

# LIGHT POLLUTION & SECURITY

## WHY THE SECURITY INDUSTRY NEEDS TO TAKE LIGHT POLLUTION MUCH MORE SERIOUSLY...

**In this article specialist Infra-Red manufacturers Derwent explain why the security industry needs to be made aware of new legislation governing light pollution and how it will affect our industry as a whole.**

Light pollution, defined as the excessive or inappropriate use of external, visible lighting is an issue we are likely to hear much more about in the coming months following recent changes in the law. Under the new *Clean Neighbourhoods and Environments Act*, which received Royal Assent on the 7th April 2005, the list of statutory nuisances will be extended to include light pollution.

### Why is light pollution an issue now?

The *Clean Neighbourhoods and Environment Act* will clear the way for a widespread clamp down on light pollution and represents a major triumph for groups who have campaigned for government legislation. Already listed as a "nuisance" under common law, light pollution was not included in the *Environmental Protection 1990* meaning that to date few Local Authorities have taken action against those responsible. The new law will allow Local Authorities to impose orders to 'put right' badly designed lighting schemes and give them the power to heavily fine companies and individuals who fail to do so.

The security industry needs to view the debate as a shot across the bows; security lighting, and particularly the practice of security flood lighting has been identified by both Government and campaign groups as a key offender and major contributor towards light pollution.

It is important to understand it is not security lighting itself that is necessarily the target of complaints; it only becomes a problem when it is excessive, poorly designed or badly installed. An area can be well lit and safe without causing light pollution if lighting is installed in the correct way. Outdoor security lights should be angled downwards and fitted with hoods to minimise light spill and glare. To provide effective illumination for CCTV the simple answer is to use low voltage Infra-Red illumination, which causes no light pollution at any wavelength and which is specifically designed to help the camera work to the best of its ability.

### What exactly is light pollution?

The simple answer is that light pollution is any external, visible lighting that causes a nuisance or detriment to the surrounding area. It is caused when light 'leaks' out of its intended target area, either into neighbouring areas or up into the sky. Light pollution destroys our view of the night sky and wastes energy, contributing to pollution and greenhouse gas emissions.

Astronomers have been extremely vocal on the issue of light pollution, claiming it ruins their appreciation of the night sky. The British Astronomical Association have been particularly active in promoting public awareness. The Council for the Protection of Rural England (CPRE) are also campaigning against the use of excessive lighting in the countryside, stating that it destroys the character of rural areas and adversely affects wildlife.

Light pollution can be categorised into three distinct types; sky glow, glare and light trespass – when unwanted light spills beyond the boundary of one property and into neighbouring ones. Often the result of poorly designed or misdirected security lighting, light trespass is at best distracting and annoying; at worst it can cause long term health problems including insomnia and anxiety and can result in a reduction of property values.

### What is the solution?

The security industry has been identified as a major contributor to light pollution chiefly due to the use of flood lighting as a security precaution. Flood lighting illuminates an area for all to see, intended to act as a visual deterrent to criminals, it is also a major cause of light spill and light pollution.

In fact there is no conclusive evidence that floodlighting does deter criminals. Flood lit premises are still routinely broken into and crimes are committed beneath security lights. In some cases visible lighting can assist the criminal by blinding onlookers and cloaking the intruder's activities.

The practical answer for security purposes is firstly more intelligent use of detector triggered systems as oppose to continuous flood lighting, and effective 24/7 CCTV surveillance using Infra-Red lighting, which is invisible to the human eye.

For years manufacturers like Derwent have argued that Infra-Red is the best illumination solution for night-time CCTV. IR illumination is specifically designed to maximise the effectiveness of CCTV cameras. It is an extremely effective illumination tool that does not cause any light pollution at any wavelength. At lower wavelengths (730nm) all that is visible from a Derwent Infra-Red lamp is an unobtrusive red glow. At 830nm, a very dull glow is visible and at 940nm the light becomes totally covert.

There is also sometimes a misconception that IR illumination is more expensive than visible lighting, however the opposite is true. Energy efficient IR illuminators last longer and cost less to run; Derwent's lower power-consumption lamps also provide environmental benefits, producing lower CO<sub>2</sub> emissions as a result of their reduced electricity use.

### Targeted lighting

The problem with visible lighting is that it is usually more expensive to illuminate perimeters and grounds in a way which will minimise light pollution – clearly there is less cabling and installation work required if lamps are mounted to a building, at the CCTV camera head, or at a single central point and directed outwards to flood a wide area with light.

However this method of 'flood lighting' can cause light pollution and will not necessarily provide enough light for CCTV cameras to see clearly at night. The more costly alternative is to set up lights on posts at regular intervals, angled down towards the ground; only this design will avoid light pollution.

Infra-Red provides the ideal solution for situations where targeted illumination is needed, for example where particular points on a perimeter need to be monitored. IR illuminators can be mounted at one point and directed horizontally outwards – and because IR is virtually invisible to the human eye, no light pollution is caused. This technique works with all CCTV installations, including static, pan and tilt and fully functional domes.

### What should security companies do?

Responsible CCTV system designers and planners need to be aware of legislation concerning light pollution and take this into account at the design stage. Philip Lynskey, Managing Director of Wakefield-based Calder Security, was recently asked to install and a CCTV system at a warehouse adjacent to a residential area.

'One elevation of the building is adjacent to a residential area and the client has asked us to cover the point with CCTV but avoid light-spill,' he explains.

Mr Lynskey has been in the business since 1974, but this is the first time that light pollution has been raised as an issue by the client. 'We've brought it up ourselves with customers in the past, particularly when dealing with residential installations, but this is the first time that a commercial client has talked to us about it from the outset.'

For both the security industry and end-users alike the message is clear – the time to think about reducing light pollution is now. By phasing-out wasteful lighting now, end users can avoid unnecessary hassle and expense if asked to re-fit lighting schemes.



For further information contact Derwent on:  
Tel +44(0)1670 730187 or sales@DerwentCCTV.com

