School Bus Warning Lamps -SAE J887 MAY82

SAE Standard
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Report of the Lighting Committee, approved July 1964, completely revised May 1982. Rationale statement available.

1. Scope—This technical report provides test procedures, dimensional data, design specifications, and performance requirements for red and yellow school bus warning lamps.

2. Definitions

2.1 School bus red warning lamps are alternately flashing lights mounted horizontally both front and rear, intended to inform other users of the highway that such vehicle is stopped on highway to take on or discharge school children.

2.2 School bus yellow warning lamps are alternately flashing lights mounted horizontally both front and rear, intended to inform other users of the highway that such vehicle is about to stop to take on or discharge school children.

3. Test Procedures

3.1 The following sections from SAE J575 JUN80 are a part of this technical report:

Section 2 —Samples for Test
Section 2.2—Lamp Bulbs
Section 3 —Laboratory Facilities
Section 4.1—Vibration Test
Section 4.2—Moisture Test
Section 4.3—Dust Test
Section 4.4—Corrosion Test
Section 4.5—Color Test (see SAE J578 (September 1978))
Section 4.6—Photometry

4.6.1 All photometric measurements shall be made with the filament of the lamp at a distance of at least 3 m from the photometric 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.

Section 4.8—Warpage Test on Devices with Plastic Lenses

3.2 Sealed units, as described in SAE J760 (December 1974) and SAE J571 (June 1976), designed for use as school bus warning lamps, when tested without the other parts of the lamp assembly, need only comply with sections 2, 3, 4.5, and 4.6 of SAE J575 JUN80.

4. Dimensional Data

4.1 The effective projected luminous area of a school bus warning lamp shall not be less than 120 mm^2.

4.2 Sealed units shall comply dimensionally with SAE J760 (December 1974) for PAR46 sealed beam lamps and SAE J571 (June 1976) for PAR56 sealed beam lamps.

5. General Design Requirements

5.1 Minimum design photometric requirements for school bus warning lamps are indicated in Table 1.

TABLE 1—MINIMUM DESIGN PHOTOMETRIC REQUIREMENTS FOR SCHOOL BUS WARNING LAMPS

Test Point, deg		Luminous Intensity, cd	
		Red	Yellow
10U	5L	20	40
	V	50	100
	5R	20	40
5U	20L	150	300
	10L	300	600
	5L	300	600
	V	300	600
	5R	300	600
	10R	300	600
	20R	150	300
H	30L	30	60
	20L	180	360
	10L	400	800
	5L	500	1000
	V	600	1200
	5R	500	1000
	10R	400	800
	20R	180	360
	30R	30	60
5D	30L	30	60
	20L	200	400
	10L	300	600
	5L	450	900
	V	450	900
	5R	450	900
	10R	300	600
	20R	200	400
	30R	30	60
10D	5L	40	80
	V	40	80
	5R	40	80

5.2 Aiming Provisions—The lamp shall be equipped with aiming pads, as described in SAE J760 (June 1976) and SAE J571 (June 1976), on the lens face suitable for use with mechanical headlamp aimers as described in SAE J602 (December 1974). The lamp shall be designed so that with the aiming plane normal to the photometric axis, the beam shall meet the photometric specifications of Table 1.

5.3 Lighting Identification Code—Lamps conforming to this technical report may be identified with the code W2 in accordance with SAE J759 (January 1975).

6. Performance Requirements—These performance requirements apply only to new, undamaged production units selected at random. Sealed units, as described in SAE J760 (December 1974) and SAE J571 (June 1976), when tested without the other parts of the lamp assembly, need only comply with paragraphs 6.1, 6.5, and 6.6.

6.1 Vibration—Any unit showing lens or reflector rotation, displacement, cracking, or rupture of parts (except bulb and sealed beam unit internal component failures) which would result in failure of any other requirements in Section 6 shall constitute a failure.

6.2 Moisture—Any moisture accumulation in excess of 2 cc shall constitute a failure.

6.3 Dust—After completion of the test and after the exterior surface has been cleaned, the lamp shall meet the photometric requirements in paragraph 7.6.

6.4 Corrosion—There shall be no evidence of corrosion which would result in failure to comply with any of the other requirements in Section 6.

6.5 Color—The lamp shall comply with the red or yellow requirements specified in SAE J578 (September 1978).

6.6 Photometric Requirements

6.6.1 The summation of the luminous intensity readings of the specific test points in a zone shall meet the value in Table 2.

TABLE 2—MINIMUM ZONAL LUMINOUS INTENSITY PERFORMANCE REQUIREMENTS FOR SCHOOL BUS WARNING LAMPS

Zone	Test Point, deg	Total for Zone, cd	
		Red	Yellow
1	30L– H 30L– 5D 20L– 5U 20L– H 20L– 5D	530	1060
2	5U–10L 5U– 5L 5U– V 5U– 5R 5U–10R	1350	2700
3	H–10L H– 5L H– V H– 5R H–10R	2150	4300
4	5D–10L 5D– 5L 5D– V 5D– 5R 5D–10R	1750	3500
5	10D– 5L 10D– V 10D– 5R	110	220
6	20R– 5U 20R– H 20R– 5D 30R– H 30R– 50	530	1060