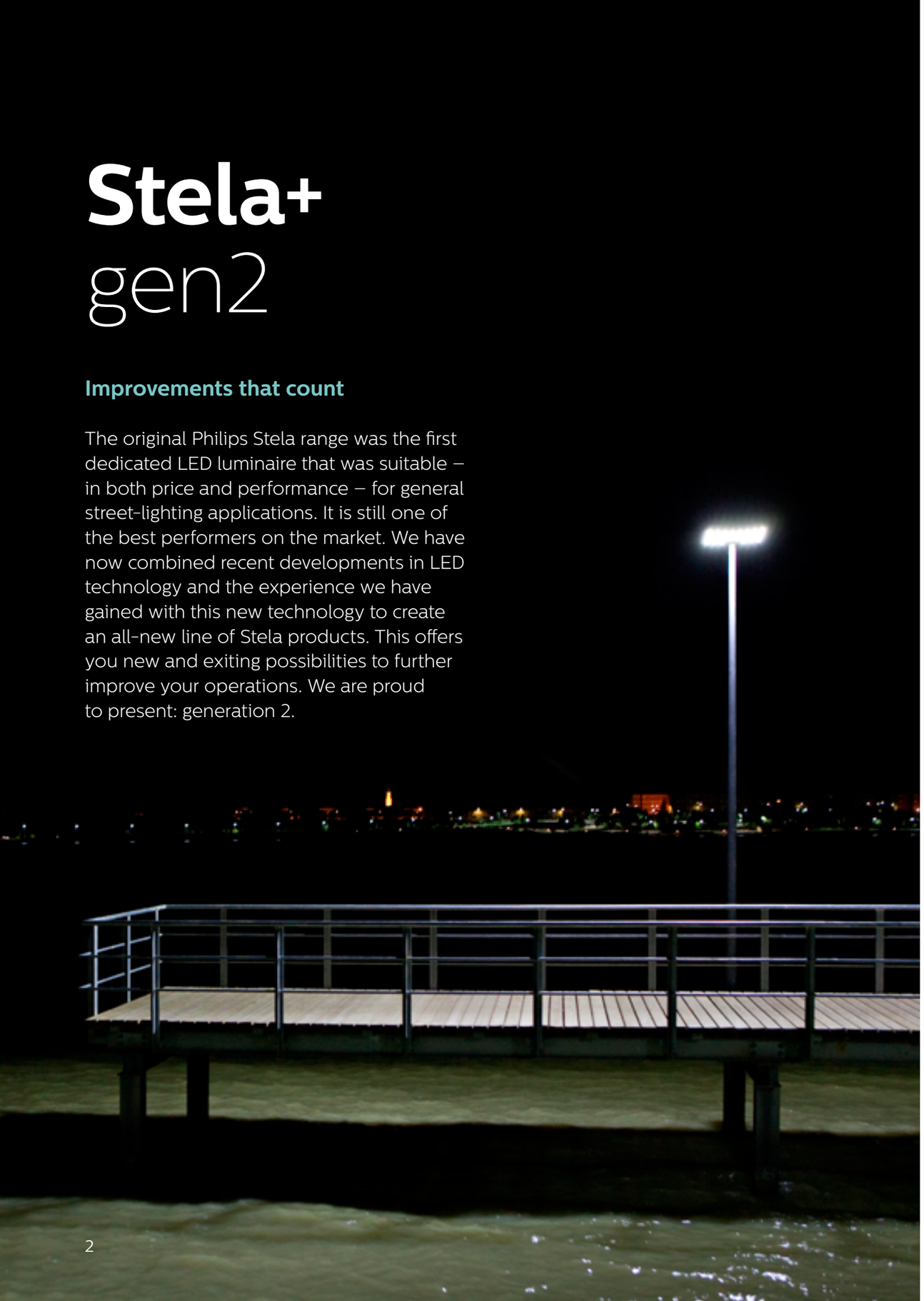
Product guide

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.



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_2 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_2 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_2 reduction

REVOLED technology for maximum **efficiency.**

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

Wide choice of lens optics to match street geometries.

