THORN
LIGHTING

ORUS PRO

Innovative illumination with low-level mounting

WE
MAKE
LIGHT
WORK

LOW-LEVEL MOUNTING THAT LEADS THE WAY

Some lighting schemes have limitations that make certain conventional lighting solutions like post-top luminaires or façade mounting less viable. Mounting heights may be restricted by structures or local regulations, there may be a need to minimise obtrusive light, or ease of access may be required for maintenance.

Orus Pro combines Thorn's clever Flat Beam® technology with an upgraded luminaire housing for a low-level mounted solution that lights roads effectively with excellent visual comfort, meeting rigorous lighting safety standards. Available in stirrup-mounted or bollard variants, Orus Pro delivers high-performance, uniform illumination without compromise.

Roads & Streets

Bridges

Car Parks

Public Transit

TRUSTED GLOBALLY FOR OVER 30 YEARS

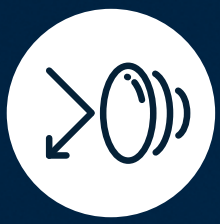
Throughout two technological eras, high pressure sodium and LED, more than 30,000 Orus luminaires have been installed around the world on hundreds of projects.

From Scandinavia to South Africa, the Caribbean Islands to New Zealand, Orus has a long history of providing safety, comfort and energy efficiency at a low mounting height.

A NEW ERA

Meet Orus Pro, the next evolution of Orus LED, reimagined with a sleeker design, enhanced visual comfort, and superior performance. Engineered to lead, Orus Pro sets a new standard in low-level road lighting.

LOW-LEVEL MOUNTING THAT LEADS THE WAY



PERFORMANCE: VISUAL EFFECTIVENESS

The precision optic and low mounting position for Orus Pro results in more light directly hitting the road surface. More light on the road surface means more light is reflected, resulting in better visibility for the driver. It also delivers exceptional visual guidance, accentuating the road's curves, rises, and dips for enhanced driver awareness.

Orus Pro is also an excellent solution where obtrusive light has to be reduced. For example, it can be specified in certain residential areas, or in areas where the surrounding buildings are illuminated and road lighting should therefore be unobtrusive.

EFFICIENCY: MINIMISING ENERGY CONSUMPTION

Compared with traditional pole lighting, Orus Pro offers significant energy savings. Its low mounting position provides comparable levels of illumination much more efficiently with a low power density indicator (DPI – expressed in W/m^2). It also allows valuable operational costs benefits throughout its total lifetime by avoiding the installation of poles, their infrastructure and maintenance related costs.

Integration with a range of UrbaSens control solutions further reduces energy consumption and maximizes efficiency.

VISUAL COMFORT: IMPROVED PERCEPTION, SATISFACTION AND SAFETY

Orus Pro offers a low contrast approach to generate a totally diffused light from across surface of the bowl, maximising perceived visual comfort for drivers and road users.

Positioning the light source close to the surface of the road emphasises the rise, fall and curves of the road for excellent visual guidance.

In addition to improved driver comfort, Orus Pro ensures better visibility of hazards and pedestrians by revealing obstacles and road surface irregularities.


ponte de Rande
80

FLAT BEAM® TECHNOLOGY

Thorn's Flat Beam® technology is a product of extensive research. The optical system offers a very sharp and controlled light distribution while optimising luminaire efficiency.

It delivers fantastic light control, driver comfort and reduced energy consumption. Extensively tested for glare, luminance and flicker, Thorn's innovative and award-winning Flat Beam® technology addresses three issues unique to low level mounting:

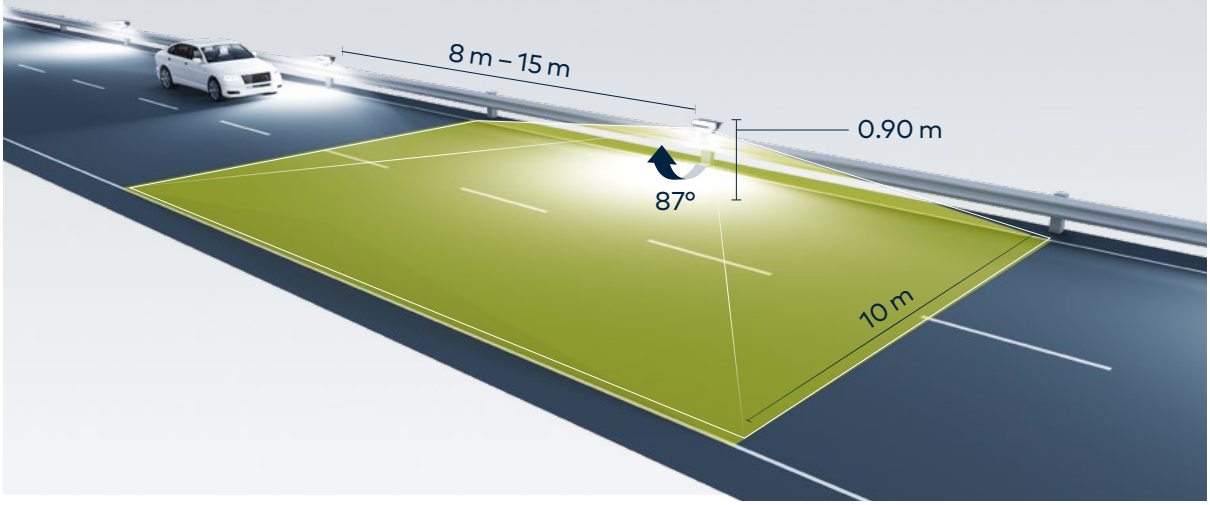
- By positioning the optical light engine below the driver's eye line, it eliminates direct glare. A recessed LED source and specific reflector means direct light cannot reach the eyes of the driver or the rear-view mirrors of a car
- A unique uniform light distribution allows Orus Pro to deliver optimum luminance on all types of road surfaces, in all weather and lighting conditions
- The sharp and controlled light distribution cuts off any backlight (B0 in BUG rating) and reduces spill light. Light is exactly where it's needed to provide a comfortable light for all road users while preserving the surrounding nocturnal environment.

