



NEW TOWN KOLKATA DEVELOPMENT AUTHORITY

(A Statutory Authority under Government of West Bengal)

Plot No. DG/13, Premises No. 04-3333, Action Area-ID,

New Town, Kolkata – 700156

Memo No. 6396/NKDA/EE-E/2023-24

Date: 06-06-2023

NOTICE INVITING e-QUOTATION

No. 28/EE-E/NKDA/2023-24

Executive Engineer (E), New Town Kolkata Development Authority invites quoted rate e-quotation from resourceful, reliable, bona-fide having experience in similar nature of work at NKDA, WBHIDCO, PWD, WBSEDCL and any other Govt. departments are requested to submit their offer for the work detailed below.

(Submission of Bid through **online**)

Sl. No	Name of the work	Estimated Amount (Rs.)	Earnest Money (Rs.)	Price of Tender documents	Period of Completion
1	Supply, delivery, installation/ replacement of LoRaWAN-based controller, Smart LED lights on different streets of AA-I, Newtown, Kolkata under NKDA	Agency has to Quote.	Earnest money Rs.1,16,000.00 (Rupees one lakh sixteen thousand) only Lumpsum to submit through Online payments/RTGS/NEFT from ICICI Bank. In favour of "Newtown Kolkata Development Authority" payable at Kolkata.	As per finance (Audit) Dept, WB Notification vide memo no 452-A/PW/0/10C-35/10 dated on 26/07/2011 GST will be added only per set to be paid only at the time of agreement.	60 days

- 1) In the event of e-filling, intending bidder may download the tender documents from the website <http://wbtenders.gov.in> directly with the help of Digital Signature Certificate. All the bidder shall have to submit Earnest Money & necessary earnest money will be deposited by the bidder through the following payment mode as finance dept. order no. 3975-F (Y) dated 28th July 2016 (Annexure-A).
 - i) Net banking (any of the banks listed to the ICICI bank payment gateway) in case of payment through ICICI payment gateway. **RTGS/NEFT** through bank account in any bank. The EMD shall be deposited in favor of "Newtown Kolkata Development Authority" payable at Kolkata.
- 2) Both **Technical Bid** and **Financial Bid** are to be submitted concurrently duly digitally signed in the website <http://wbtenders.gov.in>
- 3) Tender documents may be downloaded from website and submission of Technical Bid and Financial Bid will be done as per Time Schedule stated in Sl. No. 14 of this NIEQ.
- 4) The **FINANCIAL OFFER** of the prospective qualified tenderer(s) will be considered only if the **TECHNICAL BID** of the tenderer(s) is found qualified by competent authority of New Town Kolkata Development Authority. The decision of the competent authority of New Town Kolkata Development Authority will be final and absolute in this respect. The list of Qualified Bidders will be displayed in the website.
- 5) **Eligibility criteria for participation in the tender:**
 - i. Working Contractors of NKDA, WBHIDCO, PWD, WBSEDCL and other Govt. Departments having satisfactorily completed (as prime contractor) at least one work of similar nature (i.e. LED Street Lighting, LED Smart street Lighting, LED luminaries and its wiring, installation job only) having magnitude of at least Rs.23.20 lakhs during the last 5 years.

Note: In support of credentials bidder must submit work order, BOQ, completion certificate during online tender submission.