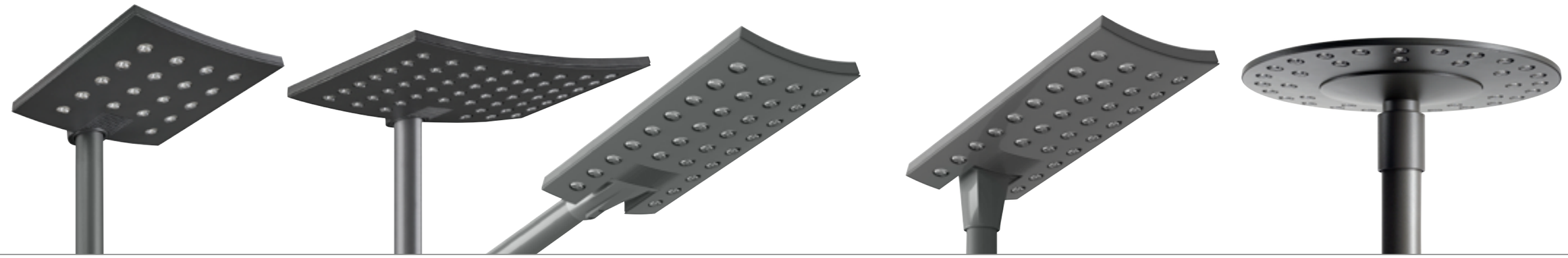
Fit-and-forget solution: up to 100,000 hours' lifetime (consult L-Tune).

