

# Luma

The vision is reality



**PHILIPS**

## The Luma family

### Complete LED solution from traffic routes to residential areas

Luma is Philips' range of dedicated Revoled road and street lighting luminaires: an LED lighting solution without compromise, offering the professional world of lighting a real energy efficient, high performance and affordable alternative to existing conventional lighting solutions. Luma covers the complete field of illuminance (S) and luminance (ME) lighting classifications up to ME1.

revoLED™

Luma includes perfect glare control and prevention of light pollution according glare classifications up to G4, thanks to the complete flat design and Optiflux lens optics. Luma fulfills its lighting job in a very effective way and brings wide scale LED public lighting in practice.



- ✓ Choice of lens optics to match international road and street geometries.
- ✓ Combination of lenses and tilt adjustment options ensure high project flexibility.
- ✓ Dedicated lumen packages deliver energy savings of over 50%, with a related reduction in CO<sub>2</sub> emissions.

## Family range

The modern Luma shapes have serene, recognisable lines and will therefore be at home in various road and street lighting environments. This makes Luma extremely suitable as the standard LED luminaire from a multilane highway to an urban street or residential area.



Luma Mini  
Post-top Ø 76 mm



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



Luma 1  
Post-top Ø 76 mm



Luma 1  
Side-entry Ø 32-60mm  
Post-top Ø 60 mm



Luma 2  
Post-top Ø 76 mm



Luma 2  
Side-entry Ø 42-60mm  
Post-top Ø 60mm



Luma 3  
Post-top Ø 76 mm



Luma 3  
Side-entry Ø 42-60mm  
Post-top Ø 60 mm

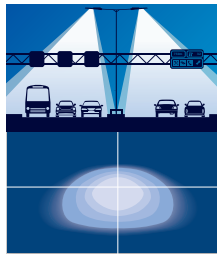


# Lighting performance

## Light distribution

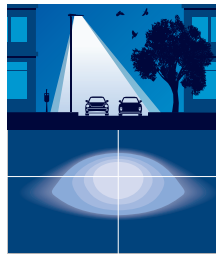
In Luma a number of lens optics are available to match the variety of road and street geometries internationally. The high performance lenses are fixed within a high reflecting frame, in order to maximise the Light Output Ratio (up to ~92%). In combination with the tilt adjustment options in Luma this gives a high project flexibility.

### R1 Distribution Medium for comfort



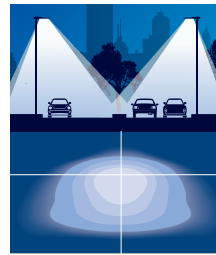
MEI-2 class for road lighting (TI<10)

### R2 Distribution Narrow



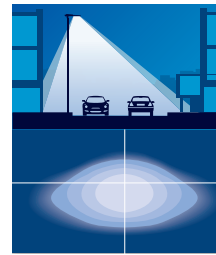
ME class for road and street lighting

### R3 Distribution Medium



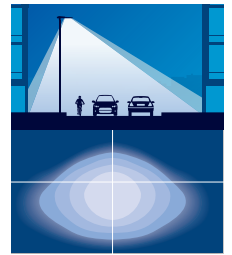
ME3 (to ME6) class for road and street lighting

### R4 Distribution Medium



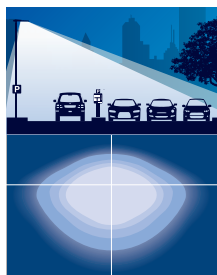
CE and S class for street and path lighting

### R5 Distribution Wide



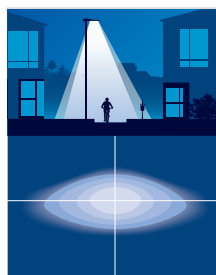
CE and S class for street and path lighting

### R6 Distribution Extra Wide



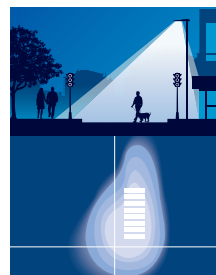
S class for street and path lighting

### R7 Distribution Narrow



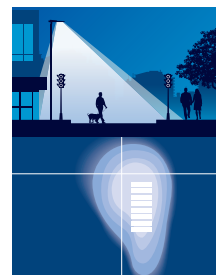
S class for street and path lighting

### R8 Distribution Pedestrian Crossing Right



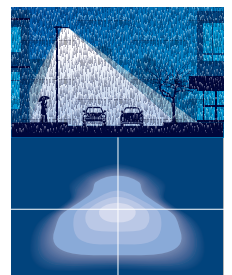
Lighting of pedestrian crossing for right arrangement

