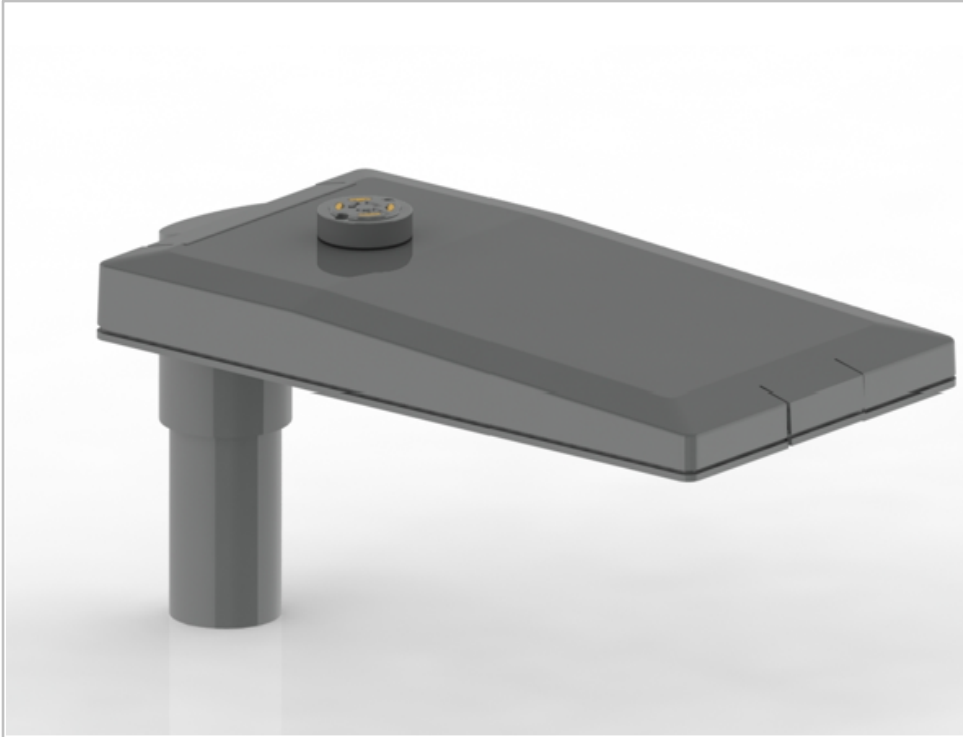
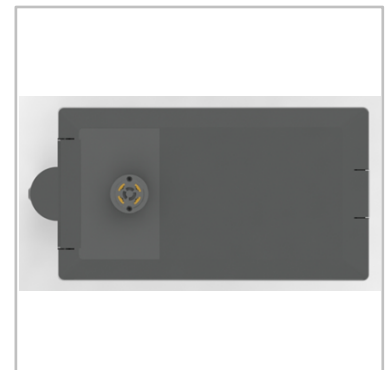


# NIGHTSTAR



Designer : Schröder



## A time-saving, versatile and high-performing road and urban solution

Based on Schröder's experience and proven track record with road and urban LED lighting, the NIGHTSTAR luminaire benefits from numerous innovations to provide the best experience for all stakeholders in public lighting: cities looking for a fast return on investment with an environmentally friendly, easy-to-operate lighting solution, contractors wanting to save time and avoid mistakes during installation, and citizens requiring safe and comfortable environments.

This connected-ready range of luminaires not only offers a realistic platform for smart cities; its compact, lightweight, optimised design minimises the carbon footprint at every stage of the product lifecycle. NIGHTSTAR stands out as the best in class for a circular economy.



## Concept

NIGHTSTAR is a robust yet compact luminaire, designed with a focus on ease of installation and maintenance, enabling customers to extend its lifetime with future upgrades. Composed of a high-pressure, die-casted aluminium body sealed with a tempered flat glass protector, offering a high degree of tightness and resistance to shocks.

Available in two sizes with a LED count of 10 to 80 LEDs, NIGHTSTAR provides a well-dimensioned, efficient lighting solution ranging from various low-height applications such as parks, bicycle paths or residential streets to main roads, boulevards and motorways.

The NIGHTSTAR range takes advantage of the latest photometric innovations. It uses the new LensoFlex®4 photometric engine, which has been developed around the ideas of performance, compactness, versatility and standardisation. Specifically designed to provide safety and comfort in urban environments.

