Ely Zebra
Long Crendon, Buckinghamshire

Lighting pedestrian crossings

There are three principle issues to consider when illuminating a Zebra crossing.

- Making the crossing itself highly visible and distinguishable from the surrounding road.
- Visibility of pedestrians at the crossing and through visibility (to ensure motorists are also aware of pedestrian activity beyond or in front of the crossing).
- Minimising glare to drivers.

In order to achieve these objectives an appropriate form of supplementary lighting is required.

To ensure that the approaching motorist clearly sees the place where pedestrians are to cross, the lighting must generate a defined luminous patch of light across the crossing carpet, with clearly delineated edges. Consider also the area beyond the crossing from the driver's perspective.The approaches to the crossing marked by zig zag lines – the controlled area – and the adjacent footways should also be adequately lit; this may be to the appropriate CE or S class. Where the road is lit to an ME class then the pavements by the controlled area should be lit to the appropriate S class.

A low mounting height of no more than 4 metres and often around 2.5 metres is usually most suitable to create this delineated carpet. While a different lamp colour from the surrounding road lighting is effective in helping highlight the carpet – for example white light (metal halide) on the crossing in a yellow light (high-pressure sodium) road installation.

Luminaires need to be as glare free as possible to ensure maximum through visibility through the crossing area – remember pedestrians will often try to cross short of the crossing itself. Flat glass luminaires are therefore best.

Finally the light distribution from the luminaire itself needs to ensure high levels of vertical illuminance onto the crossing pedestrian to ensure that they are visible to approaching motorists. Because humans are three dimensional rather than two dimensional, this vertical illumination does not need to fall exclusively onto the side of the pedestrian facing the traffic. In falling onto the curved surface facing the luminaire the pedestrian will still be rendered visible to the motorist).

The benefits of our Zebra luminaires

DW Windsor Zebra luminaires are available in a variety of styles so they can be matched to the luminaires used elsewhere on the scheme, furthermore we can supply every element required for pedestrian crossing lighting; from column to Belisa beacon; minimise installation cost and street clutter by positioning the Zebra luminaire on the same column as the Belisha globe.

These guidance parameters (explored in more depth in the ILE publication TR12) mean that the ideal pedestrian crossing luminaire will distribute most of its light in a concentrated pattern forward of the luminaire in a high enough beam spread to ensure that the complete height of the pedestrian is illuminated.

DW Windsor Zebra Floods offer this ideal distribution and are therefore eminently suitable for this application.

Reference material

Please refer to the following publications for the full requirements of lighting pedestrian crossings

BS EN 13201-2: 2003 Road Lighting Part 2: Performance requirements, Annex B

BS 5489-1: 2003 Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas Paragraphs 11.5, E.2.4, E.3.3

CEN/TR13201-1:2004 Paragraph 5.3.9

ILE (Institution of Lighting Engineers) Technical Report Number 12 "Lighting of Pedestrian Crossings"

Windsor Zebra
West Wycombe, Buckinghamshire

Target lighting values from TR12

Road class (see also BS 5489-1:2003 table B1)	Carpet average (with 60% uniformity) [Eave] in lux	Centre and kerb edge grid minimum vertical illuminance [Evmin] in lux	Rear of waiting area grid minimum vertical illuminance [Evmin] in lux
CE1	105	60	45
CE2	70	40	30
S1	52.5	30	22.5
S2	35	20	15
S3	26.25	15	11.25
S4	17.5	10	7.5

NB. This table is not a substitute to a full copy of TR12 which can be purchased from the ILE.

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Long Crendon, Buckinghamshire

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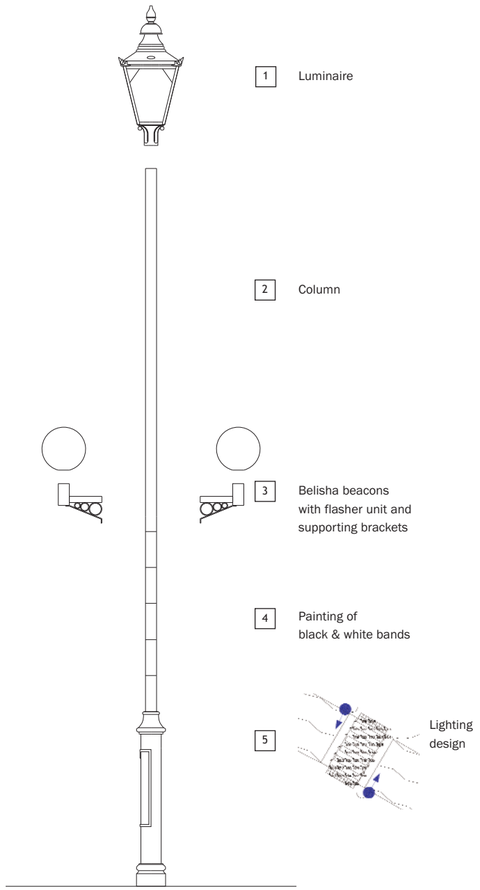
How to

For a standard two lane carriageway, two Zebra luminaires are required for each crossing, positioned on opposite sides of the road between the oncoming traffic and the crossing.

We can supply every element required for pedestrian crossing lighting:



1 Luminaire

2 Column

3 Belisha beacons with flasher unit and supporting brackets

4 Painting of black & white bands

5 Lighting design

Complete Zebra service

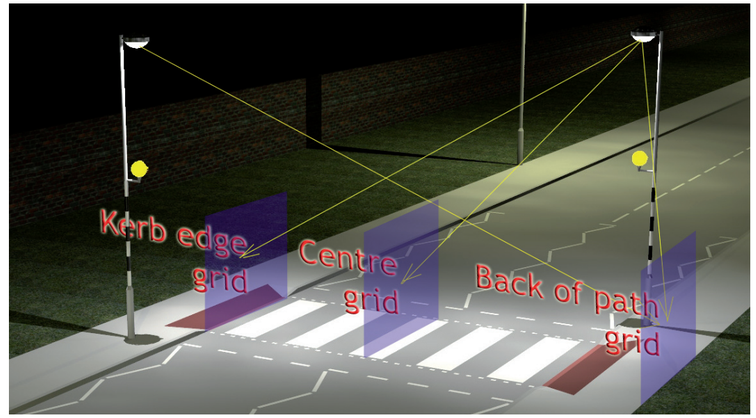
As part of our standard service we can supply not just the Zebra luminaires, but all of the individual elements that make up the complete Zebra product package.

This covers everything from the specially-designed luminaire, Belisha beacons with flasher unit and supporting brackets, to fully-painted columns complete with black and white bands.

In addition, our applications department can undertake the lighting scheme design for you, so you can be sure your pedestrian crossing is lit to meet required standards.

Precise light control

We have introduced a new 'flood' optical system to provide the light control needed for the localised lighting of pedestrian crossings. The Zebra Flood optic is available in a number of luminaire styles, so continuity can be achieved with the rest of your lighting scheme.



New universal Zebra Flood Optic is suitable for both one and two-way traffic

Zebra product ranges

Colada Zebra
p 254-255

Monaro Zebra
p 80-83

Optima Range Zebra
p 86-101

Strand Zebra
p 114-119

Ely Zebra
p 120-121

Windsor Zebra
p 146-147

Iffley Zebra
p 126-127

York Range Zebra
p 128-143