

**we-ef**

# **AFL100 SERIES**

The new generation street and area lighting

**SEE THE STARS**





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**Are we meeting the challenges  
and needs of cities today and  
tomorrow?**



# CHALLENGE

Cities and communities all must adapt and do more with less, and yet still meet the need for safety and ambience, in designing exciting night-time environments.

## This means:

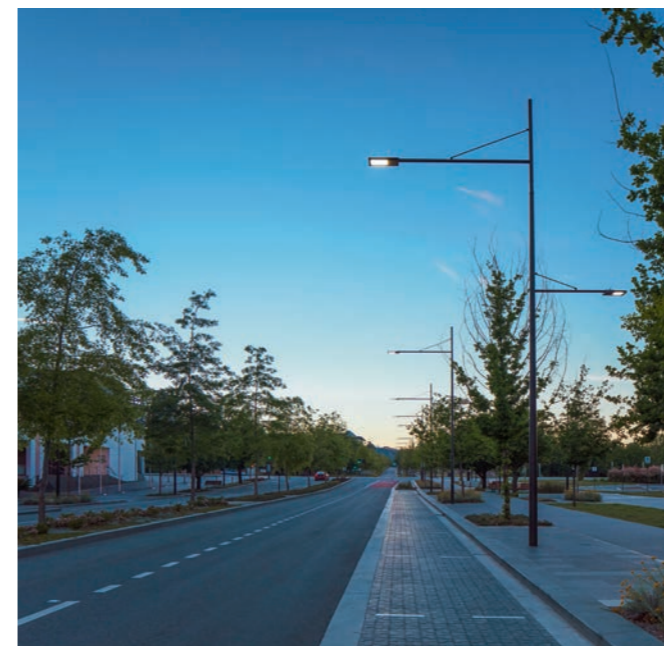
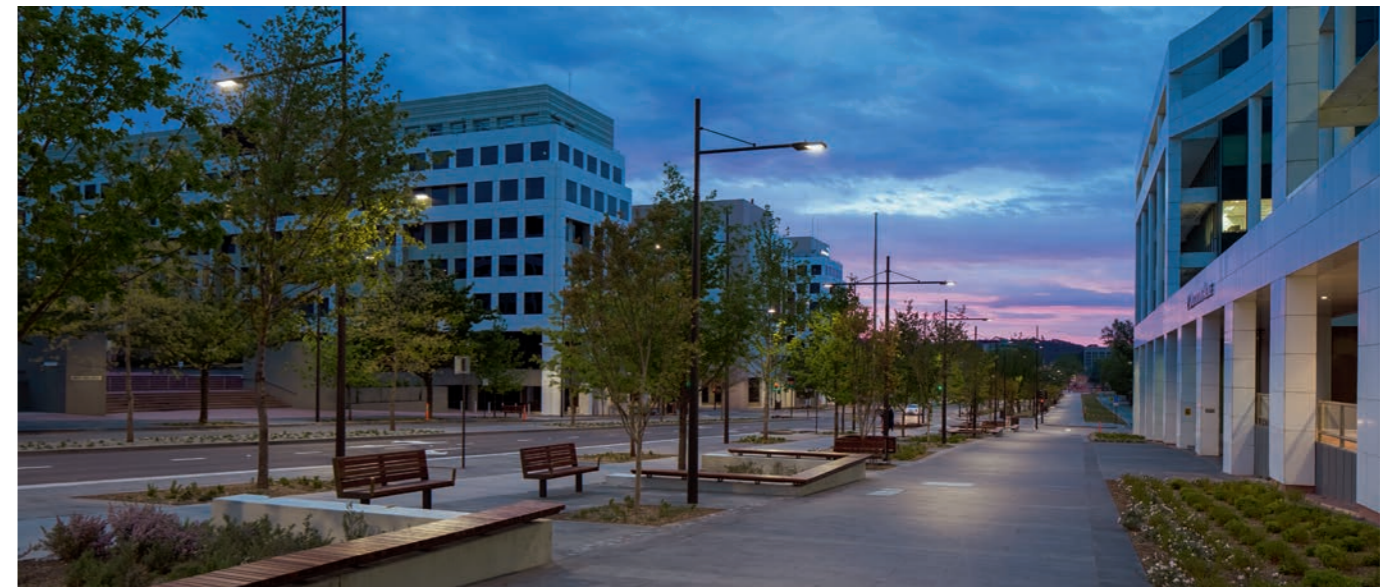
- Less energy
- Less waste
- Improved light control
- Transitioning to warmer colour temperatures
- Greater sustainability

Many cities around the world have converted streetlights to LEDs, and some monitor and manage their light points using smart lighting management system.

Such initiatives have proven to **reduce energy usage for streetlighting by around 63 percent** and save the cities millions in annual operational and maintenance costs.

In Australia, approximately 40% off the streetlights have been upgraded to LED but **only 4% have any smart control**.

Knowing that **80%+ of a luminaire's carbon output is associated to to its use phase**, highlights the potential we still have to improve, through the clever adoption of controls and connectivity, which is made easier with a luminaire that is smarter out of the box.



