THORN
LIGHTING

WE
MAKE
LIGHT
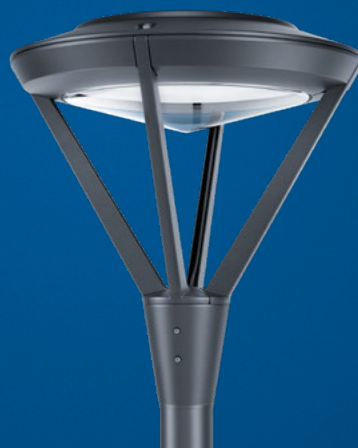WORK

AVENUE

Sustainable urban lighting without compromise

MODULAR INNOVATION

DESIGNED FOR URBAN SPACES

Avenue's clever modular concept welcomes in a new era of design innovation. Driven by decades of excellence in outdoor luminaires, this is the urban lighting solution designed to meet the needs of today – with the flexibility to meet the needs of the future.

The Avenue family consists of four product types: post-top, lateral arm, post-top lateral and suspended, all developed on the same connected modular platform.

Building surrounds

Parks & plazas

Urban & residential streets

Pathways and pedestrian areas

Car parks

ONE MODULAR PLATFORM, UNLIMITED POSSIBILITIES

AVENUE LATERAL ARM

AVENUE LATERAL POST-TOP

BUILT FOR SUSTAINABILITY

QUAD DESIGN INNOVATION

All products in the Avenue family are built on Thorn's innovative Quad modular platform (patent pending). Designed to take outdoor sustainability to the next level, the Quad platform enhances upgradability and optimises refurbishment to extend the product lifecycle.

UPGRADABILITY

Prepare your project for evolving urban IoT and connectivity strategies with Thorn's Quad platform. The modular design enables any Avenue product to be easily upgraded to include Zhaga Down in the future. Simply replace the relevant Quad section quickly and easily on-site.

REFURBISHMENT

Avenue features an all-in-one internal gear tray and light engine that can be accessed and removed with just a single tool. This design simplifies maintenance, refurbishment, and upgrades, providing a solution that can be maintained indefinitely. By reducing material waste, it minimises the environmental impact.

SUSTAINABILITY

Aligned with Zumtobel Group's Circular Design Rules, Thorn's Quad modular platform is designed for easy disassembly if maintenance or upgrade of the solution is no longer desired. This gives peace of mind that Avenue can be easily and responsibly recycled, and material content re-used. Avenue is consciously developed to minimise environmental impact, incorporating 68 % recycled materials and achieving 82 % recyclability.

CIRCULAR DESIGN

- Design for disassembly
- Facilitating long product lifetime
- Creating the foundation of ease of maintenance and future upgrade

CIRCULAR SOURCING

- High percentage recycled material content
- Ensuring the highest level of future recyclability
- Removal of substances that are contradictory to circularity and health

CIRCULAR SYSTEMS

- Maintenance & upgrade / refurbishment kits
- Reusability / remanufacturing
- High Value Recycling

68 %
RECYCLED MATERIALS

82 %
RECYCLABILITY

MODULAR
UPGRADABILITY

FLEXIBLE TO CHANGES IN YOUR IOT & CONNECTIVITY STRATEGY

Thanks to Avenue's modular design, all four variants of Avenue can be easily upgraded at any time throughout the product's lifespan, ensuring the luminaire can evolve to meet changing future needs. Not only is the all-in-one LED light engine and gear tray fully replaceable, but Avenue's unique quad design provides the opportunity for future connectivity upgrades through the addition of a Zhaga Down node with a compatible quad section.

AVENUE

DESIGNED EXCLUSIVELY FOR THORN
BY LYHNE DESIGN

Avenue is a unique collaboration, combining Thorn's expertise in technological innovation and sustainable manufacturing with the Scandinavian influence and design finesse of Denmark's Lyhne Design.

Lyhne Design specialises in creating intelligent, aesthetic, technically robust and sustainable designs, and is particularly strong in the development of technical lighting fixtures with a high degree of Nordic aesthetics.
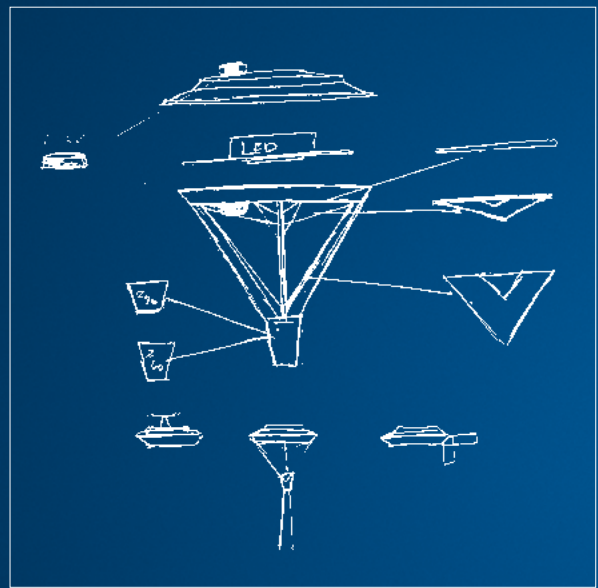
DESIGN WITH PURPOSE

As a Danish designer, Morten Lyhne is shaped by Danish design tradition, emphasising good craftsmanship with a focus is on functionality, minimalism and aesthetics. The basic principle is therefore always to keep the design as simple as possible.

Every design feature makes sense in relation to functionality, construction and production methods, and the design consists of as few parts as possible in high quality, reusable or recyclable materials. The visual design features clean, harmonious lines, transforming a highly technical and functional product into something simultaneously poetic.

GUIDING PRINCIPLES

Avenue is thoughtfully designed with a focus on Nordic aesthetics and lighting comfort – important parameters in the Nordic region. We have always gathered around the light, which represents safety, comfort and social gathering. With our outdoor luminaires we strive to embody these values, providing lighting solutions that enhance both safety and comfort in outdoor spaces, for the residents of the Nordics and all around the globe.

DESIGN PROCESS

Lyhne Design embraced the challenge of meeting the project's many, varied criteria. These included designing for diverse markets, developing multiple versions using shared components, ensuring high lighting comfort with 0 % ULOR, and creating a solution that is both sustainable and futureproof.