### R9 Distribution Pedestrian Crossing Left



Lighting of pedestrian crossing for left arrangement

### R10 Distribution Medium for wet road conditions



MEW class for road lighting

## 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.



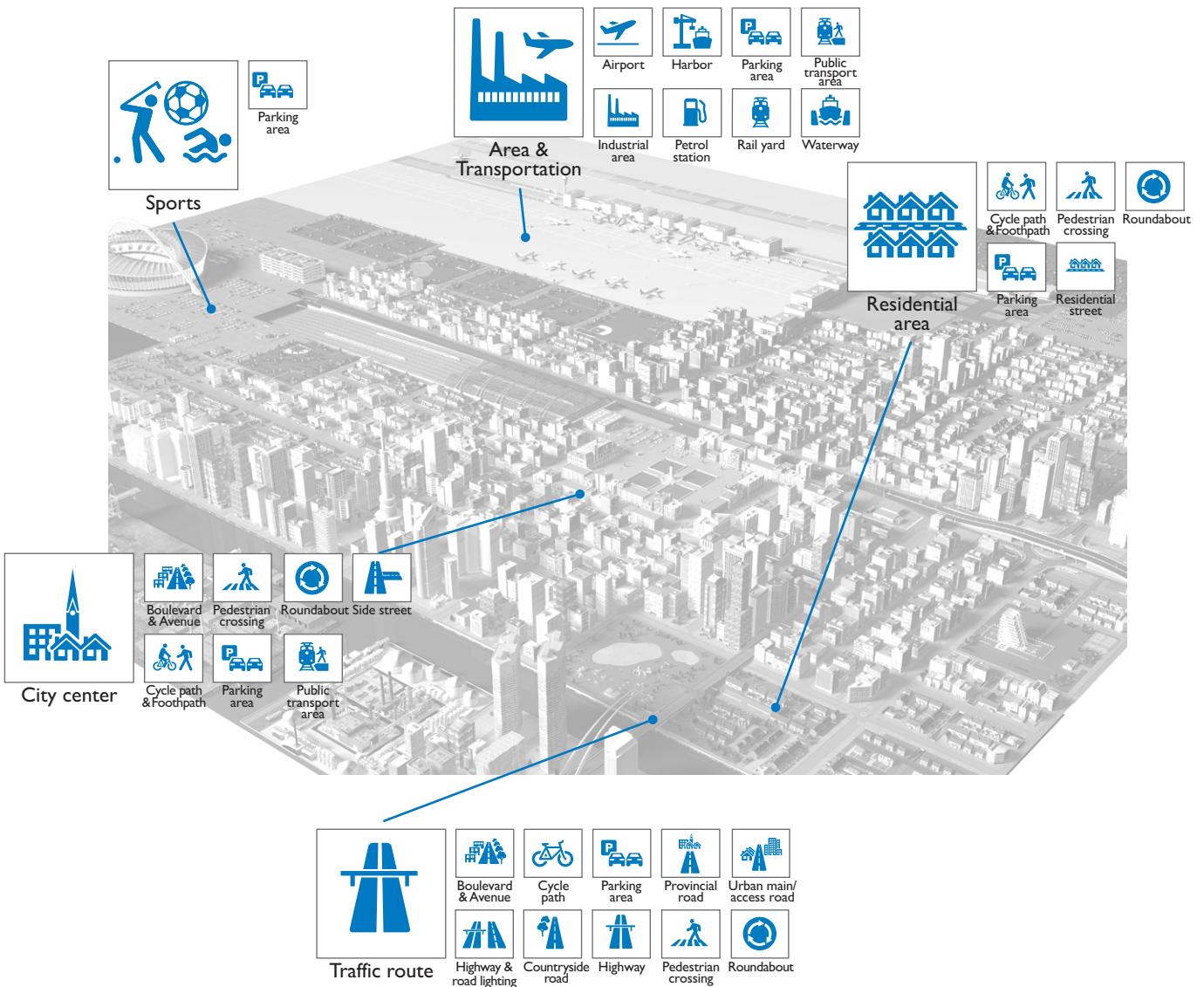
Side-entry: -20, -15, -10, and 0 degrees.



# Applications

The Luma 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.



Luma is part of our functional lighting solutions portfolio and incorporate primarily traffic functions that offer guidance and orientation, in a way that traffic safety for all participants is secured, mainly by having perfect glare control, white color rendering and uniformity quality up to all relevant standards. At the same time maximization of pole spacings is targeted by designing high performance optics, to match various lighting classes and road geometries for traffic routes in and around cities.

