

	SURFACE VEHICLE RECOMMENDED PRACTICE	
	SAE	J1432 MAY2010
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(R) Rear High Mounted Stop Lamps and Rear High Mounted Turn Signal Lamps for Use on Vehicles 2032 mm or More in Overall Width		

RATIONALE

Moved SAE J1889 to referenced documents from related documents, and corrected title

Removed 2.1.2 Other Publications and moved to 2.2.4

Corrected Reference to Federal Highway Administration to Federal Motor Carrier Safety Administration

Added 2.2.4 TMC and TTMA publications, also added updated information document availability

Changed definition 3.1 and 3.2 to align better with J387

Added 3.2.3 statement that J387 is part of this document

Changed 5.1.5 to standard Warpage Test

Added 5.1.6.2 statement to photometry test to advise document users on the use of J1889 "Photometric measurements of lamps with LED light sources should use the photometry procedure described in SAE J1889 section 5.1.5."

Added 5.4 Dock Pad Heat Test

Changed 6.1.5 to standard Warpage test

Replaced Table 1 with Figures 1 and 2 as requested by Lighting Advisory Group, and changed all related references to Table 1.

Added 6.4 Added criteria for new Dock pad heat test

Sections 6.5 and 6.6 were renumbered

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1. SCOPE

This SAE Recommended Practice provides test procedures, requirements, and guidelines for high-mounted stop lamps and high-mounted turn signal lamps intended for use on vehicles 2032 mm or more in overall width. This document applies to trucks, motor coaches, van type trailers, and other vehicles with permanent structure greater than 2800 mm high.

This document does not apply to school buses, truck tractors, pole trailers, flat-bed trailers, pick-up truck with dual wheels and trailer converter dollies. The purpose of the high-mounted stop lamp(s) and high-mounted turn signal lamp(s) is to provide a signal over intervening vehicles to the driver of following vehicles.

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 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 J1889	L.E.D. Signal and Marking Lighting Devices
SAE J2139	Tests for Signal and Marking Devices 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
SAE J1957	Center High Mounted Stop Lamp Standard for Vehicles Less than 2032 mm in Overall Width
SAE J2577	Heavy Duty Lamp Electrical Connector Standard

2.2.2 Canadian Federal Publications

Available from Transport Canada, Motor Vehicle Standards and Research Branch, 330 Sparks Street, Ottawa, Ontario K1A 0N5, Canada, Tel: 613-990-2309, www.tc.gc.ca.

Canadian Motor Vehicle Safety Standard-108 (CMVSS-108)

2.2.3 FMVSS Publications

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

Federal Motor Vehicle Safety Standard 49 CFR 571.108

Federal Motor Carrier Safety Administration 49 CFR PART 393 Subpart B

2.2.4 TMC and TTMA Publications

Available from the Truck Trailer Manufacturers Association 1020 Princess Street, Alexandria, VA 22314-2247, Tel: 703-838-1700, <http://www.ttmanet.org/publications.html>.

TTMA #RP-9 Location of Lighting Devices for Trailers

Available from the Technology and Maintenance Council, American Trucking Associations, 950 North Glebe Road, Suite 210, Arlington, VA 22203-4181, Tel: (703) 838-1700, www.truckline.com.

TMC #RP-702A Trailer Lamp and Reflector Placement

3. DEFINITIONS

3.1 High-Mounted Stop Lamp (HMSL)

A lamp supplemental to the required Stop Lamp as described in SAE J2261 and defined in SAE J387 but is mounted at any distance above the required Stop Lamp.

3.2 High-Mounted Turn Signal Lamp (HMTSL)

A lamp supplemental to the required Turn Signal Lamp as described in SAE J2261 and defined in SAE J387 but is mounted at any distance above the required Turn Signal Lamp.

3.3 The terminology contained in SAE J387 shall apply to this standard.

4. LIGHTING IDENTIFICATION CODE

High-mounted stop lamps and high-mounted turn signal lamps for use on vehicles 2032 mm or more in overall width may be identified by the code U in accordance with SAE J759.

5. TESTS

5.1 The device shall be tested according to the procedures specified in SAE J2139. 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 Warpage Test

5.1.6 Photometry

5.1.6.1 Photometric measurement shall be made with the light source of the device at least 3 m from the photometer. The H-V axis of the device shall be taken parallel to the longitudinal axis of the vehicle. Photometric measurements shall be made with the light source steady burning.

