



## CLUSTER

Trading Services

## UNIT

Electricity

## DEPARTMENT

MV/LV Operations

### PROCUREMENT DOCUMENT

### GOODS / SERVICES

Documents are to be obtained, free of charge, in electronic format, from the [National Treasury's eTenders website](#) or the [eThekweni Municipality's website](#).

**Tender No:** 29437 - 5E

**Title:** THE SUPPLY, DELIVERY AND OFF-LOADING OF LED STREET LIGHT AND FLOODLIGHT LUMINAIRES DURING A THIRTY-SIX MONTH PERIOD

### CLARIFICATION MEETING AND QUERIES

**Clarification Meeting:** There will be no clarification meeting.

**Queries can be addressed to:** Email queries to be submitted by 03 April 2025 and consolidated answers to questions will be uploaded on 10 April 2025

**General / Contractual:** Tumo Mpetsane, [Tumo.Mpetsane@durban.gov.za](mailto:Tumo.Mpetsane@durban.gov.za)

**Technical:** Criselda Bisram, [Criselda.bisram@durban.gov.za](mailto:Criselda.bisram@durban.gov.za)

### DELIVERY OF TENDERS

Sealed Tenders, addressed to the City Manager and marked with the Tender Number, are to be placed in the Tender Box **located in the ground floor foyer of the Municipal Buildings, 166 KE Masinga Road (Old Fort Rd), Durban** (and not any other municipal department), no later than:

**Closing Date:** Thursday, 17 April 2025

**Time:** 11:00am

**FACSIMILE, eMAIL or POSTED TENDERS WILL NOT BE ACCEPTED**

**Issued by:**

ETHEKWINI MUNICIPALITY

**Deputy Head:** MV/LV Operations

**Issued:** March 2025

**Document Version:** 24/02/2023(b)

**NAME OF TENDERER:** .....

**Tender Price:** R .....

**VAT Registered:** YES / NO  
(circle applicable)

## **PROCUREMENT DOCUMENT (Goods / Services)**

### **INDEX**

<b>Section</b>	<b>Page</b>
1) General Information .....	2
2) Conditions of Tender (Goods / Services: July 2016) .....	4
3) Special / Additional Conditions of Tender .....	10
4) Returnable Tender Documents .....	13
5) General Conditions of Contract (NT Circular 52: July 2010) .....	30
6) Special / Additional Conditions of Contract .....	37
7) Scope and Specification of Required Supply / Services .....	39
a) Scope of Supply / Services	
b) Specifications	
c) Drawings (if applicable)	
8) Bill of Quantities / Schedule of Rates/Activities .....	57
9) Official Tender Form .....	57
10) Annexures (if applicable)	

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**SECTION 1: GENERAL INFORMATION**

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<b>YOU ARE HEREBY INVITED TO TENDER FOR REQUIREMENTS OF THE ETHEKWINI MUNICIPALITY</b>
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TENDER No.: 29437 - 5E

DESCRIPTION: **THE SUPPLY, DELIVERY AND OFF-LOADING OF LED STREET LIGHT AND FLOODLIGHT LUMINAIRES DURING A THIRTY-SIX MONTH PERIOD**

CLOSING DATE / TIME: Thursday, 17 April 2025 at 11:00am

All tenders must be submitted on official tender documentation issued (in electronic format) by the eThekwini Municipality from:

- the National Treasury's eTenders website ( <https://www.etenders.gov.za/> ), or
- the eThekwini Municipality's website ( <https://www.durban.gov.za/pages/business/procurement> ).

Electronically downloaded documentation should be printed by the tenderer.

Tenderers are required to be registered on the **National Treasury Central Supplier Database** (CSD) as a service provider. In the case of a Joint Venture, this requirement will apply individually to each party in the Joint Venture.

Registration on the **eThekwini Municipality's Database** can be done via website: <https://ethekwivendor.durban.gov.za/>

Tenderers should ensure that tenders are delivered timeously to the correct address as stated in the Conditions of Tender. If a tender is late, it will not be accepted for consideration.

