CHAPTER 153. LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT

Sec.

Authority

The provisions of this Chapter 153 issued under the Vehicle Code, 75 Pa.C.S. §§ 4103 and 4301, unless otherwise noted.

Source

The provisions of this Chapter 153 adopted May 26, 1978, effective May 27, 1978, 8 Pa.B. 1472, unless otherwise noted.

Cross References

This chapter cited in 67 Pa. Code § 175.66 (relating to lighting and electrical systems); 67 Pa. Code § 175.96 (relating to lighting and electrical systems); 67 Pa. Code § 175.125 (relating to lighting and electrical systems); 67 Pa. Code § 175.146 (relating to lighting and electrical systems); and 67 Pa. Code § 175.175 (relating to lighting and electrical systems).

§ 153.1. Purpose and scope.

This chapter specifies requirements for original and replacement lamps, reflective devices and associated equipment necessary for signaling and for the safe operation of motor vehicles during darkness and other conditions of reduced visibility.

§ 153.2. Application.

This chapter shall apply to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers (except pole trailers and trailer converter dollies) and motorcycles, and to lamps, reflective devices, and associated equipment for replacement of like equipment on vehicles to which this chapter applies.

§ 153.3. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Flash—A cycle of activation and deactivation of a lamp by automatic means continuing until stopped either automatically or manually.

Speed attainable in one mile—The speed attainable by accelerating at maximum rate from a standing start for 1 mile on a level surface.

§ 153.4. Requirements.

(a) *Required motor vehicle lighting equipment.* Required equipment shall be as follows:

(1) Except as provided in succeeding subparagraphs, each vehicle shall be equipped with at least the number of lamps, reflective devices, and associated equipment specified in Tables I and III of Appendix A, as applicable. Required equipment shall be designed to conform to the SAE Standards or Recommended Practices referenced in those tables. Table I of Appendix A shall apply to multipurpose passenger vehicles, trucks, trailers, and buses, 80 or more inches in overall width. Table III of Appendix A shall apply to passen- ger cars and motorcycles and to multipurpose passenger vehicles, trucks, trailers, and buses, less than 80 inches in overall width.

(i) A truck tractor need not be equipped with turn signal lamps mounted on the rear if the turn signal lamps at or near the front are so constructed, double-faced and so located that they meet the requirements for double-faced turn signals specified in SAE Standard J588e, ''Turn Signal Lamps,'' September 1970.

(ii) A truck tractor need not be equipped with any rear side marker devices, rear clearance lamps, and rear identification lamps.

(iii) Intermediate side marker devices shall not be required on vehicles less than 30 feet in overall length.

(iv) Reflective material conforming to Federal Specification L-S-300, ''Sheeting and Tape, Reflective; Nonexposed Lens, Adhesive Backing,'' September 7, 1965, may be used for side reflex reflectors if this material, as used on the vehicle, meets the performance standards in Table I of SAE Standard J594d, ''Reflex Reflectors,'' March 1967.

(v) The turn signal operating unit on each passenger car, and multipurpose passenger vehicle, truck, and bus less than 80 inches in overall width manufactured on or after January 1, 1973, shall be self-cancelling by steering wheel rotation and capable of cancellation by a manually operated control.

(vi) Each stop lamp on any motor vehicle manufactured between January 1, 1973, and September 1, 1978, may be designed to conform to SAE Standard J586b, ''Stop Lamps,'' June 1966. It shall meet the photometric minimum candlepower requirements for class A red turn signal lamps specified in SAE Standard J575d, ''Test for Motor Vehicle Lighting Devices and Components,'' August 1967. Each such lamp on a passenger car and on a multipurpose passenger vehicle, truck, trailer, or bus less than 80 inches in overall width shall have an effective projected luminous area not less than 3 1/2 square inches. If multiple compartment lamps or multiple lamps are used, the effective projected luminous area of each compartment or lamp shall be

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not less than 3 1/2 square inches; however, the photometric requirements may be met by a combination of compartments or lamps.

(vii) Each turn signal lamp on any motor vehicle, except motorcycles, manufactured between January 1, 1972, and September 1, 1978, may be designed to conform to SAE Standard J588d, ''Turn Signal Lamps,'' June 1966, and shall meet the photometric minimum candlepower requirements for Class A turn signal lamps specified in SAE Standard J575d, ''Tests for Motor Vehicle Lighting Devices and Components,'' August 1967. Each such lamp on a passenger car and on a multipurpose passenger vehicle, truck, trailer or bus less than 80 inches in overall width shall have an effective projected luminous area not less than 3 1/2 square inches. If multiple compartment lamps or multiple lamps are used, the effective projected luminous area of each compartment or lamp shall be not less than 3 1/2 square inches; however, the photometric requirements may be met by a combination of compartments or lamps. Each such lamp on a multipurpose passenger vehicle, truck, trailer or bus 80 inches or more in overall width shall have an effective projected luminous area not less than 12 square inches.

