



# Global trends

# We are increasingly urban and global

Today 50% of the world's population lives in cities. This is expected to rise to 75% by 2050.

## Environmental awareness

Cities want to meet their sustainability goals and reduce light pollution and their impact on the environment.

# Cities want to **establish identity**

Municipalities want to enhance the quality of life, well being of citizens and create comfortable public spaces.

# **Growing** connectivity

There are new opportunities to improve urban life through intelligent lighting part of the IoT eco-system.

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Copenhagen City Comfort LED

# Meet the Copenhagen family

The Copenhagen family was co-designed in cooperation with the Copenhagen's Office of City Architecture in the 1960s with the purpose of enhancing the aesthetic appeal of the city through lighting.

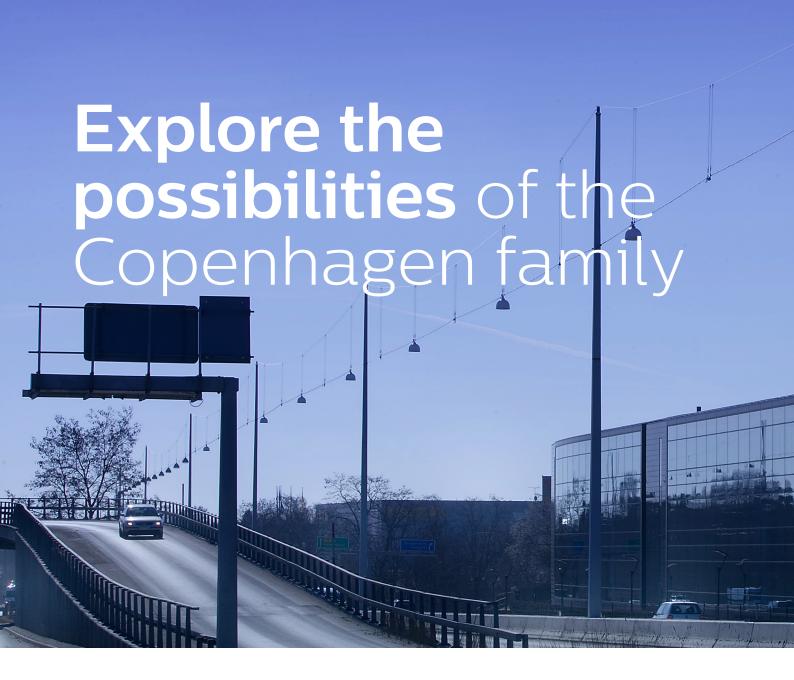
Copenhagen City LED gen2

Based on a discreet and timeless design Copenhagen comes in multiple types: Copenhagen LED gen2, Copenhagen City LED gen2, and Copenhagen City Comfort LED to cover all needed applications.

From motorways to footpaths, from city centers to parks, different areas of the city have unique lighting needs. Copenhagen can be effectively deployed in any environment and matched to its lighting needs. To meet the different mounting heights and offer harmonious propositions, we offer multiple sizes in the Copenhagen family.



Copenhagen LED gen2





### Wide application coverage

Thanks to the built in Philips LEDGINE platform, and the wide range of available application-tailored optics, Copenhagen delivers the right amount of light and in the right direction on your street, maximizing energy savings.



### High quality of light

Copenhagen delivers comfortable lighting without compromising on visibility and safety. It also offers a wide choice of color temperatures (2200K, 2700K, 3000K and 4000K) with a good to high color rendering.





### Ready for connectivity

Copenhagen comes with one or two Philips SR (System Ready) sockets, which make the luminaires future-ready. What this means is that Copenhagen is ready to be paired with both standalone and advanced control and lighting software applications such as Interact from Signify or sensors.



### Lower environmental impact

The Copenhagen family meets the five criteria of lighting for circularity. In order to reduce the carbon footprint of the luminaires, the iconic canopy is made of bio-based plastic and main metal parts manufactured from recycled aluminium.

# Meet Copenhagen City Comfort LED

# Designed to ensure the highest comfort in inner-city environments.



Public lighting

Copenhagen City Comfort family

Introduction

Copenhagen City Comfort LED caters to the needs of sensitive urban areas with high demand for spill light control and very high comfort. Since the LED platform is recessed deeper in the housing, the light points are not directly visible. The luminaire comes in two versions: Comfort and Xtra Comfort. The Copenhagen City Xtra Comfort LED version provides even more spill light control in extra sensitive areas. This means that residents in these areas can enjoy the benefits of functional lighting without being bothered by excessive light pollution. Overall, the solution creates a pleasant and comfortable atmosphere for residents and contributes to a more livable city.

