

TENDER SPECIFICATION -
CLW/ES/L5

ALT.

B	S								
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ENCLOSURES

1. DRG.NO. CLW/ES/SK-1/L5
in (3 Sheets).

ALT.

Q	S								
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2. DRG.NO. CLW/ES/SK-2/L5/P
(1 sheet).

ALT.

B									
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TOTAL NO. OF SHEETS IN THIS
SPECN. -

ALT.	R	S	
SHEETS	14	12	

ALT.
SHEETS

SPECIFICATION FOR SIGNAL LAMP & PILDY LAMP
FITTINGS W/O LAMP. 25 KV AC ELECTRIC LOCO.
WAG-7, WARA

ISSUED BY
DY. CHIEF ELECTRICAL ENGINEER (D),
CHITTARANJAN LOCOMOTIVE WORKS,
POST-CHITTARANJAN,
DIST-BURDWAN, WEST BENGAL.

By
GEE/D

CHKD

DRN

RE-TYPE

चितरंजन रेल इंजन कारखाना
वीकन पुराना, 74100

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL INDIA

क्रमांक/NO. CLW/ES/L-5

दिनांक/DATE : 22.05.2006

उप.पू. वि.व. (प्रशि.)
DY. CEE. (D)

DETAILS OF ALTERATION

ALT.	DATE	DESCRIPTION	SIGNATURE	REMARKS
A	-	-	-	-
B	10-9-75	Overall length etc. of lamp fitting changed. Notes 2,3,6 & 7 added.	-	-
C	26-12-75	Clause No.47 added	-	-
D	16-6-75	Lamp fitting fixing hole in Ref.13 & terminal stud size modified. I/D & O/D of lamp fitting indicated. Pilot lamp specification added.	-	-
E	20-5-77	Size of signal lamp terminal modified as M4/M5.	-	-
EF	6-7-77	Lamp socket modified.	-	-
G	4-3-81	Signal lamp fitting modified. Sustaining spacer and insulating sleeve incorporated. Fillet of araldite in annular space(RDSO/Mod Sheet No.RDSO/WAM4/96 dt.March'80 & D.w. test voltage changed to 1 KV).	-	-
H	2-7-81	Sustaining spacer (Ref.2) insulating sleeve(Ref.5) & Fillet of araldite in annular space deleted.	-	-
J	22-10-81	Lamp holder modified and sketch enclosed.	sd/-	-
K	5-3-82	1) Lamp Bayonet cap - BA15d. 110V deleted. 2) Sheet No. Clause 4.1 deleted. 3) Drg.No. CLW/ES/SK-2/L-5 (Ref.12) deleted. 4) Drg.No. CLW/ES/SK-2/L-5 Ref.21) deleted.	sd/-	-
L	3-8-82	1) Drawing modified. 2) Shade carrier ring material specification changed to DMC-110.	sd/-	-

SPECIFICATION FOR SIGNAL LAMP BOX & PILOT LAMP FITTING

all

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DY. CEE. (D)

चितरंजन लोकोमोटिव कारखाना
कोलकाता, भारत

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL INDIA

क्रमांक/NO. CLW/ES/ L-5

दिनांक/DATE : 22-05-2006

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DETAILS OF ALTERATIONS

SLT.	DATE	DESCRIPTION	SIGNATURE	REMARKS
M	1-8-84	1) Shade carrier ring(Ref.2) should have knurling over outer surface. 2) Ref.1: lamp holder base material specification changed to DMC-110.	Sd/-	
N	30-10-84	Special condition in Sheet No.4 added.	Sd/-	
MP	13-7-87	In Drg.No.CLM/ES/SK-1/L-5/P Fixing Screw size mentioned (Note-9 added).	Sd/-	
O	18-7-95	Sheet No.14 added.	Sd/-	
R	9-12-96	LPAR-Red added in Sht.No.14	Sd/-	
S	6-6-06	SPECIFICATION UPDATED.	<i>De</i>	