Morten Lyhne anchored the design in the equilateral triangle, a geometric shape that creates harmony and naturally appeals to the eye. From this foundational principle, he tackled the challenge of balancing technical functionality with aesthetics. This involved seamlessly integrating features such as the Zhaga Up and Down modules, harmonising the product's arms with the Canopy and spigot, and ensuring the spigot's compatibility with various pole mounts.
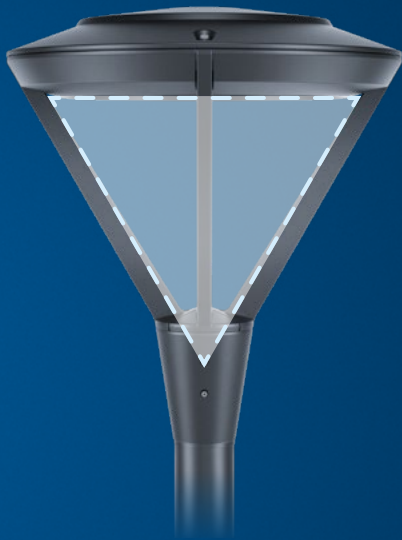
THE PERFECT TRIANGLE

Avenue was designed around the concept of the perfect triangle. One of the most fundamental and familiar geometric shapes, the equilateral triangle forms the silhouette of Avenue.

DARK SKY RESPONSIBILITY

Urban environments demand a warm and inviting aesthetic to increase the sense of comfort for users in the outdoor space. For post-top luminaires, the addition of a plastic bowl enhances this positive emotional response. However, bowls have a negative impact on the night-time environment and typically create a higher percentage of upward light pollution.

Avenue balances the human need with responsibility to protect the night-time environment with a new approach to the post-top plastic bowl. Designed by Lyhne Design to be shallow and tapered, it delivers a sense of comfort whilst ensuring less than 1 % ULOR.

Lateral mounted and suspended versions of Avenue are also available with 0 % ULOR.
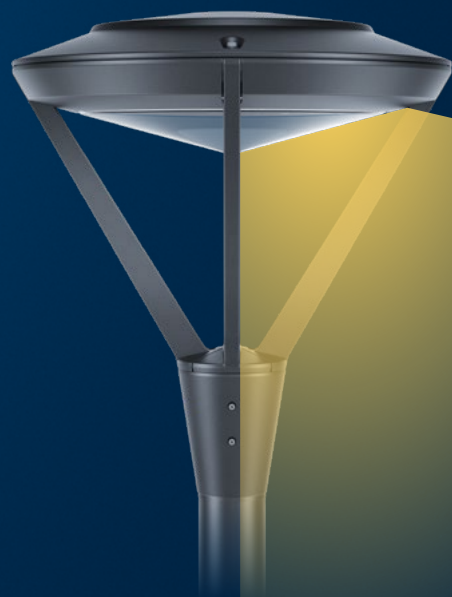
AVENUE

DESIGNED EXCLUSIVELY FOR THORN
BY LYHNE DESIGN

Together with the basic principles of functional design, Thorn's Circular Design Rules have been central to the development of Avenue. Key features like modularity and Quad platform design lie at its core, enabling easy upgrades and versatile use. For example, the all-in-one gear tray and light engine can be replaced with a single tool for ease of refurbishment, ensuring flexibility and longevity.

Avenue's standout design feature is its high level of lighting comfort. Traditionally in Denmark, a large bowl has been used to achieve this comfort, but such a design consumes excessive material. Instead, we selected a shallower bowl combined with a diffuser, which delivers the required level of lighting comfort while significantly reducing material use. With this bowl we also achieve a ULOR of close to 0 %, which would not have been possible with a large bowl. Even though Avenue delivers direct light, it gives the appearance of indirect light, balancing high performance with high comfort.

VERSATILE POST-TOP MOUNTING
A good transition from the luminaire to the pole is important for the overall aesthetics and ease of installation. In Avenue we designed the spigot, so it can easily be mounted on a variety of pole dimensions, and it can align flush with the pole to achieve a sleek, cohesive appearance.

The post-top spigot can be mounted onto 60 and 76 mm poles and, with rod accessory, flush mounted onto 76 mm poles, giving flexibility even without knowing the pole diameter you wish to install onto in advance.
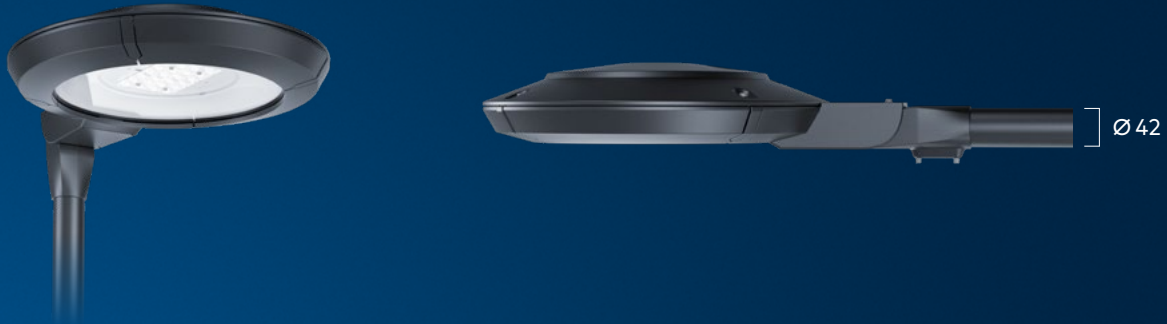
Ø 76 MM

Ø 76 MM WITH FLUSH
MOUNT ACCESSORY

Ø 60 MM

SEAMLESS LATERAL MOUNTING
The lateral post-top and lateral arm mounting spigots are designed to ensure a single clean line from the luminaire to the supporting pole / column. Lateral arm variants flush mount as standard onto 42 mm poles.

Ø 42

With his strong technical expertise, Morten Lyhne brought a deep understanding of construction and production challenges. Collaborating closely with Thorn Lighting's R&D team, we identified solutions that strike an optimal balance between functionality and visual appeal.

The best designs emerge from collaboration, and engaging end-users in the process was integral to the development of Avenue. Lyhne Design showcased the concept using physical prototypes during workshops in Denmark, Sweden, France, and the UK. Market feedback during these sessions proved invaluable, helping us refine and tailor the design to meet customer and end user needs effectively.

