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Motorcycle Turn Signal Lamps

1. **Scope**—This SAE Standard provides design parameters and general requirements for motorcycle turn signal lamps. It does not apply to mopeds.
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 J213—Motorcycle Classification
 - SAE J567—Lamp Bulb Retention System
 - SAE J575—Tests Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less than 2032 mm in Overall Width
 - SAE J576—Plastic Materials for Use in Optical Parts Such as Lenses and Reflectors of Motor Vehicle Lighting Devices
 - SAE J578—Color Specification
3. **Definition**
 - 3.1 **Motorcycle Turn Signal Lamps**—The signaling elements of a turn signal system which indicate the intent to change direction by giving a flashing light on the side toward which the turn will be made.
4. **General Requirements**—The effective projected illuminated area measured on a plane at right angles to the axis of a lamp shall not be less than 22 cm² (3-1/2 in²).
 - 4.1 The following sections from SAE J575 are a part of this document:
 - 4.1.1 SECTION 3.1—Vibration Test
 - 4.1.2 SECTION 3.2—Moisture Test
 - 4.1.3 SECTION 3.3—Dust Exposure Test
 - 4.1.4 SECTION 3.4—Corrosion Test

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4.1.5 SECTION 3.5—Warpage Test on Devices with Plastic Components

4.1.6 SECTION 3.6—Photometry Test

4.1.6.1 See Table 1 for Motorcycle Class including C, D + H and Table 2 for Class including A,B,E,+L.

TABLE 1—MINIMUM INTENSITY REQUIREMENTS (cd) CLASS C,D+H MOTORCYCLES⁽¹⁾⁽²⁾

Test Points (degrees)		Front Signal Yellow	Rear Signal Red	Rear Signal Yellow
10 U and D	10 L and R	13	3	8
	V	30	8	20
5 U and D	20 L and R	13	3	8
	10 L and R	38	10	25
	5 L and R	63	15	40
	V	88	20	55
H	20 L and R	18	5	13
	10 L and R	50	13	33
	5 L and R	100	25	68
	V	100	25	65
Maximum Rear Lamp Only		—	300	750

1. Specifications in Tables 1 and 2 are based on laboratories using accurate, rated bulbs during testing.
2. Lamps designed for use in both 6 V and 12 V systems shall be tested with 12 V bulbs. Lamps designed to operate on the vehicle through a resistor or equivalent shall be photometered with the listed design voltage of the design source applied across the combination of resistance and filament.

TABLE 2—MINIMUM INTENSITY REQUIREMENTS (cd) CLASS A,B,E+L AND C MOTORCYCLES⁽¹⁾⁽²⁾

Test Points (degrees)		Red	Yellow
10 U and D	10 L and R	3	8
	V	7	15
5 U and D	20 L and R	3	8
	10 L and R	8	20
	5 L and R	13	30
	V	18	45
H	20 L and R	4	10
	10 L and R	10	28
	5 L and R	20	60
	V	20	60
Maximum Rear Lamp Only		300	750

1. Specifications in Tables 1 and 2 are based on laboratories using accurate, rated bulbs during testing.
2. Lamps designed for use in both 6 V and 12 V systems shall be tested with 12 V bulbs. Lamps designed to operate on the vehicle through a resistor or equivalent shall be photometered with the listed design voltage of the design source applied across the combination of resistance and filament.

4.1.6.2 All intensity measurements shall be made with the filament of the signal lamp at least 3 m (10 ft) from the photometer screen. The H-V axis shall be taken as parallel to the longitudinal axis of the vehicle.

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5. **Color Test**—The color of the light emitted from turn signal lamps shall be red or yellow to the rear and yellow to the front of the vehicle. See SAE J578.
6. **Plastic Materials**—Any plastic materials used in optical parts shall comply with requirements set forth in SAE J576.
7. **Installation Requirements**—The following requirements apply to the device as used on the vehicle and are not a part of the laboratory requirements and test procedures.
- 7.1 The filament center of each signal lamp on the front shall be symmetrically spaced a minimum of 200 mm (8 in) from the centerline of the vehicle and 100 mm (4 in) from the inside diameter of the retaining ring of the headlamp unit providing the lower beam. On the rear, the symmetrical spacing shall be a minimum of 110 mm (4-1/2 in) from the centerline of the vehicle to the filament axis of the signal lamp. A minimum edge to edge separation of 100 mm (4 in) when a single tail/stop lamp is mounted on the vertical centerline and the turn signal lamps are red.
- 7.1.1 Visibility of the front turn signal to the front and the rear turn signal to the rear shall not be obstructed by any part of the vehicle throughout the test angles for the lamps, if such obstruction causes the lamp to fail to meet minimum photometric visibility requirements.
- 7.1.2 The signals from each lamp shall be visible through a horizontal angle of 45 degrees outboard. To be considered visible, the lamp must project a minimum unobstructed illuminated area of 12.5 cm² (2 in²), measured at all angles throughout the 45 degrees requirement.
- 7.2 **Turn Signal Pilot Indicator**—There shall be either a light or sound signal to give the operator a clear and unmistakable indication that the turn signal system is functioning correctly. The illuminated indicator shall consist of one or more lights flashing at the same frequency as the signal lamps, and shall be plainly visible to operators of all heights when seated in normal position in the operator's seat, while driving in bright sunlight.

If a sound signal is used, it shall be audible to the operator when the motorcycle is operating at 55 km/h (35 mph) or less. The signal shall cycle on and off at the same frequency as the signal lamps. Failure of one or more turn signal lamps to operate shall be indicated by a continuous tone or by failure of the signal to sound.

PREPARED BY THE SAE MOTORCYCLE TECHNICAL COMMITTEE

APPENDIX A

- A.1 As a matter of information, attention is called to SAE J567 for requirements and gages to be used in socket design.
- A.2 All motorcycle class designations are those given in SAE J213.

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