

# Luma

IP 66  
(XIP)

IK 09

Class I

Class II



Luma is a REVOLED™ road lighting luminaire with a clear identity, offering perfectly cooled, fit and forget solutions for all streets and roads. With the L-Tune tool the lumen package, life time and energy profile can be tuned to a preferred solution in terms of energy and costs. The real flat design prevents upward light and the OPTIFLUX™ lens optics meet current lighting standards in an effective way.

## Lamps LED

MiniLuma

up to 40 LEDs  
from 850 to 10,350 lumen

Luma 1

up to 80 LEDs  
from 1,400 to 20,400 lumen

Luma 2

up to 120 LED  
from 4,200 to 30,300 lumen

Luma 3

up to 200 LED  
from 6,950 to 49,600 lumen



MiniLuma  
Post top Ø 76mm



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



Luma 1  
Post top Ø 76mm



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



Luma 2  
Post top Ø 76mm



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



Luma 3  
Post top Ø 76mm



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

- 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 colours on request.
- 2 **Bowl** in flat toughened glass to prevent upward light according glare classification up to G4. 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 colour as canopy / frame. Universal post top / side entry spigot for  $\varnothing$  42-60mm (Luma 2 / Luma 3) and  $\varnothing$  32-60mm (MiniLuma / Luma 1) or separate spigot for post top  $\varnothing$  76mm.
- 4 **Mounting** with two stainless steel M10 bolts (extra long bolts for small column 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 colour 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 hinged for easy access to components, tool-less removable after disconnecting the plug.
- 7 **Gear** in MiniLuma, Luma 1 and Luma 2 maximum two drivers and maximum three in Luma 3 (depending on LED quantity and operating current). The drivers are programmed, based on L-Tune defined and optimised lighting solution:
  - **Tuned flux** to match required lighting level within the preferred service life and luminaire size.
  - **CONSTAFLUX** constant lumen output throughout service life, taking away over-lighting from the start of installation, giving extra energy savings.
  - **Dimming** options



- 8 **Gasket** IP 66 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  $\varnothing$  10-14mm.
- 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.

#### Dimming (all LEDs stay on):

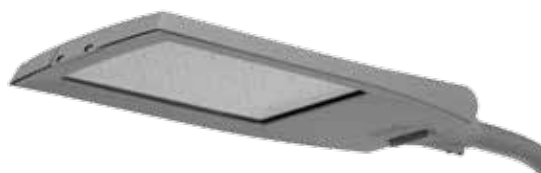
- Dynadim stand alone scenarios (various dim percentages and time settings).
- 1-10V with dim switch for extra incoming pilot line, for one step dimming.
- 1-10V or DALI dim prepared for incoming communication.

## CHARACTERISTICS

### Luma colours



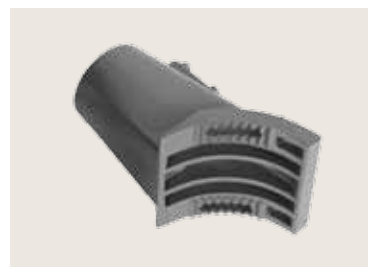
Futura Gris 900 Sablé



Futura Gris 150 Sablé

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

### Luma spigot arrangements



**MiniLuma / Luma 1:** Universal spigot for post top and side entry Ø 32-60mm (max 62mm). The small diameters 32mm and 34mm can only be installed on a steel column. For small column diameters extra long bolts can be ordered with the luminaire. Easy to put in post top or side entry position by changing the spigot bolts fixation.

Dedicated spigot for post top Ø 76mm.

**Luma 2 / Luma 3:** Universal spigot for post top and side entry Ø 42-60mm (max 62mm). For small column diameters extra long bolts can be ordered with the luminaire. Easy to put in post top or side entry position by changing the spigot bolts fixation.

### Luminaire tilt adjustment

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



Post top: 0, +5 and +10 degrees.



Side entry: -10, -5, 0, +5 and +10 degrees.

