

Cranborne Chase Area of Outstanding Natural Beauty



FACT SHEETS & GOOD PRACTICE NOTES

Second supplement to GOOD PRACTICE NOTE: GOOD EXTERNAL LIGHTING

Number 7b

Examples of dark sky compliant lighting units for use on new builds and refurbishments in and around the AONB area

Introduction

In the UK, although there are various guidelines and recommendations concerning the provision of adequate light control, there is no official scheme of approval for 'Dark Sky Friendly' (DSF) or 'compliant' lighting fittings. This AONB's own Good Practice Notes (numbers 7 and 7a) are examples of guidelines.

The International Dark-Sky Association (IDA), based in the USA, identifies a few DSF fittings fully compliant with its requirements, but none appear to be available in the UK. Examples of their acceptable fittings are shown in Appendix 2. This AONB, alongside other dark sky areas of the UK, adopts the IDA criteria for DSF light fittings.

The IDA philosophy and criteria

- ❖ If there is no need for lighting, it should not be installed!
 1. Where lighting is provided, it should be sufficient to meet the local needs and no more. The light intensity, illumination levels provided and operation times must be determined by the requirements of the task and the nature of the landscape.
 2. Any lighting fixtures with an output above 500 lumens must be fully shielded, to ensure all light is emitted downwards and none above the horizontal (90 deg.).
 3. Unshielded fittings with small light sources below 500 lumens may be permitted in special circumstances, but proper upward light control is always best.
 4. The light source colour temperature must not exceed 3000K (similar to the warm-white appearance of a domestic tungsten lamp).
- ❖ Switching controls can avoid permanent intrusion and light presence dusk-dawn. This is also a great energy saver. Proper switching is a requirement, incorporating one or more of the following:

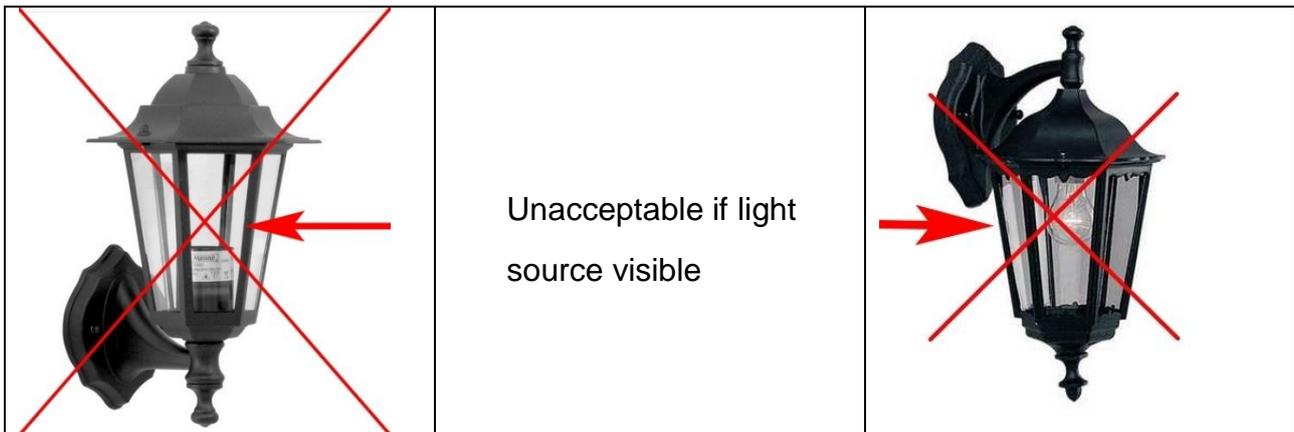
- a) Passive infra-red (PIR) switching with integrated daylight sensing. This activates the light for a pre-set time only when the nearby presence of a person or animal is detected after dark. This is often a feature of porch / door lights and floodlights.
- b) Using timer control to ensure lights are off unless needed, sometimes linked with dimming systems. (This is frequently done with street lighting nowadays.)

Switching may be built-in to fittings, or be done by separate control units for one or more lights.

Widely available light fittings: sorting the better from the unacceptable

- **Modern style fittings** abound, but very few are designed to throw light downwards only. A variety of compliant styles are illustrated in Annex 1.

Heritage / decorative styles are problematic in most cases because in the popular ‘Coach’ style, the lamp usually points upwards. This is illustrated in the example given below. (There are examples of some newer versions being developed, with the light source fitted in the canopy: a modern but classic example is the Philips myGarden LED wall light: <https://www.lighting.philips.co.uk/consumer/p/mygarden-wall-light/154793016>.)