- ii. Bidder have registered office & field service setup to provide good after sale services including necessary repair & maintenance in the state of West Bengal.
 - iii. Pan Card, Income Tax Acknowledgement Receipt for the latest Assessment year, P.T. Deposit Challan for the current year, GST Registration and PF registration Certificate are to be submitted as non-statutory documents.
 - iv. The firm must not have been debarred / blacklisted by any Govt. Dept., agency, PSUs / institution / agencies / autonomous organizations. The bidder shall submit a self-certification by an authorized person duly notarized to this effect.
 - v. Registered Partnership Deed for Partnership Firms only along with Power of Attorney since executed under any Judicial Magistrate/First Class Magistrate is to be submitted. The company shall furnish the Article of Association and Memorandum as non-statutory documents.
 - vi. The prospective bidders must have valid trade license and electrical contractor license issued from Licensing board Govt. of West Bengal with supervisory certificate of competency in part of 1,2 & 11, or National supervisory certificate of competency.
 - vii. The prospective bidders must have submitted LoRa WAN controller OEM authorization.
 - viii. Joint Ventures/MOU will not be allowed.
- 6) All materials are to be procured and supplied at site of work by the tenderer / firm at his / their own cost from approved reputed dealer / manufacturer. Departmental materials will not be issued under any circumstances unless any such provision is made and accepted latter by both the parties. Department unless otherwise stated means New Town Kolkata Development Authority. The prospective applicant shall be capable to establish Field Testing Laboratory equipped with requisite Instruments and Technical Staff complete in itself to carry out all necessary Tests for such project.
- 7) Mobilization advance, time / cost overrun and consequent cost escalation for any material labour etc. and secured advance will not be allowed.
- 8) The offer shall remain valid for 6 (Six) Month from the date of opening of the tender.
- 9) On-going payments for work may be allowed to the executing agency as per existing rules and availability of fund. Subject to deduction of security deposit, progressive payment may be made against the completed or partly completed item of works. Such interim payments, shall be made as running account bill(s), however, shall not construed to mean that the respective items / components have finally been approved and accepted by NKDA and the contractor shall not be absolved of his responsibility to set right any deficiency of such paid items / components at his/ their own cost, for rectifying all defects which are subsequently being noted or found.
- 10) No claim for interest or compensation will be entertained in respect to any money or balance of payment which may be due or alleged to be due to the contractor owing to any dispute between the contractor and NKDA or in respect to any delay in making payment of progressive or final bill of the work, to the contractor.
- Payment for the works done by the contractor will be based on recorded and accepted measurement put for payment to be invariably made by putting signature (with seal) of the contractor (or his/ their authorized representative). The contractor or his / their authorized representatives are advised to take measurements jointly with the officials of NKDA. In case of failure of his/their part either to take measurement jointly and /or acceptance of the recorded measurement, within a reasonable time, measurement taken by the department shall be considered as final for making payment. Similar acceptance is also essential for level records and survey data, field books etc.
- 11) **Idle labour, idle rent and hire charges etc.:**
No claim of any category and type, on this ground shall be entertained. The contractor and NKDA shall make every effort that such situation does not arise.
- 12) **Testing and Testing Equipment:** Testing of materials, to be used in work and the quality of finished work on quality control aspect, is to be undertaken by the contractor at own cost, with facilities provided at site and / or through approved (by NKDA) Test Houses / Laboratories. All materials and workmanship shall be in accordance with the specifications laid down in the contract and also as per P.W.D. and IS Codes. The Engineer-in-Charge reserves the right to test, examine and measure the material / workmanship direct at the place of manufacture, fabrication or at the site of works or any suitable place. The contractor shall provide such assistance, instrument machine,

labour and materials as the Engineer-in-Charge may require for examining, measuring and testing the works and quality, weight or quantity of materials used and shall supply samples for testing as may be selected and required by the Engineer-in-Charge without any extra cost. Beside this, he/they will carry out tests from outside Laboratory as per instruction of Engineer-in-Charge. The cost of all such tests would be borne by the agency.

Should the Executive Engineer or his representative consider it necessary to satisfy himself / themselves as to quality of work, the contractor shall offer sample of work done as necessary, pull-down reasonable part of the work required for inspection and testing. The contractor shall bear the cost of pulling down and shall make good the same at own cost and to the full satisfaction of E-I-C without any claim for payment

13) Security Deposit:

Retention money towards performance Security shall be deducted from the running account bill of the tenderer as per prevailing order. No interest will be paid on the money retained for Security Deposit. Notwithstanding anything as mentioned in clause 13 of WBF2912, the security deposit for the entire work i.e 3% of the total value of the work will be released in six months after successful completion. Service level T& C applicable.