# The new generation street and area lighting

For urban lighting applications

## AFL100 SERIES



**AFL110**

**AFL120**

**AFL130**

# PRODUCT OVERVIEW

**Built for the future - be it sustainability connectivity and serviceability**



## Corrosion protection



5CE  
+PRIMER

## Designed for serviceability

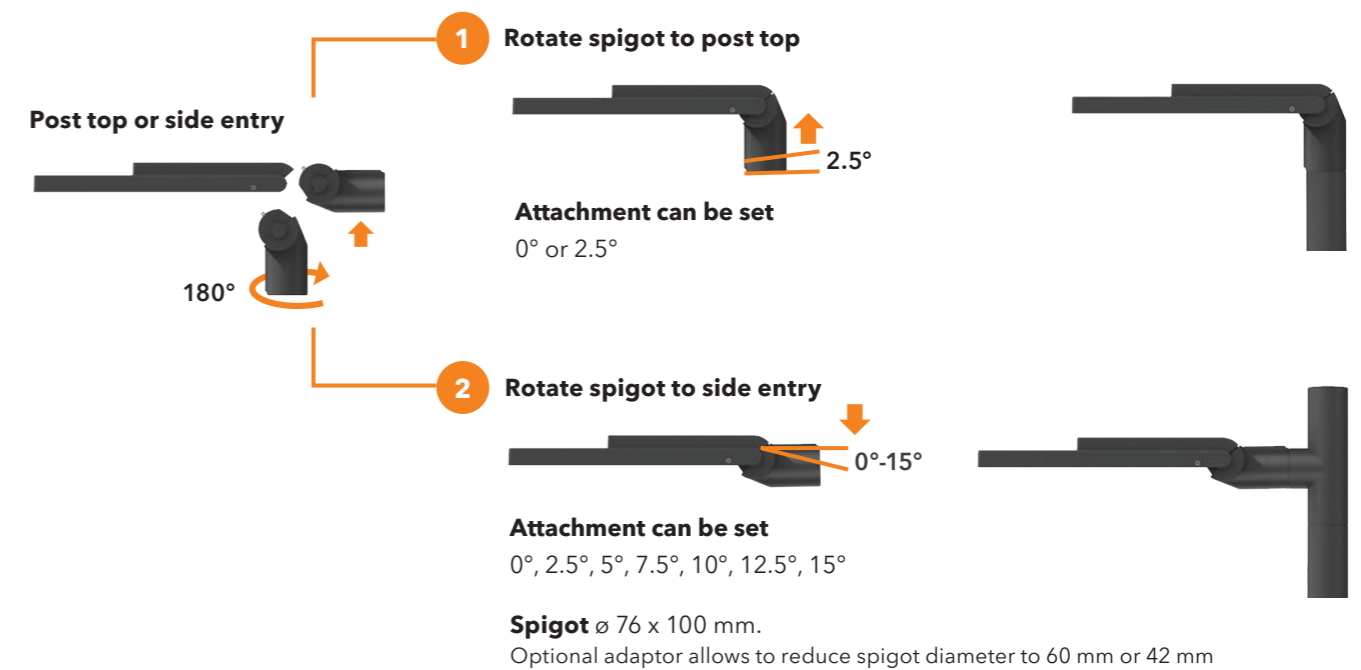


- Easy disassembly
- Quicker and more cost-effective repair & maintenance
- Ready for upgrades in the future

# PRODUCT FEATURES

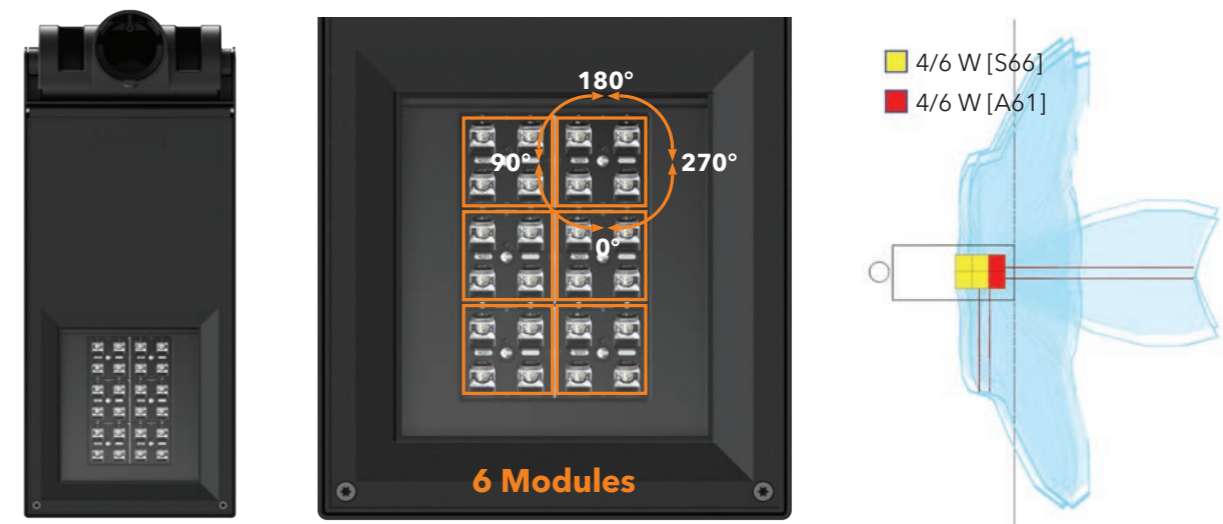
## Quick, safe and easy installation.

A sustainable cost effective solution that enable repurposing of the luminaires in the future fit for any application - a choice between post top or side entry.



## Modularity

When existing infrastructure changed, the lighting is in need of an upgrade. WE-EF hybrid optics can optimise lighting scenarios by simply switching to LED boards to a different beam or easily rotate existing LED module in 4 directions . All of this can be done on-site.

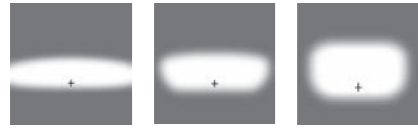


Shown above is AFL120

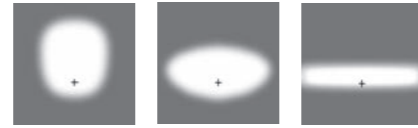
Each module can be turned in 4 directions: **0°, 90°, 180° and 270°**

# FAMILY RANGE

## AFL110 | AFL120 | AFL130



[S70] [S71] Asymmetric, side throw  
[S66] Asymmetric, side throw  
[R60] [R61] Rectangular, side throw



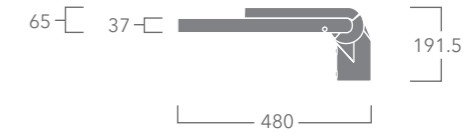
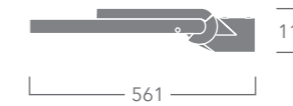
[A61] Asymmetric, forward throw  
[S61] Asymmetric, side throw  
[P66] Pedestrian/bicycle lane