# Components

**1 Housing** the canopy (1a) and frame (1b) are made of very corrosion resistant die-cast (LM6-quality) aluminium 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) aluminium, 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) aluminium, 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 aluminium, 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). 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

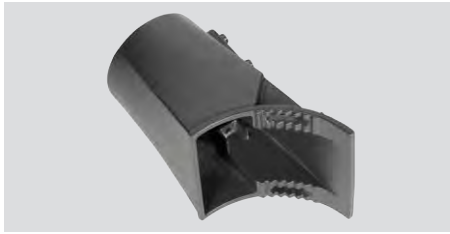
in case of incidental LED board failure, the LED board with reflector frame can easily be replaced after disconnecting the plug and removal of the lens blocks.

## 13 Controls

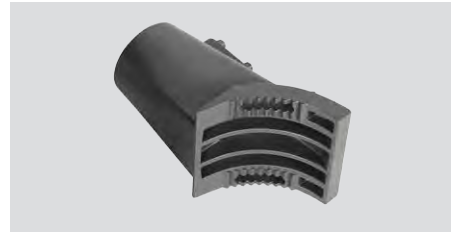
- DynaDimmer or LumiStep stand alone scenarios (various dim percentages and time settings).
- 1-10V with dim switch for extra incoming pilot line, for one step dimming.
- 1-10V or DALI dim prepared for incoming communication.

# Luminaire features

## Spigot arrangements

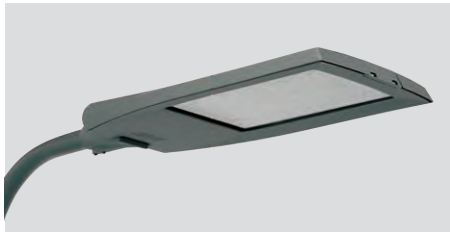


Dedicated spigot for post-top  $\varnothing$  76 mm.



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

## Colors



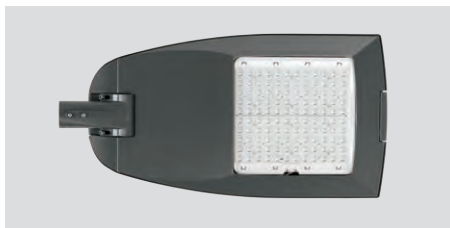
Futura Gris 900 Sablé.



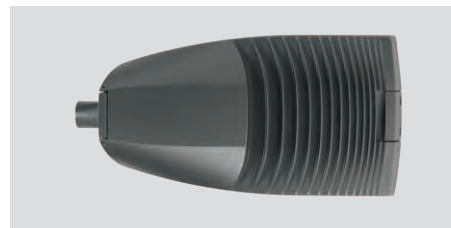
Futura Gris 150 Sablé.

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).

## Integral design



The real flat bottom view of the Luma is required to prevent any upward light. With the electronics based on top of that line at the back of the luminaire, the required extension of the heat dissipation surface (given size limitations) is perfectly integrated into a logical design profile of the luminaire, by putting vertical curves on top of the housing that get lower and with less interdistance towards the front of the luminaire. 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, and at the same time is key to the attractive appearance of the luminaire. Moreover, the horizontal top surface of the luminaire is slightly rounded and the vertical curves are rounded at their top and bottom details. Together with their deliberately chosen interdistance relative to their height, the drainage and cleaning of the luminaire is optimized.

