



**NOTICE INVITING E-TENDER FOR DESIGN,  
MANUFACTURE & CONSTRUCT, SUPPLY,  
ERECTION, TESTING AND COMMISSINING OF 04  
NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHTS  
FOR CRICKET GROUND AT IIM, LUCKNOW.**

To,  
M/S. \_\_\_\_\_

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**SUB.: NOTICE INVITING E-TENDER FOR DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHTS FOR CRICKET GROUND AT IIM, LUCKNOW.**

Dear Sir,

Tenders are invited, on behalf of the Director, Indian Institute of Management, Lucknow for DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHT FITTING FOR CRICKET GROUND AT IIM LUCKNOW, Prabandh Nagar, Lucknow as per BOQ attached. The Institute invites you to participate and to send your offers as per the attached **NOTICE** inviting **E-TENDER**.

E-Tenders are invited under two bid system (both Technical and Financial) from reputed Companies. The complete Tender document containing General term and Conditions, pre-qualification requirements etc. are available on <http://eprocure.gov.inprocure/app> and our website <http://www.iiml.ac.in> for reference only.

Reputed Companies may submit their bids in the prescribed format with all the necessary documents online at <http://eprocure.gov.inprocure/app> on or before bid submission closing Date & Time

Sd/-  
Chief Administrative Officer  
For Indian Institute of Management



**INSTITUTE OF MANAGEMENT LUCKNOW**

**NOTICE INVITING E-TENDER**

**IIML/PROJ/TENDER/2023-24/4413 Date: 20/06/2023**

**NOTICE INVITING E-TENDER FOR DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHTS FOR CRICKET GROUND AT IIM, LUCKNOW**

Dear Sir,

E-Tenders are invited from reputed companies for DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING of 04 nos. high mast with 60 nos. flood lights. To submit their tender, quote your minimum rates on enclosed bill of quantity on behalf of Director, IIM Lucknow. The General terms & conditions of service contract are also enclosed which are biding to both IIML and the Bidder.

Name of work	:	DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHTS
Earnest Money	:	Rs. 60,000/- (Rupees Sixty Thousand Only)
Total Estimated Cost	:	Rs. 30,00,000/- (Inclusive of GST)
Period of Contract	:	90 days
Date of issue of tender document	:	21/06/2023 9:00 am
Date Pre-Bid Meeting	:	27/06/2023
Late Date for submission tender document	:	30/06/2023 upto 15:00 PM
Date of opening of Technical Bid Opening	:	01/07/2023 at 15:00 PM
Date of opening of Financial Bid Opening	:	Will be informed to the Bidders Qualifying the Technical Bid.
starting of work	:	Within 10 days of the Date of LOI

Tenderer are advice to visit the site and see the work before submitting the tender.  
**The Technical and Financial bids should be uploaded through E-tendering process only before the due date & time.**

Sd/ -

Chief Administrative Officer  
For Indian Institute of Management Lucknow

# **TECHNICAL BID**

## SCOPE OF WORK

The scope of this work covers the:

- Designing of 4 nos. of pole polygon type mast lighting pole having continuously tapered, polygonal cross section, at least 8 sided or equivalent, presenting a pleasing appearance and shall be based on proven In- Tension design conforming to standards, to give an assured performance and reliable service of 20-meter height pole structure and its Foundation as per the conditions at Cricket stadium of IIM, Lucknow. The pedestal of the foundation shall be minimum 750 mm above the finished ground level. All the required inputs such as wind velocity, bearing capacity of the soil etc. needed for design has to be arranged by the Tenderer only. These designs must be vetted by the OEM and Licensed Structural Engineer.
  - The pole should have either winch or lantern carriage arrangement or should have safety cage ladder for the maintenance and replacement of the lights.
  - Fabrication of the Mast as per the design and Specifications given below and relevant standard code.
  - Supply of the Mast pole, its lighting arms, Foundation bolts, Templates etc., lights with the required nut bolts etc. to the Cricket Stadium at Indian Institute of Management Lucknow, Lucknow campus.
  - Construction of foundation as per the requirements of IS 456 and other relevant IS codes complete to the Satisfaction of User department/ Engineer In charge.
  - Erection of the Mast along with the Arms etc. for fixing of the Lights etc. Fixing of the lights, their connection with the specified cables.
  - Providing and laying of the connection cables of the required rating up to the specified location of Flood light control panel.
  - Providing and fixing of Flood light control panel along with the Timer switch at the specified location of control panel.
  - Testing and commissioning of 4 nos. of 20-meter height Flood light poles each having 450 watt LED lights
- (i) All materials to be used in execution of project shall be of first class quality; I.S.I marked and shall be approved by IIM before its application.
  - (ii) The work should be carried out in truly professional manner, neatly finished with proper line, level and plumb. Cleanliness and finishing of the job is of utmost importance. Hence the job should be done most carefully with best workmanship. For all finishing jobs samples should be approved from the Engineer-Incharge before completely executing the work.
  - (iii) The IIM should be immediately informed for any discrepancy in specifications and instructions in the execution of job at site before actual execution of particular item having discrepancy.
  - (iv) Any item found to be having been executed with poor workmanship or materials of inferior quality then the contractor shall have to rectify / reconstruct the work as specified by IIM. No extra charge will be admissible in such case. If contractors fail to do so, the IIM reserved the right to rectify / reconstruct the work through some other agency at the expenses of contractor.
  - (v) The schedule of activities as submitted by the contractor shall have to be strictly adhered to. Regular progress reports shall have to be submitted by the contractor giving all details for monitoring of the schedule.
  - (vi) The contractor shall take charge of site and if site clearance is involved, he shall attend to it (If such type of unforeseen and unavoidable situation occurs, in that

case actual labour employed for such job shall be paid including overheads and profit).

- (vii) Special care is to be taken for cleanliness of the site. After the end of day's work the site should be cleaned immediately.
- (viii) The contractor shall have to co-operate with the agencies in execution of other works in the same area.
- (ix) While executing the work, the contractor shall ensure safety and security of the property of the IIM so as to avoid theft etc.
- (x) Certain specialized items of works may be carried out directly by the specialized agencies which are directly appointed by the company, the contractor has to coordinate and cooperate such agencies by providing them clear way of working, correct size of opening, levelled floors or any such requirements which the contractor has to perform on his part.
- (xi) Absolute cleanliness is must while working.
- (xii) All care to be taken not to damage existing structure and related things. All dismantled debris to be carted away immediately from the site.
- (xiii) For any kind of discrepancy or unforeseen happenings, inform the IIM immediately.

## INSTRUCTION TO TENDERER

- (i) The Tenderer shall read the document carefully before filling it.
- (ii) Bidders are required to deposit an amount of Rs. 60,000/- (Rupees Sixty Thousand only) towards Earnest Money Deposit (EMD) to below mentioned bank account of Institute on or before the last date & time mentioned above. EMD through any other form will not be accepted. UTR number / Transaction ID and date of Deposit/Transfer of EMD shall be mentioned in Technical Bid at appropriate place. **Those who are exempted from deposit of EMD shall upload the valid certificate in this regard.** Bank

Account No.	07231450000294
IFSC Code	HDFC0000723
Name of Bank & Type of Account	HDFC BANK/Saving

- (iii) Financial bid must be filled and submitted in the prescribed formats given on the CPP portal separately. A sample format of the financial bid has been attached with the Technical bid just for the understanding of the bidders. This is required to be kept blank and just signed and stamped along with the other documents of this Tender. If filled in financial bid is found along with the Technical bid of this Tender, then the Tender shall be straight away rejected.
- (iv) Tender must be valid for a minimum period of 120 days from the date of opening.
- (v) Technical offers shall be opened first, if the tenderer fail to submit the EMD than their technical offer will not be Opened/Evaluated. The technical offers will be evaluated by the selection committee based on technical evaluation criteria of this document. The Financial offers from technically unqualified tenderers as per evaluation criteria will not be opened.
- (vi) Financial offer shall be opened only for those tenders who are technically qualified as per evaluation criteria of this tender document.
- (vii) The dates for opening financial offer will be communicated to the tenderers and tenderers are requested to be present at the time of opening the tenders. Authority letter is must if any person other than who has signed the tender document attends such event.
- (viii) Each page of the tender document must have signed by the authorized signatory of the tenderer.
- (ix) Original tender document duly signed and filled up should be uploaded.