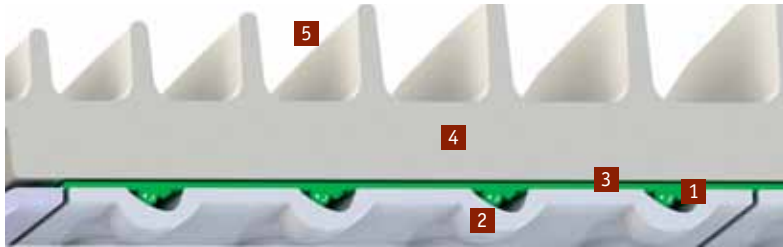
# Luma CHARACTERISTICS

## 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

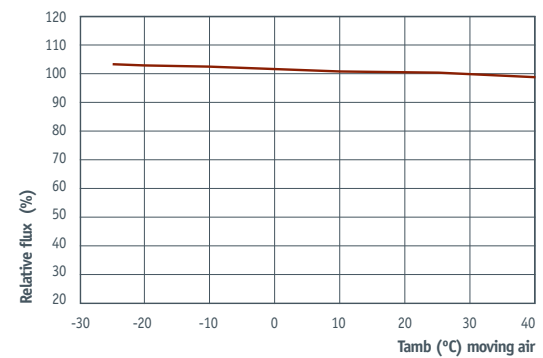
By taking an integral design approach many luminaire parts can contribute to get the coolest and therefore most efficient lighting solution.



- 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, optimising heat dissipation.
- 3** Lower LED quantities are placed on the PCB in configuration patterns that optimise heat control.
- 4** The aluminium luminaire housing has the capacity to spread and dissipate the heat to the ambient.
- 5** The curves on top of the housing further increase the dissipation capacity.

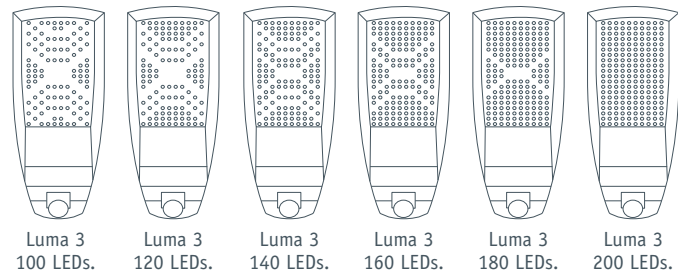
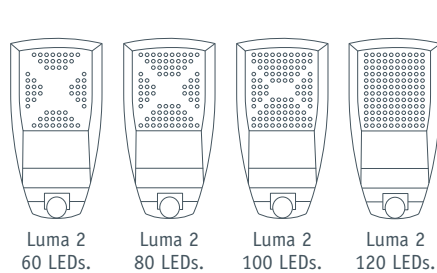
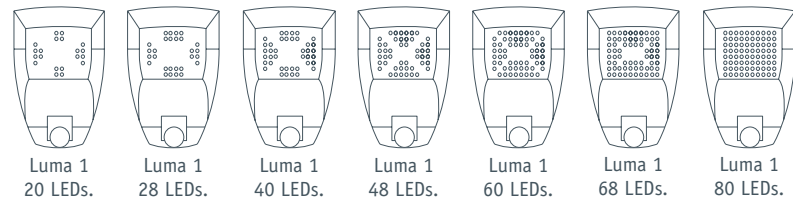
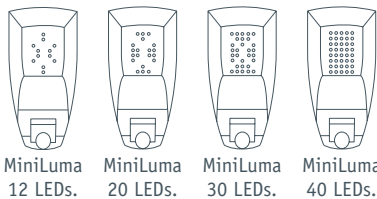
## TEMPERATURE-FLUX CURVE LUMA

Typical Temperature-flux curve for Luma



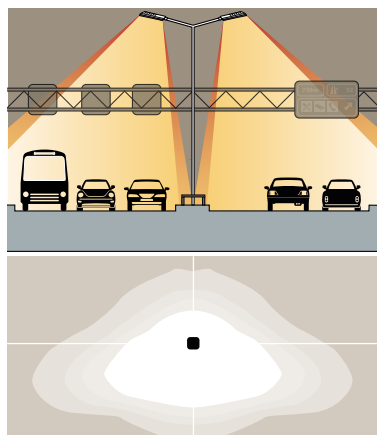
## LED configurations

The Luma has several standard LED configurations available, offering a wide range of lighting solutions.

