

ture between CIE Illuminant A (2854K) and CIE Illuminant B (5000K).

3.2.4 GREEN—Green shall not be acceptable if it is less saturated (paler), yellower, or bluer than the limit standards.

3.2.5 BLUE—Blue shall not be acceptable if it is less saturated (paler), greener, or redder than the limit standards.

## APPENDIX

**A1. Precautions**—The following are applicable to all methods of determining the color of light:

- a) Some devices may emit a different color of light in one direction than another. Measurements should be made in as many directions as required to define the color characteristic of emitted light.

Some instruments (tristimulus and spectroradiometric) use an integrating sphere at the inlet port of the device to integrate all the light from the device. Care should be taken to assure that the integrating sphere is not combining different color light emitted in different directions from the device and thereby providing an erroneous reading.

- b) The lamp and optical components should be allowed to reach operating temperature before any measurements are made. Lamps should be operated at design voltage.

If visually the device does not appear to be emitting light with a uniform color, additional precautions should be taken.

- c) The distance between the test instrument and the device un-

der test should be great enough so that further increases in distance do not affect the results. The visual field of the instrument should view the entire lighted area of the device.

**A2. Color Application**—Selective yellow is used on a limited basis primarily for fog lights and is not to be used in turn signal, parking, identification, clearance, sidemarker, and school bus warning lamps, or yellow reflex reflector applications as required by FMVSS 108.

**A3. Neutral Density**—Filtering materials are sometimes used over existing lighting devices to reduce the light intensity but not to change the fundamental color requirements as detailed in SAE J578.

**A4. Orange Fluorescent Information Guideline**—Definitions and Requirements for Orange Fluorescent color can be found in the appropriate SAE Recommended Practice or Standard. Refer to SAE J774, Emergency Warning Device, or SAE J943, Slow-Moving Vehicle Identification Emblem or to FMVSS No. 125, Warning Devices, 39 FR 28636, Aug. 9, 1974 as amended at 40 FR4, Jan. 2, 1975.

**A5. Color Measurements of Gaseous Discharge Lighting Devices**—Some laboratories cannot measure the color of light from the short pulses of lamps that use discharge tubes and, therefore, these lamps need a steady burning test source, operated at the color temperature of the gaseous discharge warning lamp. Use of CIE Illuminant C for strobe lights has been confirmed by independent testing laboratories.

**A6. Cited ASTM Report**—ASTM E 808-66, Standard Practice for Spectrophotometry and Description of Color in CIE 1931 System. Reprinted in SAE Ground Vehicle Lighting Manual, HS-34.

## SEALED BEAM HEADLAMP UNITS FOR MOTOR VEHICLES—SAE J579 DEC84

## SAE Standard

Report of the Lighting Division, approved January 1940, last revised, Lighting Committee, December 1974, reaffirmed without change December 1984.

**1. Scope**—This standard applies to design evaluation of mechanically aimable sealed beam headlamp units for two-beam systems. For service performance requirements and evaluations, see SAE J32.

### 2. Definitions

**2.1 Sealed Beam Unit**—An integral and indivisible hermetically sealed optical assembly with the name "Sealed Beam" molded in the lens.

**2.2 Upper Beam**—A beam intended primarily for distant illumination and for use when not meeting or following other vehicles.

**2.3 Lower Beam**—A beam intended to illuminate the road ahead of the vehicle when meeting or following another vehicle.

**2.4 7 in (178 mm) Sealed Beam System**—A system employing two 7 in (178 mm) Type 2 sealed beam units.

**2.5 7 in (178 mm) Type 2 Sealed Beam Unit**—A 7 in (178 mm) diameter unit providing an upper and a lower beam. Unit to be aimed to the lower beam.

**2.6 5½ in (146 mm) Sealed Beam System**—A system employing four 5½ in (146 mm) sealed beam units: two Type 1 and two Type 2.

**2.7 5½ in (146 mm) Type 1 Sealed Beam Unit**—A 5½ in (146 mm) diameter unit having a single filament and used in a four-lamp system to provide the principal portion of the upper beam.

