

## LED 백라이트 설계에서 입광부처리에 따른 휘도분포의 광학적 해석

한정민, 김병용, 김종연, 김종환, 김영환, 이상극, 옥철호, 강동훈, 서대식

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### Study on Luminance Characteristics in a Design of LED Backlight by the Light-Entering Face Treatment

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**Abstract :** In this study, it was investigated about the variation of luminance properties in LED backlight with geometrical shape such as prism or lens shape on the light-entering face. Generally, LED light source has the loss in backlight system because it has horizontal direction light. PMMA(Poly-Methyl-Meta-Acrylate) is used LGP(Light-Guide-Plate) in conventional backlight system. PMMA has low refraction angle, so that, horizontal direction light was not used in backlight system. The addition of geometrical shape in light-entering face in LGP improves the luminance characteristics because it prevents horizontal direction light generation in light-entering-face. Prism or lens shape in same pitch disposition was almost same without these treatment such as the value of 1% rising. Besides, it is particular that the gap of these shape such as the value of 0.407~0.22mm prevents horizontal direction light, so then it contributes luminance rising at 5.6%.

**Key Words :** LED, Backlight, LGP, Prism, Lens