SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE STANDARD

SAE J592 | REAF. MAR90

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Reaffirming J592

Submitted for recognition as an American National Standard

CLEARANCE, SIDE MARKER, AND IDENTIFICATION LAMPS

FOREWORD

This reaffirmed document has been changed to reflect the new SAE Technical Board Format.

1. SCOPE:

This SAE Standard provides test procedures, requirements, and guidelines for clearance, side marker, and identification lamps.

2. REFERENCES:

2.1 Applicable Documents:

SAE J575, Tests for Motor Vehicle Lighting Devices and Components

SAE J576, Plastic Materials for use in Optical Parts such as Lenses and Reflectors of Motor Vehicle Lighting Devices

SAE J567, Lamp Bulb Retention System

SAE J578, Color Specification for Electric Signal Lighting Devices

SAE J759, Lighting Identification Code

2.2 Definitions:

2.2.1 CLEARANCE LAMPS: Lamps mounted on the permanent structure of the vehicle as near as practicable to the upper left and right extreme edges that provide light to the front or rear to indicate the overall width and height of the vehicle.

2.2.2 SIDE MARKER LAMPS: Lamps mounted on the permanent structure of the vehicle as near as practicable to the front and rear edges, that provide light to the side to indicate the overall length of the vehicle. Additional lamps may also be mounted at intermediate locations on the sides of the vehicle.

2.2.3 COMBINATION CLEARANCE AND SIDE MARKER LAMPS: Single lamps which simultaneously fulfill the performance requirements of clearance and side marker lamps.

2.2.4 IDENTIFICATION LAMPS: Lamps used in groups of three, in a horizontal row, that provide light to the front or rear or both, having lamp centers that are spaced not less than 150 mm nor more than 310 mm apart, mounted on the permanent structure as near as practicable to the vertical centerline and the top of the vehicle to identify vehicles 2032 mm or more in overall width.

3. LIGHTING IDENTIFICATION CODE:

Clearance, side marker, or identification lamps may be identified by the code "P2," and combination clearance and marker lamps may be identified with the code "PC," and in accordance with SAE J759.

4. TESTS:

4.1 SAE J575 is a part of this report. The following tests are applicable with the modifications as indicated:

4.1.1 Vibration Test

4.1.2 Moisture Test

4.1.3 Dust Test

4.1.4 Corrosion Test

4.1.5 Photometry Test

4.1.5.1 Photometric tests shall be made at a lamp distance of at least 3 m. The H-V axis of a clearance lamp shall be taken as parallel with the longitudinal axis of the vehicle. The H-V axis of a combination clearance and side marker lamp shall be taken as parallel with the longitudinal axis of the vehicle when measuring clearance lamp test points, and normal to this vehicle axis when measuring side marker test points. In all cases, the H-V axis shall be taken as parallel to the surface on which the vehicle stands.

4.1.6 Warpage Test on Devices With Plastic Components

4.2 Color Test:

SAE J578 is a part of this report.

5. REQUIREMENTS:

5.1 Performance Requirements:

A device which, when tested in accordance with the test procedures specified in Section 4, shall meet the following requirements:

5.1.1 Vibration - SAE J575

5.1.2 Moisture - SAE J575

5.1.3 Dust - SAE J575

5.1.4 Corrosion - SAE J575

5.1.5 Photometry - SAE J575

5.1.5.1 The lamp under test shall meet the photometric performance requirements contained in Table 1 and its footnotes. The summation of the luminous intensity measurements at the specified test points in a zone shall be at least the value shown.

5.1.6 Warpage - SAE J575

5.1.7 Color: The color of light from front clearance lamps, front and intermediate side marker lamps, and front identification lamps shall be yellow. The color of light from rear clearance, side marker, and identification lamps shall be red. Color shall be as specified in SAE J578.

5.2 Materials Requirements:

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

5.3 Design Requirements:

5.3.1 A clearance lamp and/or a side marker lamp may be combined optically with a turn signal and/or a stop lamp. A clearance lamp may not be combined optically with a tail lamp or an identification lamp.

5.3.2 If a clearance lamp or a side marker lamp is optically combined with a turn signal lamp or a stop lamp and a two-light source (two filament) bulb is used, the bulb shall have an indexing base and the socket shall be designed so that bulbs with nonindexing bases cannot be inserted. In addition, removable 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. GUIDELINES:

TABLE 1 - Photometric Requirements

Zone	Test Points[a,b] (degrees)	Minimum Luminous Intensities (cd) See Notes c,d,e Red	Minimum Luminous Intensities (cd) See Notes c,d,e Yellow
1	45L-10U 45L-H 45L-10D	0.75	1.86
2	V-10U V-H V-10D	0.75	1.86
3	45R-10U 45R-H 45R-10D	0.75	1.86

[a]Maximum luminous intensities of red clearance and identification lamps shall not exceed 18 cd within the solid cone angle 45L to 45R and 10U to 10D. When red clearance lamps are optically combined with stop or turn signal lamps, the maximum applies only on or above horizontal. The maximum luminous intensity shall not be exceeded over any area larger than that generated by a 0.5 degree radius within the solid cone angle prescribed by the test points.

[b]The requirements for side markers used on vehicles less than 2032 mm wide need only be met 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 side marker lamps.

[c]When calculating zone totals, the measured value at each test point shall not be less than 60% of the minimum values in Table 2.

[d]Combination clearance and side marker lamps shall conform with both clearance and side marker photometric performance requirements.

6.1 Photometric Design Guidelines:

Photometric design guidelines for clearance, side marker, and identification lamps, when tested in accordance with 4.1.5 of this report, are contained in Table 2 and its footnotes.

6.2 Installation Guidelines:

The following guidelines apply to clearance, side marker, and identification lamps as used on the vehicle and shall not be considered part of the requirements.

6.2.1 The luminous intensity of incandescent filament bulbs will vary with applied voltage. The electrical wiring in the vehicle should be adequate to supply design voltage to the lamp filament.

6.2.2 Performance of lamps can deteriorate significantly as a result of dirt, grime, and/or snow accumulation on their optical surfaces. Installation of lamps on vehicles should be considered to minimize the effect of these factors.

6.2.3 Where it is expected that lamps 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.

TABLE 2 - Photometric Design Guidelines

Test Points (degrees)		Minimum Luminous Intensity (cd) See Note b Red[a]	Minimum Luminous Intensity (cd) See Note b Yellow
	45L	0.25	0.62
10U	V	0.25	0.62
	45R	0.25	0.62
	45L	0.25	0.62
H	V	0.25	0.62
	45R	0.25	0.62
	45L	0.25	0.62
10D	V	0.25	0.62
	45R	0.25	0.62

[a]The maximum design value of a lamp intended for the rear of the vehicle should not exceed the listed design maximum over any area larger than that generated by 0.25 degree radius within the solid angle defined by the test points in Table 2.
[b]For combined clearance and side marker lamps, both the clearance and side marker photometric design values should apply.

APPENDIX A

A.1. As a matter of additional information, attention is called to SAE J567 for requirements and gages used in socket design.

RATIONALE:

Not applicable.

RELATIONSHIP OF SAE STANDARD TO ISO STANDARD:

Not applicable.

REFERENCE SECTION:

SAE J575, Tests for Motor Vehicle Lighting Devices and Components

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

SAE J567, Lamp Bulb Retention System

SAE J578, Color Specification for Electric Signal Lighting Devices

SAE J759, Lighting Identification Code

APPLICATION:

This SAE Technical Report provides test procedures, requirements, and guidelines for clearance, side marker, and identification lamps.

COMMITTEE COMPOSITION:

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