(viii) For each passenger car, and each multipurpose passenger vehicle, truck, trailer, and bus of less than 80 inches in overall width the photometric minimum candlepower requirements for side marker lamps specified in SAE Standard J592e ''Clearance, Side Marker, and Identification Lamps,'' July 1972, may be met for all inboard test points at a distance of 15 feet from the vehicle and on a vertical plane that is perpendicular to the longitudinal axis of the vehicle and located midway between the front and rear side marker lamps.

(ix) Boat trailers need not be equipped with both front and rear clearance lamps provided an amber, to front, and red, to rear, clearance lamp is located at or near the midpoint on each side of the trailer so as to indicate its extreme width.

(x) Multiple license plate lamps and backup lamps may be used to fulfill the requirements of the SAE Standards applicable to such lamps referenced in Appendixes A and C of this chapter.

(xi) A parking lamp shall not be required to meet the minimum photometric values at each test point specified in Table I of SAE Standard J222. ''Parking Lamps (Position Lamps),'' if the sum of the candlepower measured at the test points within the groups listed in Figure 1 of this section is not less than the sum of the candlepower values for such test points specified in J222.

(xii) A tail lamp, stop lamp, or turn signal lamp shall not be required to meet the minimum photometric values at each test point specified in the referenced SAE Standards, if the sum of the candlepower measured at the test points is not less than that specified for each group listed in Figure 1 of this section, or for motorcycle turn signal lamps, not less than 1/2 of such sum.

GROUP TOTALS, CANDLEPOWER

Groups	Test points degrees	Parking lamps	Tail lamps			Red stop and turn signal lamps			Yellow turn signal lamps		
			One	Two	Three	One	Two	Three	One	Two	Three
1.	20L-5U, 20L-H, 20L-5D, 10L-10U, 10L-10D	2.8	1.6	2.7	3.8	55	66	80	135	165	190
2.	10U-V, 5U-10L, 5U-10R	2.4	2.1	3.6	5.5	85	100	115	210	251	290
3.	10L-H, 5L-5U, 5L-5D	4.2	3.4	5.3	8.0	140	167	195	350	420	490
4.	5U-V, H-5L, H-V, H-5R, 5D-V	16.8	9.6	16.5	24.0	380	449	520	950	1,130	1,295
5.	5R-5U, 5R-5D, 10R-H	4.2	3.4	5.3	8.0	140	167	195	350	420	490
6.	5D-10L, 5D-10R, 10D-V	2.	2.1	3.6	5.5	85	100	115	210	251	290
7.	10R-10U, 10R-10D, 20R-5U, 20R-H, 20R-5D	2.8	1.6	2.7	3.8	55	66	8	135	165	190
Maximum rear lamps only			15	20	25	300	360	420	900	900	900

(xiii) [Reserved].

(xiv) [Reserved].

(xv) [Reserved].

(xvi) All passengers cars and multipurpose passenger vehicles, trucks, and buses of less than 80 inches overall width shall be equipped with turn signal operating units designed to complete a durability test of 100,000 cycles.

(xvii) A trailer that is less than 30 inches in overall width may be equipped with only one of each of the following lamps and reflective devices, located at or near its vertical centerline: tail lamp, stop lamp and near reflex reflector.

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(xviii) A trailer that is less than 6 feet in overall length, including the trailer tongue, need not be equipped with front side marker lamps and front side reflex reflectors.

(xix) A lamp manufactured on or after January 1, 1974, and designed to use a type of bulb that has not been assigned a mean spherical candlepower rating by its manufacturer and is not listed in SAE Standard J573d, ''Lamp Bulbs and Sealed Units,'' December 1968, shall meet the applicable requirements of this standard when used with any bulb of the type specified by the lamp manufacturer, operated at the bulb's design voltage. A lamp that contains a sealed-in bulb shall meet these requirements with the bulb operated at the design voltage of the bulb.

(xx) Except for a lamp having a sealed-in bulb, a lamp manufactured on or after January 1, 1974, shall meet the applicable requirements of this standard when tested with a bulb whose filament is positioned within plus or minus 0.010 inch of the nominal design position specified in SAE Standard J573d, ''Lamp Bulbs and Sealed Units,'' December 1968 or specified by the bulb manufacturer.

(xxi) Instead of a headlighting system of two Type 1 headlamps and two Type 2, 5 3/4-inch headlamps, a vehicle manufactured on or after January 1, 1974 may be equipped with a headlighting system of two Type 1A headlamps and two Type 2A headlamps that meet the following requirements:

(A) Each Type 1A headlamp and Type 2A headlamp shall be designed to conform with the requirements for a Type 1 headlamp and Type 2, 5 3/4-inch headlamp respectively, as specified in any SAE Standard or Recommended Practice, referenced or subreferenced by Tables I and III of Appendix A, except as provided in clauses (B) and (C).

(B) Each Type 1A and Type 2A headlamp shall be designed to conform with the applicable dimensional requirements and specifications of Figure 2 of this section. At a voltage of 12.8 volts, the maximum design wattage with an allowable tolerance of plus 7.5% shall be 50 watts for a Type 1A headlamp and 60 watts for each filament of a Type 2A headlamp.