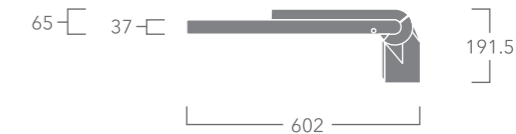
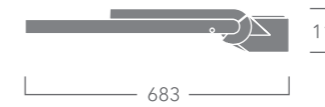
[Q66] Square distribution  
[P46L] Pedestrian crossing, left-hand traffic  
[P46R] Pedestrian crossing, right-hand traffic

AFL100	LED	Wattage	Light distributions	Nominal lumens
AFL110	8	8 – 24 W	[S70] [S71] [S66] [R60] [R61] [A61] [S61] [P66]	1240 – 3240 lm
	16	16 – 48 W	[Q66] [P46L] [P46R]	2480 – 6480 lm
AFL120	24	24 – 48 W	[S70] [S71] [S66] [R60] [R61] [A61] [S61] [P66] [Q66] [P46L] [P46R]	3720 – 6960 lm
AFL130	48	48 – 96 W	[S70] [S71] [S66] [R60] [R61] [A61] [S61] [P66] [Q66] [P46L] [P46R]	7440 – 13920 lm

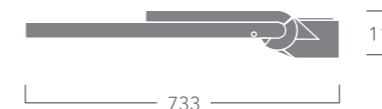
AFL110



AFL120



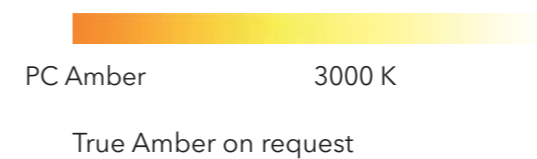
AFL130



### Standard options



### Wild-Light standard option – Available for AFL120 and AFL130

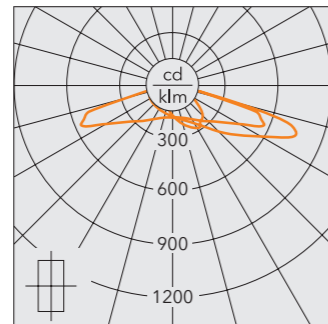
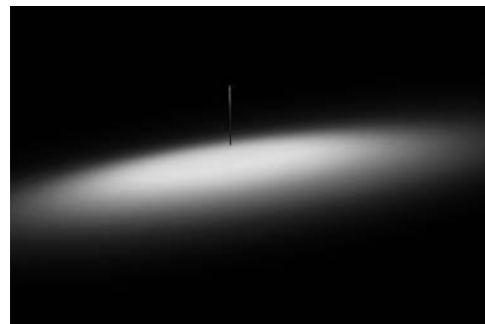


# Tailored for application challenges

## University campus



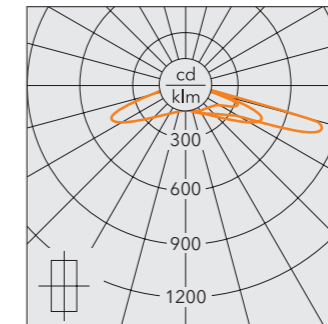
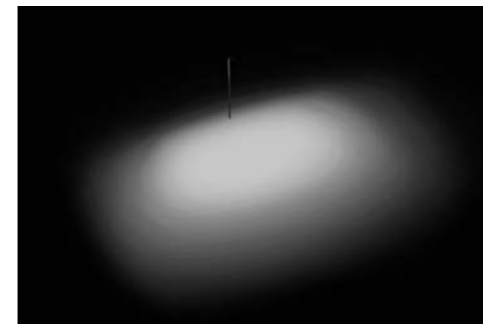
**AFL130**  
48 LED, 3000 K  
[S70] Asymmetric, side throw



## Residential area



**AFL120**  
24 LED, 3000 K  
[R60] Rectangular, side throw

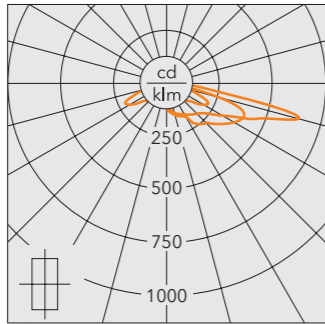
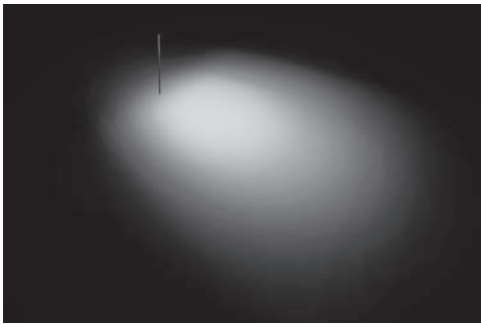




# Highway bridge



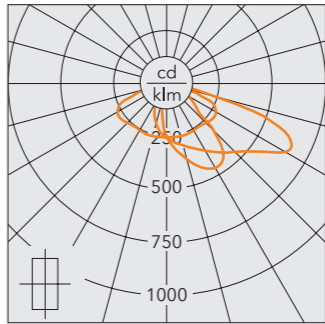
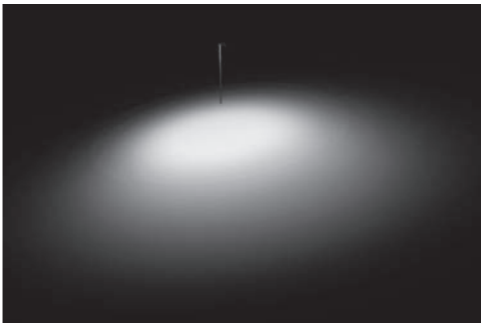
**AFL130**  
 48 LED, 3000 K  
 [A61] Asymmetric, forward throw



