

JIS

JAPANESE INDUSTRIAL STANDARD

Special Warning Lights for Automobiles

JIS D 5503-1982
(Reaffirmed: 1987)

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JAPANESE INDUSTRIAL STANDARD

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Special Warning Lights for Automobiles

D 5503-1982
(Reaffirmed: 1987)1. Scope

This Japanese Industrial Standard specifies the special warning lights to be used for emergency automobiles, load maintenance work automobiles, etc.

2. Definitions

For the purpose of this Standard, in addition to the definitions specified in JIS D 0103, the following definitions shall apply:

- (1) reference axis The straight line perpendicular to the reference plane, i.e. the rotation axis in a rotating type light and the vertical line passing the light source in an on-off type light.
- (2) reference plane The plane assigned by the manufacturer as the reference for mounting.
- (3) globe The cover of light source that is formed by translucent materials.

3. Classification

Special warning lights are classified according to the styles of light and the mounting methods as shown in Table 1.

The rated voltages to be employed shall be 12 V or 24 V.

Applicable Standards:

JIS D 0103-Glossary of Terms Relating to Electric Equipments for Automobiles

JIS D 0203-Method of Moisture, Rain and Spray Test for Automobile Parts

JIS D 0204-Method of High and Low Temperature Test for Automobile Parts

JIS D 0205-Test Method of Weatherability for Automotive Parts

JIS Z 8701-Specification of Colours According to the CIE 1931 Standard Colorimetric System and the CIE 1964 Supplementary Standard Colorimetric System

JIS Z 8722-Methods of Measurement for Colour of Reflecting or Transmitting Objects

Corresponding International Standard:

ISO 4148 Motor vehicles-Special warning lights-Dimensions

Table 1. Classification

Class	Style	Symbol	Mounting method	Remark
Class A	Cylindrical	A	Tube mounted	See Attached Fig. 1
Class B	Cylindrical	B	Flat base mounted with through hole	See Attached Fig. 2
Class C	Cylindrical	C	Single bolt mounted	See Attached Fig. 3
Class D	Cylindrical	D 1	Magnetically mounted	See Attached Fig. 4-1
	Stream line	D 2		See Attached Fig. 4-2
Class E	Cylindrical	E 1	Three bolts mounted	See Attached Fig. 5-1
	Stream line	E 2		See Attached Fig. 5-2
Class F	Rectangular	F 1	Through hole mounted	See Attached Fig. 6-1
		F 2	Roofed-rib supported	See Attached Fig. 6-2

4. Performance

4.1 Number of Flashing Light The number of flashing lights shall be not less than 60 flashes/min but not more than 300 flashes/min, when a special warning light is operated at the prescribed test voltage under normal service conditions. Provided that the measurements shall be carried out under the following conditions:

- (1) The special warning light shall be operated previously under the environment of ordinary temperature and humidity until the number of flashing lights stabilize, and then the number of flashing lights during one minute shall be measured.
- (2) In the case of a special warning light having an auxiliary reflecting mirror, the reflected light by the auxiliary reflecting mirror shall not be included in the measured number of flashes. In the case of a special warning light accommodating plural mechanisms which emit flashing light, the measurement shall be carried out on each mechanism separately.

4.2 Luminous Intensity When a special warning light is operated at the prescribed test voltage, the luminous intensity at a point where the luminous intensity of the main flashing light is the maximum in an almost horizontal plane passing through the light source shall be not less than 5000 cd with its globe removed. The measurement shall be carried out with the rotation stopped for a rotating type one, and with the light continuously operated for an on-off type one.

4.3 Resistance to Water The test shall be carried out under condition S1, specified in JIS D 0203 on a special warning light mounted as in normal service conditions. The light shall not cause any abnormality detrimental to use when it is operated at the prescribed test voltage after it has been subjected to the above test.

4.4 Resistance to Temperature The special warning light shall not cause such abnormalities detrimental to use as deformation, crack and change in color, when it is placed in a thermostatic chamber under normal service condition and subjected to the exposure test and operation test under the conditions of -30°C for low temperature exposure, 50°C for high temperature operation and -20°C for low temperature operation specified as Class 5 test in JIS D 0204.

The prescribed test voltage shall be used when the operation test is carried out.

4.5 Color and Chromaticity of Globe The color and chromaticity of globe shall be within the chromaticity range shown in Table 2 when measured in accordance with the provision of JIS Z 8722 using standard light A specified in JIS Z 8701. However, they may be decided by comparing the specimen with the standard limiting filters of the chromaticity range shown in Table 2 using the same light source with the naked eye, instead of the above method.

Table 2. Chromaticity Range

Name of color	Chromaticity range
Red	$y \leq 0.33, z \leq 0.008$
Yellow red (yellow)	$0.44 \geq y \geq 0.39, z \leq 0.010$
Blue	$y = 0.32, x = 0.16, x = 0.40 - y, x = 0.13 + 0.60 y$ or $y = 0.805 x + 0.065, y = 0.400 - x, x = 0.600 y + 0.133$

4.6 Weatherability When the test is carried out under condition MS given in Table 9 of JIS D 0205 on a globe of special warning light, there shall be no remarkable change in the outer surface and color of globe.

5. Construction

The construction of light shall be as follows:

- (1) The special warning light shall consist of a globe, lamp, reflecting mirror, rotating drive or on-off device, and the optical axis shall be almost perpendicular to the reference axis.
- (2) The special warning light shall be so constructed that it exerts flashing light by means of rotating system or on-off system.
- (3) The special warning light shall be so constructed that such failures detrimental to its function as damage of globe, loosening and coming off of screws and parts will not appear during its service while being attached to an automobile.