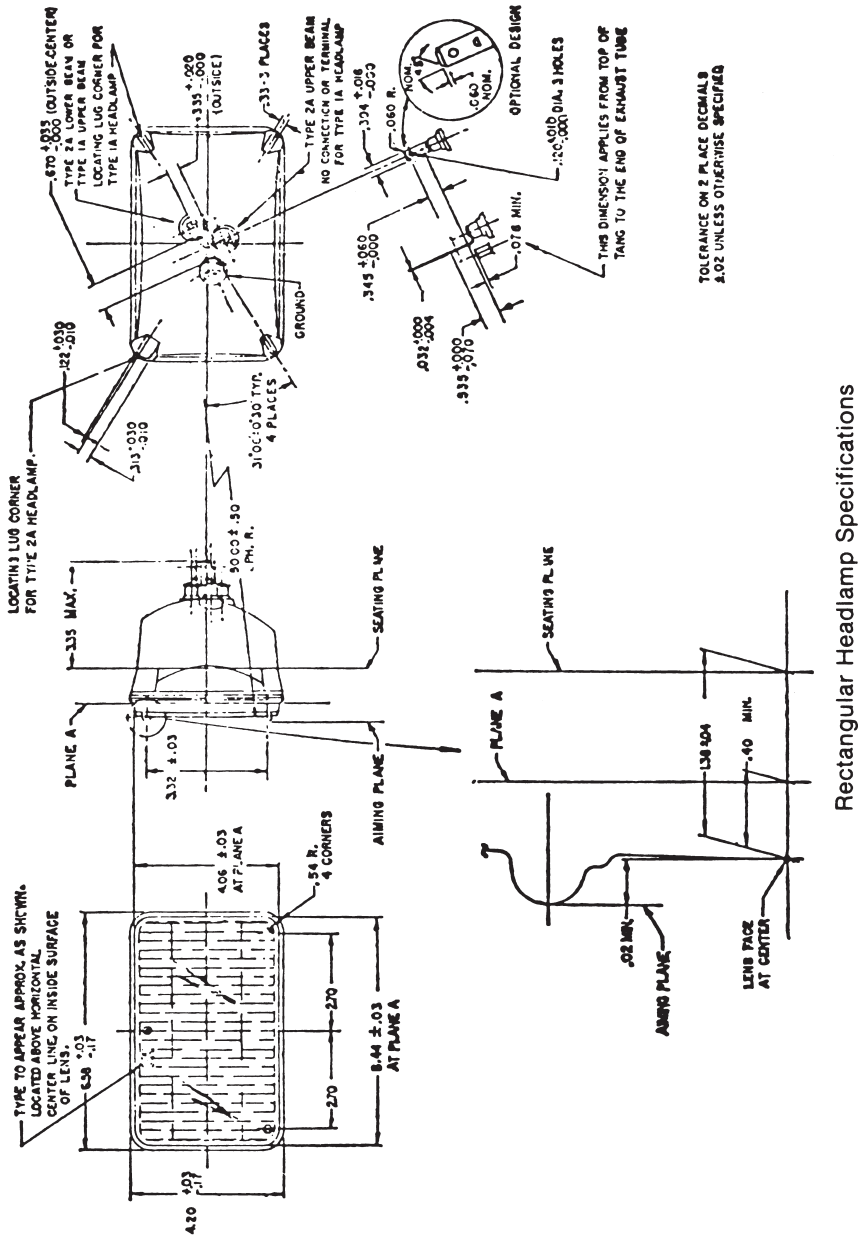
(C) The following SAE Standards and Recommended Practices or portions thereof, shall not apply:

(I) SAE Standard J571b, ''Dimensional Specifications for Sealed Beam Headlamp Units,'' April 1965.

(II) SAE Standard J573d, ''Lamp Bulbs and Sealed Units,'' December 1968.

(III) Figure 1, SAE Recommended Practice J602, ''Headlamp Aiming Device for Mechanically Aimable Sealed Beam Headlamp Units,'' August 1963.

(IV) Paragraph 2 of ''Retaining Ring Requirements,'' and the paragraph ''Proper Seating of Sealed Beam Unit,'' SAE Standard J580a, ''Sealed Beam Headlamp,'' June 1966.



Rectangular Headlamp Specifications

Figure 2

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(xxii) A backup lamp shall not be required to meet the miniumum photometric values at each test point specified in Table I of SAE Standard J593c ''Backup Lamps,'' if the sum of the candlepower measured at the test points within each group listed in Figure 3 of this section is not less than the group totals specified in that figure.

Minimum luminous intensity requirements for backup lamps

Group	Test point, degrees	Total for group, candela (see note 1)
1[1]	45L-5U 45L-H 45L-5D	45
2[1]	30L-H 30L-5D	50
3	10L-10U 10L-5U V-10U V-5U 10R-10U 10R-5U	100
4	10L-H 10L-5D V-H V-5D 10R-H 10R-5D	360
5[1]	30R-H 30R-5D	50
6[1]	45R-5U 45R-H 45R-5D	45

[1] When 2 lamps of the same or symmetrically opposite design are used, the reading along the vertical axis and the averages of the readings for the same angles left and right of vertical for 1 lamp shall be used to determine compliance with the requirements. If 2 lamps of differing designs are used, they shall be tested individually and the values added to determine that the combined units meet twice the candela requirements.

