SURFACE VEHICLE STANDARD

J2042	FEB2014

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Superseding J2042 SEP2008

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

RATIONALE

Moved SAE J387 Terminology - Motor Vehicle Lighting from 2.2 to 2.1

Moved SAE J1889 L.E.D. Signal and Marking Lighting Devices from 2.2 to 2.1

Removed from 2.2.1 because it was not correct - SAE J567Sidemarker Lamps for Use on Road Vehicles Less than 2032 mm in Overall Width

Changed 3.2 SIDEMARKER LAMP to agree with SAE J387 Lighting devices used to indicate the presence and length of the vehicle by a steady operating, low intensity light when viewed from the side

Changed 3.3 Identification lamps to agree with SAE J387 A group of three lamps in a horizontal row which provide light to the front or rear or both, to identify vehicles 2032 mm or more in overall width

Added 3.5 For additional definitions refer to SAE J387 Terminology-Motor Vehicle Lighting

Added - 5.1.5.5 Lamps utilizing LED light sources should utilize SAE J1889 photometry requirements

Added - 5.1.6.1 Lamps utilizing LED light sources should utilize SAE J1889 thermal cycle test instead of the J2139 warpage test.

Added 6.1.6.1 Lamps utilizing LED light sources should use SAE J1889 Thermal Cycle test instead of the SAE J2139 Warpage test.

Added following statement to 6.5.3 - having a light center spacing of not less than 150mm nor more than 300mm apart.

1. SCOPE

This SAE Standard provides test procedures, requirements, and guidelines for clearance, sidemarker, and identification lamps intended for use on vehicles 2032 mm or more in overall width. A clearance lamp, sidemarker lamp, or an identification lamp conforming to the requirements of this document may be used on vehicles less than 2032 mm in overall width.

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http://www.sae.org/technical/standards/J2042_201402

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. 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 or 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 J 1889 L.E.D. Signal and Marking Lighting Devices

SAE J2139 Test for Signal and Marking Devices 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 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 J592 Clearance, Sidemarker, and Identification Lamps

2.2.2 Other Publications

Attention is called to the following documents for additional information on lamp design and installation requirements.

2.2.2.1 FMVSS Publications

Available from the Superintendent of Documents, U.S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9320.

Federal Motor Vehicle Safety Standards 49CFR 571.108

Federal Motor Carrier Safety Administration 49CFR Part 393 Subpart B

2.2.2.2 Truck Trailer Manufacturers Association Publication

Available from Truck Trailer Manufacturers Association, 1020 Princess Street, Alexandria, VA 22314-2247, 703-549-3010, www.ttmanet.org.

Truck Trailer Manufacturers Association RP-9 Location of Lighting Devices

2.2.2.3 Technology and Maintenance Council Publication

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

3. DEFINITIONS

3.1 CLEARANCE LAMP

A clearance lamp provides light to the front or rear of a vehicle to indicate the overall width and height.

3.2 SIDEMARKER LAMP

Lighting devices used to indicate the presence and length of the vehicle by a steady operating, low intensity light when viewed from the side.

3.3 IDENTIFICATION LAMP

A group of three lamps in a horizontal row which provide light to the front or rear or both, to identify vehicles 2032 mm or more in overall width.

3.4 COMBINATION CLEARANCE AND SIDEMARKER LAMP

A combination clearance and sidemarker lamp is a single lamp which simultaneously meets the requirements of a clearance and a sidemarker lamp.

3.5 For additional definitions refer to SAE J387 Terminology-Motor Vehicle Lighting

4. LIGHTING IDENTIFICATION CODE

Clearance, sidemarker, or identification lamps may be identified by the code “P3”; combination clearance and sidemarker lamps may be identified by the code “PC2,” 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

5.1.2 Moisture

5.1.3 Dust

5.1.4 Corrosion

5.1.5 Photometry

5.1.5.1 The photometric test shall be made at a device distance of at least 3 m from the photometer.

5.1.5.2 The H-V axis of a clearance or identification lamp shall be taken to be parallel to the longitudinal axis of the vehicle, when the device is mounted in its design position.

5.1.5.3 The H-V axis of a sidemarker lamp shall be taken to be perpendicular to a vertical plane passing through the longitudinal axis of the vehicle, when mounted in its design position.