# Copenhagen City Comfort LED

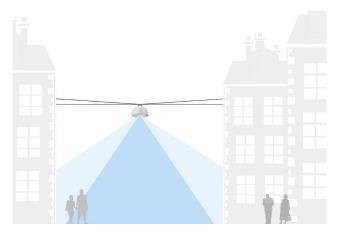


High comfort due to recessed LEDs Highest luminous intensity class  $(G^*6)$ 

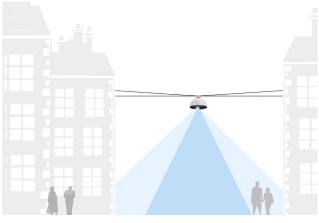
# Copenhagen City Xtra Comfort LED



Lower glare and less spill light Highest luminous intensity class (G\*6)



Reduce intensity above 85 degrees



Reduce intensity above 75 degrees Less obtrusive lighting on windows

# Application areas

## **Enhancing comfort**

Copenhagen City Comfort LED is ideal for inner city and residential environments with high demand for lighting comfort. The architecture limits the direct view into the light source for residents, minimizing obtrusive lighting. By carefully controlling glare, the solution creates a pleasant atmosphere that doesn't bother residents with excessive light.

### City centers

- Narrow city streets
- Inner city open areas
- Old town areas
- · Shopping and pedestrian streets

### Residential areas

- Residential streets
- Squares and playgrounds
- · Pedestrian streets





# Meet Copenhagen City LED gen2

# Create the right atmosphere with light



Public lighting

Copenhagen City LED gen2

Introduction

Copenhagen City LED gen2 offers fully balanced, comfortable lighting effects with minimum glare, enabled by a round LED engine, which follows the shape of the luminaire. The opal canopy option provides further possibilities to enhance the lighting impact and provides new options for city branding as it can be used to create both static (glow effect) and dynamic (RGBW) uplight. The luminaire comes with a variety of suspensions and optics, offering maximum freedom in designing lighting for city center and residential area applications.

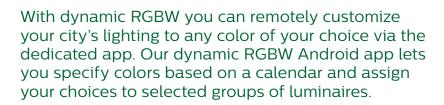






# Customize your city with dynamic uplight





Whether you want to celebrate New Year's Eve, dress up for Halloween or raise awareness on a social issue we are here to help you light up your city for any occasion. Dynamic RGBW will not only create a unique atmosphere relevant to every event but it can also guide both citizens and tourists to where special events are taking place.

New Year's Eve





**Breast Cancer Awareness** 



Gay Pride





# **Application** areas

# In the heart of the city

Designed around our LEDgine platform, Copenhagen City LED gen2 delivers outstanding levels of lighting and energy performance. Copenhagen City LED gen2 is part of our Urban lighting portfolio with strong focus on the emotional values of lighting:

For every application in the city we do have several solutions to really inspire and enhance your city, while meeting your demands and beyond.

- Create ambiance
- Enhance well-being
- Promote tourism and heritage
- Increase the livability in the city

### City centers

- Side streets
- · Squares, parks and playgrounds
- Cycle paths and footpaths
- · Shopping and pedestrian areas

### Residential areas

- Residential streets
- · Cycle paths and footpaths
- Squares, parks and playgrounds
- Parking areas



Nightlife areas



# Meet Copenhagen LED gen2

# The right light for the right areas



Public lighting

Copenhagen LED gen2

Introduction

Copenhagen LED gen2 comes in four sizes to ensure that the installation blends harmoniously with the surroundings and delivers the light levels needed. A variety of suspensions are available, enabling a variety of mounting options and providing maximum freedom during installation

Thanks to the built-in Philips LEDGINE optimized LED platform, and the wide range of available application-tailored optics, Copenhagen LED gen2 delivers the right amount of light and in the right direction on your street, maximizing energy savings.





