

## ANNEXURE-A

## 1 Technical Specification and Test Compliance for LED Highbay Light-100 W

S.No.	Description & Specifications	Required	Offered by Party	Deviations
<b>1. Technical Specification</b>				
1.1	Rating of LED Highbay Light Fixture	100 Watt		
1.1 (a)	Make of LED High Bay Light			
1.1 (b)	Model of LED High Bay Light			
1.2	Input Voltage	220 V AC±5% / 50 Hz, Single Phase		
1.3	Power Factor	0.95 or more		
1.4	Lumens per watt	85 or more		
1.5	Correlated Color Temperature (CCT)	5000K - 6500K		
1.6	Color Rendering Index (CRI)	70 or More		
1.7	Total Harmonic Distorsion (THD)	20% or Less		
1.8	Life of Luminaire	Minimum 50,000 working hours maintaining at least 70 % of initial lumens		
1.9	Optics	Integrate optics having High spread beam angle of 90° or more		
1.1	LED Make Acceptable	CREE /NICHIA /BRIDGELUX / PHILIPS/ LUMILEDS / OSRAM / TOSHIBA		
1.11	Electrical Protection	Short Circuit , Over voltage , Under voltage		
1.12	Lamp Housing	Pressure Die cast aluminum housing with heat resistant toughened glass cover and efficient heat sinking material.		
1.13	Ingress Protection	IP-65 or greater		
1.14	Mounting	Roof Mounting with Single Point Mounting arrangement with Eye Bolt or J-Hook. All items required for mounting to be supplied by the party.		
1.15	Driver	Constant Current output integrated driver built into fitting / fixture and should be field replaceable.		
<b>2. Test Compliance : Following certificates shall be provided along with the offer.</b>				
2.1	For Luminaire	LM 79 Test report for luminaire ( Clearly mentioning the values for point No. 1.1 to 1.9) from NABL /government approved laboratory.		
2.2	For LED Module	LM 80 Test report from LED chip manufacturer		
3	Documents	Party shall submit the product catalog and complete specifications of the offered LED High Bay Light along with the offer.		
4	Warranty	5 years.		

\*\* The name Plate on the items to be Printed / Embossed / Engraved/ revetted.

## 2 Technical Specification and Test Compliance for LED Street Light-90 W

S.No.	Description & Specifications	Required	Offered by Party	Deviations
<b>1. Technical Specification</b>				
1.1	Rating of LED Street Light Fixture	90 Watt		
1.1 (a)	Make of LED Street Light			
1.1 (b)	Model of LED Street Light			
1.2	Input Voltage	220 V AC±5% / 50 Hz, Single Phase		
1.3	Power Factor	0.95 or more		
1.4	Lumens per watt	85 or more		
1.5	Correlated Color Temperature (CCT)	5000K - 6500K		
1.6	Color Rendering Index (CRI)	70 or More		
1.7	Total Harmonic Distorsion (THD)	20% or Less		
1.8	Life of Luminaire	Minimum 50,000 working hours maintaining at least 70 % of initial lumens		
1.9	Optics	Integrate optics having High spread beam angle of 120° or more		
1.1	LED Make Acceptable	CREE /NICHIA /BRIDGELUX / PHILIPS/ LUMILEDS / OSRAM / TOSHIBA		
1.11	Electrical Protection	Short Circuit , Over voltage , Under voltage		
1.12	Lamp Housing	Pressure Die cast aluminum housing with heat resistant toughened glass cover and efficient heat sinking material.		
1.13	Ingress Protection	IP-65 or greater		
1.14	Mounting	Side entry suitable for 60-65 mm OD pipe bracket All items required for mounting to be supplied by the party.		
1.15	Driver	Constant Current output integrated driver built into fitting / fixture and should be field replaceable.		
<b>2. Test Compliance : Following certificates shall be provided along with the offer.</b>				
2.1	For Luminaire	LM 79 Test report for luminaire ( Clearly mentioning the values for point No. 1.1 to 1.9) from NABL /government approved laboratory.		
2.2	For LED Module	LM 80 Test report from LED chip manufacturer		
3	Documents	Party shall submit the product catalog and complete specifications of the offered LED High Bay Light along with the offer.		
4	Warranty	5 years.		