- (x) The tender not accompanied by complete document or duly filled in all respect shall be rejected.
- (xi) All erasures, cuttings and alterations made must be attested by the authorized person while filling the tender document. Over-writing of figures is not permitted.
- (xii) Successful tenderers must visit the site and see the means of access to the site and specifications and acquaint themselves fully about the works to be carried out and all other factors governing the works before quoting his rate.
- (xiii) Tenderer has to submit Performance Security deposit 05% of total contract value within 10 days after issue of LOI with minimum validity of two year in form of DD/FDR from Nationalized Bank. EMD of unsuccessful tenderer shall be returned after finalization of contract. EMD of successful tenderer shall be returned only after deposit of Performance Security deposit. Performance Security deposit will be release after successful completion of work. No interest shall be paid on amount.
- (xiv) Performance Security deposit shall be in the form of Bank Guarantee/FDR Drawn on any nationalized bank in favour of Indian Institute of Management, Lucknow payable at Lucknow.
- (xv) This is an item rate Tender. The rate quoted by the tenderer shall be the total sum of material & labour at the IIM Lucknow campus, Lucknow Excluding of GST, **GST will be paid extra as applicable.**
- (xvi) If any discrepancy / misprint is noticed / specification or BOQ, it should be clarified from the Institute before quoting the rate.
- (xvii) Following procedures shall be adopted in case of difference in quoted rates in figures and words and extensions:
  - a. Where there is difference between rates in figures and the rates, quoted in words shall be considered as correct.
  - b. Where the amount of an item is not worked out or it does not correspond to the rate either in figure or in words, the rates quoted in words shall be considered as correct and necessary extension made.
  - c. Where the rate quoted by the tenderer in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the tenderer shall be considered as correct and amount shall be corrected accordingly.
- (xviii) The Indian Institute of Management, Lucknow do not bind themselves to accept the lowest or any other tender and reserve the right to accept or reject any or all the tenders either in full or in part without assigning any reason.



- (xix) The tender shall be opened & evaluated by the tender committee and the successful tenderer shall be informed.
- (xx) If any of the document submitted by the tenderer is found fake, even after the acceptance of tender, the contract will be terminated for which the concerned tenderer will itself be responsible and no compensation, etc., will be paid by the IIM, Lucknow.
- (xxi) The Director, Indian Institute of Management, Lucknow has reserves the right to reject one or all the tenders without assigning any reason. No claim, whatsoever, shall be entertained on this account.
- (xxii) 5% of the payable bill value will be retained from each bill as defect liability period & shall be released after the warranty of lights. No interest shall be paid on amount.
- (xxiii) Tenderer are required to execute the agreement in accordance with the approved Proforma on non-judicial Rs. 100 stamp paper of appropriate value within 10 days from the date of receipt of this Letter of Intent. The cost of non-judicial stamp paper is to be borne by tenderer.
- (xxiv) Tenderer can avail relaxation (in tender fees and EMD only, No relaxation will be given in experience) given as per Govt. norms for NSIC/MSME registered firm.
- (xxv) Successful tenderer uploaded document will be verified with the original at the time of LOI / Agreement.
- (xxvi) The LED light provided should have its service provider in Lucknow.
- (xxvii) Minimum warranty of the lights must be 2 years.
- (xxviii) Tender term & condition also includes GCC which is uploaded on IIML website and also be the part of this contract and its terms and conditions shall be binding to both IIML and the successful Tenderer. So please read it properly. Link  
<https://www.iiml.ac.in/sites/default/files/upload/tender/293037022gcc.pdf>
- (xxix) Successful tenderer has to submit the design of foundation to Engineer-in-Charge before start of work.
- (xxx) Successful tenderer has provide time line of work within given completion date.
- (xxxi) **Estimate have been prepared in April - 2021, thus the cost may increase.** So price bids above the estimated cost can be considered for evaluation.

(xxxii) Intending parties are required to submit an undertaking that their firms have never been debarred / black listed by any Government/Public sector dep't. And there is no criminal case on the Proprietor/ partners/ any of the Directors in any Police station of any court of India. This undertaking is to be given in the following format:

Undertaking to be furnished by the intending Tenderers:-

I/We declare and confirm that:-

- i. I/we have never been blacklisted /debarred from IIM Lucknow any Govt. /Public sector enterprises.
- ii. There is no criminal case on me/ and my partner/ board of directors is there in any court/Police station of India.
- iii. All the information and attachments submitted in the tender document/ envelope are true and correct.
- iv. There is no suppression or concealment of information / document with regard to execution of work during the last 05 years
- v. I / We are aware that any false information provided herein will result in the rejection of my tender at any stage.

## TECHNICAL DETAILS OF BIDDER

### Details of the Tenderer:

S. No.	Particulars	Credential Criteria of Firm
1	Name of the firm & Address	
2	Contact No. and Email-ID	
3	GST Registration No. of the firm/Agency (Enclose copy) :	
4	Income Tax Permanent Account No. (Enclose copy)	
5	Experience of the firm in similar field during the last three years, ending last date of submission of tender. (Copy of Eligible Completion Certificate to be enclosed).	
6	Average Annual Turnover during last 03 years ending 31 <sup>st</sup> march of the previous financial years should be at least 30% of the estimated cost. (Copy of Annual Audited Accounts Statement for each year or the certificate for the average Turnover if the Tenderer issued by registered Chartered Accountant).	
7	OEM of the High mast Pole and Brand and Warranty of lights to be supplied. ( Valid Authorization certificate of the OEM/ High Mast manufacturers from whom they would source the Mast for this tender and shall also provide a certificate from the Manufacturer that the manufacturer would provide all the technical assistance, to the tenderer, for assembling & erection of the mast supplied by them to be enclosed)	
8	Details of EMD uploaded or MSME registration no. and year	
9	Address of the office at Lucknow for future communication and handling the Complaints during the defect liability period.	
10.	High mast pole and foundation duly vetted by the licensed Structural Engineer and OEM. (The Agency will be required to submit the vetted design in case the agency is awarded the work.)	Yes/No

SIGNATURE .....

SEAL OF ORGANISATION

## DECLARATION

1. All the information furnished by me / us here above is correct to the best of my knowledge and belief.
2. I / we have no objection if enquiries are made about the work listed by me / us in the accompanying sheets / Annexures.
3. I / We agree that the decision of Indian Institute of Management Lucknow in selection of contractor will be final and binding to me / us.
4. I / We have read the instructions and I / we understand that if any false information is detected at a later date the tender shall be cancelled at the discretion of the Company and liable for any action, as deem fit by the Indian Institute of Management Lucknow.
5. I / We hereby confirm that my/ our company has never been blacklisted by any State/ Central Government organization.

Signature of the Contractor (or) His authorized  
signatory

With seal of the agency/ firm

The Technical Bid should contain the followings documents for technical qualification: -

- a) Photocopy of GST Number
- b) Photocopy of PAN Card
- c) Prospective vendors shall have well experienced in similar type of works with Central/State/PSU/Govt./Reputed Pvt. Institution Photocopy of Experience Certificate of similar field of the firm of during the last three years, ending 31<sup>st</sup> March of the previous financial year.
- d) Experience of having successfully completed works during the last three years, ending 31<sup>st</sup> March of the previous financial year.

Three similar completed works, each costing not less than the amount equal to 40% of estimated cost of tender each year,

Or

Two similar completed works, each costing not less than the amount equal to 60% of the estimated cost of tender each year,

Or

One similar completed work of aggregate cost not less than the amount equal to 80% of the estimated cost of tender each year.

- e) Photocopy of certificate issued by CA for Average Annual Turnover during last 03 years ending 31<sup>st</sup> march of the previous financial years should be at least 30% of the estimated cost.
- f) An EMD amounting to Rs. 60,000/- (Rupees Sixty Thousand only) drawn in favor of Indian Institute of Management, Lucknow or MSME Certificate.
- g) The bidder is required to submit the draft design of the illumination system of the IIML cricket ground as per desired lux level of SP72 level III.

