In natural rhythm

Circular Light Profiles

Nature-Centric Lighting

Light that balances the needs of people, plants and animals

Inspired by the natural light of the sun which is unique and beautiful in every place, during every season and at every hour. We want to create artificial light that fits into the cyclical rhythms of nature and whose positive effects outweigh the negative ones for everyone: Humans, animals and plants alike.

Artifical light helps us humans see at night. Light gives us security, guides our orientation, our movements and our gazes but it also invites us to pause and reflect. With good lighting, we create atmosphere, quality of life and even magical moments.

On the other hand, the recurring cycle of bright daylight and a deep black night sky is important for plants, animals and humans. Artificial light disturbs these natural rhythms. Circular Light Profiles from Selux are scientifically founded to adapt light to natural cycles and the needs of nature.

Artificial light is a major source of energy for cities and municipalities. City lighting therefore plays a decisive role in the goal of significantly saving energy and becoming climate-neutral. Our Circular Light Profiles make it easier to conserve resources.

Circular Light Profiles

Safety and orientation, wildlife protection and Dark Sky cities, energy saving and CO_2 reduction

Our smart, science-based profiles create a new simplicity. They enable customised, sustainable lighting for every community, for every location.

All life on our planet has evolved to be subject to the natural rhythms and cycles of light and dark. In the process, needs change over the course of a day and year. Circular Light Profiles fit harmoniously into these natural cycles. Depending on the time of the day and time of the year, they adapt to the rhythm of people and natural light phases in order to intelligently balance the lighting needs of people and nature.

We take into account that every place on earth is unique and has individual parameters that need to be considered. Daily cycles and annual cycles differ depending on the geographic location and are taken into account in the calculation of the profiles. This holistic system is preinstalled on the Selux Core in every luminaire. This eliminates the time-consuming process of planning complex programming.

Natural

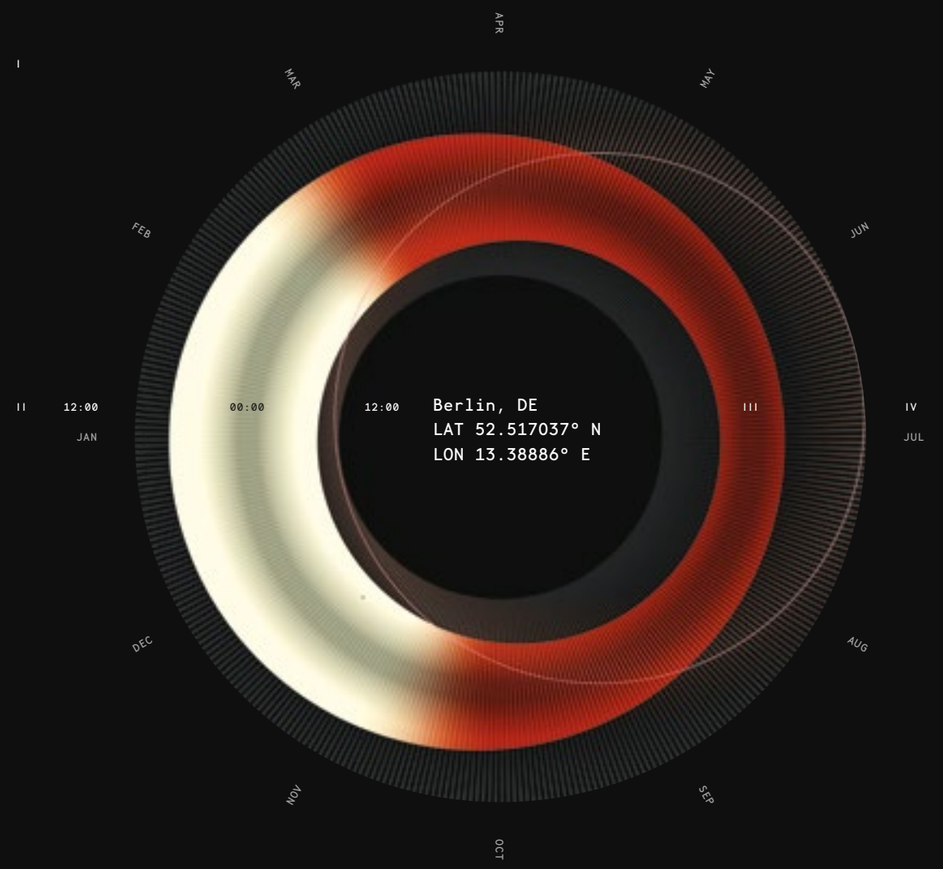
Light that balances the different needs of people and nature.