Family range

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

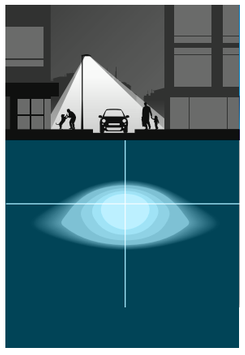
Stela+ gen2 Round

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

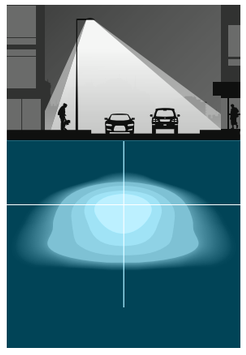
Lighting performance

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

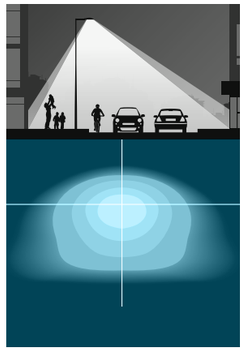
Stela+ gen2 Wide and Square



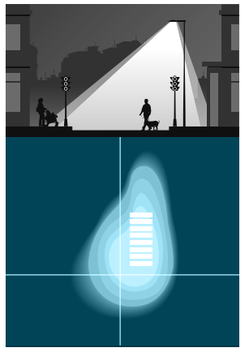
NRN Distribution Narrow



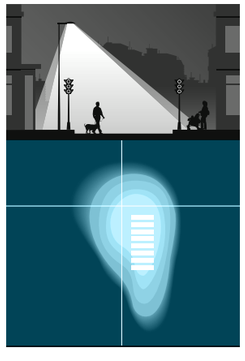
SRN Distribution Medium



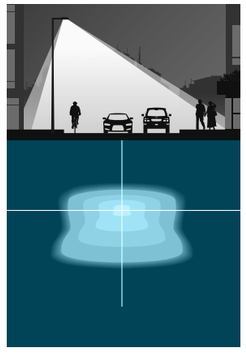
WRN Distribution Wide



DP-R Pedestrian crossing RHD
- Right-hand drive

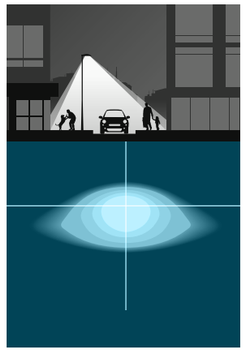


DP-L Pedestrian crossing LHD
- Left-hand drive

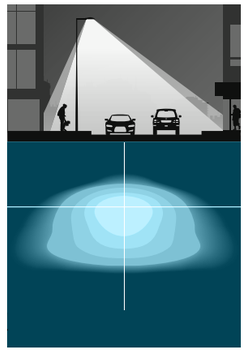


MRN Distribution ME5-6

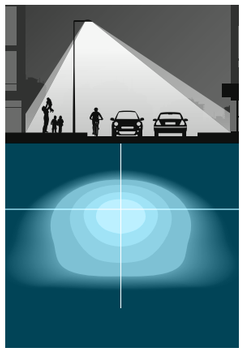
Stela+ gen2 Long



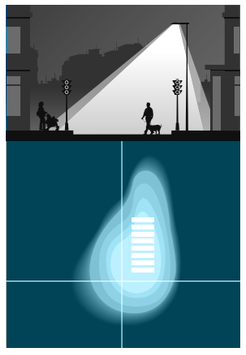
NRN Distribution Narrow



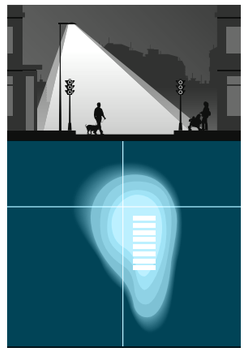
SRN Distribution Medium



WRN Distribution Wide

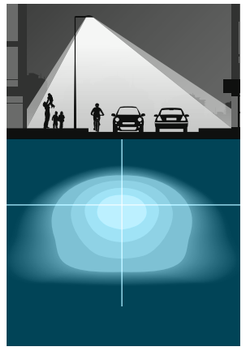


DP-R Pedestrian crossing RHD
- Right-hand drive

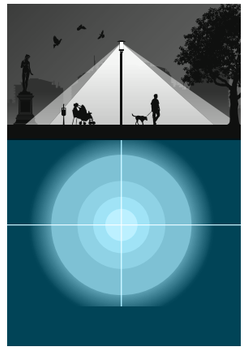


DP-L Pedestrian crossing LHD
- Left-hand drive

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 & foothpath
- Shopping & pedestrian area
- Parking area
- Public transport area

Residential area

- Residential street
- Cycle path & foothpath
- 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.

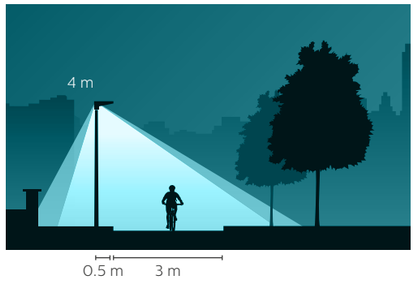
Application examples

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. 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

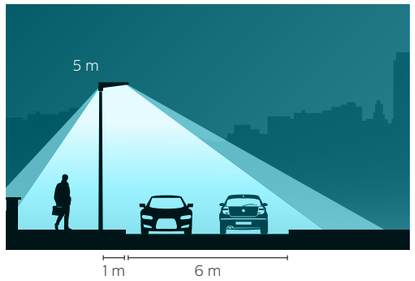
Light distribution: NRN
Class: S4
Source: 1,850 lm/NW CLO
Spacing: 43.5 m
System power: 17 W (average)



Residential medium street

Stela+ gen2 Long 30 LEDs

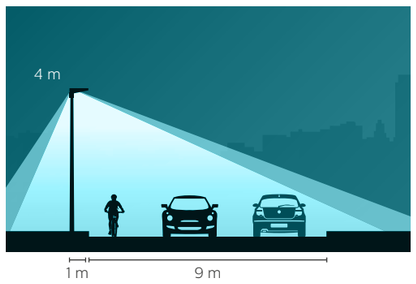
Light distribution: SRN
Class: CE4
Source: 3,600 lm/NW CLO
Spacing: 26.5 m
System power: 31 W (average)



Residential wide street

Stela+ gen2 Square 18 LEDs

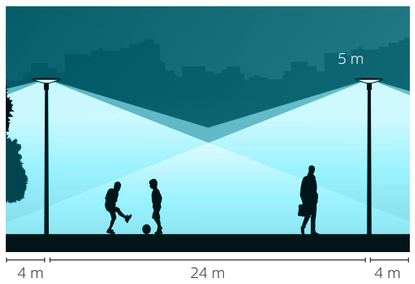
Light distribution: WRN
Class: S5
Source: 2,250 lm/NW CLO
Spacing: 34 m
System power: 20 W (average)