UNIQUE CONCEPT: GRAZING LIGHT AND HIGHER LUMINANCE

- Minimise sky glow
- Restrict obtrusive light
- TI (threshold increment) < 10 % (low glare)

INNOVATIVE CHARACTERISTICS:

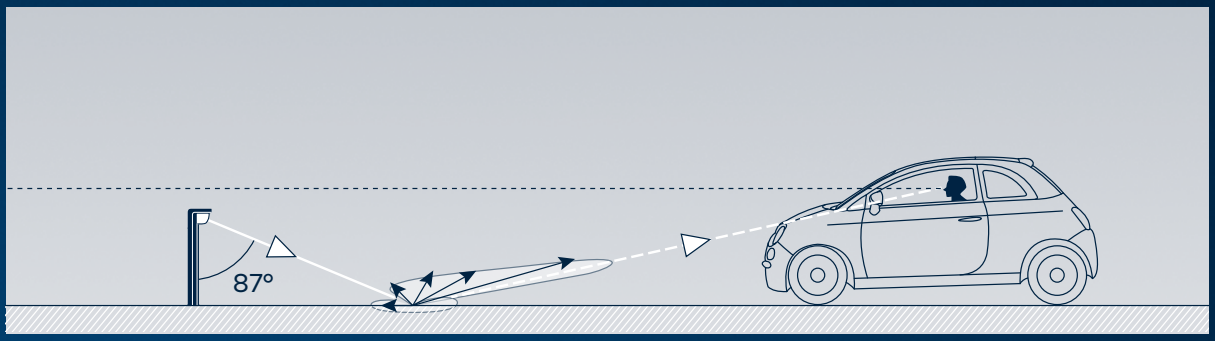
- Single or dual carriageways
- Up to 15 m width in single sided
- Low mounting height of up to 1 meter
- Spacing from 8 m to 15 m



Light is projected transversally to the road up to 15 m in a single-sided or double-sided arrangement and helps drivers:

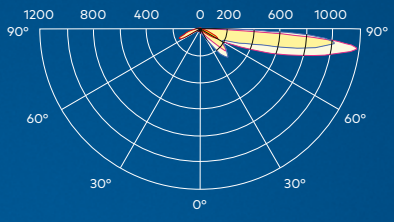
- Detect static or moving obstacles on the carriageway
- Comfortably confirm the road configuration
- Perceive the entire road surface and any issues, at all speeds, without flicker

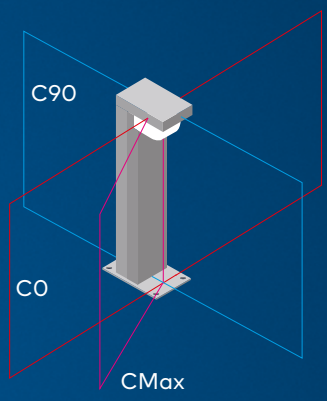
THE FLAT BEAM TECHNOLOGY

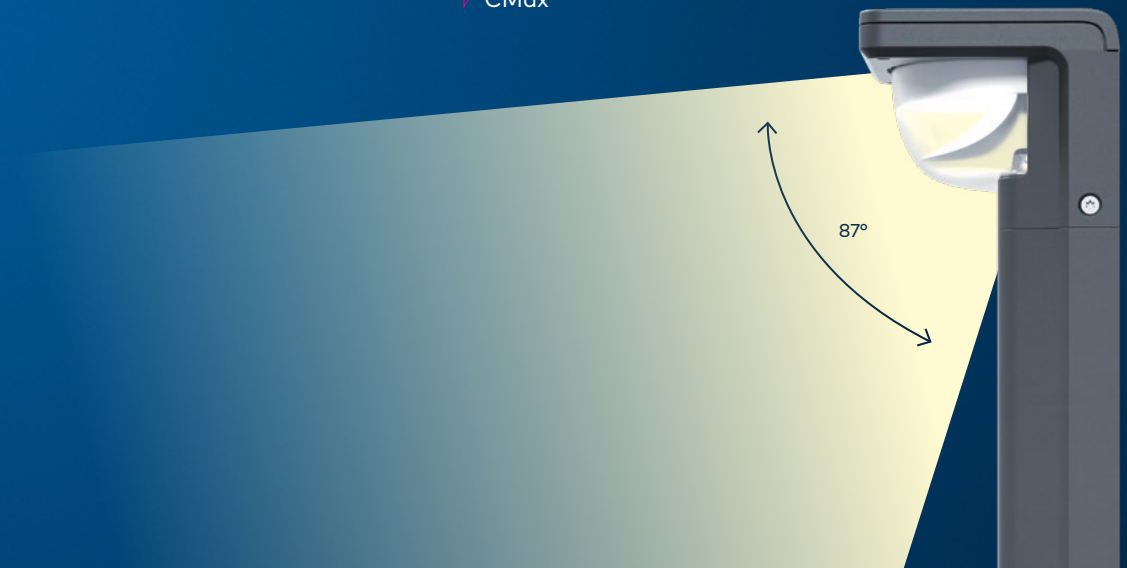


The latest studies indicate that in today's vehicles, the height of the driver's eyes is generally between 1,22 m and 1,33 m. Orus Pro is designed to be mounted below this height, avoiding direct light to the driver's eye.