5.1.5.4 The H-V axis of a combination clearance and sidemarker lamp shall be taken to be parallel to the longitudinal axis of the vehicle when testing the clearance lamp function, and perpendicular to a vertical plane passing through the longitudinal axis of the vehicle when testing the sidemarker lamp function, when the device is mounted in its design position.

5.1.5.5 Lamps utilizing LED light sources should utilize SAE J1889 Photometry Procedures

5.1.6 Warpage Test on Devices with Plastic Components

5.1.6.1 Lamps utilizing LED light sources should utilize SAE J1889 Thermal Cycle test instead of the J2139 warpage test.

5.2 Color

SAE J578 is a part of this document.

5.3 Plastic Materials

SAE J576 is a 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 J2139 or as indicated.

6.1.1 Vibration

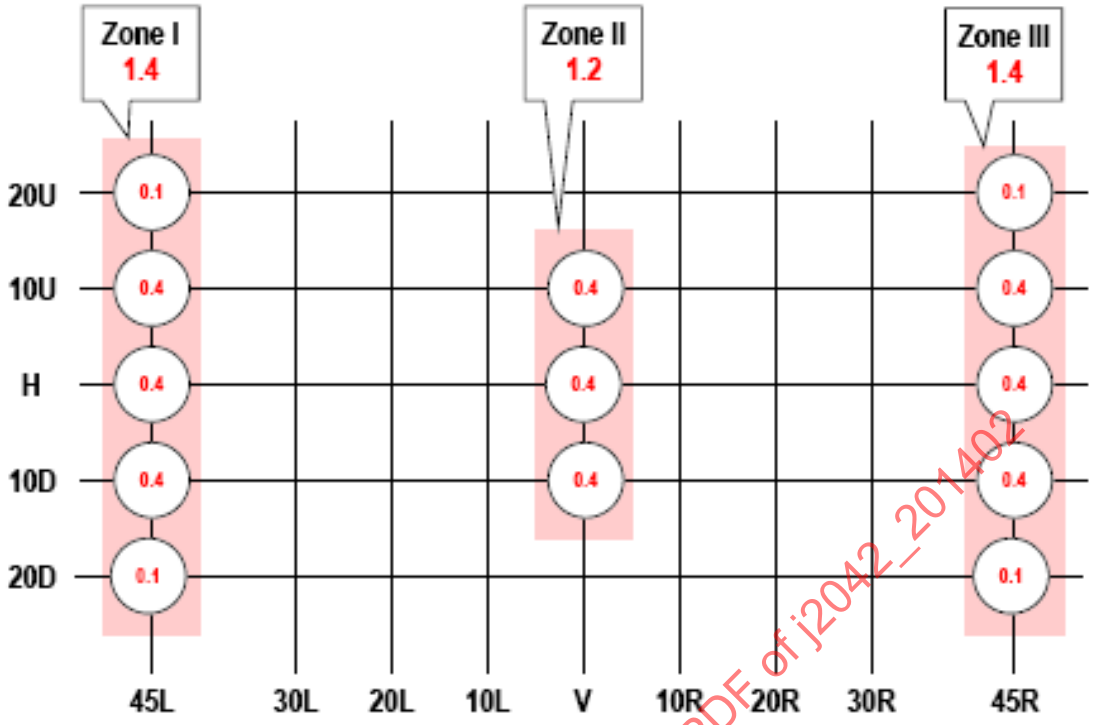
6.1.2 Moisture

6.1.3 Dust

6.1.4 Corrosion

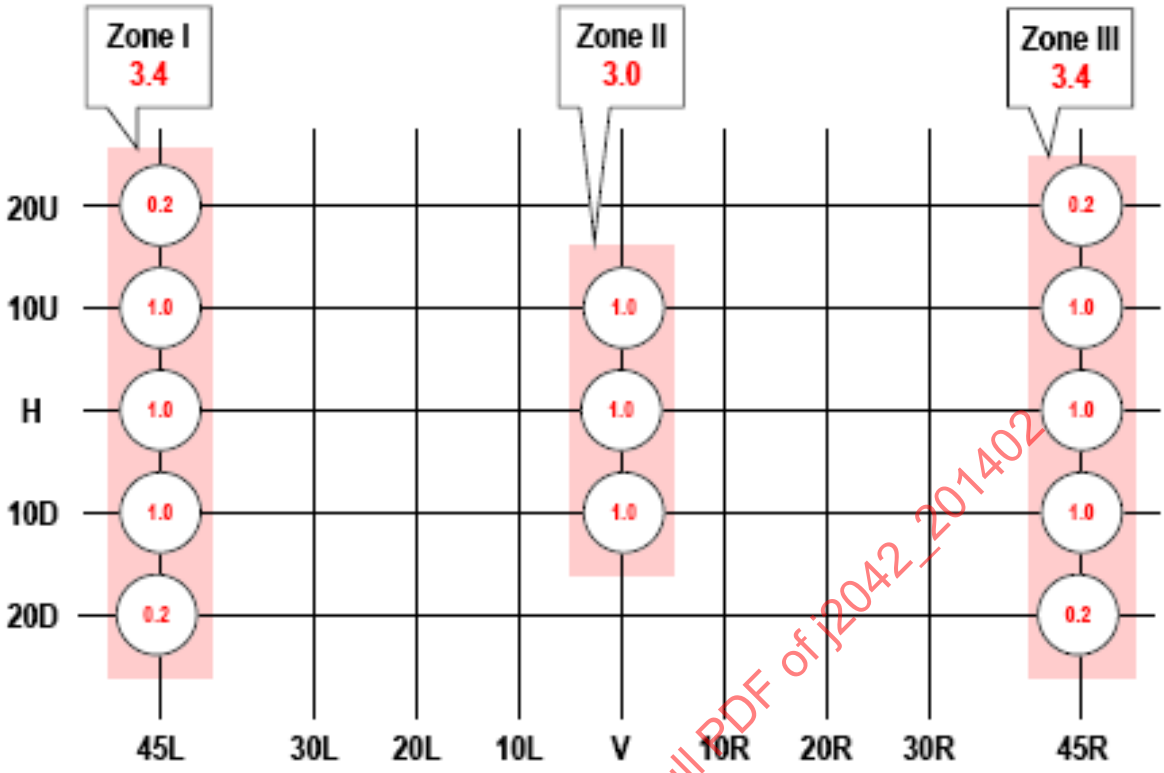
6.1.5 Photometry

The lamp shall be designed to conform to the zone total photometric requirements of Figure 1 (red) and Figure 2 (yellow) and their footnotes, except that front yellow clearance and identification lamps that are roof mounted on the vehicle need not meet the photometric requirements at 20 degrees down; 45 degrees left to 45 degrees right. Zone totals should be reduced by the values at these test points, as listed in Figure 2, when testing a lamp for this application. The summation of the luminous intensity measurements at the test points in a zone shall be at least the value shown.



1. The maximum luminous intensity for rear lamps only is 18 cd within the photometric pattern shown.
2. Ratio requirements of 6.1.5.1 apply.
3. Photometric requirements of 6.1.5 apply.
