SURFACE VEHICLE RECOMMENDED PRACTICE

J2039	JAN2014

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Superseding J2039 MAY2001

Side Turn Signal Lamps for Long Vehicles

RATIONALE

This document was revised to address the comments received from the ballot of Sep 2, 2008, FEB 2010, APR 2012, & APR2013.

Change reference from Trailers to Vehicles in scope and throughout document.

Table of contents was revised

3.1 New Definition for Turn Signals was added and “normally mounted on the side of a trailer or other large vehicle at or forward of the midpoint, and” deleted from proposed draft definition

Ref to SAE J1690 was moved to 6.5.3.

5.1.5.4 Added Measurement Flashing Mode

6.1.5.2 When a sidemarker lamp is combined with the side turn signal lamp, the side turn lamp intensity shall not be less than five times the luminous intensity of the sidemarker lamp at any test point of Figure 1.

6.1.5.4 Changed “does” to “do”.

6.1.5.5 Ref to the photometry procedure described in SAE J1889 section 6.1.56.4.1 “they” was changed to “the light source”

6.5.3 Clarified operating conditions for the operation of the side turn signal.

7.1.3 Removed Trailer and Replaced with “vehicle 12 m or more in overall length”; removed trailer and added vehicle.

Replaced Table 1 and footnotes with new style Figure 1 and footnotes

Replaced all references to Table1 with Figure 1

A1 Change 576 to 573 C81.63 - Gauges for Electrical Lamp Bases and Lamp Holders

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http://www.sae.org/technical/standards/J2039_201401

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1. SCOPE

This SAE Recommended Practice provides test procedures, requirements, and guidelines for side turn signal lamps intended for use on vehicles 12 m or more in overall length, except pole trailers. Side turn signal lamps conforming to the requirements of this document may be used on other large vehicles such as trucks, truck tractors, buses, and other applications where this type of lighting device is desirable. It is not intended for use on shorter vehicles due to the higher intensity requirements of SAE J2039 compared to the SAE J914 devices.

2. REFERENCES

2.1 Applicable Documents

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 International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J387 Terminology - Motor Vehicle Lighting

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

SAE J578 Color Specification

SAE J588 Turn Signal Lamps for Use on Vehicles Less than 2032 mm in Overall Width

SAE J759 Lighting Identification Code

SAE J1690 Flashers

SAE J1889 L.E.D. Signal and Marking Lighting Devices

SAE J2139 Tests for Lighting Devices, Reflective Devices, and Components Used on Vehicles 2032 mm or More in Overall Width

SAE J2261 Stop Lamps and Front and Rear Turn Signal Lamps for Use on Motor 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 SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J567 Lamp Bulb Retention System for Requirements and Gages Used in Retention System Design

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

2.2.2 TMC Publications

Available from the Technology and Maintenance Council, American Trucking Associations, 2200 Mill Road, Alexandria, VA 22314, Tel: (703) 838-1700, www.truckline.com.

TMC #RP-702 C Trailer Lamp and Reflector Placement

TMC #RP-704B Heavy-Duty Lighting Systems for Trailers

TMC #AV7-1 Heavy-Duty Lighting Systems for Trailers

2.2.3 TTMA Publications

Available from TTMA, 1020 Princess Street, Alexandria, VA 22314-2247, Tel: 703-549-3010, www.ttmanet.org.

TTMA #RP-9 Location of Lighting Devices for Trailers

3. DEFINITIONS

3.1 Side Turn Signal Lamp for Long Vehicles

A lighting device used as part of the turn signal system to indicate a change in direction by means of a flashing warning signal on the side toward which the vehicle operator intends to turn or maneuver.
Side turn signal lamps are supplemental to front- and rear-mounted turn signal lamps (Front and Rear Direction Indicator Lamps) described in SAE J588 or J2261.

4. LIGHTING IDENTIFICATION CODE

Side turn signal lamps for use on vehicles 12 m or more in overall length may be identified by the Code “E” in accordance with SAE J759.

5. TESTS

5.1 SAE J2139 is a part of this document.

The following tests are applicable with modification as indicated.

5.1.1 Vibration Test

5.1.2 Moisture Test

5.1.3 Dust Test

5.1.4 Corrosion Test

5.1.5 Photometry Test

5.1.5.1 Photometric measurements shall be made with the light source of the device at least 3 m from the photometer.

5.1.5.2 The H-V axis of the device shall be taken as the horizontal line through the light source and normal to the longitudinal axis of the vehicle, when the device is mounted in its design position.