The role of driver's eye height in the design of crest curves of roads – Pollack Periodica 18 (2023) 3, 113–118







THE LONG-LASTING SOLUTION FOR IMPROVED DRIVING VISIBILITY

LUMINANCE WITHOUT GLARE

Research shows that when road surfaces are illuminated with low-mounted lighting, drivers perceive a higher level of brightness. This effect occurs because the peak of the reflected light beam is directed toward the driver's eyes, without creating additional glare. Unlike traditional road lighting, the light source itself is fully concealed from the driver's view.

Studies also indicate that the threshold increment (Ti), which measures disability glare, remains well below 10 %, while both luminance and uniformity meet the required standards.

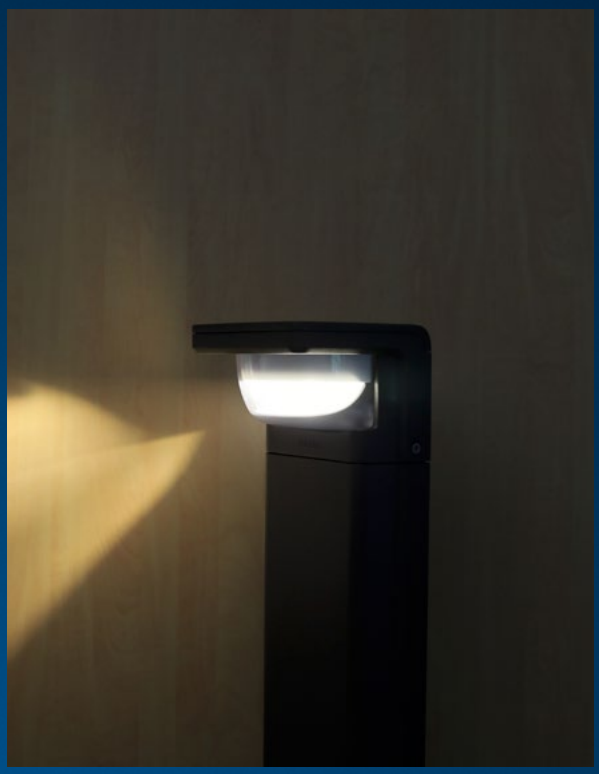
The light output from Orus Pro remains effective even in heavy traffic. Queues of vehicles do not cause occultation or distracting shadows. Instead, the system distributes light ahead of, behind, and beneath vehicles, while also reflecting it off the road surface.

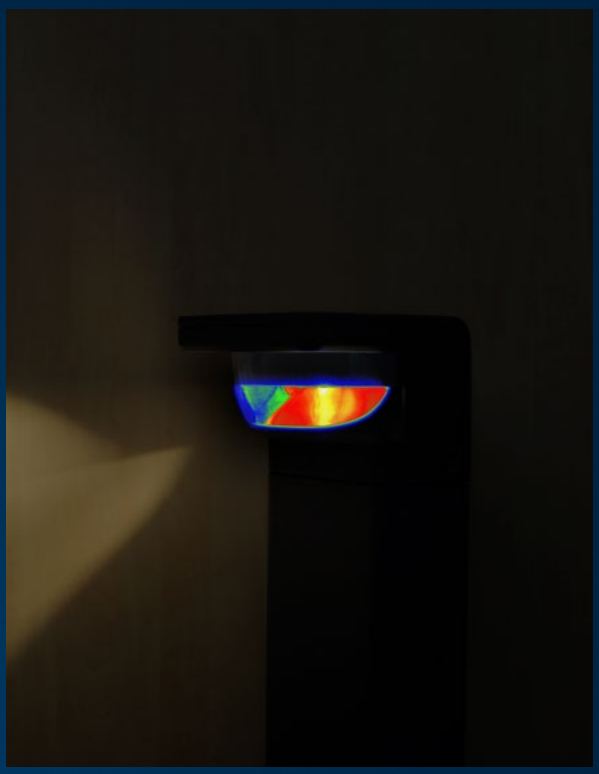
Experiencing the visual comfort generated by Orus Pro is truly game-changing.

LIGHTING CALCULATIONS AND R-TABLES:

For a lighting scheme designed to satisfy luminance criteria at low level mounting, extended R-tables (road reflectivity tables) are necessary to take into account light at grazing incidence. Lighting calculations can therefore be done on the usual lighting softwares (Relux, Lighting Reality and Dialux, but not with Dialux EVO).

The road surface extended R-tables (for pavement classification R2/R3), specific to the lighting software, are available on demand from Thorn Lighting. Please contact us for more information.