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### 3 Technical Specification and Test Compliance for LED Street Light-45 W

S.No.	Description & Specifications	Required	Offered by Party	Deviations
<b>1. Technical Specification</b>				
1.1	Rating of LED Street Light Fixture	45 Watt		
1.1 (a)	Make of LED Street Light			
1.1 (b)	Model of LED Street Light			
1.2	Input Voltage	220 V AC±5% / 50 Hz, Single Phase		
1.3	Power Factor	0.95 or more		
1.4	Lumens per watt	85 or more		
1.5	Correlated Color Temperature (CCT)	5000K - 6500K		
1.6	Color Rendering Index (CRI)	70 or More		
1.7	Total Harmonic Distorsion (THD)	20% or Less		
1.8	Life of Luminaire	minimum 50,000 working hours maintaining at least 70 % of initial lumens		
1.9	Optics	Integrate optics having High spread beam angle of 120° or more		
1.1	LED Make Acceptable	CREE /NICHIA /BRIDGELUX / PHILIPS/ LUMILEDS / OSRAM / TOSHIBA		
1.11	Electrical Protection	Short Circuit , Over voltage , Under voltage		
1.12	Lamp Housing	Pressure Die cast aluminum housing with heat resistant toughened glass cover and efficient heat sinking material.		
1.13	Ingress Protection	IP-65 or greater		
1.14	Mounting	Side entry suitable for 60 to 65 mm OD pipe bracket All items required for mounting to be supplied by the party.		
1.15	Driver	Constant Current output integrated driver built into fitting / fixture and should be field replaceable.		
<b>2. Test Compliance : Following certificates shall be provided along with the offer.</b>				
2.1	For Luminaire	LM 79 Test report for luminaire ( Clearly mentioning the values for point No. 1.1 to 1.9) from NABL /government approved laboratory.		
2.2	For LED Module	LM 80 Test report from LED chip manufacturer		
3	Documents	Party shall submit the product catalog and complete specifications of the offered LED High Bay Light along with the offer.		
4	Warranty	5 years.		

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### 4 Technical Specification and Test Compliance for LED Flood Light-60 W

S.No.	Description & Specifications	Required	Offered by Party	Deviations
<b>1. Technical Specification</b>				
1.1	Rating of LED Flood Light Fixture	60 Watt		
1.1 (a)	Make of LED Flood Light			
1.1 (b)	Model of LED Flood Light			
1.2	Input Voltage	220 V AC±5% / 50 Hz, Single Phase		
1.3	Power Factor	0.95 or more		
1.4	Lumens per watt	85 or more		
1.5	Correlated Color Temperature (CCT)	5000K - 6500K		
1.6	Color Rendering Index (CRI)	70 or More		
1.7	Total Harmonic Distorsion (THD)	20% or Less		
1.8		minimum 50,000 working hours maintaining at least 70 % of initial lumens		
1.9	Optics	Integrate optics having High spread beam angle of 120° or more		
1.1	LED Make Acceptable	CREE /NICHIA /BRIDGELUX / PHILIPS/ LUMILEDS / OSRAM / TOSHIBA		
1.11	Electrical Protection	Short Circuit , Over voltage , Under voltage		
1.12	Lamp Housing	Pressure Die cast aluminum housing with heat resistant toughened glass cover and efficient heat sinking material.		
1.13	Ingress Protection	IP-65 or greater		
1.14	Mounting	Standard Mounting		
1.15	Driver	Constant Current output integrated driver built into fitting / fixture and should be field replaceable.		
<b>2. Test Compliance : Following certificates shall be provided along with the offer.</b>				
2.1	For Luminaire	LM 79 Test report for luminaire ( Clearly mentioning the values for point No. 1.1 to 1.9) from NABL /government approved laboratory.		
2.2	For LED Module	LM 80 Test report from LED chip manufacturer		
3	Documents	Party shall submit the product catalog and complete specifications of the offered LED High Bay Light along with the offer.		
4	Warranty	5 years.		