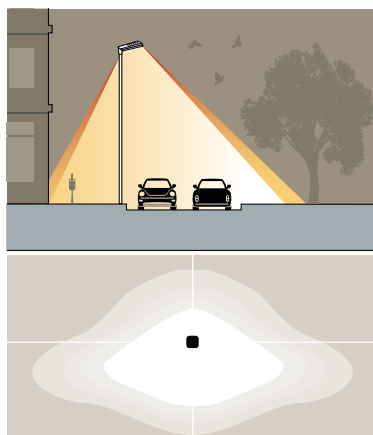


### OPTIFLUX™ optical technology

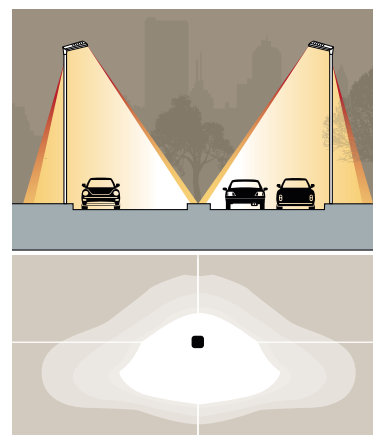
In Luma a number of lens optics are available to match the variety of ME / CE / S lighting classes and road / street geometries internationally. The high performance OPTIFLUX™ lenses are fixed within a high reflecting frame, in order to maximise the Light Output Ratio (up to ~92%). In combination with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



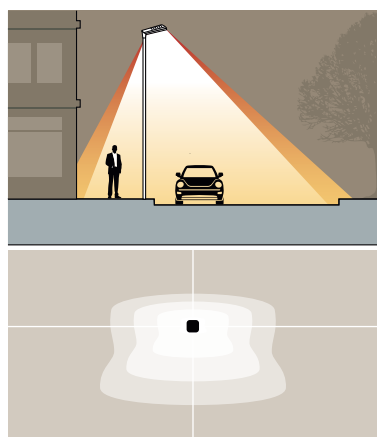
R1 - Medium distribution for ME1-2 and lower.



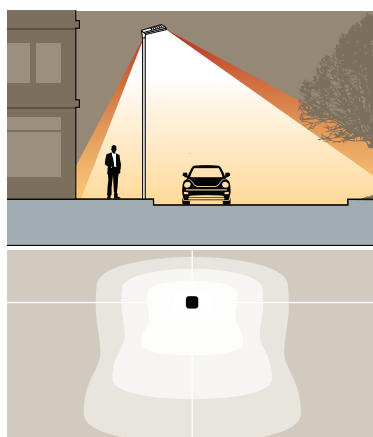
R2 - Typical distribution for relatively narrow ME geometries.



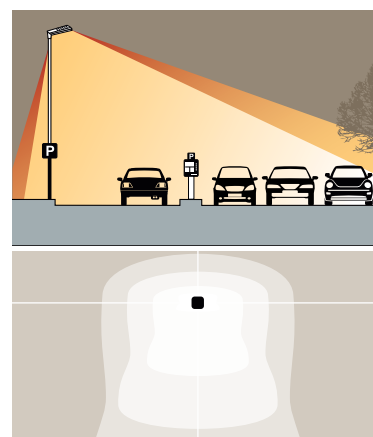
R3 - Medium distribution for ME3 and lower.



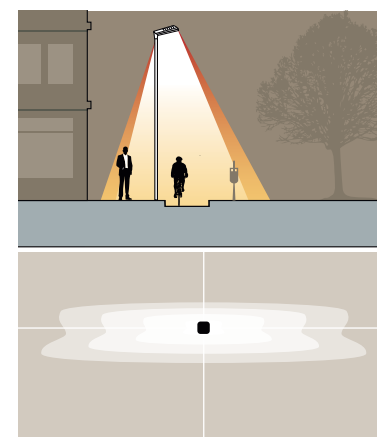
R4 - Medium distribution for S-Class.



R5 - Wide distribution for S-Class.



R6 - Extra Wide distribution for S-Class.



R7 - Narrow distribution for S-Class.

For the latest lens developments please check the most recent Luma photometries.

### Example Luma photometry notation

#### Luma 2 R1 60-120 DS-NW 1 5000-28000 NW LED

Luma 2	= Luminaire type
R1	= Lens type
60-120	= Min. and max. LED quantity
DS-NW	= Neutral White LED (Ilcos code)
1	= LED power undefined (depends on final solution)
5000-28000	= Min. and max. lumen package
NW	= Neutral White colour temperature
LED	= Light source

### Tuneable lumen packages

In order to customise the lighting solution the Luma photometries don't contain fixed output data, but a basic combination of:

- Luma version (MiniLuma, Luma 1, Luma 2 or Luma 3).
- Colour temperature (CW, NW or WW).
- Lens type (R1 to R7).