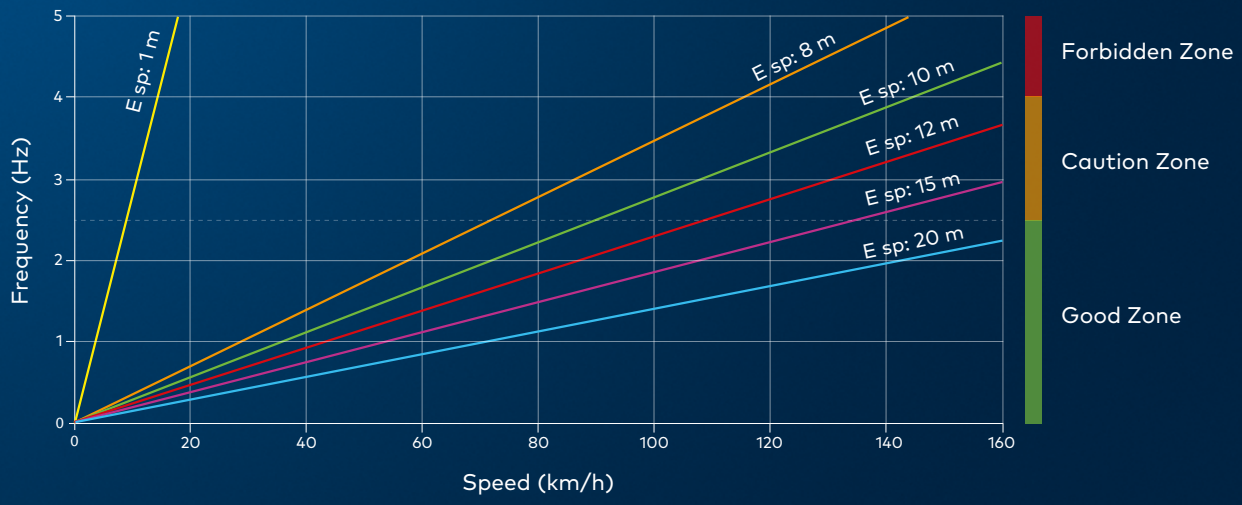
Orus Pro features a low-contrast design that enhances luminance around the LED, diffusing light across the entire surface of the bowl. This approach further reduces visual discomfort for both drivers and other road users.

FLICKER

Flicker frequency essentially depends on the relationship between light source spacing and vehicle speed. When it exceeds 4 Hz, it can cause discomfort, fatigue and headache over time. However, with Orus Pro's recommended minimum spacing of 8 meters, the flicker frequency stays below 2.5 Hz, a level considered negligible to the human eye, making it effective even for high speed motorways.

On the contrary, low level road lighting with < 5 meter spacing can generate cautionary flicker frequency at driving speed < 60 km/h.

Flicker frequency as a function of driving speed : the impact of spacing



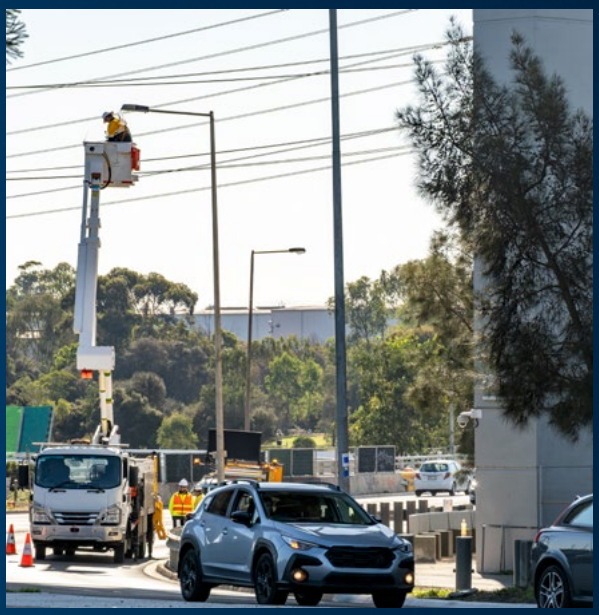
MANY CHALLENGING APPLICATIONS, ONE SOLUTION

Flat Beam® technology has proven its practical efficacy and lighting comfort in many applications, especially the following:

LIGHTING CASES	PRACTICAL BENEFITS
Bridges, with or without architectural lighting schemes	Blends into the environment unobtrusively, preserving the visual experience. Prevents spill light on the water or road underneath
Conflict areas	Prioritises visual comfort to enhance driver attention and focus
Roads and Motorway sections (Class M1/M2/M3/M4 – EN 13201)	Large spacing, reduced operational costs, and improved visual comfort
Areas with frequent fog or wet road surface	Reduces the 'bloom' effect caused by veiling luminance from conventional pole lighting
Natural parks / observatories	No back light and significantly reduced spill light compared to pole lighting, helping to preserve the habitats of nocturnal wildlife
Seafronts and coastal areas	C5 corrosion protection (ISO 9223). Low mounting height is visually unobtrusive
Temporary lighting	Practical and reusable installation
Airports / Heliport / Railways and platforms	Low height lighting helps address infrastructure challenges

When traditional road lighting solutions – using columns or façade mounting – are not feasible or desirable, Orus Pro shines as a very practical and flexible solution. It is designed for applications facing any of the following challenges:

- Cost of installation
- Inaccessibility of the lanterns during installation and maintenance operations
- Difficult or dangerous maintenance
- Extreme weather conditions (wind, fog, etc.)
- Fragile or complex configuration of the suspension structure
- Line of trees obstructing pole-mounted lighting
- Restrictive regulations
- Ambitious lighting power density (DPI) and carbon footprint targets



QUALITY AND PERFORMANCE WITHOUT COMPROMISE

The Orus Pro range is available in two variants, bollard and stirrup, to support a wide array of applications and mounting possibilities.