When only 1 backup lamp is used on the vehicle, it shall be tested to twice the candela requirements.

Figure 3

(xxiii) Variable load turn signal flashers shall comply with voltage drop and durability requirements with the maximum design load connected and

shall comply with starting time, flash rate, and percent current ''on'' time requirements both with the minimum and with the maximum design load connected.

(xxiv) The lowest voltage drop for turn signal flashers and hazard warning signal flashers measured between the input and load terminals shall not exceed 0.8 volt.

(xxv) The only required equipment for mobile structure trailers shall be stop lamps, tail lamps, rear reflex reflectors and turn signal lamps.

(xxvi) A motor-driven cycle whose speed attainable in one mile is 30 miles per hour or less need not be equipped with turn signal lamps.

(xxvii) A motor-driven cycle whose speed attainable in one mile is 30 miles per hour or less may be equipped with a stop lamp whose photometric output for the groups of test points specified in Figure 1 of this section is at least 1/2 of the minimum values set forth in that figure.

(xxviii) Each tail lamp on any motor vehicle manufactured before September 1, 1978, may be designed to conform to SAE Standard J585c, ''Tail Lamps,'' June 1966.

(xxix) Each turn signal lamp on a motorcycle manufactured between January 1, 1973, and September 1, 1978, may be designed to conform to SAE Standard J588d, ''Turn Signal Lamps,'' June 1966.

(xxx) Except as provided in subparagraph (xii), each turn signal lamp on a motorcycle shall meet 1/2 of the minimum photometric values at each test point specified for Class A turn signal lamps in SAE Standard J575d, ''Tests for Motor Vehicle Lighting Devices and Components,'' August 1967, or in SAE Standard J588e, ''Turn Signal Lamps,'' September 1970, as applicable.

(xxxi) Each turn signal lamp on a motorcycle manufactured on and after January 1, 1973, shall have an effective projected luminous area not less than 3 1/2 square inches.

(xxxii) Note 6 of Table 1 in SAE Standard J588e, ''Turn Signal Lamps,'' September 1970, shall not apply. A stop lamp that is not optically combined with a turn signal lamp shall remain activated when the turn signal is flashing.

(xxxiii) Headlamps may conform to SAE Standard J579c, ''Sealed Beam Headlamp Units for Motor Vehicles,'' December 1974, except that:

(A) In Table I of SAE Standard J579c, the maximum candela at any test point shall not exceed 37,500.

(B) In Table II of SAE Standard J579c, the combined maximum candela at any test point shall not exceed 37,500.

(C) At a voltage of 12.8 volts, the maximum design wattage, with an allowable tolerance of plus 7.5%, shall be as follows: 50 watts for Type 1 (5 3/4-inch); 37.5 watts for Type 2 (5 3/4-inch) high beam; and 60 watts for Type 2 (5 3/4-inch) low beam, Type 2 (7-inch) low beam and Type 2 (7-inch) high beam.

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(2) Plastic materials used for optical parts such as lenses and reflectors shall conform to SAE Recommended Practice J576c, May 1970, except that:

(i) Plastic materials manufactured before January 1, 1976, may conform to SAE J576b, August 1966.

(ii) Plastic lenses used for inner lenses or those covered by another material and not exposed directly to sunlight shall meet the requirements of paragraphs 3.4 and 4.2 of SAE J576b, or J576c, as applicable, when covered by the outer lens or other material.

(iii) After the outdoor exposure test, the haze and loss of surface luster of plastic materials used for lamp lenses shall not be greater than 30% haze as measured by ASTM-1003-61, ''Haze and Luminous Transmittance of Transparent Plastic.''

(iv) After the outdoor exposure test, plastic materials used for reflex reflectors shall meet the appearance requirements of paragraph 4.2.2 of SAE J576b or J576c as applicable.

(3) No additional lamp, reflective device, or other motor vehicle equipment shall be installed that impairs the effectiveness of lighting equipment required by this chapter.

(4) Each school bus shall be equipped with a system of four red signal lamps designed to conform to SAE Standard J887, ''School Bus Red Signal Lamps,'' July 1964, and four amber signal lamps designed to conform to that standard, except for their color, and except that their candlepower shall be at least 2 1/2 times that specified for red signal lamps. Both red and amber lamps shall be installed in accordance with SAE Standard J887, except that:

(i) Each amber signal lamp shall be located near each red signal lamp, at the same level, but closer to the vertical centerline of the bus.

(ii) The system shall be wired so that the amber signal lamps are activated only by manual or foot operation, and if activated, are automatically deactivated and the red signal lamps automatically activated when the bus entrance door is opened.

(5) The color in all lighting equipment covered by this standard shall be in accordance with SAE Standard J578a, April 1965, ''Color Specification for Electric Signal Lighting Devices.''