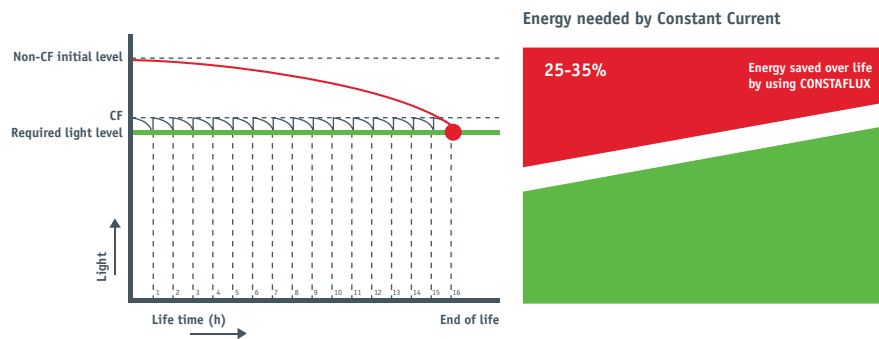
Each file shows the min. and max. flux possible within the limitations of LED quantity, lumen output for each colour temperature, and min. and max. operating current.

In lighting software the optimum lens and flux can be defined.

## CONSTAFLUX

Luma can be programmed to keep the flux of the LEDs at a predefined constant level over the life time (by increasing the operating current over time to compensate for the LED lumen depreciation).

Over-lighting at the beginning is taken away, so extra energy saving can be realised (up to 35% extra versus L70 based solutions).



### Lighting optimisation

As more and more lighting solutions are judged on their energy efficiency (for instance using labels representing system Watts / target lux or cd / target area  $m^2$ ), the aim is to light an area with exactly sufficient light at lowest energy consumption possible.

In other words taking out over-lighting.

In Luma this can be fine tuned by using the programmable drivers based on the L-Tune tool solutions provided.

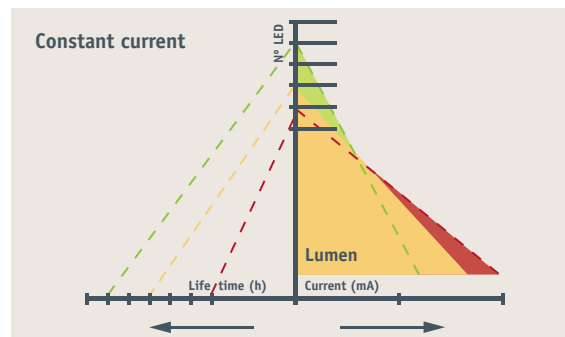
### Solution drivers.....

The lighting optimisation in Luma is driven by the following instruments:

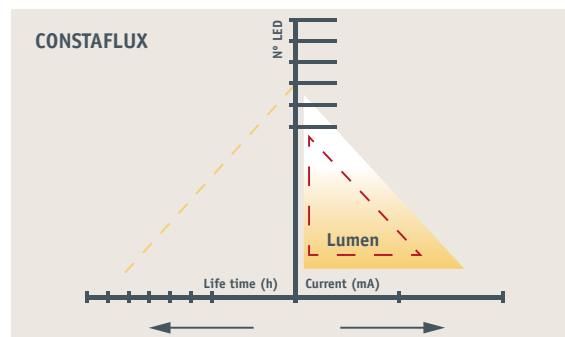
- quantity of LEDs
- operating current
- increased LED life time resulting from dimming and / or use of CONSTAFLUX.

### .....and their interrelationships

Both for constant current and CONSTAFLUX solutions the interrelating solution drivers can be seen in following graphs.



- Typical lumen package using Constant Current.
- Same lumens by higher current and less LEDs, giving a shorter life time.
- Same lumens by more LEDs and lower current, giving a longer life time.

