

	SURFACE VEHICLE STANDARD	SAE	J593 AUG2010
		Issued 1947-08 Revised 2010-08	
		Superseding J593 SEP2005	
Backup Lamp (Reversing Lamp)			

RATIONALE

Figure 1 is changed to a new format that is consistent with other SAE documents.

1. SCOPE

This SAE Standard provides installation requirements, test procedures, design guidelines, and performance requirements for backup/reversing lamp.

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 J567	Light Source Retention System
SAE J575	Test Methods and Equipment for Lighting Devices for Use on Vehicles Less than 2032 mm in Overall Width
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 J1330	Photometry Laboratory Accuracy Guidelines

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3. DEFINITIONS

3.1 BACKUP LAMP

A lighting device used to provide illumination behind the vehicle and to provide a warning signal to pedestrians and other drivers when the vehicle is backing up (reversing) or is about to back up.

3.2 POINT OF VISIBILITY

Any point on the lens surface which is within an area bounded by the intersection of the lens surface with a 25 mm diameter cylinder, the centerline of which passes through the light source center and is oriented horizontally and parallel with the longitudinal axis of the vehicle.

4. LIGHTING IDENTIFICATION CODE

Backup Lamps may be identified by the code "R" in accordance with SAE J759.

5. TESTS

5.1 SAE J575 is a part of this report. The following tests are applicable with modifications 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 Photometric Test

5.1.5.1 Photometric tests shall be made with the photometer at a distance of at least 3 m from the lamp. The H-V Axis shall be taken as the horizontal line through the light source and parallel with the longitudinal axis of the vehicle.

5.1.5.2 Photometric measurements shall be made with the bulb filament steadily burning.

5.1.6 Warpage Test (on Devices with Plastic Components)

5.2 Color Test

SAE J578 is part of this report.

5.3 Materials Test

SAE J576 is part of this report.

6. REQUIREMENTS

6.1 A device when tested in accordance with the test procedures specified in Section 5 shall meet the requirements as specified in SAE J575 unless otherwise noted.

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 lamps of a two-lamp system shall be designed to conform to one of the following photometric requirements:

a. Each lamp of the pair is tested to the photometric requirements of Figure 1;

OR

b. When two lamps of the same or symmetrically opposite designs are used, the photometric readings along the vertical axis and the average of the readings for the same angles left or right of the vertical axis for one lamp may be used to determine compliance with the requirements of Figure 1.

OR

c. When two lamps of differing designs are used, they shall be tested individually, and the photometric values added shall meet twice the zone total candela requirements of Figure 1.

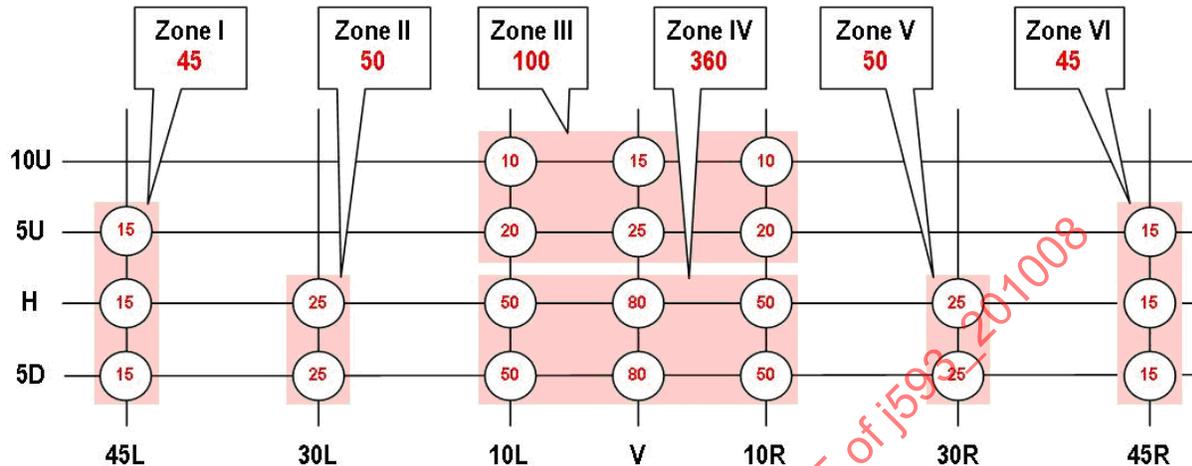
6.1.5.2 When only one backup lamp is used on the vehicle, it shall be designed to conform to twice the photometric requirements of Figure 1 and its footnotes.

6.1.5.3 If a backup lamp has portions of its lens which project non-white light, that light shall be excluded from measurement made to determine compliance with 6.1.5.1 and 6.1.5.2. The lamp or lamps shall be designed to conform to the photometric requirements of this document with white light as defined by 6.2.

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6.1.6 Warpage

SAE J575.



The maximum luminous intensity is 300 cd per lamp at H and above for a two-lamp system and 500 cd at H and above for a single-lamp system.

1. Photometric Requirements of 6.1.5.1 (two-lamp system) apply.
2. Photometric Requirements of 6.1.5.2 (one-lamp) apply.
3. Non-white light exclusions of 6.1.5.3.
4. 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.
5. 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. 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 1 - PHOTOMETRIC PERFORMANCE REQUIREMENTS
Minimum Luminous
Intensity(cd)

6.2 Color

The color of the light from a backup lamp shall be white, as specified in SAE J578. A backup lamp may project incidental red, yellow, or white light through the reflectors or lenses that are adjacent to, close to, or part of the lamp assembly. If a lamp has portions of its lens which project non white light, that light shall be regarded as incidental if, when only the nonwhite light is measured at each test point specified in Figure 1, the sum of such measurements does not exceed 20% of the sum of the test point measurements of the total light output (white plus nonwhite).

6.3 Material Requirements

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

6.4 Installation Requirements

- 6.4.1 Backup lamps shall be mounted so that the point of visibility of at least one of the lamps is visible from any eye point that is (a) 0.6 to 1.8 m above the horizontal plane on which the vehicle is standing and (b) rearward of a vertical plane perpendicular to the longitudinal axis of the vehicle, 0.9 m to the rear of the vehicle and extending 0.9 m beyond each side of the vehicle.