14) Date and Time Schedule:

Sl. No.	Particulars	Date & Time
1	Date of uploading of N.I.E.Q. & other Documents (online) (Publishing Date)	06.06.2023
2	Documents download start date (Online)	06-06-2023 from 6:55P.M.
3	Documents download end date (Online)	23-06-2023 upto 6:55 P.M
6	Bid submission start date (Online)	06-06-2023 from 6:55A.M.
7	Bid submission closing date (Online)	23-06-2023 at 6:55 P.M
8	Bid opening date for Technical Proposals (Online)	26-06-2023 at 11:00 A.M.
9	Last Date of uploading list for Technically Qualified Bidder(online)	Will be intimated in due course.
10	Date for opening of Financial Proposal (Online).	Will be intimated in due course.

15) Earnest Money:

- a) Earnest money of **Rs.1,16,000.00 (Rupees one lakh sixteen thousand)** only to submit in the form of ICICI Bank online/ RTGS/NEFT from scheduled Bank, in favor of “**Newtown Kolkata Development Authority**” payable at Kolkata balance amount covering 2% of the quoted amount to be submitted in bank draft / pay order at the time of making agreement by the successful tenderer.
- b) Earnest Money for the successful tenderer will be retained and converted as Initial Security deposit. The Balance security deposit @ 1% will be deducted from on-going bills to cover 3% of the total value of work done.
- c) The security deposit for the original work of the successful tenderer will be refunded after defect liability period as stipulated in relevant clause of the tender document.

16) The tenderers are bound by the terms & conditions of WBF 2911(ii) along with specification, notice for calling Tenders, Special terms & condition, Information to Bidders, Schedule of works etc, which forms a part and parcel of this contract.

17) Income Tax, GST & PF will be deducted as per Govt. orders issued from time to time and would be applicable on the date of making payment of the bills. Building & other construction workers cess @ 1.0% will be deducted from progressive bills in pursuance with G.O. no. 599A/ 4M – 28 / 06 dated 27/09/2006.

18) The Bidder, at his own responsibility and risk is encouraged to visit and examine the site of works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the work as mentioned in the Notice Inviting Tender, before submitting offer with full satisfaction. The cost of visiting the site shall be at his own expenses.

19) The intending Bidders shall clearly understand that whatever may be the outcome of the present invitation of Bids, no cost of Bidding shall be reimbursable by the Department. New Town Kolkata Development Authority reserves the right to accept or reject any offer without assigning any reason

- whatsoever and is not liable for any reimbursement of any cost that might have been incurred by any Tenderer at any stage of Bidding.
- 20) Prospective applicants are advised to note carefully the eligibility criteria before tendering the bids.
 - 21) **Conditional / Incomplete tender will not be accepted under any circumstances.**
 - 22) **The intending tenderers are required to quote the rate *online*.**
 - 23) Contractor shall have to comply with the provisions of (a) the contract labour (Regulation Abolition) Act. 1970 (b) Apprentice Act. 1961 and (c) minimum wages Act. 1948 of the notification thereof or any other laws relating thereto and the rules made and order issued there under from time to time.
 - 24) During scrutiny, if it comes to the notice of the tender inviting authority that the credential or any other paper found incorrect / manufactured / fabricated, that bidder would not be allowed to participate in the tender and that application will be rejected without any prejudice.
 - 25) If there be any objection regarding prequalification of any Agency the same should be lodged online to Chief Engineer, New Town Kolkata Development Authority within 2 (*two*) days from the date of publication of list of qualified agencies and beyond the said time schedule no objection will be entertained.
 - 26) Before issuance of WORK ORDER, the Tender Inviting Authority may verify the credential and other documents of the lowest tenderer in original, if found necessary. After verification if it is found that the documents submitted by the lowest tenderer is either manufactured or false in that case work order will not be issued in favour of the said Tenderer under any circumstances and his/their offer will be treated as cancelled.
 - 27) If any discrepancy arises between two similar clauses on different notification, the clause superseding others will be solely as per the discretion of the Tender inviting authority.
 - 28) The successful Tenderer whose tender is accepted shall make formal agreement in WBF 2911 (ii) along with bid documents in triplicate, within 7 (seven) days from the date of issue of work order by Executive Engineer, New Town Kolkata Development Authority on payment of usual charges which is non-refundable under any circumstances and submit the same duly signed by him/them to this office. If the contractor fails to perform the formalities within the specified period the Tender is liable to be cancelled and the Earnest Money will be forfeited as per relevant clauses under memorandum of WBF 2911(ii).
 - 29) **Qualification criteria:**

The tender inviting and Accepting Authority will determine the eligibility of each bidder. The bidders shall have to meet all the minimum criteria as stipulated in relevant clauses of this NIEQ.

