Highway Sign Retroreflectivity and Visual Performance

Highway signs are a critical part of the roadway infrastructure, providing important information to drivers to assist in navigation, identify potentially hazardous roadway locations, and to remind drivers of safe operating practices.

Ensuring that signs have sufficient visibility to the driving public is a key undertaking by transportation agencies such as the New York State Department of Transportation (NYSDOT). In order to assist NYSDOT in evaluating and comparing different materials for photometric and visual performance, the present project was conducted to select and validate a visibility model for use as a basis for performance specifications, to develop a practical methodology for conducting field measurements of sign performance along roadways, and to develop practical tools to assist highway engineers in making informed,

quantitative decisions about the levels of performance provided by different materials.

In addition to describing the methods for an approach to visual performance based specifications, a spreadsheet tool for calculating sign luminance and visibility was also developed.

The findings from the present project can be used by NYSDOT and other agencies in New York State to compare the photometric and visual performance of different sign materials used for different types of signs. While further field validation is necessary before performance specifications could be implemented using visual performance criteria as a basis for sign performance, the results in this study suggest that such criteria are practical, conservative and can be field-verified using available photometric tools and methods.

Spreadsheet tool for calculating sign luminance and visibility.
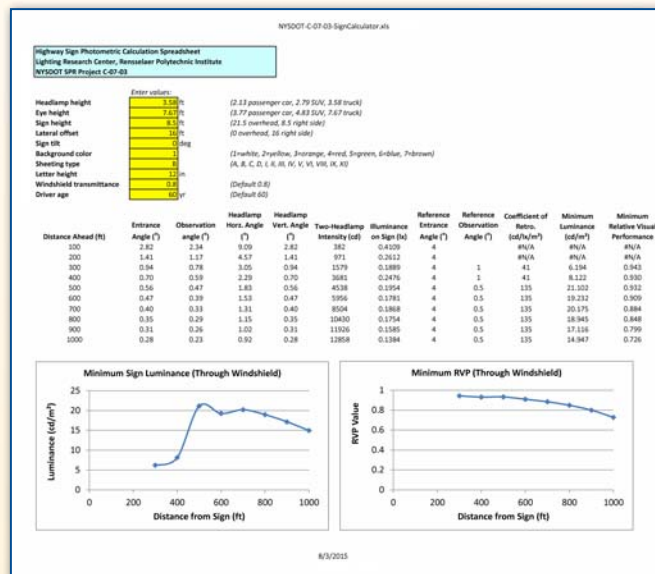
Report

A copy of the LRC's report to NYSDOT may be downloaded at: www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-07-03%20Final%20Report_12-2014.pdf

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