Square

Stela+ gen2 Round Area 36 LEDs

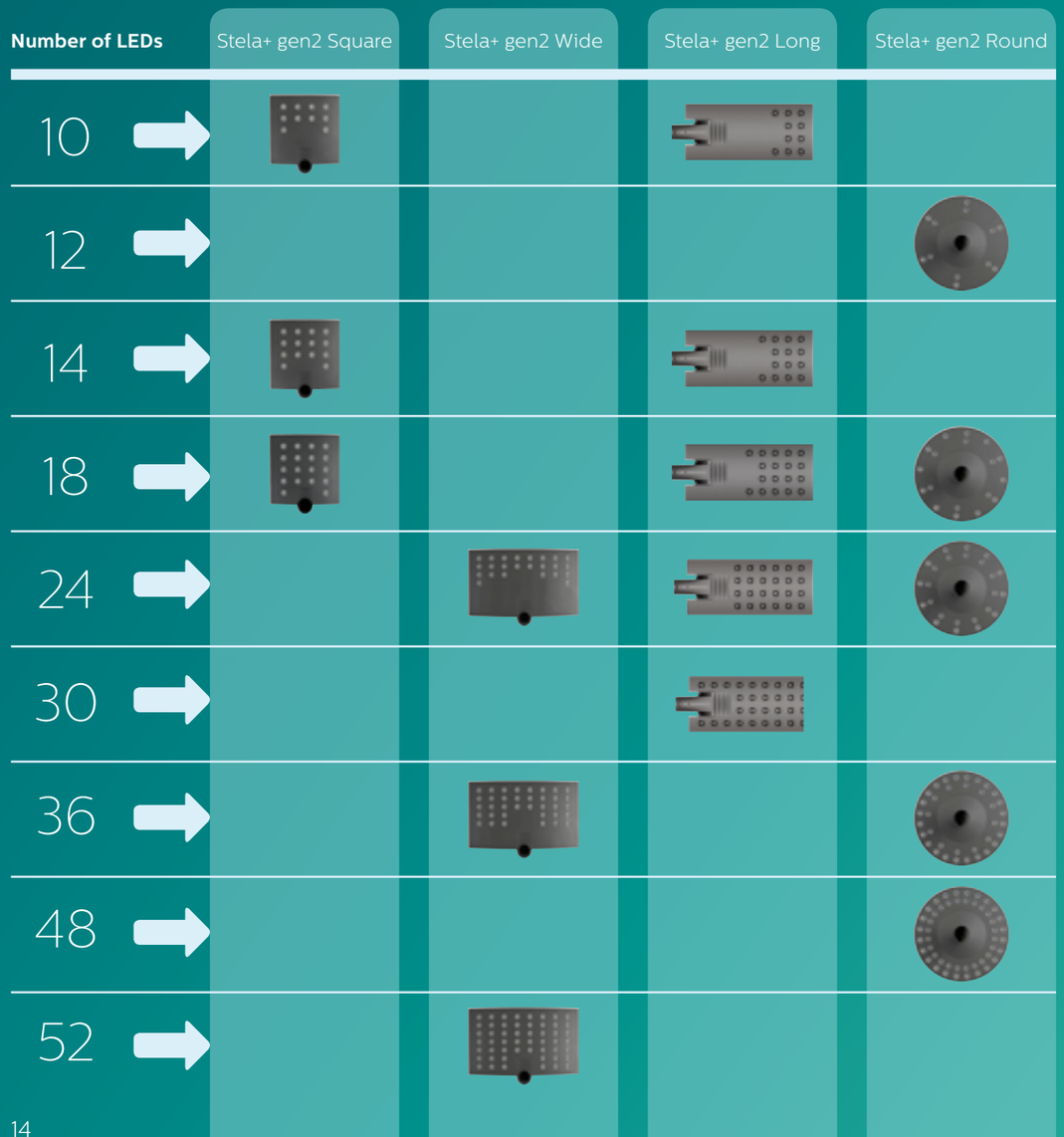
Light distribution: WRN
Class: CE5
Source: 4,450 lm/NW CLO
Spacing: 24 m
System power: 36 W (average)



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.



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.