Copenhagen LED gen2 mini





Copenhagen LED gen2 **small** 





Copenhagen LED gen2 large



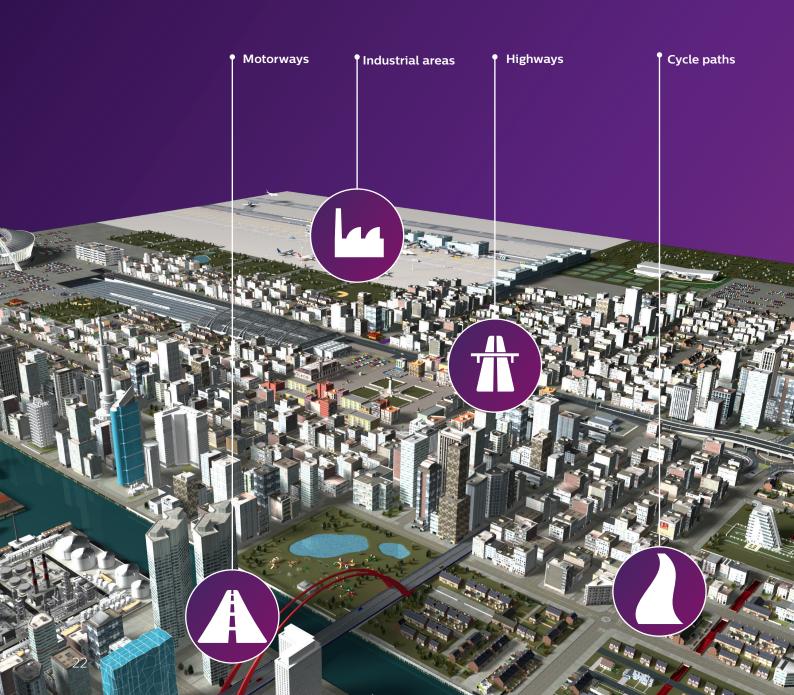


Copenhagen LED gen2 mega

# **Application** areas

# Different contexts need different light

From industrial areas to motorways to highways - different areas of the city have unique lighting needs. Copenhagen LED gen2 can be effectively deployed in any environment to match its lighting needs.







Public lighting

Copenhagen LED gen2

LEDGINE

# **LEDGINE** optimized

Thanks to the built in Philips LEDGINE optimized LED platform, and the wide range of available application-tailored optics, Copenhagen LED gen2 delivers the right amount of light and in the right direction on your street, maximizing energy savings.



Complete optics range ensures a perfect fit for every application. The optics offer flexibility, enabling standardization over applications with outstanding performance across a wide range of geometries – as well as design parameters such as tilt and overhang. They are easy to use and distribution remains the same, so even after a LED upgrade you are assured of design continuity. The optics comply with national and European road lighting standards.



Using a standard engine across key portfolio means you can benefit from the latest LED upgrades to various products without changing light distributions. The flux packages are predefined across product ranges, including CLO options. Flux minimization is achieved by using the highest flux package (up to L96B10) per standard. And for upgrades, the lighting image is continued and the engine is available for your installed base. Easy configuration is assured thanks to the Service tag.



For tuned project solutions, we can support you with the exclusive L-Tune tool. It enables you to build the required flux to ensure the best balance between operational life, maintained flux, energy costs and product type. You can create your own standard by matching requirements to your own policy. For serviceability, the L-Tune program codes are linked to the Service tag.

# Lighting for the planet

# Designed for the circular economy

Our purpose is to unlock light's extraordinary potential for a brighter future and a better world. Helping to further develop the circular economy is a good place to start. Copenhagen family meets the five criteria of lighting for circularity.

# Energy efficiency and extended lifetime

- Copenhagen LED gen2 offers a very high luminous efficacy of up to 167 lm/W.
- It has a range of tailor-made optics that support optimized lighting design in various applications, for even greater energy savings.
- Very high lumen maintenance with a lifetime of 100,000 hours at L98.

### **Connectable**

- Copenhagen LED gen2 can be connected to Interact or any other CMS via Zhaga sockets for increased energy savings and/or asset management.
- Selected luminaires feature a bottom socket for Zhaga-compliant sensors such as the Philips outdoor sensor bundle

### Serviceable

 Copenhagen LED gen2 family luminaires are easy to service, repair and replace thanks to the Signify Service tag, QR-based identification system.

### Upgradable

 Copenhagen LED gen2 is upgradeable. Driver and other electrical components can be replaced easily using standard tools.

