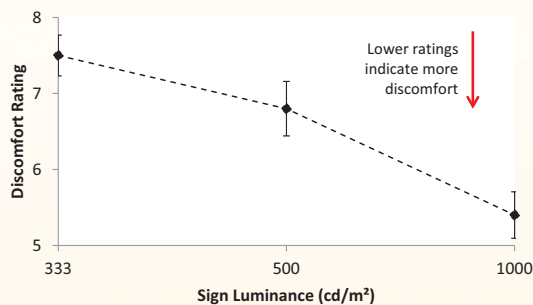
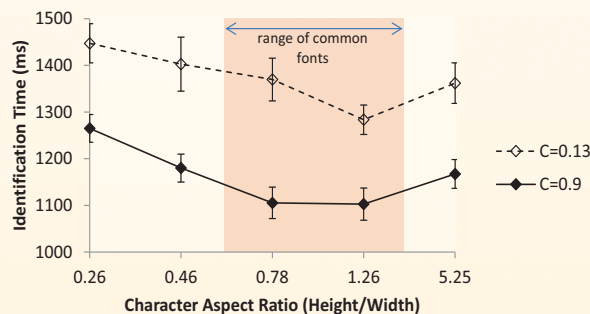


Guidelines for Visibility, Conspicuity and Legibility of Illuminated Signs

Signs are critical elements of the outdoor visual environment, providing wayfinding and location information to drivers and pedestrians. They must be noticeable under a wide range of conditions, day or night, but not so noticeable that they could create distraction or glare. Signs must also be legible so that their content can be easily read and understood. The LRC reviewed published literature on sign conspicuity and legibility, and conducted two human factors experiments to fill gaps from the literature.



Discomfort glare ratings for different sign panel luminances.



Identification times to displayed digits varying in contrast and aspect ratio. The shaded area shows the range of aspect ratios for common fonts used in Microsoft Word.



Left: Low-contrast digits with an aspect ratio close to 1:1. Right: High-contrast digits with a small aspect ratio.

Recommendations from the sign industry suggest using the illuminance from a sign at an observer's eyes as the metric for quantifying the potential of an illuminated sign to produce distraction or glare. In one experiment, LRC researchers measured ratings of discomfort glare from three scale-model sign panels that produced the same illuminance at observers' eyes but had different sizes and thus, different maximum luminances. Consistent with prior LRC studies, the sign panels were judged as glarier when their luminances were higher.

In the other experiment, observers were asked to identify numerical digits shown in a simulated sign panel display. The digits varied in contrast and in their aspect (height:width) ratio but had the same solid angular size. Digits having the same contrast would be predicted by the relative visual performance (RVP) model to be equally legible. Identification times were shortest for higher contrast characters, as expected, and also for aspect ratios near 1:1. As the characters became taller or wider, observers took longer to identify them. The results showed that using typefaces with aspect ratios different from 1:1 will degrade legibility.

Publication

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