The eligibility of a bidder will be ascertained on the basis of the document(s) submitted in support of the minimum criteria. If any document submitted by a bidder is either manufactured or false, in such cases the eligibility of the bidder / tenderer will be rejected at any stage without any prejudice to take any penal action against him/them as may be deemed fit by the Tender Accepting Authority.
 - 30) **No. price preference and other concession will be allowed as per order no 8648 – F(T) dated 12.10.2012.**
 - 31) Agencies are required to give a work programme preferably in the form of a bar-chart and to approve it by the EIC (Engineer-in-Charge) before commencement of work and if progress of work abruptly differs from the given work program, the undersigned may terminate the work order at any point of time.
 - 32) Unless otherwise stipulated, all the works are to be done as per general conditions and general specifications of the latest edition of 'PWD (Electrical)/(W.B) Schedule
 - 33) In case of any inadvertent typographical mistake in the specific price schedule of rates, the same will be treated to be so corrected as to confirm with the prevailing relevant schedule of rates and/or technically sanctioned estimate.

- 34) Intending tenderer should note that he will have to work simultaneously with other contractors already entrusted with other work or with contractors to be entrusted with other work in future in the same site. The contractor will have to work in close co-operation and harmony with all the contractors engaged in the project. Any claim for idle labour, for any reason whatsoever, will not be entertained under any circumstances.
- 35) NKDA will not be held responsible for making payment against any anticipated profit and/or compensation for any losses or price escalation whatsoever for the works as stated in the annexure of this NIEQ. Rates should be quoted accordingly.
- 36) The address as furnished by the contractor shall be deemed as the postal address of this office. Any notice or instruction to be given to the contractor under the terms of contract shall be deemed to have been served if it has been delivered to his authorized agent (on the strength of authorization) or representative or sent by registered letter to his official address as furnished.
- 37) Arbitration clause of WBF 2911(ii) stands deleted. Any dispute related to the contract will have to be settled in Calcutta High Court.
- 38) Any Corrigendum, notification in connection to this NIEQ will be published in the official website of New Town Kolkata Development Authority (www.nkdamar.org) as well as <https://wbtenders.gov.in> . The applicants are requested to please follow the websites for such notifications, corrigendum etc.
- 39) **Scope of work:**
- I. Supply, Installation, Testing, Commissioning, dashboarding with three years comprehensive maintenance of Smart Energy Efficient LoRaWAN Based Lighting Application at Different locations of New Town, AA-I.
 - II. The bidder must provide IP65 certification for complete LED Luminaire along with LoRaWAN controller fitted on it.
 - III. Vendors are advised to survey the installation and make themselves aware of the existing street light system.
 - IV. The total comprehensive warranty for these new LED lights and controllers are for duration of 3 Years from the date of installation. Corresponding warranty certificate from OEMs must also be submitted. During this period, the bidder has to provide the maintenance, replacement of all defective LED luminaries, controller and other equipment's related to LED fittings of all types installed.
 - V. The communication connectivity between controller and application software for managing and monitoring of LED luminaires shall be borne and maintained by the bidder throughout the Project duration.
 - VI. The bidder has to supply street light application software as per mentioned features in tender. The bidder shall host the application software on cloud environment.
 - VII. The bidder shall provide comprehensive training and orientation of application software to NKDA selected officials at NKDA office.
 - VIII. Light solution should provide APIs to connect to Centralized Smart City Digital Platform to enable device data to be collected and facilitates cross- domain use case by Smart City Digital Platform.
 - IX. Lighting Solution Should support the following standards such as Web sockets, REST APIs and typical formats like HTML, JSON etc. to have integration with Smart City digital Platform.
 - X. The system should provide all the APIs information to Smart City Digital Platform vendor and should own the integration and deployment efforts along with Smart City Digital Platform vendor to aggregate the Smart Lighting services on Smart City Digital Platform dashboard.
 - XI. The system should be controllable from proposed Command and Control Centre for which the bidder shall make necessary arrangement for integration.
 - XII. Other work must be executed per the BOQ & the technical specifications.
- 40) **Payment Mode:**
- I. BOQ Items no 1, 2 & 5 payment will be released as per work completion.
 - II. BOQ Items no 3 & 4 payment will be released yearly after the successful completion of each year.
- 41) **The tender document consists of:**
- i) WBF2911.
 - ii) Annexure for controller & Light specification.



