

ENERGY EFFICIENCY SERVICES LIMITED
(A JV of PSUs of Ministry of Power, Govt. of India)
DN-53, WECS Building 1st Floor, Salt Lake Sector- V, Kolkata- 700091

(WEST BENGAL)

(OPEN TENDER)

DETAILED INVITATION FOR BIDS (IFB)

Name of Work:- Supply of LED Lights with comprehensive onsite warranty of 5 years for BEEP in the state of West Bengal (Different Sites) and North East (Guwahati, Agartala)

NIT/Bid Document No. EESL/Kol RO/2018-19/12H/05

Date: 25.02.2019

EESL invites interested bidders (Manufacturer/Supplier) for the aforesaid supply of equipment Under Single Stage Single Envelope Bidding Process. For detail about the IFB, please refer to the detail that follow. Any Amendment(s)/Corrigendum/Clarification(s) with respect to this tender shall be uploaded on the EESL website only. The bidder should keep themselves updated by regularly visiting the website (www.eeslindia.org) of EESL for any Amendment(s)/Corrigendum/Clarification(s) in regard to this tender.

Thanking you,

On behalf of EESL

(Sudeep Bhar)
Regional Head
(WB, NE & Sikkim)

BID DETAILS

Bidding Document No.	Bid Document No.:- EESL/Kol RO/2018-19/12H/05 Dated: 25.02.2019
Bid Submission Last Date	10 th of March, 2019 till 5:00 PM(Except Saturday & Sunday)
Price Bid Opening Date & Time	Second week of March, 2019. Detail will be notified in the website.
Contact Person for Technical queries	Mr. Deepak Hansda Dy. Manager -Tech Energy Efficiency Services Limited. Kolkata Regional Office E-mail: dhansda@eesl.co.in , u_ssarkar@eesl.co.in , u_sdatta@eesl.co.in , Contact : 033-46022678
Bid should be addressed to	Regional Head (WB, NE & Sikkim) Energy Efficiency Services Limited Kolkata Regional Office DN-53, WECS Building 1 st Floor, Salt Lake Sector- V, Kolkata-700091 Contact: 033-46022678

EESL reserves the right to reject any or all bids or cancel / withdraw the Invitation for Bids without assigning any reason whatsoever and in such case no bidder / intending bidder shall have any claim arising out of such action.

On behalf of EESL

(Sudeep Bhar)
Regional Head
(WB, NE & Sikkim)

Name of Work: Supply of LED Lights with comprehensive onsite warranty of 5 years for BEEP in the state of West Bengal (Different Sites) and North East (Guwahati, Agartala)

1. BID SUBMISSION:

The bidders are required to submit the Price Bids single envelope with all attachments in original to the following address:

**Energy Efficiency Services Ltd.,
DN-53, WECS Building 1st Floor, Salt Lake Sector- V,
Kolkata- 700091
Ph: 033-46022678**

● **Date of Price Bid Opening:** Second week of March, Detail will be notified through e-mail.

2. PRE-BID MEETING: Pre-bid meeting will be held on 04th March, 2019 at 3:00 PM at EESL Kolkata Regional Head Office. Address: DN-53, WECS Building, 1st Floor, Salt Lake City, Sector V, Kolkata 700091.

3. EVALUATION CRITERIA:

Sl.	Criteria	Documents to submit
1	Bidder should be:- a Company incorporated under Companies Act 1956 OR a partnership firm registered by Registrar of Firms under Indian Partnership Act, 1932 OR An LLP firm registered under Limited Liability Partnership Act, 2008 OR a proprietorship firm with registration for relevant taxes, duties & licenses.	A. Certificate of Incorporation issued under Indian Companies Act, 1956 from Registrar of Companies / other relevant documents to be submitted B. Documentary evidence may be furnished along with the bid.
2	Should have an average annual turnover of at least <u>Rs. 15 lakhs</u> in the last three (3) years i.e. FY 2015-16, 2016-17 and 2017-18.	Audited financial statements of last three financial years is to be submitted with summary as cover page on firm/company letterhead and CA certificate along with the financial statement

Sl.	Criteria	Documents to submit
3	Should have been profitable in last FY i.e. 2017-18 or should be profitable in one out of first two FY i.e. 2015-16 or 2016-17.	Audited financial statements of last three financial years is to be submitted with summary as cover page on firm/company letterhead and CA certificate along with the financial statement.
4	Should not be black-listed by any Central / State Government / Public Sector Undertaking in India	Declaration should be given on letter head
5	Bidder should have the experience of manufacturing or supply of LED indoor luminaries in commercial buildings/office buildings/industries/ railway stations/metro stations/airports/ Other similarly Indoor and compound lighting applications, in the preceding three completed Financial Years reckoned from the date of opening of the Bids, the respective schedule. The bidder should have executed (anywhere in India) 1 single order of Rs. 40 lakh or 2(two) orders of Rs. 25 lakhs each or 3(three) orders of Rs. 20 lakhs each to any Central/State Govt./Public Sector Undertaking in India.	Documentary evidence may be furnished along with the bid. Documentary evidence to be furnished(Purchase Order, LoA, Lol, Agreement, Work completion certificate, etc) along with the bid as per Annexure-QA
6	Bidder should have service network in the area covered under the tender to ensure minimum response time.	Undertaking on company letter head for the same with details of service network.
7	Bidder should have established distribution/sales network in the area covered under the tender	Undertaking on company letter head for the same with details of distribution/sales network.

Note: In case Audited Balance sheet of FY 2017-18 is not available bidder has to submit the Audited Balance sheet of the preceding last three years i.e. FY 2016-17, FY 2015-16 and FY 2014-15

Notes:

The tenderer shall submit details of work executed by them in the Performa of **Annexure-A** for the works to be considered for qualification of work experience criteria. Documentary proof such as completion certificates from client clearly

indicating the nature/scope of work, actual completion cost and actual date of completion for such work should be submitted. The offers submitted without this documentary proof shall not be evaluated. In case the work is executed for private client, copy of work order, bill of quantities, bill wise details of payment received certified by C.A., T.D.S certificates for all payments received and copy of final/last bill paid by client shall be submitted.

4. SUMMARY OF BILL OF QUANTITY:

Bill of Quantity For Govt./ Commercial building, railway stations, railway workshops in the state of West Bengal, Assam, Tripura.

Sl. No.	State	Location/Site	Type of light	Type	Qty.
1	West Bengal	DGCI&S Office, Kolkata, Ruby Crossing	10 W Panel light	Recess	145
			18 W panel Light	Recess	30
			36 W Panel Light	Surface	55
2		Patent Office, Kolkata, Salt lake, Sector V	10 W panel Light	Surface	60
			18 W Panel Light	Recess	25
			18 W Panel Light	Recess	60
3		GST Bhawan, Kolkata, Ruby Crossing	10 W Downlight	Surface	110
4		Bharat Heavy Electricals Limited	36 W Panel Light	Recess	300
			18 W panel Light	Recess	156
	10 W Panel light		Recess	65	
	36 W Downlight		Recess	2	
	25 W Downlight		Recess	6	
5	Tripura	Aayakar Bhawan, Agartala	10 W Downlight	Surface	55
Agartala DM Office		10 W Downlight	Surface	200	
7	Assam	NFR-Lumding	7 W Downlight	Recess	36
8		NFR-Tinshukia	10 W Panel Lights	Recess	7
			10 W Panel Lights	Recess	7
9		Dy. Labour Commissioner-Guwahati	10 W Downlight	Surface	5
	10 W Panel light		Surface	28	

EESL reserves the right to change the qty. of each appliances to be awarded and for variation in BOQ up to +/-10% on one or more items subject to total variation in LOA Quantity limited to +/- 10%.

5. SCOPE OF WORK:

- ✓ Supply of LED lights/luminaries with 5 Years comprehensive on-site warranty for various buildings/sites located across the country.
- ✓ Bidder shall design and manufacture the LED lights/luminaries as per technical specification mentioned at Annex- A.
- ✓ It is advised that bidder should carry out field survey of building/site before supply of LED lights/luminaries to ensure the fitment/ interchangeability of LED lights/luminaries in existing location of conventional lights. Further, bidder may be required to demonstrate sample installation to EESL/Building owner.
- ✓ **The Luminaries casing shall carry EESL labels in EESL approved requisite sizing so as to ensure clear visibility.**
- ✓ Successful bidder shall maintain/replenish sufficient buffer stock (equal to 10% or minimum 10 numbers for each light types, whichever is lower) of each type of Luminaries at respective buildings through-out the warranty period with no cost escalation for rectification of fault for speedy resolution of failed LED lights. The buffer stock shall be replenished every month. In case of shortfall of buffer stock noticed at the end of the month, if the non-maintenance of the required minimum buffer stock carries on for beyond 10 days from the date of intimation from EESL, **a notional penalty at the rate of Rs. 100 per day shall be charged by EESL** from the payments due annually to bidder from the date when replenishment was supposed to be done till the actual date of replenishment. Defective material should be replaced within 15 days.
- ✓ Successful bidder shall provide all necessary technical and operational information with regard to the new equipment's to building owner and train (onsite training), the notified staff of building in installation, operation and maintenance of the new equipment's.
- ✓ Theft/damage of equipment's at site will be liability of the bidder till handover of equipment's to the building owner in the prescribed material receipt certificates.
- ✓ In the case of extra item(s)(items that are completely new, and are in addition to the items contained in the contract), the contractor may intimate EESL within fifteen days of receipt of intimation or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration time to the analysis of the rates submitted by the contractor, determine the rates on the basis of mutually agreed rates.
- ✓ The supplier shall supply the ordered quantity as and when required within time limes stipulated by the EIC from the date of intimation or date of purchase order at the desired locations mentioned in the Purchase Order. In case of non-execution of the order either partially or fully, EESL reserves the right to terminate the agreement and purchase from alternative source at the risk and cost of the default supplier. In such cases the EESL, has every right to recover the cost and impose penalty including blacklisting of the supplier and the product.
- ✓ The successful Bidder will be responsible to execute the work of particular buildings for timely as the timeline given in as for respective building:

Delivery of all LED lights at respective site shall be within 2 weeks from the date of written communication/ PO given to the bidder for the particular building. The Supplier should acknowledge the receipt of the Purchase Order within 3 days of its receipt.

- ✓ This tender is floated for lining up firm rate contract. No commitment is made from EESL to procure part / full quantity mentioned in the enquiry. The quantities mentioned in this tender are only indicative. It may vary according to EESL's requirement and placement of rates does not guarantee any minimum order value.
- ✓ The contract is likely to commence from the date of award of contract and would continue for a period of 6 months. The period of the contract may be further extended on sole discretion of EESL after the completion of contract as per the requirement of the EESL or may be curtailed/terminated before the contract period owing to deficiency in service or supply of substandard quality of materials on the sole discretion of EESL.
- ✓ Call up POs against this tender shall be placed as per EESL requirement subsequently.
- ✓ Prices quoted by the Bidder, shall remain firm and fixed and valid until completion of the Contract and will not be subject to variation on any account. Any new taxes & Duties, if imposed by the State/ Govt. of India after the last date of bid submission but before the Contractual Delivery Date, shall be reimbursed to the contractor on submission of documentary evidence for proof of payment to State/ Govt. Authorities and after ascertaining it's applicability with respect to the contract.

✓ **Project Monitoring Verification & penalty**

Annually, Bidder has to do sample power consumption testing of up to 10% or 10 numbers (whichever is less or at least 10) of different capacity of each type of LED light, wherein power consumption of the light shall be checked for each of different type of light, which shall comply to BoQ for respective buildings.

In case if power consumption of respective light exceeds the wattage as mentioned tender and quoted by bidder, the bidder will be liable to account for energy savings shortfall as per below:

- ✓ dS (shortfall in power savings) = $W_n - W_m$, Where,
 W_n is the average (up to 10 Nos.) of specific LED light consumption assessed using check tests for each type of light, and

W_m is the maximum watt consumption for specific light type as per above table

It is pointed out that the value W_n is based on the principle that LED lights will have PF of minimum 0.9. In case the PF of measured lights falls below 0.9, the W_n value shall be corrected as per below formula

$$W_n = W_n \times 0.9 / (\text{actual PF below } 0.9)$$

ΣdE = Shortfall in power savings x number of lights (for each category of light) x annual use days x daily use hours

Amount payable to EESL = Σ dEx Tariff Rate (current Tariff Rate (i.e. at time of verification) to be used for penal provisions)

In case of light output depreciating over the contract period and contradicting the LM80 reports provided by bidder, such lights will have to be replaced free of cost within the contract period without additional cost to EESL.

✓ **Quality plan and Pre-dispatch Inspection(PDI) :**

EESL reserves the right to inspect the Works of the bidder to assess Manufacturing Capacity, Quality Assurance Systems, input components and raw material quality along with finished product performance testing either during pre-bid stage or post award.

a. **Quality Plan:**

Bidders shall submit typical Quality Assurance and Inspection Plan, including the details of in-process testing and Pre-Dispatch Inspection along with technical bid. The Pre-dispatch Inspection Plan and Type Tests proposed to be carried out as per approved quality plan.

b. **Type Tests:**

EESL reserves the right to select two number of samples for each types of BoQ item/luminary from the maximum four lot offered for supply and send the same for Type Tests as per approved quality plan to an independent NABL Accredited Laboratory and the charges for the same shall be borne by the Bidder.

Lot is defined as: 25% of Bill of Quantity or 5000 number of luminary whichever is low for each kind of BoQ item/luminary.

❓ **Pre-dispatch Inspection(PDI) :**

EESL reserves the right to carry out Pre-dispatch Inspection at their works either on their own or through their authorized representative for any or all the lots of LED Luminaries to be supplied under subject LOA as per Inspection Plan approved by EESL.

All the Test Reports should contain Batch number as well as Serial Number. The Inspection call should be accompanied by a statement of the details of Make/Order Code/Part Number and Serial Numbers of LED Chips used in the Luminaries offered for inspection (Luminaire wattage-wise) along with the copies of documents in support of purchase/receipt of LED Chips (Invoice, etc.,).

PDI should include review of Internal Test Reports. Internal Test Reports should contain details of LED Chips used in the batch of Luminaries under inspection (Order Code/Part Number and Serial Numbers of LED Chips for each wattage rating of Luminaries). Internal Test Reports as well as PDI Test Reports shall be submitted for all Lights. Bidder may submit in-house test report.

6. SPECIFICATION:

This specification covers for supply of Light Emitting Diode (LED) lighting that shall be used as general lighting wherein EESL is executing projects.

The product should be latest state of art and compliant to relevant IEC 60598-1, 2, 3, IEC 62031 and IEC/PAS 62612 or their latest edition depending on the type of luminaries. In addition to the above luminaries shall adhere to relevant BIS standards IS 15885, 16101, 16102, 16103, 16104, 16105, 16106, 16107 (Part I & II), 16108 as per the application. The product shall be of proven design should possess type test certificate / performance certificate from the accredited laboratory. The product and its major components shall be state of art and of proven design.

A. **Fixture:**

1. The fixture shall be suitable to work under following ambient conditions.
 - ✓ Maximum ambient air temperature of 35°C (For Outdoor products), 45°C (For Indoor products)
 - ✓ Atmosphere - The equipment shall be designed to work in coastal, humid, salt laden and corrosive atmosphere.
2. Housing, if not used as a heat sink shall be made of 0.5 mm thick CRCA sheet / Extruded Aluminium (2 mm) or pressure die cast (PDC-2 mm), conforming to relevant standards, polyester powder coated of at least 40 microns) and high U.V. & corrosion resistance.
3. Heat sink used should be extruded Aluminium or Pressure Die-Cast Aluminium having high conductivity preferably ADC 12 or LM 6.
4. Luminaire should be covered with suitable Glass or diffuser with High Transitivity. Outdoor luminaire shall be with clear toughened glass or clear polycarbonate cover.
5. Lighting fixtures and accessories shall be designed for continuous trouble free operation under diverse atmospheric conditions without deterioration of materials. Degree of protection of enclosure shall be at least IP-20. However, degree of protection of enclosure for outdoor fixtures shall be at least IP-65.
6. The fixture should conform to applicable IS 10322 / IEC 60598 (All parts & amendments) and should have the associated LM-79 report (for Electrical and photometric test methodology for LED lighting) from accredited lab. Test report shall be submitted along with relevant catalogues.
7. The fixture should have a surge protection of at least 2 KV for indoor luminaries and 3 KV for outdoor luminaries.

B. **LED:**

Approved makes are *Philips-Lumileds, Osram, Nichia, Cree, Seoul Semiconductor, Samsung, Everlite*. Manufacturer should have LM-80 report and with projected life as per TM 21. Test report shall be submitted along with relevant catalogues.

High lumen efficacy LEDs suitable for the application along with following features shall be used:

1. LED Efficacy at the chip level shall > 135 lumen/watt
 - a. The efficiency of the LED at 85 Degree C junction temperatures shall be more than 85%.
 - b. The system luminous efficacy of LED luminaire shall be more than 100 Lumens per watts (+/- 5%)
2. Adequate heat sink with proper thermal management shall be provided.
3. Minimum view/beam angle of the LED shall not be less than 120°.
4. Power factor of complete fitting shall be more than 0.95
5. LED shall be surface mounted type duly soldered to PCB by Reflow system or COB type. The Solder used shall be ROHS compatible for environment friendliness.
6. Input frequency range shall be between 50Hz±3%.
7. Colour rendering index CRI ≥80 as specified in item description in BOQ.
8. Correlated Colour Temperature shall be in the range of 2700K-6500 K.
9. LED Chip Wattage shall be greater than 0.3W and not more than 1W.

C. LED driver:

Driver shall conform to IS 15885 (part 2 / section 13) 2012 in accordance with GOI notification dated 07.11.2014. LED driver shall have following features:

1. Input voltage Range within 160V(RMS) to 270V (RMS)
2. Driver shall be designed to withstand at least 2 KV for indoor luminaries and 3 KV for outdoor luminaries.
3. Output voltage of the driver shall be designed to meet the Power Requirement of the system.
4. Output voltage ripple should be within 3%
5. Output over voltage protection 125 V DC
6. Full Load Efficiency ≥ 85%
7. Total Harmonic Distortion shall be less than 10%.
 - ✓ Current waveform should meet EN 61000-3-2
8. LED Driver shall withstand voltage of 350V for 2 hours and restore normal working when normal voltage is applied
9. The driver should comply to CISPR 15 for limits and methods of measurement of Radio Disturbance characteristics
10. The equipment should comply to IEC 61547 for EMC immunity requirements
11. The control gear should be compliant to IEC 61347-2-13, IEC 62031 and IEC 62384.

D. General:

- The lumen maintenance of the LED lightings shall not be less than 80% after 50,000 hours i.e. LM80.

- The supplier shall provide evidence that the LED chipset manufacturer has the patent right to produce the supplied LED chipset to avoid infringement of white LED patent.
- The product offered should fall in “Exempt group” for indoor luminaries for Photo biological safety norms as per IS: 16108.
- Warranty shall commence after delivery and end at 60 months after delivery. The warranty of replaced item shall re-start from date of attending defect / replaced.
- Test reports for various parameters i.e. flux, power, efficacy, chromaticity, temperature, protection etc. issued by certified agency shall be furnished. Estimation on product’s life and performance shall also be furnished.
- LED lighting wattage shall be as per BoQ with $\pm 10\%$ tolerance.
- EESL reserves the right of testing of products for its conformity in accordance with above specifications

A: Illumination Level: The fitting shall be so designed that the illumination level shall be evenly distributed and shall be free from glare.

B: INSPECTION TESTS

☐ Type test

☐ Acceptance test

☐ Routine test.

B.1 Type Test

Type tests shall be carried out to prove confirmation with the requirement of specification and general quality/ design features of the unit. In case of any change in Bill of Material or design of unit, complete type test shall be repeated.

If any sample fails in any of the type tests, two fresh samples shall be taken and tested. If any sample again fails in that test, the whole lot shall be rejected.

B.2 Acceptance Tests:

These tests are carried out by an inspecting authority at the supplier’s premises on sample taken from a lot for the purpose of acceptance of a lot. Acceptance tests shall not be carried out from particular size from the lot on which type tests have already been conducted. Recommended sampling plan is given below.

B.3 Sample size and criteria for conformity

The luminaries shall be selected from the lot at random. In order to ensure randomness of selection, procedures given in IS 4905-1968(Reaffirmed 2001) may be followed.

B.4 Routine Tests:

These tests shall be performed by the manufacturer on each complete unit of the same type and the results shall be submitted to the inspecting agency, prior to

offering the lot for acceptance test the firm shall maintain the records with traceability.

B.5 Test Scheme:

Sl.	Description of test	Clause no.	Type Test	Acceptance Test	Routine Test
1	Visual and Dimensional check	C	Y	Y	Y
2	Checking of documents of purchase of LED	C (ii)	Y	Y	Y
3	Resistance to humidity	C (iii)	Y	-	-
4	Insulation resistance test	C (iv)	Y	Y	Y
5	HV test	C	Y	Y	Y
6	Over voltage protection	C (vi)	Y	-	-
7	Surge protection	C (vii)	Y	-	-
8	Reverse polarity	C(viii)	Y	Y	Y
9	Temperature rise Test	C (ix)	Y	-	-
10	Ra (Colour Rendering Index) Measurement test	C(x)	Y	-	-
11	Lux measurement	C (xi)	Y	Y	Y
12	Fire retardant Test	C (xii)	Y	-	-
13	Test for IP protection	C (xiii)	Y	-	-
14	Environmental tests	C (xv)	Y	-	-
15	Reliability Test	C (xvi)	Y	-	-
16	Life Test	C (xvii)	Y	-	-
17	Endurance Test	C (xviii)	Y	-	-
18	EMI/EMC		Y	-	-

C Method of Testing:

(i) Visual and Dimensional Check:

The unit shall be checked visually for all dimensions as per approved design and drawing. General workmanship should be good; all the components properly secured and sharp edges shall be rounded off. Check the marking and quality of the workmanship visually. Check the rating and make of electronic/ electrical items.

(ii) Checking of documents of purchase of LED:

Check Document of purchase of LED lamps of approved sources

(iii) Resistance to humidity test:

This is carried out by suspending the painted panels in corrosion chamber maintained at 100% RH and temperature cycle of 42 to 48 deg. C for 7 days and examining it for any sign of deterioration and corrosion of metal surface.

(iii) Insulation resistance test:

The insulation resistance of the unit between earth and current carrying parts shorted together shall not be less than 2M when measured with 500V megger.

(iv) HV test:

Immediately after insulation resistance test, an AC voltage of 1.72 KV rms (1500 + 2x rated voltage) of sine waveform of 50 Hz shall be applied for one minute between the live parts and frame. There shall not be any kind of breakdown, flashover or tripping of supply.

(vi) Over voltage protection:

The Luminaires shall withstand at 300 VAC for two Minutes.

(vii) Reverse polarity:

The Luminaire shall withstand polarity reversal. It shall be operated with reverse voltage for 5 minutes at maximum value of voltage range. At the end of this period, the supply shall be made correct polarity and Luminaire shall operate in a normal way.

(viii) Temperature rise Test:

Temperature rise Test shall be conducted at 100 VAC with full load. The temperature rise shall be recorded by temperature detectors mounted at the specified reference points on the body of semiconductors, capacitors and other components as agreed between purchaser and manufacturer. The maximum – recorded temperature under worst conditions shall be corrected to 55 degree Celsius and compared with maximum permissible temperature (for power devices at junction). Under loading conditions as specified above, the corrected temperature of the power devices shall have a safety margin of

minimum 10⁰C. Temperature at junction shall not exceed 1000C when corrected to 550C. The Luminaire shall also be subjected for short time rating after continuous loading to ensure the temperature rise is within the permissible limit. The maximum temperature rise of the electronics devices on the PCBs shall be in limit for industrial grade components suitable for 850 C environment. In case of exceeding limit, use of MIL-grade component shall be considered keeping EESL informed.

(ix) Ra (Colour Rendering Index) measurement test:

The lumen is the unit of luminous flux, which is equal to the flux emitted in a solid angle of one Steradian by a uniform point source of one candela.

The initial reading of the chromaticity co-ordinates X&Y shall be within 5 SDCM (Standards Deviation for Colour matching) from the standardized rated value as per Annex. D of IEC 60081-1997.

The initial reading of the general colour-rendering index (Ra) shall not be less than the rated value decreased by 3. The lumen maintenance of the lamp shall not be less than 90% of the initial lumen after 20000 burning hours and 80% of the initial lumen after 50000 hours. The initial lumen will be taken after 100 hours aging. Photometric test shall be conducted as per annexure B of IEC 60081-97. The lumen maintenance test shall be done as per annexure C of IEC 60081-97.

(x) Fire retardant Test:

Fire Retardant test shall be conducted as per IEC 60332-1 of the wire used in the fittings.

(xi) Test for IP protection:

This test shall be conducted as per IEC 60529.

(xii) Reliability Test:

The reliability can only be determined in actual service. However, the following tests shall be carried out on the prototype to simulate as close as possible, the service conditions. There shall be no failure during this test.

- a) The light unit shall be mounted in an oven maintained at 45°C.
- b) The light will be operated at the specified maximum voltage and at 45°C for a period of 100 hours.

(xiii) Life Test:

The lumen maintenance & life test shall be done as per of LM 80 Report of LEDs.

(xiv) Endurance Test:

The Luminaire shall be kept "ON" within put voltage of 250 VAC for 200 hours. After this the Luminaires subjected to 20,000 cycles of "ON" and "OFF", each

cycle consisting of 3 seconds “ON” and 10 seconds “OFF” period. Luminaire should survive this test. Test is to be continued for 20,000 cycles, followed by performance test.

(xv) Safety:

The Luminaire shall comply with the safety requirements as per IEC-61195.

7. SCOPE OF WORK:

1. Bidders may visit the buildings/Sites to assess the exact side of material for the recess type material and to understand various requirements that may arise during Supply.
2. Design, Manufacturing, Testing & Supply of LED luminaries to the said location as per BOQ.
3. Appliances will be supplied only to the mentioned site/locations.
4. All Bidders have to submit the sample test report (LM-79, LM-80) of all supplied material. (Report from any NABL accredited Lab).

8. TERMS OF PAYMENT:

Sl.	Stage	% of payment	Milestone	Remarks
1	1st	60% of Material Cost	Design, manufacturing and Supply of LED lights at desired location against the PO.	Receipt at respective site and submission of bills along with certification/verification by authorized representatives of EESL.
2	2nd	40 % of Material cost	After satisfactory operation/working of LED lights at desired location against the PO. The payment will be made within the 03 months from date of supply as approved by EIC	If the satisfactory operation/working of LED lights could not be undertaken at the building which are beyond the control of M/s EESL & the bidder: The payment of the invoice could be undertaken subject to formal representation from the vendor with relevant proofs, approved by EIC.