DEVELOP

| IDEATE | PROTOTYPE | TEST |
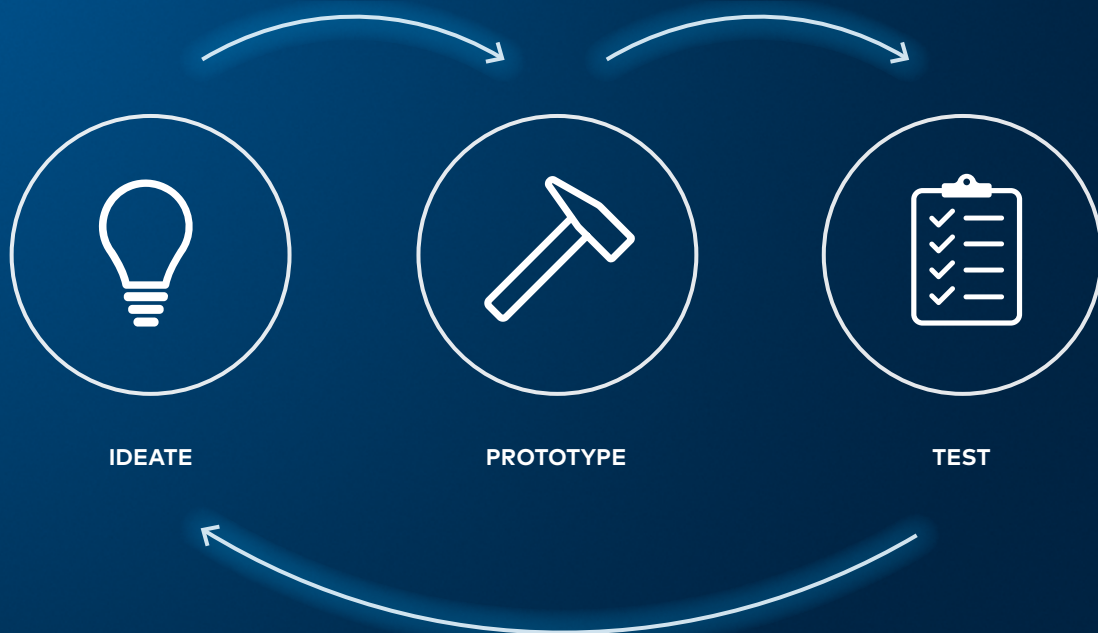
EVALUATE & DOCUMENT

CONNECTIVITY

Avenue brings to market one of the world's first urban solutions with Zhaga Down node capability.
As an added bonus, Thorn's Quad modular innovation means you can upgrade to Zhaga Down capability,
even if you have already invested in Avenue without this connected facility.

URBASENS DETECT

APPLICATION: Urban communities, pedestrianised zones, schools, city landmarks,
bus and tram stations, small parking lots
SCALE: Single lighting point (standalone)
TECHNOLOGY: PIR, radar, Zhaga interface

UrbaSens DETECT is a standalone (i. e. point-to-point level) outdoor lighting control system that
utilises MovU components such as PIR detectors, vehicle radar or a separate Zhaga interface.
Designed for targeted lighting applications, it is ideal for urban communities and areas with high
pedestrian traffic.

URBASENS MOVE

APPLICATION: Pedestrian paths & cycle paths, small to medium car parks, building surrounds
SCALE: Recommended up to 60 luminaires per network group, limitless groups
TECHNOLOGY: Tridonic BasicDIM Wireless – 2.4 GHz free band mesh network

UrbaSens MOVE is an advanced wireless local group control system, with simple Bluetooth-based
configuration and no recurring fees. Using motion detection and ambient light triggers, luminaires
can respond and adapt either as single light points or groups for predefined scenarios, providing
comfortable and safe visibility to pedestrians, cyclists or vehicles in a parking lot. It even integrates
with Litecom from Zumtobel to harmonise indoor and outdoor lighting control. UrbaSens MOVE
gives you the ability to deliver the right light, in the right place, at the right time – balancing the
need for user comfort with environmental considerations.

URBASENS CIVIC CONNECT

APPLICATION: Towns, suburban areas, car parks and transportation hubs
SCALE: Small-to-medium lighting networks
TECHNOLOGY: M2M (Machine to Machine) network. Communication without
direct human intervention.

UrbaSens CIVIC CONNECT is the cutting-edge outdoor lighting control system that utilises
M2M network technology such as NB-IoT (narrowband Internet of Things) or Cat-M1 (low power
wide area network). Specifically designed for towns and suburban areas, our system seamlessly
integrates with these networks, allowing you to effortlessly manage and optimise your
lighting infrastructure.

URBASENS CITY CONNECT

APPLICATION: Cities and city centres, large car parks, major transportation hubs
**SCALE:** Medium-to-large lighting networks
TECHNOLOGY: Mobile network, internet, ethernet, mesh network

UrbaSens CITY CONNECT is the ultimate outdoor lighting control system, tailored for cities and
high traffic areas. With a single point of internet connection and advanced 2.4 GHz mesh network,
our system effortlessly connects up to 200 devices to a gateway, ensuring seamless control and
unmatched efficiency.

URBASENS CIVIC CONNECT

LIGHTING CONTROL FOR TOWNS AND FEATURE AREAS
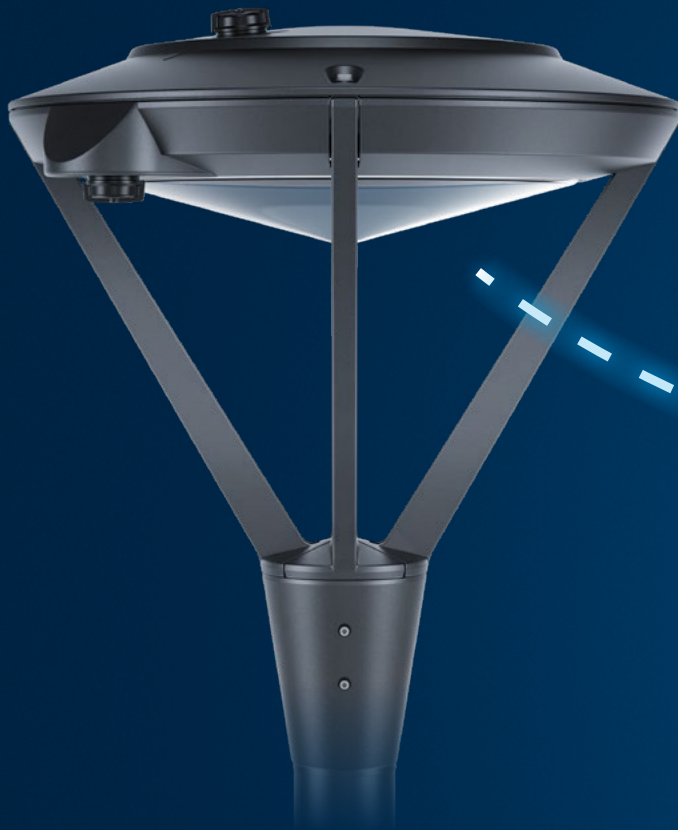
FEATURES OF CIVIC CONNECT

NIGHTTUNE
Advanced technologies are now further optimised through DALI Addressing.

AUTOMATIC LOCALISATION
Integrated GPS for easier commissioning.

INTEGRATED CONNECTIVITY
10 years of network connectivity included with IoT network (NB-IOT, CAT-M1).

INTEGRATED SIM
Sim is preloaded in the node ready for commissioning.

SHARED FEATURES

WEEKLY CALENDAR
7 day week calendar to best reflect site specific behaviours.