# Foreshore



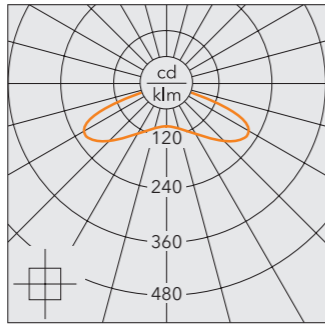
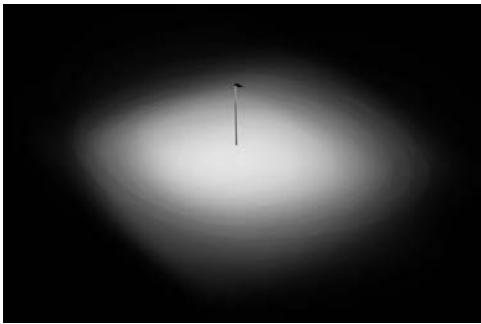
**AFL130**  
 48 LED, 2700 K  
 [S61] Asymmetric, side throw



# Train station



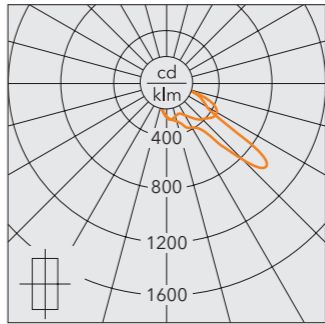
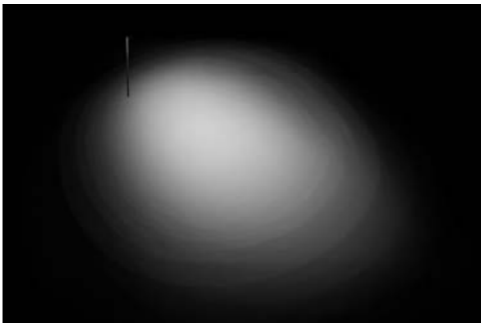
**AFL130**  
 48 LED, 3000 K  
 [Q66] Square distribution



# Pedestrian crossing



**AFL130**  
 48 LED, 3000 K  
 [P46R] Pedestrian crossing, right-hand traffic



**Protect the  
beauty of our  
night skies**





# Sustainable solution for the night

Guided by 'five principles for responsible outdoor lighting'



## Useful - All light should have a clear purpose

- Application oriented
- Dark sky optics and meaningful connectivity options



## Targeted - Light should be directed only to where needed

- Quality optics together with the possibility of additional backlight shields



## Low light levels - Light should not be brighter than necessary

- Designed to be dimmable, providing only the required level of brightness



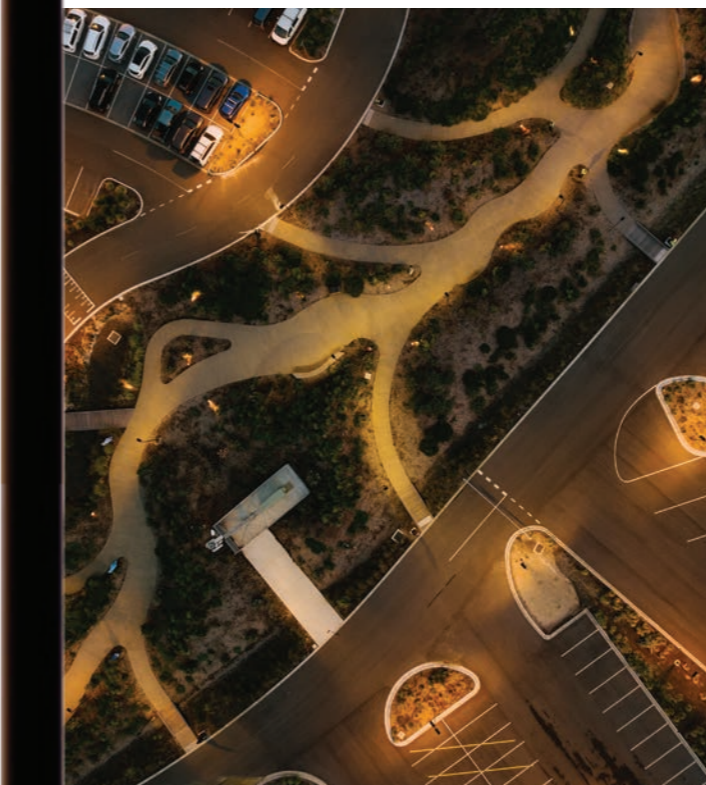
## Controlled - Light should be used only when it is useful

- Designed to be ready to connect - Zhaga , NEMA, eSAVE or CityGrid - extend to smart city when needed



## Colour temperature - As warm as possible

- Offering a wide range of colour temperatures, with reduced blue components in the light spectrum
- Mixed-colour LED solutions, called "Wild-Light", wherein which two different colour temperatures can be configured in one luminaire, with special attention to light-sensitive creatures





# End-of-life

Luminaire components are recyclable



# Energy efficient and dark sky considered solution

With Wild-Light, you can balance the human activity while preserving the night

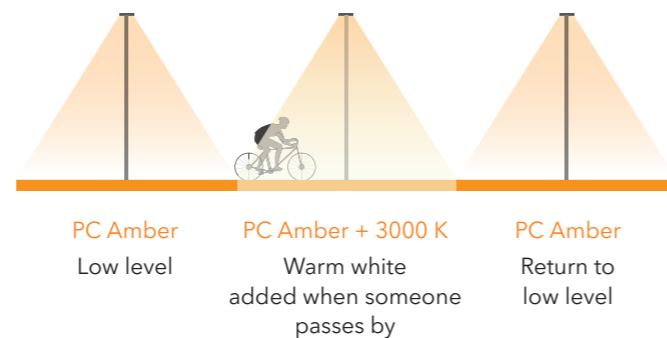


Available for AFL120 and AFL130



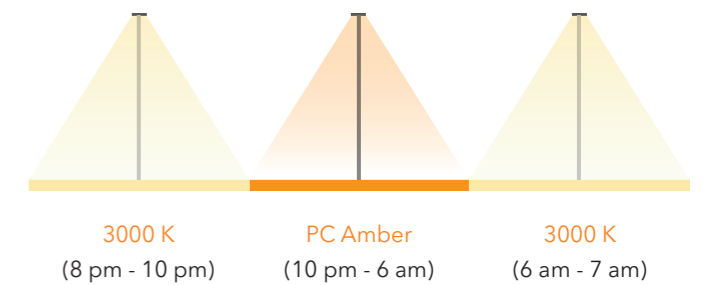
## 1 Wild-Light Motion

Example: The PC Amber light shines all night at a low level to limit the impact on wildlife and save energy. In the presence of human traffic, colour temperature is immediately increased to 3000 K. When no one is in the vicinity, it then returns to PC Amber.