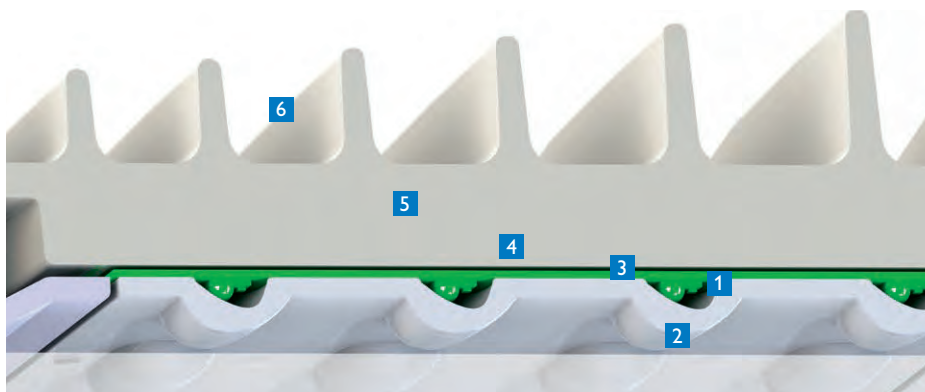
# Luminaire features

## 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.



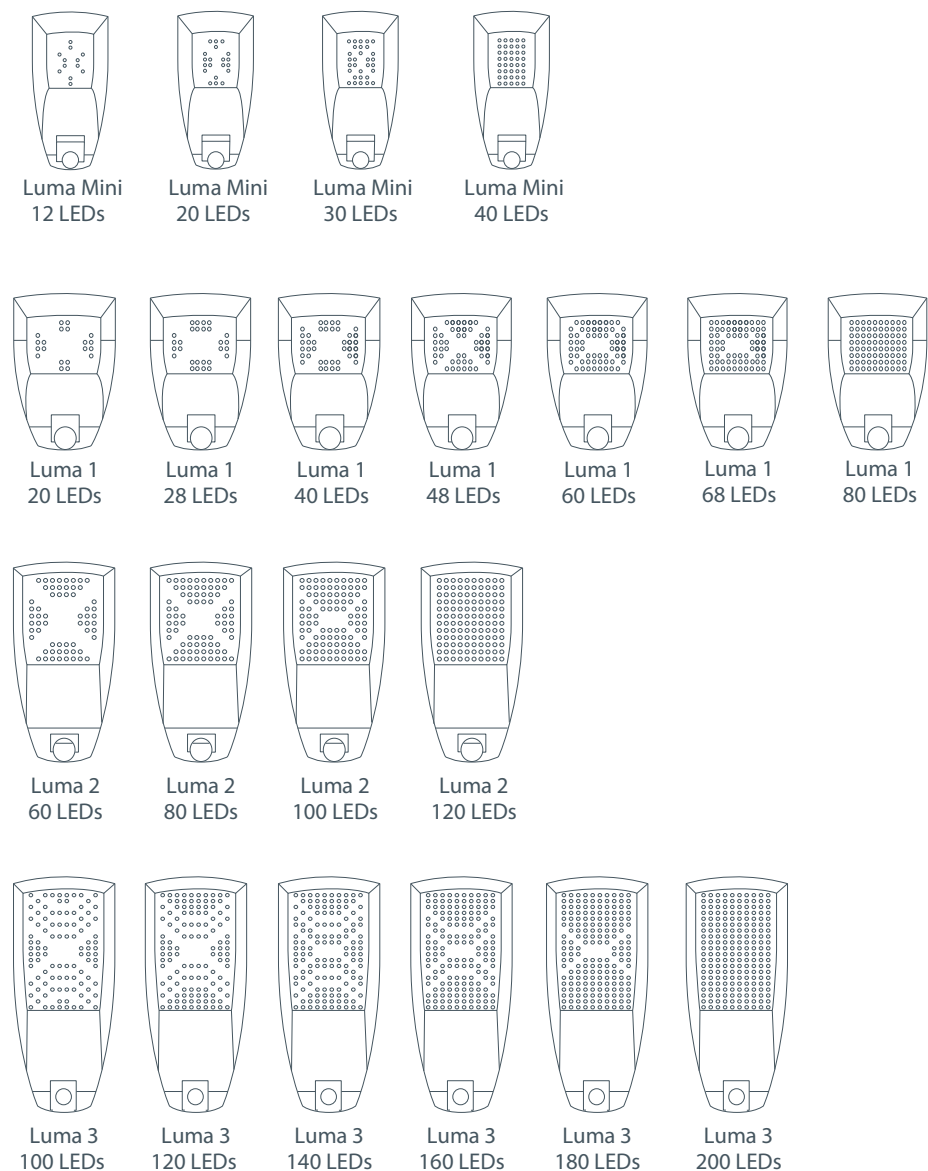
- 1 LEDs at relatively close interdistance, asking for accurate heat control.
- 2 Lenses are grouped in lens plates of 20 lenses; by using this controllable compact size and always placing all lens plates on the PCB, the result is an equalized pressure on the PCB, optimizing heat dissipation.
- 3 Lower 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 aluminium 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.



# Luminaire features

## LED configurations 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.



# Luminaire features

## 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.

The image displays two screenshots of the L-Tune software interface. The left screenshot shows the input configuration page with sections for 'Colour temperature', 'Flux & Maintenance factors', and 'Dimming and dimming options'. The right screenshot shows the 'Calculated possible solutions' table with columns for 'Solution', 'Cost/Flux', and 'Investment possibility', and a 'Results' section below it.

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 fulfill 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.