Rhythmic

Light that adapts independently to the seasons and times of day for maximum efficiency.

Individual

Light that takes the local context into account. Preconfigured for varying zones and individually customisable.



I
The circle represents an annual cycle.

II
Each facet of the circle represents a period of 24 hours, between 12 noon and 12 noon the next day.

III
Light colour and light intensity can be read from the opacity and colouring of the shaded area.

IV
The thin red circle represents the increasing and decreasing insect activity over the course of the year.

Three parameters shape the light

The basic principle of our Circular Light Profiles is the intelligent modulation of the lighting effect. Depending on requirements, we change the lighting effect of the light intensity, light colour and light distribution parameters. This is how we create dynamic light profiles: Efficient, ecologically sound and beautiful.

Parameters

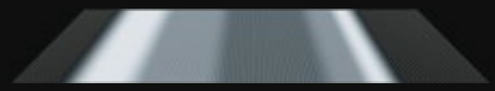
Lighting

Example of a daily diagram

Light intensity

I II III

Only as bright as necessary. Dynamic light intensity for safety, efficiency and the preservation of darkness.



I II III

Light colour

I II III

Dynamic colour temperatures over the course of the day and the year for the protection of flora and fauna. The more red light used, the greater the protective effect.

I III

Biological Red from spring to autumn

I

Biological White in winter

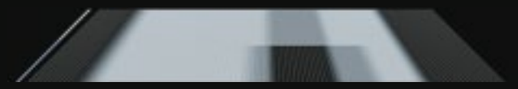
II

Biological White from spring to autumn

Light distribution

I II III

Adaptive light distributions in the course of the day. To create atmosphere, a sense of space, efficiency and to maintain a dark sky.



I II

III II

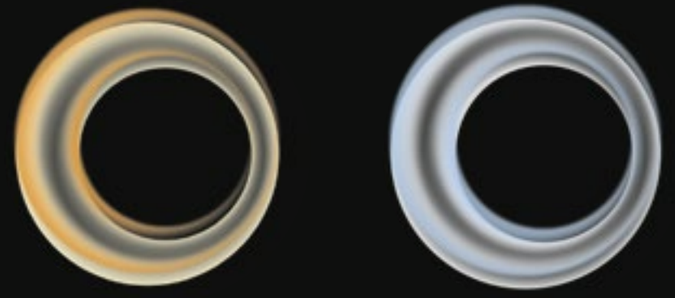
Circular Light Profiles

Light profiles for protection of insects and natural habitats

Insect-friendly light profiles take the activities of the majority of insects into account and adapt the light colour and light intensity to their natural rhythms on a scientific basis.

Light profiles for gentle and atmospheric lighting

Our lighting profiles for atmospheric light create a balance between human activities and the natural rhythms of plants and animals by independently changing the light distribution and light intensity during the course of the night.



Circular Light Profiles
with a focus on insect and nature conservation

Insect activity and protected period

Insect mortality affects our complex ecosystem and accelerates further species extinction among plants and animals. Artificial light is proven to disturb insect flight patterns and to influence the natural rhythms and behaviour of insects, animals and plants.

