School Bus Red Signal Lamps — SAE J887a

SAE STANDARD

LAST REVISED FEBRUARY 1975

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.
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SCHOOL BUS RED SIGNAL LAMPS - SAE J887a

SAE Standard

Report of Lighting Committee approved July 1964, and last revised February 1975.

1. DEFINITION - School bus red signal lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as school bus and to inform other users of highway that such vehicle is stopped on highway to take on or discharge school children.

2. IDENTIFICATION CODE DESIGNATION - The identification code designation will be W2.

3. GENERAL REQUIREMENTS - The effective projected illuminated area measured on a plane at right angles to the axis of the lamp must not be less than 19 in^2 (120 cm^2).

3.1 The following sections from SAE J575 are part of this standard.

3.1.1 Section B - Samples for Test
3.1.2 Section C - Lamp Bulbs
3.1.3 Section D - Laboratory Facilities
3.1.4 Section E - Vibration Test
3.1.5 Section F - Moisture Test
3.1.6 Section G - Dust Test
3.1.7 Section H - Corrosion Test
3.1.8 Section J - Photometry
3.1.9 Section L - Warpage Test on Devices with Plastic Lenses

3.2 Sealed units designed for use as school bus signal lamps, when tested without the other parts of the lamp assembly, need only comply with Sections B, D, and J of SAE J575.

3.3 COLOR TEST - See SAE J578.

3.4 PHOTOMETRIC TEST -

3.4.1 All beam candela measurements shall be made with a bar photometer, or equivalent, with the filament of the lamp at a distance of at least 10 ft (3m) from the photometer screen. The lamp axis shall be taken as the horizontal line through the light source parallel to what would be the longitudinal axis of the vehicle, if the lamp were mounted in its normal position on the vehicle.

3.4.2 An aiming tolerance of $\pm$ 1/2 deg vertical and $\pm$ 1 deg horizontal should be allowed for manufacturing and laboratory variations.

4. AIMING PROVISIONS - The lamps should be equipped with aiming pads on the lens face suitable for use with mechanical headlamp aimer. The lamp should be designed so that with the aiming plane normal to the photometer axis, the beam shall meet the photometric specifications indicated in Table 1.

5. GENERAL SIGNAL SYSTEM RECOMMENDATIONS - (These general recommendations are not a part of the test specifications.)

5.1 Each vehicle should be equipped with two alternately flashing red lamps on the rear and two alternately flashing red lamps on the front. They should be controlled by a manually actuated switch and shall flash alternately at a rate of 60 - 120 cycles per min (1 - 2 Hz). The "on" period of the flasher should be long enough to permit the bulb filament to come up to full brightness. There should be a visible or an audible means of giving a clear and unmistakable indication to the driver when the signal lamps are turned on. Front and rear signal lamps should be spaced as far apart laterally as practical but in no case shall the spacing between the lamps be less than 40 in (1000 mm).

5.2 The signal lamps should be mounted on the same horizontal center line as high as practical at the front above the windshield and on the same horizontal center line as high as practical at the rear so that the lower edge of the lenses are not lower than the top line of the side window openings.

5.3 The visibility of the front signal lamps to the front and of the rear signal lamps to the rear should be unobstructed by any part of the vehicle from 10 deg above to 10 deg below horizontal and from 30 deg to the right to 30 deg to the left of center line of the lamps.

5.4 To improve the effectiveness of the signal, it is recommended that the area of the vehicle immediately surrounding the signal lamp be painted black.

5.5 Lamps should be mounted on the school bus with their aiming plane vertical and normal to the vehicle axis. A suggested tolerance is 1 deg in vertical aim and 2 deg in horizontal aim. If lamps are aimed or inspected with a mechanical headlamp aimer, the graduation settings for aim should be 0 down and 0 sideways. The limits for inspection should be from 5 up to 5 down and from 10 right to 10 left.

TABLE 1 - MINIMUM PHOTOMETRIC REQUIREMENTS FOR RED SCHOOL BUS WARNING LAMPS

Test Point	Candela	Test Point	Candela
10U 5L	20		
V	50		
5R	20		
5U 20L	150	H 20R	180
10L	300	30R	30
5L	300		
V	300	5D 30L	30
5R	300	20L	200
10R	300	10L	300
20R	150	5L	450
		V	450
H 30L	30	5R	450
20L	180	10R	300
10L	400	20R	200
5L	500	30R	30
V	600		
5R	500	10D 5L	40
10R	400	V	40
		5R	40

APPENDIX

As a matter of information, attention is call to SAE J567 for requirements and gages to be used in socket design and to SAE J571 (Figs. 1 and 3) for aiming pad dimensions and locations. Attention is also called to SAE J602 for mechanical aimers and to SAE J1054 for characteristics of alternating flashers to be used with these signal lamps.