

TECEO GEN2



Designer : Michel Tortel



Lighting in an efficient and sustainable manner

TECEO GEN2 is an optimisation of a market benchmark recognised by independent bodies. The first generation of this successful luminaire has enabled thousands of towns and cities to improve lighting levels, generate energy savings and reduce their ecological footprint.

Thanks to its broad range of lumen packages, its impressive scope of light distributions and its various control options, TECEO GEN2 provides the ideal solution for lighting numerous environments; from bike paths, squares and car parks to residential streets, urban roads, large avenues and motorways.

Designed for a versatile mounting with the same universal piece allowing both side-entry and post-top fixation on a spigot, TECEO GEN2 is easy to combine with standard poles, refined brackets or wall brackets.



IP 66

IK 10

IK 09



UL 1598
CSA C22.2
No. 250.0

005
certification



Concept

TECEO GEN2 is composed of three different parts in aluminium, with a top opening. The hinges of the top cover open 120° to provide access to the gear compartment.

TECEO GEN2 can be fitted with LensoFlex® photometric engines, protected by a tempered glass.

The TECEO GEN2 range offers optimised photometrical performance with a minimum total cost of ownership. This highly efficient luminaire is available in three sizes to offer towns and cities the ideal tool to improve lighting levels, generate energy savings and reduce their ecological footprint.

TECEO S has been designed for low-height applications such as residential streets, car parks and bike paths. The TECEO GEN2 1 is ideally suited to lighting urban roads and squares, while the TECEO GEN2 2 is perfect for large roads, avenues and motorways.

The complete range is available with three different universal fixation parts adapted for post-top and side-entry mounting on various spigots (Ø32mm with adapter, Ø42-48mm, Ø60mm and Ø76mm). A dedicated Ø60mm penetrating spigot is also available. The inclination angle can be adjusted on-site for both post-top (0 to +15°) and side-entry (0 to -15°) configurations.



The top opening provides access to the gear compartment for cabling and maintenance.



To remain as open and interoperable as possible, the TECEO GEN2 is available with both NEMA or Zhaga sockets and complies with the ZD4i standard.



The TECEO GEN2 range offers universal fixations for spigots ranging from Ø32 to Ø76mm. It is also available with a dedicated Ø60mm penetrating spigot.



The inclination angle can be adjusted on-site for both post-top (0 to +15°) and side-entry (0 to -15°) configurations.

TYPES OF APPLICATION

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

KEY ADVANTAGES

- 3 sizes to provide the most accurate solutions for numerous road and urban applications
- Maximised savings in energy and maintenance costs
- Dark sky compliant: ULOR = 0%, no up-light
- Universal fixation adapted for side-entry and post-top mounting
- Any RAL or AKZO colour
- Connected-ready for your future Smart city requirements
- Based on open and interoperable standards
- Compatible with the Schröder EXEDRA control platform
- Zhaga-D4i certified
- High photometric performance
- Solar-powered variants



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.

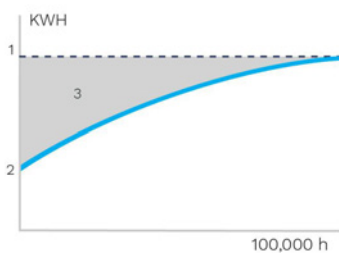




Constant Light Output (CLO)

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.



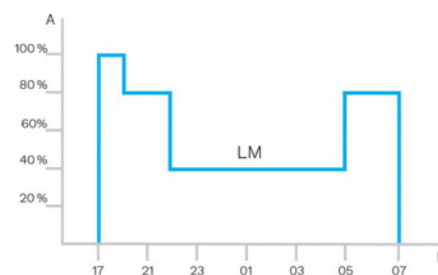
1. Standard lighting level | 2. LED lighting consumption with CLO | 3. Energy savings



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.

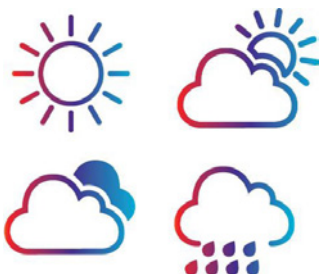


A. Dimming level | B. Time



Daylight sensor / photocell

Photocell or daylight sensors switch the luminaire on as soon as natural light falls to a certain level. It can be programmed to switch on during a storm, on a cloudy day (in critical areas) or only at nightfall so as to provide safety and comfort in public spaces.