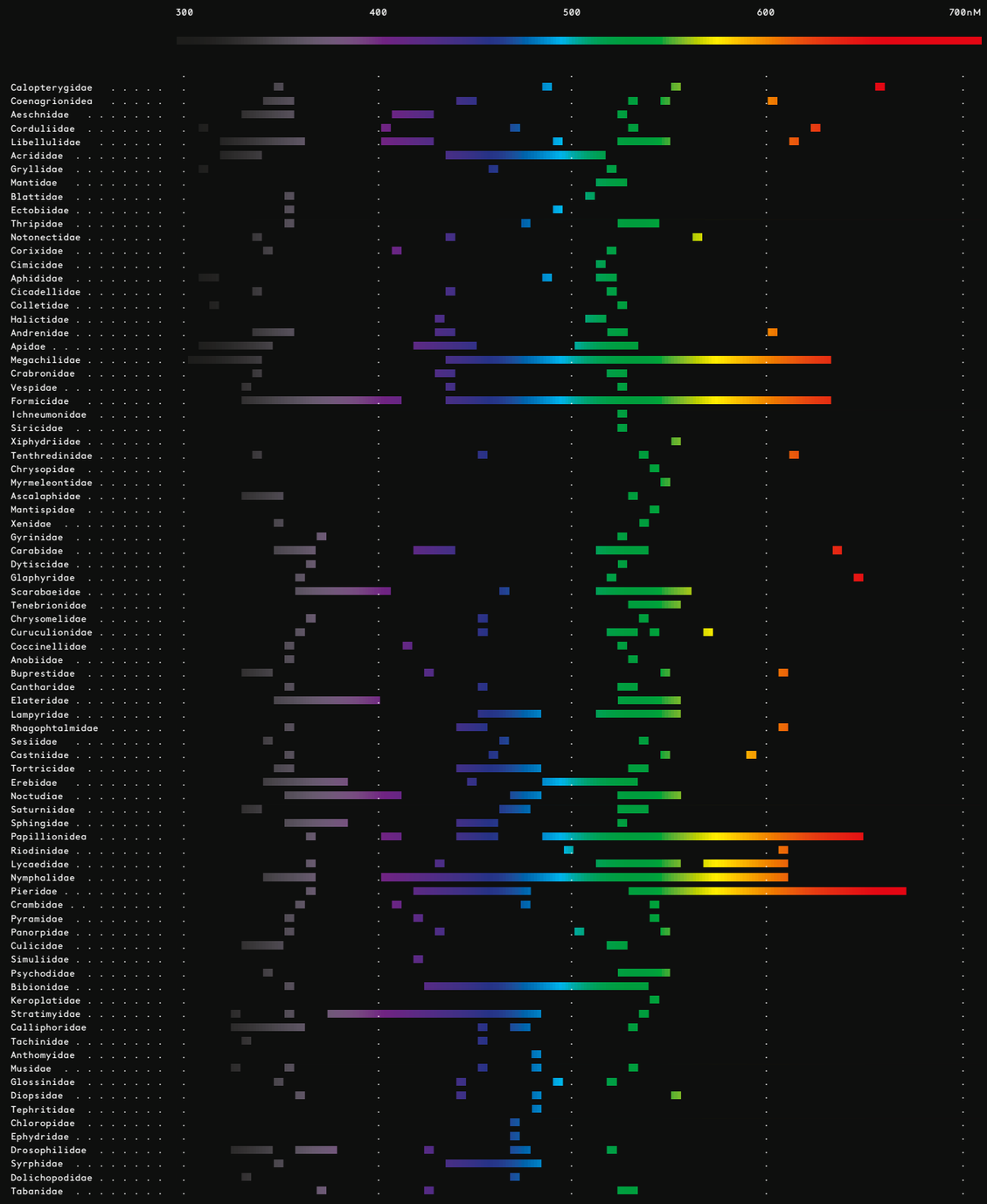
Insects are cold-blooded creatures. If the outside temperature is low, their body temperature also drops and they cease their activity. As soon as the days get longer, they wake up again and their activity increases. Summer is their most active time, which then decreases again as the day gets shorter.

Our insect-friendly and animal-friendly light profiles take into account the activities of a large proportion of insects and scientifically adjust the light colour and light intensity to the natural rhythms of insects and nature.