The Municipality will consider a tender submitted in response to this request for tender to be an offer from your company to perform the supply on the basis of that tender. Accordingly, please review the attached General and Special Terms and Conditions which will form the basis for any supply arrangement entered into between the Municipality and your company.

The Municipality is seeking tenders from potential suppliers only and makes no representation or promise in relation to procuring work from a supplier or suppliers. The Municipality will not be responsible for any costs associated with preparing and submitting a tender.

The Municipality does not bind itself to accept the lowest or any tender. It reserves the right to accept the whole or any part of a tender to place orders. Bidders shall not bind the Municipality to any minimum quantity per order. The successful Tenderer (s) shall be bound to provide any quantities stipulated in the specification.

The successful tenderer will be required to fill in and sign a written Contract Form (MBD 7).

**NB: NO TENDER WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE**  
(as defined in Regulation 44 of the Local Government: Municipal Supply Chain Management Regulations).

**THE FOLLOWING PARTICULARS MUST BE FURNISHED  
(Failure to do so may result in your tender being disqualified)**

Name of Tenderer: .....

Postal Address: .....

Street Address: .....

E-Mail Address: .....

Telephone Number:


-


-


Cell phone Number:

Facsimile Number:

**Circle Applicable**

Is your entity registered on the **eThekweni Municipality's supplier database?**

YES / NO

- **If YES insert** your PR Number: .....

**PR** .....

Is your entity registered on the **National Treasury Central Supplier Database (CSD)?**

YES / NO

- **If YES, insert** your MAAA Number: .....

**MAAA** .....

Insert a SARS Tax Compliance Status PIN

.....

Is your entity VAT registered?

YES / NO

- **If YES insert** Vat Registration Number: .....

.....

Has a **Declaration of Municipal Fees** been submitted?

YES / NO

Has a **Declaration of Interest** (MBD 4) been submitted?

YES / NO

Has a **Declaration for Procurement Above R10 Million** (MBD 5) been submitted?

YES / NO

Has a **Preference Points Claim** (MBD 6.1) been submitted?

YES / NO

Has a **Declaration of Bidder's Past SCM Practices** (MBD 8) been submitted?

YES / NO

Has a **Certificate of Independent Bid Determination** (MBD 9) been submitted?

YES / NO

**Are you the accredited representative** in South Africa for the goods / services / works offered? **If YES, enclose proof** at the back of the tender submission.

YES / NO

Signature of Tenderer: .....

Date: .....

Name / Surname: ..... (in block capitals)

Capacity under which  
this tender is signed:

.....

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## **SECTION 2 : CONDITIONS OF TENDER – (Goods / Services : June 2019)**

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### **INDEX**

- 1. DEFINITIONS**
- 2. CONDITIONS OF TENDER & CONTRACT**
- 3. TENDER INFORMATION**
  - (1) General
  - (2) Obtaining Tender Documents
  - (3) Queries Relating to this Tender
  - (4) Briefing Session (Clarification Meeting)
  - (5) Closing Date and Delivery of Tender Submissions
  - (6) Tender Validity and Withdrawal of Tenders
- 4. RETURNABLE SCHEDULES, FORMS, CERTIFICATES**
  - (1) Authority of Signatory
  - (2) Tax Compliance Status PIN / Tax Clearance Certificate
  - (3) Declaration of Municipal Fees
  - (4) Health and Safety
  - (5) Municipal Bidding Documents
    - (a) MBD 4: Declaration of Interest
    - (b) MBD 5: Declaration for Procurement Above R10 Million
    - (c) MDB 6.1: Preference Points Claim
    - (d) MBD 8: Declaration of Bidder's Past Supply Chain Management Practices
    - (e) MBD 9: Certificate of Independent Bid Determination
  - (5) Official Tender Form
  - (6) Additional Schedules, Forms, or Certificates
- 5. INFORMATION TO BE SUPPLIED RE SUB-CONTRACTORS**
- 6. SAMPLES**
- 7. MANUFACTURERS**
- 8. CLARIFICATION**
- 9. PRICING**
- 10. ESTIMATED QUANTITIES**
- 11. DELIVERY, RISK, PACKAGES, ETC**
- 12. RATES OF EXCHANGE**
- 13. IMPORT PERMITS**
- 14. EVALUATION PROCESS**
- 15. BRIBERY AND COMMUNICATION WITH COUNCILLORS / OFFICIALS**
- 16. NEGOTIATIONS WITH PREFERRED TENDERERS**
- 17. CANCELLATION OF TENDER PROCESS**
- 18. ACCEPTANCE OF TENDER**
- 19. PAYMENT and FACTORING**
- 20. APPEAL PROCESS**

