

Turn Signal Lamps —SAE J588f

SAE Standard
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Report of the Lighting Division approved February 1927 and completely revised by Lighting Committee June 1978.
Rationale statement available.

φ 1. **Scope**—This engineering design standard provides design parameters and general requirements for turn signal lamps. It is intended for use in conjunction with SAE J256b.

2. **Definitions**

2.1 **Turn Signal Lamps**—The signaling elements of a turn signal system which indicate a change in direction by giving a flashing light on the side toward which the turn will be made. (For flashing rate and *on* period, see SAE J590e.)

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 turn signal lamp. If a multiple compartment or multiple lamps are used and the distance between the optical axes (filament centers) does not exceed 560 mm (22 in) for two compartment or lamp arrangements and does not exceed 410 mm (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).

φ TABLE 1 — MINIMUM DESIGN PHOTOMETRIC REQUIREMENTS (cd)

Test Points (Deg)	Front Signals—Yellow						Rear Signals					
	Spacing of Turn Signal From Lighted Edge of Low Beam Unit— See Section 4.2						Red			Yellow		
	(A) 100 mm (4 in) or more			(B) less than 100 mm (4 in)			1	2	3	1	2	3
Lighted Sections	1	2	3	1	2	3	1	2	3	1	2	3
10U&D 10L&R V	25 60	30 75	35 90	60 150	75 185	85 225	10 25	12 30	15 35	15 40	20 50	25 55
5U&D 20L&R 10L&R 5L&R V	25 75 125 175	30 88 150 205	35 100 175 235	60 185 310 435	75 220 375 510	85 250 435 585	10 30 50 70	12 35 60 82	15 40 70 95	15 50 80 110	20 55 100 130	25 65 110 150
H 20L&R 10L&R 5L&R V	35 100 200 200	45 120 240 240	50 140 275 275	85 250 500 500	110 300 600 600	125 350 685 685	15 40 80 80	18 47 95 95	20 55 110 110	25 65 120 130	30 75 150 150	35 90 175 175
Maximum— Rear Lamps Only	—	—	—	—	—	—	300	360	420	750	900	900

Notes:

- Specifications are based on laboratories using accurate, rated bulbs during testing.
- Lamps designed for use with both 6V and 12V bulbs 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.
- A multiple device signaling 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 dimensions given in paragraph 3.1. For a separate lamp arrangement, where lamps are interchangeable, each lamp should be of approximately the same performance.
- When a tail lamp or parking lamp is combined with the turn signal lamp, the signal lamp shall not be less than three times the candlepower (a) of the tail lamp at any test point, or (b) of the parking lamp at any test point on or above horizontal; except that at H-V, H-5L, H-5R, and 5U-V, the signal lamp shall not be less than five times the candlepower of the tail

lamp or parking lamp. If a multiple compartment or multiple lamp arrangement is used and the distance between optical axes for both the tail lamp (parking lamp) and the turn signal is within the dimensions specified in paragraph 3.1, the ratio of the turn signal to the tail lamp (parking 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 (parking lamp) and turn signal are optically combined. Where the tail lamp is combined with the turn signal lamp, and the maximum candlepower of the tail lamp is located below horizontal and within an area generated by an 0.5 deg radius around a test point, the ratio for the test point may be computed using the lowest value of the tail lamp candlepower within the generated area.

5. Lamps intended for the rear of a vehicle shall not exceed the listed maximum candlepower over any area larger than that generated by an 0.25 deg radius.

The φ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.