

(R) Sidemarker Lamps for Use on Road Vehicles Less Than 2032 mm in Overall Width

1. **Scope**—This SAE Standard provides test procedures, requirements, and guidelines for sidemarker lamps for vehicles less than 2032 mm in overall width.

2. **References**

2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J567—Lamp Bulb Retention System

SAE J575—Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less than 2032 mm in Overall Width

SAE J576—Plastic Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices

SAE J578—Color Specification

SAE J759—Lighting Identification Code

SAE J1889—L.E.D. Lighting Devices

SAE J2042—Clearance, Sidemarker, and Identification Lamps for Use on Motor Vehicles 2032 mm or More in Overall Width

SAE J2139—Test for Lighting Devices and Components used on Vehicles 2032 mm or More in Overall Width

2.2 **Related Publications**—The following publications are provided for information purposes only and are not a required part of this document.

2.2.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J387—Terminology—Motor Vehicle Lighting

2.2.2 NHTSA PUBLICATION—Available from the Superintendent of Documents, U. S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9371. www.nhtsa.dot.gov.

Code of Federal Regulations 49 - Part 571.108 FMVSS 108

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3. **Definitions**

3.1 Sidemarker Lamps—Lighting devices used to indicate the presence and length of the vehicle when viewed from the side.

4. Lighting Identification Code—Sidemarker lamps which meet the requirements of this document may be identified by the code "P2" in accordance with SAE J759.

5. **Tests**

5.1 SAE J575 and SAE J1889 are a part of this document. The following tests are applicable with the modifications as indicated. Alternatively, sidemarker lamps may be tested according to SAE J2139.

5.1.1 VIBRATION

5.1.2 MOISTURE

5.1.3 DUST

5.1.4 CORROSION

5.1.5 PHOTOMETRY

5.1.5.1 The photometric tests shall be made at a distance of at least 3 m between the lighting device and the photometer.

5.1.5.2 The H-V axis of a sidemarker lamp in a position as it will be mounted on a vehicle shall be taken as perpendicular to a vertical plane passing through the longitudinal axis of the vehicle.

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5.2 Color—SAE J578 is a part of this document.

5.3 Plastic Materials—SAE J576 is part of this document.

6. **Requirements**

6.1 Performance Requirements—The device when tested in accordance with the test procedures of this document shall meet the requirements of SAE J575 and, if applicable, SAE J1889. Alternatively, if tested according to SAE J2139, sidemarker lamps shall meet the requirements of SAE J2139.

NOTE—Sidemarkers conforming to requirements of SAE J2042 meet requirements of SAE J592.

6.1.1 VIBRATION

6.1.2 MOISTURE

6.1.3 DUST

6.1.4 CORROSION

6.1.5 PHOTOMETRY

6.1.5.1 The lamp shall be designed to conform to the zone total photometric requirements of Table 1 and its footnotes. The summation of the luminous intensity measurements at the test points in a zone shall be at least the value shown.

TABLE 1—PHOTOMETRIC REQUIREMENTS⁽¹⁾

Zone	Test Points (degrees)		Minimum Luminous Intensity (cd) ⁽²⁾ Red	Minimum Luminous Intensity (cd) ⁽²⁾ Yellow	Zone Total Luminous Intensity (cd) ⁽³⁾ Red	Zone Total Luminous Intensity (cd) ⁽³⁾ Yellow
I	10U		0.25	0.62	0.75	1.86
	H	45L	0.25	0.62		
	10D		0.25	0.62		
II	10U		0.25	0.62	0.75	1.86
	H	V	0.25	0.62		
	10D		0.25	0.62		
III	10U		0.25	0.62	0.75	1.86
	H	45R	0.25	0.62		
	10D		0.25	0.62		

Maximum Luminous Intensity (cd)

1. Reduced inboard angle requirements of 6.1.5.2 apply.
2. The measured values at each individual test point shall not be less than 60% of the required minimum value shown for that individual test point location.
3. The sum of the luminous intensity measurements at each test point within a zone shall not be less than the Zone Total Luminous Intensity shown.

6.1.5.2 The inboard angle requirements for sidemarkers may be met alternatively for inboard test points at a distance of 4.6 m from the vehicle on a vertical plane that is perpendicular to the longitudinal axis of the vehicle and located midway between the front and rear sidemarker lamps.

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6.2 Color

6.2.1 The color of light from front and intermediate sidemarker lamps shall be yellow per SAE J578.

6.2.2 The color of light from rear sidemarker lamps shall be red per SAE J578.

6.3 Plastic Materials Requirements—Plastic materials used in optical parts shall meet the requirements of SAE J576.

6.4 Design Requirements

6.4.1 A sidemarker lamp may be an independent lamp or grouped, combined, or reciprocally incorporated with any other lamp or reflective device if the requirements for sidemarker lamp and the associated equipment are met.

- 6.4.2 If a sidemarker lamp is reciprocally incorporated or combined with a turn signal lamp or a stop lamp and a replaceable multiple (e.g., two filament) light source is used, the light source retention system shall be designed with an indexing feature in order to insure that the light source without such indexing feature cannot be used. Removable light source retention systems (sockets) shall have an indexing feature so that they cannot be reinserted into lamp housings in random positions, unless the lamp will perform its intended function with random light source orientation.

6.5 Installation Requirements

- 6.5.1 As installed on the vehicle, with all vehicular obstructions considered, sidemarker lamps, shall meet photometric requirements of Table 1.
- 6.5.2 Sidemarker lamps shall be mounted on the permanent structure of the vehicle not less than 380 mm above the road surface measured from the center of the device at the vehicle curb weight.
- 6.5.3 Sidemarker lamps shall be mounted as near as practicable to the front and rear edges of the vehicles to indicate the overall length of the vehicle.
- 6.5.4 An intermediate yellow sidemarker lamps shall be mounted near the midpoint on vehicles 7.6 m or more in overall length.

7. Guidelines

- 7.1 **Installation Guidelines**—The following guidelines apply to sidemarker lamps as used on the vehicle and shall not be considered part of the requirements.

- 7.1.1 The luminous intensity of a lighting device may vary with applied voltage. The electrical wiring in the vehicle should be adequate to supply design voltage to the light source of a lighting device.
- 7.1.2 Performance of lighting device may deteriorate significantly as a result of dirt, grime, ice, and/or snow accumulation on its optical surfaces. Installation of a device on a vehicle should be considered to minimize the effect of these factors.
- 7.1.3 Where it is expected that lighting device must perform in extremely severe environments, such as in off-highway, mining, fuel haulage, or where it is expected that they will be totally immersed in water, the user should specify lamps specifically designed for such use.

- 7.2 **Socket Design Guideline**—For requirements and gages to be used in socket design, refer to SAE J567.

8. Notes

- 8.1 **Marginal Indicia**—The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.