PHILIPS

Xitanium FlexTune
Outdoor driver

Flexible, adaptive outdoor lighting

Light that adapts

The way people and vehicles interact with roads and cities is changing fast. It’s driving the move from static illumination to more adaptive lighting solutions – a new situation that demands far more from a single luminaire. The ability to change lighting output, optical distribution and even color are now becoming a necessity. So cities can create attractive spaces, and enhance certain areas with dynamically-changing light settings.

The latest Philips Xitanium FlexTune Outdoor driver is designed to enable the transition to flexible, adaptive outdoor lighting. Lighting that can adapt to changing situations, weather conditions and even the needs of wildlife. Discover how adaptive lighting with FlexTune can help you take a leading role in this exciting new transition.

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Simple, smart and adaptive FlexTune Outdoor

Today's smart cities are changing fast. To keep pace, modern municipalities need sustainable ways to install public lighting that targets different road users while creating vibrant and attractive destinations. Light has the power to do both. But only if it is designed to adapt to all the different needs of the people who choose to shop, work and live in our cities.

Until now, that degree of flexibility required multiple luminaires and drivers, and sophisticated controls and systems, resulting in a level of complexity and investment beyond the reach of many municipalities. FlexTune Outdoor has changed all that. Our unique, single driver proposition offers low system complexity with high accuracy and control as the MultiOne software is designed to enable two channels to be programed separately. For adaptable lighting, with sensors, dimming and color mixing, which can be integrated into a single luminaire or connected groups.

The Philips Xitanium FlexTune Outdoor driver is built on our long legacy of expertise in outdoor lighting solutions. One that's enabled with all of our most reliable features and technologies from Philips Xitanium and Dynadimmer to SimpleSet and MultiOne. So it's easy for OEMs to design into a wide range of luminaires to create cost-effective, adaptive outdoor lighting that's easy to configure and simple to control.

FlexTune. One driver, multi-configuration

Low system complexity
With a single driver, FlexTune delivers low total system complexity with high accuracy and control

Cost effective
No need to program two separate drivers. One dual channel driver offers sophisticated lighting controls such as scene setting or color mixing

Peace of mind
The Dynadimmer feature is combined with CCT tuning so there's no need to connect to separate control systems

Connectivity ready
The SR D4i platform works with third party controls so you can develop standardized nodes and/or software systems

Philips quality
As a global player in outdoor lighting, we are recognized for our solid R&D investments and rich heritage in outdoor applications

Innovative technology
Near Field Communication (NFC) and MultiOne tools offer new ways to configure lighting during manufacturing, on stock, and in the field

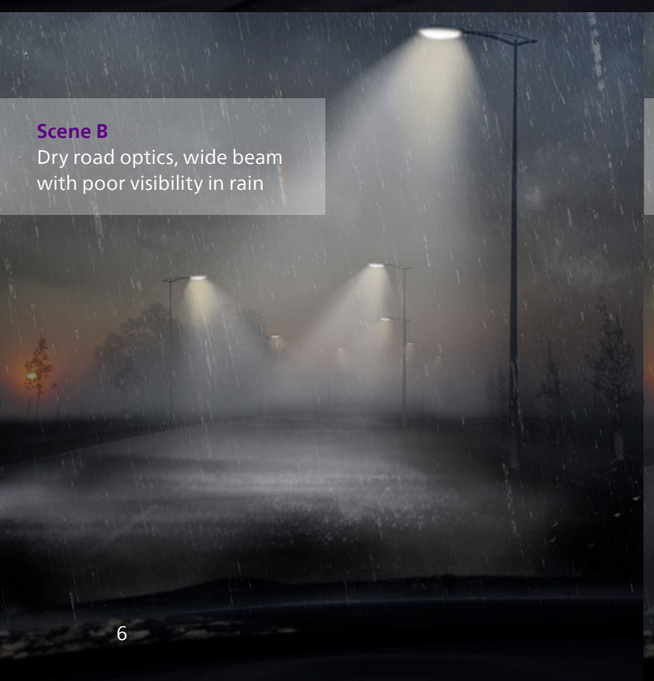
By 2050, 9.8 billion people will live on the planet - 70% of them in cities!*