## **TENDER Declaration**

I/We have read and examined the Notice Inviting tender, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, & other documents and rules referred to in the conditions of contract and all other contents in the tender document for the work including GCC attached separately or upload on iiml.ac.in.

I/We have thoroughly read the tender specification and have understood the site/working condition

I/We hereby tender for the execution of the work specified for IIM Lucknow within the time specified, viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing.

I/ We agree to keep the tendered rates valid till 120 days from the date of opening of tender and not to make any modifications in its terms and conditions.

A sum of Rs. 60,000/- is hereby forwarded in Cash/Receipt Treasury Challan/Deposit at call Receipt of a Scheduled Bank/Fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by scheduled bank as earnest money.

OR

I/We had submitted a self-attested copy of valid certificate as a proof of exemption from submission of Earnest money deposit.

If I/we, fail to furnish the prescribed performance guarantee or fail to commence the work within prescribed period I/we agree that the IIM Lucknow or its successors in office shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail of commence work as specified, I/we agree that II, Lucknow or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations/ additional/ extra items as may be ordered as per the provisions in the Contract.

Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/ have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in IIM, Lucknow in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/we shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information derived therefrom to any person other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated \_\_\_\_ \*\* \_\_\_\_

Signature of contractor  
with seal of the agency/ firm

## DEFINITIONS

In this Contract, the following words and expressions shall have the meanings as stated below:

- (i) **'IIM'** shall mean Indian Institute of Management, IIM Road, Lucknow and shall include their successors and assigns, as well as their authorized representatives.
- (ii) **'ENGINEER-IN-CHARGE'** shall mean the engineer appointed by the IIM to supervise all activities of the project.
- (iii) **'TENDERER'** shall mean the company / agency who quote against the tender enquiry for undertaking the work.
- (iv) **'CONTRACTOR'** shall mean the successful tenderer whose tender has been accepted by the IIM and to whom the order is placed by the IIM and shall include his heirs, legal representatives, successors etc.
- (v) **'PERMANENT WORKS'** shall mean all the works included in the schedule of quantities and shall also include additions, alterations etc. communicated in writing.
- (vi) **'SITE'**, shall mean the all place i.e. IIM, Lucknow where the project is to be executed.
- (vii) **'PROJECT'** shall mean entire work specified in the contract documents inclusive of extra items/extra quantities (if any) executed during the contract period.
- (viii) **'ACCEPTANCE LETTER'**, shall mean written consent by a letter of IIM to the tenderer intimating him that his tender has been accepted.
- (ix) **'CONTRACT'** shall mean the articles of Contract Agreement. The conditions of contract, schedule of quantities, specifications, attached and duly signed by the IIM and the Contractor.
- (x) **'DATE OF CONTRACT'** shall mean the date on which the IIM has issued acceptance letter.
- (xi) **'CONTRACT PERIOD'** shall mean the period (including rainy season) specified in the tender documents during which the contract shall be executed.
- (xii) **'COMPLETION CERTIFICATE'** shall mean the certificate issued by the IIM to the contractor after successful completion of the project. This certificate will be issued on the basis of consultant's/ User's certificate to IIM about the completion of the job.
- (xiii) **'EXTRA ITEMS'** are those items, which are not appearing in the BOQ but are required to be executed during the project period and for which rates are to be derived as per the formula given in the conditions of the contract.
- (xiv) **'EMD'** shall mean Earnest Money Deposit. The Owner takes this amount to check the earnestness/seriousness of the tenderers in case they are selected as winners.

# **SPECIAL CONDITIONS OF CONTRACT.**

## **1.1 Directive to Contractor**

### **1.1.1 Interpretation of Contract Documents:**

- (i) All the documents (such as SNIT, ITT, TENDERER DECLARATION, DEFINITIONS & SCOPE OF WORK, TECHNICAL SPECIFICATIONS, General Conditions of Contract which are available on IIML Web site and FINANCIAL BID) forming part of the contract are to be taken as mutually explanatory, supplementary and complementary to each other. If there is any error, omission or discrepancy in any of them, it shall be brought to the notice of the IIM. The decision of the IIM shall be final and binding. The contractor shall execute the work accordingly.
- (ii) The contractor shall examine all the contract documents thoroughly including the scope, nature and magnitude of works he has to execute in accordance with the contract documents.
- (iii) The contractor shall visit the project site so as to study the site conditions, means of access to the site and other factors governing the works.

### **1.1.2 Period of Contract:**

The time period for completion of job for DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING of 04 nos. high mast with 60 nos. Work shall be completed 90 days from the date of issue of LOI (Letter of Intent).

### **1.1.3 Delay in work execution due to reasons beyond contractor control:**

#### **Force Majeure:**

If the execution of work is delayed due to force majeure, or due to the circumstance which were not in the control of the Tenderer then IIM as per the affected period may extend the time period as per the discretion of the Director of the Institute.

### **1.1.4 Dispute & Arbitration:**

- (i) All disputes or differences whatsoever arising between the parties out of or relating to this contract or the specifications, designs and quality of work, quality of materials used for the work, construction, meaning and operation or effect of the work or the breach thereof that cannot be settled by good faith and negotiations between the parties within 60 days of the commencement of the negotiation shall be settle by mutually referring the dispute to a sole Arbitrator and the award passed by him shall be final and binding on the parties. Selection of arbitrator shall be made by mutual consent. The cost of arbitration shall be divided equally. The proceedings will be governed by the provisions of the arbitration & Conciliation Act, 1996. The place of arbitral proceedings will be Lucknow. The language of the arbitral proceedings shall be English
- (ii) By consent of Parties the jurisdiction of all other courts are excluded and the courts at Lucknow alone shall have jurisdiction.

- (iii) "Abandonment/incomplete work", wherein it should be mentioned that apart from the forfeiture of security the incomplete work shall be got completed from some other agency and the costs thereof be recovered from the contractor.
- (iv) The service of notice will be given by e-mail, fax, courier, speed post or registered post be added and the address for service of notice be specified both for IIM and contractor.

#### **1.1.5 Escalation:**

The rates quoted by the contractor in the contract documents shall be final and shall not be subjected to any change due to the increase in labour wages or inflation wages or inflation in the cost of materials or any other price variations due to any reason during the stipulated time period of the contract or during the extended time period of completion.

### **1.2 Execution of Work**

#### **1.2.1 General:**

All the works shall be executed in accordance with the specifications and instructions approved by the IIM as mentioned in the contract document.

#### **1.2.2 Inspection of works:**

- (i) The IIM shall have the full authority to inspect the works at any time, at any stage. The contractor shall provide adequate facilities to carry the inspection work. The contractor should present himself or his authorized representative during the inspection so that the IIM can convey the instruction regarding the works.
- (ii) The contractor shall give information to the IIM before covering up the works so that the same can be inspected and measured jointly & correctly to true dimensions.
- (iii) If the contractor fails to get the work inspected before covering it up, then the IIM has full authority to get the work uncovered at the expense of the contractor and if any fault is found then the contractor should rectify the same without claiming any extra payment.

#### **1.2.3 Inadequate / substandard works and materials:**

- (i) Material used should be make mention in **BOQ**
- (ii) If any work executed by the contractor is found to be of bad workmanship, then the same is to be dismantled and re-executed by the contractor without claiming any extra payment or extension in time period.

#### **1.2.4 Default of Contractor in compliance:**

If the contractor or his authorized representative fails to follow the instructions given by the IIM regarding any of the works, then the same shall be got executed by engaging other contractor/ persons by IIM at the risk and cost of the contractor.



### **1.2.5 Discrepancies between instructions:**

The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions. In the case of discrepancy between the schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed: -

- i. Description of Schedule of Quantities.
- ii. Particular Specification and Special Condition, if any.
- iii. Drawings.
- iv. IIM LUCKNOW Specifications.
- v. Indian Standard Specifications of B.I.S.

If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor. Any error in description, quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

If any discrepancy occurs between the various instructions conveyed to contractor or his authorized representative or if any misunderstanding arises between the contractor's staff and IIM's staff, the contractor shall report the matter immediately to the IIM. The decisions of IIM shall be final and binding. Moreover, no claims for losses due to discrepancies between instructions, doubts or misunderstandings shall be admissible.