Side-entry
Ø 32-60 mm

Post-top
Ø 60 mm

Dedicated spigot for post-top
Ø 76 mm

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.

Playful spigot design, standard version

Playful spigot design in two-tone version

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%

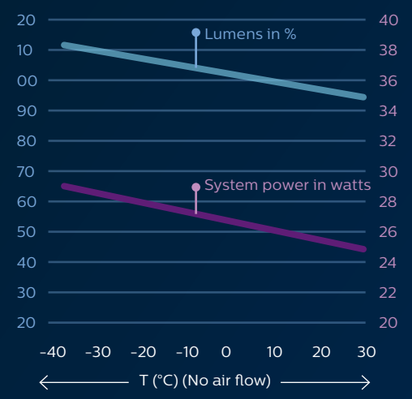
Result
Dual optics:
Lamp (LED) + lens
Luminaire output: 90% - 94%

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

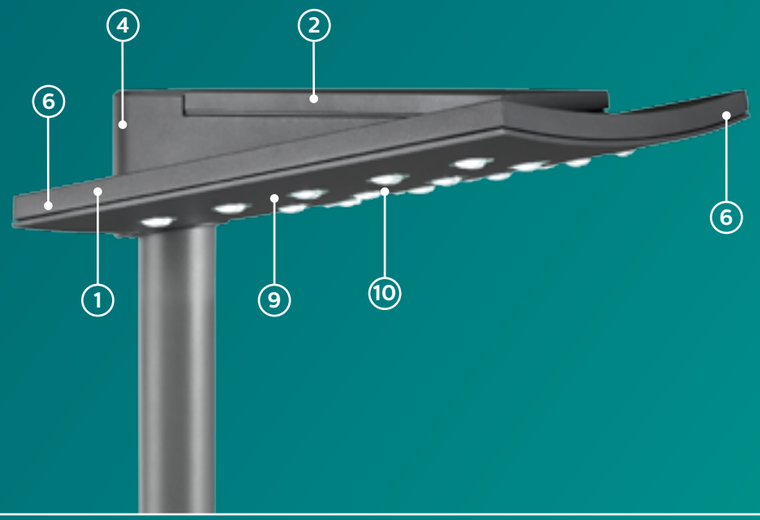
REVOLED technology has been developed to respond to the high importance society attaches to energy saving and reducing CO_2 emissions. The technology consists of the innovative COO-LED and DIRECTA technical concepts. The use of white high-power LEDs helps to achieve considerable energy savings and CO_2 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.

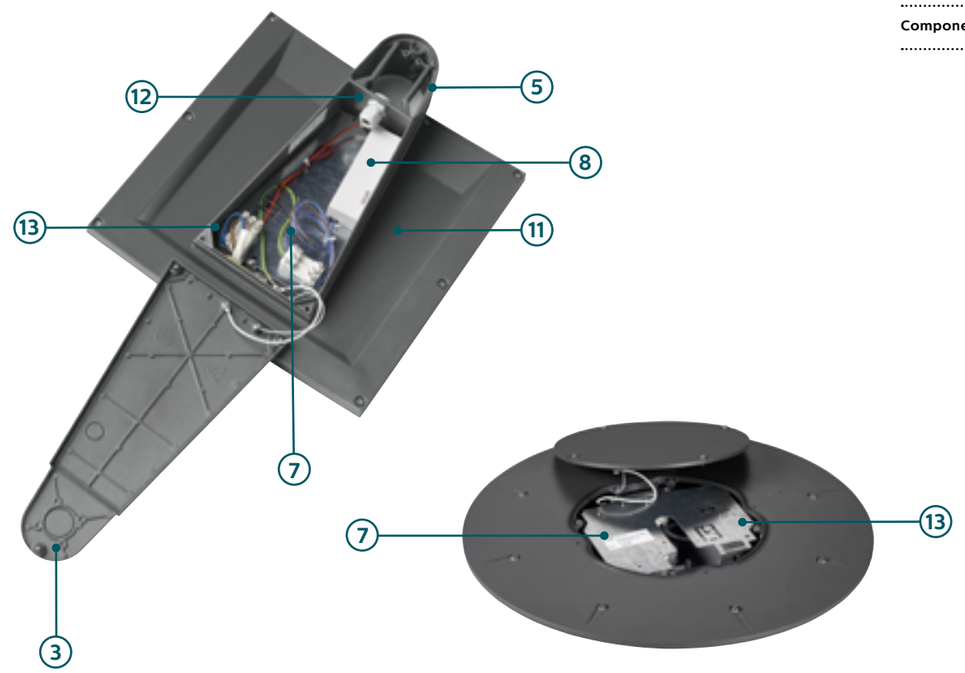


COO-LED thermal management

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).