Equipped with the latest generation of COB technology and enhanced by the Flat Beam® concept, the compact head of Orus Pro is optimised for ease of installation whilst remaining a discreet presence in the landscape.

Orus Pro's optic is designed as a highly practical, plug-and-play system that simplifies maintenance and upgrades. Whether carrying out maintenance, upgrading the LED module, or changing the CCT, the integrated unit can simply be removed and replaced, making it quick and easy and preventing damage.

STIRRUP

The expertly designed stirrup bracket allows precise tilting on all 0 – 90° angles with two tamper-resistant fixing screws, robust enough to withstand 50 kg of static load.

The external gearbox offers flexible installation options to match site infrastructure and can control one or several Orus Pro heads. It features captive screws and a tamper-proof arching bracket, and is designed with through-wiring to reduce cabling complexity.

EXTERNAL GEARBOX

The visor is manufactured from a strong polycarbonate. A special varnish is applied for protection against natural scratches from dust and particulates, and fine gravel projection from the road. It also protects against spray paint adhesion.

Based on high-end car headlight manufacturing, the visor provides abrasive resistance and hardness combined with improved climate and chemical resistance.

In the bollard variants, control gears are housed in separate, IP66-rated, fully wired gearboxes.

Orus Pro is rated to IK10 for impact resistance and C5 for corrosion resistance, making it suitable for use in challenging environments, such as coastal areas and seafronts, where luminaires are at higher risk of corrosion. Thanks to Thorn's expertise in thermal dissipation for long-lasting operation, Orus Pro can withstand external ambient temperatures of up to 40 °C whilst maintaining its high performance.