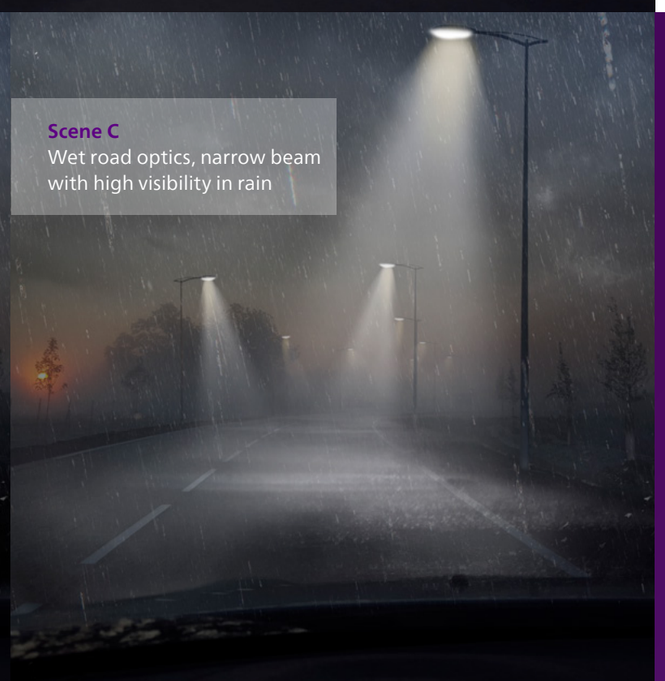
As the density of cities and urban areas increases, we need sustainable ways to improve city living.

* https://ourworldindata.org/urbanization#what-share-of-people-will-live-in-urban-areas-in-the-future

Easy to configure
- MultiOne gives you access to the features already built into our drivers - simply adjust the parameters
- SimpleSet for fast and wireless programing
- Dynadimmer for integral independent dimming functionality
- Special CCT tuning functionality (DALI 209) from 2200K to 6500K for outdoor applications
- MultiOne makes controlling the separate output channels easy in dual channel mode (2x DALI 207)

High Xitanium reliability
- 10 kV CM surge immunity
- 100,000 hours lifetime (@ Tcase-life temperature. Maximum failures = 10%)
- Withstands outdoor conditions e.g. ambient temperatures between -40 and +55 °C, relative humidity between 10 and 90%, and high CM/DM surge immunity levels
- Easy to design in (temperature, EMC, class II, D4i)





Adjusting to weather

With an increasing number of cyclists using the roads, vehicles need to be even more vigilant. Anything that impairs their vision is a potential problem. Bad weather, such as rain, hail, fog and snow, is particularly problematic. Conventional road and street lighting can cause significant glare for drivers. But by cleverly combining two optics into the luminaire, it is now possible to create outdoor lighting that can actively adapt to poor weather conditions and actually reduce glare*.

The Philips Xitanium FlexTune Outdoor driver can control two optics from a single driver, enabling you to provide multiple lighting directions and intensity from a single pole. It enables each pole to focus a beam closer to the pavement or widen the beam for a more evenly-distributed view of the road.

* For example, the Philips Fortimo FastFlex lenses where FastFlex lens "2x8/II-X WTR Gen2" is specifically designed for wet road surfaces to reduce light that is mirrored by a wet road towards the driver. Detailed glare reduction calculations can be made based on a specific road and luminaire with support from our design-in support teams.

