

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1424

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Submitted for recognition as an American National Standard

CARGO LAMPS FOR USE ON VEHICLES UNDER 12 000 LB GVWR

1. Scope—This SAE Recommended Practice provides test procedures, performance requirements, design guidelines, and installation requirements for cargo lamps that are mounted on the exterior of vehicles weighing under 12 000 lb GVWR (Gross Vehicle Weight Rating).

2. References

2.1 Applicable Documents—The following publications form a part of this specification to the extent specified herein. The latest issues of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J567—Lamp Bulb Retention System

SAE J575—Tests for Motor Vehicle Lighting Devices and Components

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

SAE J578—Color Specification

SAE J759—Lighting Identification Code

2.2 Definition

2.2.1 A Cargo Lamp(s) is a supplemental lamp mounted on the exterior of a vehicle weighing under 12 000 lb GVWR for the purpose of providing illumination to load and unload cargo in an environment of otherwise insufficient light.

3. Lighting Identification Code—A cargo lamp for use on vehicles weighing less than 12 000 lb GVWR may be identified with the code "G" 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—In addition to the test procedures in SAE J575, the following apply:

4.1.5.1 Photometric measurements shall be made with the light source of the lamp at a distance of at least 3 m from the photometer.

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4.1.6 WARPAGE TEST ON DEVICES WITH PLASTIC COMPONENTS—The device shall be operated with the bulb burning steadily during the test period.

4.2 Color Test—SAE J578 is a part of this report.

5. Requirements

5.1 Performance Requirements—A device 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 A single lamp mounted on a test stand to simulate mounting attitude on the vehicle shall meet the photometric performance requirements contained in Table 1—Photometric Performance Requirements and its footnotes.

5.1.6 WARPAGE TEST—SAE J575

5.2 Color—The color of the light from a cargo lamp shall be white as specified in SAE J578.

5.3 Material Requirements—Plastic materials used in optical parts shall meet the requirements of SAE J576.

6. Guidelines

6.1 Photometric Design Guidelines for cargo lamps, when tested in accordance with 4.1.5 of this report, are contained in Table 2—Photometric Design Guidelines.

6.2 Installation Guidelines

6.2.1 These guidelines apply to the device as used on the vehicle and are not a part of the design requirements, performance requirements, or test procedures.

6.2.1.1 The cargo lamp shall be wired in one of the following ways:

- a. Into the vehicle dome light circuit so that it cannot be energized unless the dome light is also energized, or
- b. In such a manner that it can be turned on only when the vehicle is stopped, or
- c. Independent with a separate on-off switch and a dash-mounted telltale lamp with an appropriate label to indicate the lamp operation.

6.2.1.2 The cargo lamp shall be mounted on the rear of the vehicle, or the vehicle cab, or in the cargo bed. One or more lamps may be used.

TABLE 1—PHOTOMETRIC PERFORMANCE REQUIREMENTS²

Zone	Test Points (degrees)	Minimum Luminous Intensity ¹ Zone (cd)
1	10D - V	67
	40D - V	
	40D - 10L	
	40D - 10R	
2	10D - 10L	69
	10D - 30L	
	40D - 30L	
	70D - 30L	
	70D - 10L	
3	10D - 10R	69
	10D - 30R	
	40D - 30R	
	70D - 30R	
	70D - 30R	
	70D - 10R	

¹ The measured value at each test point shall not be less than 60% of the minimum value for that test point in Table 2.

² The maximum per lamp at 1.5 degrees and above shall be 300 cd.

TABLE 2—PHOTOMETRIC DESIGN GUIDELINES

Test Points (degrees)	Luminous Intensity (cd)
1.5D & Above	300 max
10D - V	22 min
10D - 10L	22 min
10D - 10R	22 min
10D - 30L	22 min
10D - 30R	22 min
40D - V	15 min
40D - 10L	15 min
40D - 10R	15 min
40D - 30L	15 min
40D - 30R	15 min
70D - 10L	5 min
70D - 10R	5 min
70D - 30L	5 min
70D - 30R	5 min

APPENDIX A

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

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Rationale—The purpose of a cargo lamp is to illuminate areas where there is insufficient light to allow convenient loading and unloading of cargo. This type of device has been offered by manufacturers for years; however, because they were mounted on the exterior of the vehicle certain States required that they be certified as back-up lamps since there was no proper SAE Specification. The purpose of this SAE Recommended Practice is to establish requirements more appropriate to the actual use of these devices.

Typically lighting devices have been classified into groups that are appropriate for vehicles either over or under 80 inches in overall width. However, in the case of this lamp such a classification would allow cargo lamps to be used on a typical pickup bed truck but would preclude them from use on basically the same truck with tandem wheels. Therefore, a more appropriate classification has been made at the 12 000 lb GVWR rating.

In order to assure that the device is not projecting white light into a following driver's eyes while the vehicle is operating, the wiring of the cargo lamp is specified.

The minimum photometric values were established from the cargo lamp observations conducted by the SAE Lighting Committee on September 9, 1981, in Dearborn, MI.

Relationship of SAE Standard to ISO Standard—Not applicable.

Application—This SAE Recommended Practice provides test procedures, performance requirements, design guidelines, and installation requirements for cargo lamps that are mounted on the exterior of vehicles weighing under 12 000 lb GVWR.

Reference Section

SAE J567—Lamp Bulb Retention System

SAE J575—Tests for Motor Vehicle Lighting Devices and Components

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

SAE J578—Color Specification

SAE J759—Lighting Identification Code

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