# Luma in control

Lighting city streets, roads and public spaces presents many challenges. The dynamics of city life change constantly due to traffic density and different traffic levels. You need the right levels of lighting to respond to those changes and make the city feel safe, attractive and inviting. But you are also under pressure to reduce energy costs and maximize your green credentials. Philips offers you a complete intelligent lighting controls range to help you overcome all those problems and make the city more livable and sustainable.

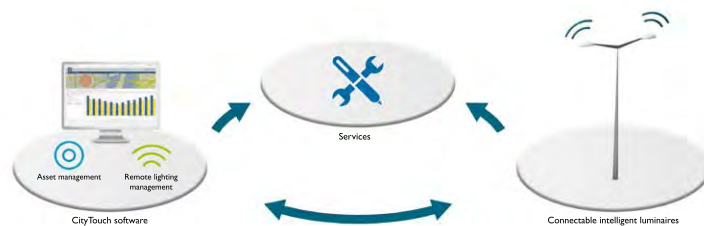
## CityTouch LightWave



Luma can be seamlessly connected with CityTouch LightWave via integration of all the intelligence into the luminaire without any additional hardware needed. The communication runs directly via the public mobile network. As a positive side effect, no own maintenance effort is required. In addition, the whole connectivity management is part of our service which keeps any hassle away from you as a customer. Once connected to the power supply a light point automatically appears on the CityTouch map at the right location – with all technical parameters imported into the system.

CityTouch LightWave is an intelligent, interactive remote management solution for your street lighting. It brings your city lighting to life and provides you with flexibility, knowledge and accuracy.

Flexibility means that you will be easily able to act or react according to expected and unexpected situations by dimming or brightening all areas within your city to ensure safety and well-being. Knowledge implies that you are always informed about the current status of every single luminaire – for better maintenance and faster repairs. Accuracy stands for precise energy metering which gives you a perfect overview on real non-estimated energy consumption.



### CityTouch LightWave key features



#### Control of each individual light point

You get the flexibility to adapt every single luminaire to changing situations or demands of the city at any time. To adjust calendars to the individual needs you are free to change the “switching points” of every dimming profile simply via drag and drop.



#### Fault detection & notification

A quicker and better knowledge of the current status of the lighting infrastructure enables you to manage faster maintenance and improve the maintenance service level.



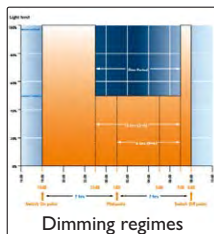
#### Accurate energy metering

With accurate energy metering down to the level of each single luminaire it is possible to verify your energy bills and identify new potential savings.

# Luma in control

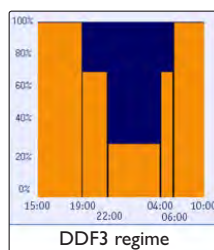
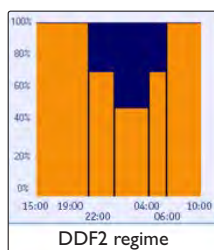
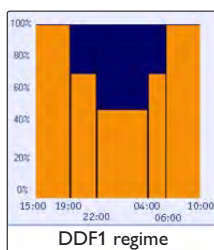
## LumiStep control

An integrated control system available in the Philips driver, which lowers the flux of the light source and power consumed over a period of 6, 8 or 10 hours (3 pre-programmed versions). The potential energy savings (on power system) is up to 25%, depending on the luminaires and light source used.



## DynaDimmer control

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



## Starsense Wireless with RF antenna

A system to control and monitor remotely light points, that works independently with practically any light source. It is not limited in available power scenarios. Starsense allows to have feedback from the installation, which supports easy maintenance. This solution can generate up to 70% energy savings and 40% on maintenance costs.