OVER THE AIR UPDATE
The system can be updated wirelessly once installed.

REALTIME CONNECTIVITY
With UrbaSens CIVIC CONNECT and CITY CONNECT you can send commands and retrieve information almost instantly.

LIGHT SENSOR
Advanced lux level based switching.

URBASENS CITY CONNECT

LIGHTING CONTROL FOR CITIES
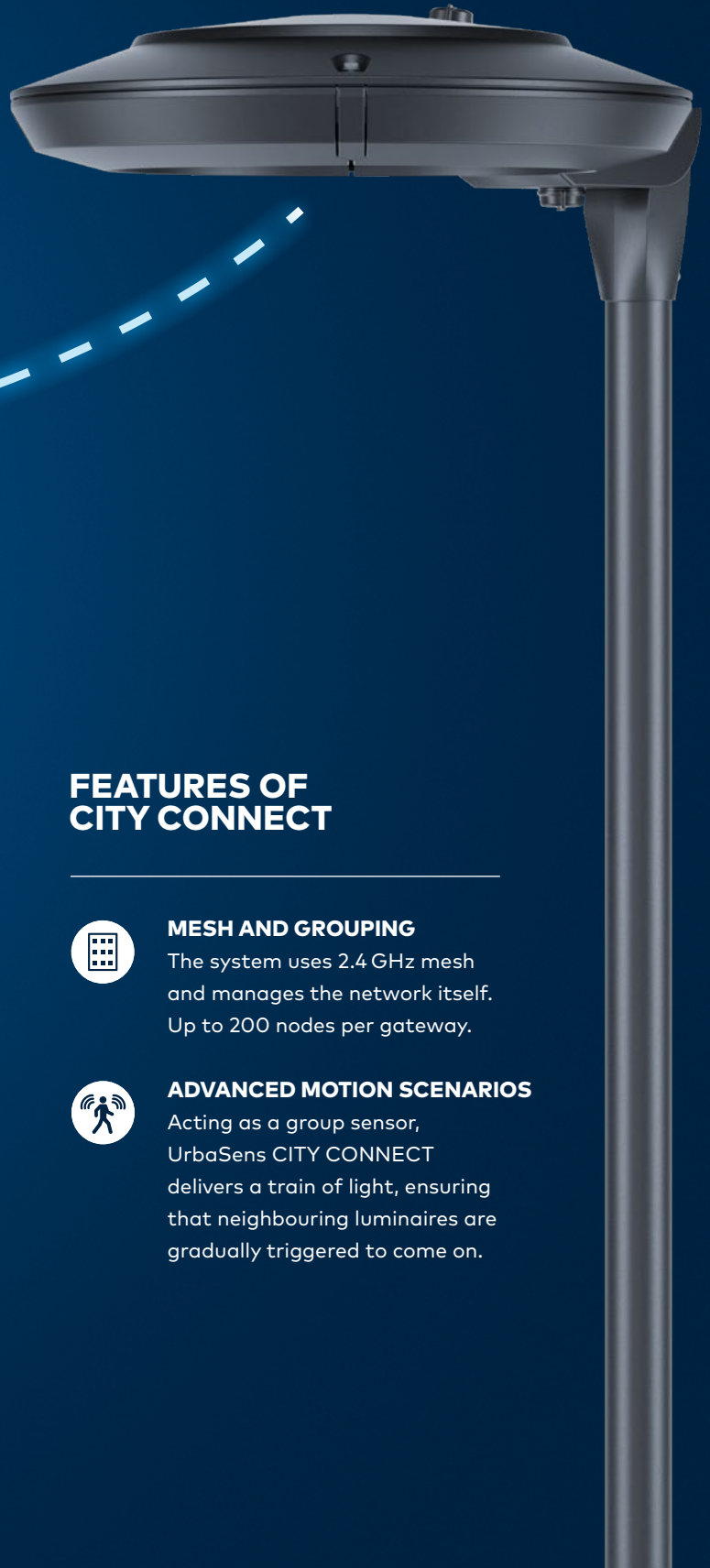
FEATURES OF CITY CONNECT

MOTION SENSING
Precision based presence detection via a D4i motion sensor.

ASTRO CLOCK
Switching via local sunset and sunrise.

ENERGY REPORTING
Get exact energy saving reports.

FAULT NOTIFICATION
Alerts are available on the platform and a daily notification email is possible.

MESH AND GROUPING
The system uses 2.4 GHz mesh and manages the network itself. Up to 200 nodes per gateway.

ADVANCED MOTION SCENARIOS
Acting as a group sensor, UrbaSens CITY CONNECT delivers a train of light, ensuring that neighbouring luminaires are gradually triggered to come on.

NIGHTTUNE

NIGHTTUNE CREATES THE PERFECT BALANCE IN LIGHTING AT NIGHT

In the evening, urban areas often become mixed use spaces, with vehicles and pedestrians moving around, and dining and socialising taking place as daytime use of space transitions into the night-time economy. During this time period, NightTune provides a moderate colour temperature.

As the night progresses, roads, pavements and public spaces become quieter, and the output of the cool LEDs is reduced, resulting in a dimmer, warmer light. It creates a more comfortable atmosphere while saving energy, preserving safety perception and respecting the nocturnal ecosystem.

As morning approaches and traffic returns to the streets, the output of the cool LEDs increases to provide brighter, natural light that meets the higher safety demands.

