

TENDER SPECIFICATION

No. CLW/ES/3/0655

ENCLOSURES:

- 1) ANNEXTURE
- 2) DRG. NO. CLW/ES/3/SK-1/

TOTAL NO. OF SHEETS: 8

ALT							
SHEETS							

SPECIFICATION
FOR
HEAD LIGHT LAMP
WAG-9, WAP-7 & WAP-5 AC ELECTRIC LOCOMOTIVES

ISSUED BY




DY. CHIEF ELECTRICAL ENGINEER/CON/D-II

CHITTARANJAN LOCOMOTIVE WORKS

P.O. CHITTARANJAN, PIN-713331

DIST. BURDWAN, WEST BENGAL (INDIA)

SPECIFICATION
FOR
HEAD LIGHT LAMP

 JE
  SSE
  AEE

APPROVED BY


 14/9/11
 DY. CEE/CON/D-II

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL. INDIA

NO. CLW/ES/3/0655

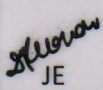

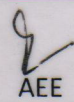
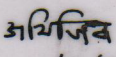
DATE. 22.08.2011

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ALTERATION SHEET

SHEET-2

SL. NO.	DATE OF ALTERATION	ALT. NO.	SHEET NO.	DESCRIPTION	SIGNATURE

SPECIFICATION FOR HEAD LIGHT LAMP	 JE	 SSE	 AEE	CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL. INDIA	
	APPROVED BY  14/9/2011 DY. CEE/CON/D-II			NO. CLW/ES/3/0655 DATE. 22.08.2011	
				ALT.	

SPECIFICATION FOR HEAD LIGHT LAMP

1. This specification covers the manufacture and supply of Head light lamp for WAG-9, WAP-7 and WAP-5, 3-PHASE Electric locomotives.

2. **SERVICE CONDITION:**

2.1 **Climatic and environmental condition**

Maximum atmospheric temperature	: 70° C (in Sun)
	: 50° C (in shade)
Nominal Humidity	: 60%
Reference site condition	: Ambient 45° C, Inside HT compartment 55° C
Maximum Humidity	: 100% saturation during rainy season
Altitude	: 160 m.a.s.l.
Rain fall	: Very heavy in certain areas. The Locomotive will be designed to permit its Running at 10 KM /Hr. in flood water level Of 102 mm above rail level.
Atmosphere during hot weather	: Extremely dusty and desert terrain in certain Areas.
Coastal Areas	: Locomotive and equipment will be designed To work in coastal areas in humid and salt laden atmosphere.

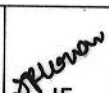
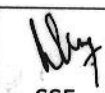
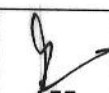
3. **STANDARD**

The relevant IEC ,IS specification shall apply with respect to all materials used in the manufacture of Head light lamp.


4. **TECHNICAL DESCRIPTION:**

- i) Wattage : 200W
- ii) Nominal voltage : 110 V. DC
- iii) Operating voltage : 110 V. DC.
- iv) Maximum voltage : 120 V. DC.

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WEST BENGAL. INDIA

NO. CLW/ES/3/0655
DATE. 22.08.2011

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4. TECHNICAL DESCRIPTION:

SHEET-4

- i) Wattage : 200W
- ii) Nominal voltage : 110 V. DC
- iii) Operating voltage : 110 V. DC.
- iv) Maximum voltage : 120 V. DC.

5. FILAMENT DETAILS AS UNDER:

- a) Center Beam Candle Power (CBCP) : 15000 (Min.)
- b) Rated average life : 2000 (hrs.)
- c) Approx. initial lumens : 2270 (Min.)

6. SUBMISSION OF TENDER QUOTATION:

The tenderer shall give sufficient information to prove that his factory has adequate facilities and capacity to manufacture the HEAD LIGHT LAMP to meet fully the technical requirements of the specification and quality of materials and workmanship.

Detail drawing of the HEAD LIGHT LAMP.

7. DRAWING :

Drg. No. CLW/ES/3/SK-1/0655 is attached with the specification.

All the non metallic parts should be fire retardant/self extinguishing type as per IS-11731 or any other equivalent DIN, IEC standard.

8. TESTS:

Sl. No.	TESTS	SPEC.CLAUSE NO.	TYPE TEST	ROUTINE TEST	ACCEPT. TEST
1.	Visual Inspection	9.	✓	✓	✓
2.	Measurement of Insulation resistance.	10	✓	✓	✓
3.	High Voltage test	11	✓	✓	✓
4.	Test for Water leakage.	12	✓	✓	✓
5.	Thermal sock proof test	13	✓	—	—
6.	Photometric test	14	✓	✓	✓
7.	Endurance test	15	✓	—	—

For imported headlight lamps from reputed suppliers who have supplied headlight lamp of WAG-9/WAP-7/WAP-5 locomotive in the past, material may be accepted based on test certificate of OEM, guarantee certificate and import documents.

SPECIFICATION
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9. **Visual inspection**

Check for mounting dimensions. Quality of finish.

10. **Measurement of insulation resistance**

The insulation resistance between the terminals and body of Head Light lamp shall be measured by a 500 V. DC. Megger. The Insulation resistance shall not be less than 5 Meg. Ohms.

