



You need only  
5 minutes to learn all  
the important facts about  
**light pollution**  
and the  
basics of ecological  
and economical  
lighting.



**?**

**Light pollution -  
what in the world is that?**

**Light pollution is useless light shining into  
the night sky and the environment,  
with adverse impacts on humans,  
nature and environment.**

**!**

**This is caused by  
wasteful lighting, that  
beams up into the sky  
and to all sides:**



**mushroom  
luminaire**



**floor spotlight**



**globe light**

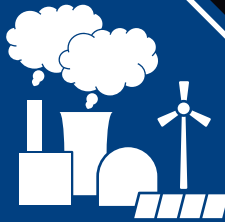


**facade illumination  
and billboards**



**tilted case  
luminaire**

**The consequences  
are far reaching:**



## **Energy and costs**

**Luminaires, shining their light uselessly into the sky and nature, consume a lot of energy and money, often from your taxes.**

**That's an opportunity to economise, in times of climate change and tight budgets.**





## **Impacts on humans**

**Humans are biologically used to the change of day and night. Wrong light and continuous lighting affect the well-being and the health of humans, e.g. the day/night cycle and the production of the hormone melatonin, which causes long-term consequences.**



## **Impacts on animals**

**Caused by light pollution, insects are lured away from their natural environment. They lack within the food chain and pollination, with impacts on nature and our food supply. Migrating birds are diverted from their flight track and nocturnal animals are disturbed.**



## **Impacts on plants**

**In addition to the indirect effects because of the missing insects, light pollution has direct effects on plants, e. g. on the season cycle and photosynthesis, that changes carbon dioxide to essential oxygen.**





## **Impacts on the starry sky**

**Light pollution dulls the view on the stars  
and takes the fascination of the original night sky  
away. The stars provide the basis for our  
culture, the calendar and navigation,  
for science and development.**

**The starry sky is a  
heritage of  
mankind.**



## **Impacts on safety**

**Glare and scattered light worsen our eyesight and in consequence the safety in road traffic. If the lighting is too bright, the surroundings are nearly invisible for us. So we could react to hazards only at the last moment.**

**What are the  
things we can  
do against  
light pollution**

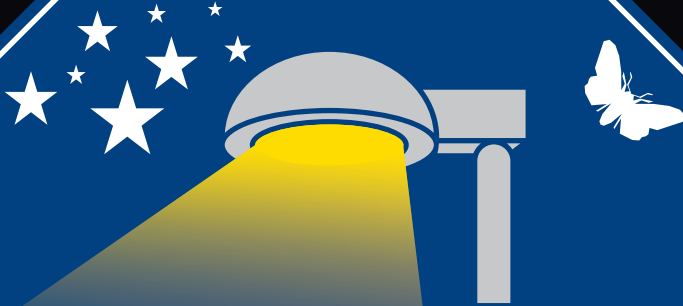


# **Intelligent lighting!**

**It's easy to implement ecological and economical illumination without light pollution, while retaining the luxury of light.**

**On the following pages  
you can see the basics  
of correct lighting.**

**That's  
perfect lighting:**



**full-cut-off, warm white,  
moderate, energy-efficient.**

**But what does that mean?  
And how does  
it work?**



## **full-cut-off:**

**The lamp is fully shielded by the case of the luminaire. The shielding restricts emission of light to the sky and to the sides, reflectors guide the light where it belongs. A flat protective glass and horizontal installation minimize glare and scattered light.**

**Please guide the light only to the ground.**



## **warm white:**

**Lamps with a warm white light colour attract less insects because of the low rate of blue light. The warm white light is pleasing to humans and it's not scattered so much (compare to the blue colour of the sky).**



## **moderate:**

**Consistent and moderate lighting offers a comfortable light with good and glare-free sight. Timers and motion sensors switch the light on only if needed. Sometimes, lighting is unnecessary at all.**





## **energy-efficient:**

**Energy-saving lamps like sodium vapour lamps or LEDs should be standard. You can save a lot of energy and money, particularly in street lighting.**

**But energy-saving lamps should not lead to installing more powerful lamps.**



## **For professionals:**

**For perfect lighting, use full-cut-off-luminaires with no light above horizontal plane (upper light ration  $ULR=0\%$ ), warm white lamps with a colour temperature with maximum 3000 Kelvin, e. g. sodium vapour lamps and LEDs, but not too bright.**

# Urgent call

**to all mayors and construction  
companies and energy providers:**

**Act now to avoid light pollution and be a  
shining example in this area! Use  
lighting only full cut-off, warm white,  
moderate, energy-efficient!**



**You get further  
information at the  
dark-sky-organisation of your  
country. If there isn't any, please  
found one. Greetings from the dark-sky-  
group „Projekt Sternenpark Schwäbische Alb“  
in Germany - an organization of volunteers!**

**[www.sternenpark-schwaebische-alb.de](http://www.sternenpark-schwaebische-alb.de)**



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