(b) *Other requirements.* The words ''it is recommended that,'' ''recommendations,'' or ''should be'' appearing in any SAE Standard or Recommended Practice referenced or subreferenced in this chapter shall be read as setting forth mandatory requirements, except that the aiming pads on the lens face and the black area surrounding the signal lamp, recommended in SAE Standard J887, ''School Bus Red Signal Lamps,'' July 1964, shall not be required.

(c) *Location of required equipment.* Except as provided in paragraphs (1)—(8), each lamp, reflective device, and item of associated equipment shall be securely mounted on a rigid part of the vehicle other than glazing that is not designed to be removed except for repair, in accordance with the requirements of

Table I or III of Appendix A of this chapter and in locations specified in Table II of Appendix A of this chapter, multipurpose passenger vehicles, trucks, trailers and buses 80 or more inches in overall width, or Table IV of Appendix A of this chapter, all passenger cars,and motorcycles, and multipurpose passenger vehicles, trucks, trailers and buses less than 80 inches in overall width, as applicable.

(1) Except as provided in this paragraph, each lamp and reflective device shall be located so that it meets the visibility requirements specified in any applicable SAE Standard or Recommended Practice. In addition, no part of the vehicle shall prevent a parking lamp, tail lamp, stop lamp, turn signal lamp, or backup lamp from meeting its photometric output at any applicable group of test points specified in Figures 1 and 3 of this section, or prevent any other lamp from meeting the photometric output at any test specified in any applicable SAE Standard or Recommended Practice. However, if motor vehicle equipment—for example, mirrors, snow plows, wrecker booms, backhoes, and winches—prevents compliance with this paragraph by any required lamp or reflective device, an auxilliary lamp or device meeting the requirements of this paragraph shall be provided. Clearance lamps may be mounted at a location other than on the front and rear if necessary to indicate the overall width of a vehicle, or for protection from damage during normal operation of the vehicle, and at such a location they need not be visible at 45° inboard.

(2) On a truck tractor, the red rear reflex reflectors may be mounted on the back of the cab, at a minimum height not less than four inches above the height of the rear tires.

(3) On a trailer, the amber front side reflex reflectors and amber front side marker lamps may be located as far forward as practicable exclusive of the trailer tongue.

(4) When the rear identification lamps are mounted at the extreme height of a vehicle, rear clearance lamps need not meet the requirement of Table II of Appendix A of this chapter that they be located as close as practicable to the top of the vehicle.

(5) The center of the lens referred to in SAE Standard J593c, ''Backup Lamps,'' February 1968, shall be the optical center.

(6) On a truck tractor, clearance lamps mounted on the cab may be located to indicate the width of the cab, rather than the overall width of the vehicle.

(7) The requirement that there be not less than four inches between a front turn signal lamp and a low beam headlamp, specified in SAE Standard J588e, ''Turn Signal Lamps,'' September 1970, shall not apply if the sum of the candlepower values of the turn signal lamp measured at the test points within each group listed in Figure 1 of this section is not less than 2 1/2 times the sum specified for each group for yellow turn signal lamps.

(d) *Equipment combinations.* Two or more lamps, reflective devices, or items of associated equipment may be combined if the requirements for each lamp,

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reflective device, and item of associated equipment are met, except that no clearance lamp shall be combined optically with any tail lamp or identification lamp.

(e) *Special wiring requirements.* Special wiring requirements shall be as follows:

(1) Each vehicle shall have a means of switching between lower and upper headlamp beams that conforms to SAE Recommended Practice J564a ''Headlamp Beam Switching,'' April 1964, or to SAE Recommended Practice J565b, ''Semi-Automatic Headlamp Beam Switching Devices,'' February 1969.

(2) Each vehicle shall have a means for indicating to the driver when the upper beams of the headlamps are on that conforms to SAE Recommended Practice J564a, April 1964, except that the signal color need not be red.

(3) The tail lamps on each vehicle shall be activated when the headlamps are activated in a steady-burning state.

(4) The stop lamps on each vehicle shall be activated upon application of the service brakes.

(5) The vehicular hazard warning signal operating unit on each vehicle shall operate independently of the ignition or equivalent switch, and when activated, shall cause to flash simultaneously sufficient turn signal lamps to meet, as a minimum, the turn signal lamp photometric requirements of this chapter.

(6) Each vehicle equipped with a turn signal operating unit shall also have an illuminated pilot indicator. Failure of one or more turn signal lamps to operate shall be indicated in accordance with SAE Standard J588e, ''Turn Signal Lamps,'' September 1970, except when a variable-load turn signal flasher is used on a truck, bus or multipurpose passenger vehicle 80 or more inches in overall width, on a truck that is capable of accommodating a slide-in camper, or on any vehicle equipped to tow trailers.

(7) On all passenger cars, motorcycles, and multipurpose passenger vehicles, trucks, and buses of less than 80 inches overall width:

(i) When the parking lamps are activated, the tail lamps, license plate lamps and side marker lamps shall also be activated.

(ii) When the headlamps are activated in a steady-burning state, the tail lamps, parking lamps, license plate lamps and side marker lamps shall also be activated.

(f) *Activated lamps.* When activated:

(1) Turn signal lamps, hazard warning signal lamps and school bus warning lamps shall flash.