Learn more at: https://www.docs.lighting.philips.com/en_gb/oem/download/fastflex/Familysheet-Fastflex-lenses-Gen2.pdf

Benefits

- Flexible optical light distribution addresses glare for road users according to weather conditions
- Creates a single fixture with dual beams
- Sensors enable automatic response to changing weather and light conditions*

* Depending on integration and readiness of compatible outdoor nodes and city management systems

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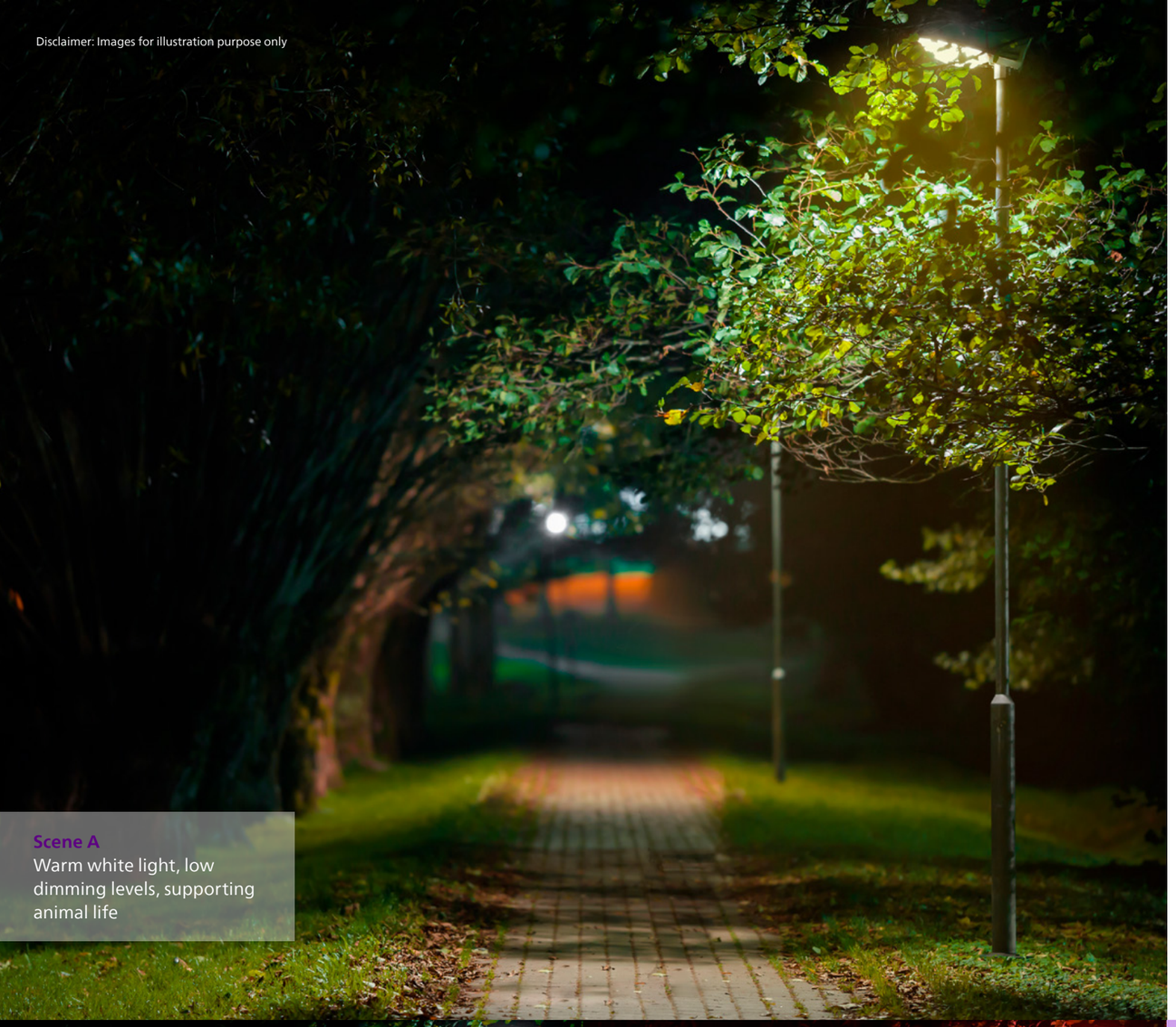
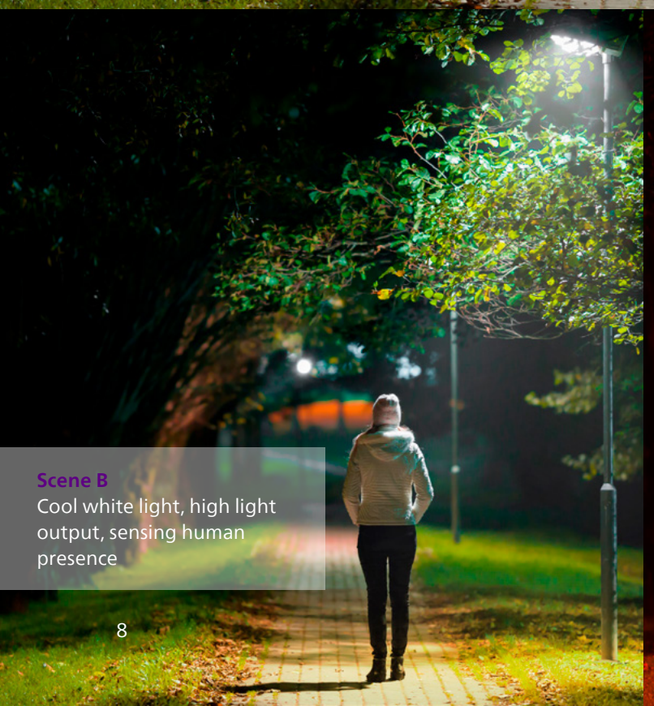
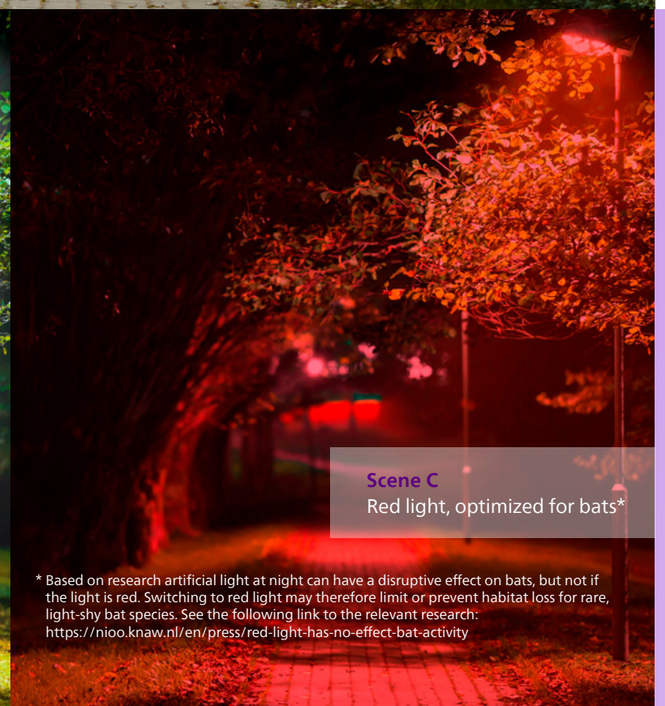