Dark Sky Approved design with just 0.4 % upward light

3000 K

2700 K

2200 K

3000 K 100 %	2700 K 75 %	2200 K 50 %	2700 K 75 %	3000 K 100 %
SWITCH ON		MID POINT OF NIGHT		SWITCH OFF

100 %
75 %
50 %
25 %
0 %
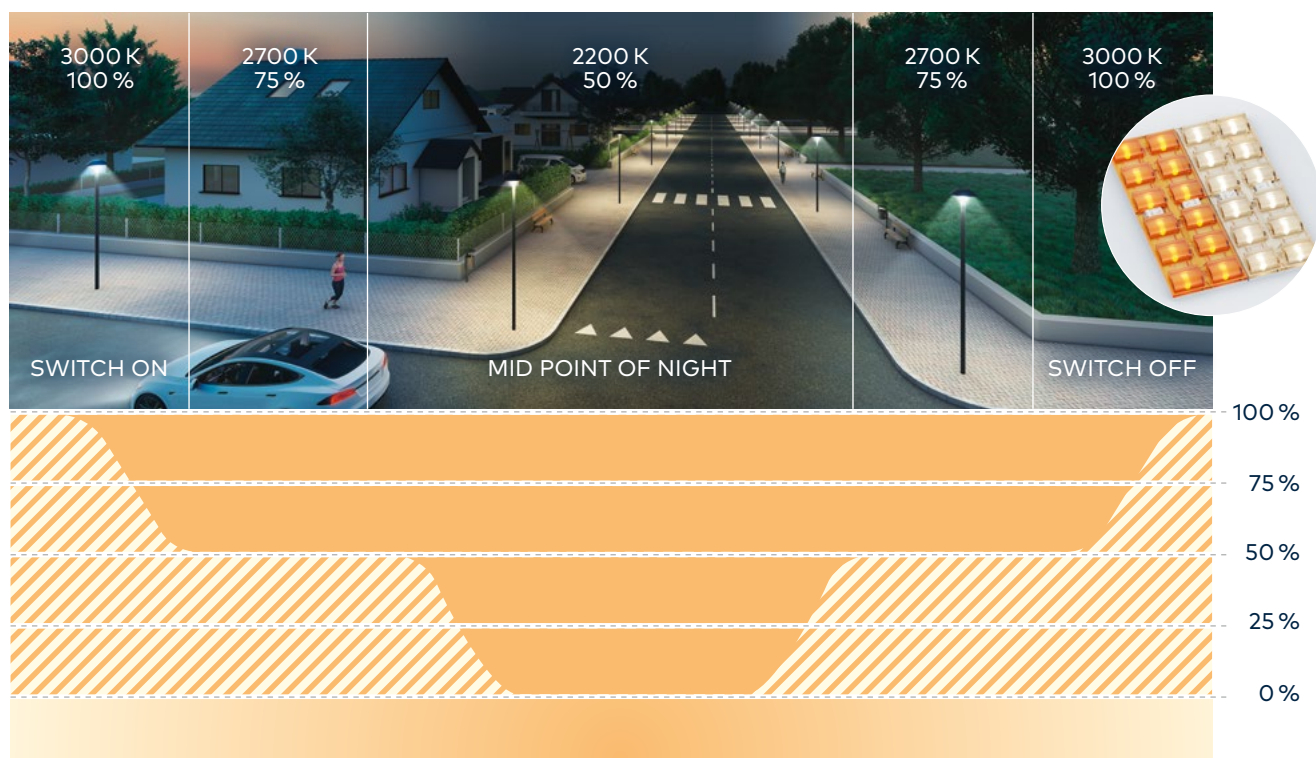
Use case example

2200 K — Channel 1: Always at 100 %

4000 K — Channel 2: Dimming

2200 K 3000 K — Result: Changing colour temp and luminous flux adj

Avenue utilises the latest Tridonic dual channel driver innovation to reduce number of components and enable ease of commissioning to meet the demands of your application.

OPTICAL EXCELLENCE

The optical system of an outdoor luminaire must be designed to satisfy several criteria in terms of luminaire performance (P) and efficiency (E), visual comfort (C) and, of course, to respect the environment as well. Consequently, we have developed the R-PEC and the A-PEC LED optical systems, respectively for Road (R) and Amenity (A) lighting.

Integrating Thorn's in house developed optical platform enhances the application use cases of the Avenue family, with optic solutions catering for major and minor roads as well as urban spaces, parks, car parks and building surrounds.

A-PEC
Amenity lighting optics

R-PEC
Road lighting optics

OPTICAL EXCELLENCE

Visual comfort is key for the urban environment. Increasing human perception of well-being and safety by avoiding glare and harsh lit effects. Thorn is proud to have an in-house team of optical experts, dedicated to outdoor optical developments to bring excellence in outdoor lighting design.

COMFORT OPTIC

Avenue's optional comfort optic further enhances visual comfort, in conjunction with Avenue's new responsible approach to plastic bowl design that minimises ULOR. The comfort optic is designed to deliver a soft, inviting illumination to the urban space, eliminating glare.

EXTERNAL VISOR ACCESSORY

For applications where a physical cut off is required, Avenue is available with an optional external visor.

GLARE CONTROL

Avenue achieves an excellent glare rating of D6 – very low glare, giving peace of mind that with the Avenue solution, best in class visual comfort is guaranteed.

$\gamma = 85°$
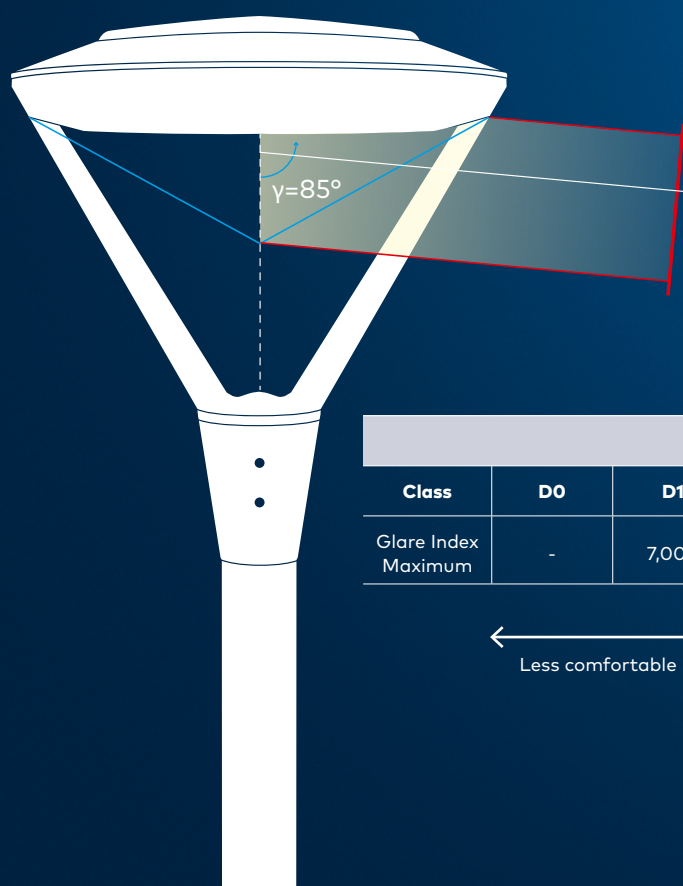
Imax at 85°
(Flux dependant)

A: Luminous apparent surface seen under 85° normal to Imax location

$$D = \frac{Imax(85°)}{\sqrt{A}}$$

Glare index classes							
Class	**D0**	**D1**	**D2**	**D3**	**D4**	**D5**	**D6**
Glare Index Maximum	-	7,000	5,500	4,000	2,000	1,000	500

