

NORTHERN RAILWAY



Headquarters Office,  
Baroda House,  
New Delhi

No: 181/Elect./P/PCEE Spec/117

Dt. 24.05.2024

Chief Electrical Engineer,  
Construction, Tilak Bridge  
**New Delhi**

Chief Electrical Engineer,  
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**AMV, CB/LKO & JUDW**

Workshop Astt. Elect. Engr.,  
Northern Railway,  
**Amritsar**

**Sub:** Validity of Technical Specification- LED based luminaries for General Services applications.

**Ref.:** This office letter no.181/Elect/P/PCEE spec/117 dtd. 04.11.2019

In reference to above, validity of technical specification no. CEE/NR/121-Elect/PS/2018 (Rev.'3') dt. 28.06.2018 & (Rev.'4') dt. 04.11.2019 for 'LED based luminaries' for General Services applications which was valid 30.06.2019 has now been extended up to **31.12.2025**.

This has the approval of **PCEE/NR**.

**(R.N. MALLICK)**

Dy. Chief Electrical Engineer/PS

## NORTHERN RAILWAY

### TECHNICAL SPECIFICATION FOR LED BASED LUMINARIES (INPUT VOLTAGE SINGLE PHASE 230 VOLT AC, 50Hz) FOR GENERAL SERVICES APPLICATIONS

Spec No. PCEE/NR/121-Elect/PS/2019 (Rev.-'4') Dated: 04 .11.2019

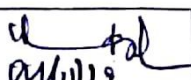
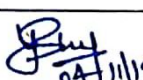
ISSUED BY

OFFICE OF THE Pr. CHIEF ELECTRICAL ENGINEER  
BARODA HOUSE, NORTHERN RAILWAY  
NEW DELHI

| SN | Date           | Clause No. | Revision     | Reason   |
|----|----------------|------------|--------------|--|
| 1. | October '2019' | 12.0       | -do-         | To implement the public procurement Order-2017, Railway Board letter no. 2015/RS(G)/779/5 dated 16.03.2018 preference to 'Make in India' |
| 2. | -do-           | 13.0       | -do-         | Requirement of pit light rated voltage 110 volt AC   |
| 3. | -do-           | 7.0        | Revision-'4' | Inclusion the technical details for Signages for A1 & A category Railway Station   |

Approved by:

  
CEGE/NR

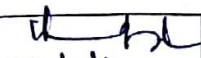
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| Dy. CEE/PS <br>04/11/19 | SSE/PS <br>04/11/19 |
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**TECHNICAL SPECIFICATION FOR LED BASED LUMINARIES**

Revision.-'4' of the above specification on 3 pages has been issued and shall be followed as given below:

| S. No | Clause No. | Subject   | Details of Items in existing specification | Revised with Revision.-'4'   |                         |   |   |
|-------|------------|---|--|--|-------------------------|---|---|
| 1.    | 12.0       | Implementation of the public procurement Order-'2017' | Not included, added as 12.0                | To implement the public procurement Order-2017 vide Railway Board letter no. 2015/RS(G)/779/5 dated 16.03.2018 preference to 'Make in India' |                         |   |   |
| 2.    | 13.0       | Technical Parameters for Pit light                    | Not included, added as 13.0                | The technical parameters are as under  |                         |   |   |
|       |            |   |  | S N  | Description             | Specification for 18W   | Specification for 22W (Bulkhead)                                      |
|       |            |   |  | 1.   | Rated Voltage           | 110V AC   | 110V AC   |
|       |            |   |  | 2.   | Front Cover             | Toughened glass diffuser as per Para 4.3 of the specification   | Toughened glass diffuser as per Para 4.3 of the specification         |
|       |            |   |  | 3.   | LED Test                | LM79 & LM80 certified LED as per Para 3.1.7 & 3.1.8   | LM79 & LM80 certified LED as per Para 3.1.7 & 3.1.8                   |
|       |            |   |  | 4.   | Control Gear/LED Driver | External constant current driver as per Para 3.3 of the specification (max. placement distance 1 mtr) | External constant current driver as per Para 3.3 of the specification |
|       |            |   |  | 5.   | Internal Wiring         | Teflon insulated, Copper conductor  | Teflon insulated, Copper conductor                                    |
|       |            |   |  | 6.   | Hardware                | MS zinc plated & passivated   | MS zinc plated & passivated   |
|       |            |   |  | 7.   | Ingress Protection      | IP66  | IP66  |
|       |            |   |  | 8.   | Impact Test             | IK10  | IK10  |
|       |            |   |  | 9.   | Lumen maintenance       | 50,000hrs. & L70  | 50,000hrs. & L70  |
|       |            |   |  | 10.  | Operating Temperature   | -10°C to 50°C   | -10°C to 50°C   |