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.

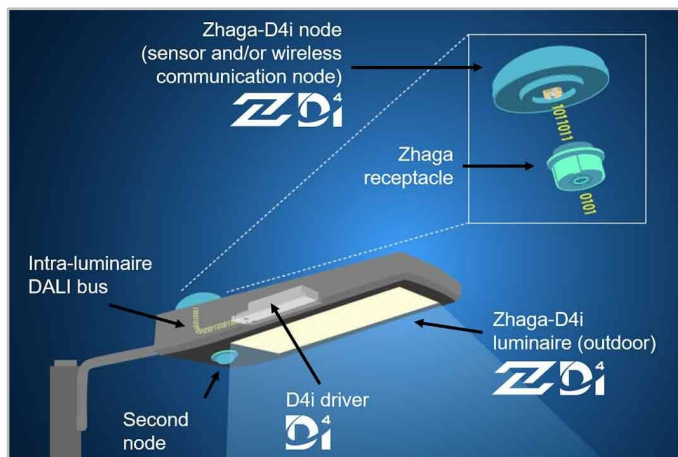
Each luminaire level can be configured individually with several parameters such as minimum and maximum light output, delay period and ON/OFF duration time. PIR sensors can be used in an autonomous or interoperable network.



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.

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

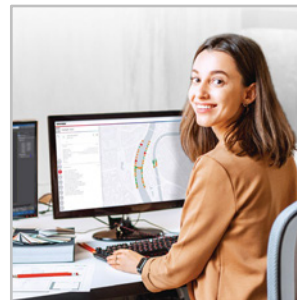
With EXEDRA, Schröder has taken a technology-agnostic approach: we rely on open standards and protocols to design an architecture able to interact seamlessly with third-party software and hardware solutions. Schröder EXEDRA is designed to unlock complete interoperability, as it offers the ability to:

- 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

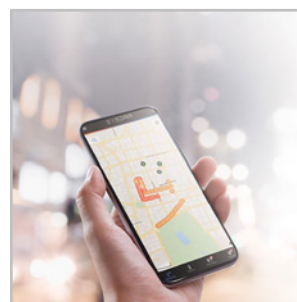
Data is gold. Schröder EXEDRA brings it with all the clarity managers need to drive decisions. The platform collects massive amounts of data from end devices and, aggregates, analyses and intuitively displays them to help end-users take the right actions.

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.

Schröder EKINOX powered by Sunna Design is an eco-friendly solar lighting solution that combines renewable energy production with Schröder's renowned photometries, achieving optimal lighting levels while reducing carbon emissions and preserving the environment. This stand-alone solution consists of three solar kits (with two battery capacity options) paired with dedicated Schröder luminaires that are equipped with 20 to 80 high-power LEDs.



Smart lighting package



Schröder EKINOX powered by Sunna Design revolutionises the deployment of renewable energy lighting solutions with its innovative design. It features frameless solar panels, advanced battery technology, intelligent in-built electronics, and luminaires equipped with LensoFlex®4 photometric engines to fully optimise solar lighting. With three customisable package options available, this solution sets a new standard for ease and efficiency.

SE1	SE2	SE4
20 LEDs	20 or 40 LEDs	40 or 80 LEDs
1,800lm	3,500/3,700lm	7,100/7,500lm
Up to 180lm/W	Up to 180lm/W	Up to 180lm/W

Straightforward implementation

Schröder EKINOX powered by Sunna Design simplifies on-site deployment and ensures optimal performance with its user-friendly design. The SE solar kits feature post-top mounting for Ø60mm (SE1 and SE2) or Ø76mm (SE4) spigots. With the help of its partners, Schröder provides comprehensive solutions that include reinforced poles and brackets that are compliant with EN40 calculation standards and have CE marking.

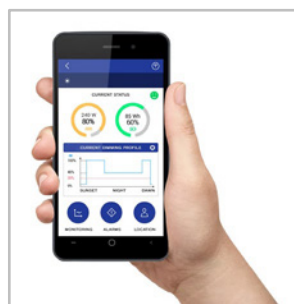
Separate tilt settings



eliminating the risk of installation errors, and ensuring easy and efficient installation.

