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16. Abstract

One of the most promising proposals for an Advanced Frontlighting System (AFS) is bending light, in which light from headlamps is directed into the path of a turn. We performed a field study to investigate the appearance of bending light, implemented as a swiveling beam pattern, to other roadway users. Observers were asked to view a series of turning maneuvers performed by a vehicle equipped with bending light and were asked to comment on the maneuvers in three sets of trials. The three sets were structured to direct progressively more of the observer's attention to the vehicle's frontlighting system. Responses were classified to indicate the degree to which observers spontaneously noticed specific details about the frontlighting system. In another series of trials, observers viewed turning maneuvers in which the bending-light function was inactive on half of the trials, and were asked to distinguish whether it was active or inactive. Results suggest that observers are not very sensitive to the movement of bending light and often report lamp movement as variation in the intensity of the lamp; that is, the lamp appears to brighten and dim. Although the appearance of variation in brightness could be used as a signature for bending light, observers demonstrate a limited ability to distinguish bending light from fixed light. Overall, the results suggest that the likelihood that beam movement would either help or hinder other road users is small.

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