SPECIFICATION FOR
SIGNAL LAMP BOX & PILOT
LAMP FITTING

De
डॉ. व. वि. र. (प्रति.)
DY. CEE. (D)

चितरंजन रेल इंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
आवक/NO. CLW/ES/L-5
दिनांक/DATE : 22.05.2006

4/10
SEE/D

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- 1.0 Scoper.
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- 4.0 Design of Signal Lamps.
- 5.0 Standards.
- 6.0 Approval of samples
- 7.0 Condition of contract.
- 8.0 Submission of Tender.
- 9.0 Guarantee.
- 10.0 Tests

5.5.5/D
CHKD
DRN

SPECIFICATION FOR
SIGNAL LAMPS & P/LDT
LAMP FITTINGS.

De

डय.सु.सि.न. (सवि.)
DY. CEE. (D)

चितरंजन रेल इंजन कारखाना
पश्चिम बंगाल, भारत
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA

क्रमांक/NO. C/LM/ES/L5/
दिनांक/DATE : 22-05-2006

1.0 SCOPE

1.1 This specification covers the requirement of signal lamp plate and single signal lamp and pilot lamp fittings for AC Electric Locomotives. The signal lamp shall be fixed on to the driving desk in the locomotive cab for giving visual indication to the driver of the occurrence of any predetermined operation of sequence of operation. Pilot lamp shall be used for testing of fuses and shall be fitted in the fuse panel.

2.0 SERVICE CONDITIONS

2.1 The signal lamp and pilot lamp covered in this specification shall be suitable for service in ambient temperature varying from 0 to 60°C with maximum relative humidity of 100% in and altitude of 1000 meters above the mean sea level and in dusty atmospheric conditions.

2.2 The equipment shall be mounted inside the locomotives. It shall be of robust design for traction duty and shall withstand satisfactorily the vibrations and shock normally encountered in service as indicated below:

- a) Maximum vertical acceleration - 1.0 g.
- b) Maximum Transverse acceleration - 3.5 g.
- c) Max. longitudinal acceleration - 3.0 g.

(g being acceleration due to gravity)

d) Maximum frequency 10 Hz with amplitude 2.5 mm

3.0 Deviations

3.1 Any deviations from this specification calculated to improve the performance, utility and efficiency of the equipment proposed by the manufacturer, will be given due consideration provided full particulars with justification thereof are furnished in the tender.

4.0 Design of signal lamps & Pilot lamp fittings

4.1 The signal lamp plate and single signal lamp or pilot lamps shall be manufactured in accordance with the drawing attached to the specification.

4.2 The lamp holder shall conform to IS:1258. The insulating material used shall be suitable as regards resistance to moisture, and flammability. The insulating material used shall not soften under condition of use & in addition shall have adequate resistance to tracking.

4.3 The edge of the signal lamp or pilot lamp casings shall be smooth & free from burrs which might have injure insulation or the use of the fitting.

SPECIFICATION FOR
SIGNAL LAMP & PILOT LAMP
FITTING.

DRN
DY. CEE. (D)

चितरंजन लोकोमोटिव कारखाना
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL INDIA
क्रमांक/NO. CLK/EG/L5
दिनांक/DATE: 22/05/2006

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- 4.4 The coloured lens used with signal lamps shall be manufactured from glass. The lens shall be free from blisters.
- 4.5 Markings: The manufacturer shall engrave/emboss/imprint/stencil permanent identification marks indicating their name/brand name/monogram and also the month & year of manufacture at a conspicuous place.
5. STANDARDS
- 5.1 Relevant Indian standard specifications shall be made applicable with respect to all materials used in the manufacture of the equipment.
- 6.0 APPROVAL OF SAMPLES
- 6.1 The supplier shall submit at least two prototype samples of each type of the signal lamp and pilot lamp to the Dy. Chief Electrical Engineer (Dev) /CIN/Chitteranjan for his inspection and approval.
- 6.2 Improvements suggested after inspection and tests shall be incorporated by the supplier in the bulk supply without affecting the guaranteed deliveries.
- 6.3 Material of Series production shall not be offered to the inspector authorised under the contract until the prototype has been finally approved.