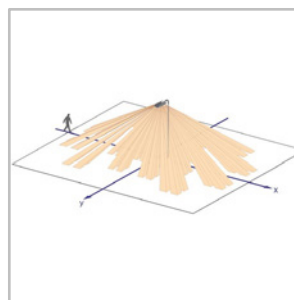
Optimising solar energy harvesting and light distribution on a site require different settings. This can only be achieved when the solar panel and luminaire are separate. Schröder EKINOX allows for this flexibility within its design, as the solar panels can be tilted to the optimal angle, ranging from 0 to 50° (depending on the selected SE kit). The connection between the solar panels and luminaire is made using a cable with coded connectors,

Specific dimming profiles



The energy capacity of a solar-powered luminaire is limited and should be managed carefully. To ensure that the right panel and battery size is chosen for the specific local requirements, such as light levels, autonomy days, and traffic density, several pre-configured profiles are available at the time of ordering. The chosen dimming scenario can also be modified on-site by Schröder's local customer service team to meet the specific needs of the site.

Motion detection feature

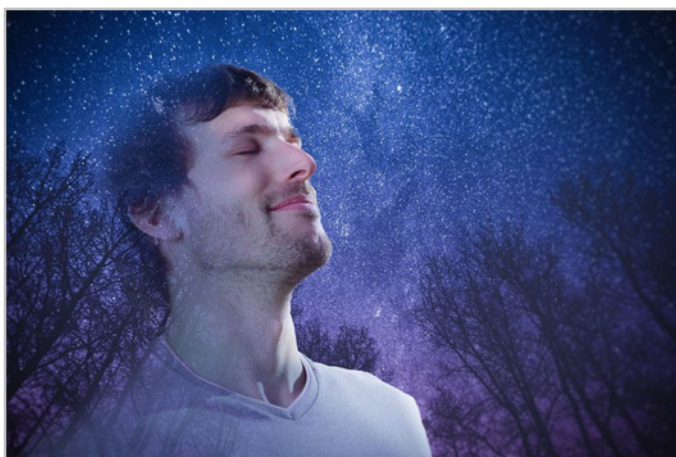


As an additional feature, the luminaire can be equipped with a motion sensor (PIR) to enhance safety and user experience. The dimming scenario can be overridden by motion detection (vehicles, bicycles, or pedestrians) resulting in the light level rising to 100% for a brief period, maximising visibility and ensuring safety for users.

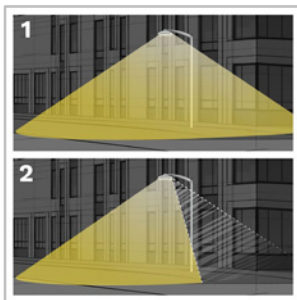
Smart management to prevent blackouts

Managing energy use intelligently is crucial as the level of charge in the battery when the luminaire is turned on can vary depending on the energy accumulated throughout the day. The on-board electronics in Schröder EKINOX intelligently divide the night into three parts, and adjust the light level accordingly, to prevent blackout situations and ensure seamless operation.

With the PureNight concept, Schröder offers the ultimate solution for restoring the night sky without switching off cities, while maintaining safety and well-being for people and preserving wildlife. The PureNight concept guarantees that your Schröder lighting solution satisfies environmental laws and requirements. Well-designed LED lighting has the potential to improve the environment in all respects.



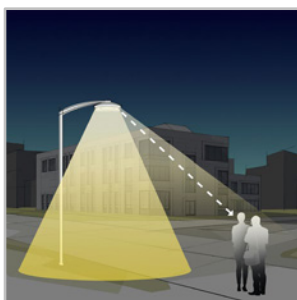
Direct the light only where it is wanted and needed



1. Without backlight
2. With backlight

Schröder is renowned for its expertise in photometry. Our optics direct light only where it is wanted and needed. However, light trespass behind the luminaire might be a key concern when it comes to protecting a sensitive wildlife habitat or avoiding intrusive lighting towards buildings. Our fully integrated backlight solutions easily address this potential risk.