## Reusable and recyclable

 The aluminum parts are fully recyclable and can be used for new die-cast aluminum. The PE canopy can be recycled to make new plastic parts. The flat glass is fully recyclable and can be used to produce new glass parts. Energy e



Public lighting
Copenhagen
LED gen2

Lighting for nature

# Lowering the carbon footprint of our iconic design

We are committed to reduce our environmental impact and create more sustainable products. The iconic plastic canopy of the Copenhagen family is made of 88% bio-based polyethylene and the main metal parts of 88% post-consumer recycled aluminium. Using bio-based raw materials means that the plastics we acquire come from renewable resources unlike conventional plastics which are derived from fossil fuels. According to the lifecycle analysis carried out by Signify, the carbon footprint of the luminaire is 28% lower in the product stage compared to the same luminaire using fossil-based plastic and virgin aluminum. The reduction of global warming potential caused by each luminaire is equivalent to the impact of 25 kg of CO<sup>2</sup>.\*





 Canopy is made from 88% bio-based plastic



Metal parts are manufactured from 88% recycled aluminum



-

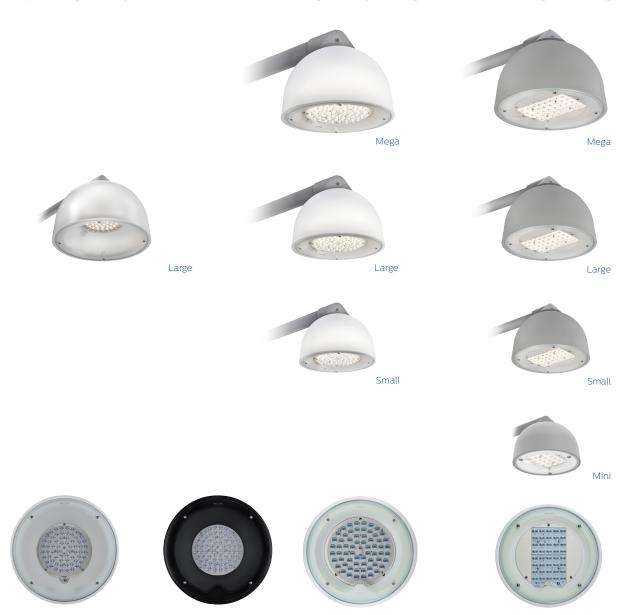
28% lower carbon footprint of the product stage

<sup>\*</sup> Total GWP of Copenhagen LED gen2 small using fossil polyethylene and virgin aluminum equals to 8.83E+01 kg CO<sup>2</sup>e in A1-A3 phase of the lifecycle, while the total GWP of Copenhagen LED gen2 using bio based polyethylene and recycled aluminium is 6.62E+01 kg CO<sup>2</sup>e.

# Family range

From busy traffic roads to the city center, for renovation and new luminaires, the Copenhagen LED gen 2, Copenhagen City LED gen 2 and Copenhagen City Comfort LED family are the perfect solution. With multiple mounting options and four different sizes, the Copenhagen family can handle installations with mounting heights from 3 m to 12 m.

Copenhagen City Comfort LED Copenhagen City LED gen2 Copenhagen LED gen2





# Installation overview

Copenhagen City LED gen2











	Post-top	Side entry	Wire suspended	Pendant
Small	BPS771	BRS761	BSS761	BDS761
Large		BRS762	BSS762	BDS762
Mega		BRS763	BSS763	BDS763

<sup>\*</sup> suspension is selected and ordered separately

# Copenhagen LED gen2













	Wall	Double Post-top	Post-top	Side entry	Wire suspended	Pendant
Mini	BWS559	BVS559	BPS559			BDS559
Small			BPS561	BRS561	BSS561	BDS561
Large				BRS562	BSS562	BDS562
Mega				BRS563	BSS563	BDS563

<sup>\*</sup> suspension is selected and ordered separately

# Copenhagen City Comfort LED









	Side entry	Wire suspended	Pendant
Small*	BRS861	BSS861	BDS861
Large	BRS862	BSS862	BDS862
Mega			

Copenhagen City Xtra Comfort LED









	Side entry	Wire suspended	Pendant
Small*	BRS961	BSS961	BDS961
Large	BRS962	BSS962	BDS962
Mega			