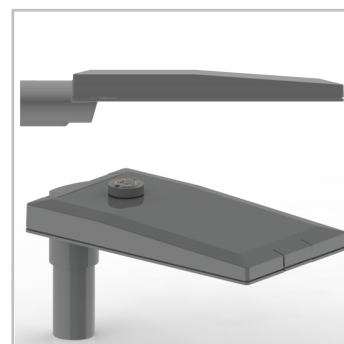
To simplify installation and maintenance operations, NIGHTSTAR introduces technologies such as the universal fixation system enabling post-top or side-entry mounting. The luminaire offers tool-free access to the gear compartment. The top cover hinges upwards and is retained by a bracket. Closing of the luminaire is confirmed when the clamp clicks in place with a clear, loud clicking noise, audible even in a noisy urban environment.

Supplied pre-wired (optional), NIGHTSTAR is adapted to post-top and side-entry mounting on any spigot (Ø42-48mm, Ø60mm and Ø76mm). The universal fixation system enables switching from one position to another at any time. This unique feature eases installation and offers complete versatility regarding pole and bracket configurations.

The universal fixation system fully complies with IEC and ANSI 3G vibration standards.



NIGHTSTAR integrates highly efficient photometrical platforms.



The universal fixation system with switching from a post-top to a side-entry position facilitates ordering and installing luminaires.

## TYPES OF APPLICATION

- URBAN & RESIDENTIAL STREETS
- BRIDGES
- BIKE & PEDESTRIAN PATHS
- RAILWAY STATIONS & METROS
- CAR PARKS
- SQUARES & PEDESTRIAN AREAS
- ROADS & MOTORWAYS

## KEY ADVANTAGES

- Maximised savings in energy and maintenance costs
- New generation of LensoFlex®4 photometric engines offering high-efficiency lighting, comfort and safety
- 2 sizes to provide the most accurate solution for numerous road and urban applications
- Tool-free access with a clear, perceptible click upon closing
- Easy adjustment from post-top to side-entry thanks to a universal fixation design
- Wide range of operating temperatures
- Zhaga-D4i certified
- Connected-ready



NIGHTSTAR is compatible with Circle Light Application, a straightforward, quick and cost-effective tool to interact with the luminaire, capture its data and manage settings.



NIGHTSTAR is connected-ready and can operate with various sensors and control systems.



LensoFlex®4

LensoFlex®4 maximises the heritage of the LensoFlex® concept with a very compact yet powerful photometric engine based upon the addition principle of photometric distribution. The number of LEDs in combination with the driving current determines the intensity level of the light distribution. With optimised light distributions and very high efficiency, this fourth generation enables the products to be downsized to meet application requirements with an optimised solution in terms of investment.

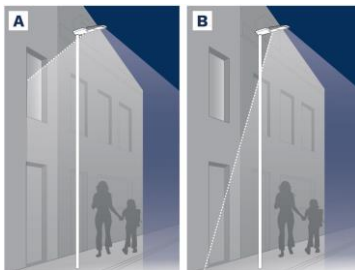
LensoFlex®4 optics can feature backlight control to prevent intrusive lighting, or a glare limiter for high visual comfort.



Back Light control

As an option, the LensoFlex®4 modules can be equipped with a Back Light control system.

This additional feature minimises light spill from the back of the luminaire to avoid intrusive light towards buildings.



A. Without Back Light control | B. With Back Light control



Embellishment plate

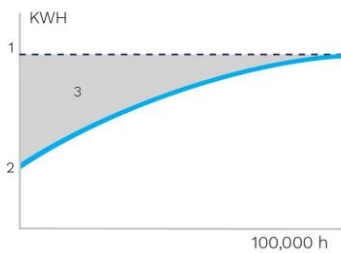
This accessory not only provides a more aesthetic solution as it covers the wires supplying the PCBA's with power, it also increases the lumen output thanks to its extra bright surface that reflects light out of the optical unit. Depending on the configuration, the embellishment plate can increase the lumen output by 2 to 3%.



Constant Light Output (CLO)

This system compensates for the depreciation of luminous flux to avoid excess lighting at the beginning of the installation's service life. Luminous depreciation over time must be taken into account to ensure a predefined lighting level during the luminaire's useful life.

Without a CLO feature, this simply means increasing the initial power upon installation in order to make up for luminous depreciation. By precisely controlling the luminous flux, the energy needed to reach the required level can be maintained throughout the luminaire's life.