- Pendant / top-fixed designs, with the lampholder in the canopy and the lamp pointing downwards potentially have better light control, but are no improvement on the coach style if fitted with a standard Tungsten or Compact Fluorescent lamp. By using a directional light source, such as a low power, wide-beam downward-pointing LED light source these can be potentially compliant. Fittings with ‘downlight’ GU10 LED lamps in the canopy could be compliant (see the illustrated examples, page 7).
- Some **solar-powered lights** are available, but need to be carefully evaluated for light output and battery capacity / operation time. They still need proper light control to meet the criteria (<500ln or shielded or light directed downwards).
- **Bollards** can be useful, but require proper upward light control. Many designs do not employ adequate shielding and may use highly reflective metallic posts which become secondary sources of light.
- **Bulkhead lights** are frequently used on domestic and private dwellings, as a cost-effective option. However, the lamps used are often too bright, and diffusers cause light to be emitted above the horizontal.

- Over-bright fittings with poor optics are not dark-sky-friendly although their impacts can be mitigated by use of motion-sensitive switching.
- **Floodlights** are a huge problem. The vast majority of domestic and industrial fittings are of an unacceptable ‘point and shoot’ design. This is frequently exacerbated by poor installation, with units pointing across, rather than on to, the areas to be lit. Two examples are illustrated below.



Turning this style of fitting down – dipping – so that no light is emitted above the horizontal is a way of mitigating existing lights.

- Floodlight fittings with the correct optics to be dark-sky-friendly are of the **flat-glass double-asymmetric** type and are available from major manufacturers. (Confusingly, some manufacturers use the term ‘asymmetric’ to mean the same thing.) Such units are designed for the glass face to be set horizontally, with the optics throwing the light beam forwards. Fittings such as this may still use high-intensity discharge lamps, but LED types are now widely available.
- Appropriate use of flat-glass asymmetric / double asymmetric fittings, mounted horizontally, must be the standard for modern, properly designed, domestic security, public area, and sports lighting.
- Commonly, floodlights use LEDs of 4000K ‘neutral white’ colour. There is further scope for confusion in use of the ‘cool white’ and ‘daylight’ terminology, which typically relates to lights >5000K. Some manufacturers can supply fittings with ‘warm white’ 3000K LEDs, but rarely seem to make this very clear in their advertising or technical data. **3000K** is the maximum for Dark Sky areas.
- Security lights should be **PIR controlled** and always need correct installation.

Manufacturers and suppliers

There are a large number of lighting manufacturers in the UK, and more in Europe and worldwide. Many global manufacturers nowadays have production facilities in China, and large quantities of generic units come into the UK from there. Fittings may be supplied direct from the manufacturers, but are often distributed by a wide range of secondary suppliers and wholesalers. Sometimes virtually identical fittings appear under different names.

Overall, relatively few seem to provide DSF light control and lamp power. Some however do show potential to be very dark-sky friendly, even if not fully compliant.

Appendix 1 to this note lists companies currently producing some DSF domestic-type and industrial fittings.

Light fitting examples

The following illustrations are of a variety of types of light fitting, based on data available in various catalogues and on websites, in order to guide developers to specific examples.

Illustrations are given of:

- Modern styles
- Heritage / decorative fittings
- Solar powered possibilities
- Bollards
- Floodlights

These are intended to be examples only, and have not been critically tested by the AONB, so are not recommendations.

More will be added as they are identified, in order to maintain an updated list of examples. The intention is to illustrate the principles of DSF fittings, so that other versions and styles may be identified and evaluated relative to the needs of individual projects, small or large.

In the case of new area and sports lighting proposals, it is AONB policy that they be competently designed to meet the requirements of dark skies and all other environmental considerations. Such situations will typically have high-output lamps or LED light sources. Specific lamp types and fittings are not included here, as they require proper selection and design by specialized lighting designers.

Examples of dark-sky-friendly light fittings

List last updated 19/2/19

Modern style wall-mounted lights

		
Fleet GU10 Square	Zinc Leto Adjustable (Aim Down)	Philips myGarden Virga LED
	Black, S-Steel	Black, chrome
GU10 35w Max. Tungsten or LED	GU10 35w Max. Tungsten or LED	LED 3w
Toolstation	Toolstation	Homebase

		
Nordlux Tin Maxi	Radius 9w LED Round	Antar GU10 Egg
Black, Alum., S-Steel	Graphite	Black
GU10 Lamp Tungsten or LED	3 x LED	GU10 lamp Max. 25w Tungsten 10w LED
Homebase	Homebase, YESSS	Homebase

