

# Glare effect of LED indoor illumination

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## Abstract

In previous literature, glare can be divided into direct glare, indirect glare, and background glare, whereas direct glare is the mainstream to the various glare assessment methods such as BGI, VCP, LC, CGI, and UGR. The reason why these studies do not focus on indirect glare and background glare is that the intensity of traditional light sources is not enough to produce numerous reflections on object surfaces. But it will be a significant problem if we use LED as indoor illumination. In this study, we investigate the relationship between light scattering and glare of LED indoor lighting devices. We also analyze the direct and indirect glare from light source to the eye, and the background glare from light source through the environment to the eye. After making simulation by Monte Carlo Ray Tracing method, an optimal LED lighting model for indoor illumination can be obtained. Finally, we will simulate visual images from different glare indices.

Keyword : Illumination design; Image reconstruction techniques; LED lighting