## Luma in perspective

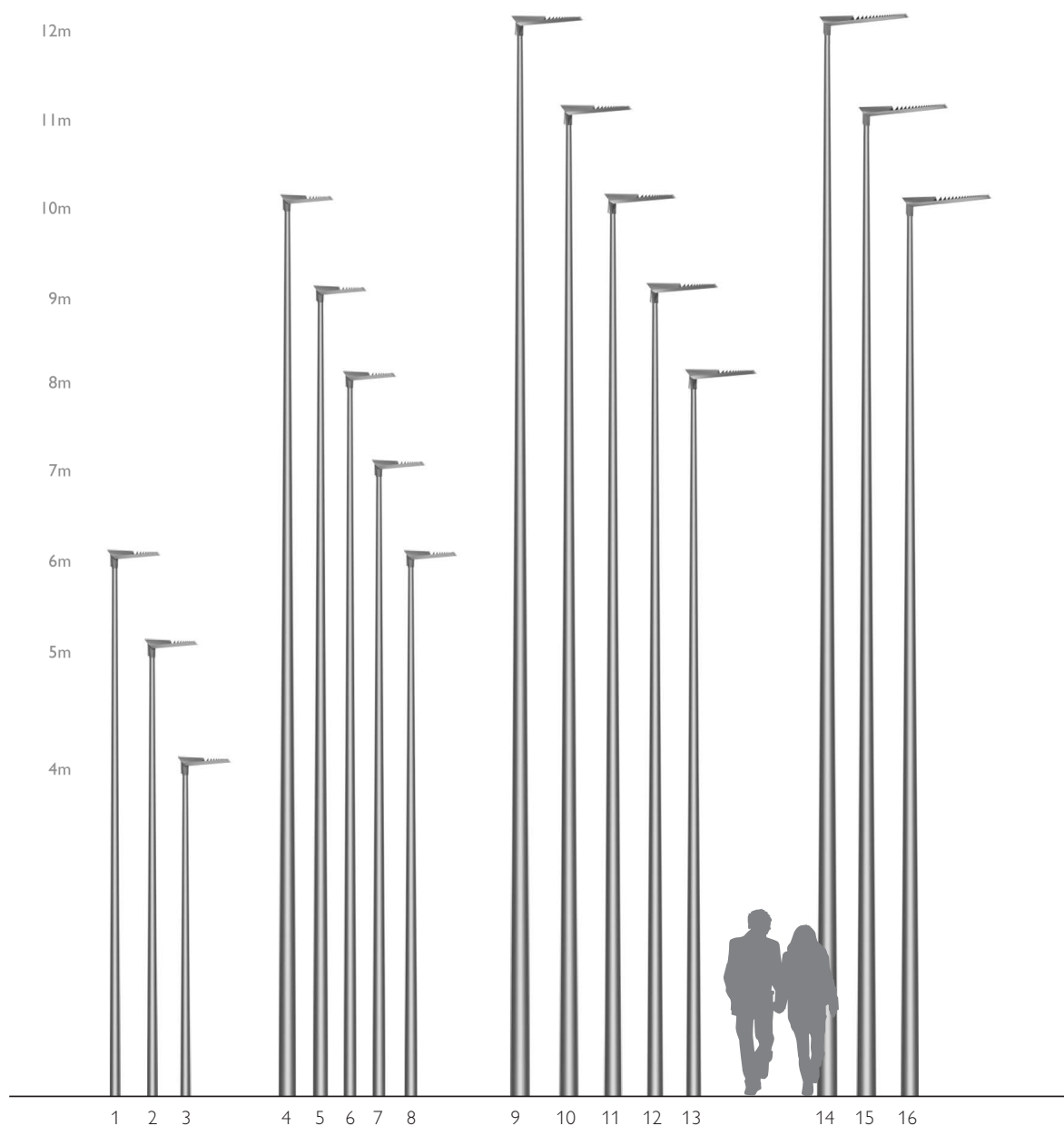
The Luma range has been designed to offer perfect solutions, also in terms of the proportion of the luminaire to its mounting height or a specific environment.

1-3. Luma 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.

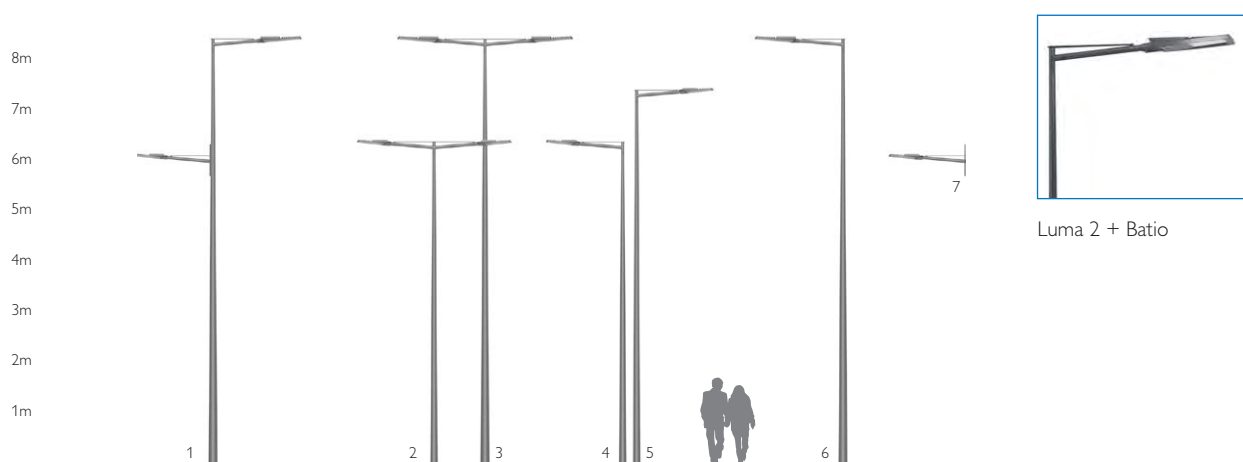


## Luma complete sets

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. Have a look in our Inspiration for urban complete sets catalogue.