Executive Engineer (E)
New Town Kolkata Development Authority

Memo No. 6396/1(7)/NKDA/EE-E/2023-24

Date: 06-06-2023

Copy forwarded for information to:-

- i) The Chief Executive Officer, New Town Kolkata Development Authority.
- ii) The Chief Engineer, New Town Kolkata Development Authority.
- iii) The Finance Officer, New Town Kolkata Development Authority.
- iv) The Assistant Engineer (E), New Town Kolkata Development Authority.
- v) P.A to the Chairman, New Town Kolkata Development Authority.
- vi) Office copy of NKDA.
- vii) Official Website of New Town Kolkata Development Authority (www.nkdamar.org)



**Executive Engineer (E)
New Town Kolkata Development Authority**

Annexure**A. Controller Specification:**

Parameters	Specifications
Device Features	On/ Off , Dimming & Metering
Lamp type	LED Light
Mode of Operation	Manual Mode, Lux Sensor [Factory] Mode, Calendar Schedule Mode.
No of Lamps	Individual
LED Load Wattage	20W to 500W
Dimming Interface	0-10V Analog
Dimming Range	0%-100% with step of 10%
Lux Sensor	460-655nm
Load power Measurement	Accuracy Class I, meter needs to be certified from NABL Accredited Lab.
Device Led Indicator	Red, Blue colour LED
Network Interface	LoRaWAN 1.0 Class C Certification Required to be submitted: 1. Device must have WPC ETA Certificate. 2. Device/Module must be LoRa Alliance certified.
RF Spectrum	India ISM Band
Tx Power	>= 14dBm
Rx sensitivity	-125dBm
Security	128Bit AES Encryption
Operating Voltage	170-300V AC, 50Hz
Power Consumption	<=2.5W
<u>Alert/ Notification:</u>	
Lamp failure	Yes
Over / under Voltage	Yes
Over / under Current	Yes
Main Failure	Yes
Low Power Factor	Yes
<u>Data Report :</u>	
Data report interval	Yes
Lux Sensor Value	Yes
Line Voltage	Yes
Load Current	Yes
Power Factor	Yes
Energy Consumption	Yes
Lamp Burn Time	Yes
Controller Burn Time	Yes
Lamp on/off Cycle	Yes
<u>Product Certifications:</u>	
Meter Accuracy	Class I
IP rating	IP65 When integrated LED Light
Operating Temperature	0°C to +60°C

<u>Other Details:</u>	
Warranty	3 Year
Connection Type	7 Pin Male NEMA Connector

Controller is capable of measuring and monitoring:

- Input voltage (Volts)
- Load current (Amps)
- Active power (Watt)
- Power factor (PF)
- Energy (kWh)

The Controller can detect the following failures specific to individual Luminaire.

- Load failure alert & restoration
- High / low mains voltage alert & restoration
- High / low mains current alert & restoration

B. Network:

The LoRaWAN network deployment in the mentioned scope area will be responsibility of the bidder. For this purpose, the bidder will arrange Gateway hardware, infrastructure, location rental etc required for setting up network or avail LoRaWAN provider services across scope area.

C. Application Software:

Street light application Software will provide end to end functionality for provisioning, monitoring and controlling the installed street lights.

Following are major components of application:

- Standalone web-based software which shall offer users control of the whole system.
- Web based interfaces accessible from any computer via browsers such as Internet Explorer, Chrome or Safari.
- Street Light Controller Registration & Commissioning.
- Monitoring Dashboard
 - For individual street light visualization on a map for monitoring & control (web application).
 - To configure operating modes of controller and set dimming profile.
 - Get real time on/off status.
 - Alerts & Notification.
 - User Management.
 - Reports.

Device Operating mode, Setup and Configuration

Below section describes Device (Controller) operating mode, setup and configuration.

1.1.1 Device operating mode

The application will enable to send the following modes of operation onto street light controller:

- Lux Sensor - In this mode controller will use on board ambient lux sensor to make a decision to switch on-off light, as per prevailing environment conditions.
- Schedules – In schedule mode re configurable time can be defined and set for switching on / off. Further a dimming profile can be applied for schedule mode of operation.
- Real Time / Manual – In real time mode the application will enable to send on/off /dim command in real time mode.

1.1.2 Device/Lamp Setup

Application will allow User to create, view and update status of the controller at Project level. There will also be an option to bulk upload of controller details. Each street light lamp along with controller will be associated with the Pole.

1.1.3 Device/Lamps mapping to hierarchy

Devices after creation need to be mapped to the lowest most hierarchy (Pole). User who has the privileges will be able to perform this mapping. Device can be further moved from one pole to another or can be removed permanently. When data will be visualized for a pole, there will be continuity of data irrespective of different devices/lamps attached to it.

1.1.4 Configuration

Devices will be associated with one device mode of operation and a dimming operating mode can be applied. Device configuration can be associated with devices individually and can be changed remotely.

1.1.5 Lamp Groups

Grouping of lights can be defined one time during the commissioning of the project. Lamp groups will be collection of lamps/devices needs to be monitored.

Each lamp will be associated with Pole and can be grouped in following hierarchy.

- Pole No.
- Lane
- Ward
- City
- User interface will be available where user will be able to send command at group level, while application will send commands individually to each lamp.

1.1.6 Dimming Profile

Dimming Profile will allow defining the dimming schedule of the Lamps at an interval of one hour. Application Users who have been given the permission to manage dimming profile will be able to update profile for each device. Each profile will have 12 different blocks where time and dimming % can be defined for each block. These schedules will be associated at the individual controller level.

Dimming profile can be assigned to group and/or individual devices. Profile applied on individual device will take precedence over profile applied on group to which device belongs.

1.1.7 Alert Configuration

System will allow configuration of alerts at each level of Hierarchy. There will be different types of alerts (Pre-defined alerts). User will be able to add/update email id.

1.1.8 Map View

The latitude and longitude value of every pole which is to be captured and provided by Customer will enable to plot the corresponding device on the map. Application will facilitate to control (On/OFF/Dim) device from the map view itself.

1.1.9 Dashboard View

Two kinds of Dashboard will be provided by the application

- Executive dashboard.
- Operations dashboard.

Executive Dashboard

Following reports/analytics to be produced

- Total energy Consumption (Approximate).
- Total Energy Saved (Approximate).
- Cost saved (Approximate).

Operations Dashboard

Following reports to be produced

- Hierarchy view – This will present the devices status under a site (dashboard presentation).
- Active alarm report – All the active alarm will be shown here.
- ON/Off/Dim Status report – Report presents status of all the devices at that point of time.

- Map – Devices will be plotted on map and user can take actions on those devices from map itself.
- Latest Data – Last data received from the lamps will be shown on the dashboard with RAG status.

1.1.10 Alerts monitored and triggered

The alerts type / parameters mentioned below will be programmed in the controller firmware as a rule parameter. Based on lamp failure the controller will send the desired data. The data will be then processed and concerned **email** alerts would be sent to the stakeholders onto their registered email id.

Lamp Failure	Yes
Mains Failure & Restoration	Yes

1.1.11 Reports

The application visualization will provide the below mentioned reports visualization.

- Energy Saving Report
- Load ON/OFF Status report
- Device alert log
- Device Metering Report
- **Data Archiving:** Controller data for running year to be on cloud for min of 6 months. Old data to be achieved and handed over Customer IT team at agreed frequency in readable/ RDBMS format.