### **SPECIAL / ADDITIONAL CONDITIONS OF TENDER**

## STANDARD CONDITIONS OF TENDER (Goods / Services)

### 1. DEFINITIONS

#### General:

- (1) Defined words / phrases are printed in *Italic font*.
- (2) Definitions apply to the singular as well as the plural.
- (3) Any reference to the masculine gender shall be taken to include the feminine and any reference to the feminine gender shall be taken to include the masculine.
- (4) The words "bid" and "tender", and "bidder" and "tenderer" can be used interchangeably.
- (5) All definitions as defined in the **General Conditions of Contract** are applicable to these **Standard Conditions of Tender**. These definitions include:
  - "Closing time"
  - "Contract"
  - "Contract Price"
  - "Corrupt practice"
  - "Countervailing duties"
  - "Country of origin"
  - "Day"
  - "Delivery"
  - "Delivery ex stock"
  - "Delivery into consignees store or to his site"
  - "Dumping"
  - "Force majeure"
  - "Fraudulent practice"
  - "GCC"
  - "Goods"
  - "Imported content"
  - "Local content"
  - "Manufacture"
  - "Order"
  - "Project site"
  - "Purchaser"
  - "Republic"
  - "SCC"
  - "Services"
  - "Supplier"
  - "Tort"
  - "Turnkey"
  - "Written" or "in writing"
- (6) **Bid or Tender:** The offer submitted in respect of an invitation to submit such an offer.
- (7) **Bidder or Tenderer:** An entity (company, close corporation, partnership, joint venture, sole proprietor) which submits a *bid/tender*.
- (8) **Municipality:** The eThekweni Municipality, as represented by the duly authorised delegate, official or committee.
- (9) **SCT:** Special Conditions of Tender (found in Section 3).
- (10) **Week:** A period of seven (7) consecutive *days*.
- (11) **Material Deviation:** A material deviation or qualification is one which, in the *Municipality's* opinion, would:
  - (a) Detrimentially affect the scope, quality, or performance of the services or supply identified in the Scope;
  - (b) Significantly change the *Municipality's* or the *Tenderer's* risks and responsibilities under the contract; or
  - (c) Affect the competitive position of other *Tenderers* presenting responsive *tenders*, if it were to be rectified.

### 2. CONDITIONS OF TENDER & CONTRACT

The specification will be governed by the **Standard Conditions of Tender** (Goods and Services), **Special Conditions of Tender (SCT)**, **General Conditions of Contract (GCC)** (Government Procurement General Conditions (July 2010), as amended by National Treasury Circular 52 dated 30 July 2010), the **Special Conditions of Contract (SCC)**, the **Occupational Health and Safety Act** (Act No. 85 of 1993), and the **eThekweni Code of Conduct**.

#### Complete Acceptance of Conditions

Unless otherwise expressly stipulated in a letter covering the *tender*, every *Tenderer* shall be deemed to have waived, renounced, and abandoned any conditions printed or written upon any stationery used for the purpose of, or in connection with, the submission of their *tender*, which are in conflict with the **General Conditions of Contract** and **Special Conditions of Contract**. *Tenderers* are advised that any *material divergences / qualifications* from the official Conditions or Specification will render their *tenders* liable to disqualification.

### 3. TENDER INFORMATION

#### (1) General

- (a) *Tenders* will be liable for rejection unless made out on the official tendering documentation.
- (b) Any alterations effected upon any of the tendering documents must be clearly shown by means of a hand written (black, non-erasable ink), or typed, entry and must be signed in full by the *Tenderer*. **The use of correction fluid is not permitted.**
- (c) *Tenderers* may submit alternative solutions that, in the *Tenderer's* opinion, are to the *Municipality's* advantage economically and technically. Full technical details of the alternative *tender(s)* shall be submitted with the tender documents. Alternative *tender(s)* shall be submitted separately.

#### (2) Obtaining Tender Documentation

All tenders must be submitted on official tender documentation issued, in electronic format, by the eThekweni Municipality. Electronically downloaded documentation (obtainable free of charge) should be printed and suitably bound by tenderer.

#### (3) Queries Relating to this Tender

Queries can be directed to the person / Department as stated in the **SCT**.

#### (4) Briefing Session (Clarification Meeting)

Details of the briefing session are stated in the **SCT**. Failure to attend a **compulsory** briefing session will invalidate the *tender*. *Tenderers* must sign the attendance list in the name of the tendering entity. *Tenders* will only be evaluated from those tendering entities appearing on the attendance list.

**(5) Closing Date and Delivery of Tender Submissions**

Sealed *tenders* made out on the enclosed Official Tender Form, which shall be signed by or on behalf of the *Tenderer*, and addressed to the City Manager, marked with the appropriate Tender number, must be placed in the **Tender Box** as stated in the **SCT** not later than the **date and time** as stated in the **SCT**, where after they will be opened publicly.

All tender documents **must** be placed directly into the Tender Box and should not be delivered to any other Municipal Department. *Bidders* are advised that *tenders* submitted by post, fax or email **will not** be considered. All couriered documents must be placed directly into the Tender Box and should not be delivered to any other Municipal Department.

Any *tender* received after the closing date and time stated for the receipt thereof **shall not** be accepted for consideration and shall be returned to the *Tenderer*.

**(6) Tender Validity and Withdrawal of Tenders**

*Tenders* must hold good until 16:00 of the 5th week following the date on which *tenders* are opened, or during such other period as may be specified in the **SCT**. The *Municipality* may, during the period for which *tenders* are to remain open for acceptance, authorize a *Tenderer* to withdraw their *tender* in whole or in part on condition that the *Tenderer* pays to the *Municipality* on demand, a sum of one thousand Rand (R1,000.00). The *Municipality* may, if it thinks fit, waive payment of such sum in whole or in part.

**4. RETURNABLE SCHEDULES, FORMS, CERTIFICATES**

Each *Tenderer* shall complete fully and accurately the following documents and submit these documents with the *tender*:

- (1) **Authority of Signatory:** In terms of Clause 4(5)(c) of the Conditions of Tender.
- (2) **Tax Compliance Status PIN / Tax Clearance Certificate:** SARS has introduced a new Tax Compliance Status System. Tenderers can submit a Tax Compliance Status PIN (TCS PIN) instead of an original Tax Clearance Certificate. This TCS PIN can be used by third parties to certify the taxpayer's real-time compliance status.
- (3) **Declaration of Municipal Fees:** Only those *Bidders* whose municipal fees are fully paid, or those that have concluded acknowledgement of debt agreements with the *Municipality*, are eligible to *tender*.  
All *Bidders* must sign the Declaration of Municipal Fees returnable form, declaring that their municipal fees are in order or that acknowledgement of debt agreements have been concluded, and include the relevant account numbers in the declaration. Failure to include account numbers or sign will invalidate the *tender*. The completion of the declaration is also applicable to *Bidders* outside of the eThekweni Municipal Area.
- (4) **Declaration with respect to the Occupational Health and Safety Act:** Acceptance of undertaking in terms of the Occupational Health and Safety Act (Act 85 of 1993) and the relevant Regulations.