### **1.2.6 Liabilities for defects and rectifications:**

If it shall appear to the IIM that any work has been executed with imperfect or unskilled workman or with materials of any inferior description, or of quality inferior to that contracted for, or otherwise not in accordance with the contract, the contractor shall on demand in writing from the IIM or his representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for forthwith rectify or remove and reconstruct that work so specified and provide other proper and suitable materials or articles at his own charges and cost, and in the event of failure to do so within a period to be specified by the IIM or his demand aforesaid, the Incharge may on expiry of notice period rectify or remove, re-execute the work at the risk of Contractor and the cost shall be recovered from the Contractor. The decision of the IIM as to any question arising under this clause shall be final and conclusive.

### **1.2.7 Period of warranty:**

The warranty period of the work shall be equivalent to warranty of LED Flood light (Minimum 2 years) from the date of completion of the work as certified by the IIM. If LED Flood light get defective occurs during the period of liability the same will be changed by the contractor at his own expense.

### **1.2.8 Suspension of work:**

The contractor shall suspend the progress of work on receipt of the written order from the IIM for any of the following reasons:

- (i) On account of any default on the part of the contractor. In this case the contractor shall be entitled for the extension of time, but the contractor shall have no claim for payment of compensation for re-execution of faulty works.
- (ii) For execution of the works for reasons other than the default of the contractor.
- (iii) For safety of the works.

**In case of suspension of work:**

- a. The contractor shall during such suspension, properly protect and secure the works and carry out the instructions of the IIM.
- b. If the suspension is ordered for the reasons 1.2.11 (ii) as stated above, the contractor shall be entitled for extension of time equal to the period of every such suspension but no compensation for damages etc. shall be admissible on account of suspension of work.

**1.2.9 Possession Prior to completion:**

The IIM shall have authority to take possession of any completed or partially completed works. Such possession shall not be deemed to be acceptance of any work completed in accordance with the contract. If such prior possession delays the progress of works then the adjustment in the time of completion shall be done accordingly. The decision of the Engineer-Incharge regarding the extent of delay shall be final and binding.

**1.2.10 Care of Works:**

From the commencement to the completion of works, the contractor shall take full responsibility for the care of all works and in case any damage or loss occurs then the contractor shall repair and make good the same at his own cost so that on completion of the work, the same shall be in good order in every respect in accordance with the contract and to the satisfaction of the IIM.

**1.3 Certificate and Payment**

**1.3.1 Schedule of Rates:**

- (i) The payments to be made to the contractor shall be as per the finalized rates in tender documents and the rates of extra items finalized from time to time.
- (ii) The rates finalized in the tender document shall remain firm till the completion of work including extension of time, if any. *Mode of Payment:*

All measurements shall be in the metric system and in accordance with Indian Standard Specifications and in accordance with standard engineering practice. If the contractor has any objection regarding the measurements then the contractor shall inform the IIM immediately. The decision given by the IIM shall be final and binding on the contractor. .

**1.3.2 Mobilization Advance:**

No mobilization advance shall be paid.

### **1.3.3 Billing:**

The contractor shall submit running bill. After measurement and verification of work payment will be made.

### **1.3.4 Terms of Payment:**

- (i) The payment due to the contractor shall be made only in Indian Currency by Crossed Account Payee Cheque or RTGS. In no case, will the IIM be responsible if the cheque is misled or miss-appropriated by the contractor or his representatives.
- (ii) The IIM reserves the right to carry out post payment audit and technical examination of the bills and work executed including all supporting vouchers etc. the IIM further reserves the right to enforce recovery of over-payment when detected. Similarly, if any under payment is discovered, the amount shall be paid to the contractor.
- (iii) Wherever any claim for the payment against the contractor arises as per the contract, the same may be deducted from the bill of the contractor or from his security deposit.
- (iv) 5% of the payable bill value will be retained from each bill as security deposit & shall be released on the satisfactory completion of the job after the defect liability period equivalent to warranty of light. No interest shall be paid on security deposit amount.
- (v) **Tax Deduction:** All statutory deduction like Income Tax, Works Contract Tax, E.S.I., P.F or any other government-imposed liability shall be borne by the contractor (as applicable at the time of execution of job). Statutory deduction as per the govt. direction shall be deducted from each bill submitted by the contractor.

### **1.3.5 Provisional Completion Certificate:**

When the contractor successfully completes the works as per the contract, he shall be eligible to apply for provisional completion certificate in respect of the works. The IIM shall issue to the contractor the provisional completion certificate after verifying from the completion documents submitted by the Engineer-Incharge and satisfying him/ user Department that the work has been completed in accordance with the contract document. The contractor, after obtaining the provisional completion certificate, is eligible to present the final bill for the work executed by him under the terms of the contract.

The work will not be considered as complete and taken over by the IIM until all the temporary works, labour hutments etc. are removed and the work site cleared to the satisfaction of the IIM.

If the contractor fails to comply with the requirements of the above on or before the date for the completion of the works, the IIM may, at the expense of the contractor, remove the tools and plants and surplus materials and dispose-off the same and the contractor shall pay the amount of all expenses incurred.

## **1.4 Labour Laws and Safety Regulations**

### **1.4.1 Labour Laws:**

- (i) Labour below the age of 18 years shall not be employed on the work.

- (ii) The contractor shall not pay less than what is specified by the law to labours engaged by him on the work.
- (iii) The contractor shall, at his own expenses, comply with all labour laws and the IIM shall not be responsible for any recovery/penalty imposed by the respective authorities for violating the labour laws.
- (iv) If the contractor is covered under the Contract Labour (Regulation & Abolition) Act, he shall obtain a license from the licensing authority (i.e. the office of labour Commissioner), by payment of the necessary prescribed fee and deposit, if any, before starting the work.
- (v) The contractor shall furnish to the IIM, the details of the workers employed on the works.
- (vi) The contractor shall comply with the provisions of the existing rules and regulations relating to labour laws.
- (vii) The IIM shall on a report having been made by an inspecting officer as defined in Contract Labour (Regulation and Abolition) Act, 1980, have the power to deduct from the amount due to the contractor any sum required or estimated to be required for making good the losses suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, or if deductions made from his or their wages which are not justified by the terms of contract or non-observance of the said regulations.

#### **1.4.2 Minor/Fatal Accident on Duty:**

For cases of minor/Fatal accident on duty not covered under compensation by IIM, the contractor shall have to compensate the affected person/family. The absence from duty, if takes place, due to such accident shall be considered as special leave and full payment shall have to be made for duration of such absence.

### **1.5 Safety Code**

#### **1.5.1 Safety and Protection:**

The contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions. While carrying out the work, the contractor should provide for;

- (i) Safety of personnel engaged in the construction.
- (ii) Protection and safety of works and materials during their progress.
- (iii) Sanitary and hygienic conditions of working and living for his workers, as required by the IIM.

#### **1.5.2 Use of Safety Gadgets:**

The contractor shall have to ensure availability and use of all desired safety gadgets like safety belts, helmets, goggles, hand gloves, gumboots etc.

#### **1.5.3 First Aid:**

The contractor shall provide first aid facilities for his employees and those of his sub-contractors. The requisite first aid box and medicines should always be available at work site.

#### **1.5.4 Preservation of Peace:**

The contractor shall take precautions to prevent any riotous or unlawful behavior by his workers, for the preservation of peace and protection of inhabitants and the security of property in the neighborhood of the work.

#### **1.6 Details of Work Execution**

- (i) The work shall be done in such a manner so as to clear work force availability for other agencies working at site.
- (ii) Finish of work shall be as per details given by IIM.
- (iii) In general the complete work is to be done as per Indian Standard and esthetical norms as specified and detailed in Tender.

#### **1.7 Site**

The site is located at IIM Lucknow, IIM Road, Lucknow. The contractor shall be responsible for accommodation of the manpower, the movement of his men, material and equipment at his own cost.

#### **1.8 Electricity**

Electrical power at one point to be provided by the IIM. The Contractor will be responsible for getting electrical connectivity including supplying of cables, connections, and other required items.

#### **1.9 Contractor's Scope of Supply**

All materials required for executing the jobs specified in the Bill of Quantities, inclusive of all tools, tackles, scaffolding, consumables and testing equipment's shall be procured and supplied by the contractor at his own cost except for any items specified as IIM supplied.