Scene A
Warm white light, low dimming levels, supporting animal life



Scene B
Cool white light, high light output, sensing human presence



Scene C
Red light, optimized for bats*

* Based on research artificial light at night can have a disruptive effect on bats, but not if the light is red. Switching to red light may therefore limit or prevent habitat loss for rare, light-shy bat species. See the following link to the relevant research: https://nioo.knaw.nl/en/press/red-light-has-no-effect-bat-activity

People and nature

Spaces that are shared equally by people and nature have always been a challenge for outdoor lighting. The need to provide a comfortable and well-lit environment where people can feel secure has often compromised the needs of nature and biodiversity. Now, for the first time, a Philips Xitanium Outdoor driver with FlexTune offers manufacturers a smart, simple way to realize adaptive outdoor lighting for areas such as parks, suburbs and places where biodiversity and dark skies need to be preserved.

It is now possible to provide lighting that can detect the presence of people, increasing the light output and beam width accordingly to provide more light for a comfortable and secure experience. At the same time, with timer controls or sensors, lighting can dim down to a minimum. This supports the natural biodiversity in an area, helping to address light pollution and create dark skies. It also respects the natural rhythms of flora, fauna, insects, bats and other animals. Changing the spectrum during specific times of the night means that the natural rhythms of nocturnal species can be respected, while still ensuring sufficient illumination for residents whenever they need it.

Challenge 1:
Dark skies

Challenge 2:
Biodiversity

Benefits

- Enables different light spectra to support biodiversity
- Supports natural rhythms of nocturnal species
- Helps to offer sufficient illumination for comfort of residents in nature
- Addresses light pollution and creating dark skies
- Contributes to energy efficiency by reducing light levels and via presence detection

Scene A
Shopping ending before nightfall, warm light

Scene B
Dinner time, very warm light

Scene C
Shops and restaurants closed, cool light and low dimming levels

Comfort and security

As more and more people choose to live, shop and enjoy spending time in the city, the way lighting is used is changing fast. City centers are evolving from just shopping destinations into recreational spaces. People are visiting city centers for a multitude of reasons from shopping through to dining and other entertainment. So much so that the city center can be as busy at night, as it is during the daytime. With the Philips Xitanium FlexTune Outdoor driver you can now create adaptive street lighting that can change to meet these diverse needs. Designed to support solutions with comfort and security in mind, with brighter 4000K light during the daytime shopping period, and then adapting to the evening needs with 2700K light for more ambience. Perfect for dining out in the city.

This new adaptive street lighting can also provide dynamic light corridors which can guide visitors to specific locations. Adaptive lighting is set to change the face of city centers, and the Philips Xitanium FlexTune Outdoor driver can help you fast track the transition.

Challenge 1:
Create destinations with lighting

Challenge 2:
Support activities in an area

Benefits

- Supports solutions addressing comfort and security in city centers and streets
- Saves energy by reducing light levels during the late hours of the night
- Creates an experience with color temperatures
- Responds with light on demand*

* Depending on integration and readiness of compatible outdoor nodes (e.g. sensing presence), city management systems, and overall luminaire design where the driver is integrated

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Scene A
No traffic, warm white light, low to medium dimming levels

Scene B
Pedestrians, cool white light, high intensity

Crossings and intersections

Unfortunately, most serious traffic incidents involving pedestrians occur at intersections and crossings. The lack of awareness, visibility and stopping time combine to create very dangerous situations. One way to help improve this is to enhance the visibility and the stopping distance. That's where adaptive street lighting can play a significant role. By using a dual optic in the luminaire, it is possible to change the beam angle and the light color when pedestrians are crossing. This provides vehicles with a long-range visual signal that there are people in the road, while at the same time providing extra illumination at the crossing location.

With the Philips Xitanium FlexTune Outdoor driver this dual optic control is now possible with a single, smart driver. So a single luminaire can perform a dual role, enhancing visual awareness for road users, and contributing to comfort and security for pedestrians.