How insects perceive light

Current scientific studies show that many insect species do not have receptors for light in the long-wave, red range. One of the effects of this evolutionary adaptation is that these insects are strongly irritated by bright light sources with a blue component at night.

The colder the colour temperature and the brighter the light source, the greater the disturbance for the insects. A paradigm shift towards warm or, even better, red light sources can provide sufficient light for the human eye and protect insects at the same time.



Biological Red
Safety, nature and insect protection in particularly sensitive locations

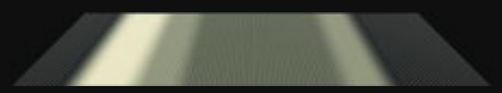
Efficient light with 2700K in winter

In the colder months, when no insects are active, the more efficient light colour of 2700K is used. The extended dark periods save 30-40% energy.

Gentle red light from spring to autumn

In the warmer months, when animals and insects are at their most active, red light is used to protect them in their natural habitat.

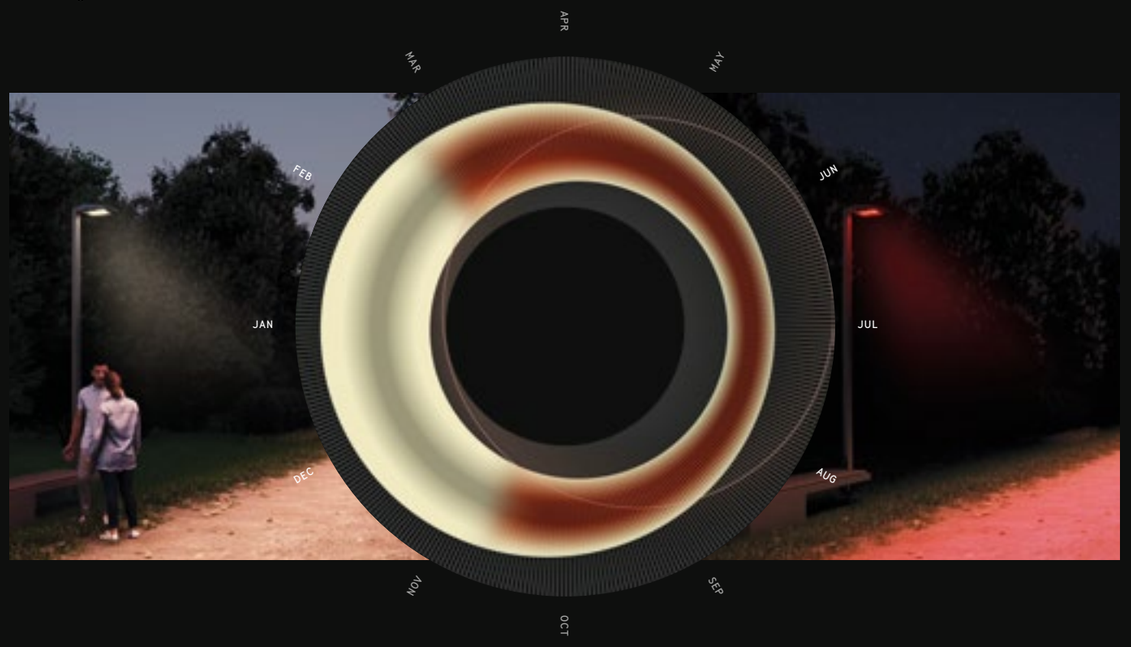
Winter



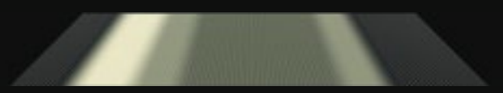
Spring to autumn

For mixed-use and cultural areas

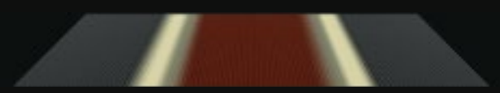
In areas where warm, white light is desired to be used for busier areas, it is also possible to change the light colour throughout the night. During the insect-active summer, this profile uses the 2700K light colour briefly before switching to red light in the quieter time of the night.