### Batio bracket

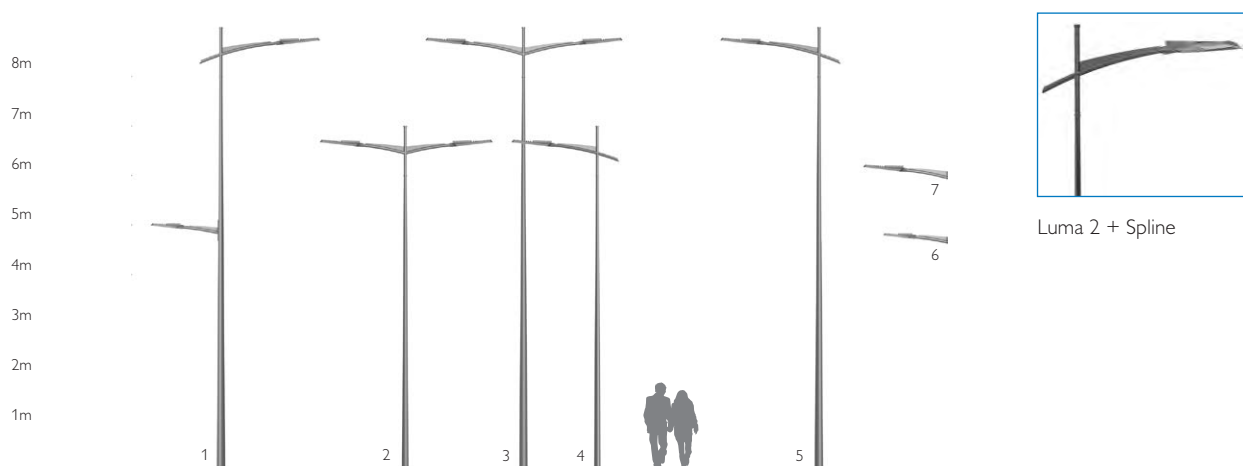
1. Luma 2 + Batio L980 bracket + Aloa/Accante pole + Luma Mini + Batio L660 rear bracket
- 2-4. Luma 1 + Batio L660 bracket + Aloa/Accante pole
- 3-6. Luma 2 + Batio L980 bracket + Aloa/Accante pole
5. Luma 1 + Batio L980 bracket + Aloa/Accante pole
7. Luma Mini + Batio L980 wall bracket



Luma 2 + Batio

### Spline bracket

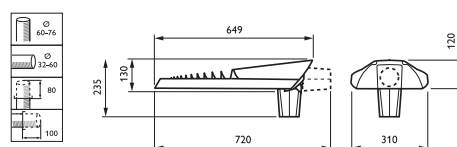
1. Luma 2 + Spline L1645 bracket + Aloa/Accante pole + Luma Mini + Spline L1485 rear bracket
- 2-4. Luma 1 + Spline L1485 bracket + Aloa/Accante pole
- 3-5. Luma 2 + Spline L1645 bracket + Aloa/Accante pole
6. Luma Mini + Spline L1485 wall bracket
7. Luma 2 + Spline L1645 wall bracket



