



सत्यमेव जयते

**INDIAN RAILWAY
STANDARD SPECIFICATION
(TENTATIVE)**

**FOR
SIGNAL AND POINT INDICATOR LAMPS**

**SPECIFICATION NO. IRS: S 27-64
Revision 0**

(Number of pages 09)

**SIGNAL DIRECTORATE
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SIGNAL AND POINT INDICATOR LAMPS****Authors****Director/ Signal/ RDSO****Approved by****Sr. Executive Director/ Signal, RDSO****Abstract****This document specifies the technical requirements of Signal and Point Indicator Lamps**

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NAME	ORGANIZATION	FUNCTION	LEVEL
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AMENDMENTS

Version	Chapter/ Annexure	Amendment	Effective date
<u>IRS: S 27-64</u>		FIRST ISSUE	1964

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GOVERNMENT OF INDIA**MINISTRY OF RAILWAYS**
(RAILWAY BOARD)

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INDIAN RAILWAY STANDARD SPECIFICATION
(Tentative)
For
SIGNAL AND POINT INDICATOR LAMPS
Serial NO. S 27-64**0. FOREWORD**

- 0.1 These specifications are issued under the fixed Serial No. S 27 the final number indicates the year of original adoption as standard or, in the case of revision, the year of last revision.

ADOPTED, 1964

- 0.2 This specification requires reference to the following Indian Railways Standard and Indian Standard Specification which shall also be complied with to the extent applicable: -

IRS	S7 – Roundels , Glasses and Lenses.
IRS	S8 – Signal Lamp Burners.
IRS	S10 – Mechanical Signalling and Interlocking Equipments.
IS	341 – Black Japan .
IS	1459 – Kerosenes.

- 0.3 Wherever reference to any Standard appears in this specification, it shall be taken as reference to the latest version of that Standard unless the year of issue is specifically stated.

- 0.4 This specification is intended chiefly to cover the technical provisions and the provisions relating to the supply of materials and so does not include all the necessary provisions of a contract.

1. SCOPE

- 1.1 This specification covers the requirements of Signal Lamps and Point Indicator Lamps.

2. GENERAL REQUIREMENTS.

- 2.1 The design of the lamp top shall be such as to make the air intake and exhaust flow through the intended passages.
- 2.2 The main considerations in the design of the Signal and Point Indicator Lamps are:-
- 2.2.1 An efficient beam of light shall be produced using Kerosene oil to Indian Standards Specification No. 1459 Grade 1.
 - 2.2.2 The air for combustion is taken in and exhausted at a suitable rate.
 - 2.2.3 It shall be easily possible to ensure that the center of the flame coincide with the focal point of the lens. When tested with signal lamp burner to IRS Specification S-8
 - 2.2.4 There shall be no access for rain water to enter the lamp.
 - 2.2.5 The perforated area in the lamp top shall be uniformly distributed.
 - 2.2.6 The accumulation of smoke inside the lamp or deposit of soot on the lens and lamp body is avoided.
 - 2.2.7 Riveted or spot welded construction, as specified by the purchaser, shall be adopted.

3. LENSES.

- 3.1 For signal Lamp, the lens shall be an optically clear lens of 136 mm diameter with 89 mm focus and shall comply with I.R.S. Specification S 7.
- 3.2 For Point Indicator Lamp, the lenses shall be optical lenses 101 mm. diameter with 89 mm focus and shall comply with I.R.S. Specification No. S 7. The colour of the lenses shall be specified by the purchaser and the colours of the target disc shall correspond with colours of lenses.

4. PAINTING.

- 4.1 Sheet steel parts before assembling shall be tinned with a lead-tin alloy containing not less than 40 % nor more than 50 % pure lead.

- 4.2 When the lens hood and the lamp bottom have been assembled on lamp body, the body shall again be dipped in molten lead-tin alloy.
- 4.3 The finished lamps shall be thoroughly cleaned from rust, scales and dust with a suitable cleaner and / or steel brushes to remove all grease.
- 4.4 The parts after being properly cleaned shall be sprayed outside with black Japan to Indian Standard Specification no. 341.
- 4.5 After spraying, the lamp shall be baked at an even temperature of 12°C min. for a sufficient length of time to secure a hard durable finish.