7.0 CONDITIONS OF CONTRACT

- 7.1 The standard IRS conditions of contract will be applicable for the supply of the equipment.
8. The tenderer shall furnish the following information in their offer .
- Date by which prototype samples will be submitted
 - Date of commencement/completion of the bulk supply.

9.0 Guarantee

The supplier shall give a guarantee of clear 12 months on all the components from the date of commissioning of the equipment of the locomotive. Any defect or damage noticed during above period due to defective material of Workmanship shall be replaced by the supplier free of cost.

10.0 Tests

- 10.1 Following type and routine tests shall be carried out on the signal lamps & pilot lamp.

TYPE TESTS

1) Insulation Resistance (dry) tests

The insulation resistance shall be measured by applying a pressure of 500 volts d.c. between,

Specification of Signal Lamps & Pilot Lamp fittings.

Handwritten Signature
व.गु.वि.व. (वनि.)
DY. CEE. (D)

चितरंजन रेल इंजन कारखाना
वीरभद्र नगर, बारा
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
क्रमांक/NO. CLN/SS/4-5/
दिनांक/DATE : 22/05/2006

SEE/D

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- a) The terminals.
b) The terminals (Shorted) and metallic casing. The insulation Resistance value thus measured shall not be less than 5 meg. ohms.

11) Insulation Resistance (Humid) test.

- (a) The fitting shall be subjected to a damp treatment for a period of 24 hours by keeping it in at humidity chamber in which the relative humidity is not less than 95% and temperature 55°C.

The insulation resistance shall be measured as per test No. 10.1 (i) not later than 10 minutes after its removal from the humidity chamber.

The insulation resistance, thus measured shall not be less than 2 meg. ohms.

After this test, the signal lamp fitting shall satisfactorily pass the high voltage test specified.

111) Temperature rise test

The test shall be carried out at an ambient temperature of 55°C the fitting shall be operated with 110 Volts, 10 Watts lamp. Until steady temperature is reached and the temperature on the casing of the signal lamp fitting shall be measured with bulb thermometer.

The maximum temperature of the surface shall not be more than 70°C.

iv) Vibration test.

The light fitting with their lamps shall be mounted on a table and made to operate at the rated voltage. The table shall then be subjected to vibration in both vertical & horizontal planes with an amplitude of 3.5mm at 20 C/S for a duration of one hour each, at the end of which the vibration shall be changed to an amplitude of 10mm at 5 C/S and continued for one more hour. During the test there shall be no flickering of the lamps, sparking at the connections and lamps falling of the holder. At the end of the test the fitting shall be examined and there shall not be any mechanical damage or distortion to any of the parts.

v) Di-electric test

1.0 KV, 50 C/S AC shall be applied for one min between :-

- i) Terminals.
ii) All terminals shorted and casing.

Routine Test

- i) Insulation Resistance (Dry test).
ii) High Voltage test.

PILOT/SIGNAL LAMP
FITTINGS .


ज.सू. वि.न. (सवि.)
DY. CEE. (D)

विद्युत् रेल इंजन कारखाना
दिल्ली, भारत
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA

क्रमांक/NO. CLM/ES/15
दिनांक/DATE : 22/08/2006

अ.सू.
S.E.E./D

अ.सू.
C.K.R.D.

अ.सू.
DRM

11.0 SPECIAL CONDITION

Once a prototype is approved no contractor shall change his source of supply of sub-contractor for purchase components and sub-assemblies without CLW's approval.

12.0 CLW reserves the right to procure material only from ISO certified firms.

PILOT/SIGNAL LAMP
FITTINGS.

