

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1424

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(R) Cargo Lamps for Use On Vehicles Under 5443 kg (12 000 lb) GVWR

1. **Scope**—This SAE Recommended Practice provides test procedures, performance requirements, design guidelines, and installation) GVWR (Gross Vehicle Weight Rating).

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, 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

SAE J2139—Tests for Signal and Marking Devices Used on Vehicles 2032 mm or More in Width

3. Definitions

3.1 **Cargo Lamp**—A supplemental lamp mounted on the exterior of a vehicle weighing under 5443 kg (12000 lb) GVWR for the purpose of providing illumination to load and unload cargo in an environment of otherwise insufficient light.

4. Lighting Identification Code

4.1 A cargo lamp for use on vehicles weighing less than 5443 kg (12 000 lb) GVWR may be identified with the code "G" in accordance with SAE J759.

5. Tests

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

5.1.1 VIBRATION TEST

5.1.2 MOISTURE TEST

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5.1.3 DUST TEST

5.1.4 CORROSION TEST

5.1.5 PHOTOMETRY TEST—In addition to the test procedures in SAE J575, the following apply:

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

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

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

5.3 **Plastic Materials**—SAE J576 is a part of this report.

6. **Requirements**

6.1 **Performance Requirements**—A device when tested in accordance with the test procedures specified in Section 5 shall meet the requirements of SAE J575 or SAE J2139.

6.1.1 VIBRATION

6.1.2 MOISTURE

6.1.3 DUST

6.1.4 CORROSION

6.1.5 PHOTOMETRY

6.1.5.1 A device mounted on a test stand to simulate mounting attitude on the vehicle shall be designed to conform to the photometric performance requirements contained in Table 1 and its footnotes.

6.1.6 WARPAGE TEST

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

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

7. **Guidelines**

7.1 **Installation Guidelines**

7.1.1 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.

7.1.1.1 The cargo lamp(s) 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.

- 7.1.1.2 The cargo lamp(s) shall be mounted on the rear of the vehicle, or the vehicle cab, or in the cargo bed. One or two lamps may be used. If two lamps are used on the back of the cab or the rear of the vehicle the combination of lamps must meet the one lamp requirement.

TABLE 1—PHOTOMETRIC PERFORMANCE REQUIREMENTS⁽¹⁾

Zone	Test Points (degrees)	Minimum Luminous Intensity (cd) ⁽²⁾ Number of Lamps	Minimum Luminous Intensity (cd) ⁽²⁾ Number of Lamps	Zone Total Luminous Intensity ⁽²⁾ Number of Lamps	Zone Total Luminous Intensity ⁽²⁾ Number of Lamps
		1	2 ⁽³⁾	1	2 ⁽³⁾
1	10D - V	22	22		
	40D - V	15	15	67	67
	40D - 10L	15	15		
	40D - 10R	15	15		
2	10D - 10L	22	22		
	10D - 30L	22	22	69	59
	40D - 30L	15	15		
	70D - 30L	5	—		
	70D - 10L	5	—		
3	10D - 10R	22	22		
	10D - 30R	22	22	69	59
	40D - 30R	15	15		
	70D - 30R	5	—		
	70D - 10R	5	—		

1. The maximum per lamp (on a line from 1.5 degrees down, vertical to 90 degrees up, vertical) shall not be greater than 300 cd.
2. The measured value at each test point shall not be less than 60% of the minimum value for that test point.
3. The photometric requirements for each lamp, if two lamps are installed inside the cargo bed and on opposite sides of the bed.

8. Notes

- 8.1 **Marginal Indicia**—The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. A (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE SIGNALING AND MARKING DEVICES STANDARDS COMMITTEE
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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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