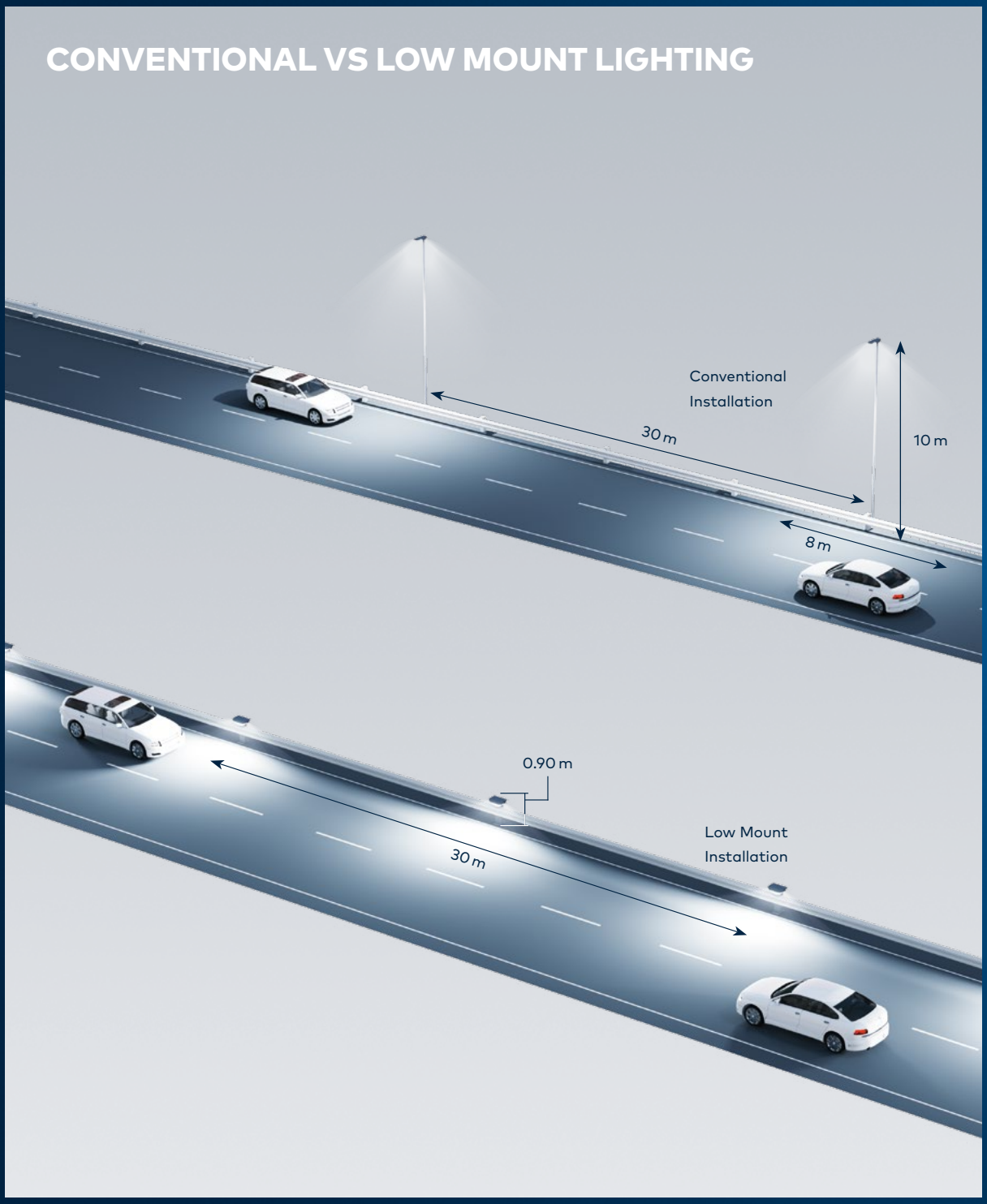
BOLLARD 700 MM

BOLLARD 900 MM

The bollard variant is available in two standard heights, 700 mm or 900 mm. This height diversity provides greater flexibility in installation and increased options for spacing and visual comfort.

LIGHTING EFFICACY

Orus Pro takes a novel approach to road lighting infrastructure. By positioning its light sources at less than one meter in height, the system makes installation and maintenance simpler and more cost-effective. At the same time, it delivers high lighting efficiency with a much lower power density than traditional pole lighting. Orus Pro proves that there is a smart and attractive alternative to conventional solutions.



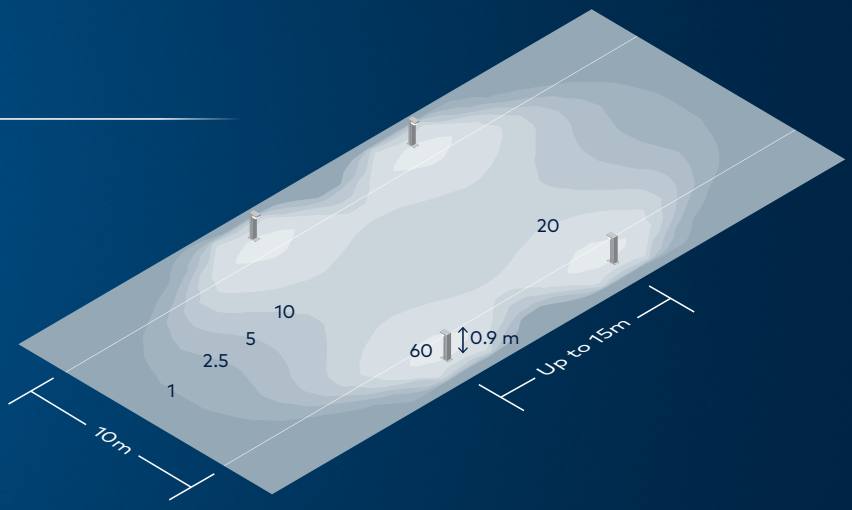
50 %
ENERGY SAVING

Compared with conventional pole lighting, Orus Pro reduces power consumption and power density (DPI*) by 50 % on average, compared with high efficacy 10 m high pole luminaire and 30 meter spacing.

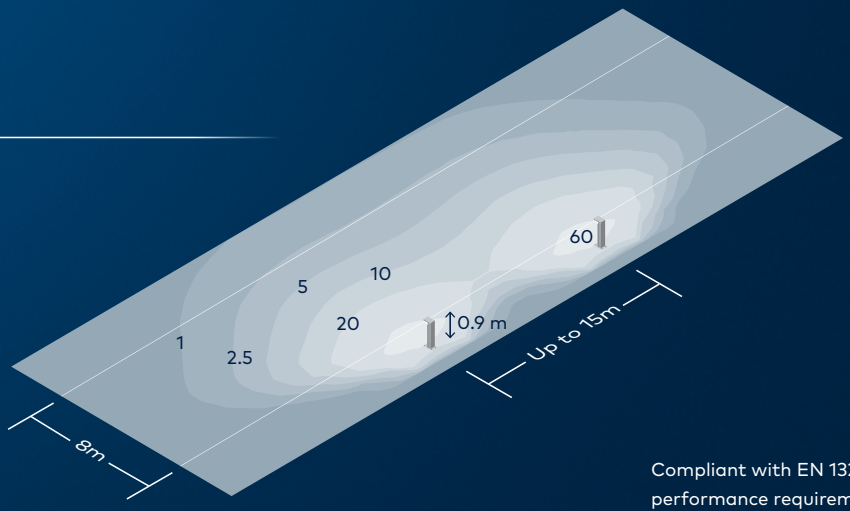
*Typically expressed in watts per square meter (W/m²), lighting Power Density Indicator (DPI) is a way to measure how much electricity is used for lighting a space. The lower the DPI, the lower the energy use, electricity costs, and environmental impact i.e. the fundamentals of a lighting network.

Orus Pro offers flexible installation options. It can be mounted on one or both sides of the road, with spacing of 8 m – 15 m. In the dual configuration, Orus Pro can effectively light roads up to 15 meters wide, including multiple traffic lanes, cycle paths, and central reservations.

