SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1133

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School Bus Stop Arm

1. Scope—This SAE Recommended Practice provides test procedures, requirements, and guidelines for school bus stop arms.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision 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 J759—Lighting Identification Code
SAE J887—School Bus Warning Lamps
SAE J1054—Warning Lamp Alternating Flashers

3. Definition

3.1 A **school bus stop arm** is an auxiliary device used to signal that a school bus has stopped to load or discharge passengers. It supplements devices specified by SAE J887.

4. Lamps for use on school bus stop arms may be identified by the code "W6" in accordance with SAE J759.

5. Tests

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

5.1.1 VIBRATION TEST

5.1.2 MOISTURE TEST

5.1.3 DUST TEST

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5.1.4 CORROSION TEST

5.1.5 PHOTOMETRY—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(s) of the lamp(s) at least 18 m from the photometer. The H-V axis shall be taken as parallel to the longitudinal axis of the vehicle.

5.1.5.2 Photometric measurements shall be made with the bulb filament steadily burning.

5.1.5.3 An optional alternate measure of photometric performance can be made using flash energy.

5.1.5.3.1 Photometric measurements shall be made with the device in its normal operating position and all flash energy measurements shall be made with the light source at least 18 m from the photometer sensor. The H-V axis shall be taken as parallel to the longitudinal axis of the vehicle.

5.1.5.3.2 The voltage applied to the input wires or terminals of the device shall be 12.8 V for nominal 12 V electrical systems and 25.6 V for nominal 24 V electrical systems.

5.1.5.3.3 Photometric luminous intensity measurements (candela seconds) shall be taken as the average of ten consecutive flash cycles.

5.1.6 WARPAGE TEST FOR DEVICES WITH PLASTIC COMPONENTS

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

5.3 Durability—The device shall be subjected to a test of 45 000 cycles at a rate not to exceed 0.2 Hz and at a temperature of 25 °C ± 3 °C. A cycle shall consist of movement from the parked or retracted position to the fully extended position and return to the parked position.

6. Requirements

6.1 Performance Requirements—A device, when tested in accordance with the test procedures specified in Section 5, shall meet the following requirements:

6.1.1 VIBRATION—SAE J575

6.1.2 MOISTURE—SAE J575

6.1.3 DUST—SAE J575

6.1.4 CORROSION—SAE J575

6.1.5 PHOTOMETRY—In addition to the requirements of SAE J575, the school bus stop arm lamps shall meet the following photometric performance requirements:

6.1.5.1 The summation of the luminous intensity readings of the specific test points in a zone shall meet the values in Table 1.

TABLE 1—PHOTOMETRIC PERFORMANCE REQUIREMENTS

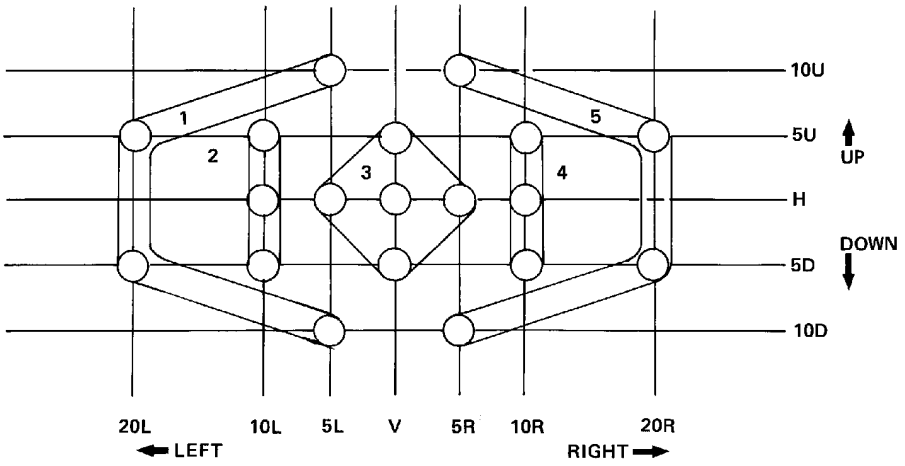
Zone	Test Points (degrees)	Minimum Total Zonal Luminous Intensity (cd)
1	10U–5L 5U–20L 5D–20L 10D–5L	52
2	5U–10L H–10L 5D–10L	100
3	5U–V H–5L H–V H–5R 5D–V	380
4	5U–10R H–10R 5D–10R	100
5	10U–5R 5U–20R 5D–20R 10D–5R	52

NOTE 1—For the lamp to conform to the photometric zonal performance requirements, the summation of the candela measurements at the specific test points in a zone shall meet or exceed the values specified for that zone in Table 1.

NOTE 2—When calculating the zone total, the measured candela for a test point shall not be less than 60% of the value specified for that test point in Table 2.

NOTE 3—See Figure 1 for a graphical description of the Zonal Boundaries.

GRAPHICAL DESCRIPTION OF THE ZONAL BOUNDARIES



The line formed by the intersection of a vertical plane through the light source of the device and normal to the test screen is designated V. The line formed by the intersection of a horizontal plane through the light source and normal to the test screen is designated H. The point of intersection of these two lines is designated H-V. The other points on the test screen are measured in terms of degree from these two lines. Degrees to the right (R) and to the left (L) are regarded as being to the right and left of the vertical line when the observer stands behind the lighting device and looks in the direction of the emanating light beam when the device is properly aimed for photometry with respect to the H-V point. Similarly, the upward angles designated as U and the downward angles designated D, refer to light emanating at angles above and below the horizontal line, respectively.

FIGURE 1—GRAPHICAL DESCRIPTION OF THE ZONAL BOUNDARIES