#### **1.10 Liquidated damage charges**

0.05% per day of contract value for delay up to 15 days. 0.10% per day of contract value for delay from 15-30 days and for delay beyond 30 days it will be 0.25 % of the contract Value per day. Total levy of this Liquidated damage shall not exceed more than 10% of the contract value. In case the delay continues beyond 3 Months than the tender/ Contract will be automatically cancelled and Security Deposit and Retention will be forfeited in this case.

#### **1.11 Recovery from the Contractor**

- (i) If the contractor or his employees damage or destroy the property of the IIM, then the same shall be replaced / refunded by the contractor, otherwise the expenses may be recovered from his bill or security deposit.
- (ii) All compensation and recoveries to be made as per terms of the contract shall be deducted from the contractor's bill or security deposit.
- (iii) Forfeiture of Security Deposit: Whenever any claim against the contractor is to be recovered then the same may be made from the security deposit.

If the contractor abandons the work or leaves the work incomplete, then the IIM has the right to forfeit the security deposit.

- (iv) The contractor will make fence around the area given for labour hutment to avoid unauthorized entry.

### **1.12 Service of Notice**

All notices, consents, approval or other communication required to be given or served hereunder by either party hereto to the other party shall be in writing, and in English and shall be personally delivered to, left at, sent by registered post, email, courier, speed post or facsimile by either party to the other at the addresses mentioned here in below. Both parties agree that the facsimile transmission will not be used as a sole method for the communication of important notices such as any modification or termination.

- (i) THE DIRECTOR  
INDIAN INSTITUTE OF MANAMEMENT  
PRABANDH NAGAR, IIM ROAD  
LUCKNOW-226013**

- (ii) Notice to the Tenderer at the Address mentioned in the Tender Document**

## **TECHNICAL SPECIFICATION – HIGH MAST STADIUM LIGHT**

### **TECHNICAL SPECIFICATION AND DATA SHEET FOR 20 M FIXED HEAD HIGHMAST FOR CRICKET STADIUM FLOOD LIGHTS.**

This specification covers the design, manufacture, transportation, installation, testing and commissioning of the complete Signage, using fixed type of High Mast Towers, including the Civil Foundation Works.

#### **a. Structure**

The High mast shall be of continuously tapered, polygonal cross section, minimum 8 sided or equivalent, presenting a good and pleasing appearance, assured performance, and reliable service. The top height of mast and Flood light shall be at 20 m, with minimum across Flat dimensions of 200mm at the top or as per design to support the weight of lights. The plate thickness shall be 5 mm for bottom and 4 mm for top section. The structure shall be suitable for wind loading as per IS-875, pt-3, 1987. The Pole should be provided with ladder to reach the head frame and there must be standing platform of suitable size for repair and maintenance of the luminaries manually and hook arrangement to fixing the rope/pulley tying the safety belt.

The Head frame shall be so designed that these 15 lights plus 05 additional light (in case require) can be fixed in the designed pattern and position on each pole so that Average illumination from these 4 Mast lighting on the field (Site plan of the cricket field is enclosed) shall be minimum 200-300 lux.

#### **b. Construction**

**The contractor is required to properly design the placement of these 4 masts so that the illumination requirements given in SP 72: 2010/ stipulated below are fulfilled.** The mast shall be capable of safely withstanding the strong winds prevailing at site. The deflection at the top during heavy storm periods shall therefore be considered in the design and the mast designed in such way that the above deflection during worst periods is kept to a minimum value. The mast shall be fabricated from steel plates conforming to BS EN 10025 or equivalent having minimum yield strength of 355 N/Sq. mm and silicon content in steel shall be less than 0.06%, cut and folded to form minimum 8 sided polygonal sections and welded with automatic sub merged arc welding machine. The welding shall be in accordance with BS: 5135.

The 16 meters high mast shall be delivered either in two or maximum three sections, and shall be joined together by slip stressed-fit method at site. No site welding or bolted joint shall be done on the mast. The High mast shaft shall have only one longitudinal weld without any circumference weld. The minimum overlap distance shall be 1.5 times the diameter at penetration.

The mast shall be provided with full-penetrated flange, which shall be free from any laminations or inclusions. The welded connection of the base flange shall be fully developed to the strength of the entire section. The base flange shall be provided with supplementary gussets between the bolt holes to ensure elimination of helical stress concentration. For the environmental protection of the mast, the entire fabricated mast shall be hot dip galvanized, internally and externally as per BS EN ISO 1461 having a uniform thickness of 65 microns. The deflection of the mast is to be limited to 1/40 of the height at 2/3 of the design wind speed.

#### **c. Door Opening**

An adequate door opening shall be provided at the base of the mast and the opening shall be such that it permits clear access to equipment like winches, cables, plug and socket, etc. and

also facilitate easy removal of the winch. The door opening shall be complete with a close fitting, vandal resistant, weather proof door, provided with a heavy duty double internal lock with special paddle key. The door opening shall be carefully designed and reinforced with welded steel section, so that the mast section at the base shall be unaffected and undue buckling of the cut portion is prevented.

**d. Dynamic Loading for the Mast**

The mast structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 (three second gust), and shall be measured at a height of 10 meters above ground level. The design life of the mast shall be a minimum of 35 years. Wind excited oscillations shall be damped by the method of construction and adequate allowance shall be made for the related stresses.

**e. Junction Box**

Weather proof junction box with IP55 enclosure, made of Cast Aluminum shall be provided on the Carriage Assembly as required, from which the inter- connections to the designed number of the flood light luminaries and associated control gear fixed on the carriage shall be made.

**f. Head Frame**

The head frame which is to be designed as a capping unit of the mast, shall be of welded steel construction, galvanized both internally and externally after assembly.

**g. Foundations & Foundation Bolts**

Foundation bolts set comprising minimum 12 nos. 30 mm diameter 850 mm long having minimum 6.8 grade bolts, anchor plate 8mm thick and template as per the PCD of the base plate of the High mast and C/c distance of its bolts. The exposed portion of the bolts and nuts washers shall be hot dip galvanized. Foundation shall be designed for the reaction arising out of the dynamic loading of the high mast for the actual safe soil bearing at site. RCC foundation shall **be with minimum M 20 grade concrete and Fe500D TMT reinforcement bars**. Stirrups must be bent at 135° at the end.

**h. Lightning Finial, Earthling and Earthling Terminals**

Suitable earthling terminals using 12 mm diameter galvanized bolts shall be provided at a convenient location on the base of the Mast. One earth pit pipe type as per IS 3043 shall be provided for each mast for lightening protection. One lightning finial is to be provided on top of mast.

Suitable Aviation obstruction light shall be provided as per the Law of the Land.

**Mandatory Safety Cage Ladders are being provided by the High Mast Manufacturer**

The fabrication and design of the safety Cage Ladder shall comply with OHSA, Regulations for Industrial Establishments, Section 18 and IS 3696 and IS 8172 and Standing platform with railing to be provided at the head frame for the maintenance of the lights.

**TECHNICAL DATA SHEET (20 M HIGH MAST)**

Sr. No.	Description	INLAND (50m/sec)
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<b>1.</b>	<b>HIGH MAST STRUCTURE</b>	
a.	Height of the polygonal Mast pole.	20 Meters (with man rider)
b.	MAKE	Any make of HMS pole fulfilling the specification
c.	Material Construction	High Tensile Steel. As per BS-EN 10025 Grade S 355
d.	Material Construction of base plate and other stiffeners	IS 2062
e.	Minimum plate thickness	Top : 4 mm Bottom : 5 mm
f.	Cross section of mast in polygon (No. of sides)	Minimum 8 sides
g.	Length of Individual sections (approx.)	Top section : 6620 mm, Bottom section : 10980 mm
h.	Minimum base dia and top diameter	Top diameter : 200 mm Bottom diameter : 540 mm
i.	Type of Joints	Telescopic Slip Joint
j.	Metal protection treatment for mast section	Hot dipped galvanized (single dip)
k.	Thickness of galvanization	As per BS EN ISO 1461
l.	Base Flange diameter/thickness/PCD	740mm/30 mm/650mm
m.	Lightening protection finial	As per IS 2309
<b>2.</b>	<b>DYNAMIC LOADING AS PREVAILING AT SITE</b>	
a.	Max. wind speed (as per IS 875-Part III 1987)	50 m/sec
b.	Max. gust speed time	3 seconds
c.	Height above ground level at which these two factors are measure	10 mtrs
d.	Factor of safety for wind load	As per relevant I.S. Code
e.	Factor of safety for other load	As per relevant I.S. Code
<b>3.</b>	<b>FOUNDATION DETAILS</b>	
a.	Type of foundation	RCC RAFT footing (M-20)
b.	Size of foundation	As per design and Site Condition

c.	Design Safety factor	AS PER IS 456
d.	Considered wind pressure	AS PER IS 875
e.	Considered wind speed	50 M/ SEC
f.	No. of foundation bolts	12 Nos.