Challenge 1:
Visibility at crossings and intersections

Challenge 2:
Driver awareness of other traffic

Benefits

- Differentiates road users with color contrast and/or light intensity
- Dynamically changes lighting at crossings and junctions*
- Offers dual optic control

* Depending on integration and readiness of compatible outdoor nodes (e.g. sensing presence), city management systems, and overall luminaire design where the driver is integrated

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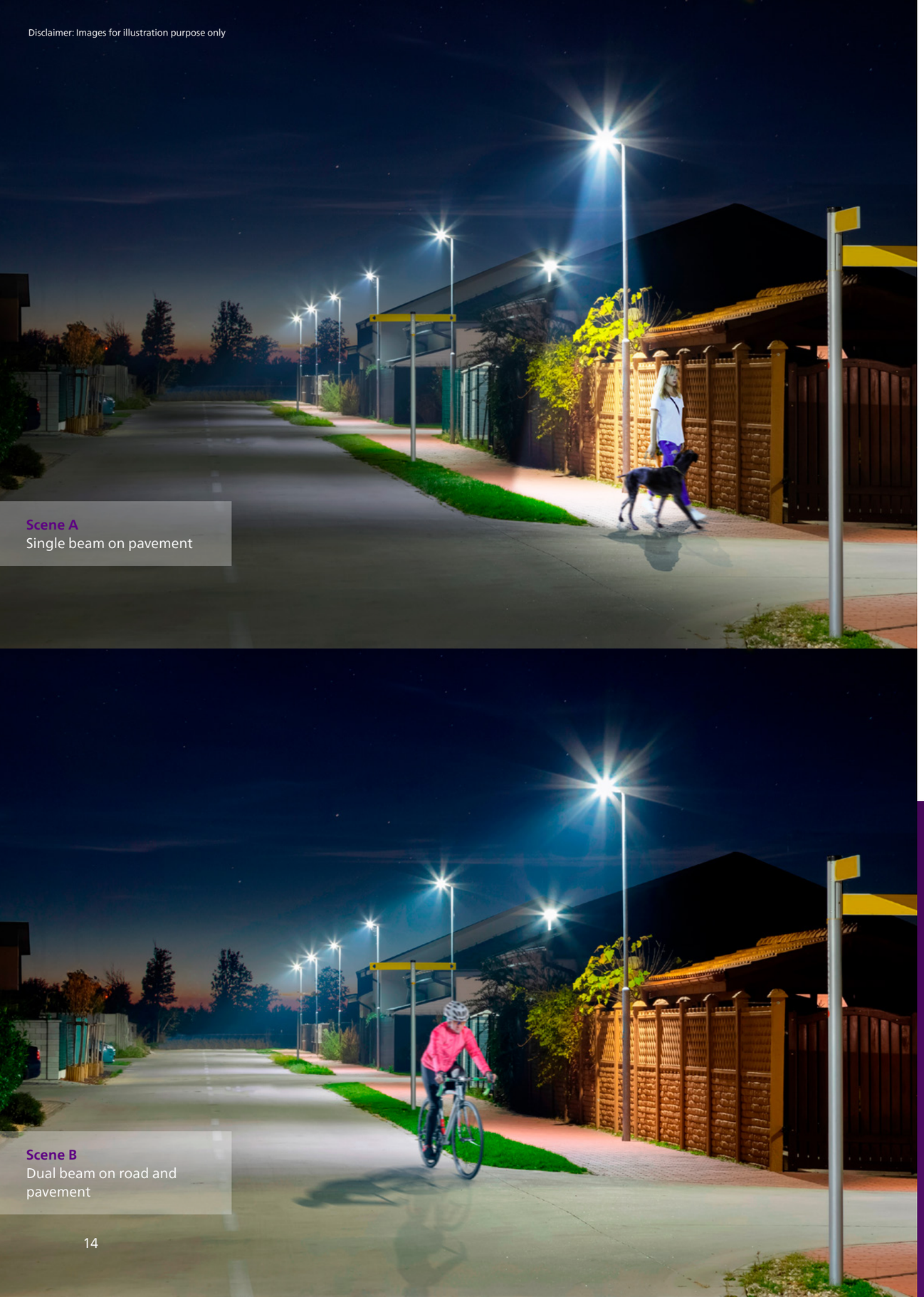

