

ASSIST Application & Benefit Metric Guides

The Alliance for Solid-State Illumination Systems and Technologies (ASSIST) has developed short design guides to the main lighting characteristics important for different applications. Specifically, these guides suggest alternative ways to evaluate and compare LED solutions with traditional lighting technologies. The suggestions focus on how application metrics and benefit metrics can be used and contrasted to typical light source or luminaire metrics (e.g., luminous efficacy) when assessing the effectiveness of different lighting options at meeting the design objectives.

Metrics Background

Application metrics are methods that measure the application efficacy of a particular lighting system, which is concerned with how well a lighting system delivers light to where it is needed and is specific to the application and its task area. The basic concept can be augmented to conform to the photometric requirements of a task, for example light levels and uniformity. Application efficacy is in direct contrast to the traditional metric of luminaire system efficacy, which is specific only to the luminaire and does not consider the application. ASSIST has implemented the application efficacy concept in a number of its recommended metrics, as a means to appropriate comparisons among all lighting technologies serving a given application.

Benefit metrics consider what factors are important in an application and how a light source (LEDs in this case) can provide those benefits using metrics other than those traditionally considered. These benefit metrics may include spectral effects on visibility, brightness, color rendering (beyond CRI), light source color appearance, perception of safety, flicker perception, illuminance uniformity, and more.

Sponsor

Alliance for Solid-State Illumination Systems and Technologies (ASSIST)



Publications

ASSIST has created guides for the following applications along with a few of their appropriate metrics:

- Parking lot lighting – scene brightness, discomfort glare, illuminance uniformity, visual efficacy
- Roadway lighting – scene brightness, photopic illuminance, visual efficacy
- Health care lighting – color quality, task lighting, non-visual effects
- Retail lighting – application efficacy, color quality, methods for using color to increase the visual appeal of displays while reducing power density
- Industrial lighting – visibility, safety, visual comfort

More Information

Visit <http://www.lrc.rpi.edu/programs/solidstate/assist/appGuides.asp>



and <http://www.lrc.rpi.edu/value/index.asp>



Lighting
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