

LightingEurope position paper

Adaptive road lighting: an intelligent alternative to simply switching off at night

There is a general tendency amongst national and regional authorities throughout Europe to switch off public lighting on roads, either completely or more commonly, during parts of the night to reduce energy costs in public spending.

LightingEurope is convinced that thanks to the implementation of new technologies on all levels i.e. luminaires, light sources and control systems, roads can remain illuminated. With available technologies, energy savings can be maximized without putting the safety of road users and pedestrians at risk.

In addition to the energy-saving measures, this initiative is also encouraged by environmental organisations focusing on the potential damage caused by nuisance and intrusive light on eco-systems. As representatives of the European Lighting Industry we welcome this public and political awareness to ban intrusive and spill light. By implementing intelligent lighting systems, intrusive light can be limited as well.

Although in most countries there is an obligation to the community to provide the correct amount of light, in certain cases short term savings are predominant. Austria has clearly stated via a national standard (Ö1053:2011) that it is not recommended to switch off lighting completely, even individual light points, as it fundamentally disturbs the uniformity of the lighting scheme. Upcoming European standards on road lighting under prEN13201 series have similar requirements and recommendations.

A correct adaptation of the lighting levels, depending on traffic density, is strongly supported. A lower density of traffic does not require the same quantity of light to ensure the safety of the users as long as the uniformity is maintained. The electricity consumed to produce the light for road lighting accounts for 6-7% of total consumption but can be as high as 60% in a local municipality's budget.

Many studies show the strong correlation between the lighting level and the number of accidents and particularly those involving pedestrians. In addition, crime rates and a

general feeling of discomfort increase dramatically when public lighting is switched off at night. It has also to be considered that in general, the increased social cost for the community (hospital, insurance, police, surveillance, additional safety measures etc.) due to the above reasons, will be considerably higher than the cost of energy saved due to completely switching off the light at night.

A modern road lighting installation is capable of providing:

- High-quality, uniform lighting which increases the level of safety, comfort and well-being
- Minimum energy consumption
- Intelligent dimming scenarios
- Optimised maintenance schemes
- The preservation of the 'Dark Sky' while limiting the upward and/or intrusive light
- A long lasting sustainable solution including a strongly reduced environmental footprint.

New technologies for the luminaires: light sources (e.g. LED), optical systems, electronic control gears and control systems provide the necessary tools to achieve these high-quality public lighting installations. Luminaires can be equipped either with fixed dimming schemes or more intelligent adaptive lighting (based on sensors and external inputs), integrated into a powerline or wireless controlled network. This enables an overall energy reduction that outperforms savings achieved by switching off inefficient lighting systems during part of the night.

Providing the right amount of light (related to traffic density, road and weather conditions etc.) where and when it is needed is the preferred practice compared with simply switching off the lights. The combination of increased safety and the return on investment due to energy savings makes intelligent road lighting the optimal solution.

LightingEurope is an industry association representing 32 leading European lighting manufacturers and national lighting associations. LightingEurope members employ over 100,000 people in Europe and represent an annual turnover estimated to exceed 20 billion euros. LightingEurope is dedicated to promoting efficient lighting practices for the benefit of the global environment, human comfort, and the health and safety of consumers.

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