


BEGA



Responsible outdoor lighting
Environmentally friendly light





The effect and significance of artificial light

Natural light sources such as the sun and the moon influence the biological activity of plants and microorganisms as well as the instincts of humans and animals. Moonlight helps animals navigate in the dark, especially insects, which are by far the group of animals with the most species. Changes between light and dark, the light incidence direction and the rhythm of light in the form of the duration of daily light use also have an influence on the lives of organisms.

Artificial light – especially light with high blue light content – has an attractive effect on animals, especially insects and birds. It can severely disrupt life's natural rhythms. The consequences can be far-reaching: Impairment of reproductive and foraging activities and even the death of animals in the vicinity of artificial light sources. In order to minimise negative influences on the ecosystem as a whole, light should not be a disruptive factor to the natural balance.

The focus is on responsible outdoor lighting that addresses the fundamental relevance of illumination to ensure safety and create identity. It illuminates our habitats and avoids adverse effects on animals as much as possible – in natural areas as well as in urban environments.

Principles of efficient ecological illumination

The following guidance forms the basis for planning ecologically and economically balanced, responsible outdoor lighting that protects the night sky:

- Each light should have a **clear purpose** and should be compatible with the character of the surroundings (natural areas, residential areas, inner-city areas, industrial areas)
- Light should only be **directed** to where it is needed – taking into account the relevant regulations
- The light should be **no brighter than necessary** and should be **integrated into a demand-based** control system
- Glare, stray light and **light emission** to the sides and above the luminaires should be avoided
- In natural surroundings in particular, **shielded** light points **close to the ground** should be planned and implemented wherever possible
- If possible, **warm light colours** should be used – colour temperatures of 3000 Kelvin or lower due to their **lower blue light content**
- Luminaires should have the **highest possible protection class** to prevent insects from entering and subsequently dying in the luminaires
- The **surface temperature** of the luminaires should be as low as possible – avoiding unnecessary heat radiation to protect wildlife

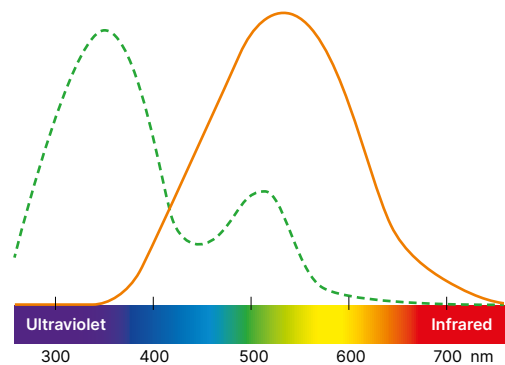




The influence of blue light on insects and humans

Reducing blue light is recommended to decrease the light's attractive effect on animals, especially insects. BEGA luminaires usually feature a colour temperature of **3000 Kelvin**.

Many standard BEGA luminaires are additionally available **with a colour temperature of 2700 or 2200 Kelvin** – on request, we can also supply almost any luminaire in other colour temperatures.



Visibility of the wavelengths of light for:

--- insects (nocturnal) — humans

Ecologically efficient lighting solutions for the scenic illumination of living spaces



Ecologically efficient lighting solutions should avoid unnecessary light emission. At the same time, relevant illuminated living spaces need to be preserved. Furthermore, architecture usually has special cultural, historical or architectural significance. This must be presented as identifiable and visually evocative focal points, even in the dark – at least during the evening hours.





Dark Sky: luminaires for natural surroundings

The luminaires in our “Dark Sky” selection feature highly efficient light that is directed onto the surface to be illuminated, emitting less than 1% of their luminaire luminous flux into the upper half-space of the luminaire. The exact data regarding luminaire luminous flux in the upper half-space as well as statements on the BUG rating according to IES TM-15-07 and the CEN Flux Code according to EN 13032-2 can be found in the **product data sheets** for the individual luminaires on the BEGA website and must be checked against the respective regionally applicable regulations.

BUG rating according to IES TM-15-07

The system used to examine luminaires with photometric data is based on light incidence measurements:

Backlight – Light behind the luminaire

Uplight – Light above the luminaire

Glare

The lumen ratings measured are classified on a scale from 0 (low) to 5 (high). These values must be checked against the applicable regional regulations.



