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The dissertation is devoted to the problem of street lighting measurements. A properly lit roadway contributes to improved traffic safety while reducing electricity consumption and meeting intended lighting goals.. Currently used measurement methods are time-consuming, labour-intensive and require stopping traffic on the surveyed road section. In addition, the assessment of illumination is limited to the selection of a representative section and the estimation of the assessment for the entire street sequence. On the basis of a review of literature sources, an alternative to the currently used standards was found by using a dynamic method of street lighting measurement, with the use of a measuring vehicle for the task. The indicated approach is acceptable in the standards, however, due to the change of the measurement plane, it is necessary to interpolate the measurement points to the roadway plane to which the requirements contained in the standards refer. The analysis of the literature proves the lack of a complete analytical description of the issue allowing the application of dynamic street lighting measurements in a normative manner.

The first part of the dissertation presents theoretical and research considerations related to street lighting measurements. The first chapter of the dissertation is an introduction to the subject and a definition of illuminance as an evaluation parameter. The second chapter formulates the aim, thesis and scope of the dissertation. The subject of the third chapter is the developed method. A criterion for the assessment of street lighting condition related to the class of street lighting and energy efficiency indicators is presented. Assumptions are defined and the theoretical influence of factors on the assessment of lighting infrastructure is presented. The second part of the dissertation is of utilitarian-application character. Chapter four presents field measurements along with a description of the author's street lighting measurement system. The MSA method was used to confirm the compliance of the obtained results. The fifth chapter contains a detailed analysis of the results of selected test plots including verification and validation of the developed measurement method. The sixth chapter is a practical application of the method with particular emphasis on the visualisation of measurement results in GIS format and identification of road sections requiring action. The last chapter of the dissertation presents a summary, conclusions and further research directions for the presented solution.