5.1.6.2 Photometric measurements of lamps with LED light sources should use the photometry procedure described in SAE J1889 section 5.1.5

5.2 Color

SAE J578 is a part of this document.

5.3 Plastic Materials

SAE J576 is a part of this document.

5.4 Dock Pad Heat Test

5.4.1 The lamp shall have its light emitting lens surface pressed into a vinyl covered (PVC) cushion so that the light emitting surface is fully enveloped by the vinyl cover. The cushion shall consist of a pure vinyl (PVC) covering over padding consisting of 20 lb density urethane foam, 6 inches thick.

5.4.2 The lamp shall be positioned in the normal mounting position as used on the vehicle.

5.4.3 All light sources of the lamp shall be powered for the duration of the test. The lamp(s) shall be operated at 12.8 V for a 12-V system, and 25.6 V for a 24-V system.

5.4.4 The test shall be conducted at an ambient temperature of $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$.

5.4.5 The duration of the test shall be 1 h.

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 Warpage

Upon completion of the test, the device shall be visually examined for warpage of plastic components. If warpage is observed that could result in failure of other tests contained in this document, the test(s) shall be performed on the warped sample to ensure compliance.

6.1.6 Photometry

6.1.6.1 The lamp shall be designed to conform to the zone total photometric requirements of Figures 1 for red lamps or Figure 2 for yellow lamps including footnotes. The summation of the luminous intensity measurements at the test points in a zone shall be at least the value shown.

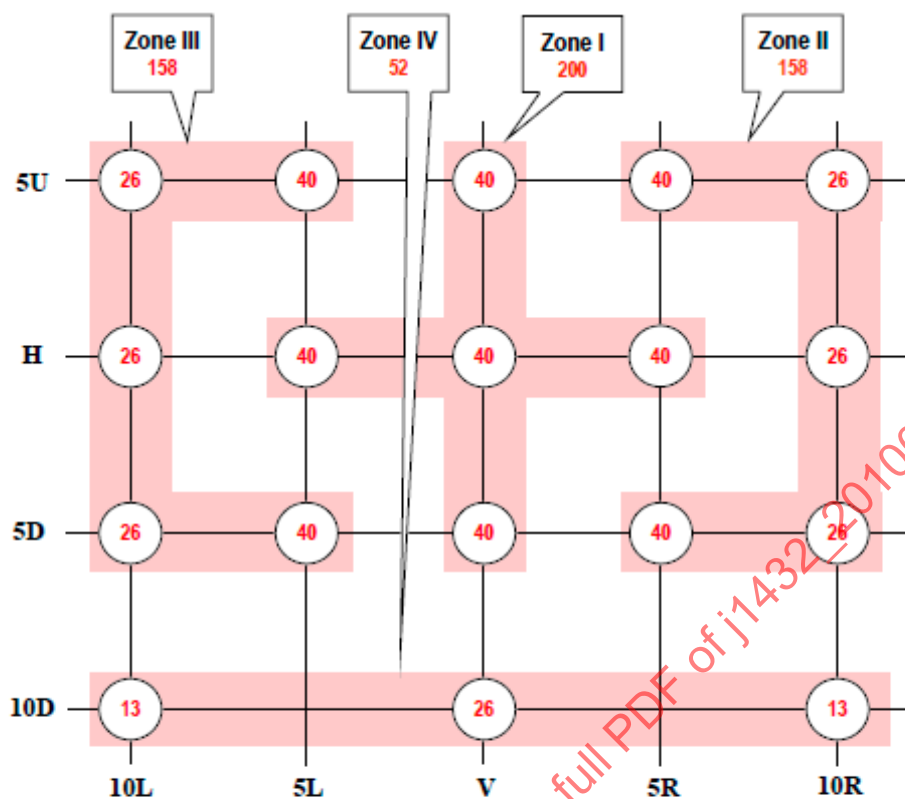
6.1.6.1.1 A HMSL and/or HMTSL combined with a clearance lamp shall have an intensity not less than three times the luminous intensity of the clearance lamp at any test point, except that at H-V, H-5L, H-5R, 5U-V, and 5D-V, the combined lamp's intensity shall be not less than five times the luminous intensity of the clearance lamp.

6.1.6.1.2 When the maximum intensity of the clearance lamp is located below the horizontal and is within an area generated by a 1.0 degree radius around a test point, the ratio for the test point may be computed using the lowest value of the clearance lamp's luminous intensity within the generated area.

