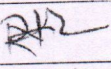
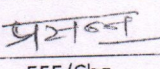

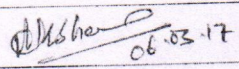


Specification No: CEE/GS/LED/OUTDOOR/2017/2.

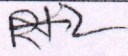
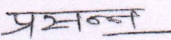
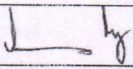
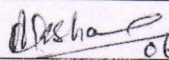
**TECHNICAL SPECIFICATION FOR ENERGY EFFICIENT LED LUMINARIES OF DIFFERENT WATTAGES FOR OUTDOOR APPLICATION.**

<b>1.0</b>	<b>SCOPE</b>	
	The scope includes supply/ supply & installation of energy efficient LED luminaries for outdoor application such as uncovered platform area, Street light, High Mast light, court yard area etc. as per the technical parameters specified in para 4.0.	
<b>2.0</b>	<b>Service conditions:-</b>	The LED luminaries for outdoor application such as uncovered platform area, Street light, High Mast light, court yard area etc. of Indian Railway under the following environmental condition:
<b>3.0</b>	<b>Environmental condition:-</b>	
3.1	Ambient Temperature	-5°C to 55° C
3.2	Relative humidity	40% to 100%
3.3	Coastal area	The equipment shall be designed to work in coastal area in humid, salt laden and corrosive atmosphere. The maximum value of the condition in the coastal area will be as follows: Max. pH value : 8.5 Sulphate : 7 mg/litre Max. concentration of chlorine: 6 mg/litre Max. Conductivity : 130 micro Siemens/cm Annual rainfall : Ranging between 1750 to 6250 mm with thunder storm Altitudes : Maximum 1200 m above sea level
<b>4.0</b>	<b>Parameter specified</b>	
4.1	Luminary Casing/Housing	Pressure die-cast aluminium with toughened glass cover.
4.2	Rated System wattage	Respective wattage±3%.
4.3	Operating Input Voltage	90- 300 V, at 50 Hz For protection of surge high voltage the provision of auto shut down should be provided.
4.4	Power factor	≥ 0.90
4.5	Total Harmonic Distortion(THD)	≤ 20%
4.6	LED Lumen efficacy	≥ 95 Lm/watt
4.7	IP protection/Housing protection	IP 65 or higher.
4.8	Surge protection	≥ 3 KV.
4.9	System luminous Efficacy	≥ 82%
4.10	CRI	≥70
4.11	Colour temperature	3000K – 6500K
4.12	Test report certificate	LM 79 & LM 80.
4.13	Acceptable Make of LED Luminaries	Philips/Bajaj/Havells/Crompton Greaves/Syska/Halonix/Wipro.

			
SSE/G/Stores	EEE/Chg.	Dy.CEE/Chg.	CESE



5.0	<b>MARKING:</b>
	The following information shall be distinctly and indelibly marked on the housing: a) Year of manufacture, Batch Number, Serial Number. b) Name of Manufacturer c) Rated input voltage d) Rated wattage
6.0	<b>Guarantee/Warranty:</b>
	The LED luminaries shall be guaranteed for satisfactory performance and manufacturing defect for a period of 60 months from date of commissioning or 72 months from the date of supply whichever is earlier.

			 06.03.17
SSE/G/Stores	EEE/Chg.	Dy.CEE/Chg.	CESE