

Optical Design of Full View Lens based on Energy Luminance Analysis Chart of Stray Light

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Abstract

This paper presented optical design software (CODE V) in combination with stray light simulation software (Light Tools) to develop and analyze the influence of 360 degree lens stray light on MTF. We study the pupil entrance position of 2P3G lens group, set the pupil entrance position of the same inside-aperture lens which locates in the Lens 2(S2) or Lens 3(S1) surface. After simulation and analysis of ray tracing software, we get the best pupil entrance position of the lens to achieve the best efficiency and resolution. In addition, through the energy luminance analysis chart of stray light, comparison between this simulation and the actual test verifies that this design is consistent with the fact, so this method provides a reference for the future optical design and manufacture.

Keywords: 360 degree lens; stray light; MTF

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