## 2 Wild-Light Advanced

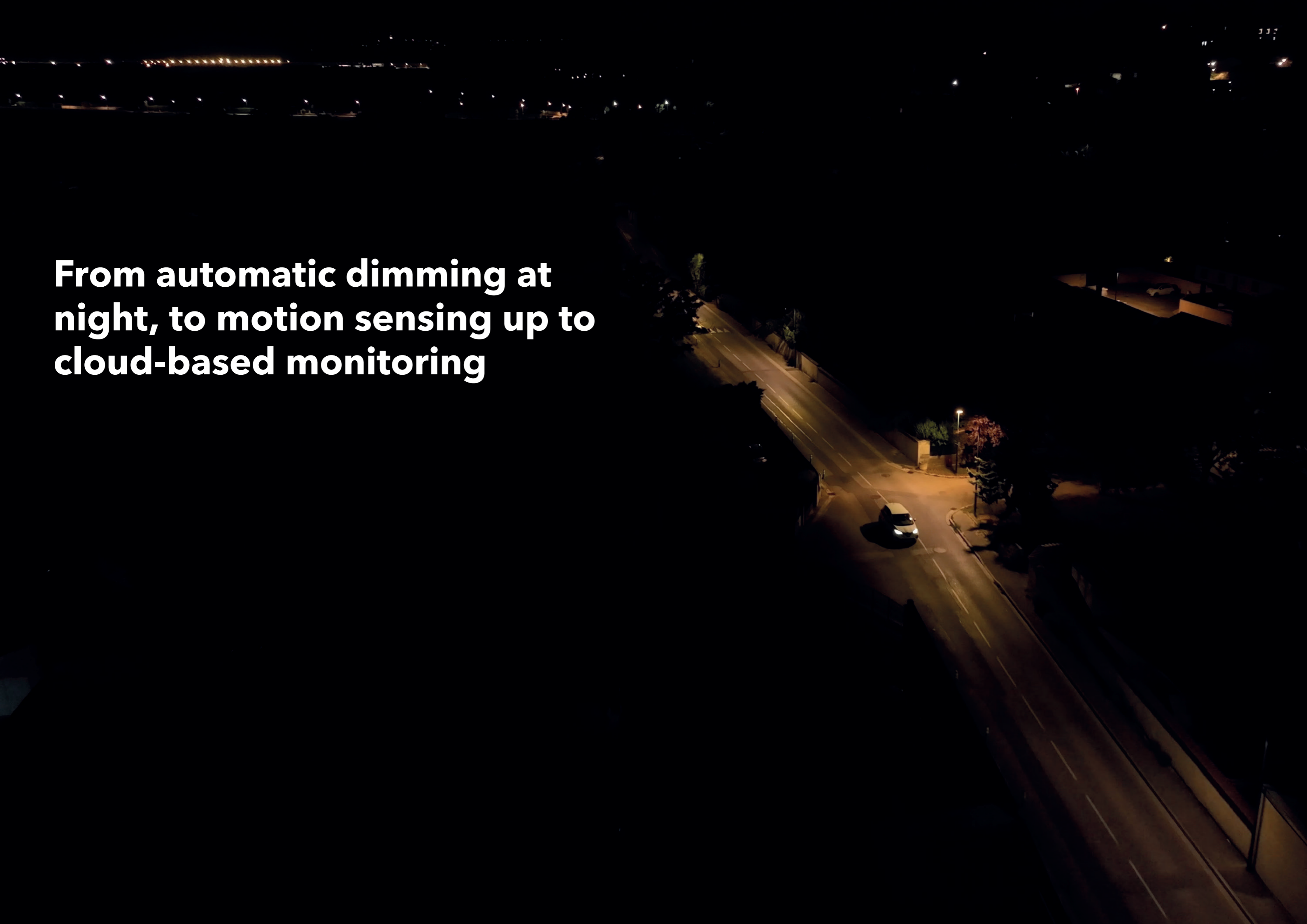
Example: Fully automatic dimming preset that starts the night with warm white (3000 K from 8 pm to 10 pm), reduces to PC Amber in the middle of the night (PC Amber from 10 pm to 6 am) and returns to warm white in the early morning (3000 K from 6 am to 7 am); a particularly simple and economical solution.





**Why go smart?**

**From automatic dimming at night, to motion sensing up to cloud-based monitoring**

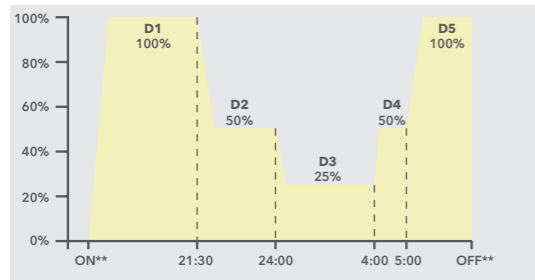






# Key uses and benefits

## 1. Scheduled dimming - for energy reduction



**Application:** Streets and pathways

**Challenge:** How to reduce energy bill while keeping the streets safe?

**Solution:** Eco Step Dim® allows precise scheduled dimming throughout the night

**Result:** Reduced energy consumption

💡 Easy to implement, but does not allow for later adjustments

## 2. Wireless control - for precise control



**Application:** City centre or residential area

**Challenge:** How to implement lighting within the existing infrastructure or increase flexibility of the lighting system when required?

