Lighting and signalling design of pedestrian crossings

SCOPE AND APPLICATION

This technical specification provides the guidelines to correctly design the lighting of pedestrian crossings on motor vehicle roads in application of EN13201 and UNI/TS 11726.

TERMS AND DEFINITIONS

Waiting area

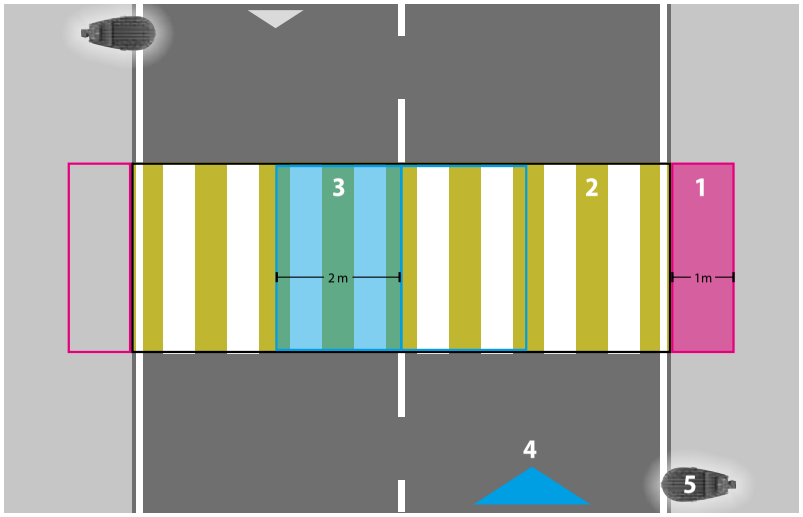
Limited area next to the traffic lanes where pedestrians stand before crossing. Typically the waiting area is a portion of the sidewalk.

Crossing area

Transversal portion of the road where pedestrians walk when crossing. This area is identified by the white stripes.

Transition zone

Portion of the crossing area of two-way roads, located in the opposite travel direction lane, where a pedestrian that is already crossing the road must start to be visible to incoming traffic.



The different areas for the travel direction are highlighted above:

1. **Waiting area**
2. **Crossing area**
3. **Transition zone**
4. **Traffic lane**
5. **LED streetlight**

ROAD CLASS (EN13201)	LIGHTING CLASSES OF THE PEDESTRIAN CROSSINGS
M1	-
M2	EV1 (50 LUX MIN.)
M3	EV2 (30 LUX MIN.)
M4	EV2 (30 LUX MIN.)
M5	EV3 (10 LUX MIN.)
M6	EV3 (10 LUX MIN.)

CALCULATION GRID

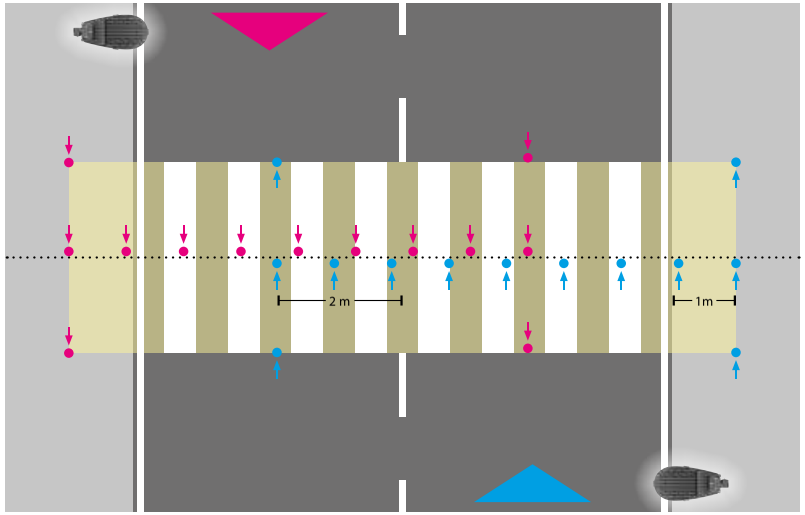
The calculation grid consists in a series of points along the transversal axis of the road passing through the center of the pedestrian crossing which have a constant distance not exceeding 1m, all points are on a plane at a height of 1m from the road level.

Four (4) additional points shall be placed at the edges of the measuring area, two (2) at the outer limits of the waiting area and two (2) at the outer limits of the transition zone.

All these points are measuring vertical illuminance and shall be oriented towards the incoming traffic.

The vertical illuminance measured on the whole axis of the crossing, shall be greater than the applicable EV class.

To ensure uniformity, the vertical illuminance measured on the four (4) points at the edges of the measuring area shall be 15% or greater than the applicable EV class.



MEASURING AREA

Two-way roads

Starts from the outer limits of the waiting area and extends to the outer limits of the transition zone. One traffic direction is considered for evaluation.

One-way roads

Starts from the outer right limits of one waiting area and extends to the outer left limits of the other waiting area.

DYNAMIC LIGHTING

In case interactive systems are installed, the pedestrian crossing and its users may be more visible if the lighting level is increased when they are crossing. At least one (1) lighting class increase from the standby mode is requested. If the standby requirement is already EV1, a minimum increase of 50% is requested.

WARNING AND SAFETY LIGHT DEVICES

Active safety devices are another way to increase the visibility of pedestrian crossings especially during the day

- Backlit signs minimum class L2 according to EN 12899-1
- Flashing lights minimum class L8M (with 90x90 cm signs) or L2H (with 60x60 cm signs) according to EN 12352.