Income Tax (if applicable) shall be deducted as per rules.

- **Price Basis:**

Price basis shall be the F.O.R to building as informed by the EIC.

- **Security Deposit against Rate Contract:**

10% EMD submitted by the successful bidder shall be converted into security deposit, to be kept valid till contract period/ 12 months + 3 months claim period. If no EMD was submitted by the bidder (due to exemption), the same shall be submitted within seven (7) days of receipt of the Work Order.

8. LIQUIDATED DAMAGE (LD):

In case of any delay in the execution of the order beyond the stipulated time schedule including any extension permitted in writing, EESL reserves the right to recover from the bidder a sum equivalent to 0.5% of the value of the delayed equipment installation/unexecuted portion of work for each week of delay and part thereof subject to a maximum of 10% of the total value of the contract.

Alternatively, EESL reserves the right to purchase and distribute equipment/material from elsewhere at the sole risk at the cost of successful bidder/contractor and recover all such extra cost incurred by EESL in procuring the material from resources available including EMD/Bid Security/encashment of Bank Guarantee or any other sources etc. Further, if any extra cost is incurred by EESL due to delay in work completion by the party beyond the completion time as per P.O./L.O.A., the same shall also be recovered from party's invoice/EMD/BGs etc.

Alternatively, EESL may cancel the order completely or partly without prejudice to his right under the alternatives mentioned above.

9. ADJUDICATOR:

Adjudicator under the contract shall be appointed by the Appointing Authority i.e. CEO/MD (EESL). If the bidder does not accept the Adjudicator proposed by EESL, it should so state in its bid form and make a counter proposal of an adjudicator. If on the day the contract agreement is signed, the EESL and contractor have not agreed on the appointment of adjudicator, the adjudicator shall be appointed, at the request of either party, by the appointing authority specified.

The Bidder shall be deemed to have examined the Bid document, to have obtained his own information in all matters whatsoever that might affect carrying out the Works in line with the Technical specifications and Scope of Work specified in the document at the offered rates and to have satisfied himself to the sufficiency of his Bid. The bidder shall be deemed to know the scope, nature and magnitude of the work and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works he has to complete in accordance with the Bid documents irrespective of any defects, omissions or errors that may be found in the Bid documents.

10. INSURANCE:

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. For delivery of goods at site, the insurance shall be obtained by the

Contractor, for an amount not less than the Contract Price of the goods from “warehouse to warehouse” (final destinations) on “All Risks” basis including War risks and strikes.

11. TRANSPORTATION, DEMURRAGE, WHARFAGE, ETC.:

Contractor is required under the Contract to transport the Goods to place of destination defined as Site. Transport to such place of destination in India including insurance, as shall be specified in the Contract, shall be arranged by the Contractor, and the related cost shall be included in the Contract Price.

12. Successful bidder, on whom letter of award is placed, is to ensure all safety guidelines, rules and regulations, labour laws etc. Successful bidders indemnify EESL for any accident, injury met by its labour, employee or any other person working for him. Any compensation sought by its labour, employee or any other person working for him shall be paid by successful bidder as per settlement solely. EESL has no role to play in this matter.

13. Successful bidder is to ensure interchangeability of its product supplied for replacement during warranty and maintenance period and even when it is purchased from open market. In case due to change in technology , the supplied product is not available during warranty/ maintenance period than the improved version of product can be used in warranty/maintenance period with same or improved technical parameters or the combination thereof after written communication of Engineer in Charge at same cost& terms and conditions. Successful Bidder, on whom letter of award has been placed, has also to confirm that the price of improved version of product is not lesser than the original product or its parts in comparison.

On behalf of EESL

(Sudeep Bhar)
Regional Head
(WB, NE & Sikkim)