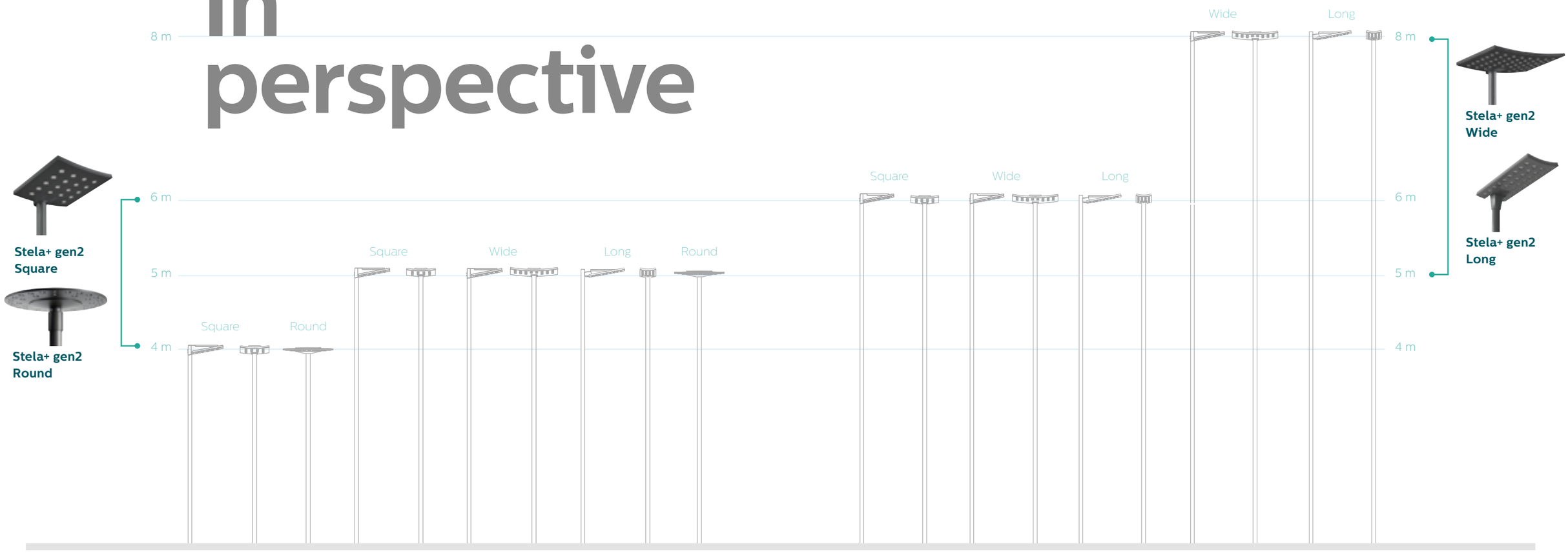
Stela+ gen2 Square
10 - 18 LEDs
Is suitable for mounting heights of 4-6 m post-top.

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.