Less comfortable ← → More comfortable

INSTALLATION POSSIBILITIES

With lumen packages from 800 to 9000 lm, Avenue offers a wide range of mounting configurations, styles and heights, ensuring the perfect solution for all projects. This is supported by the suite of in-house produced optics to offer a toolbox of lit effect possibilities to meet your design intent.
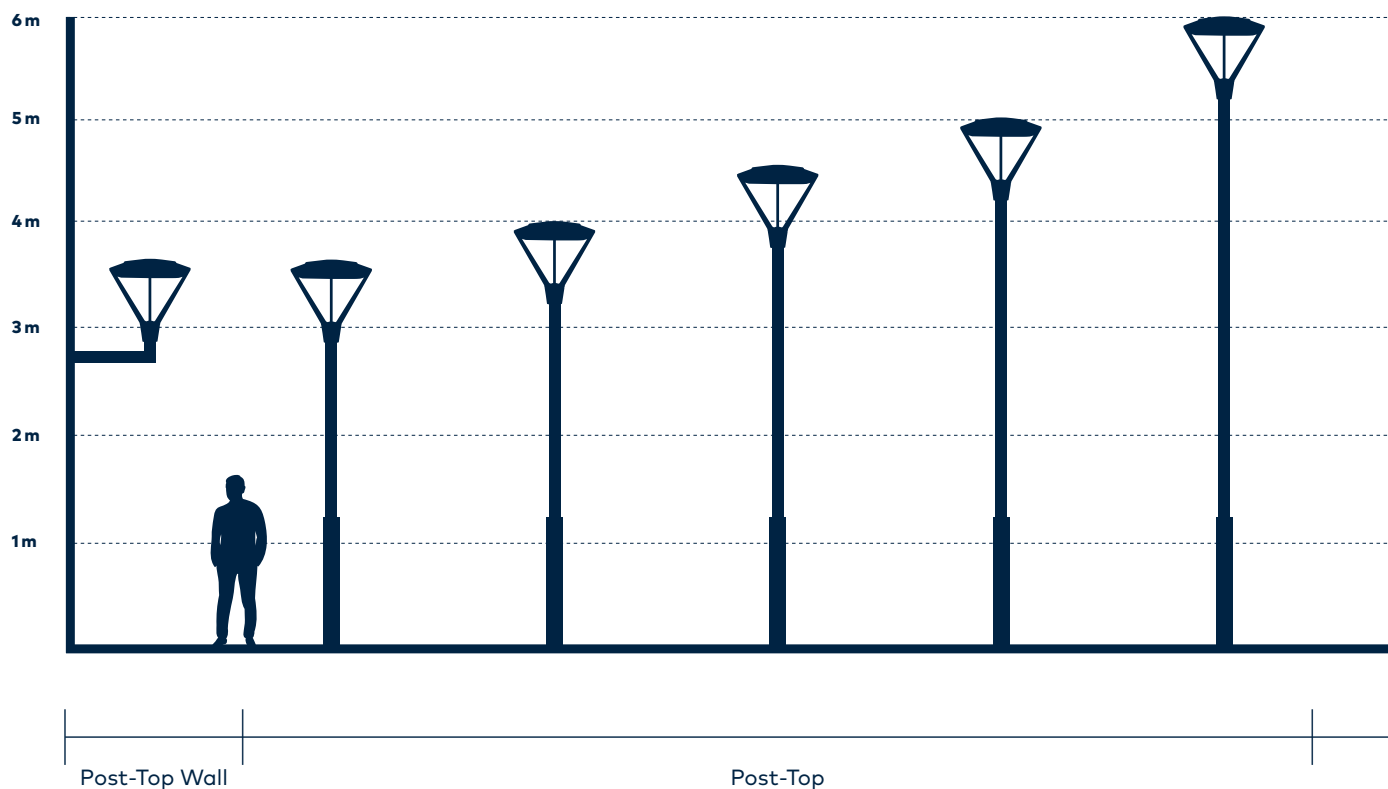
INSTALLATION

 Luminaire accessible with single tool for ease on maintenance and future upgradeability

 10 Degree of tilt on lateral types

 Pre-wired as standard for ease of installation

Lateral Post-Top

Lateral Arm

Suspended
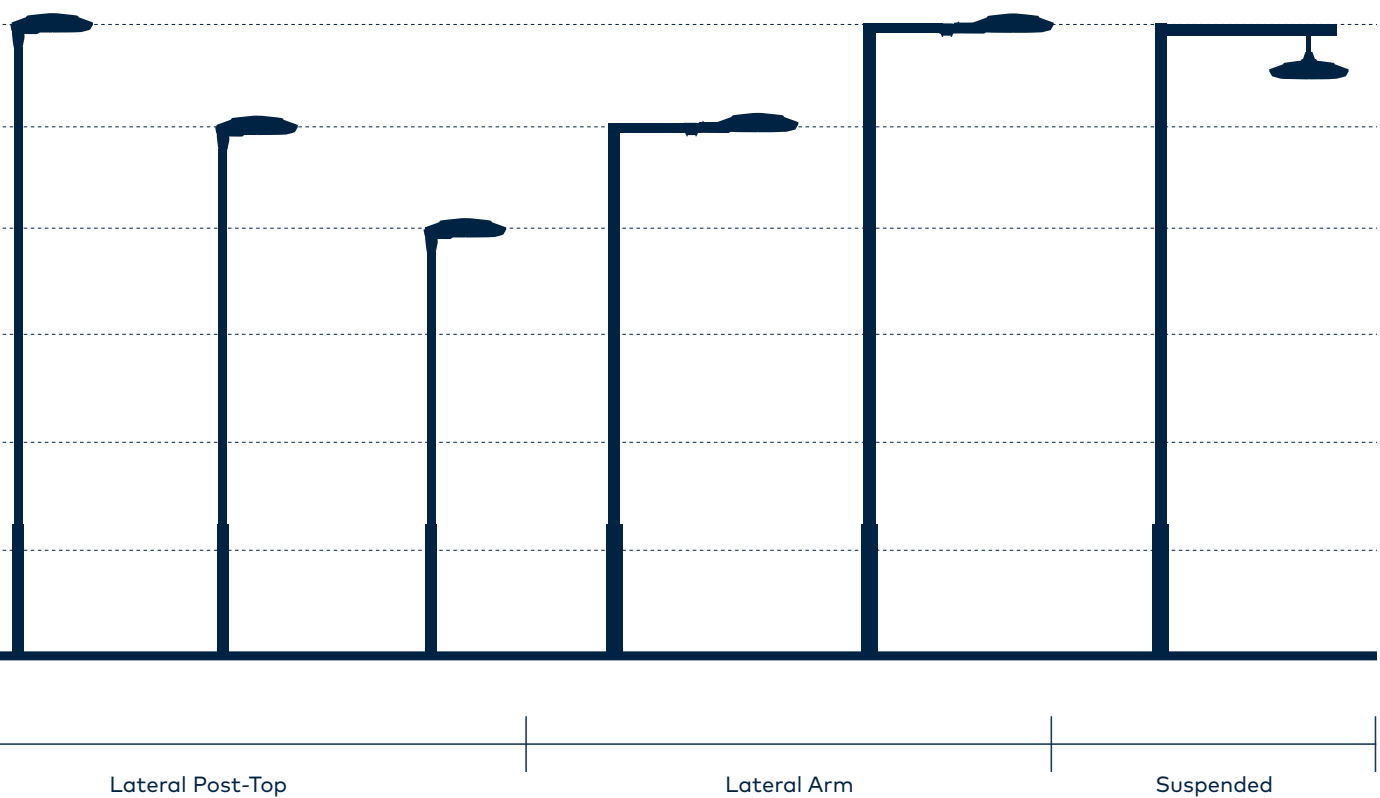
BUILT TO LAST

Using the highest quality, sustainable materials and rigorous testing, all Avenue solutions are C5 corrosion resistant