### **APPLICABLE STANDARDS**

The following shall be the Reference Standards for the loading of the high mast:

- |   |                              |   |
|---|------------------------------|---|
| ☐ | BS Code of Practice, CP-3,   | Gradient of wind related to height Chapter-V, |
| ☐ | BS 4360                      | Grades of MS Plates                           |
| ☐ | BS 5135                      | Welding                                       |
| ☐ | BD 729                       | Galvanizing                                   |
| ☐ | Technical Report (TR) No.7 – | Specification for Mast and Foundation.        |
| ☐ | IS 875 (Pt-III) 1987         | Code of Practice for Design Loads for         |

## **TECHNICAL SPECIFICATION AND DATA SHEET OF 450W OR ABOVE LED LIGHT SPECIFICATION**

The Design for illumination should be in accordance with the provisions given for illumination of class III Cricket stadium in SP 72: 2010. Brief of the illumination requirement is as follows:

Minimum Vertical illumination

At edges/ boundary = 150 -200 Lux. (Approx.)

At Cricket pitch = 250 - 300 lux. (Approx.)

### **SPECIFICATION OF MAIN LED FIXTURES AND ACCESSORIES:**

(i) LUMINAIRES: All luminaires shall conform to the following:

- a. LED luminaires shall consist of LED modules, driver, heat sink for thermal management and optic assembly.
- b. The luminaires shall be suitable for connection to the power supply mains directly (without need of separate driver).
- c. All LED luminaires shall be provided with toughened glass or equivalent and high efficiency prismatic diffuser under the LED chamber to protect the LED and luminaires.
- d. Suitable reflector /lenses may also be provided to increase the illumination uniformity and distribution for LED.
- e. Adequate heat sink with proper thermal management shall be provided.
- f. The luminaires shall have an inbuilt surge protection of not less than 6 kV or specified in tender/data sheet to prevent damage to the driver in case of sudden voltage surge.
- g. The luminaire shall be designed and tested for general lighting application as per relevant application.

(ii) HOUSING OF LUMINAIRE:

- a. The housing construction of luminaire shall meet safety requirements as per IS 10322. The luminaire housing shall have following minimum features:
- b. Adequate ingress protection (IP) rating of the LED luminaire should be provided for intended application indicated in this specification. For outdoor application, luminaires shall be weatherproof type. Any deviations for suggested luminaires suitable for intended application shall be clearly indicated in the bid.
- c. Extruded aluminum heat sink, designed to act as efficient heat dissipater important for LED luminaires.
- d. Pressure die cast aluminum cover on both sides for holding of extruded aluminum heat sink.
- e. Luminaire provided with heat resistant toughened glass/ polycarbonate.
- f. Control gear compartment is an integral part of luminaire. There shall be separate compartment for control gear and LED modules.
- g. LEDs are provided with secondary lens optics to get optimum optical performance.

- h. The driver used is specially designed to have surge voltage, open/short circuit protections.
- i. Luminaire is provided with a mounting bracket fixed on pressure die-cast aluminum covers for aiming adjustment.
- j. The luminaire housing shall have minimum IP 66, IK 07 and shall be preferably made up of MS CRCA sheet and powder coated/ die cast aluminum.
- k. The LED lighting & control gear should comply with the relevant electromagnetic compatibility standards IEC: 61000-3-2/ IS: 14700-3-2 for limits on harmonic current emissions, IEC: 61000-3-3 for limits on voltage changes, voltage fluctuations and flicker and IEC: 61547 for immunity requirements.
- l. All hardware used in the luminaires shall be suitably zinc plated and passivated or SS hardware.
- m. Each lighting fixture shall be provided with suitable earthing terminal. All metal or metal enclosed parts of the housing shall be bonded and connected to the earth terminal to ensure satisfactory earthing continuity throughout the fixture.

(iii) LUMEN MAINTENANCE AND FAILURE FRACTION:

The luminaire shall be designed for L70 of not less than 50000 hrs (min) and failure fraction of 10% (max). Manufacturer shall furnish test certificates proving this.

(iv) THERMAL MANAGEMENT OF LED LUMINAIRE:

- a. Luminaire shall be designed for proper thermal management of LEDs. LED die temperature is affected by PCB thermal resistance and LED spacing on the board. Designed luminaire shall be such that the LED die temperature does not exceed the maximum Junction Temperature (T<sub>j</sub>). Drive current should be determined for the surrounding ambient temperature (T<sub>a</sub>) to dissipate the heat from the product.
- b. Heat sink design for LED lighting shall be provided to dissipate the heat from LED junction and LED driver to maintain operating temperature as per applicable standards.

(v) OPTICS:

- a. The luminaire optics shall be designed such that the lumen output shall be uniform and glare free.
- b. Distribution of light output can be either by lens, diffuser or reflector.

(vi) LED DRIVER: The LED driver shall be designed for operating voltage specified below and shall have built in voltage surge protection, short circuit, & Over Voltage protections. The fixtures having cable termination shall be suitable to terminate one additional 2.5mm<sup>2</sup> copper conductors for grounding purpose.

The lighting fixtures shall comply with following requirements:

- a. Connections between different components shall be made in such a way that they will not become loose by small vibrations.
- b. All fixtures shall be complete with drivers, wiring and terminal blocks. Each lighting fixture shall be provided with an earthing terminal suitable for connection to the purchaser's earthing conductor.
- c. All metal or metal enclosed parts of the housing shall be bonded and connected to the earthing terminal so as to ensure satisfactory earthing continuity throughout the fixture. Each lighting fixture shall be provided with a grounding terminal suitable for connection to purchaser's 14SWG GI wire.
- d. LED drivers shall have inbuilt protections against overload and short circuit conditions. Drivers shall conform to driver safety requirement standard.

S.No.	Item Description	Specification
1	Input supply voltage range and frequency	120-277V AC, 50Hz, 1-Φ
2	Variation in AC supply voltage and frequency	±10% and ±3%
3	Ambient temperature	35°C
4	Overall power factor	Not less than 0.90 lag at full load
5	Electrical Insulation	Class-1
6	THD with test certificate	≤10%
7	L70 life	Min 50,000 hours at 35°C
8	System efficacy	>120 lumen/Watt
9	View angle/ Beam Angle	Asymmetric Wide and Symmetric Narrow
10	Correlated Colour Temperature (CCT)	5700K for outdoor
11	Colour Rendering Index with test certificate	≥70% for outdoor fixtures
12	SDCM	<5
13	Minimum ingress protection with test certificate	IP-66 for outdoor fixtures, weather proof/ dustproof fixtures
14	Minimum ingress protection for impact resistance	IK08
15	No. of hours usage	6 to 8 hours per day
16	Rated watt of lamp	475Watt ± 10W
17	LED type	High Power LED (>1 watt and not more than 3watt)
18	LED chip make	Lumiled, Osram, Nichia, and CREE
19	LED Chip	Shall be LM 80 Certified
20	LED Chip Efficacy	≥160 lumen/watts
21	Lamp starting time	Not more than 5 second
22	Working Humidity	10% to 90%
23	High Voltage Protection	HV cut off @330VAC ± 20VAC
24	Short Circuit Protection	Shall be provided