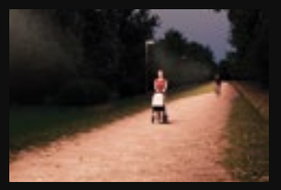


Winter



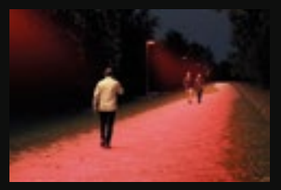
Spring to autumn





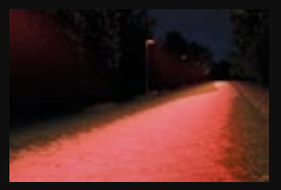
I

At sunset, the luminaire switches independently to 2700K with 100% of the predefined light output.



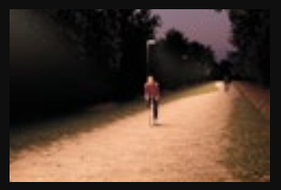
II

About one hour after dusk, the light colour changes to red and the light intensity is reduced.



III

At night, when fewer people are out, the light intensity is reduced again.



IV

About one hour before sunrise, the light colour changes to 2700K and the intensity is increased again.

Biological White
Security with natural and insect protection

Efficient light with 3000K in winter

In cold winter months, when insects are not active, a more efficient light colour of 3000K can be used. Due to the longer duration of the night in winter, the energy saving potential is 30-40% higher when used during this time.

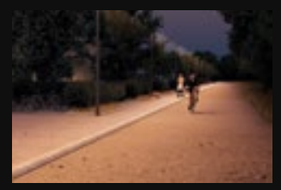
Gentle warm 2200K from spring to autumn

In the warmer months, when animals and insects are most active, 2200K is used to protect insects and biodiversity within their natural habitat.

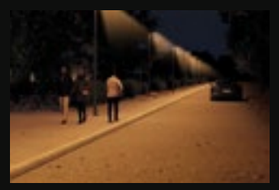
Winter

Spring to autumn

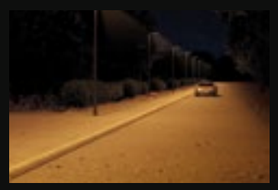
I II III IV



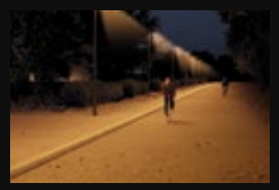
I
At dusk the luminaire switches on automatically.



II
In the early evening with high light intensity.



III
At night with low light intensity.



IV
At dawn with increased light intensity.

Adjusting White
Orientation for people and dark zones for nature

Dynamic modulation of light intensity at different times of the day and year

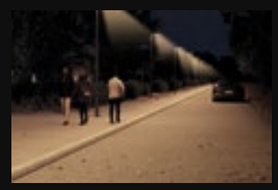
The Adjusting White light profile adapts to natural rhythms and changes the light intensity of a luminaire depending on the time and frequency of use.

Winter

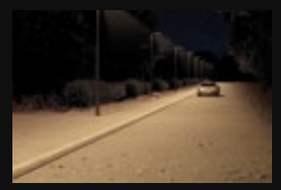
Spring to autumn

I II III IV

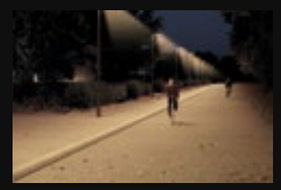
I
At dusk, the luminaire switches on automatically with high light intensity.



II
In the early evening with high light intensity.



III
At night, the light intensity is further reduced.



IV
At dawn the light intensity is again increased with increased human activity.

Circular Light Profiles
for gentle and atmospheric lighting

Lighting in urban spaces enables safety. In addition to light colour and light quantity, light distribution is also essential for the sense of space and orientation. Up to now, light distribution has always been planned for a specific purpose.