Class M3 Road
Lighting level 1 Cd/m²



Class M2 Road
Lighting level 1,5 Cd/m²



Compliant with EN 13201 performance requirements

REDUCED OPERATIONAL COST

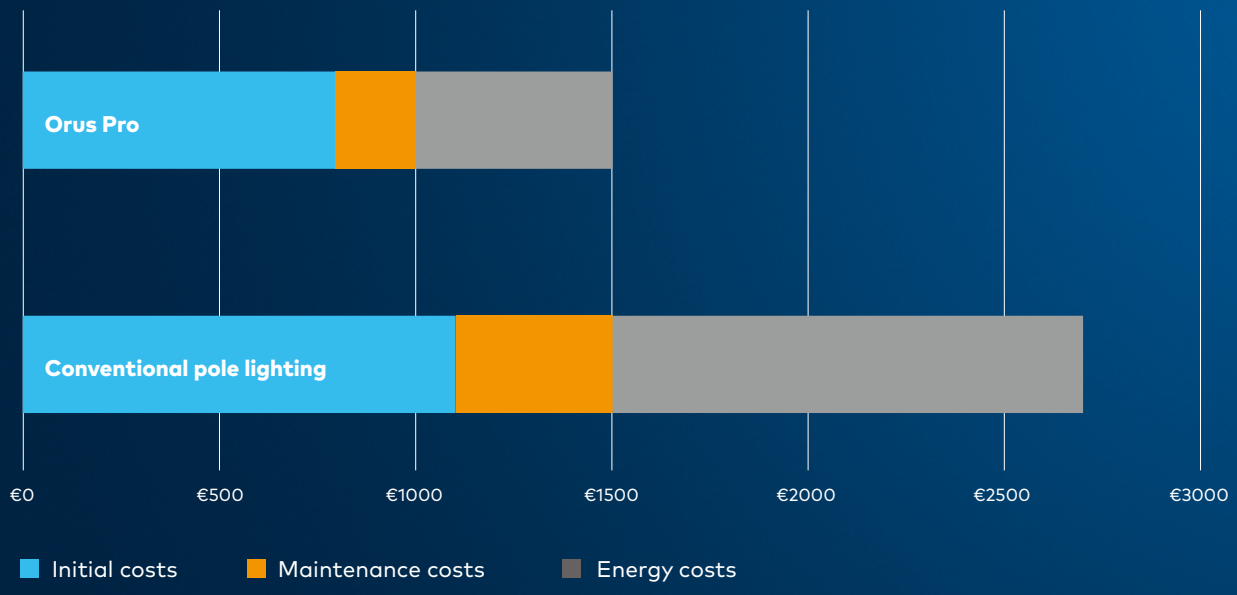
Beyond lighting, Orus Pro delivers significant cost benefits throughout its entire lifetime. By eliminating the need for poles and their supporting infrastructure, it enables a completely new approach to budgeting lighting networks.

Key benefits include:

- Greatly reduced carbon footprint
- No need for lifting equipment during installation or maintenance
- Shorter road closure periods
- Convenient, cost-effective maintenance
- Very low power density with high efficiency

By lowering the total cost of ownership, Orus Pro not only saves money but also promotes energy efficiency and environmental sustainability.

Total lifetime cost



SMART CONTROLS

Orus Pro comes equipped with a high-efficiency Tridonic D4i driver as standard, making it fully future-proof. It can be integrated into Thorn's UrbaSens wireless control systems, either right from the initial installation or later as part of a lighting network improvement plan by simply adding an external wireless control node.

This control node, Urbasens Move TriLink, can single-handedly connect up to 20 addresses in a group. This allows Orus Pro luminaires to be fully controlled as part of a wider lighting and control scheme. From standalone management up to grouped lighting scenes, Orus Pro is ready to perform within the UrbaSens smart ecosystem.

Contact us to discover a tailored smart lighting control solution for your needs.

DALI wired group or
individually controlled

UrbaSens Move TriLink or UrbaSens Connect Cabinet controller

UrbaSens
Move

UrbaSens
Play

UrbaSens
City Connect

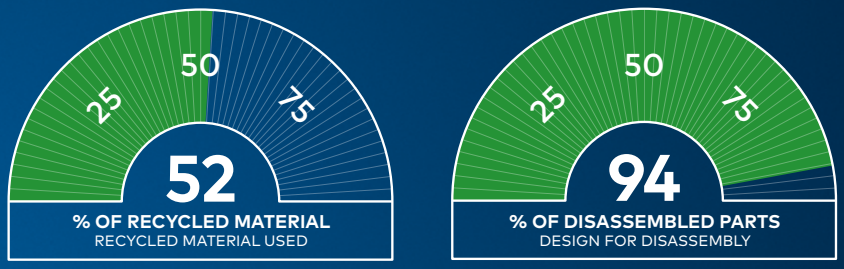
UrbaSens
Civic Connect

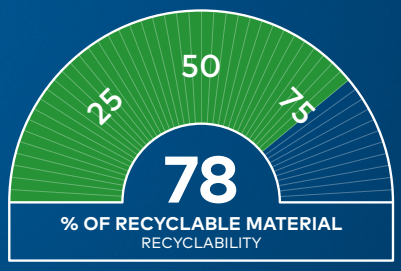
CIRCULAR DESIGN

Thorn's commitment to Circular Design Rules strengthens every one of our lighting products. With Orus Pro, we achieve high scores across the four key pillars of the circular design approach:

ORUS PRO

Orus Pro, 700 mm bollard, 1200 lm, 3000 K, DALI driver





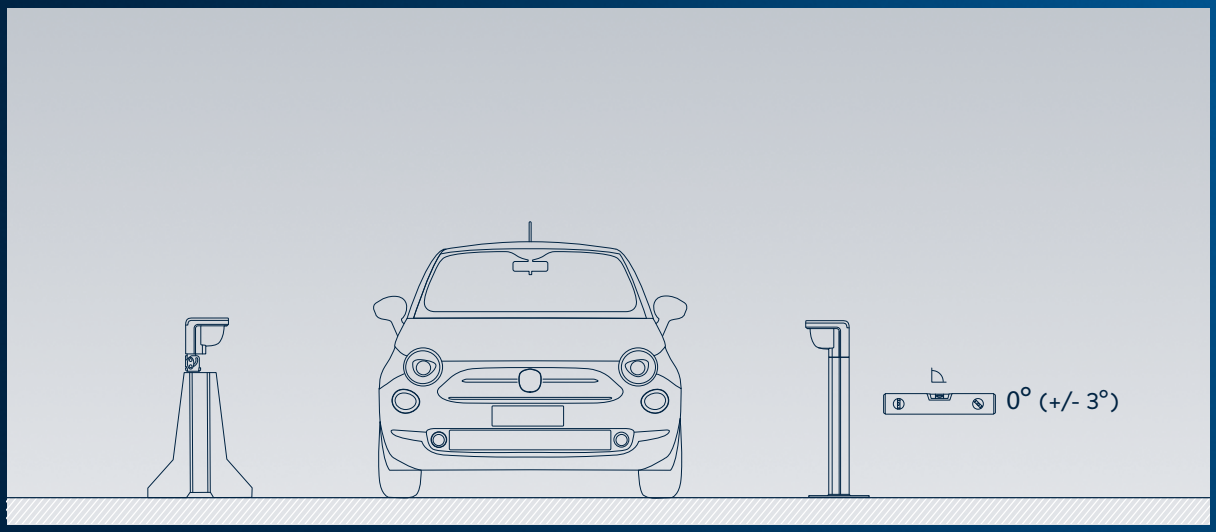
INSTALLATION RESTRICTIONS / MOUNTING

Orus Pro comes ready for installation, with the reflector positioned for optimal performance so no on-site adjustment is required.

For best optical results, spacing, and visual comfort, please follow these guidelines:

- Mounting height: ideally 0.90 m, with limited tolerance to ensure the luminaire remains below eye level
- Offset from the road: 1.0 m – 1.5 m
- Alignment: the top of the luminaire must remain parallel to the road surface (0°) with minimal tilt deviation
- Orus Pro is not suitable for roads with steep slopes
- For further installation information and advice on good practices, please refer to the installation instructions.

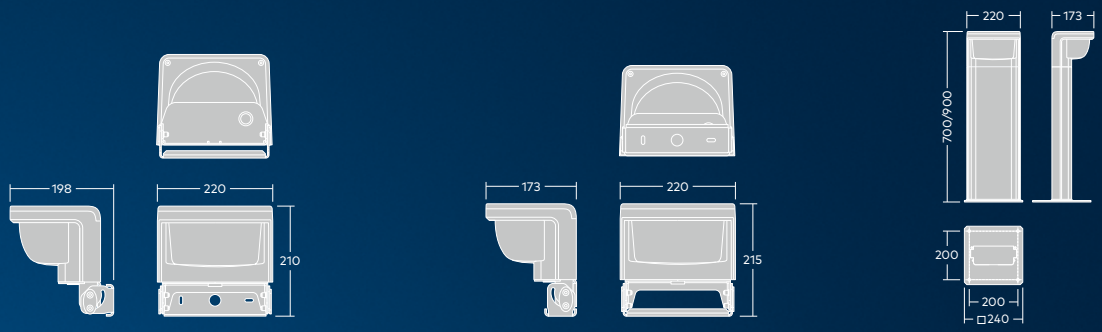
As standard, Orus Pro is supplied with quick connectors and designed for through-wiring.
All external screws are tamper-resistant for added security.



DISCOVER

thornlighting.com/ORUP

ORUS PRO



	LED Chip-On-Board (COB)
	2200 K / 2700 K / 3000 K / 4000 K
	Up to 2,850 lm (4000 K)
	Up to 110 lm/W
CRI	70 (2700 K / 3000 K / 4000 K), 65 (2200 K)
ULOR	< 6 % (Standard), < 3 % (U3 option)
	IP66
	–20 °C to 40 °C
	IK10
	C5 corrosion ISO 9223 – suitable for seaside and tropical installation
	L90 – 70,000 h @ 25 °C
	Bollard version in 700 or 900 mm height, stirrup version for façade, guardrail or wall mounting
	Wide Road optic for large spacing up to 15 meters
	Stirrup version : 0° to 90°
	Texturized anthracite (ANT), grey (GY), black (BK). RAL colours (80 % gloss) on demand
	10 kV (3 pulses) as standard. Option for additional 10 kV (multipulse) & 20 kV (single pulse)
	TRIDONIC D4i / DALI-2 driver to offer all control levels : Smart Lighting with UrbaSens ecosystem, DALI-2 dimmable with DALI CMS (HFX), adaptable dimming profiles

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GET IN TOUCH

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5 YEAR GUARANTEE

As a globally leading luminaire manufacturer, Thorn Lighting provides a five-year warranty for its complete product range within all European Countries.
thornlighting.com/guarantee

02/2026 (INT)

WE MAKE LIGHT WORK