LED조명용 비구면 Plastic Lens의 성능향상을 위한 광학설계

이학석, 박종락, 김민재*, 김혜정*, 김정호*
조선대학교, *한국광기술원 초정밀광학팀

Optical Design considering Efficiency Improvement of Aspheric Plastic Lens for LED Lighting

Hak-Suk Lee, Jong-Rak Park, Min-Jae Kim*, Hye-Jung Kim*, Jung-Ho Kim*
Chosun Univ. *Ultra Precision Optical Team(KOPTI)

Abstract : Light emitting diode(LED) has many advantages including lower energy consumption and longer lifetime and eco-friendly in comparison with traditional light sources. Spheric plastic lens generally used in LED lighting occurs aberration and ghost image which give displeasure and deteriorate vision quality in human eyes. Using the optical program (LightTools™, CodeV™), we were confirm the aberration and ghost image in optical simulation and employed aspheric lens form in the lens design to improve these problems. From the comparison of the simulation results between the aspheric lens and the spheric lens, we were ascertain to be improved both aberration and Ghost image.

Key Words : light emitting diode(LED), Ghost, Aspheric Plastic Lens, Aberration, Optical Design