Scene A
Single beam on pavement

Scene B
Dual beam on road and pavement

Road and pavement

Commuting on foot and by bicycle are becoming more popular as people adopt healthier, more sustainable lifestyles. But this also presents new challenges for comfort and security on streets and roads. Today, street lighting is optimized for road users with vehicles, and adding a second set of street lighting specifically for pedestrians is not always financially viable. But, by combining two directed optics in a single luminaire it is now possible to create light that can focus on the pavement, for a greater sense of pedestrian comfort and security. And it can also switch beam spread and direction to the road when a vehicle or cyclist is detected. The Philips Xitanium FlexTune Outdoor driver provides a single driver solution that operates both optics and light. This could increase efficiency e.g. dim or turn off lights when not needed, as well as creating roads and pavements that are more comfortable and contribute to visibility for everyone.

Challenge 1:
Increasing number of cyclists

Challenge 2:
Type of road user changes during day

Benefits*

Manages light separately for road and pedestrian areas

Light than can adapt throughout the day as traffic needs change

Offers specific light for cyclists

Responds with light day and night

* These benefits depend on the integration and readiness of compatible outdoor nodes (e.g. sensing presence), city management systems, and overall luminaire design where the driver is integrated

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Scene A
Warm white light (early evening)

Scene B
Colored light (late evening)

White and color ambience

Cities as destinations for events, entertainment and relaxation is a trend that is set to continue. And the increasing desire for the extended city experience means that people's enjoyment does not stop when the sun goes down. Public spaces are being transformed into cozy, inviting and inspiring places to visit and relax after dark. A key part of this experience is light. Light is an instant way to transform a space and create something truly inspiring. And when you use street lighting that is adaptive, you can create effects that not only entertain, but also serve many other purposes; changing lights for atmosphere, or using light intensity and color for guidance or traffic zoning are all possible with adaptive light.

The Philips Xitanium FlexTune Outdoor driver enables you to design outdoor lighting that not only changes color, but can also sense activity and react. And it can also be programed to adjust the beam and angle of light. A solution that adapts to the movement of people or traffic to provide specific effects at certain times of the day. And one that gives a city center a unique signature.

Challenge 1:
Attract people to city areas

Challenge 2:
Signal closing time

Benefits*

- Creates attractive ambiences
- Supports specific activities
- Supports calendar events or promotions

* These benefits depend on the integration and readiness of compatible outdoor nodes (e.g. sensing presence), city management systems, and overall luminaire design where the driver is integrated

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Scene A
Regular white light

Scene B
Guide light for traffic and road services

Guide light information

Safety is always the priority on roads and highways. But today, hazards on the road are usually only indicated by LED displays, which are often missed by passing vehicles. With the Philips Xitanium FlexTune Outdoor driver it is now possible to design highway lighting that can actually react to an incident, sending a visual warning to drivers that can be seen over large distances. Once an incident has been identified and reported, the closest highway lights can be adjusted to emit a different color, for instance red. From a distance, this provides a very clear indication to drivers that something has occurred as they approach the scene.

Adaptive lighting can also be used to reduce the energy levels when highways are no longer in heavy use. For example, they can be dimmed overnight to reduce a large amount of energy consumption. And because they can be fitted with sensors, if a vehicle is detected, they can revert to normal light levels. It's a smart system that's designed with increasing safety and reducing energy in mind. The Philips Xitanium FlexTune Outdoor driver can control both beam angle and light output. So your highways can benefit from light that adapts with just one smart driver.

Challenge 1:
Flag incident location

Challenge 2:
Improve traffic flow, reduce secondary incidents

Benefits*

- Offers clear incident warnings over long distances
- Supports police and traffic services
- Enables fast centralized response
- Highlights accurate location for drivers

* Depending on integration and readiness of nodes and city management systems, and overall luminaire design where the driver is integrated

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