Offer maximum visual comfort to people



Because of the lower installation height compared to road lighting, visual comfort is an essential aspect of urban lighting. Schröder designs lenses and accessories to minimise any type of glare (distracting, discomforting, disabling glare and blinding glare). Our design offices harness a range of possibilities to find the best solutions for each project and ensure that we provide a gentle light that delivers the best night-time experience.

Protect wildlife



If not well designed, artificial lighting can badly affect wildlife. Blue light and excessive intensity can have a damaging effect on all types of life. Blue light radiation has the ability to suppress the production of melatonin, the hormone that contributes to the regulation of the circadian rhythm. It can also alter the behavioural patterns of animals including bats and moths, as it can change their movements towards or away from light sources. Schröder favours warm white LEDs with minimal blue light, combined with advanced control systems including sensors. This enables permanent adaptation of the lighting to the real needs of the moment, minimising disturbance to the fauna and flora.

Choose a Dark Sky certified luminaire



The International Dark-Sky Association (IDA) is the recognised authority on light pollution. It provides leadership, tools and resources to industries and companies willing to reduce light pollution. The IDA's Fixture Seal of Approval programme certifies outdoor lighting fixtures as being Dark Sky Friendly. All products approved by this programme must comply with the following criteria:

- The light sources shall have a maximum correlated colour temperature of 3000K;
- Uplight allowance limited to 0.5% of total output, or 50 lumens, with no more than 10 lumens in the 90-100 degree UL zone;
- The luminaires must have a dimming capability to 10% of full rating;
- The luminaires must be equipped with a fixed mounting option;
- The luminaires must have Safety Certification by an independent laboratory.

This approved Schröder range of luminaires complies with these requirements.

GENERAL INFORMATION

Recommended installation height	4m to 15m 13' to 49'
Circle Light label	Score ≥90 - The product fully meets circular economy requirements
Driver included	Yes
CE mark	Yes
CB mark	Yes
ENEC certified	Yes
ENEC+ certified	Yes
UL certified	Yes
ROHS compliant	Yes
Dark Sky friendly lighting (IDA certification)	Yes
Zhaga-D4i certified	Yes
French law of December 27th 2018 - Compliant with application type(s)	a, b, c, d, e, f, g
BE 005 certified	Yes
RCM mark	Yes
UKCA marking	Yes
Testing standard	EN 60598-1 EN 60598-2-3:2003/A1:2011 UL 1598 CSA C22.2 No. 250.0 ANSI C 136-31

HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA
Protector	Tempered glass
Housing finish	Polyester powder coating
Standard colour(s)	AKZO grey 900 sanded
Tightness level	IP 66
Impact resistance	IK 09, IK 10
Vibration test	Compliant with ANSI C 136-31 standard, 3G load and modified IEC 68-2-6 (0.5G)
Access for maintenance	By loosening screws on the top cover Tool-less access to gear compartment (option)

· Any other RAL or AKZO colour upon request

OPERATING CONDITIONS

Operating temperature range (Ta)	-30°C up to +55°C / -22°F up to 131°F 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
Power factor (at full load)	0.95+
Surge protection options (kV)	6 10 20
Electromagnetic compatibility (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-4-5 / EN 61547
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	2200K (WW 722) 2700K (WW 727) 3000K (WW 730) 3000K (WW 830) 4000K (NW 740) 5700K (CW 757)
Colour rendering index (CRI)	>70 (WW 722) >70 (WW 727) >70 (WW 730) >80 (WW 830) >70 (NW 740) >70 (CW 757)
ULOR	0%
ULR	0%

· Meets IDA Dark Sky requirements when fitted with LEDs of 3000K or less.

· 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
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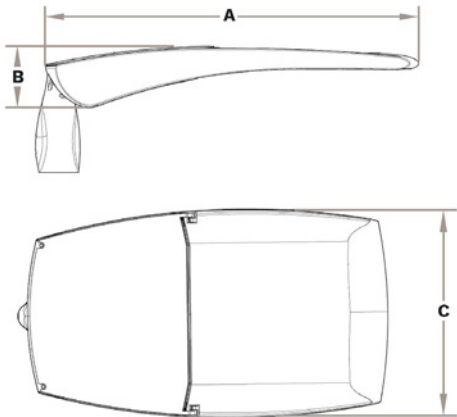
· Lifetime may be different according to the size/configurations. Please consult us.