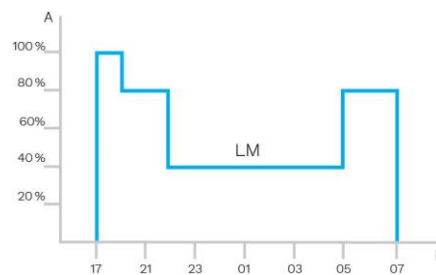
1. Standard lighting level | 2. LED lighting consumption with CLO | 3. Energy savings



Custom dimming profile

Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring.

The period between switching on and switching off is used to activate the preset dimming profile. The customised dimming system generates maximum energy savings while respecting the required lighting levels and uniformity throughout the night.



A. Dimming level | B. Time



PIR sensor: motion detection

In places with little nocturnal activity, lighting can be dimmed to a minimum most of the time. By using passive infrared (PIR) sensors, the level of light can be raised as soon as a pedestrian or a slow vehicle is detected in the area.

Each luminaire level can be configured individually with several parameters such as minimum and maximum light output, delay period and ON/OFF duration time. PIR sensors can be used in an autonomous or interoperable network.



Schröder EXEDRA is the most advanced lighting management system on the market for controlling, monitoring and analysing streetlights in a user-friendly way.



## Standardisation for interoperable ecosystems

Schröder plays a key role in driving standardisation with alliances and partners such as uCIFI, TALQ or Zhaga. Our joint commitment is to provide solutions designed for vertical and horizontal IoT integration. From the body (hardware) to the language (data model) and the intelligence (algorithms), the complete Schröder EXEDRA system relies on shared and open technologies. Schröder EXEDRA also relies on Microsoft, Azure for cloud services, provided with the highest levels of trust, transparency, standards conformance and regulatory compliance.

## Breaking the silos

With EXEDRA, Schröder has taken a technology-agnostic approach: we rely on open standards and protocols to design an architecture able to interact seamlessly with third-party software and hardware solutions. Schröder EXEDRA is designed to unlock complete interoperability, as it offers the ability to:

- control devices (luminaires) from other brands
- manage controllers and to integrate sensors from other brands
- connect with third-party devices and platforms

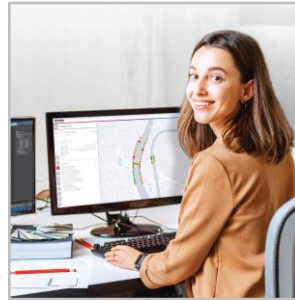
## A plug-and-play solution



As a gateway-less system using the cellular network, an intelligent automated commissioning process recognises, verifies and retrieves luminaire data into the user interface. The self-healing mesh between luminaire controllers enables real-time adaptive lighting to be configured directly via the user interface. OWLET IV luminaire controllers, optimised for Schröder EXEDRA, operate Schröder's luminaires and luminaires from third

parties. They use both cellular and mesh radio networks, optimising geographical coverage and redundancy for continuous operation.

## Tailored experience



Schröder EXEDRA includes all advanced features needed for smart device management, real-time and scheduled control, dynamic and automated lighting scenarios, maintenance and field operation planning, energy consumption management and third-party connected hardware integration. It is fully configurable and includes tools for user management and multi-tenant policy that enables contractors, utilities or big cities to segregate projects.

## A powerful tool for efficiency, rationalisation and decision making

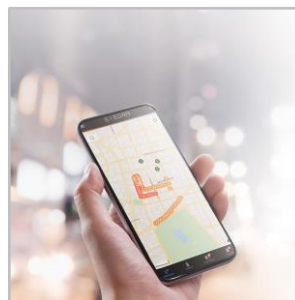
Data is gold. Schröder EXEDRA brings it with all the clarity managers need to drive decisions. The platform collects massive amounts of data from end devices and, aggregates, analyses and intuitively displays them to help end-users take the right actions.

## Protected on every side



Schröder EXEDRA provides state-of-the-art data security with encryption, hashing, tokenisation, and key management practices that protect data across the whole system and its associated services. The whole platform is ISO 27001 certified. It demonstrates that Schröder EXEDRA meets the requirements for establishing, implementing, maintaining and continually improving security management.

