SOCIETY OF AUTOMOTIVE ENGINEERS, INC. • TWO PENNSYLVANIA PLAZA • NEW YORK, NEW YORK 10001

LAND SEA AIR SPACE

TECHNICAL REPORT J586c

STOP LAMPS — SAE J586c

SAE Standard

Report of the Lighting Division approved February 1927 and last revised by Lighting Committee August 1970.

1. Scope—This standard provides test methods and requirements for stop lamps.

2. Definitions

2.1 Stop Lamps—Lamps giving a steady light to the rear of a vehicle, or train of vehicles to indicate the intention of the operator of a vehicle to stop or diminish speed by braking.

2.2 Multiple Compartment Lamp—A device which gives its indication by two or more separately lighted areas which are joined by one or more common parts such as a housing or lens.

2.3 Multiple Lamp Arrangement—An array of two or more separated lamps on each side of the vehicle which operate together to give a signal.

3. Laboratory Requirements

3.1 A multiple compartment lamp or multiple lamps may be used to meet the photometric requirements of a stop lamp. If a multiple compartment or multiple lamps are used and the distance between the optical axes (filament centers) does not exceed 22 in. for two compartment or lamp arrangements and does not exceed 16 in. for three compartment or lamp arrangements, then the combination of the compartments or lamps must be used to meet the photometric requirements for the corresponding number of lighted sections (Table 1). If the distance between optical axes exceeds the above dimensions, each compartment or lamp shall comply with the photometric requirements for one lighted section (Table 1).

TABLE 1—MINIMUM DESIGN CANDLEPOWER REQUIREMENTS

Test Points, deg		Lighted Sections 1	2	3
10U and 10D	10L	10	12	15
	V	25	30	35
	10R	10	12	15
5U and 5D	20L	10	12	15
	10L	30	35	40
	5L	50	60	70
	V	70	82	95
	5R	50	60	70
	10R	30	35	40
	20R	10	12	15
H	20L	15	18	20
	10L	40	47	55
	5L	80	95	110
	V	80	95	110
	5R	80	95	110
	10R	40	47	55
	20R	15	18	20
Maximum		300	360	420

NOTES:

1. Specifications are based on laboratories using accurate, rated bulbs during testing.
2. Lamps designed for use in both 6V and 12V systems shall be tested with 12V 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.
3. A multiple device signalling unit gives its indication by two or more separately lighted sections which may be separate lamps, or areas that are joined by common parts. The photometric values are to apply when all sections which provide the same signal are considered as a unit except when the dimensions between optical centers exceed those given in paragraph 3.1. For a separate lamp arrangement, where lamps are interchangeable, each lamp should be of approximately the same performance.
4. When a tail lamp is combined with the stop lamp, the stop lamp shall not be less than three times the candlepower of the tail lamp at any test point on or above horizontal; except that at H-V, H-5L, H-5R, and 5U-V, the stop lamp shall not be less than five times the candlepower of the tail lamp. If a multiple compartment or multiple lamp arrangement is used and the distance between optical axes for both the tail lamp and stop lamp is within the dimensions specified in paragraph 3.1, the ratio of the stop lamp to the tail lamp shall be computed with all the compartments or lamps lighted. If a multiple compartment or multiple lamp arrangement is used and the distance between optical axes for one of the functions exceeds the dimensions specified in paragraph 3.1, the ratio shall be computed for only those compartments or lamps where the tail lamp and stop lamp are optically combined.
5. Stop lamps shall not exceed the listed maximum candlepower at night over any area larger than that generated by a 1/4 deg radius.

For vehicles of 80 in. in overall width, a maximum of two lamps and/or compartments per side may be mounted closer together than 22 in. providing that each compartment and/or lamp meets the single compartment photometric requirements listed in Table 1 and has a minimum effective projected luminous lens area of 12 sq in. Each lamp and/or compartment utilized in this manner shall meet the one lighted section value for all functions for which it is designed.

3.2 The effective projected luminous lens area of a single compartment lamp measured on a plane at right angles to the axis of a lamp must be at least 8 sq in.

3.3 If a multiple compartment lamp or multiple lamps are used to meet the photometric requirements of a stop lamp, the effective projected luminous lens area of each compartment or lamp shall be at least 3½ sq in., provided the combined area is at least 8 sq in.

3.4 The following sections from SAE J575 are a part of this standard:

3.4.1 Section B—Samples for Test
3.4.2 Section C—Lamp Bulbs
3.4.3 Section D—Laboratory Facilities
3.4.4 Section E—Vibration Test
3.4.5 Section F—Moisture Test
3.4.6 Section G—Dust Test
3.4.7 Section H—Corrosion Test
3.4.8 Section J—Photometry
3.4.9 Section L—Warpage Test on Devices with Plastic Lenses, except that lamp is to be operated 5 min on and 5 min off until the total time equals 1 hr. If the tail lamp and/or side marker lamps are incorporated in the same device, they shall be operated continuously during the test. (The test is to be conducted in a circulating air type oven.)

3.5 Plastic Materials—Any plastic materials used in optical parts shall comply with the requirements set forth in SAE J576.

3.6 Color Test—The color of the light from stop lamps shall be red. (See SAE J578.)

3.7 If the stop lamp is optically combined with the tail lamp and a two-filament bulb is used, the bulb shall have an indexing base and the socket shall be designed so that bulbs with nonindexing bases cannot be used.

3.8 Photometric Requirements

3.8.1 All beam candlepower measurements shall be made with the incandescent filament (s) of the signal lamp (s) at least 10 ft from the photometer screen. The H-V axis shall be taken as parallel to the longitudinal axis of the vehicle. When compartments or lamps are photometered together, the H-V axis shall intersect the midpoint between the optical center (filament).

3.8.2 Beam candlepower measurements of multiple compartment lamp or multiple lamp arrangements shall be made by either of the following methods:

(a) All compartments or lamps may be photometered together provided that a line from the optical center (filament) of each compartment or lamp to the center of the photometer sensing device does not make an angle of more than 0.6 deg with the photometer (H-V) axis.

(b) Each compartment or lamp may be photometered separately by aligning its axis with the photometer and adding the value at each test point.

3.8.3 Table 1 lists design candlepower requirements for a stop lamp.

4. Installation Requirements—The following requirements apply to the device as used on the vehicle and are not part of the laboratory test requirements and procedures.

4.1 Visibility of the stop lamp shall not be obstructed by any part