DIMENSIONS AND MOUNTING

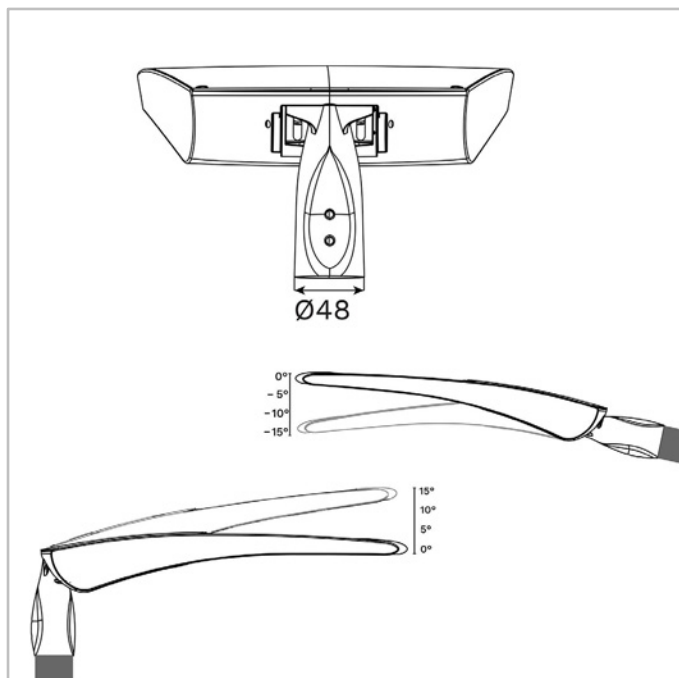
AxBxC (mm inch)	TECEO S : 450x99x252 17.7x3.9x9.9 TECEO GEN2 1 : 580x107x310 22.8x4.2x12.2 TECEO GEN2 2 : 740x118x427 29.1x4.6x16.8
Weight (kg lbs)	TECEO S : 5.1 11.2 TECEO GEN2 1 : 7.9 17.4 TECEO GEN2 2 : 14.2 31.2
Aerodynamic resistance (CxS)	TECEO S : 0.05 TECEO GEN2 1 : 0.06 TECEO GEN2 2 : 0.08
Mounting possibilities	Side-entry slip-over – Ø32mm Side-entry slip-over – Ø42mm Side-entry slip-over – Ø48mm Side-entry slip-over – Ø60mm Side-entry slip-over – Ø76mm Side-entry penetrating – Ø60mm Post-top slip-over – Ø32mm Post-top slip-over – Ø42mm Post-top slip-over – Ø48mm Post-top slip-over – Ø60mm Post-top slip-over – Ø76mm Post-top penetrating – Ø60mm

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

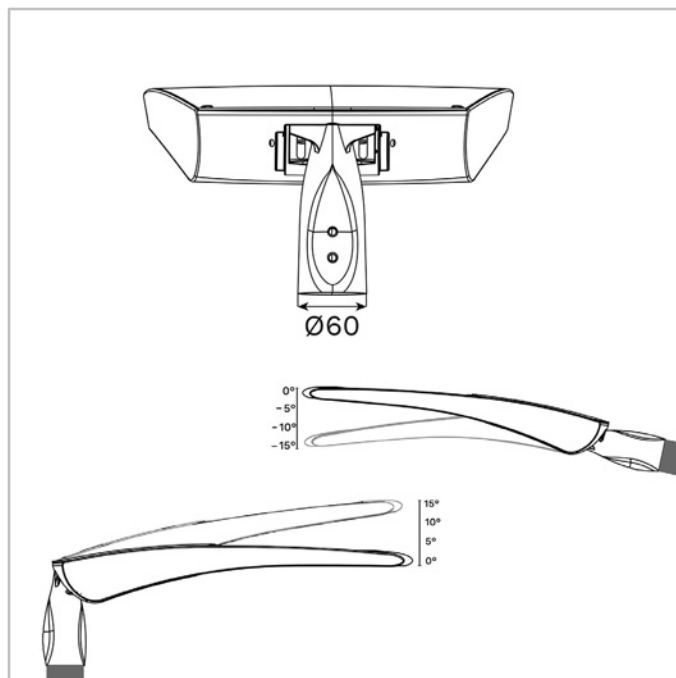
· To meet International Dark Sky requirements, a fixed mount must be selected (+/- 15° allowable to permit leveling so that the luminaire is parallel to the road [0° final tilt]).