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|    |     |  |                                |   |                           |  |  |
|----|-----|--|--------------------------------|---|---------------------------|--|--|
|    |     |  |                                | 11  | Main Housing & Frame      | Aluminum casting with powder coating as per Para 4.7 of the specification  | Aluminum casting with powder coating as per Para 4.7 of the specification  |
|    |     |  |                                | 12  | Wattage                   | 18 watt +/- 10%  | 22 watt +/- 10%  |
|    |     |  |                                | 13  | Power factor              | >0.90 as per Para 3.1.9 of the specification   | >0.90 as per Para 3.1.9 of the specification   |
|    |     |  |                                | 14  | Lumen Output              | 2340 lm  | 1760 lm (If bulkhead type)   |
|    |     |  |                                | 15  | CCT                       | 5500K-6500K  | 5500K-6500K  |
|    |     |  |                                | 16  | CRI                       | >70  | >70  |
|    |     |  |                                | 17  | Protection                | System covers the open & short circuit protection, reverse polarity protection & surge protection as per Para 3.3.8 of the specification | System covers the open & short circuit protection, reverse polarity protection & surge protection as per Para 3.3.8 of the specification |
|    |     |  |                                | 18  | Other applicable standard | IS: 10322 (Pt.-5/sec.-1)-1985/IEC 60598 or latest  | IS: 10322 (Pt.-5/sec.-1)-1985/IEC 60598 or latest  |
| 3. | 7.0 | Technical details for Signages for A1 & A category Railway Station | Not included, and added as 7.9 | Type- A, B, C, D & other accessories as per following details:- |                           |  |  |

**Para 7.9, Type- 'A'**

Entry gate & Exit gate, Lane Marking Gantry, Parking entry, Parking Exit, Freight entry, Freight Exit, Way Finding Sign External (6panelsx6 directories) Panels, Way Finding Sign External, Building Titles, On Staircase east gate sign, double sided sign shall be of size: 30'x 5', 60'x2.5', 20'x5', 72"x10", 18'x2', 16'x1.5' etc. Dimension may vary as per site requirement conforming to following technical details:-

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Made of Laser cut aluminum panel of 1mm thick aluminum sheet with painted face having 3mm letter fascia to be laser cut out from opel perplex sheet of 4mm thickness to use as per signage size: 20 w, 40 w, 60 w, 100 w, 150w constant current mode power supply, universal AC input/Full range.

(a) Signage Support Gantry Structure: Made up of 50mmX50mmX2mm pipes sections for fixing sign board both front and back.

(b) Anchor Plates: To use plates from existing gantry structure RCC Base (M40/50 concrete) of size 900x1800x1800mm each pole.

#### Type- 'B'

Way finding signage external shall be of Size 36"x8" (4x2Panels,1x1Panels,2x1 panels), way finding Signage Internal (4x1) Panels shall be of Size - 36"x8", dimension may vary as per site requirement conforming to following specifications:-

Signage Panel Sides front and back Illuminated, 1mm aluminum sheet with laser cut graphics, painted to required colour to use as per signage size: 20 w, 40 w, 60 w, 100 w, 150w, constant current mode power supply universal AC input/full range.

#### Type- 'C'

Establishment Titles, Amenities Signs, Platform Number, Gate Entry/Exit shall be of Size : 3'x1',2'x1.5',5'x1.5' etc, dimension may vary as per site requirement conforming to following specifications:-

Signage Panel, sides - front and back Illuminated, 1mm aluminium sheet with laser cut graphics, painted to required colour to use as per sign size: 20 w, 40 w, 60 w, 100 w, 150w, constant current mode power supply universal AC input/Full range.



#### Type- 'D'

Layouts sign shall be of size 8'x4' Feet dimension may vary as per site requirement conforming to following specification:-

Signage Panel, Sides - front and back Illuminated, 1mm aluminum sheet with laser cut graphics, painted to required colour to use as per signage size: 20 w, 40 w, 60 w, 100 w, 150w, constant current mode power supply universal AC input/Full range.

### 7.10 OTHER ACCESSORIES

- (i) **Fixing:** To wall with anchor bolts of 50mmX6mm Size, fixed with HILTI HS V M-12 expansion fastener.
- (ii) **Fixing Hanging Type:** Telescopic pipes of size - 25mmX25mmX10'4' fixed to sign with size bolt of 25mmX6mm size and SS 304 plate of size 75mmX150mmX 3mm with a stiffening bar support and fixed to roof with fasteners of size - 75mmX8mm through a 150mmX150mm, SS 304 plate of 4mm thickness.
- (iii) **Fixing Projecting Type:** Two pipes of thickness 50mmX50mmX300mm with SS 304 plate of size - 4"x8"x3mm for anchoring to wall with fasteners of size - 75mmX8mm.
- (iv) **Support Structure:** Support structure of stainless steel grade-304, two square pipe of size- 75mmX75mmX1mm of length 10' fixed with use of SS:304 anchor plates of size - 200mmX2mmX4mm fixed to RCC base with anchor fasteners, RCC Base: size - 24"x18"x18".

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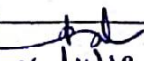


- (v) **Pole Mounting, Type-I:** Single MS pole mounting with 200mm dia x 5mm x 6m with MS plate base of size 720mmx720mmx20mm with 3mx25mm dia anchor rods (8 each plate) grouted in ground with 1mx1mx1.5m. RCC - M40/50 Conforming to IS: 1239- 2004 or latest HFW pipe of class A.
- (vi) **Pole Mounting, Type-II:** Single MS pole mounting with 300mm/dia x 5mmx 6m with MS plate base of size 920mmx920mmx20mm, with 3mx25mm dia anchor rods (8 each plate) grouted in ground with 1.5mx1.5mx2m. RCC-M40/50 Conforming to IS: 1239-2004 or latest HFW pipe of class A.
- (vii) **Fixtures:** Signage structure made of 40mm round pipes in scissor pattern Conforming to IS: 1239: 2004 HFW pipe of class A.


**Note:-** (i) The RDSO document regarding 'Functional Requirement Specification' for LED based luminaries for Pit lighting shall be followed.

- (ii) The above changes shall be effective in the specification and remaining spec will be same as per CEE/NR specification no. CEE/NR/121-Elect/PS/2018 (Rev.-'3') dated 28.06.2018.

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