4. Combination clearance and sidemarker lamps shall conform with both clearance and sidemarker lamp photometric requirements.
5. 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.
6. 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.
7. The listed maximum shall not be exceeded over any area larger than that generated by a 0.5 radius within the solid angle defined by the test points. When red clearance lamps are optically combined with stop lamp and turn signal lamps, the maximum applies only on or above the horizontal.

FIGURE 1 - PHOTOMETRIC REQUIREMENTS (RED)
Minimum Luminous Intensity (cd)



1. Ratio requirements of 6.1.5.1 apply.
2. Photometric requirements of 6.1.5 apply.
3. Combination clearance and sidemarker lamps shall conform with both clearance and sidemarker lamp photometric requirements.
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.

FIGURE 2 - PHOTOMETRIC REQUIREMENTS (YELLOW)
Minimum Luminous Intensity (cd)

6.1.5.1 When a clearance lamp is combined with a stop lamp or a turn signal lamp, the stop lamp or turn signal lamp intensity shall be not less than three times the luminous intensity of the clearance lamp at any test point, except that at H-V, H-5L, H-5R, and 5U-V, the stop lamp or turn signal lamp intensity shall be not less than five times the luminous intensity of the clearance lamp.

6.1.6 Warpage

6.1.6.1 Lamps utilizing LED light sources should meet SAE J1889 Thermal Cycle test.

6.2 Color

The color of the light from the front clearance lamps, the front identification lamps, and the front and intermediate sidemarker lamps shall be yellow.

The color of the light from the rear clearance lamps, rear identification lamps, and the rear sidemarker lamp (aka a tracking lamp on a trailer) shall be red.

The color shall meet the requirements of SAE J578.