Q P 0444



Q P 0475



Q P 0615



Q P 0529



Q P 0492



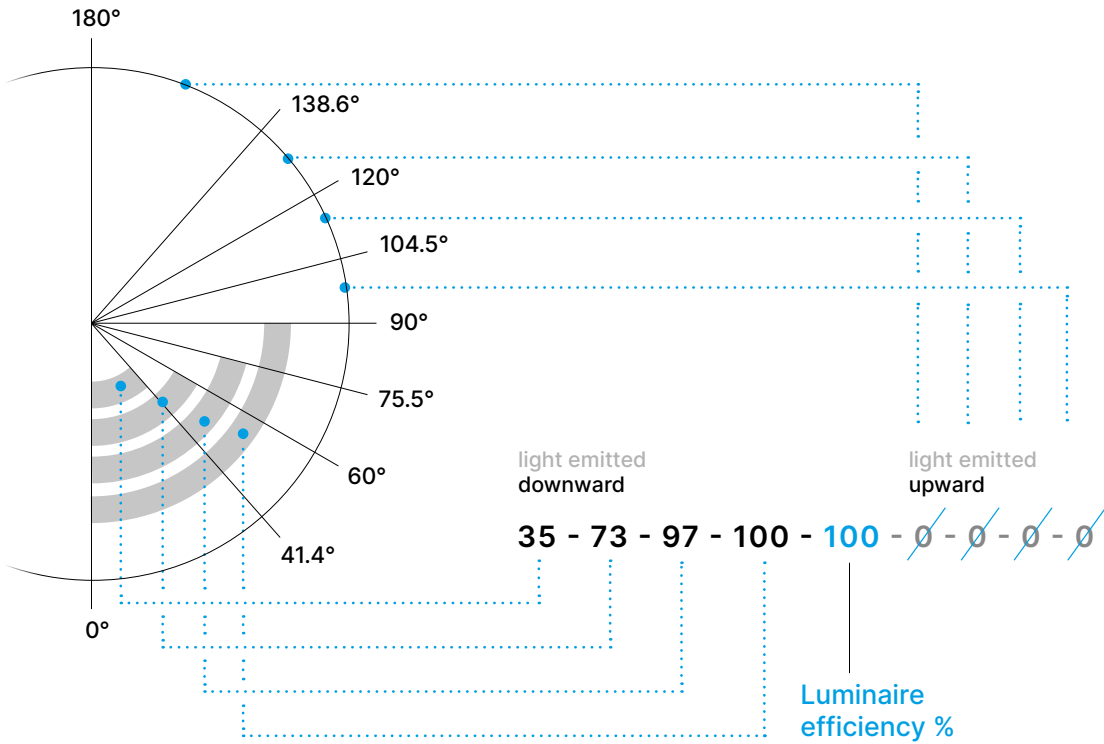
Q P 0385

Please enter the number behind the magnifying glass symbol on our website to receive all the product information you require.

→ bega.com

You can find all luminaires here:

→ bega.com/darksky



CEN Flux Code according to EN 13032-2

Percentage of the luminous flux of the luminaire emitted upward and downward in defined solid angles.

Each segment has an assigned number.







BEGA BugSaver®

We have developed luminaires with BEGA BugSaver® technology for efficient illumination in both urban and natural surroundings. They enhance people's sense of security and additionally protect nocturnal animals.

A flexible colour temperature and light output allow the shielded light to blend into the environment at different times without affecting the natural balance. At the same time, safe illumination of the area remains an elementary component of the lighting design.

The colour temperature of the luminaires can be switched with the help of the BEGA BugSaver® control devices from 3000 Kelvin to an amber colour tone with a significantly reduced blue light content similar to a colour temperature of 1800 Kelvin. The amber-coloured light has a much less attractive effect on insects.

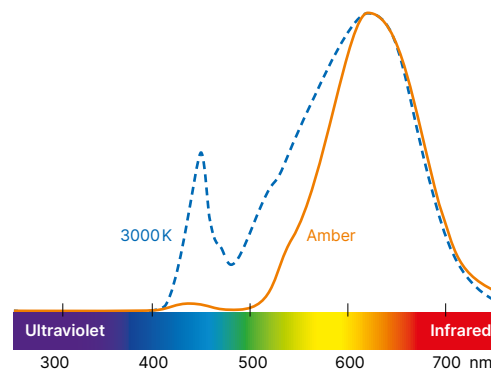
Another option is to simultaneously reduce the power to achieve a lower lighting intensity.

Integration into the intelligent BEGA Connect light control system is recommended to take full advantage of the flexibility of BEGA BugSaver® technology. Switching and reduction options can then be adapted to the highly varying protection requirements at different times of the year, for example.

→ bega.com/bug saver



Q P 0369 Q P 0421





Three BEGA BugSaver® control devices are available for switching the colour temperature and simultaneous power reduction. Control can be effected via control phase or with the help of virtual midnight calculation for up to nine connected luminaires. No other components are required.

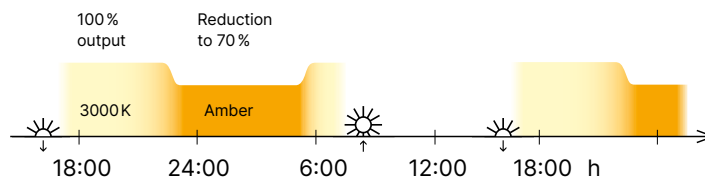
Luminaires with our BEGA BugSaver® technology can be controlled via DALI Device Type 8 (DT8) and can therefore be easily integrated into **intelligent control systems**.