5.1.5.3 Photometric measurement steady burning mode- shall be made with the light source steadily burning.

5.1.5.4 Photometric measurement flashing mode - When measuring LED devices, or the need to take precautions to avoid overheating, the lamps may be measured in the flashing mode.

5.1.5.4.1 In the case of LED devices this must be achieved with a switching frequency of 1.5 Hz +/- 0.5 Hz with a pulse width greater than 0.3 seconds, measured at 95% peak light intensity.

5.1.5.4.2 In the case of replaceable filament lamps, they shall be operated at reference luminous flux during on time. In all other cases the voltage required shall be switched with a rise time and fall time less than 0.01 seconds; no overshoot is allowed. In the case of measurements taken in the flashing mode the reported luminous intensity shall be the maximum intensity.

5.1.6 Warpage Test on Devices with Plastic Components

5.2 Color

The lamp assembly color shall be measured in accordance with SAE J578.

5.3 Plastic Materials

The plastic (optical) materials shall be tested in accordance with SAE J576.

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 J2139 or as indicated.

6.1.1 Vibration

6.1.2 Moisture

6.1.3 Dust

6.1.4 Corrosion

6.1.5 Photometry

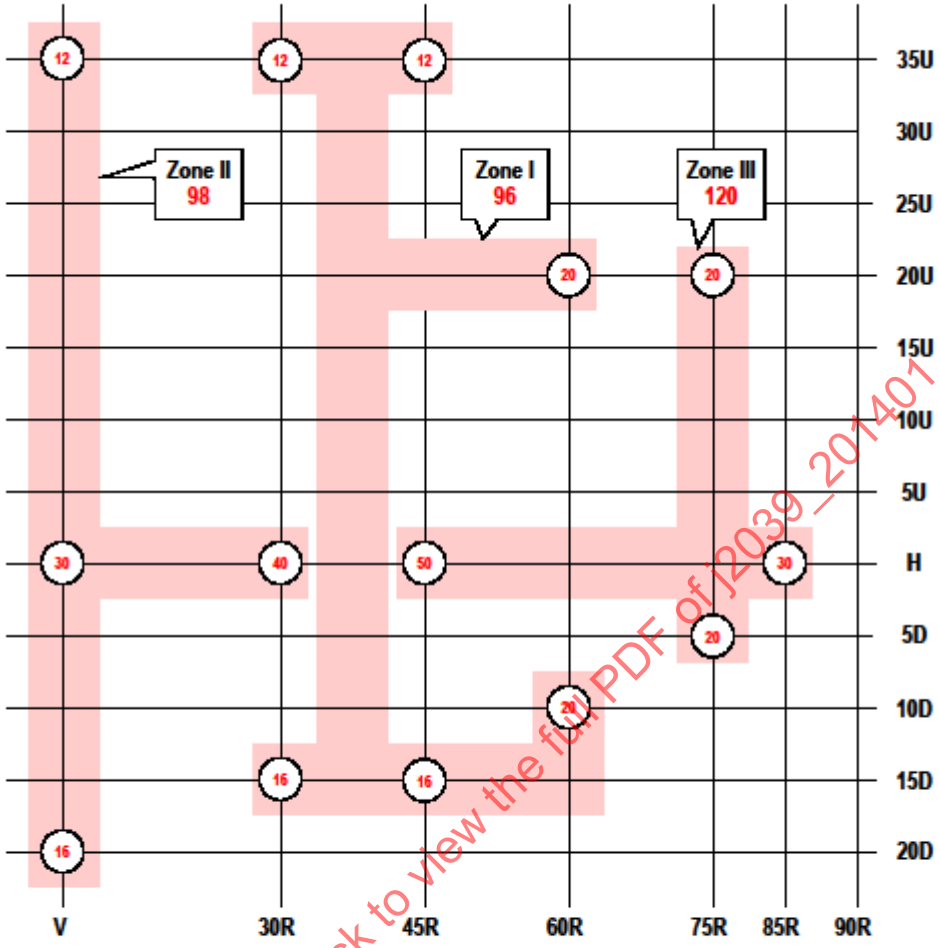
6.1.5.1 The lamp shall be designed to conform to the zone total photometric requirements of Figure 1 and its footnotes. The summation of the luminous intensity measurements at the test points in a zone shall be at least the value shown.

6.1.5.2 When a sidemarker lamp is combined with the side turn signal lamp, the side turn lamp intensity shall not be less than five times the luminous intensity of the sidemarker lamp at any test point of Figure 1

6.1.5.3 If multiple lamps are used for the side turn signal function each lamp shall meet the requirements of this standard.