11. **High voltage test**

2 KV. RMS, 50 Hz. AC shall be applied between the terminals Shorted and the body for 01 (one) minute. No flash over or break down of voltage shall occur.

12. **Test for water leakage**

The front cover shall be tightened and water shall be poured on the front glass and kept for one hour. At the end of this test the assembly shall be examined for any visual evidence of water leakage.

13. **Thermal shock proof test**

Thermal shock proof test shall be done by rising the temperature of the head light lamp and after stabilization water maintained at 11 degree to 12 degree C to be poured on it. The test shall be repeated for 5 times. At the end of the test the glass shall be checked for any abnormality.

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14. PHOTOMETRIC TEST.

14.1 TEST VOLTAGE: Test voltage at lamp terminals shall be steady set at 110 v. \pm 0.5 volt. The momentary fluctuation of the test voltage during the test shall be not more than \pm 1 %. The test shall be conducted both before and after the endurance test.

14.2 ILLUMINATION INTENSITY:

The main Head light lamp under test shall be mounted on a test stand which shall be put on one end at the centre line (length wise) of the level ground, free from obstruction over an area 300 m x 30m. The height of the axis shall be 3.7mtrs. above the ground level. Photometric readings shall be taken on each point shown in annexure A at

- i) Ground level
- ii) Height of 0.75mtrs. above rail level
- iii) Height of 1.5mtrs. above rail level

With above readings, curves of intensity of illumination shall be plotted to obtain the spread over the track.

14.2.1 During routine / acceptance test illumination intensity measurements will be done on head lights at a distance of 8 mtrs.

14.3 ANGLE OF THE BEAM:

Head light lamp shall be mounted on a table with beam centre 1 mtr. above the ground. Photometric measurement shall be taken in the lateral direction at right angles to the axis of the beam in horizontal plane at 1mtr. Height at a distance of 100mtrs. from the head light lamp. Move photometer in lateral direction on the left and right so as to read the maximum illumination intensity and locate the point after which the illumination level reaches $1/10^{\text{th}}$ of maximum value.

The distance between both left and right points should be measured as 'X' mtr-

$$\text{Then } \tan A = X/2 \times 1/100$$

The angle 2A is the angle of the beam.

The head light shall comply with the requirement of clause 16 as per test conducted under clause 16.2 and 16.3

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15. ENDURANCE TEST

The head light lamp operated at 110 V.DC. for a period of 120 hrs. under normal condition of use. During this test the head light lamp is switched off for a period of 3 hrs. in each 24 hrs. at the end of test no deterioration such as cracks discoloring etc. shall be noticed on the reflector or any other parts.

After endurance test the head light lamp shall be tested again for the photometric test as laid down in clause 14. There shall not be such difference in the photometric reading.

16. TECHNICAL DOCUMENTS TO BE SUPPLIED BY THE TENDERER:

- | | | |
|-----|--|-------------|
| i) | Type test report | : 10 copies |
| ii) | Routine test reports along with each set | : 04 copies |
| | Maintenance manual | : 20 copies |
| | Detailed drawing | : 06 copies |

17) (i) Manufacturer's name (ii) Electrical ratings in watts (iii) Max. rated voltage should be embossed on the unit

18) QUALITY ASSURANCE AS PER ISO 9000

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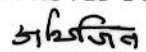

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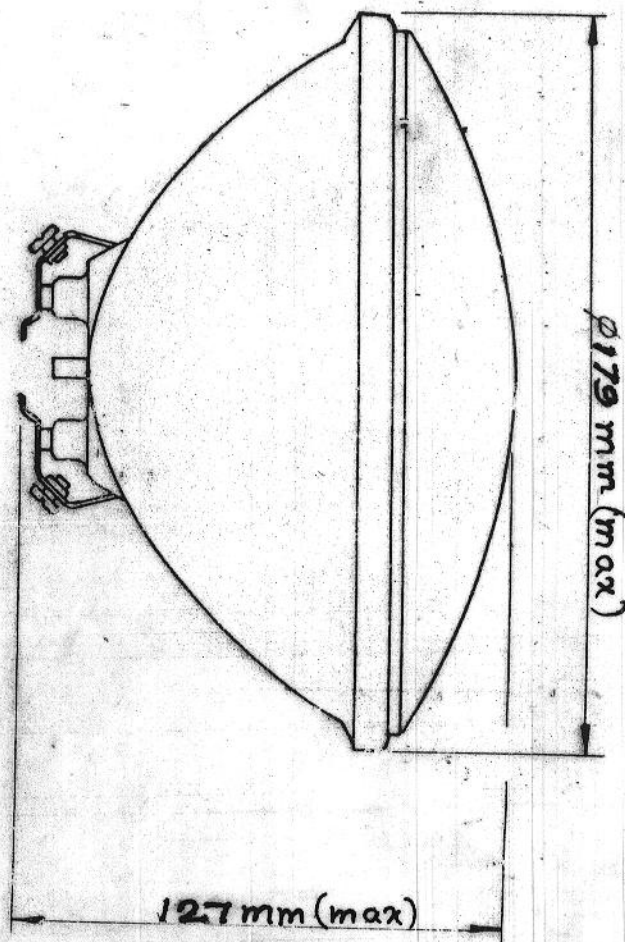
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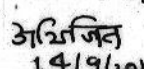
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PAR56 200W. 120V Medium Flood

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