(2) All other lamps shall be steady-burning, except that means may be provided to flash headlamps and side marker lamps for signaling purposes.

(g) *Replacement equipment.* Requirements for replacement equipment shall be as follows:

(1) Each lamp, reflective device or item of associated equipment manufactured to replace any lamp, reflective device or item of associated equipment on any vehicle to which this chapter applies, shall be designed to conform with this chapter.

(2) Each lamp, reflective device or item of associated equipment to which paragraph (1) applies may be labeled with the symbol ''DOT'', which shall constitute a certification that it conforms with applicable Federal motor vehicle safety standards.

Cross References

This section cited in 67 Pa. Code § 153.5 (relating to subreferenced SAE Standards and Recommended Practices).

§ 153.5. Subreferenced SAE Standards and Recommended Practices.

(a) SAE Standards and Recommended Practices subreferenced by the SAE Standards and Recommended Practices included in Tables I and III of Appendix A and § 153.4(a)(4) and (e)(1) (relating to requirements) are those published in the 1970 edition of the SAE Handbook, except that the SAE Standard referred to as ''J599'' is J599c, ''Lighting Inspection Code,'' March 1973, and the subreferenced SAE Standard referred to as ''J575'' is J575e, ''Tests for Motor Vehicle Lighting Devices and Components,'' August 1970, for tail lamps, stop lamps, and turn signal lamps designed to conform to SAE Standard J585d, J586c, and J588e respectively.

(b) Requirements of SAE Standards incorporated by reference in this chapter, other than J576b and J576c, shall not include tests for warpage of devices with plastic lenses.

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APPENDIX A

TABLE I.—REQUIRED MOTOR VEHICLE LIGHTING EQUIPMENT MULTIPURPOSE PASSENGER VEHICLES, TRUCKS, TRAILERS, AND BUSES, OF 80 OR MORE INCHES OVERALL WIDTH

Item	Multipurpose passenger vehicles, trucks, and buses	Trailers	Applicable SAE standard or recommended practice
Headlamps	2 white, 7-inch, Type 2 headlamp units; or 2 white, 5¾-inch, Type I headlamp units and 2 white 5¾-inch, Type 2 headlamp units.	None	J580a, June 1966; J579a, August 1965; and J566, January 1960.
Taillamps	2 red	2 red	J585d, August 1970.
Stoplamps	2 red [1]	2 red [1]	J586c, August 1970.
License plate lamp	1 white [2]	1 white [1]	J587d, March 1969.
Reflex reflectors	4 red; 2 amber [6]	4 red; 2 amber	J594e, March 1970.
Side marker lamps	2 red; 2 amber [6]	2 red; 2 amber	J592e, July 1972.
Backup lamp	1 white [3]	None	J593c, February 1968.
Turn signal lamps	2 red or amber; 2 amber [3]	2 red or amber	J588e, September 1970.
Turn signal operating unit.	1	None	J589, April 1964.
Turn signal flasher	1 [5]	None	J590b, October 1965.
Vehicular hazard warning signal operating unit.	1	None	J910, January 1966.
Vehicular hazard warning signal flasher.	1 [5]	None	J945, February 1966.
Identification lamps	3 amber; 3 red [6]	3 red	J592e, July 1972.
Clearance lamps	2 amber; 2 red [6]	2 amber, 2 red.	J592e, July 1972.
Intermediate side marker lamps.	2 amber [4]	2 amber [4]	J592e, July 1972.
Intermediate reflex reflectors.	2 amber [4]	2 amber [4]	J594e, March 1970.

[1] See S4.1.1.6. [2] See S4.1.1.10. [3] See S4.5.6. [4] See S4.1.1.3. [5] See S4.4.2. [6] See S4.1.1.2

APPENDIX A (Continued)