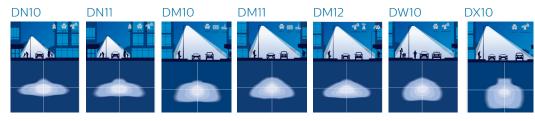
<sup>\*</sup>available upon request

Portfolio of optics

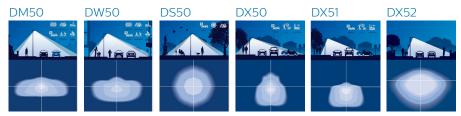
# Portfolio of optics

### Copenhagen LED gen2

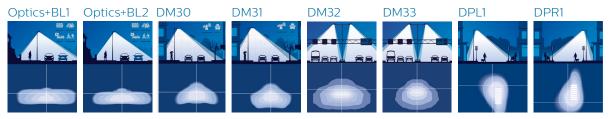
LEDGINE O optics for roads and residential streets



LEDGINE O optics for residential streets, roundabouts and open areas



LEDGINE O optics for dedicated application areas (pedestrian crossings, optics with backlight cover, etc.)



### LEDGINE O optics for Copenhagen LED gen2 Mega catenary version



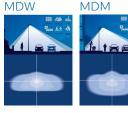
### Copenhagen City LED gen2 and Copenhagen City Comfort LED

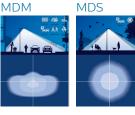
LEDGINE optics for roads and streets

DSW



LEDGINE optics for residential streets





LEDGINE optic for dedicated application areas



# Configuration overview

**Standalone** 

LEDGINE Round or Square Easily replaceable LED unit Glow effect (optional)



**System Ready** 

LEDGINE Round or Square Easily replaceable LED unit Glow effect (optional)

2 x SR-connector: Top: inside mounted

**Bottom: mounted in front glass** 



Connected

LEDGINE Round or Square Easily replaceable LED unit Glow effect (optional) Interact integrated



**Dynamic\*** 

LEDGINE Round or Square Easily replaceable LED unit Interact integrated (optional)

Wireless controlled dynamic RGBW uplight



\* For the mini version please consult us







# **Standard** sets





Public lighting

Copenhagen gen2 family

Standard sets









# Service tag for improved servicability

Service tag features a QR-based identification system that gives you instant access to critical information during unpacking, installation, diagnostics, fault reporting and programming. Simply scan the tag with a smartphone or tablet running the Signify Service tag app, and you can access information about the contents of the box and troubleshooting details specific to the luminaire. Service tag also allows you to source spare parts and restore factory settings in the field. It's that simple.



Public lighting

Copenhagen gen2 family

Serviceability

### Why Service tag?



### More effective maintenance

Improves installation process by providing easy access to product configuration information



## Easy access to relevant information

Improves installation process by providing easy access to product configuration information

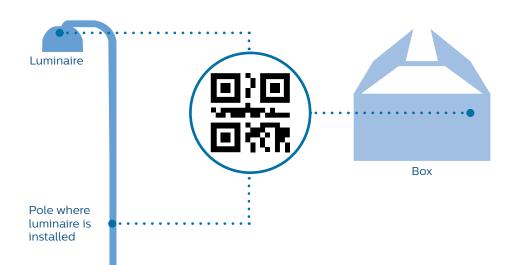


Digital maintenance

Allows you to pre-program spare parts to factory settings

#### Instant access to procedures, spare part list and programming

This tag features a QR-based identification system that gives you instant access to critical information during unpacking, installation, diagnostics, fault reporting and programming. Simply scan the tag with a smartphone or tablet running the Service tag app, and the contents of the box plus installation information are described. The tag also activates the five-year warranty. To assist in diagnosing breakdowns, scanning the tag provides the troubleshooting guide applicable to that luminaire. Sourcing spare parts and 'one touch' programming of parts to original settings can also be done using the app. It's that simple.



# Designed for serviceability

Step 1



Unscrew four screws to remove the glass.

Step 2



Loosen the two mask screws and remove it.

Step 3



Unscrew two screws to remove the geartray.

#### Step 4



Detach the wires with click connectors.

#### Step 5



Unscrew two screws to remove the driver. Install the new driver. Loosen two screws and remove LED board.



# System-ready architecture

The digital and smart city era is accelerating fast. To keep pace, cities need luminaires that are not only designed for today's technologies, but are prepared for future advances and upgrades. The system-ready architecture gives you a scalable foundation that you can build on whenever your city is ready to opt into new advances in technology. So you can take light beyond illumination into a dynamic world of sensor-rich lighting - whenever you're ready.

### **Upgrade now** or later

Copenhagen LED gen2 is a system-ready luminaire, with universal sockets on each luminaire, so all you have to do is click in controllers or sensors to activate new applications. That means you can install your luminaires today and mount controllers and sensors at a later date – without any hassle.

### An open platform

Our system-ready luminaires use state-of-the-art architectures and components. Because they are SR certified, they are compatible with all components released in our SR program. This ensures you'll always be ready for the latest innovations that will enable you to get more out of your lighting infrastructure.



#### **Future-proof upgrades**

System ready luminaires can be paired with sensors and controllers now or later. A city solution that is completely flexible and scalable.



#### Plug and play

Designed for hassle-free installation, controllers and sensors can be mounted without opening the luminaire on the bottom SR connector.



#### Standardized technology

Thanks to Zhaga standardization and the SR certified program, you will have access to preferred technology, allowing you to make use of innovations from different suppliers.



#### Aesthetic design

The small, unobtrusive form factor can be mounted discreetly on luminaires. The top connector is located inside the cannopy so the controller is not visible and does not affect the aesthetic of the luminaire.



#### **Flexibility**

The SR socket can be mounted on the top, or on top and bottom of the luminaire, giving you the flexibility to choose from all sources of sensor applications. The IP66 rating also ensures there is no risk of water ingress.



#### Open innovation platform

Using this new System ready architecture gives you access to new innovations that could enhance your lighting even further in the future.

# Ready to be connected to **Interact**

Public lighting

Copenhagen gen2 family

Connectivity

Interact connected lighting from Signify turns your street lighting into a connected network capable of hosting sensors and other IoT-enabled devices. It lets you to tap into a wide range of both lighting and non-lighting benefits such as dimming and noise level monitoring.

Copenhagen gen2 is ready to connect with Interact whenever you are. The connector node is integrated into the canopy and does not affect the luminaire aesthetics.

For more information about Interact visit: www.interact-lighting.com/city





# Specifications

Copenhagen City LED gen2	Copenhagen City LED go small (Bx761)		City LED gen2 BxS762)	-	hagen City LED gen2 mega (Bx763)	
	Housing: 88% bio-based polyethylene; rotational moulded					
Material	Front glass: Tempered glass silk screen printed					
	Bracket, heatsink: 88% recycled aluminum					
Color	Opal white with glow effect or light-tight RAL colors on request					
Marine Salt Protection (MSP)	Yes					
Source flux	2,000 lm to 10,000 lm	4,000 lm t	o 14,000 lm	8,00	00 lm to 14,000 lm	
Power consumption	13W to 83W	28W t	o 122W		47W to 122W	
Color temperature	2200K, 2700K, 3000K or 4000K					
Color Rendering Index (CRI)	>80 (3000K), >70 (2200K, 2700K, 3000K)					
IK- / IP-rating	IK08 / IP66		/ IP66 n option)		IK08 / IP66	
Isolation class	Class I or II					
Surge protection	6 kV (10 kV on request)					
Lifetime – LED	100,000 h (L87 to L96B10)					
Lifetime - driver	100,000 h (0,5% failure / 5,000h)					
Weight	6 kg	8	kg		12 - 13,5 kg	
Wind area (Scx)	Small = 0,08m <sup>2</sup>	Large	= 0,12m <sup>2</sup>		Mega = 0,18m <sup>2</sup>	
CLO	Yes					
System Ready (SR)		Y	'es			
Control options	Interact, DALI, Line Switch, DynaDimmer or LumiStep					
Comfort accessories	Backlight cover, satin diffuser					
Certification:	CE / ENEC+					
Copenhagen LED gen2		Copenhagen LED en2 small (Bx561)	Copenhager gen2 large (B		Copenhagen LED gen2 mega (Bx563)	
Material	Housing: 88% bio-based polyethylene; rotational moulded					
	Front glass: Tempered glass silk screen printed					
	Bracket, heatsink: 88% recycled aluminum					
Color	Opal white with glow effect or light-tight RAL colors on request (luminaire). Standard silver. Other RAL colors are available upon request (bracket).					
Marine Salt Protection (MSP)	Yes					
Source flux	1,200 lm to 3,500 lm 2,1	00 lm to 12,000 lm	4,000 lm to 20,	000 lm	7,500 lm to 35,000 lr	
Power consumption	8W to 30W	15W to 84W	28W to 142		54W to 250W	
Color temperature	2200K, 2700K, 3000K or 4000K					
Color Rendering Index (CRI)	>80 (3000K), >70 (2200K, 2700K, 3000K and 4000K)					
IK- / IP-rating	IK08 / IP66		IK07 / IP6 (IK08 on op	66	IK08 / IP66	
Isolation class	Class II		Class I o			
Surge protection	Clubb II	6 kV (10 kV		. !!		
Lifetime – LED	6 kV (10 kV on request) 100,000 h (L86 to L96B10)					
Lifetime - driver	100,000 H (E88 to E96810) 100,000 h (0,5% failure / 5,000h)					
Weight	3 kg	6 kg	8 kg	11)	12 - 13,5 kg	
Wind area (Scx)	Mini = 0,04m <sup>2</sup>	Small = 0,08m <sup>2</sup>	Large = 0,12	2m <sup>2</sup>	Mega = 0,18m <sup>2</sup>	
CLO	141111 T O,OHIII		L	-111	iviega - U,IOIII	
System Ready (SR)	Yes					
Control options	Interact, DALI, Line Switch, DynaDimmer or LumiStep					
Comfort accessories	Backlight cover, satin diffuser (only for mini)					
CONTION CACCESSOTIES	CE / ENEC+					