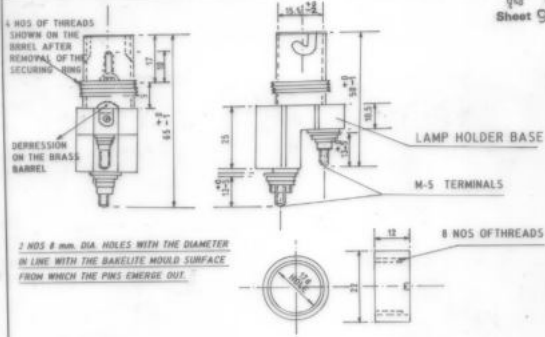

उप.मू नि.न. (प्रति.)
DY. CEE. (D)

चितरंजन रेल इंजन कारखाना
वीरगंज, पश्चिम बंगाल
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
क्रमांक/NO. CLW/PS/15
दिनांक/DATE : 22/05/2006

संवेदन
DRN

15/5/06
CHRO

502/0



SECURING RING

SPECIFICATION: METALIC B.C. DOUBLE CONTACT LAMP HOLDER OF TYPE B15a WITH SHADE CARRIER RING & PROVIDED WITH M-4 TERMINALS FOR CONNECTIONS & GENERALLY CONFORMING THE ABOVE SKETCH.

STANDARD-

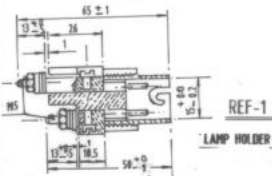
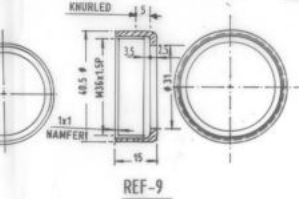
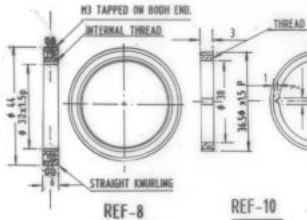
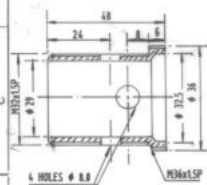
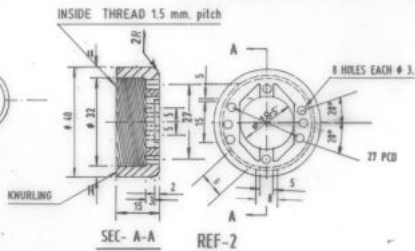
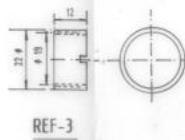
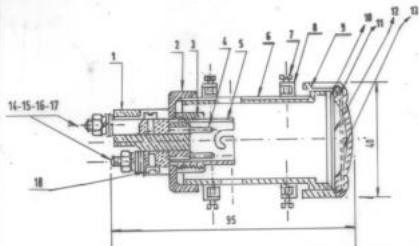
1. ALL DIMENSIONS ARE IN MM.
2. SIDE WAYS PLAY OF THE PLUNGER (CONTACT PIN) SHALL NOT BE SO MUCH AS TO EXCEED THE HIGH GAP BETWEEN PLUNGER & INSIDE OF BARREL TO A VALUE LOWER THAN 1.0 mm.
3. MATERIAL OF THE LAMP HOLDER BASE- DMC 110 OR EQUIVALENT.
4. ONCE A PROTOTYPE IS APPROVED OR CLW'S APPROVAL NO CONTRACTOR SHALL CHANGE HIS SOURCE OF SUPPLY OR SUB-CONTRACTOR FOR PURCHASED COMPONENTS & SUB- ASSEMBLIES WITHOUT CLW'S APPROVAL.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

INDICATION
LAMP SOCKET

उप.पु.वि.व. (सपि.)
 DY. CEE, (D)

चित्तारंजन रेल इंजन कारखाना
 पश्चिम बंगाल, भारत
CHITTARANJAN LOCOMOTIVE WORKS
 WEST BENGAL, INDIA
 क्रमांक/NO. CLW/ES/SK-1/L-5
 दिनांक/DATE : 30 / 05 / 2006



NB:-
4. THREADED COMPONENTS SHALL BE AS PER IS: 4218 (PT. III & IV). THE THREADED COMPONENTS IN THESE FITTINGS ARE OF M36x1.5P AND M32 x 1.5P OF MEDIUM GRADE WITH TOLERANCE 6G AND 6H.