Our lighting profiles for atmospheric light create a balance between human activities and the natural rhythms of plants and animals by changing the light distribution and light intensity during the course of the night. In this way, we create different spatial experiences that are adapted to the utilisation — without a great deal of effort.

Atmosphere, well-being and Dark Sky

Atmosphere, well-being and safety are important aspects of lighting, especially where urban life takes place at night. In addition to horizontal light, vertical light is particularly important for the sense of space. This means that in urban spaces where people come together and linger in the evening, the lighting should not just be a horizontal, two-dimensional surface, but should extend across vertical surfaces into three-dimensional space. The vertical illumination of façades and street decorations creates a sense of space. At the same time, this vertical lighting component also illuminates the faces of pedestrians. This ensures that we are recognised and that we in turn can recognise others better and move around safely. Vertical light expands the urban space three-dimensionally and thus enables a sense of space and better perception. This creates a sense of well-being and emphasises the beauty of the architecture.

The reduction in the amount of light and the associated focus on purely horizontal light emission in turn makes the luminaire more energy-efficient, protects the enviornment from spill light and thus enables star cities and quiet zones for nocturnal animals.

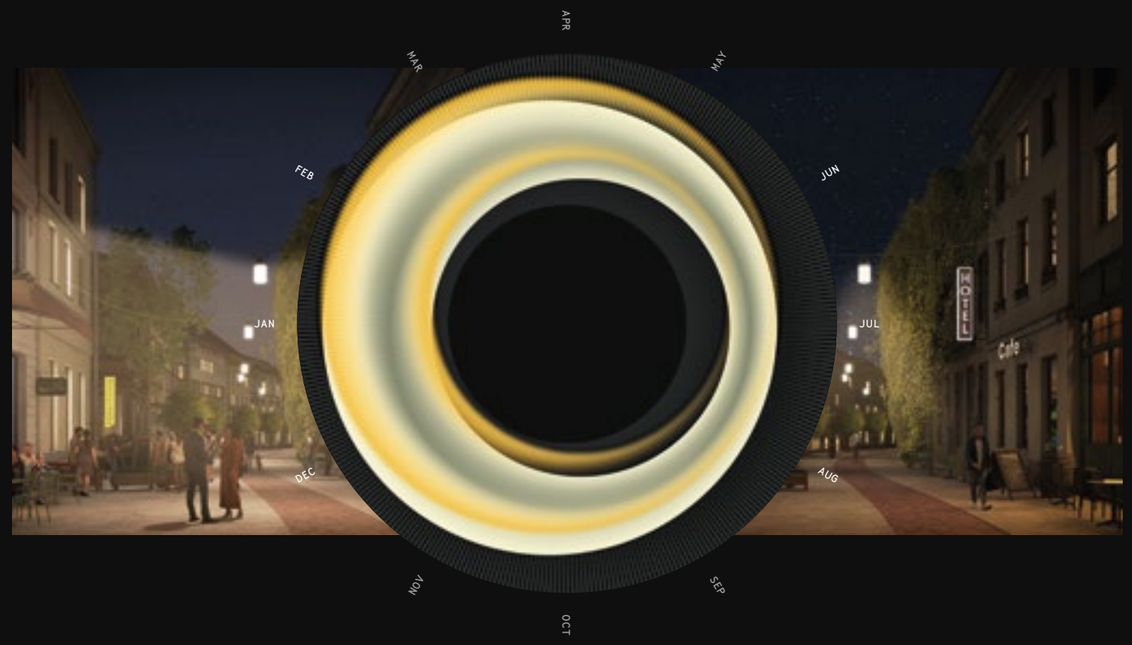
I
Vertical and horizontal lighting for atmosphere and a sense of space.

II
Horizontal lighting protects the night sky and ensures safety.

Dynamic Ambiance
Atmosphere, orientation and Dark Sky in urban spaces

Dynamic modulation of vertical and horizontal light components with adjusting light intensity at different times of the day and year

›Dynamic Ambiance‹ offers different lighting scenography in one luminaire by changing the vertical and horizontal light distributions and light intensity, which dynamically and efficiently adapt to the natural rhythms of people and nature.



