

Increasing of visibility on the pedestrian crossing by the additional lighting systems

Richard Baleja¹, Petr Bos¹, Tomas Novak¹, Karel Sokansky¹ and Tomas Hanusek¹

¹Faculty of Electrical Engineering and Computer Science, VSB - Technical University of Ostrava, 17. listopadu, 70833 Ostrava, Czech Republic

E-mail: richard.baleja.st@vsb.cz

Abstract. Pedestrian crossings are critical places for road accidents between pedestrians and motor vehicles. For this reason, it is very important to increase attention when the pedestrian crossings are designed and it is necessary to take into account all factors that may contribute to higher safety. Additional lighting systems for pedestrian crossings are one of them and the lighting systems must fulfil the requirements for higher visibility from the point of view of car drivers from both directions. This paper describes the criteria for the suitable additional lighting system on pedestrian crossings. Generally, it means vertical illuminance on the pedestrian crossing from the driver's view, horizontal illuminance on the crossing and horizontal illuminance both in front of and behind the crossing placed on the road and their acceptable ratios. The article also describes the choice of the colours of the light (correlated colour temperature) and its influence on visibility. As a part of the article, there are case designs of additional lighting systems for pedestrian crossings and measurements from realized additional lighting systems by luxmeters and luminance cameras and their evaluation.