USED FOR ELECT. LOCO
DETAILS OF LAMP SOCKET
(SIGNAL)

उत्. म. वि. ब. (मवि)
D.Y. C. E. R. (D)

चिरंजन रेलवे जन कारखाना
एरियनवरवादा, भारत
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
क्रमांक/No. (LW/ES/SK-1/L-5) / Sheet No. 1

दिनांक/Date - 30/05/2006

चिरंका CLW

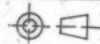
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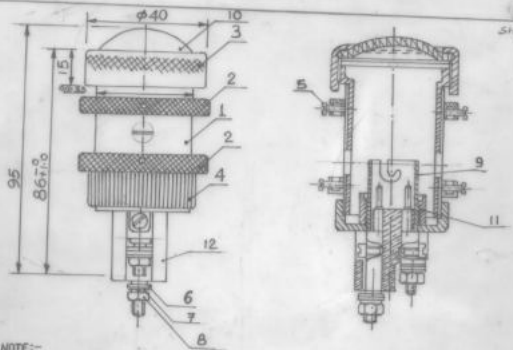
5. REF NO. 5 SEE DETAILS DRG. NO. CLW/ES/SK-1/L-5.

1. ALL DIMENSIONS ARE IN MM.
2. MIN. 3MM. CLEARANCE SHOULD BE MAINTAINED BETWEEN THE LAMP GLASS AND THE INNER FACE OF THE GLASS LENS.
3. TO ENSURE INTERCHANGEABILITY THE PITCH OF THE LAMP HOUSING & RING NUTS ' THREADS SHOULD BE CHECKED WITHRING GAUGE.
- 4.

| ALT. No. | AUTHORITY | DESCRIPTION | INITIAL | DATE |
|----------|-----------|------------------------|---------|-------------------------|
| 18 | | CHEESE HEAD SCREW M4 | 2 | BRASS CR. PLTD. IS-2389 |
| 17 | | PLAIN WASHER M5 | 4 | BRASS CR. PLTD. IS-2389 |
| 16 | | SPRING WASHER M5 | 2 | STEEL CR. PLTD. IS-3063 |
| 15 | | NUT HEX. HD. M5 | 2 | BRASS CR. PLTD. IS-2389 |
| 14 | | STUD TERMINAL M5 | 2 | BRASS CR. PLTD. IS-2389 |
| 13 | | INNER WASHER | 1 | LEATHEROOD PAPER |
| 12 | | INNER WASHER | 1 | RUBBER |
| 11 | | LAMP CAP (LENS) | 1 | GLASS FROSTED |
| 10 | | INNER RING NUT | 1 | BRASS CR. PLTD. IS-2389 |
| 09 | | CAP FOR CASING | 1 | BRASS CR. PLTD. |
| 08 | | OUTER RING NUT | 2 | BRASS CR. PLTD. IS-2389 |
| 07 | | CHEESE HD. SCREW M3 | 4 | BRASS CR. PLTD. IS-1366 |
| 06 | | LAMP HOUSING | 1 | BRASS CR. PLTD. |
| 05 | | LAMP HOLDR B.C. B 150D | 1 | BRASS IS-1250 |
| 04 | | PLUNGER | 2 | BRASS IS-410 |
| 03 | | SECURING RING | 1 | BRASS IS-410 |
| 02 | | SHADE CARRIER RING | 1 | DMC-110 OR EQUIVALENT |
| 01 | | LAMP HOLDER BASE | 1 | DMC-110 |