6.1.6.1.3 A HMSL combined with identification lamp(s) shall have an intensity not less than three times the luminous intensity of the identification lamp at any test point, except that at H-V, H-5L, H-5R, 5U-V, and 5D-V, the combined lamp's intensity shall be not less than five times the luminous intensity of the identification lamp.

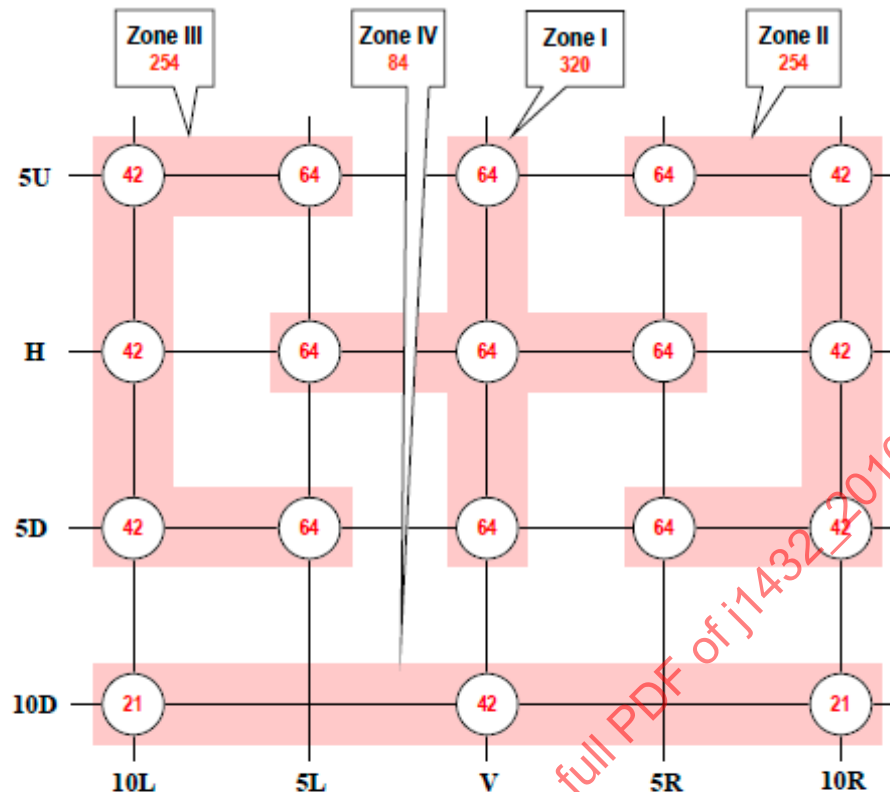
6.1.6.1.4 When the maximum intensity of the identification lamp is located below the horizontal and is within an area generated by a 1.0 degree radius around a test point, the ratio for the test point may be computed using the lowest value of the identification lamp(s) luminous intensity within the generated area.

6.1.6.2 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 130 cd at H and below.
2. The Measured value at each 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 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.
4. The listed maximum shall not be exceeded over any area larger than that generated by a 0.5 degree radius within the solid angle defined by the test points.
5. Ratio requirements of 6.1.6.1.1 apply.
6. Maximum intensity requirements of 6.1.6.2.2 and 6.1.6.1.4 apply.

FIGURE 1- PHOTOMETRIC REQUIREMENTS (RED)
MINIMUM LUMINOUS INTENSITY (cd)



1. The maximum luminous intensity is 300 cd at H and below.
2. The Measured value at each 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 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.
4. The listed maximum shall not be exceeded over any area larger than that generated by a 0.5 degree radius within the solid angle defined by the test points.
5. Ratio requirements of 6.1.6.1.1 apply.
6. Maximum intensity requirements of 6.1.6.1.2 and 6.1.6.1.4 apply.

FIGURE 2 PHOTOMETRIC REQUIREMENTS (YELLOW)
MINIMUM LUMINOUS INTENSITY (cd)

6.2 Color

The color of the light from the high-mounted stop lamp or high-mounted turn signal lamp shall be as specified in SAE J578 for the following combinations.

HMSL combined with Identification lamps—Red

HMSL combined with clearance lamps—Red

HMTSL combined with clearance lamp(s)—Red

HMTSL mounted adjacent to the clearance lamp(s) and the required turn signal lamps are yellow—Yellow

6.3 Plastic Materials

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

6.4 Dock Pad Heat Test

Upon completion of the test, the device shall be visually examined for warpage of plastic components. If warpage is observed that could result in failure of other tests contained in this document, the test(s) shall be performed on the warped sample to ensure compliance.