## Mobile App: any time, any place, connect to your street lighting



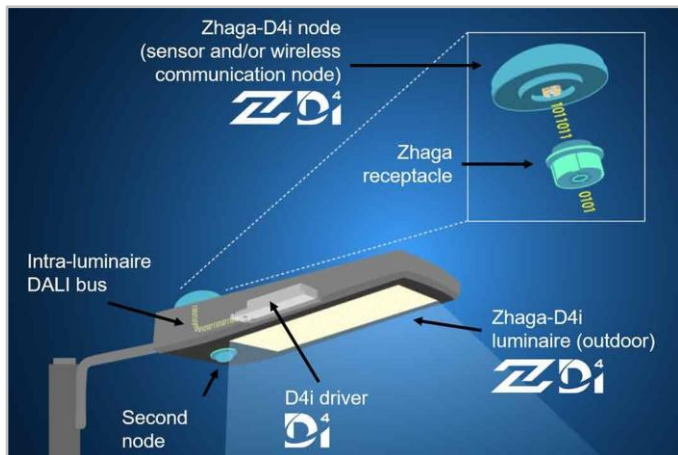
The Schröder EXEDRA mobile application offers the essential functionalities of the desktop platform, to accompany all types of operator on site in their daily effort to maximise the potential of connected lighting. It enables real-time control and settings, and contributes to effective maintenance.

The Zhaga consortium joined forces with the DiiA and produced a single Zhaga-D4i certification that combines the Zhaga Book 18 version 2 outdoor connectivity specifications with the DiiA's D4i specifications for intra-luminaire DALI.

## 2 sockets: top and bottom



The Zhaga socket is small and suited to applications where aesthetics is essential. The architecture of Zhaga-D4i also foresees the possibility of putting two sockets on one luminaire, allowing for instance, the combination of a detection sensor and a control node. This also has the added value of standardising certain detection sensor communications with the D4i protocol.



## Standardisation for interoperable ecosystems



As a founding member of the Zhaga consortium, Schröder has participated in the creation of, and therefore supports, the Zhaga-D4i certification program and the initiative of this group to standardise an interoperable ecosystem. The D4i specifications take the best of the standard DALI2 protocol and adapt it to an intra-luminaire environment but it has certain limitations. Only luminaire mounted control devices can be combined with a Zhaga-D4i luminaire.

According to the specification, control devices are limited respectively to 2W and 1W average power consumption.

## Certification program

The Zhaga-D4i certification covers all the critical features including mechanical fit, digital communication, data reporting and power requirements within a single luminaire, ensuring plug-and-play interoperability of luminaires (drivers) and peripherals such as connectivity nodes.

## Cost-effective solution

A Zhaga-D4i certified luminaire includes drivers offering features that had previously been in the control node, like energy metering, which has in turn simplified the control device therefore reducing the price of the control system.

## GENERAL INFORMATION

Recommended installation height	4m to 14m   13' to 49'
Circle Light label	Score ≥90 - The product fully meets circular economy requirements
Driver included	Yes
CE mark	Yes
ENEC certified	Yes
ENEC+ certified	Yes
UL certified	Yes
ROHS compliant	Yes
Zhaga-D4i certified	Yes
BE 005 certified	Yes
UKCA marking	Yes
Testing standard	EN 60598-1 EN 60598-2-3 IEC TR 62778 EN 62262 LM 79-08 (all measurements in ISO17025 accredited laboratory) LM 80 (all measurements in ISO17025 accredited laboratory)

## HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA
Protector	Tempered glass
Housing finish	Polyester powder coating
Standard colour(s)	RAL 9005 Textured / RAL7043 Textured
Tightness level	IP 66
Impact resistance	IK 08 (IK 09 optional)
Vibration test	Compliant with ANSI C 136-31 standard, 3G load and modified IEC 68-2-6 (0.5G)
Access for maintenance	Tool-less access to gear compartment

· Any other RAL or AKZO colour upon request

## OPERATING CONDITIONS

Operating temperature range (Ta)	-30°C up to +40°C with wind effect
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· Depending on the luminaire configuration. For more details, please contact us.

## ELECTRICAL INFORMATION

Electrical class	Class 1 US, Class I EU, Class II EU
Nominal voltage	120-277V – 50-60Hz 220-240V – 50-60Hz 347V – 50-60Hz
Surge protection options (kV)	10
Electromagnetic compatibility (EMC)	EN 55015:2013/A1:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61547:2009, EN 62493:2015
Control protocol(s)	1-10V, DALI
Control options	AmpDim, Bi-power, Custom dimming profile, Photocell, Remote management
Socket	Zhaga (optional) NEMA 7-pin (optional)
Associated control system(s)	Schröder EXEDRA
Sensor	PIR (optional)

## OPTICAL INFORMATION

LED colour temperature	0K (R ) 2200K (WW 722) 2700K (WW 727) 3000K (WW 730) 3000K (WW 830) 4000K (NW 740) 5700K (CW 757)
Colour rendering index (CRI)	>0 (R ) >70 (WW 722) >70 (WW 727) >70 (WW 730) >80 (WW 830) >70 (NW 740) >70 (CW 757)
ULOR	0%
ULR	0%

· ULOR may be different according to the configuration. Please consult us.

