

SAE-J583

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SURFACE VEHICLE STANDARD

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(R) FRONT FOG LAMPS

1. Scope—This SAE Standard provides performance requirements, test procedures, and design and installation guidelines for front fog lamps.

2. References

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

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

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 J578—Color Specification

SAE J599—Lighting Inspection Code

SAE J759—Lighting Identification Code

2.2 Definition

2.2.1 A FRONT FOG LAMP is a lighting device providing illumination forward of the vehicle under conditions of fog, rain, snow, or dust. Principally, the front fog lamp supplements the lower beam of a standard headlamp system.

3. Lighting Identification Code—Front fog lamps may be identified by the code "F" in accordance with SAE J759.

4. Tests

4.1 Test Voltage—In conducting tests on front fog lamps, the test voltage shall be $12.8\text{ V} \pm 20\text{ mV}$, DC as measured at the terminals of the lamp.

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4.2 SAE J575—SAE J575 is a part of this report. The following test procedures are applicable with modifications indicated:

4.2.1 TESTS

4.2.1.1 Vibration Test

4.2.1.2 Moisture Test

4.2.1.3 Dust Test

4.2.1.4 Corrosion Test

4.2.1.5 Photometry Test

4.2.1.5.1 Photometric tests shall be made with the photometer at a distance of at least 18.3 m (60 ft) from the fog lamp. A front fog lamp designed to be aimed mechanically shall be centered on the photometer axis with the aiming plane on the lens normal to the photometer axis.

4.2.1.5.2 A front fog lamp not intended to be aimed mechanically shall be centered on the photometer axis with the beam aimed downward so that 500 cd is directed at some point on the horizontal between 6L and 6R, whereby the horizontal beam distribution is being kept symmetrical with respect to the photometer axis. This can also be accomplished by balancing the beam.

4.2.1.5.3 A front fog lamp that has no provisions for mechanical lateral aim, shall be mounted in the design position of the goniometer, as it is prescribed to be mounted on the vehicle. The beam is aimed downward so that 500 cd is directed at some point on the horizontal between 6L and 6R.

4.2.1.6 Warpage Test (on devices with plastic components)

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

4.4 Plastic Materials—Plastic materials used in optical parts shall be tested in accordance with the procedures in SAE J576.

4.5 Sealed Beam Unit Tests—Sealed beam units designed for use as front fog lamps, when tested without other parts of the lamp assembly, are not subject to moisture, dust, and corrosion tests.

5. Requirements.

5.1 Performance Requirements

5.1.1 SAE J575 REQUIREMENTS—A device, when tested in accordance with the test procedures specified in Section 4, shall meet the following requirements in SAE J575:

5.1.1.1 Vibration

5.1.1.2 Moisture

5.1.1.3 Dust

5.1.1.4 Corrosion

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5.1.1.5 **Warpage** (This is a requirement only for devices with plastic components.)

5.1.2 **COLOR**—The color of the light from a front fog lamp shall be white to yellow within the limits specified in SAE J578.

5.1.3 **PHOTOMETRY**—The beam of the front fog lamp shall be designed to conform to the light intensity distribution (candela) values as shown in Table 2. The lamp shall meet the photometric performance requirements contained in Table 1.

TABLE 1—PHOTOMETRIC REQUIREMENTS

Test Point ¹ Degree	Candela (Cd) Max	Candela (Cd) Min
8U - 90U ²	90	—
4U - 6L and 6R	150	—
2U - 6L and 6R	300	—
1U - 6L and 6R	420	—
H - 6L and 6R	600	—
1-1/2D - 3L and 3R	12 000	1600
1-1/2D - 9L and 9R	—	800
3D - 15L and 15R	—	800

¹ A tolerance of $\pm 1/4$ degree in location is allowed at any test point.

² From the normally exposed surface of the lens.

TABLE 2—PHOTOMETRIC DESIGN GUIDELINES

Test Point ¹ Degree	Candela (Cd) Max	Candela (Cd) Min
8U - 90U ²	75	—
4U - 6L and 6R	125	—
2U - 6L and 6R	250	—
1U - 6L and 6R	350	—
H - 6L and 6R	500	—
1-1/2D - 3L and 3R	10 000	2000
1-1/2D - 9L and 9R	—	1000
3D - 15L and 15R	—	1000

¹ A tolerance of $\pm 1/4$ degree in location is allowed at any test point.

² From the normally exposed surface of the lens.

5.1.4 **PLASTIC MATERIALS**—The plastic materials used in optical parts shall meet the material performance requirements as listed in SAE J576.

6. Guidelines

6.1 **Photometric Design Guidelines**—The photometric design guidelines for front fog lamps when tested in accordance with 4.2.5 of this document are contained in Table 2.