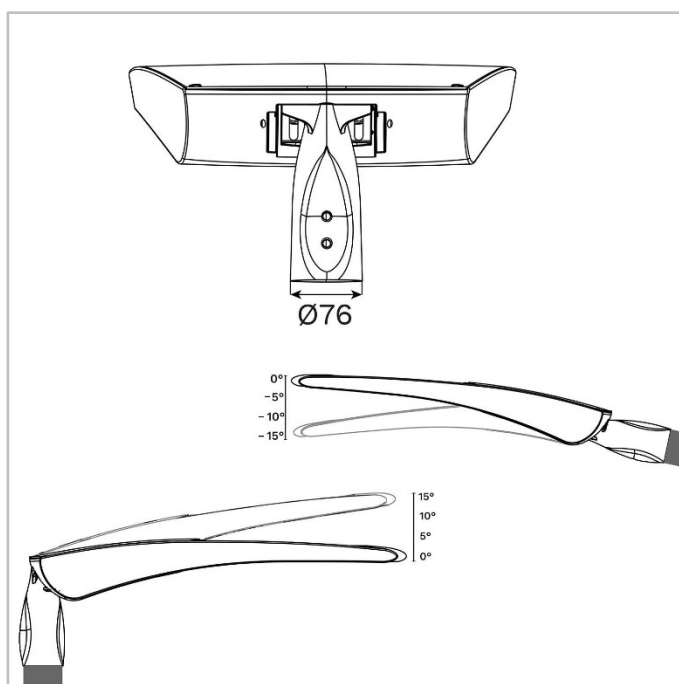
TECEO GEN2 | TECEO GEN2 1 and TECEO GEN2 2 - Slip-over mounting for Ø48mm spigot - 2xM10 screws



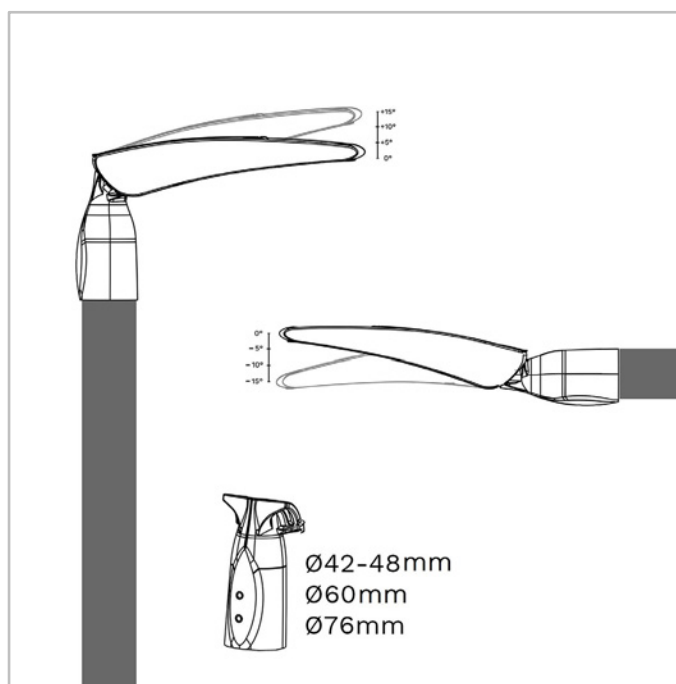
TECEO GEN2 | TECEO GEN2 1 and TECEO GEN2 2 - Slip-over mounting for Ø60mm spigot - 2xM10 screws