These enable the use of lighting systems in line with demand and the environment:

- night-time power reduction or switch-off
- Using motion and/or twilight sensor technology

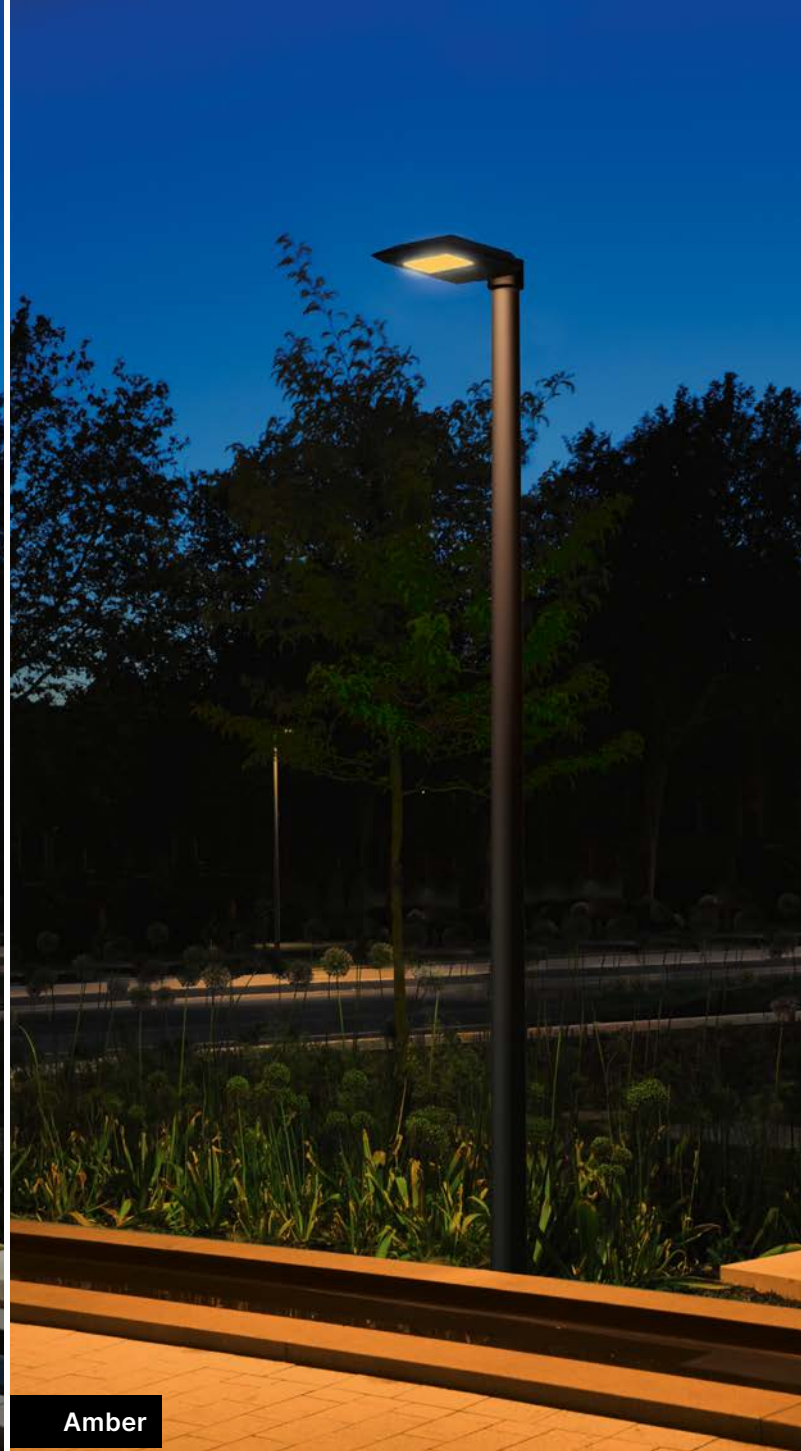
The simplest, most cost-effective solution for implementing light control anywhere, independent of any existing IP infrastructure, is our cloud-based **BEGA Connect** system. Convenient implementation is made possible thanks to the BEGA Air Connector's integrated Internet connection

→ connect.bega.com





3000 K



Amber



Simple anywhere. Simple everywhere.

The future of intelligent illumination

Automated and controlled lighting even in the most remote locations thanks to Narrowband IoT.

Setup and control of professional lighting systems – easier than ever before.

Fast, secure, cost-efficient.

connect.bega.com



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