· ULR may be different according to the configuration. Please consult us.

## LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L95 (high-power LEDs)
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· Lifetime may be different according to the size/configurations. Please consult us.

## DIMENSIONS AND MOUNTING

AxBxC (mm | inch)

NIGHTSTAR MINI : 620x107x290 | 24.4x4.2x11.4

NIGHTSTAR MIDI : 670x107x340 | 26.4x4.2x13.4

Weight (kg | lbs)

NIGHTSTAR MINI : 7.0 | 15.4

NIGHTSTAR MIDI : 9.0 | 19.8

Aerodynamic resistance (CxS)

NIGHTSTAR MINI : 0.03

NIGHTSTAR MIDI : 0.03

Mounting possibilities

Side-entry slip-over – Ø42mm

Side-entry slip-over – Ø48mm

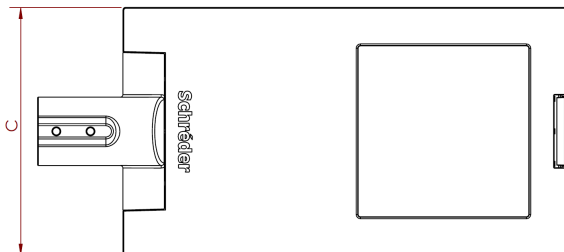
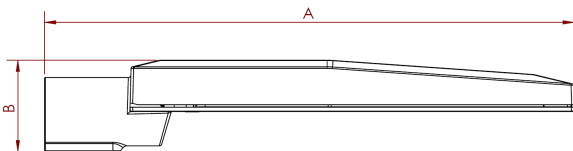
Side-entry slip-over – Ø60mm

Post-top slip-over – Ø60mm

Post-top slip-over – Ø76mm

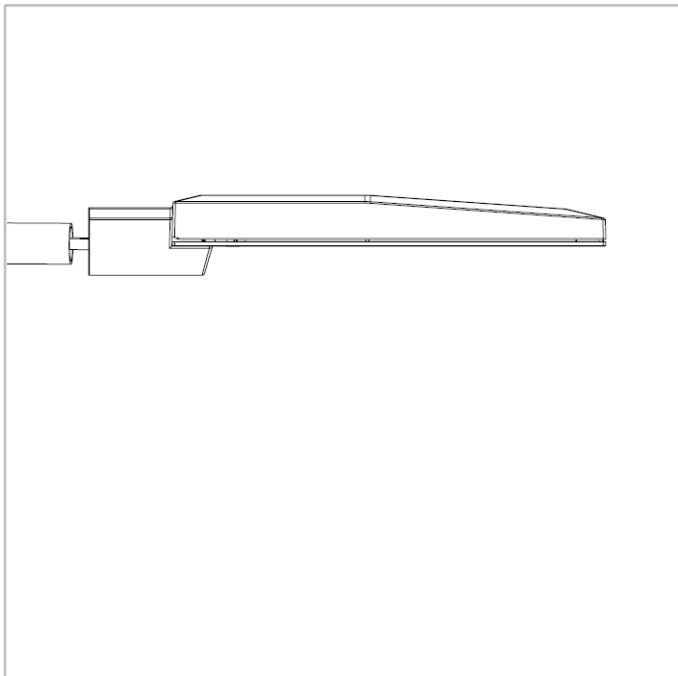
· Dimensions given for NIGHTSTAR with Ø60mm spigot (side-entry mounting)

· Size and weight may be different according to the configuration. Please consult us for more information.