Copenhagen City Comfort LED	Copenhagen City Comfort LED large (BxS862, BxS962)			
Material	Housing: 88% bio-based polyethylene			
Material	Front glass: tempered glass silk screen printed Bracket, heatsink: 88% recycled aluminum			
Color	Opal white or light-tight RAL colors on request			
	Standard silver. Other RAL colors on request (bracket)			
Marine Salt Protection (MSP)	Yes			
Source flux	2,000 lm to 14,000 lm			
Power consumption	13W to 90W			
Color temperature	2200, 2700, 3000K or 4000K			
Color Rendering Index (CRI)	>80 (3000K), >70 (2200K, 2700K, 3000K and 4000K)			
Optics choice	MDM, MDW, MDS, MDA, DSW, DK			
Glare index class	D6			
Luminous intensity class	G*6			
Upward Lighting Ratio (ULR)	0%			
IK- / IP-rating	IK07 / IP66 (IK08 on option)			
Isolation class	Class I or II			
Surge protection	6 kV (10 kV on request)			
Lifetime – LED	100.000 h (L87 to L96B10)			
Lifetime - driver	100,000 h (0,5% failure / 5,000h)			
Weight	8 kg			
Wind area (Scx)	0,12 m <sup>2</sup>			
CLO	Yes			
System Ready (SR)	Yes			
Control options	Intetact, DALI, Line Switch, DynaDimmer or LumiStep			
Certification	CE / ENEC +			



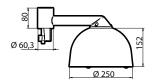
## Dimensional drawings

Public lighting

Copenhagen gen2 family

Specifications

#### Copenhagen LED gen2 mini



Post-top - BPS559



Center 1/2" thread - BDS559



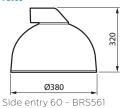
#### Copenhagen (City, City Comfort) LED gen2 small

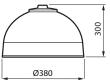




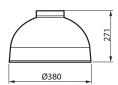
Side entry 48 - BRS561







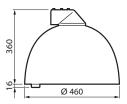
Center 3/4" thread - BDS561



Suspended / wire - BSS561

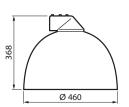
#### Copenhagen (City, City Comfort) LED gen2 large



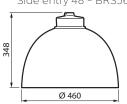


Side entry 48 - BRS562





Side entry 60 - BRS562



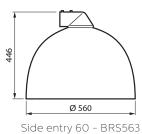
Center 3/4" thread - BDS562



Suspended / wire - BSS562

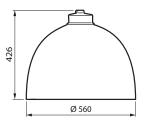
#### Copenhagen (City) LED gen2 mega





Ø 560

Suspended / wire - BSS563



Center 3/4" thread - BDS563





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