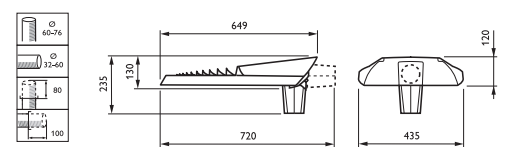
Luma 2 + Spline

# Main specifications

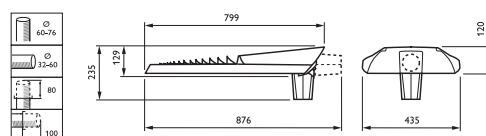
Product features	Specifications
<b>Type</b>	Luma Mini (up to 40 LEDs) • Luma 1 (up to 80 LEDs) • Luma 2 (up to 120 LEDs) • Luma 3 (up to 200 LEDs)
<b>Light source</b>	Built-in LED module
<b>Color temperature</b>	3000K (warm white) • 4000K (neutral white) • 5700K (cool white)
<b>Color Rendering Index</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 L80F10
<b>CLO</b>	CLO is available
<b>Warranty</b>	Gold > 100,000 hours • Silver < 100,000 hours
<b>Optic</b>	R1 - R10
<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 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>	40W: 65A@100µs • 75W: 80A@150µs • 100W: 80A@150µs • 150W: 108A@140µs
<b>Intelligence control</b>	LumiStep (LS) • DynaDimmer (DDF) • SDU (D4) • External dimming 1-10 V (D7/D9) • Starsense Wireless with RF antenna • CityTouch client
<b>Mains voltage</b>	210-240 V / 50-60 Hz
<b>Electrical class</b>	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 Futura colors or duo-colors available on request
<b>IP-rating</b>	IP66
<b>IK-rating</b>	IK09
<b>Weight</b>	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 Mini 0.055 m <sup>2</sup> • Luma 1 0.057 m <sup>2</sup> • Luma 2 0.067 m <sup>2</sup> • Luma 3 0.079 m <sup>2</sup>
<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
<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



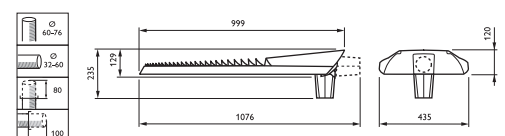
Luma Mini / BGP621 40 /NW PSU II OFR1 GR 62 0 L30



Luma 1 / BGP623 68 /NW PSU II OFR1 GR 62 0 L30



Luma 2 / BGP625 120 /NW PSU II OFR1 GR 62 0 L30



Luma 3 / BGP627 180 /NW PSU II OFR1 GR 62 0 L30

# Conversion table

Luminaire version	Product family code	LED	CW Min/Max lumen	NW Min/Max lumen	WW Min/Max lumen	System power (W) Min / Max
Luma Mini	BGP621	12	1,100 - 3,350	1,000 - 3,100	850 - 2,450	10 - 30
Luma Mini	BGP621	20	1,800 - 5,550	1,700 - 5,150	1,400 - 4,000	15 - 47
Luma Mini	BGP621	30	2,700 - 8,350	2,500 - 7,700	2,100 - 6,000	22 - 69
Luma Mini	BGP621	40	3,600 - 11,000	3,350 - 10,250	2,800 - 7,900	27 - 90
Luma 1	BGP623	20	1,800 - 5,550	1,700 - 5,150	1,400 - 4,050	15 - 47
Luma 1	BGP623	28	2,550 - 7,400	2,350 - 6,850	1,950 - 5,650	21 - 65
Luma 1	BGP623	40	3,600 - 10,500	3,350 - 9,700	2,800 - 8,000	28 - 94
Luma 1	BGP623	48	4,350 - 12,550	4,000 - 11,600	3,350 - 9,550	33 - 111
Luma 1	BGP623	60	5,400 - 15,500	5,000 - 14,350	4,200 - 11,900	40 - 137
Luma 1	BGP623	68	6,100 - 17,550	5,650 - 16,200	4,750 - 13,400	44 - 154
Luma 1	BGP623	80	7,200 - 22,150	6,750 - 20,500	5,550 - 15,650	51 - 180
Luma 2	BGP625	60	5,450 - 15,700	5,000 - 14,500	4,200 - 12,000	40 - 137
Luma 2	BGP625	80	7,200 - 20,650	6,700 - 19,100	5,600 - 15,800	52 - 187
Luma 2	BGP625	100	9,000 - 25,450	8,350 - 23,550	6,950 - 19,550	68 - 229
Luma 2	BGP625	120	10,950 - 32,950	10,100 - 30,450	8,350 - 23,250	79 - 270
Luma 3	BGP627	100	9,000 - 26,100	8,350 - 24,150	6,950 - 19,950	68 - 231
Luma 3	BGP627	120	10,800 - 30,950	10,000 - 28,650	8,350 - 23,700	80 - 273
Luma 3	BGP627	140	12,600 - 35,900	11,650 - 33,200	9,750 - 27,500	91 - 316
Luma 3	BGP627	160	14,350 - 40,550	13,250 - 37,500	11,100 - 31,150	108 - 365
Luma 3	BGP627	180	16,450 - 49,300	15,200 - 45,600	12,500 - 34,750	118 - 402
Luma 3	BGP627	200	18,250 - 54,400	16,900 - 50,300	13,900 - 38,200	129 - 446