		
Integral-LED Pathlux Brick 3w	Lumenlights Pema LED	Integral-LED Pathlux Step
Dark-grey, White	Anthracite, Silver-grey, White	Dark-grey, White
LED 3w 150Lm 3000K IP65	LED 3.3w 120Lm 3000K	LED 2.2w 90Lm 3000K IP65
Homebase, Integral-LED	Lumenlights Ltd,	Integral-LED,

		
Firstlight Colt PIR	Lumenlights Pema LED Wall Light	Lutec Spril Medium
S-Steel	Anthracite, Silver-grey, White	Anthracite
	LED 3.3w 120Lm 3000K	CREE LED 8x3w
	CEF	Lutec

		
Luceco LED Exterior Wall Light	Gemini 20w LED PIR	Slip LED Aluminium Brick Light
Grey	Graphite	Silver
3w LED 120Lm 3000K	LED 20w PIR (16 LED)	LED 3w
Luceco	Homebase	Screwfix

	
Nordlux Scorpius	Nordlux Scorpius Maxi
Black, Galvanized, Copper	Black, Galvanized, Copper
40w Max. E14 cap Tungsten or LED	60w Max. E27 cap Tungsten or LED
Homebase, Nordlux	Nordlux

Heritage-style wall lights

(All require suitable downward reflector-type lamp or LED COB light source)

These examples would only be DSF when fitted with light source as illustrated. The lamp / source should be top-mounted, therefore providing a downward light source, and/or be appropriately shielded (as in the USA examples illustrated in Appendix 2).

		
GU10 type lamp LED preferred	Reflector style lamp LED preferred	Chip on Board (COB) LED source COB LEDs have the emitter chip and driver electronics as a single unit
Under 500Lm output 3000K Wide beam best	Under 500Lm output 3000K Wide beam best	

		
Pendant style, option 1	Pendant style, option 2	Pendant style, option 3
Existing styles would need adaptation to meet dark skies criteria. The canopy should be deep enough to fully shield LED COB type light sources, or be fitted with a suitable lampholder to allow use of GU10 'downlight' lamp or reflector type. Fittings designed for a GU10 lamp would allow easy replacement. A flat LED COB source would allow for full shielding within the canopy.		

Solar-powered wall lights


Snake LED Solar Flood with PIR
Matt black
LED 400Lm
Screwfix

Bollards

	
Spril 16 LED 22w Bollard	Collingwood Bol LED Mains WW
Black	Iroko Wood
LED 16 22w	LED 3x1w Warm White
Homebase	Collingwood Lighting

Floodlights

All fittings should be mounted horizontally, with the asymmetric / double asymmetric optical distribution throwing the light forwards, without any need for upward tilt.


Whitecroft Levanter
Graphite, Silver-grey
LED 35w 3045Lm 4000K Post / wall
Whitecroft

		
Thorn LED Fit Small	Tamlite Explorer 40w	Whitecroft Euroflood MidiLED
Light Grey	Grey	Grey
LED 45w 4500Lm 4000K Asymmetric	LED 40w 4800Lm 4000K	LED 52w 6000Lm 4000K
Thorn	Tamlite	Whitecroft

The above 3 units are all designed to be mounted flat, not upright as illustrated.

7c 2/4/19 – AS / RB / MM

Examples of companies producing some DSF domestic-type and industrial fittings

The following companies produce DSF light fittings. Wholesalers, distributors and retail businesses are also included. Other producers and suppliers are available: this list is not exhaustive, and will be updated as necessary.

Producers / manufacturers

Collingwood Lighting Ltd
Firstlight Ltd
Integral-LED Ltd
Luceco Ltd
Nordlux Lighting
Philips Lighting plc
Searchlight Ltd
Tamlite Lighting Ltd
Thorn Lighting Ltd
Whitecroft Lighting Ltd

Wholesalers / Distributors / DIY outlets include

B & Q
City Electrical Factors (CEF) Ltd
Edmundson Electrical Ltd
Homebase
Screwfix
Toolstation
YESSS Electrical Ltd

IDA-approved fitting types available in the USA are shown below

Home Depot

Category: [Store](#) > [Search by Retailer](#) > [Home Depot](#)

View as: **Grid** [List](#)



8106-A138 Kirkham™
Post Mount



8106-A138-L Kirkham™
Post Mount LED



Aged Bronze Bell
Shaped Dark Sky
Outdoor Wall Lantern



Hampton Bay Essen
Antique Copper
Outdoor Wall Lantern



Hampton Bay Essen
Antique Copper
Outdoor Wall Lantern



LED Dark Sky Outdoor
Wall Mount Light



Rio Champagne