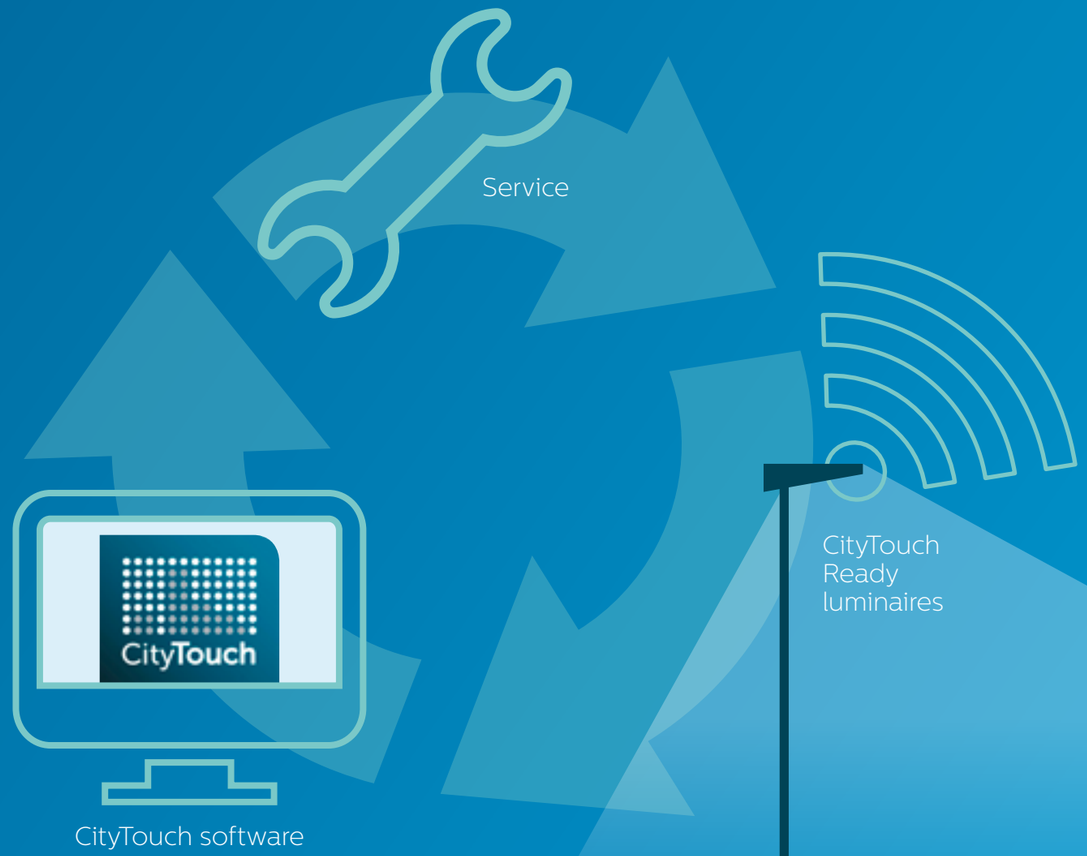
In perspective



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

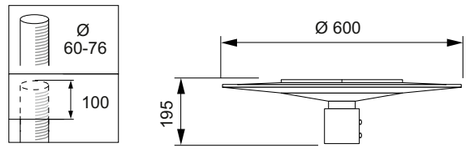
An integrated control system available in the Philips driver, which lowers the light source's flux and the power consumed over a period of 6 or 8 hours (two pre-programmed versions). The potential energy savings (on power system) are up to 25%, depending on the luminaires and light source used.

DynaDimmer control

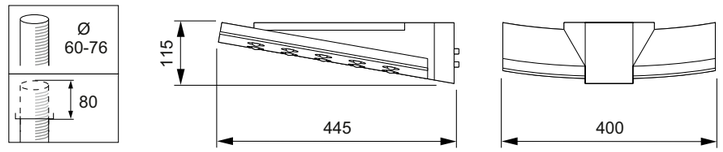
An integrated control system included in each light point It is operated on electronic equipment and can be integrated into the Philips driver. It can apply 5 levels of power, (re)definable in terms of level and duration, per chosen light point. An average energy saving of approximately 50% per year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