**Solution:** Connectivity (Zhaga Book 18 controller) offers wireless control that is scalable

**Result:** Exact lighting level that can easily be adjusted at your convenience without the worry of rewiring

💡 Faster installation that is customisable and cost-effective

## 3. Motion sensor - for comfort and safety



**Application:** Streets, parks and pathways

**Challenge:** How to keep streets and paths comfortable and safe while dimming?

**Solution:** Eco Step Dim Motion® controls the dimming level based on pre-programmed motion sensor

**Result:** Feeling of safety combined with visible energy reduction

💡 A standalone package with a flexibility to expand to a local mesh network or to a complete wireless network controlled and monitored with a dashboard

## 4. Dashboard - for reporting, configuration and asset management



**Application:** City centre or residential area

**Challenge:** How to control and monitor lighting fixtures in the city?

**Solution:** Connectivity combined with cloud service enable extensive dashboard to control all parameters

**Result:** Exact status and historical view of all lighting assets, reporting functions and email alerts in case of malfunctioning

💡 Key data (streetlight performance) is accessible through the Cloud solution



# Environmentally sustainable lighting solution

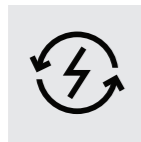
Light dims down from 3000 K to PC Amber when motion is not detected



# Smart lighting made easy

Control the light in a simple and extremely efficient way with modern connectivity solutions.

## Benefit for users



**Energy savings**  
Save up to 85% through smart dimming



**Comfort**  
Configure to application through dimming protocols



**Flexibility**  
Future-proof, upgradable system



**Protection and Preservation of nature**  
Environmental considered lighting through warmer colour temperature - Wild-Light



**Safety**  
Offering 'Light on Demand' for footpaths and cycle lane



**Maintenance cost**  
Reduce up to 40%

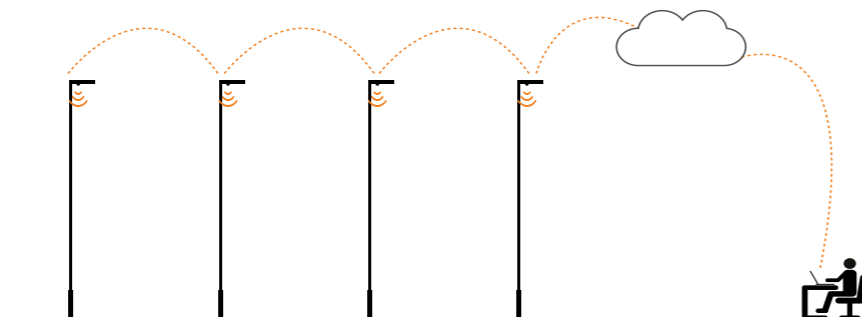
## Example Scenario

### Council A requires a solution to

- Minimise ecological impact; reducing the amount of light, particularly blue light for local ecosystem
- Monitor operational status of each luminaire, its energy consumption and view the operational cost savings from their council office

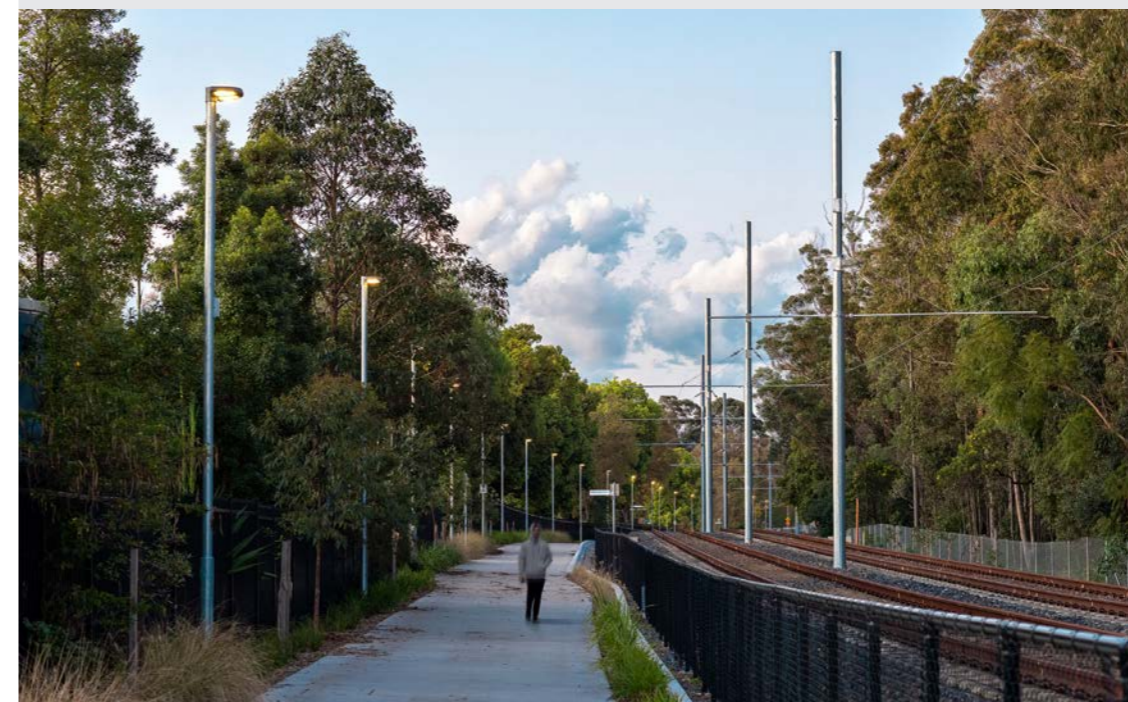
### A CONNECTED SOLUTION:

- Luminaires fitted with a pre-programmed Zhaga PIR sensor which activates higher kelvin colour temperatures upon detection of human traffic
- Luminaires revert back to a lower kelvin colour temperature once human traffic is no longer detected
- Utilising the SIM nodes the luminaire network is able to facilitate the remote monitoring requirements



