

# DOURO GEN2



## Sleek, modern, highly efficient urban lighting luminaire

The DOURO GEN2 urban lighting solution features a sleek, minimalist design that blends into a variety of urban environments with subtle elegance.

Equipped with cutting-edge lighting technology, it delivers high-quality, energy-efficient illumination, specifically designed to meet the various demands of urban lighting needs.

Rethought to address the challenges of modern cities, this second generation embraces circular economy principles at the core of its design.

Discover DOURO GEN2 and enjoy high-performance, sustainable, stylish lighting.



## Concept

DOURO GEN2's upper and lower body is made of stainless steel alloy, giving it high resistance to various types of urban environment and situation.

At the heart of its sleek design lie circular principles. DOURO GEN2 integrates a unique module that incorporates both the photometric engines and electronic components (drivers, fuses and surge protection) into a single, easily removable and interchangeable unit. This innovation makes it a versatile, sustainable and circular-refined urban luminaire.

Designed to meet the needs of modern cities, DOURO GEN2 integrates the latest in connected lighting technology. It can be equipped with a NEMA or a Zhaga socket, providing easy access to advanced remote lighting management options.

DOURO GEN2 relies on the latest LensoFlex® LED concept developed by Schröder, delivering highly efficient, energy-saving lighting. It provides high quality lighting while saving significant energy resources, thanks to the superior efficiency of its photometric engines. Compatible with a wide range of light distributions, DOURO GEN2 allows you to provide each of your spaces with lighting that is perfectly adapted and tailored to your needs.

This street luminaire is designed for lateral mounting. Access to the LED module is made by loosening two screws on the bottom cover.



A sleek, refined design that blends discreetly into a variety of urban environments



Modern and circular

## TYPES OF APPLICATION

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

## KEY ADVANTAGES

- LensoFlex®4 versatile solutions for high-end photometries maximising comfort and safety
- FutureProof: follows the principles of circular economy
- Durable and recyclable materials
- Connected-ready
- Pure and simple design



Connected-ready



Lateral mounting allows subtle integration into different types of urban furniture



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.

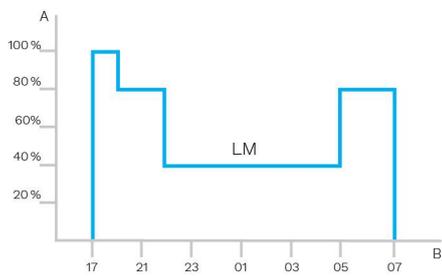




## Custom dimming profile

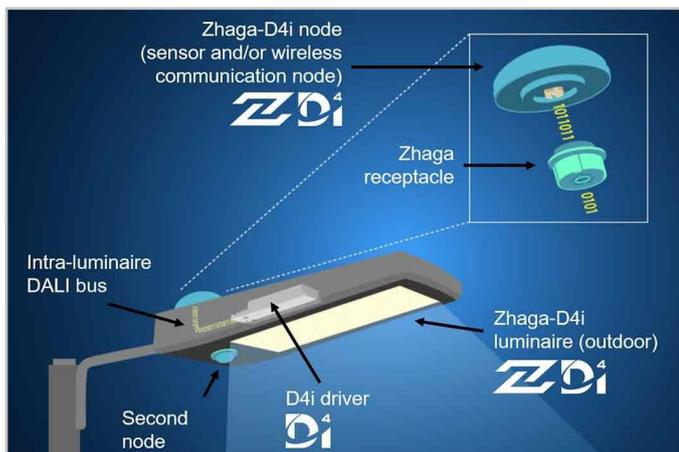
Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring.

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

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.



## 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

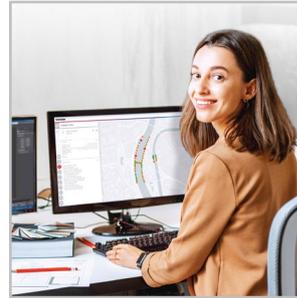
With EXEDRA, Schröder has taken a technology-agnostic approach: we rely on open standards and protocols to design an architecture able to interact seamlessly with third-party software and hardware solutions. Schröder EXEDRA is designed to unlock complete interoperability, as it offers the ability to:

- 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

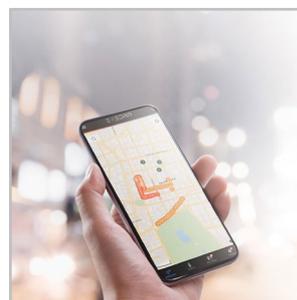
Data is gold. Schröder EXEDRA brings it with all the clarity managers need to drive decisions. The platform collects massive amounts of data from end devices and, aggregates, analyses and intuitively displays them to help end-users take the right actions.

## 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

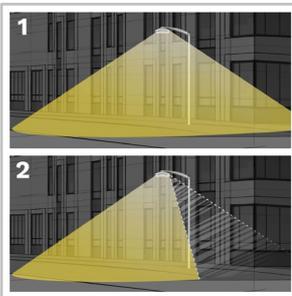


The Schröder EXEDRA mobile application offers the essential functionalities of the desktop platform, to accompany all types of operator on site in their daily effort to maximise the potential of connected lighting. It enables real-time control and settings, and contributes to effective maintenance.

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.

