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SAE J582 SEP84

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Auxiliary Low Beam Lamps

SAE Recommended Practice
Completely Revised September 1984

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ϕ AUXILIARY LOW BEAM LAMPS—SAE J582 SEP84 SAE Recommended Practice

Report of the Lighting Division, approved January 1941, completely revised by the Lighting Committee September 1984. Rationale statement available.

1. Scope—This SAE Technical Report provides general design and performance requirements, test procedures, and installation guidelines for auxiliary low beam lamps.

2. Definitions

2.1 An auxiliary low beam lamp supplements the lower beam of a standard headlamp system.

3. Lighting Identification Code—Auxiliary low beam lamps may be identified by the code "Z," in accordance with SAE J759, Lighting Identification Code.

4. Tests

4.1 Test Voltage—In conducting tests to the auxiliary low beam lamps, the test voltage used shall be 12.8 V ± 20 mV, DC as measured at the terminals of the lamp.

4.2 SAE J575—The following procedures in SAE J575, are a part of this report with modifications as indicated.

Lighting Devices
Bulbs
Test Fixture

Laboratory Facilities
Vibration Test
Moisture Test
Dust Test
Corrosion Test
Warpage Test on Devices with Plastic Components

4.3 Color Test—The test procedures in SAE J578 are 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 Photometric Test

4.5.1 Photometric tests shall be made with the photometer at a distance of at least 18.3 m (60 ft) from the headlamp. The headlamp shall be aimed mechanically by centering the headlamp on the photometer axis with the aiming plane on the lens normal to the photometer axis.

4.5.2 A headlamp designed not to be aimed mechanically, shall be centered on the photometer axis with the beam aimed downward and to the right so that 5000 cd max is directed at 1/2U at some point between 1R and 3R, and 3500 cd max is directed at 1/2D—1L.

4.6 Out-of-Focus Test Procedures

4.6.1 This test shall be conducted on auxiliary low beam lamps with replaceable light sources.

4.6.2 The lamp shall be mounted in the goniometer with the mechanical axis coincident with the photometer axis.

4.6.3 The test voltage for the test lamp shall be 12.8 V ± 20 mV DC.

4.6.4 The lamp shall be photometered at the appropriate test points as listed in Table 2.

4.6.5 Intensity measurements shall be made at six out-of-focus positions with the filament located at 2/3 of the tolerance values specified by the manufacturer above-below, ahead-behind, and right-left of the design position.

5. Requirements

5.1 Performance Requirements

5.1.1 LIGHTING DEVICES—The performance requirements apply only to new unused and undamaged lamps fabricated from production tools and assembled by production processes.

5.1.2 BULBS—Unless otherwise specified, bulbs used in the tests shall be supplied by the laboratory and be representative of standard bulbs in regular production. The rated standard bulbs shall be operated at their designed luminous intensity (MSCP); sealed units shall be seasoned and operated at their design voltage.

5.1.3 VIBRATION—Upon completion of the test, the same device shall be examined. There shall be no evidence of rotation, displacement, cracking or rupture of parts (except bulbs and sealed beam unit internal components) which would prevent the device from meeting the performance criteria of any of the tests contained in Section 4 of J575. Additionally, there shall be no evidence of cracking or rupture of parts of the device affecting its mounting.

5.1.4 MOISTURE—There shall be no moisture accumulation in excess of 2 mL.

5.1.5 DUST—The device shall be considered to have met the requirements if no dust is found on the interior surfaces of the device, or if the maximum beam intensity output is within 10% as compared with the condition after the device is cleaned inside and out. Sealed beam units shall be exempt from this test.

5.1.6 CORROSION—There shall be no evidence of internal or external corrosion or edge corrosion beyond 2.5 mm (0.100 in) from any sharp or cut edge. The lamps shall show no evidence of surface deterioration, fractures, color bleeding, or deterioration of bonding materials.

5.1.7 COLOR—The color light from auxiliary low beam lamps shall be white as specified in SAE J578.

5.1.8 PLASTIC MATERIALS—Any plastic materials used in optical parts shall conform to the requirements in SAE J576.

5.1.9 WARPAGE—This is a requirement only for devices with plastic components. There shall be no evidence of warpage, delamination, fractures, deterioration of bonding material, or deformation which would result in failure to meet the requirements of Section 5 of this technical report.

5.1.10 OUT-OF-FOCUS—The auxiliary low beam lamp shall meet the photometric requirements of Table 2 for each of the out-of-focus positions.

5.2 Design Guidelines

5.2.1 PHOTOMETRIC DESIGN—Table 1 establishes the desired auxiliary low beam lamp pattern. The beam from the device shall meet the beam candela distribution guidelines indicated in Table 1.

5.3 Service Performance Requirements

5.3.1 PHOTOMETRY—When tested in accordance with the procedures in paragraph 4.5, the device shall meet the requirements shown in Table 2.

6. Guidelines—The following recommendations and test procedures apply to the device as used on the vehicle and are not part of the laboratory test requirements and procedures.

6.1 Lamp Aim on Vehicle—Mechanical lamp aim adjustment and inspection may be performed in accordance with SAE J599 and SAE J602.

6.2 If vehicle mounting precludes mechanical aiming, the lamp may be visually aimed. The correct visual aim is with the top edge of the high intensity zone 25 mm (1 in) above horizontal at 7.6 m (25 ft) and the left edge of the high intensity zone 130 mm (5 in) left of vertical at 7.6 m (25 ft).

6.3 Means shall be provided to turn off the auxiliary low beam lamp independently of the lower beam lamps of the standard headlighting system.

6.4 Lamp Mounting—A single lamp shall be mounted at the front and to the left side (driver's side) of the center of the vehicle. If two lamps are used, they shall be mounted at the same mounting height level with respect to the standard headlamps.

TABLE 1—PHOTOMETRIC DESIGN GUIDELINES

Test Point Deg[a]	Candela-Max	Candela-Min
10U —90U[b]	175	—
1-1/2U—1L to L	800	—
1-1/2U—1R to R	2000	—
1/2U —1L to L	1000	—
1/2U —1R to 3R	5000	—
1/2D —1-1/2R to 3R	50 000	15 000
1/2D —1L to L	3500	—
1D —1R	—	10 000
1D —3R	—	15 000
4D —2R	8000	

[a] A tolerance of ± 1/4 deg in location is allowed at any test point.
[b] From the normally exposed surface of the lens.

TABLE 2—PHOTOMETRIC SERVICE PERFORMANCE REQUIREMENTS

Test Point[a]	Requirement, cd
1-1/2U—1R	2000 max
1/2U —1L to L	1200 max
1/2U —1R	5000 max
1/2D —1-1/2R to 3R	10 000 min
1D —3R	15 000 min

[a] A tolerance of ± 1/4 deg in location may be allowed at any test point.

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