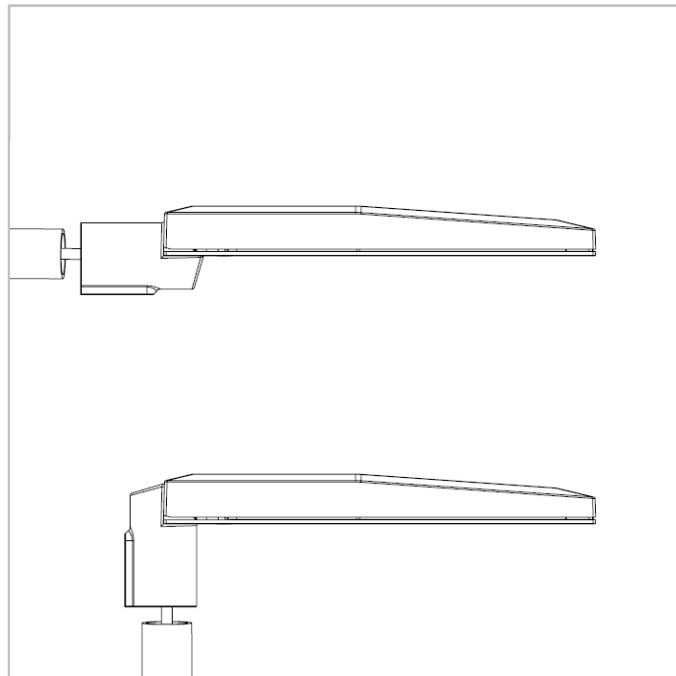




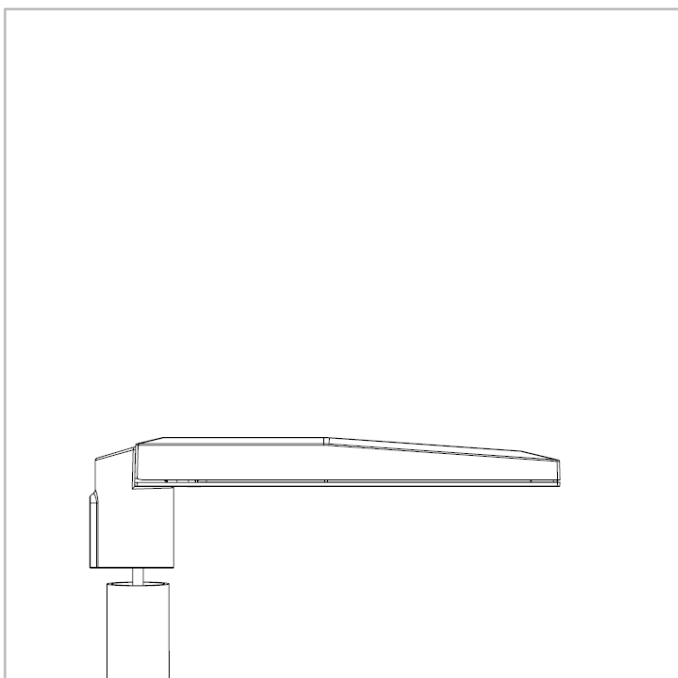
NIGHTSTAR | Slip-over mounting for  
Ø42- 48mm spigot - 2xM10 screws

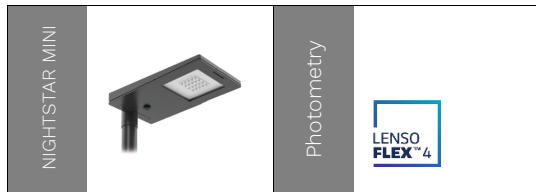


NIGHTSTAR | Slip-over mounting for  
Ø60mm spigot - 2xM10 screws



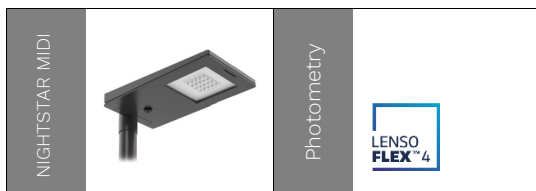
NIGHTSTAR | Slip-over mounting for  
Ø76mm spigot - 2xM10 screws





Number of LEDs	Luminaire output flux (lm)												Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 722		Warm White 727		Warm White 730		Warm White 830		Neutral White 740		Cool White 757				
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
10	600	3000	700	3500	800	3800	700	3600	800	4100	800	4000	7	34	150
20	1200	6100	1400	7100	1600	7700	1500	7300	1700	8200	1600	8000	13	65	165
30	1900	8400	2200	9700	2400	10600	2300	10000	2600	11200	2500	11000	19	82	175
40	2600	8600	3000	10000	3200	10900	3000	10300	3400	11500	3300	11300	24	86	162

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %



Number of LEDs	Luminaire output flux (lm)												Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 722		Warm White 727		Warm White 730		Warm White 830		Neutral White 740		Cool White 757				
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
40	2600	9500	3000	11000	3200	12000	3100	11300	3400	12700	3400	12400	24	86	179
60	3900	14100	4500	16300	4900	17800	4600	16700	5200	18900	5100	18400	35	128	184
80	3900	14100	4500	16300	4900	17800	4600	16700	5200	18900	5100	18400	35	128	187

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %