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5 Technical Specification and Test Compliance for LED Bulb 5-7 Watt

S.No.	Description & Specifications	Required	Offered by Party	Deviations
<b>1. Technical Specification</b>				
1.1	Rating of LED Bulb	5-7 Watt		
1.1 (a)	Make of LED Bulb			
1.1 (b)	Model of LED Bulb			
1.2	Input Voltage	220 V AC±5% / 50 Hz, Single Phase		
1.3	Power Factor	0.95 or more		
1.4	Lumens per watt	85 or more		
1.5	Correlated Color Temperature (CCT)	5000K - 6500K		
1.6	Color Rendering Index (CRI)	70 or More		
1.7	Total Harmonic Distorsion (THD)	20% or Less		
1.8	Life of Luminaire	minimum 50,000 working hours maintaining at least 70 % of initial lumens		
1.9	Optics	Integrate optics having High spread beam angle of 120° or more		
1.1	LED Make Acceptable	CREE /NICHIA /BRIDGELUX / PHILIPS/ LUMILEDS / OSRAM / TOSHIBA		
1.11	Electrical Protection	Short Circuit , Over voltage , Under voltage		
1.12	Ingress Protection	IP-65 or greater		
1.13	Mounting	B22		
1.15	Driver	Constant Current output integrated driver built into fitting / fixture and should be field replaceable.		
<b>2. Test Compliance : Following certificates shall be provided along with the offer.</b>				
2.1	For Luminaire	LM 79 Test report for luminaire ( Clearly mentioning the values for point No. 1.1 to 1.9) from NABL /government approved laboratory.		
2.2	For LED Module	LM 80 Test report from LED chip manufacturer		
3	Documents	Party shall submit the product catalog and complete specifications of the offered LED Bulb along with the offer.		
4	Warranty	5 years.		

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6 Technical Specification and Test Compliance for LED Tubelight

S.No.	Description & Specifications	Required	Offered by Party	Deviations
<b>1. Technical Specification</b>				
1.1	Rating of LED Tube Light	9 Watt		
1.1 (a)	Make of LED Tube Light			
1.1 (b)	Model of LED Tube Light			
1.2	Input Voltage	220 V AC±5% / 50 Hz, Single Phase		
1.3	Power Factor	0.95 or more		
1.4	Lumens per watt	85 or more		
1.5	Correlated Color Temperature (CCT)	5000K - 6500K		
1.6	Color Rendering Index (CRI)	70 or More		
1.7	Total Harmonic Distorsion (THD)	20% or Less		
1.8	Life of Luminaire	minimum 50,000 working hours maintaining at least 70 % of initial lumens		
1.9	Optics	Integrate optics having High spread beam angle of 120° or more		
1.1	LED Make Acceptable	CREE /NICHIA /BRIDGELUX / PHILIPS/ LUMILEDS / OSRAM / TOSHIBA		
1.11	Electrical Protection	Short Circuit , Over voltage , Under voltage		
1.12	Ingress Protection	IP-65 or greater		
1.13	Mounting	T-8		
1.15	Driver	Constant Current output integrated driver built into fitting / fixture and should be field replaceable.		
<b>2. Test Compliance : Following certificates shall be provided along with the offer.</b>				
2.1	For Luminaire	LM 79 Test report for luminaire ( Clearly mentioning the values for point No. 1.1 to 1.9) from NABL /government approved laboratory.		
2.2	For LED Module	LM 80 Test report from LED chip manufacturer		
3	Documents	Party shall submit the product catalog and complete specifications of the offered LED Tube Light along with the offer.		
4	Warranty	5 years.		

\*\* The name Plate on the items to be Printed / Embossed / Engraved/ revetted.