5. INSPECTING & TESTING.

- 5.1 Manufacturer shall test all lamps to ensure compliance with clause 5.2.
- 5.2 Ventilation Test for finished lamp shall be carried out in the following 4 positions of the lamp placed vertically for 2 minutes each with wind directed horizontally on the complete lamp at a wind velocity of 110 km per hour.

During the test, the lamp shall not get extinguished.

- 5.2.1 Lens side facing wind.
- 5.2.2 Side 90° to the left of that lens facing wind.
- 5.2.3 Side opposite to that lens facing wind.
- 5.2.4 Side 90° to the right of that lens facing wind.
- 5.3 For operational test, to ensure compliance with clause 2.2.6 the lamps shall be inspected to see that there is neither accumulation of smoke inside the lamp nor the flame has extinguished after the lamp has burnt continuously for 24 hours after the wick had been adjusted to produce a flame of maximum height without smoking.
- 5.4 Lamps shall be tested in Still Air at temperature of 43° for two hours. During the test, the lamp shall not get extinguished.
- 5.5 Driving Rain Test shall be carried out as follows to ensure compliance with clauses 2.24.

The lamps shall be subjected to water sprayed on all external surfaces from the shower heads to simulate the effects of driving rain to the satisfaction of the Inspecting Officer.

6. REJECTION.

- 6.1 One lamp shall be selected at random by the purchaser or his nominee for every 100 numbers of the lamp or part thereof for the purpose of specified Wind velocity and Operational tests. If either of the test extinguished the flame, action will be taken in accordance with clause 6.3

- 6.2 One lamp shall be selected at random by the purchaser or his nominee for every 250 numbers of lamp or part thereof for purpose of the specified Driving Rain test and

Still Air Temperature test. If the lamp fails in either of the tests action will be taken in accordance with Clause 6.3.

- 6.3 Should any samples fail to fulfil the test requirements as in clauses 6.1 and 6.2, two further samples shall be selected from the same lot at random and if both the additional samples are satisfactory, the lot shall be accepted. If any of these samples fails, the lot shall be rejected.

7. PACKING.

- 7.1 The inter-spaces between lamps in the crates shall be suitably filled-in to ensure that the lamps do not get displaced from their position in transit.

8. IMPORTANT NOTE.

- 8.1 Manufacture and workmanship, marking, finish and warranty shall be in accordance with the requirements under I.R.S S-10.

APPENDIX.

Information to be supplied by the Purchaser.

1. Type of Construction Ref: Clause 2.2.7
2. Colours of lenses..... ..Ref: Clause 3.2

REF

AMMENDMENT-1

Page 1, Clause 0. FORWARDED. 5-27

Am-n.1

ADD the following at the end of clause 0.2:-

"IS: 2106 (Part XI) - Environmental tests for electronic equipment - Part XI Water Spray Test".

5-27

Page 3, Clause 5, INSPECTION & TESTING.

Am-n.1

Delete the existing clause 5.3 and substitute the following:-

"For operational test, to ensure compliance with clause 2.2.6, the lamp shall be inspected to see that there is neither accumulation of smoke inside the lamp nor deposit of soot on the lens and lamp body nor the flame has extinguished after the lamp has burnt continuously for 24 hours after the wick has been adjusted to produce a flame of maximum height without smoke".

Am-n.1
Page 4, Clause 5, INSPECTION & TESTING.

Delete the existing clause 5.5 and substitute the following:-

"To ensure compliance with clause 2.2.4, lamps shall be subjected to water sprayed on all external surfaces from shower-heads to simulate the effect of driving rain as per IS: 2106 (Part XI). ✓

"During the test, the lamps shall not get extinguished and visual inspection at the end of the test shall not show any ingress of water."