## A CONNECTED CASE STUDY: Parramatta Light Rail

- Stage 1 of the Parramatta Light Rail connects Westmead to Carlington via the Parramatta CBD with a 2-way track spanning 12 kilometres.
- WE-EF luminaires with on pole controllers were installed for this project, forming a **mesh network**
- The Active Transport Link now features energy-saving lighting, which will illuminate parts of the pathway when human traffic is detected
- When no human traffic is detected, the system will dim back down ensuring harmonious co-habitation between humans and our eco system
- The project is scalable and a gateway can be added in the future



# Optics and lighting performance

## Three key lenses

Dark sky optics, biodiversity preservation with strict limited rear light characteristics for reducing light wastage and no light above 90°. More lumens per Watt and Kg allow for better spacing in return reducing CO<sub>2</sub> level.



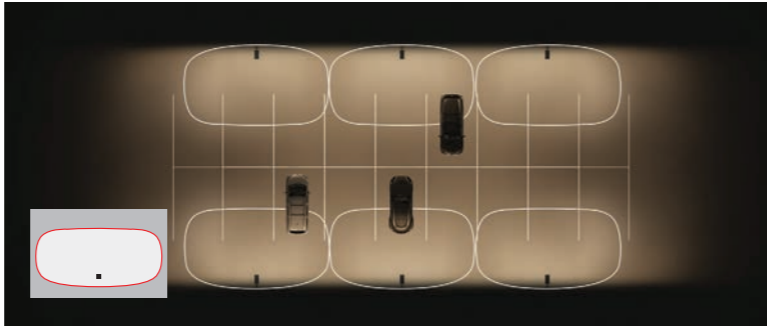
**Tailored for reduced infrastructure along pathways and narrow**  
**[S71]** Asymmetric, side throw



**For greater forward for roadways and wider spaces**  
**[S66]** Asymmetric, side throw



**NEW non-reflective flat glass**  
 Reduces back spill by 20%



**Tailored for parking areas**  
**[R61]** Rectangular, side throw



AFL110, 8 LED, 3000 K  
 [R61] Rectangular, side throw



AFL110, 8 LED, 4000 K  
[P66] Pedestrian/bicycle lane



AFL110, 8 LED, 3000 K  
[S71] Asymmetric, side throw  
[P66] Pedestrian/bicycle lane



AFL110, 16 LED, 4000 K  
[S71] Asymmetric, side throw

# Tailor the light

## Modularity

Combines the advantage of two precision optics - maximise and control the direction of light distribution to meet the application needs

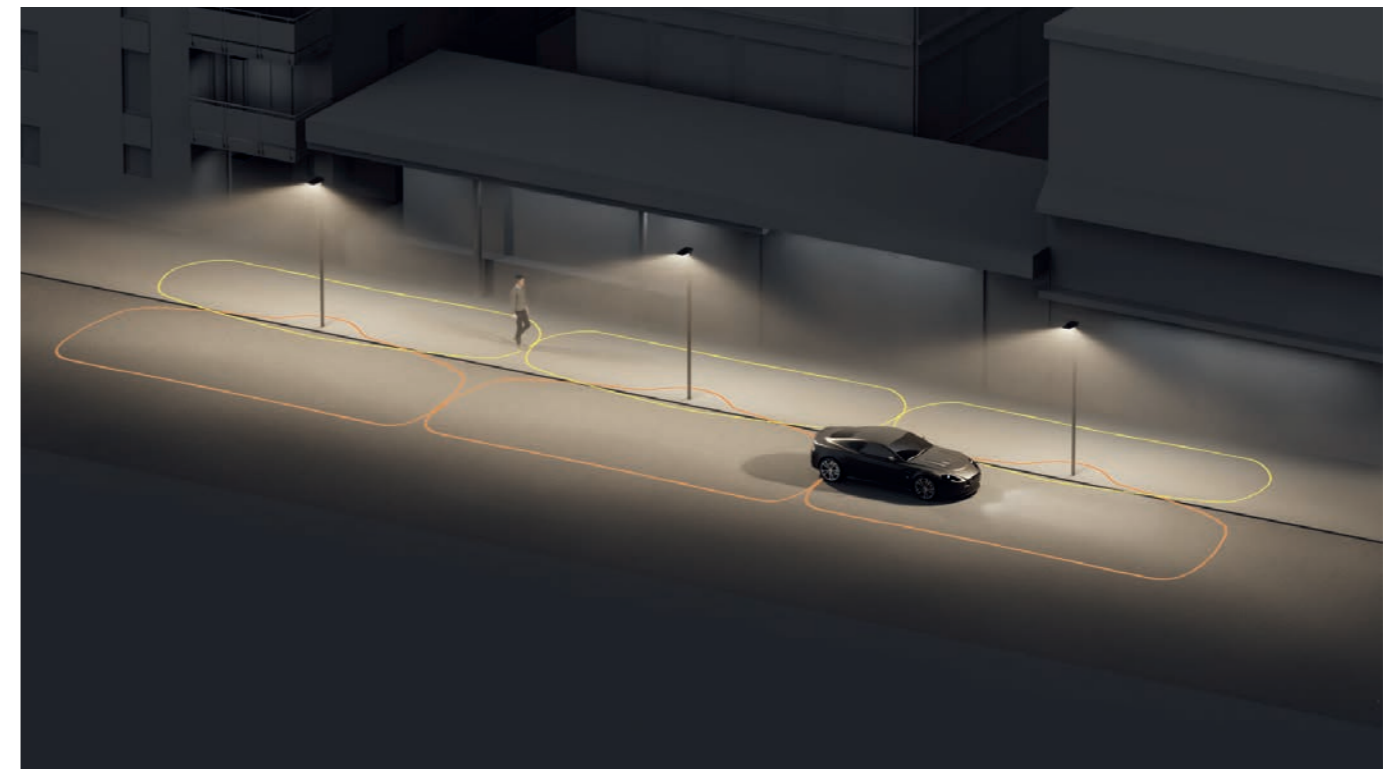
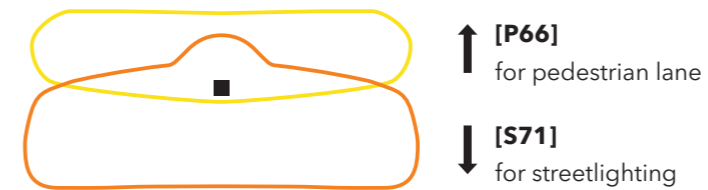
### Scenario 1