Dimensional drawings

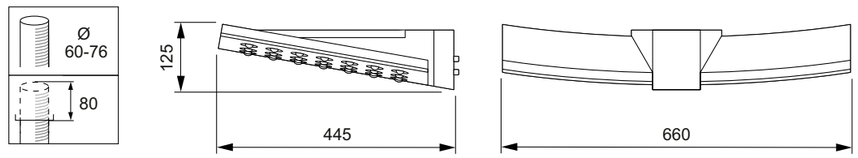
Stela+ gen2 Round



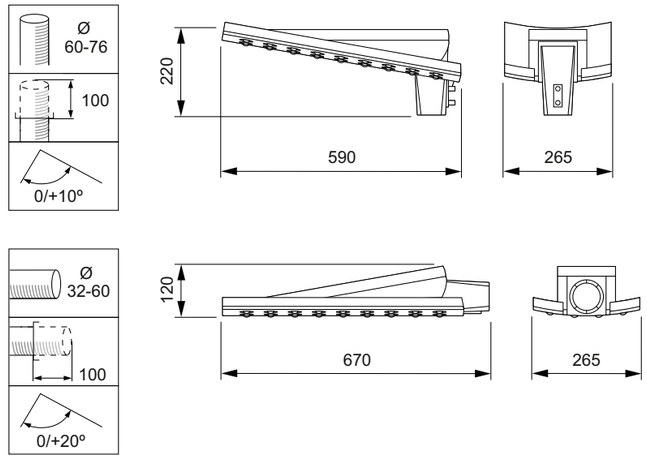
Stela+ gen2 Square



Stela+ gen2 Wide



Stela+ gen2 Long



Main specifications

Product features	Specifications
Type	BPP610 Stela+ gen2 Round Road BPP611 Stela+ gen2 Round Area BPP612 Stela+ gen2 Wide BPP614 Stela+ gen2 Square BPP616 Stela+ gen2 Long
Light source	Integrated LED module
Power	Variable, consult L-Tune Ranging from 8 to 119 W, depending on LED configuration and color temperatures
Luminous flux	Tunable, consult L-Tune Ranging from 750 lm (10 WW LEDs) to 13,250 (52 CW LEDs)
Luminaire efficacy	Variable, depending on tuning In NW, approximately between 102 and 125 lm/W
Correlated color temperature	3000 K (warm white, WW), 4000 K (neutral white, NW), 5700 K (cool white, CW) typical
Color rendering Index	WW: ≥ 80, NW: ≥ 75, CW: ≥ 70
Maintenance of lumen output-L80F10	Variable, choice made via L-Tune calculation Typically between 70,000 and 100,000 hours at 25 °C
Operating temperature range	-20 to +35 °C
Driver	Integrated programmable LED driver
Power/data supply	Philips Xitanium Prog+
Control system input	1-10 V or DALI
Intelligent control	SDU-LineSwitch, LumiStep, DynaDimmer, Starsene RF Wireless, CityTouch Ready
Options	Constant Light Output (CLO), also possible in combination with dimming Class II versions: Mini photocell or NEMA socket Factory-fitted cable
Optics	NRN (Distribution Narrow) SRN (Distribution Medium) WRN (Distribution Wide) DP-R (Pedestrian crossing RHD) DP-L (Pedestrian crossing LHD) MRN (Distribution ME5-6)
Optical cover	PMMA clear
Material	High-pressure die-cast aluminum (LM 6)
Color	Standard: Akzo Futura Gris Sablé 900 Other RAL or Akzo Futura colors available on request
Connection	Plug & socket connector
Maintenance	Easily exchangeable gear tray including drivers
Installation	Square/Wide and Round: post-top mounting, Ø 76 mm, suitable for Ø 60 mm, including adapter Long: post-top mounting, spigot Ø 76 mm or spigot Ø 60 mm, side-entry mounting, universal Ø 32-60 mm
Surge protection	4 kV as standard, 10 kV by optional SPD
Cable gland	M20 with strain relief, cable 10-14 mm
Accessories	Dedicated adapter for Square/Wide or Round reducing from Ø 76 mm to Ø 60 mm
Warranty	Silver 5 years as standard, extended warranty can be requested
Inrush current driver	40 W: 65 A/100 µs; 75 W: 80 A/150 µs; 100 W: 80 A/150 µs; 150 W: 118 A/140 µs
IP	IP66
IK	IK10 housing, IK06 lenses
Weight & windage (m^2)	Square: 5-6 kg - 0.04 m^2 Wide: 8-9 kg - 0.06 m^2 Long: 7-8 kg - 0.05 m^2 Round: 7-8 kg - 0.05 m^2

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
		48	3,550-10,150	4,050-11,550	4,350-12,350	33-110 W
Stela+ gen2 Square	BPP614	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
		18	1,350-3,850	1,550-4,350	1,650-4,650	14-43 W
Stela+ gen2 Wide	BPP612	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

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