| CRD No. | REF. | PART DRG. NO. | DESCRIPTION | QTY. | MATL. | SPECIAL. | WT. |
|---------|--------|---------------|-------------|------|-------|----------|-----|
| DRN | | DATE | NAME | | | | |
| DRN | 29/5/6 | | H. Bedoi | | | | |
| CHD | | | | | | | |
| TWD | | | | | | | |
| COMP | | | | | | | |
| SCALE | | | | | | | |
| REF. | | | | | | | |

| | |
|---|---|
| <p>USED FOR</p> <p>ELECTRIC LOCOMOTIVES</p> <p>DETAILS OF</p> <p>SIGNAL LAMP</p> <p>SOCKET.</p> | <p>CHITTARANJAN</p> <p>LOCOMOTIVE WORKS</p> <p>WEST BENGAL, INDIA</p>

<p>APPROVED—</p> <p>No. CLW/ES/SK-1/L-5</p> |
|---|---|



NOTE:-

1. ALL DIMENSIONS ARE IN mm.
2. MINIMUM 3mm CLEARANCE SHOULD BE MAINTAINED BETWEEN THE LAMP GLASS & THE INNER FACE OF THE LENS.

| NO. | DESCRIPTION | QTY/ FITTING | MATERIAL SPECN. |
|------|-----------------------------|--------------|--------------------------|
| 12 | LAMP HOLDER BASE | 1 | BMC 100 OR EQUIVALENT |
| 11 | SECURING RING | 1 | BRASS |
| 10 | LAMP CAP (LENS) | 1 | GLASS FROSTED |
| 9 | LAMP HOLDER B15d (BRASS) | 1 | T.S. 12.5B |
| 8 | NUT HEX. HD M5 | 2 | BRASS CHROMIUM PLTD. |
| 7 | SPRING WASHER M5 | 2 | SP STEEL |
| 6 | PLAIN WASHER M5 | 4 | BRASS CHROMIUM PLTD. |
| 5 | CHEESE HD. SCREW-M3 15:1366 | 4 | BRASS CHROMIUM PLTD. |
| 4 | SHADE CARRIER RING | 1 | BMC-110 OR EQUIVALENT |
| 3 | CAP FOR CASING | 1 | BRASS MICRAL CARR PLATED |
| 2 | OUTER RING NUT | 2 | BRASS CHROMIUM PLATED |
| 1 | LAMP HOUSING | 1 | BRASS CHROMIUM PLATED |
| REF. | DESCRIPTION | QTY/ FITTING | SPECN. |

PILOT/SIGNAL LAMP
FITTING
FOR WAG-7 & WAP-4
LOCOS

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA.

NO. CLW/ES/SK2/L5

DATE :

DR. C. E. E (D)

DATE: / /
CHKD. SEE IN

LAMP FITTING

Spec: No. CLW/ES/L-5

| Sl.No. | Description of item | Dwg./Spec.No. | LAMP NUMBER | Lamp | | C&D No. | WAG-7/WAP-4
Qty/Loco. | Remarks |
|--------|---|--------------------------------------|-----------------------|---------|--------|---------|--------------------------|--------------------------|
| | | | | Voltage | Watts. | | | |
| 1. | Lamp fitting w/o lamp with cap for fuse tester EOC(L.E.C.C) | CLW/ES/L-5/C
CLW/ES/SK-2/C(Sht.3) | CLW/ES/SK-1/
L-5/0 | 110 | 10W | | 1 | |
| 2. | Lamp fitting w/o Lamp Single Signal (NOTCH INDICATOR) | -do- | -do- | 110 | 10W | | 2 | with yellow glass cover. |
| | (1) Lamp fitting w/o Lamp Single Signal (NOTCH INDICATOR) | -do- | -do- | 110 | 10W | | 2 | with red glass cover. |

Specification for
light fittings for
WAP-4/ WAG -7.

व. न. सि. न. (संवि)
DY. C.E.E. (R)

विदर्भ रेलवे जन कारखाना
वसिष्ठवाग, मराठ
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
Snt/No. CLW/ES/L-5 पृष्ठ सं./Sheet No. 14

Page/Date
Page/Date- 22/05/2006

चिरेका CLW