1.2 Data Communication Frequency

- **Communication from Controller to Application**
 - Normal mode:
 - The controller will send health packets for every hour during operation on mains supply, additionally on request basis when asked by user.
 - Alert/Event Mode:
 - The controller will send alert packets upon occurrence of the event.
- **Communication from Application to Controller**
 - The command will be send to device only for any configuration or schedule change once in month.

B. The LED Streetlight specifications: -

1.1	Electrical Specifications (LED Driver)	150W (+/-2%) LED streetlight
	Input Voltage	AC 140 to 270 V AC.
	Input Frequency	50Hz
	Power Factor	≥ 0.95
	Drive Current	$\leq 750\text{mA}$
	Driver Efficiency	$\geq 90\%$
	IEC Compliance	Confirming to IEC-61347-1 & IEC 61347-2-13
		IEC 61547, 610-3-2, CISPR-15/ IEC:60598. EN EC & CE approved.
	Ingress protection	driver itself should be IP66
1.2	Total Harmonic distortion	
	THD(I)	$\leq 10\%$
	Humidity	10% to 90% RH
1.3	LED Luminaire Specifications:	
	Life Expectancy	Equal or more than 50000 burning hrs. With @L70.
	Colour Temp	5700K \pm 300K
	Colour Rendering Index	≥ 70
	Lumen/watt	$\geq 120\text{lum/W}$
	Wattage	150W
	Make of LED Source	High Power LED-- CREE/SEOUL/LUMILEDS/Osram/Nischia
	LED wattage	High power LED with 1W to 5W only
	Surge Protection	5KV within the driver & 10KV external/ internal to fixture.
	NEMA 7 pin socket	luminaire must have NEMA 7 pin socket
	Lamp Housing	The body shall be robust, corrosion resistant superior in finish & without any cracks or through holes, made in a single piece by high pressure die cast LM6 aluminium alloy. The luminaries shall be monolithic construction totally enclosed dust tight & water proof. Degree of protection shall be IP66 as defined in Appendix A of IS10322 (Part-I 1982) with latest amendments.
	Heat Sink/Dissipation	Integrated with in luminaire & The dimensions of luminaries shall be adequate to permit sufficient heat dissipation through the body itself, so as to prevent abnormal temperature rise inside the lantern & consequential damage to cover & gasket materials, LEDs, lenses & Electronic Driver.

Driver	Drivers should be potted & aluminium body for improved durability, constant current drivers with separate compartment, preferable top maintainable for ease of maintenance, also driver compartment should be IP66. Driver should also have Double phase protection, over load, open circuit and short circuit protection. driver itself should be IP66
Covers	Covers should be used to ensure proper IP66 degree of protection. It shall not get discoloured shall not suffer degradation due to heat and ageing.
Gasket	Gasket: A extruded silicon/EPDM loop gasket shall be provided in the lantern body to ensure a weather proof seal between the toughened glass and the metal housing to exclude the entry of dust, water, insects, etc. When the luminaries are closed, should conform to IP 66 Class.
Impact resistance	\geq IK05
Junction Temp	<105
Luminaire system efficiency	\geq 120 lumens/watt (\geq 18000lumens delivered) (supported by LM79 from own NABL accredited lab)
Ingress Protection Level	IP66
Manufactures Logo	Manufactures Word Mark/Name Engraved/ Embossing on die cast housing to allow traceability/authenticity till life of fixture (Sticker/Printing not allowed).
LED Make	CREE, NICHIA, OSRAM, LUMILED, SEOUL
Secondary optics	Secondary optics to be used for superior spread and throw.
Warranty	3Years from the date of delivery acceptance.

Certificates required:

1. ROHS certification for Sauce (LED).
2. Photo biological test report.
3. LED Source manufacturer's authorisation certificate.
4. LM79 report from own NABL approved lab along with the tender.
5. LM80 report from the source manufacturer with OEM's watermark across the page.
6. Type test report as per IS 10322/60598.
7. ISO certifications for manufacturing facility.
8. Manufacturer should have their own NABL accredited lab for photometric testing.
9. Technical data sheet for the above product.
10. BIS certification as for electrical safety for drivers under IS No15885.
11. BIS for the product and driver.
12. Make PWD approved.

Executive Engineer (Electrical)

New Town Kolkata Development Authority