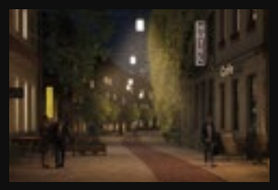
Winter

Summer

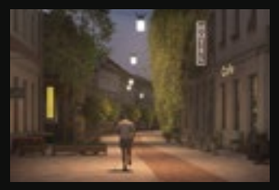
I II III IV

I
At dusk, both vertical and horizontal light components with high light intensity.

II
In the evening, both vertical and horizontal light components with reduced light intensity.



III
At night, exclusively horizontal light distribution and reduced light intensity.



IV
In the morning hours, vertical and horizontal light components with increased light intensity.

Dynamic Path
Atmosphere, Dark Sky and efficiency

The horizontal light distribution and light intensity is intelligently adjusted in the course of a night and year

›Dynamic Path‹ offers different lighting scenography in one luminaire which are created by changing the horizontal light distribution and light intensity depending on the time and frequency of people and nature.

Winter

Summer

I II III IV

I
During early evening, wide light distribution and high light intensity.

II
Narrow light distribution and reduced light intensity in the late evening.

III
Narrow light distribution and reduced light intensity during the later hours.

IV
Towards dawn a wide light distribution and high light intensity.

Customised for every spatial situation

Each area within the built environment has different requirements and needs, which we take into account when modulating the lighting effect.

Nature

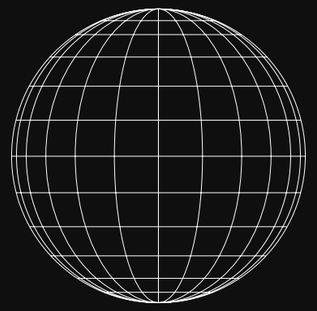
Mix

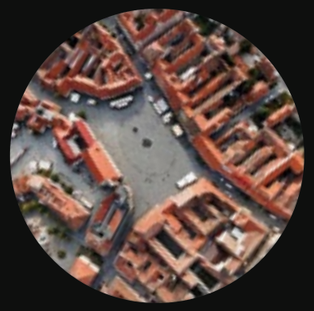
Culture

Uniform design
different lighting experiences

Different profiles can be integrated into a Selux luminaire depending on the space to be illuminated and the lighting requirements, so that it is also possible to fulfil a design concept within a city with different ecological and human needs depending on the space.

The path to an intelligent luminaire with an individual light profile





1

Select a base profile

In the first step, you select a base profile. This specifies the initial logic according to which your individual light profile is calculated.

2

Specify the geographical location

The geographical location is used to calculate sunrise and sunset times, which act as natural rhythms for the lighting profiles.

3

Specify type of area

The selected base profile is calibrated depending if the focus of the area is culture, mixed or nature. You will receive a finely adjusted lighting diagram for your project.

4

Select luminaire

You choose a luminaire model that fits harmoniously into the appearance of your project. You can equip the same model with different profiles.

5

Do you use a central switch-off for your luminaires?

Your individual profile takes central cut-off devices into account. All you have to do is specify this in the configuration process.

6

Finalise order

Your luminaire is delivered ready for use with your individual profile already pre-installed. Plug and Light—without time-consuming configuration.

Products

Circular Light Profile	Lanova	Yloo top
Biological Red	○	○
Biological White	○	○
Adjusting White	●	●
Dynamic Ambiance	●	○
Dynamic Path	○	●

Circular Light Profile	Lanova catenary	Yloo lateral
Biological Red	○	○
Biological White	○	○
Adjusting White	●	●
Dynamic Ambiance	●	○
Dynamic Path	○	●

Lif	Saturn	Aira
●	●	●
●	●	●
●	●	●
○	○	○
○	○	○

Tal	Avanza	New March 2024
●	●	●
●	●	●
●	●	●
○	○	○
○	○	○

Customised sustainable light for every community for every location

Design online:
selux.com/circular-light-profiles/circular-configurator

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