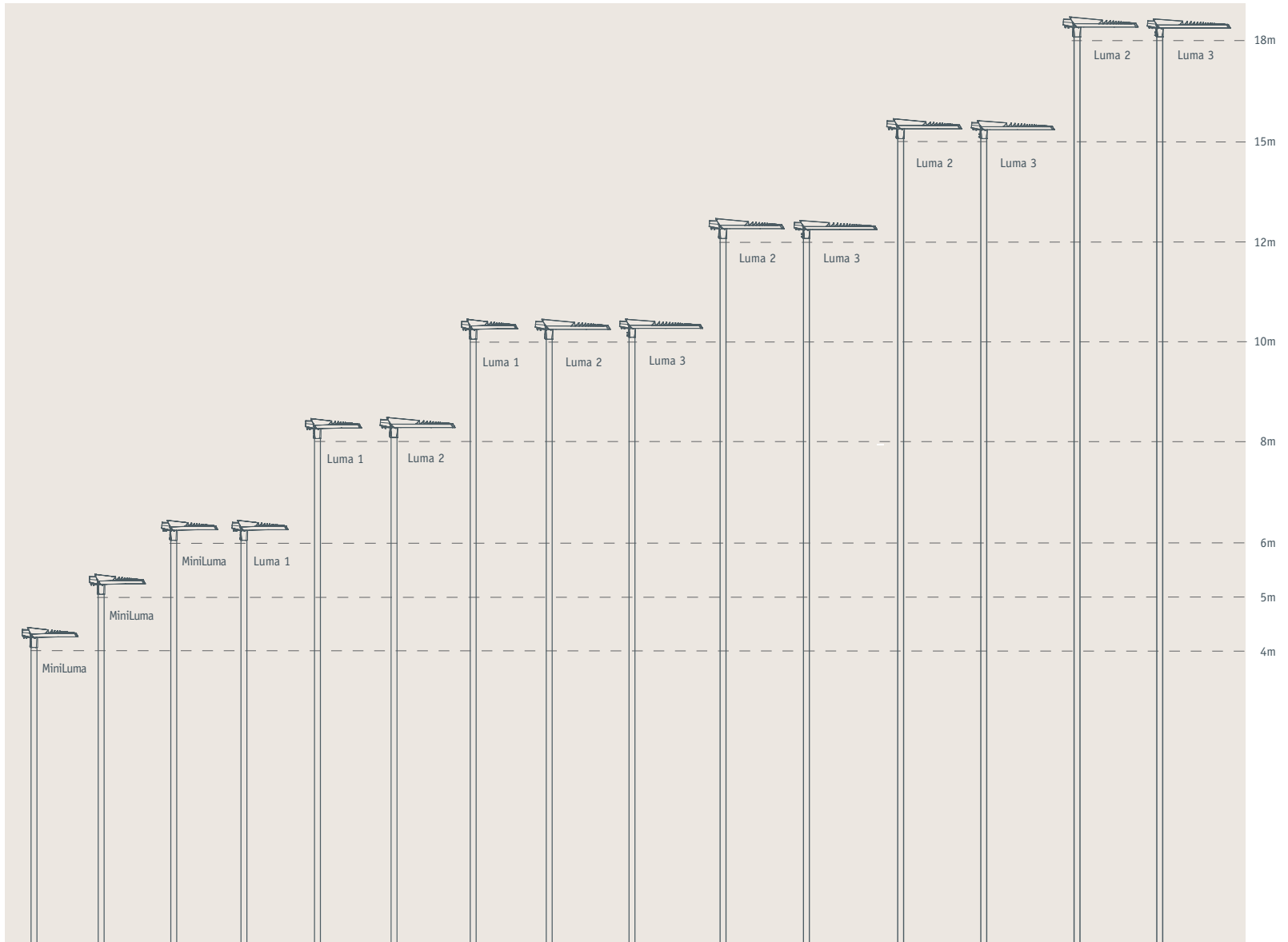


- By using CONSTAFLUX less initial lumens are needed for the same light technical performance, as lumen depreciation is compensated by increasing the current over life.

The same lumen package can be built in different ways to suit the client's and project's priorities.

### Luma in perspective

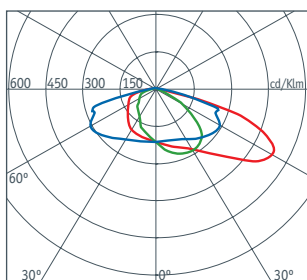
The Luma range has been designed to offer perfect solutions for each project, also in terms of the proportion of the luminaire to its mounting height or a specific environment.



- MiniLuma** suitable for mounting heights of 4-5-6m post top or side entry, for instance on residential streets or cycle paths.
- Luma 1** suitable for mounting heights of 6-8-10m post top or side entry, for instance on main residential streets or urban traffic roads.
- Luma 2** suitable for mounting heights of 8-10-12-15-18m post top or side entry, for instance on main urban traffic roads or motorways.
- Luma 3** suitable for mounting heights of 10-12-15-18m post top or side entry, for instance on motorways.