TABLE II.—LOCATION OF REQUIRED EQUIPMENT

MULTIPURPOSE PASSENGER VEHICLES, TRUCKS, TRAILERS, AND BUSES, OF 80 OR MORE INCHES OVERALL WIDTH

Item	Location on—		Height above road surface measured from center of item on vehicle at curb weight
	Multipurpose passenger vehicles trucks, and buses	Trailers	
Headlamps	Type 1 headlamps at the same height, 1 on each side of the vertical centerline; Type 2 headlamps at the same height, 1 on each side of the vertical centerline; as far apart as practicable.	Not required	Not less than 24 inches, nor more than 54 inches.
Taillamps	On the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practicable.	On the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practicable.	Not less than 15 inches, nor more than 72 inches.
Stop lamps	On the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practicable.	On the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practicable.	Not less than 15 inches, nor more than 72 inches.
License plate lamp	At rear license plate, to illuminate the plate from the top or sides.	At rear license plate, to illuminate the plate from the top or sides.	No requirement.
Backup lamp	On the rear	Not required	No requirement.
Turn signal lamps	At or near the front—1 amber on each side of the vertical centerline at the same height, and as far apart as practicable. On the rear—1 red or amber on each side of the vertical centerline, at the same height, and as far apart as practicable.	On the rear—1 red or amber on each side of the vertical centerline, at the same height, and as far apart as practicable.	Not less than 15 inches, nor more than 83 inches.
Identification lamps	On the front and rear—3 lamps, amber in front, red in rear, as close as practicable to the top of the vehicle, at the same height, as close as practicable to the vertical centerline, with lamp centers spaced not less than 6 inches or more than 12 inches apart.	On the rear—3 lamps as close as practicable to the top of the vehicle at the same height, as close as practicable to the vertical centerline, with lamp centers spaced not less than 6 inches or more than 12 inches apart.	No requirement.
Clearance lamps	On the front and rear—2 amber lamps on front, 2 red lamps on rear, to indicate the overall width of the vehicle, one on each side of the vertical centerline, at the same height, and as near the top as practicable.[1]	On the front and rear—2 amber lamps on front, 2 red lamps on rear, to indicate the overall width of the vehicle, one on each side of the vertical centerline, at the same height, and as near the top thereof as practicable.[2 3 4]	No requirement.
Intermediate side marker lamps.	On each side—1 amber lamp located at or near the midpoint between the front and rear side marker lamps.	On each side—1 amber lamp located at or near the midpoint between the front and rear side marker lamps.	Not less than 15 inches.
Intermediate side reflex reflectors.	On each side—1 amber located at or near the midpoint between the front and rear side reflex reflectors.	On each side—1 amber located at or near the midpoint between the front and rear side reflex reflectors.	Not less than 15 inches nor more than 60 inches.
Reflex reflectors	On the rear—1 red on each side of the vertical centerline, as far apart as practicable, and at the same height.[3] On each side—1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	On the rear—1 red on each side of the vertical centerline, as far apart as practicable, and at the same height. On each side—1 red as far to the rear as practicable, an 1 amber as far to the front as practicable.	Not less than 15 inches nor more than 60 inches.
Side marker lamps	On each side—1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	On each side—1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	Not less than 15 inches.

[1] See S4.3.1.6.

[2] See S4.3.1.2.

[3] See S4.3.1.4.

[4] See S4.1.1.9.

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APPENDIX A (Continued)

TABLE III—REQUIRED MOTOR VEHICLE LIGHTING EQUIPMENT

ALL PASSENGER CARS AND MOTORCYCLES, AND MULTIPURPOSE PASSENGER VEHICLES, TRUCKS, TRAILERS AND BUSES, OF LESS THAN 80 INCHES OVERALL WIDTH

Item	Passenger cars, multipurpose passenger vehicles, trucks and buses	Trailers	Motorcycles	Applicable SAE standard or recommended practice
Headlamps	2 white, 7-inch, Type 2 headlamp units, or 2 white, 5 1/4-inch, Type 1 headlamp units and 2 white, 5 1/4-inch, Type 2 headlamp units.			J580a, June 1966, J579a, August 1965, and J566, January 1960.
			1 white	J584, April 1964 and J566, January 1960.
Taillamps	2 red	2 red [14]	1 red	J585d, August 1970.
Stoplamps	2 red [1 2]	2 red [1 14]	1 red [1]	J586c, August 1970.
License plate lamp	1 white [3]	1 white [3]	1 white [3]	J587d, March 1969.
Parking lamps	2 amber or white [4]	None	None	J222, December 1970.
Reflex reflectors	4 red; 2 amber [5]	4 red; 2 amber [11 12]	3 red; 2 amber	J594e, March 1970.
Intermediate side reflex reflectors.	2 amber [9]	2 amber [9]	None	J594e, March 1970.
Intermediate side marker lamps.	2 amber [9]	2 amber [9]	None	J592e, July 1972.
Side marker lamps	2 red; 2 amber [3]	2 red; 2 amber [15]	None	J592e, July 1972.
Backup lamp	1 white [3 11]	None	None	J593e, July 1972.
Turn signal lamps	2 red or amber; 2 amber [3 6]	2 red or amber	2 amber, 2 red or amber [12]	J588e, September 1970.
Turn signal operating unit.	1 [7 8 10]	None	1 [12]	J589, April 1964.
Turn signal flasher	1 [6]	None	1 [12]	J590b, October 1965.
Vehicular hazard warning signal operating signal.	1	None	None	J910, January 1966.
Vehicular hazard warning signal flasher.	1 [6]	None	None	J945, February 1966.

[1] See S4.1.1.6. [2] See S4.1.1.7. [3] See S4.1.1.10. [4] See S4.1.1.11. [5] See S4.1.1.2. [6] See S4.4.2.
[7] See S4.5.6. [8] See S4.1.1.5. [9] See S4.1.1.3. [10] See S4.1.1.15. [11] See S4.1.1.17. [12] See S4.1.1.18.