6.1.5.4 Lamp size, compartment and/or sections do not apply to this standard.

6.1.5.5 Conformance of lamps with LED light sources should use the photometry procedure described in SAE J1889 section 6.1.5



1. The maximum luminous intensity is 200 cd within the photometric pattern shown and 50 cd at 85L to 90L @ H and above.
2. The ratio requirements of 6.1.5.2 apply.
3. This figure shows the zone totals for the curbside lamp requirements The roadside lamp zone totals are symmetrically opposite.
4. The measured values at each test point shall not be less than 60% of the required minimum value shown for that individual test point location.
5. The sum of the luminous intensity measurements at each test point within a zone shall not be less than the zone total shown. The luminous intensity measurements at each discrete test point shown within the corresponding zone are the values used to calculate the specified zone total.
6. The listed maximum shall not be exceeded over any area larger than generated by a 0.5 degree radius within the solid angle defined by the test points.
7. The forward maximum intensity applies throughout the zone of 85 degrees left to 90 degrees left and horizontal and above.

FIGURE 1 – PHOTOMETRIC REQUIREMENTS
MINIMUM LUMINOUS INTENSITY (CD)

6.1.6 Warpage

6.2 Color

The color of the light from the side turn signal lamp shall be yellow as specified in SAE J578.

6.3 Plastic Materials

The plastic materials used in the optical parts shall meet the requirements of SAE J576.

6.4 Design Requirements

6.4.1 If a side turn signal lamp is optically combined with a sidemarker lamp and a replaceable multiple light source is used, the light source retention system shall be designed with an indexing means so that the light source is properly indexed. Removable light source retention systems shall have an indexing feature so that the light source cannot be reinserted into the lamp housing in a random position, unless the lamp will perform its intended function with random light source orientation.

6.5 Installation Requirements

The side turn signal lamp shall meet the following requirements as installed on the vehicle.

6.5.1 Visibility of each side turn signal lamp shall not be obstructed by any part of the vehicle throughout the photometric test pattern of Figure 1 unless the lamp is designed to comply with all photometric and visibility requirements with these obstructions considered. Figure 2 shows the range of the photometry test pattern. The visibility and photometric requirements below the lamp horizontal axis are not applicable when the lower lighted edge of the lamp is less than 750 mm above the ground.

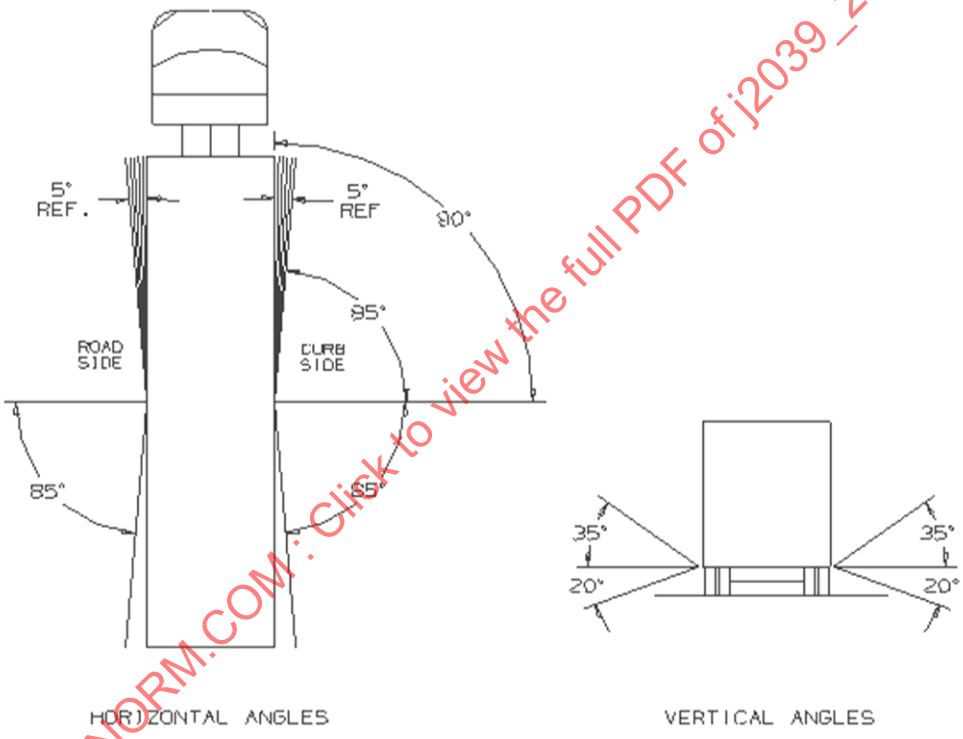


FIGURE 2 - VISIBILITY REQUIREMENTS