#### Challenge:

Tailored for narrow pathway and pedestrian lane

#### Solution:

A combination of two light distributions for two-sided arrangements:



**Luminaire:** AFL110, 16 W, 700 mA

**Pole height:** 4 m

**Spacing:** 10 m

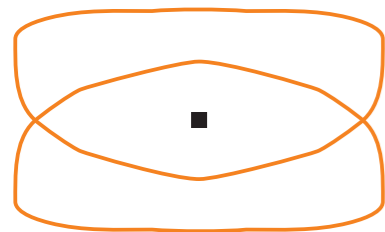
## Scenario 2

### Challenge:

Tailored for streetlighting and pedestrian lane

### Solution:

A combination of identical light distribution for two-sided arrangements



↑ [S66]  
for streetlighting  
↓ [S66]  
for streetlighting



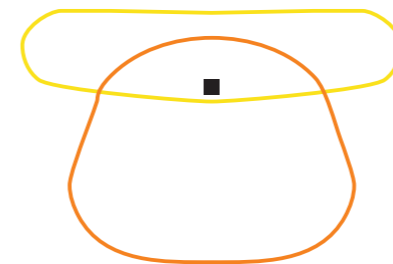
## Scenario 3

### Challenge:

Tailored for carpark area and pedestrian lane

### Solution:

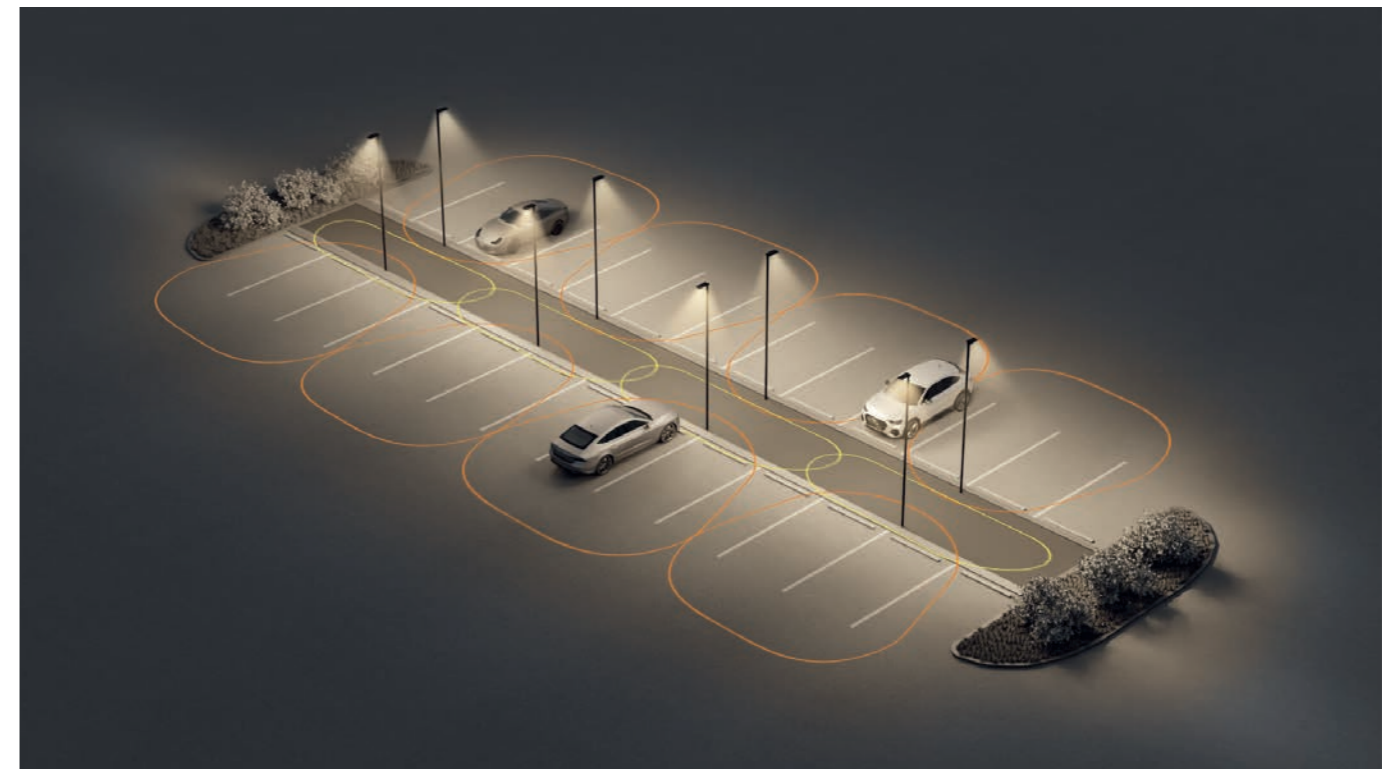
A combination of two light distributions for two-sided arrangements:



↑ [P66]  
for pedestrian lane  
↓ [A61]  
for forward throw



**Luminaire:** AFL110, 24 W, 1050 mA  
**Pole height:** 6 m  
**Spacing:** 19 m



**Luminaire:** AFL110, 16 W, 700 mA  
**Pole height:** 4 m  
**Spacing:** 10 m



AFL110, 16 LED, 3000 K  
[S66] Asymmetric, side throw  
[P66] Pedestrian/bicycle lane



# SEE THE STARS

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