APPENDIX A (Continued)

TABLE IV—LOCATION OF REQUIRED EQUIPMENT

ALL PASSENGER CARS AND MOTORCYCLES, AND MULTIPURPOSE PASSENGER VEHICLES, TRUCKS, TRAILERS AND BUSES OF LESS THAN 80 INCHES OVERALL WIDTH

Item	Location on		Height above road surface measured from center of item on vehicle at curb weight
	Passenger cars, multipurpose passenger vehicles, trucks, trailers and buses	Motorcycles	
Column 1	Column 2	Column 3	Column 4
Headlamps	Type 1 headlamps at the same height, 1 on each side of the vertical centerline; Type 2 headlamps at the same height 1 on each side of the vertical centerline; as far apart as practicable.	On the vertical centerline, except that if two are used, they shall be symmetrically disposed about the vertical centerline.	Not less than 24 inches, nor more than 54 inches.
Taillamps	On the rear—1 on each side of the vertical centerline, at the same height, and as far apart as practicable. [2]	On the rear—on the vertical centerline except that if two are used, they shall be symmetrically disposed about the vertical centerline.	Not less than 15 inches, nor more than 72 inches.
Stoplamps	On the rear—1 on each side of the vertical centerline, at the same height, and as far apart as practicable. [2]	On the rear—on the vertical centerline except that if two are used, they shall be symmetrically disposed about the vertical centerline.	Not less than 15 inches, nor more than 72 inches.
License plate lamp.	At rear license plate, to illuminate the plate from the top or sides.	At rear license plate	No requirement.
Parking lamps.	On the front—1 on each side of the vertical centerline, at the same height, and as far apart as practicable.	Not required	Not less than 15 inches, no more than 72 inches.

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APPENDIX A (Continued)

TABLE IV—LOCATION OF REQUIRED EQUIPMENT—Continued.

ALL PASSENGER CARS AND MOTORCYCLES, AND MULTIPURPOSE PASSENGER VEHICLES, TRUCKS, TRAILERS AND BUSES OF LESS THAN 80 INCHES OVERALL WIDTH—Continued

Item	Location on		Height above road surface measured from center of item on vehicle at curb weight
	Passenger cars, multipurpose passenger vehicles, trucks, trailers and buses	Motorcycles	
Column 1	Column 2	Column 3	Column 4
Reflex reflectors.	On the rear—1 red on each side of the vertical centerline, at the same height, and as far apart as practicable.[2] On each side—1 red as far to the rear as practicable, and 1 amber as far to the front as practicable. [1]	On the rear—1 red on the vertical centerline except that, if two are used on the rear, they shall be symmetrically disposed about the vertical centerline. On each side—1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	Not less than 15 inches, nor more than 60 inches.
Backup lamp	On the rear	Not required	No requirement.
Turn signal lamps. [1]	At or near the front—1 amber on each side of the vertical centerline, at the same height, and as far apart as practicable. On the rear—1 red or amber on each side of the vertical centerline, at the same height, and as far apart as practicable.	At or near the front—1 amber on each side of the vertical centerline at the same height, and having a minimum horizontal separation distance (centerline of lamps) of 16 inches. Minimum edge to edge separation distance between lamp and headlamp is 4 inches. At or near the rear—1 red or amber on each side of the vertical centerline, at the same height and having a minimum horizontal separation distance (centerline to centerline of lamps) of 9 inches. Minimum edge to edge separation distance between lamp and tail or stop lamp is 4 inches.	Not less than 15 inches, nor more than 83 inches.
Side marker lamps.	On each side—1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	Not required	Not less than 15 inches.
Intermediate side marker lamps.	On each side—1 amber located at or near the midpoint between the front and rear side marker lamps.	Not required	Not less than 15 inches.
Intermediate side marker reflectors.	On each side—1 amber located at or near the midpoint between the front and rear side marker reflectors.	Not required	Not less than 15 inches, nor more than 60 inches.

[1] Front turn signal lamps not required for trailers.

[2] See S4.1.1.18.

NOTE: (1) The term ''overall width'' refers to the nominal design dimension of the widest part of the vehicle, exclusive of signal lamps, marker lamps, outside rearview mirrors, flexible fender extensions, and mud flaps, determine with doors and windows closed, and the wheels in the straight-ahead position.

This supersedes the interpretation of the term ''overall width'' appearing in the FEDERAL REGISTER of March 1, 1967 (32 Fed. Reg. 3390).

(2) Paragraph S3.1 and Tables I and III of § 571.108 as amended (32 Fed. Reg. 18033, Dec. 16, 1967), specify that certain lamp assemblies shall conform to applicable SAE Standards. Each of these basically referenced standards subreferences both SAE Standard J575 (tests for motor vehicle lighting devices and components) which in turn references SAE Standard J573 on bulbs, and SAE Standard J567 on bulb sockets.

(3) Paragraph C of SAE Standard J575 states in part: ''Where special bulbs are specified, they should be submitted with the devices and the same or similar bulbs used in the tests and operated at their rated mean spherical candlepower.'' The Administrator has determined that this provision of SAE Standard J575 permits the use of special bulbs, including tubular-type bulbs, which do not conform to the detailed requirements of Table I of SAE Standard J573. It follows that the sockets for special bulbs need not conform to the detailed requirements of SAE Standard J567. These provisions for special bulbs in no way except the lamp assemblies from meeting all performance requirements specified in Federal Standard No. 108, including those specified in the basically referenced SAE Standards, and in the subreferenced SAE Standard J575.

[41 Fed. Reg. 33522, Aug. 23, 1976]

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