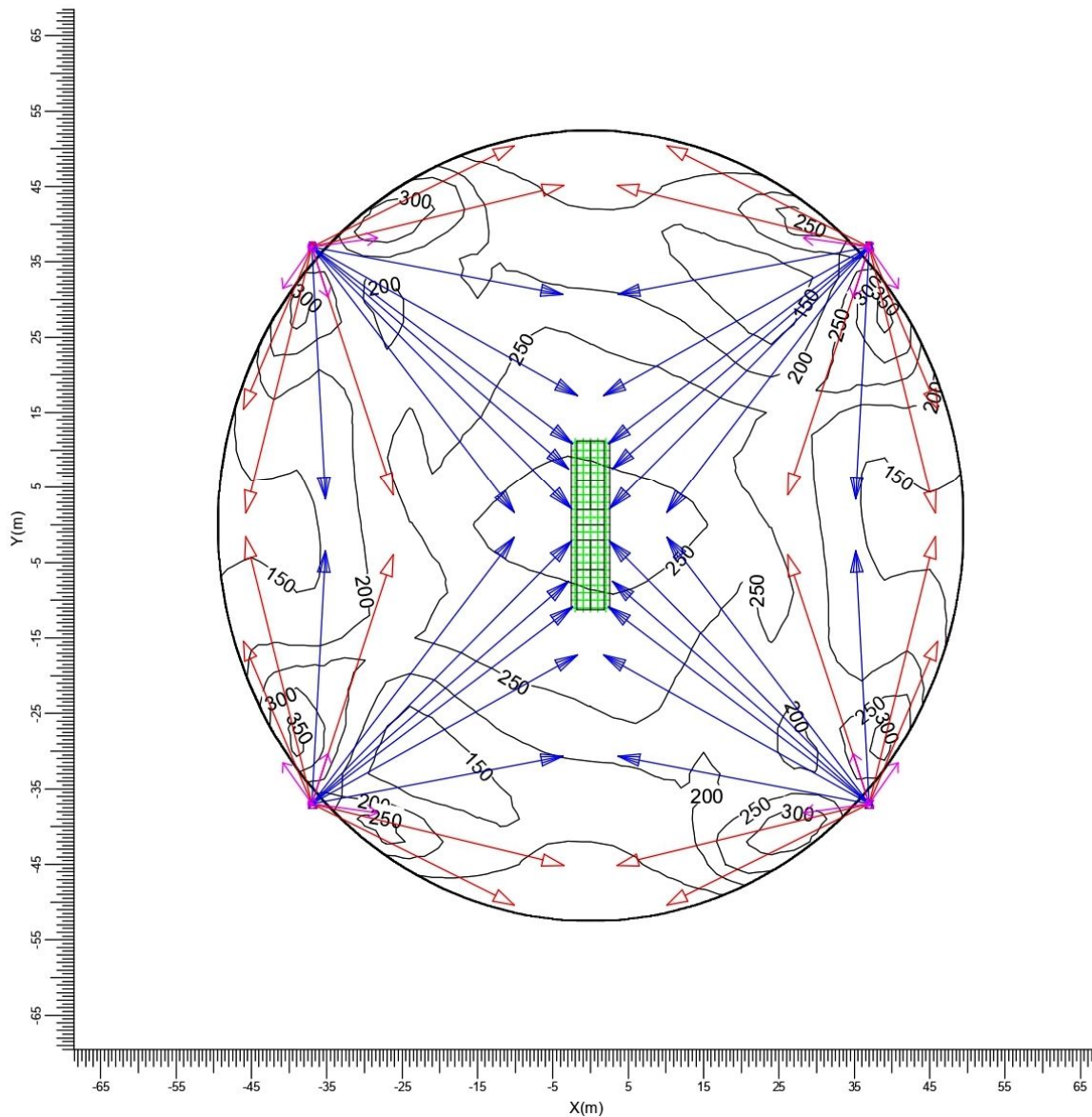
25	Open Load Protection	Shall be provided
26	Reverse Polarity Protection	Shall be provided
27	Starting	Flicker free & Instant start
28	For photo biological safety requirements the luminaries shall comply	With IS 16108.
29	Input Surge Protection	≥4 KV internal and 20kV external
30	Driver Protection	440V (P2P)Protection for 8 Hrs., High cut off @ 325±15V
31	Stress Voltage withstand capability	440V for upto 8 Hrs
32	Inbuilt Aiming Angle Scale	Yes
33	Auto Restart	Yes
34	Type of Driver	Constant Current
35	Colour Rendering Index (CRI)	≥70
36	Diffuser	UV resistant Polycarbonate
37	Lens	peanut lens for each LED
38	Frame/Housing	Pressure die-cast Aluminium
39	Heat Sink	Highly efficient extruded aluminium heat sink
40	Short Time voltage	440 V , 30 second
41	Luminaire make	Philips, Bajaj, Havells or equivalent.
42	Luminaire weight(nominal)	should not exceed 12.5kgs



# Tentative Lux Distribution diagram around the field (Actual lux distribution across the field may vary as per the design of OEM)

## 3.2 Cricket: Iso Contour

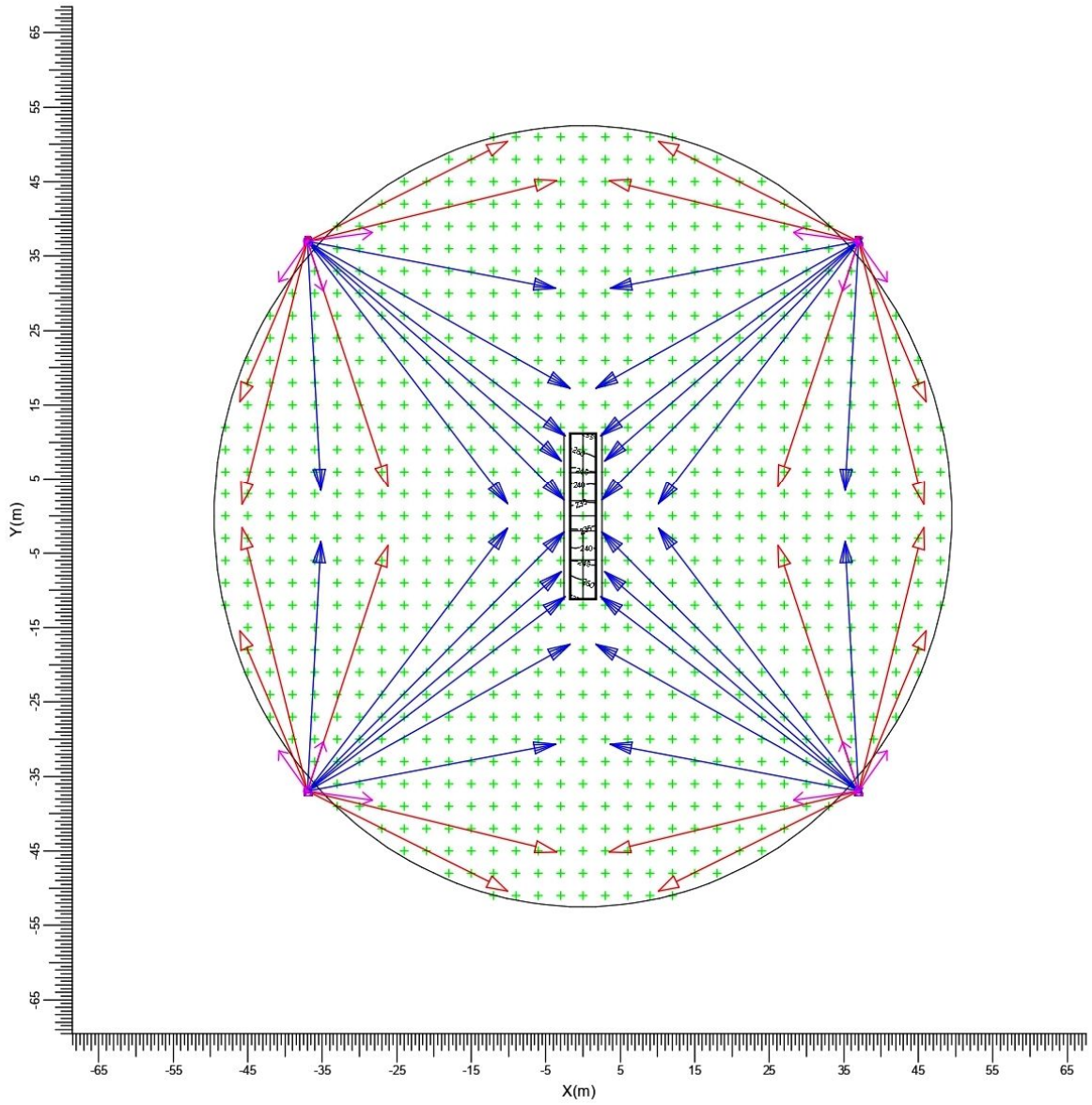
Grid : Cricket at Z = -0.00 m  
Calculation : Surface Illuminance (lux)