**2.8 5½ in (146 mm) Type 2 Sealed Beam Unit**—A 5½ in (146 mm) diameter unit having two filaments and used in a four-lamp system to provide the lower beam and a secondary portion of the upper beam. Unit to be aimed to the lower beam.

**2.9 4 x 6½ in (100 x 165 mm) Sealed Beam System**—A system employing four 4 x 6½ in (100 x 165 mm) sealed beam units: two Type 1A and two Type 2A.

**2.10 4 x 6½ in (100 x 165 mm) Type 1A Sealed Beam Units**—A 4 x 6½ in (100 x 165 mm) rectangular unit having a single filament and used in a four-lamp system to provide the principal portion of the upper beam.

**2.11 4 x 6½ in (100 x 165 mm) Type 2A Sealed Beam Unit**—A 4 x 6½ in (100 x 165 mm) rectangular unit having two filaments and used in a four-lamp system to provide the lower beam and a secondary portion of the upper beam. Unit to be aimed to the lower beam.

**2.12 Mechanically Aimable Sealed Beam Unit**—A unit having three pads on the face of the lens, forming a mechanical aiming plane used to adjust and inspect the aim of the unit when installed on the vehicle.

**2.13 Aiming Plane**—A plane through the three aiming pads on the face of the lens.

**2.14 Mechanical Axis**—A line perpendicular to the aiming plane through the geometric center of the lens.

**2.15 H-V Axis**—A line from the center of the lens to the intersection of the horizontal and vertical lines on the screen.

### 3. Laboratory Requirements

**3.1 Test Voltage**—In conducting tests to this standard, the sealed beam unit shall be operated at 6.4 or 12.8 V for 6 and 12 V electrical systems.

**3.2** The following sections from SAE J575 are a part of this standard:

3.2.1 Section B—Samples for Test.

3.2.2 Section D—Laboratory Facilities.

3.2.3 Section J—Photometry. The angular relation between test points for the upper and lower beams is as shown in Fig. 3.

**3.3 Color Test**—The color of the light from a sealed beam unit shall be white, as defined in SAE J578.

### 3.4 Beam Pattern Location

**3.4.1 BEAM LOCATION**—The aiming plane of the sealed beam unit shall be placed parallel to the aiming screen at 25 ft (7.6 m) with the mechanical axis on the H-V axis.

**3.4.1.1 5½ in (146 mm) Type 1 Sealed Beam Unit**—The beam shall be photoelectrically aimed so that test points in Fig. 1 designated by the squares have equal intensity and those designated by the triangles

TABLE 1—TEST POINT VALUES FOR 7 in (178 mm) TYPE 2 SEALED BEAM UNITS

Upper Beam (One 7 in (178 mm) Unit)			Lower Beam (One 7 in (178 mm) Unit)		
Test Points, deg <sup>b</sup>	cd, max	cd, min	Test Points, deg <sup>b</sup>	cd, max	cd, min
2U-V	—	1000	10U to 90U <sup>a</sup>	125	—
1U-3R and 3L	—	2000	1U-1-1/2L to L	700	—
H-V	75 000	20 000	1/2D-1-1/2L to L	1000	—
			1/2D-1-1/2L to L	2500	—
			1-1/2U-1R to R	1400	—
H-3R and 3L	—	10 000			
H-6R and 6L	—	3250	1/2U-1R to 3R	2700	—
H-9R and 9L	—	1500	1/2D-1-1/2R	20 000	8000
H-12R and 12L	—	750	1D-6L	—	750
			1-1/2D-2R	—	15 000
1-1/2D-V	—	5000			
1-1/2D-9R and 9L	—	1500	1-1/2D-9L and 9R	—	750
2-1/2D-V	—	2500	2D-15L and 15R	—	700
2-1/2D-12R and 12L	—	750	4D-4R	12 500	—
4D-V	5000	—			

<sup>a</sup> From the normally exposed surface of the lens.

<sup>b</sup> A tolerance of ±1/4 deg in location may be allowed for at any test point.