Suitable for the toughest coastal environments

IK10 rated, Avenue is robust for the most challenging public environments

DISCOVER
AVENUE

	12 LEDs / 18 LEDs / 24 LEDs / 36 LEDs
	2200 K / 2700 K / 3000 K / 4000 K / NightTune
	800 lm to 9000 lm
	Up to 150 lm/W
CRI	70 / 80
ULOR	0 % for Suspended and Lateral Mount / < 1 % for Post-Top
	0.3 m to 7 m pre-wired cable
	IP66
	−30 °C to 35 °C
	IK10
	C5 corrosion resistance ISO 9223 – suitable for coastal and tropical installation
	UV Resistant
	100,000 h B10L90 @ 35 °C for 350 mA / 500 mA / 700 mA | 100,000 h B10L90 @ 25 °C for 1050 mA
	A-PEC / R-PEC / Comfort Optic Diffuser (Bowl variants only) / Prismatic Foil (Flat Glass variants only)
	T42 / T60 / T76
	Texturised Anthracite / Texturised Light Grey / Texturised Black / Texturised White / 44 RAL finishes on request
	10 kV
	Bi-Power Line / Light Reduction Twin Phases / Bi-Power Switchable / Multi-Layer Dimming / CL0 / Integral Mini Photocell / Integral Nema Photocell facility / DALI-2 / Zhaga Up socket / Zhaga Down socket / Zhaga Up/Down socket
	Class I / Class II
	5 SDCM
	Up to D6

SEE AVENUE IN AUGMENTED REALITY

VIRTUAL PRODUCT SAMPLES, STRAIGHT FROM YOUR DEVICE

You can now see Avenue in 3D anywhere you choose! Turn your office into a virtual showroom, or preview the augmented reality luminaire outside in its natural environment. All you need is a mobile device or tablet and this brochure.
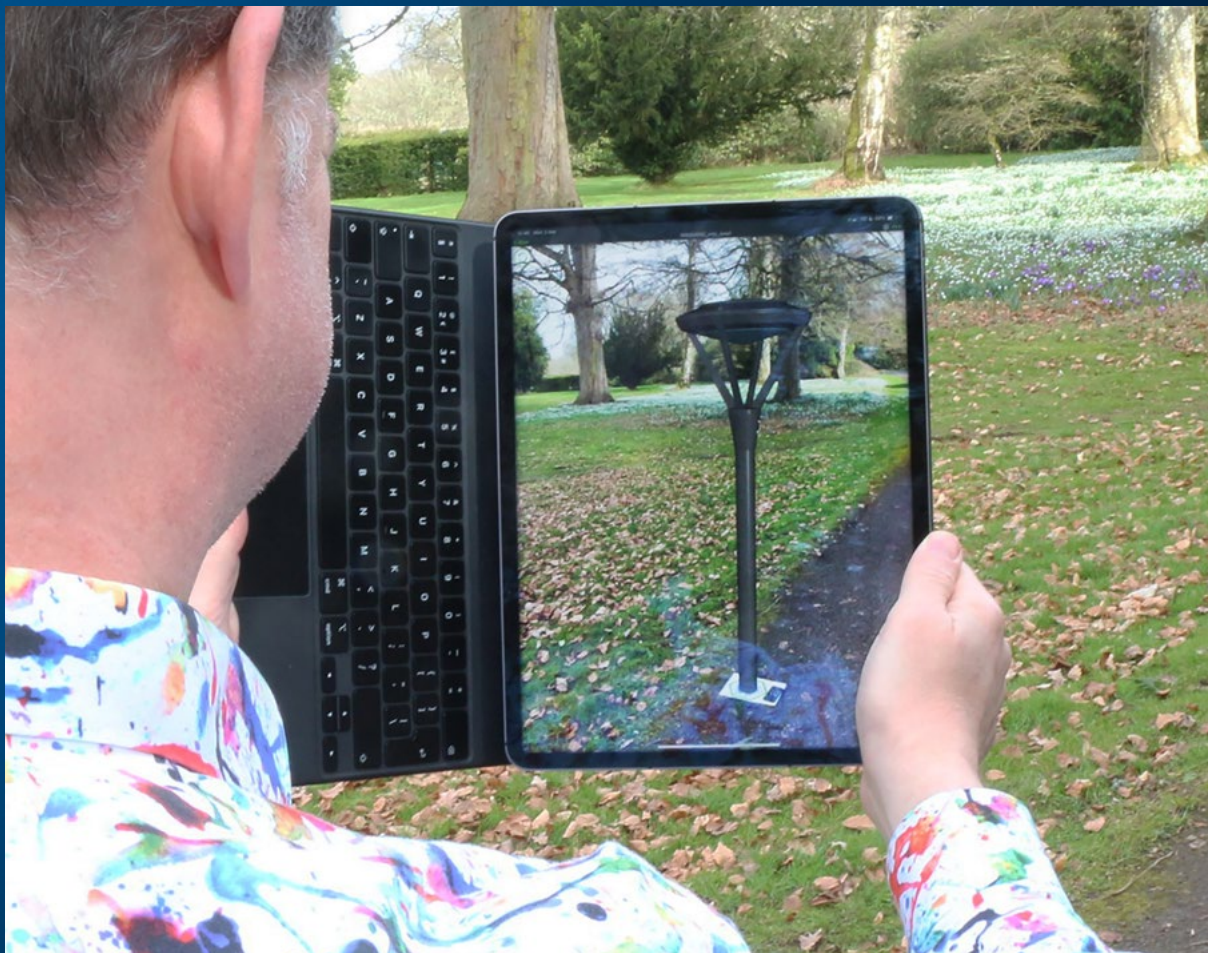
Turn the page to begin...

STEP 1 – DOWNLOAD THE VUFORIA VIEW APP

Using a phone or tablet, scan any of the QR codes below to download the app, or search 'Vuforia View' on the Apple or Google Play app store.

STEP 2 – DISPLAY THE 'THINGMARK'

The 'Thingmark' guides where you will see your virtual Avenue come to life.