**(5) Municipal Bidding Documents (which includes):**

- (a) **MBD 4: Declaration of Interest:** All *Bidders* are to sign the Declaration of Interest wherein they declare any relationship that may exist with an official of the Municipality involved in the evaluation process.  
Regulation 44 of the Supply Chain Management Regulations states that a Municipality or Municipal Entity may not make any award to a person:
  - (i) Who is in the service of the state;
  - (ii) If that person is not a natural person, of which any Director, Manager, Principal, Shareholder or Stakeholder is a person in the service of the state; or
  - (iii) Who is an advisor or consultant contracted with the Municipality or municipal entity.
 Should a contract be awarded, and it is subsequently established that Regulation 44 has been breached, the Municipality shall have the right to terminate the contract with immediate effect.
- (b) **MBD 5: Declaration for Procurement Above R10 Million (if applicable):** For all procurement expected to exceed R10 million (all applicable taxes included), tenderers must complete this questionnaire.
- (c) **MBD 6.1: Preference Points Claim Form:** For the awarding of Preference Points, *Bidders* are required to complete the attached MBD 6.1 form and return it with their tender submission. Failure on the part of a tenderer to complete and submit this form will be interpreted to mean that preference points for **Specific Goals** are not claimed.  
The Municipality reserves the right to require of a tenderer, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the Municipality.
- (d) **MBD 8: Declaration of Bidders Past Supply Chain Management Practices Form:** This form serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- (e) **MBD 9: Certificate of Independent Bid Determination:** Section 4(1)(b)(iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms if it involves collusive tendering or tender rigging. In order to give effect to this, the Certificate of Bid Determination must be completed and submitted with the tender.

**(5) Official Tender Form** (see Section 9)**(a) Legal Status of Tenderer**

It is essential for the purpose of entering into a legal contract that *Bidders* state on the Official Tender Form, under "Name and Address of Tenderer ", their full legal status:

- (i) the full registered name of the company making a *tender*; or
- (ii) if the *Tenderer* is a person conducting business under a recognised trading name then:
  - State the name of the person(s);
  - State recognised trading name; and
  - State whether an owner, co-owner, proprietor, etc.

**(b) Signing of Official Tender Form**

Failure of a *Tenderer* to complete, in its entirety, and sign the Official Tender Form will invalidate the *tender*.

**(c) Authority of Signatory**

*Bidders* are to complete and sign the Authority of Signatory returnable document, and attach the required additional documents.

**(d) Differences or Discrepancies**

Should there be any difference or discrepancy between the prices or price contained in the Official Tender Form and those contained in any covering letter from the *Tenderer*, the prices or price contained in the Official Tender Form shall prevail.

**(6) Any additional Schedules, Forms, or Certificates as stated in the SCT.****5. INFORMATION TO BE SUPPLIED REGARDING SUB-CONTRACTORS**

*Bidders* are to state in their *tenders*, or covering letters, whether, if the contract were to be awarded to them, the whole of the work would be executed by them in their own workshop / factory. If the answer is in the negative, they are required to state which part(s) would be handed to sub-contractors and the name and address of such sub-contractors.

**6. SAMPLES**

*Bidders* may be required to state where samples of the full range of products can be inspected or be required to submit samples for inspection prior to the closing date of the *tender*.

**7. MANUFACTURERS**

The names of the manufacturers of the goods or equipment offered must be stated in the *tender*.

*Bidders* who are not manufacturers, accredited distributors, or agents must provide a valid agreement / Joint Venture Agreement, entered into with the manufacturer, accredited distributors, or agents, with their submission. This agreement must meet all the requirements as laid down in the *tender* document, and must cover the contract period.

**8. CLARIFICATION**

The Head: Supply Chain Management Unit, or an authorized representative, may request clarification or further information on any aspect of the *tender*. The *Tenderer must* supply the requested information within the time specified. Failure to comply will render the *tender* non-responsive.

**9. PRICING**

*Bidders* would be precluded from this *tender* if their pricing structure deviates from the Official Tender Form.

**(1) Nett Prices**

All prices shall be quoted in South African currency (Rand) after deduction of any brokerage or discount allowed to the Municipality.

**(2) Unit Prices**

*Bidders* shall quote only one price in respect of each item. Such price is to hold good for the full duration of the contract period, being subject to variation only in accordance with specified criteria, as stated in the *Conditions of Contract*.

**(3) Firm Tenders**

*Bidders* may submit firm prices for each 12 month period. These prices shall be free from all fluctuations, including any statutory increases.

**(4) Value Added Tax (V.A.T)**

Prices exclusive and inclusive of VAT must be stated separately on the Official Tender Form.