### 3.4 Pitch: Iso Contour

Grid : Pitch at Z = -0.00 m  
Calculation : Surface Illuminance (lux)



# **FINANCIAL BID**

# FINANCIAL BID

## BILL OF QUANTITY

### BOQ FOR SUPPLY INSTALLATION AND FIXING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD AND FOCUSED LIGHTS

S.No.	Description of Items	Unit	Qty	Unit Rate(Rs.)	Total (Rs.)
1	<b>(A) 20 Mtr. High Mast Stadium Flood Lighting system.</b>				
1.01	Design, fabricate and Supply at site 20Mtr. High Mast pole (excluding the Ht. of head frame) with head frame of suitable size as per the design with caged ladder and platform with railing for maintenance of the Flood lights along with all its Accessories, nut bolts etc. conforming to the Specifications of the contract. High mast shall be of continuously tapered, polygonal cross section, minimum 8 sided or equivalent, presenting a good and pleasing appearance, assured performance, and reliable service. The height of mast pole shall be at 20 m, with minimum across Flat dimensions of 200mm at the top. The plate thickness shall be 5 mm for bottom and 4 mm for top section or equivalent and suitable for wind velocity as per IS 875 part 3. The 20 meter high mast shall be delivered either in Two or maximum three two sections, and shall be joined together by slip stressed-fit method at site. The minimum overlap distance shall be 1.5 times the diameter at penetration entire fabricated mast shall be hot dip galvanized, internally and externally as per BS EN ISO 1461 having a uniform thickness of 65 microns. It shall also include accessories for high mast including head frame arrangement suitable for mounting 15 luminaries LED FLOOD LIGHT symmetrically and provision of 5 more light to be provided for future. Suitable head frame as per the design for the required illumination across the designed illumination beam to be designed, fabricated and fixed over the pole. The tilt angle and curvature of the head frame to be designed so as to get the class III illumination of cricket ground as per SP 72 Refer (Page 27-30 of the Tender document "Illumination requirements") Including supply of foundation bolts manufactured from special steel min. 6.8 grade along with nuts, washers, anchor plate and templates (1 fitting per mast is necessary) as per specification and direction of the Engineer - In- Charge. Bidders are requested to Quote for the Foundation bolts, Templates etc. separately in the specified row below.	Nos.	4		
1.02	Providing Mild Steel Templates suitable and matching with the PCD of the high mast pole fabricated with minimum 50 x 5 mm plate with Red oxide/ zinc chromate antirust coating. Holes for the Bolts to be drilled/ punched and grinded properly so that even surface may be obtained for proper leveling of the Bolts.	Nos.	4		
1.03	Providing and fixing minimum 28 mm diameter minimum 850 mm long having minimum 6.8 grade bolts having anchor plate 8mm thick along with minimum 2 nos. galvanized nuts per bolt. The exposed portion of the bolts and nuts washers shall be hot dip galvanized and the embedded portion can be coated with anti-rust coating such as Zinc Chromate/ red oxide.	Nos.	64		
2	SITC of high-quality integrated LED Flood Light with a minimum system lumen of 56,000Lm and system wattage not exceeding	Nos.	60		

	<p>470W with a nominal efficiency 120Lm/W. Luminaire should have CCT of 5700K with SDCM &lt;5 and CRI &gt;70. Fixture should be available with Asymmetric wide, symmetric narrow and specially designed FLNB beam optics for sports application. The housing should be of non-corrosive high pressure die-cast aluminum to stand with extreme environments, having corrosion resistant powder coating to pass NSS of 500 Hrs. Product should be suitable for continuous operation (10-12 Hrs. per day), with lifetime of 50K hours@L70. The Ingress protection should be minimum IP66 with an IK rating of 08. Optical and control gear compartments shall be maintainable/replaceable without impacting the LED units. While accessing the gear compartment, the optical compartment should not be accessible. The luminaire should have a 20 KV /10 KA SPD duly bolted in the luminaire, with PF &gt;0.95. The SPD should be able to sustain a minimum 15 hits of 10KA rating i.e. total of 45 hits across all the three modes as per IEEE 62.41.2. The luminaire should have a breather to ensure that air balance inside and outside of the compartment. The luminaire should be of Class B serviceability. The wattage of each LED should be greater than 1watt and less than 3Watt. Only high power single white LED chip with ceramic based suitable for outdoor use is allowed. Multi-chip, array multi-die, mid power, integrated arrays and COB's are not permitted. Array of light connection should be in parallel not in series. The HP LED used in the luminaire shall be SMD type only of make Lumiled, Osram, Nichia, and CREE. The luminaire should be capable of withstanding voltage stress of 440V for 8 Hrs. should have an auto shutdown @325V and have an auto recovery feature. The Drivers should be a potted driver not a printed circuit board without casing, mounted inside the luminaire. The weight of the luminaire should not be more than 12 Kg</p>				
3	Supply & Laying of 4C x 70 sq. mm Aluminum PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade from main panel to sub panel in recessed or open clamp with GI saddle. Termination of cable at both the end with appropriate lug and all the accessories required for termination.	Mtrs	80		
4	Supply and Laying of 16sq.mm x 4 armor Aluminum PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required	Mtrs	630		
5	Supplying and fixing 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. (For DB box). FP 63A, 440V	Nos.	4		
6	Fabrication, supply, Installation testing & commissioning of Electrical control panel of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalized with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc. complete in all respect, as per CPWD specification with following in coming and	Nos.	1		

	Outgoings, suitable for operation on 415V, 3 phase, 50Hz Ac Supply with enclosure protection class IP 42 as required :INCOMING: 250A, 50kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Digital Ammeter (0-250 A) with selector switch & CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Aluminum Bus Bar 300AOUTGOING: 04 nos. 63 A, 50kA TPN MCCB, Ics=100% Icu, with overload protection				
7	<b>(B)FOUNDATIONS</b> Construction of suitable shallow foundations with M-20 Concrete and fe500d reinforcement steel for the High Mast considering the safe soil bearing capacity at site as 8 T/Sq. Mtr. At 2 Meter depth below ground level with all materials and labours. Pedestal size should be suitably designed as per the G.A. drawing of the Pole given by the pole Manufacturer. The work includes provision of packing plates (If required) and grouting the gap in between the pedestal top and Base plate of the pole.	Set	4		
8	<b>(C) ERECTIONS</b>				
8.01	Erections of the High Mast with the help of suitable equipment's with maximum safety of the erection worker and wiring of Luminaries with all wiring materials with all materials & labours.	Nos.	4		
8.02	Cable trenching /laying of underground cable in pipe and PVC conduit in all type of soil below and concrete surface respectively. Underground Cable to be laid minimum 600 mm below the earth in the Approved PVC pipes overlain by caution tape. Suitable route markers with PVC blocks fixed directly in earth @ 50 m C/c shall be provided over the underground cable route.	Mtrs	630		
9	<b>(D) EARTHING</b>				
9.01	Earthing with GI earth electrode 50mm dia x 3 mtr length including earth enhancing compound (Jam Fill quality product) and PIT cover for earthing pit etc as reqd. (193GI JMV)	No	1		
9.02	Providing & fixing 25mm x 5mm GI strip on surface or in recessed for connection etc. as reqd.	Mtrs	20		
9.03	Providing & fixing 04mm GI round wire on surface or in recessed for connection etc. as reqd.	Mtrs	400		
	<b>Total</b>				
	GST as Applicable				

**Note:** The contractor is advice to survey the actual site for assessment of critical application if any & accordingly quote the rates.

Signature with seal of the Contractor