Printed brochure: Place the brochure on the floor or another suitable flat surface with the large Thingmark on the page opposite clearly visible.

Digital brochure: Print the Thingmark on the opposite page or display full screen on a second mobile device or tablet.

THINGMARK

STEP 3 – OPEN THE APP'S QR CODE SCANNER

Open the Vuforia View app. Select this icon from the bottom toolbar to open the QR code scanner.

Scan your chosen QR code.

STEP 4 – SEE AVENUE COME TO LIFE!

Align the virtual 'Thingmark' on your device screen with the one on the brochure page opposite and see your virtual Avenue come to life!

AVENUE
Post-Top

AVENUE
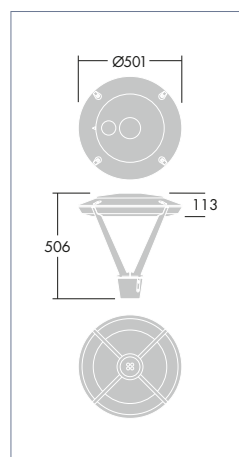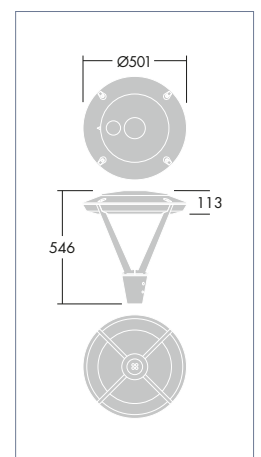Lateral Post-Top

AVENUE
Lateral Arm

AVENUE
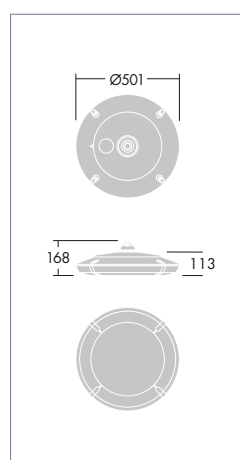Suspended

CONFIGURATION GUIDE – AVENUE

AV	MLE Top	12L35	830	RS	PB	ZUD	NONE	II	CON	T60	ANT
Range	**Type**	**LED/mA**	**CRI/CCT**	**Optic**	**Enclosure**	**Controls**	**Dimming**	**Safety**	**Wiring**	**Spigot**	**Colour**

Colour

Code	Description
ANT	Texturised Anthracite
GY	Light Grey 150 Sanded
BK	Textured Black P36
WH	Textured White
RALxxxx	Special RAL finish

Spigot

Code	Description
MSU	Suspended Mounting
T60	60 mm Post Top Spigot
T76	76 mm Post Top Spigot
L42E	42 mm Lateral Arm Spigot
T42E	42 mm Lateral Post Spigot

Wiring

Code	Description
WSxx	Pre-wired, 0.3 m or 3 – 7 m, H07RNF
DSxx	Pre-wired, 0.3 m or 3 – 7 m, for DACH market
CW0.3	Pre-wired with 0.3 m cable and connector
CD0.3	Pre-wired with 0.3 m cable and connector, for DACH market

Safety

Code	Description
I	Electrical Class I
II	Electrical Class II

Dimming

Code	Description
NONE	Non Dim
BPL	Bi-Power Line
LRT	Light Reduction Twin Phases
BS	Bi-Power Switchable
MLD1	Multi-Layer Dimming
BP	Bi-Power
HFX	DALI-2

Controls

Code	Description
ZU	Zhaga Up Socket
ZD	Zhaga Down Socket
ZUD	Zhaga Up & Down Sockets
PM	Photocell Mini socket
N7	Integral Nema Photocell socket 7 pin

Enclosure

Code	Description
CL	Plastic Bowl
CL-D	Plastic bowl with comfort diffuser
GL	Glass
PR	Glass with comfort diffuser

Optic

Code	Description
CST	Comfort Street
RS	Round Symmetrical
RSC	Radial Symmetrical Comfort
WST	Wide Street (asymmetrical)
AESC	Axial Extra Street Comfort
ENR	Extra Narrow Road
ES	Extensive Street
EW2	Extra Wide
EWC	Extra Wide Comfort
EWR	Extra Wide road
EWS	Extra Wide Street
NR	Narrow Road
RC	Road Comfort
SC	Street Comfort
SES	Super Extensive Street
WR	Wide Road
WS	Wide Street
WSC	Wide Street Comfort

CRI/CCT

Code	Description
722	CRI 70 2200 K
727	CRI 70 2700 K
827	CRI 80 2700 K
730	CRI 70 3000 K
830	CRI 80 3000 K
740	CRI 70 4000 K
840	CRI 80 4000 K
722-40	NightTune

LED/mA

Code	Description
12L35	12 LEDs 350 mA
12L50	12 LEDs 500 mA
12L75	12 LEDs 750 mA
12L105	12 LEDs 1050 mA
18L35	18 LEDs 350 mA
18L50	18 LEDs 500 mA
18L70	18 LEDs 700 mA
18L105	18 LEDs 1050 mA
24L35	24 LEDs 350 mA
24L50	24 LEDs 500 mA
24L70	24 LEDs 700 mA
36L35	36 LEDs 350 mA
36L50	36 LEDs 500 mA
36L60	36 LEDs 600 mA

Type

Code	Description
MTP	Post-Top
MLE Top	Lateral Post
MLE Lateral	Lateral Arm
MSU	Suspended

Range

Code	Description
AV	Avenue

Ø501

113

506

Post-Top D76 Spigot

Ø501

113

546

Post-Top D60 Spigot

Ø501

168

113

Suspended

Ø501

702

142

113

Lateral Arm

Ø501

630

213

113
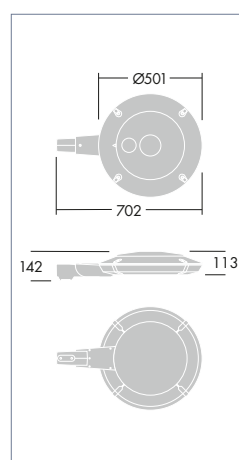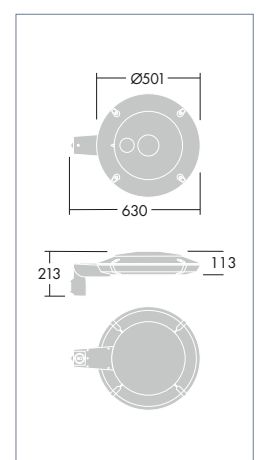
Lateral Post-Top

Configure the ideal product solution with myProduct. The myProduct configurator
allows you to easily configure a luminaire according to your needs.
Try it now at www.thornlighting.com/myproduct

GET IN TOUCH

www.thornlighting.com/contacts

WE MAKE LIGHT WORK