

THE DISTRIBUTION OF ERRORS
IN THE DESIGN OF INDIRECT LIGHTING
WITH SQUARE LUMINAIRES

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ABSTRACT *Square / rectangular luminaires lighting in a lambert way are usually used in large installations of indirect lighting. In order to investigate the operation of the most popular in Poland international programs Relux and Dialux, square luminaire was simulated. Achieving a relative height greater than the threshold distance of photometry in the test room was the main target of the simulation. In order to assess the accuracy of the calculation of lighting system with a square luminaire, researchers compared the maximum illuminance E_{max} calculated by using the programs in the main axis of the source, ie under the luminaire. Then they calculated, the real illuminance distribution $E_{p,rz}$ at the surface of the floor, which was compared to the schedule prescribed under the law of inverse squares. On this basis, they made analysis of errors occurring between the results obtained from the programs and the results of the real illuminance. All simulations were performed by changing the height of suspended luminaire above the floor from 0.25 m to 3.0 m.*

Keywords: *indirect lighting, large luminaires, lighting design software Dialux and Relux*