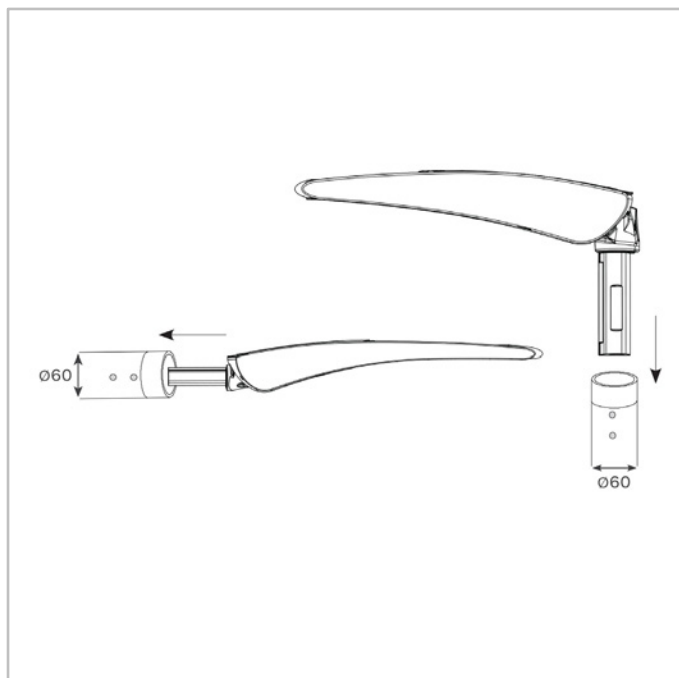
TECEO GEN2 | TECEO GEN2 1 and TECEO GEN2 2 - Slip-over mounting for Ø76mm spigot - 2xM10 screws

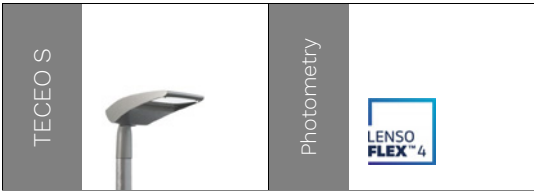


TECEO GEN2 | TECEO S - Slip-over mountings for Ø32 (with adapter), Ø42-48mm, Ø60mm or Ø76mm spigots - 2xM10 screws



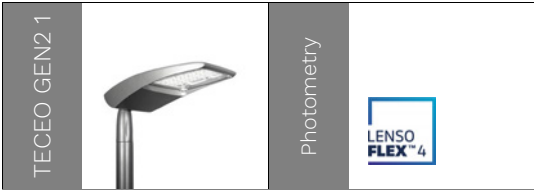
TECEO GEN2 | TECEO S, TECEO GEN2 1 and
TECEO GEN2 2 - penetrating mounting for
Ø60mm spigots - 2xM8 screws





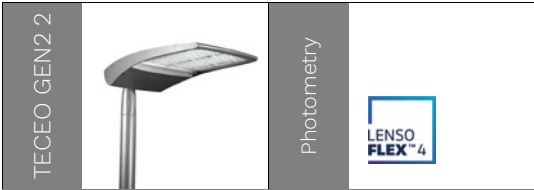
Luminaire output flux (lm)												Power consumption (W)		Luminaire efficacy (lm/W)	
Warm White 722		Warm White 727		Warm White 730		Warm White 830		Neutral White 740		Cool White 757					
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
10	600	3100	700	3500	800	3900	700	3700	800	4100	800	4000	7	35	153
20	1300	6200	1500	7100	1600	7800	1500	7400	1700	8300	1600	8100	13	66	161
25	1800	7100	2100	8200	2300	9000	2100	8400	2400	9800	2300	9200	16	77	167

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



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					
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
20	1300	6100	1500	7100	1600	7700	1500	7300	1700	8200	1600	8000	13	66	162
25	1800	6900	2000	8000	2200	8700	2100	8200	2400	9500	2300	9000	16	71	162
30	1900	9200	2200	10600	2400	11600	2300	10900	2600	12300	2500	12000	19	96	171
40	2600	12300	3000	14200	3200	15500	3000	14600	3400	16400	3300	16000	24	130	176
50	3600	13900	4100	16000	4500	17500	4200	16400	4800	19100	4700	18000	30	152	169

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



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Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to	
50	3200	14600	3700	16800	4100	18400	3800	17300	4300	19500	4200	19000	30	159	178	
60	4000	16100	4600	18500	5000	20300	4700	19100	5300	21500	5200	20900	35	163	180	
80	5300	21500	6100	24700	6700	27100	6300	25400	7100	28700	6900	27900	46	218	183	
100	6700	26000	7700	29900	8400	32800	7900	30800	8900	34700	8700	33800	58	268	183	
120	8000	28700	9200	33000	10100	36100	9500	33900	10700	38200	10400	37300	71	280	180	

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