### Luma

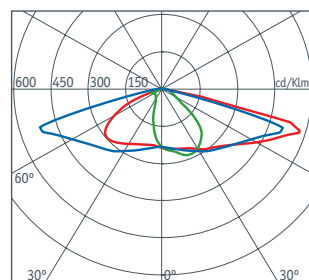


**Optic**  
R1

**Lamp**  
120LED

**Performance**  
ULOR: 0%  
DLOR: 93%

### Luma



**Optic**  
R4

**Lamp**  
120LED

**Performance**  
ULOR: 0%  
DLOR: 92%

MODEL	TYPE	SHAPE	COLOUR TEMP.			REFLECTOR							W.a. (m <sup>2</sup> )	Kg	
			NW	CW	WW	R1	R2	R3	R4	R5	R6	R7			
MiniLuma	12LED		•	•	•	•	•	•	•	•	•	•	•	0.055	9.5
	20LED		•	•	•	•	•	•	•	•	•	•	•		9.5
	30LED		•	•	•	•	•	•	•	•	•	•	•		9.5
	40LED		•	•	•	•	•	•	•	•	•	•	•		9.5
														(no driver)	9.0
Luma 1	20LED		•	•	•	•	•	•	•	•	•	•	•	0.057	11.0
	28LED		•	•	•	•	•	•	•	•	•	•	•		11.0
	40LED		•	•	•	•	•	•	•	•	•	•	•		11.0
	48LED		•	•	•	•	•	•	•	•	•	•	•		11.0
	60LED		•	•	•	•	•	•	•	•	•	•	•		11.0
	68LED		•	•	•	•	•	•	•	•	•	•	•		11.0
	80LED		•	•	•	•	•	•	•	•	•	•	•		11.5
														(no driver)	10.0
Luma 2	60LED		•	•	•	•	•	•	•	•	•	•	•	0.067	14.5
	80LED		•	•	•	•	•	•	•	•	•	•	•		15.5
	100LED		•	•	•	•	•	•	•	•	•	•	•		15.5
	120LED		•	•	•	•	•	•	•	•	•	•	•		15.5
														(no driver)	13.5
Luma 3	100LED		•	•	•	•	•	•	•	•	•	•	•	0.079	19.5
	120LED		•	•	•	•	•	•	•	•	•	•	•		19.5
	140LED		•	•	•	•	•	•	•	•	•	•	•		19.5
	160LED		•	•	•	•	•	•	•	•	•	•	•		19.5
	180LED		•	•	•	•	•	•	•	•	•	•	•		20.5
	200LED		•	•	•	•	•	•	•	•	•	•	•		20.5
														(no driver)	17.5

For the tolerances on flux and / or system power values applicable, please see the installation guide of the product.

Exact flux and system power to be defined by L-Tune tuning tool.

W.a. (Windage area)  
Kg (Weight)

### OPTIONS

Including cable

Wired for cell (WFC), mini Photocell or NEMA socket

Other RAL, Futura colours or duo colour versions on request

DIM versions:

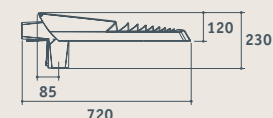
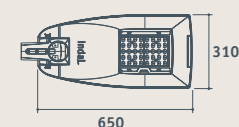
1) Dynadim stand alone scenarios programmed (various dim percentages and time settings)

2) 1-10V with dim switch for extra incoming pilot line, for one step dimming

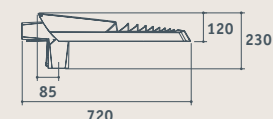
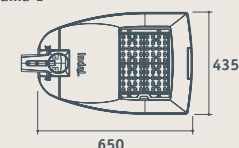
3) 1-10V or DALI dim prepared for incoming communication

4) Control & Monitoring versions, like Starsense RF OLC

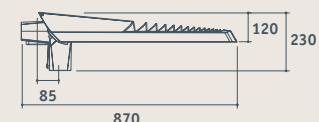
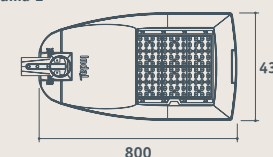
### MiniLuma



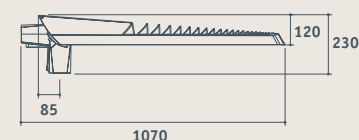
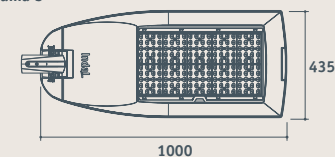
### Luma 1



### Luma 2



### Luma 3



### Mounting details