## Get the starry sky back



The Upward Light Ratio (ULR) and Upward Light Output Ratio (ULOR), the latter taking the flux from the luminaire into account, provide information on the percentage of light emitted towards the sky. This Schröder range of luminaires minimises or eliminates (depending on the options) upward-directed light flux. It complies with strict international and local requirements.

**GENERAL INFORMATION**

Recommended installation height	4m to 12m   13' to 39'
CE mark	Yes
ENEC certified	Yes
ENEC+ certified	Yes
ROHS compliant	Yes
Zhaga-D4i certified	Yes

**HOUSING AND FINISH**

Housing	Stainless steel
Optic	PMMA
Protector	Tempered glass
Housing finish	Polyester powder coating
Tightness level	IP 66
Impact resistance	IK 08
Access for maintenance	By loosening screws on the bottom cover

· IP66 for the optical bloc, IP54 for the luminaire

**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 I EU, Class II EU
Nominal voltage	220-240V – 50-60Hz
Surge protection options (kV)	10
Electromagnetic compatibility (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-3-3 / EN 61547
Control protocol(s)	1-10V, DALI
Control options	AmpDim, Custom dimming profile, Remote management
Socket	Zhaga (optional) NEMA 7-pin (optional)
Associated control system(s)	Schröder EXEDRA

**OPTICAL INFORMATION**

LED colour temperature	2200K (Warm White WW 722) 2700K (Warm White WW 727) 2700K (Warm White WW 827) 3000K (Warm White WW 730) 3000K (Warm White WW 830) 4000K (Neutral White NW 740) 5700K (Cool White CW 757)
Colour rendering index (CRI)	>70 (Warm White WW 722) >70 (Warm White WW 727) >80 (Warm White WW 827) >70 (Warm White WW 730) >80 (Warm White WW 830) >70 (Neutral White NW 740) >70 (Cool White CW 757)

**LIFETIME OF THE LEDS @ TQ 25°C**

All configurations	100,000h - L92
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· Lifetime may be different according to the size/configurations. Please consult us.

## DIMENSIONS AND MOUNTING

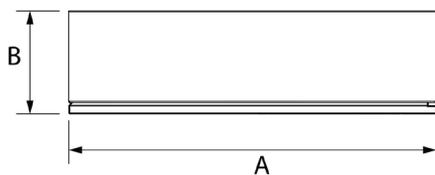
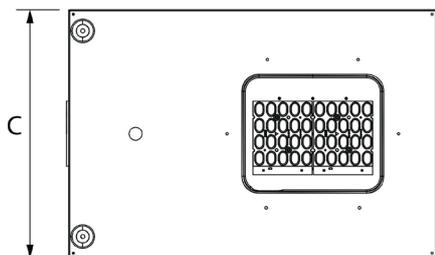
AxBxC (mm | inch) 560x160x380 | 22.0x6.3x15.0

Weight (kg | lbs) 12.0 | 26.4

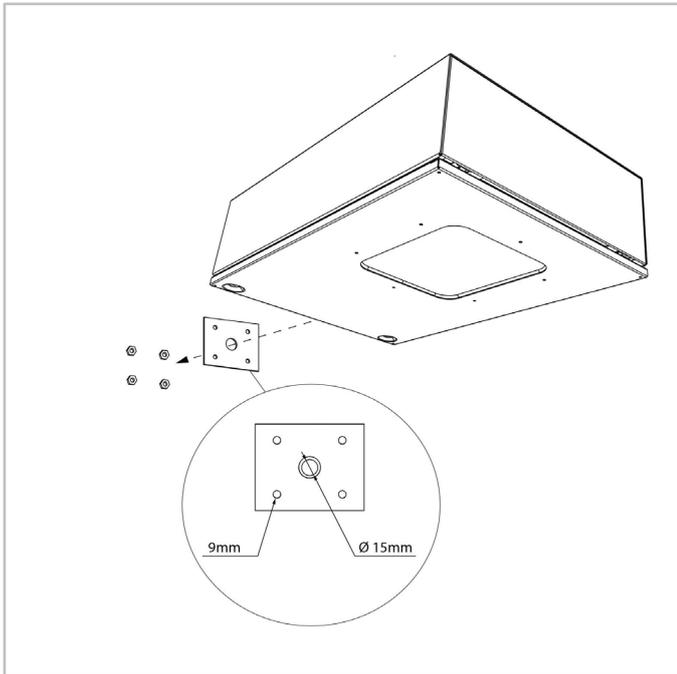
Aerodynamic resistance (CxS) 0.08

Mounting possibilities Lateral mounting

*For more information about mounting possibilities, please consult the installation sheet.*



## DOURO GEN2 | Lateral mounting





Number of LEDs	Luminaire output flux (lm)														Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White WW 722		Warm White WW 727		Warm White WW 827		Warm White WW 730		Warm White WW 830		Neutral White NW 740		Cool White CW 757				
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
20	1100	5700	1300	6400	1200	5900	1400	6900	1300	6400	1500	7500	1400	7100	13	58	161
25	1600	6100	1800	6800	1600	6200	1900	7400	1800	6800	2100	8000	2000	7600	16	60	156
40	2300	9500	2600	10600	2400	9700	2800	11400	2600	10600	3000	12300	2900	11800	24	89	175
50	3200	9900	3600	11000	3300	10100	3900	11900	3600	11000	4200	12800	4000	12300	30	91	168

Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$

