Interaction Time to Clear-Lens Turn Signals Under Sun-Loaded Conditions

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The use of clear-lens signal lamps on automobiles, motivated largely by styling considerations, has prompted interest in whether there are any safety consequences associated with these lamps. In a previous report (UMTRI-98-2), it was found that under bright, sunny conditions, luminance contrast between the off and on states of clear-lens turn signal lamps is smaller than for lamps using amber lenses. On the other hand, color contrast between the off and on states is greater with clear-lens turn signals. An experiment was conducted to compare the reaction time of drivers to signal lamps using clear and amber lenses. The results indicate that luminance contrast is the primary characteristic influencing driver performance and that no compensatory advantage appears to be obtained with increases in color contrast. This result is also consistent with evidence from basic research on visual search.