**10. ESTIMATED QUANTITIES**

The estimated quantities are set out in Section 8 : Bill of Quantities / Schedule of Rates/Activities which forms part of the official tender documents. The quantities are stated purely for the information of the *Bidders* and are in order to ascertain an estimated total contract price. The *Supplier* will, however, be bound to supply whatever quantity or quantities the *Municipality* may actually require, and may exceed, or be less than, the estimated quantities stated.

**11. DELIVERY, RISK, PACKAGES, ETC**

- (1) Unless otherwise provided, all goods are to be supplied only against the form of order issued by the *Municipality*.
- (2) *Bidders* shall quote a unit price which shall include delivery to the specified delivery point, as stated in the *SCT*.
- (3) The risk in all goods purchased by the *Municipality* under the contract shall remain with the *Supplier* until such goods shall have been duly delivered.
- (4) *Bidders* shall clearly state the period within which delivery will be made after receipt of the official order, as this may be material in the adjudication of the *tender*.

**12. RATES OF EXCHANGE**

- (1) Where the goods are imported the *Supplier* shall, within seven days of date of official Purchase Order, arrange through their bankers for the foreign commitment to be covered forward down to the Rand in order to fix the rate of exchange. The *Supplier* shall notify the *Municipality* as soon as possible thereafter regarding the rate which has been fixed on such forward exchange.

Any increase or decrease between the basic rate of exchange as at a date seven days prior to the date of closing of *tenders* and that existing at the date of establishment of the forward exchange cover within the period stipulated above shall be paid or deducted by the Municipality. Upon the failure of the *Supplier* to arrange forward exchange cover, the *Supplier* shall be liable should there be any increase in the basic rate of exchange occurring after the last mentioned date.

The bank charges incurred in obtaining the forward exchange cover shall be for the *Municipality's* account.

- (2) The *Supplier* shall on request:
- Submit documentary proof of the rate of exchange; and
  - When an adjustment is claimed in terms of this sub-clause, whether by the *Supplier* or the *Municipality*, submit documentary proof to the satisfaction of the Deputy City Manager: Treasury in respect of such claim.

**13. IMPORT PERMITS**

- (1) In order to minimise special importation, *Bidders* should, where possible, have recourse to local suppliers and / or manufacturers.
- (2) *Bidders* must state whether their *tender* is dependent upon the issue of a special import permit or whether they are able to supply the goods by making use of the import facilities available to them.
- (3) In the event of a tender being dependent upon the issue of a special import permit, application for such special import permit shall be made by the Tenderer, unless otherwise provided for in the *SCT*.

**14. EVALUATION PROCESS**

The procedure for evaluation of responsive Tender Offers will be in accordance with the eThekweni Municipality's current SCM Policy and the Preferential Procurement Policy Framework Act (5 of 2000), and the Preferential Procurement Policy Framework Act Regulations (November 2022).

**Details of additional evaluation criteria, if applicable, are stated in the *SCT*.**

Evaluation points for price and preference will only be calculated for *Bidders* who comply with the contractual and technical specification, and if applicable, have attained the minimum Functionality Score as stated in the *SCT*.

The evaluation process of responsive *tenders* will be as follows:

- Score each *tender* in respect of the financial offer made and preferences claimed (if any);
- Calculate the total number of evaluation points ( $T_{EV}$ ) in accordance with the following formula:  
 $T_{EV} = N_{FO} + N_P$  where:  $N_{FO}$  : is the number of evaluation points awarded for the financial offer; and  $N_P$  : is the number of evaluation points awarded for preferences claimed.
- Rank *tenders* from the highest number of evaluation points to the lowest.
- Recommend the *Tenderer* with the highest number of evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- Rescore and re-rank all *Bidders* should there be compelling and justifiable reasons not to recommend the *Tenderer* with the highest number of evaluation points, and recommend the *Tenderer* with the highest number of evaluation points, unless there are compelling and justifiable reasons not to do so, and the process set out in this sub-clause is repeated.

**(1) Evaluation points awarded for the financial offer:**

Reference is to be made to the Special Conditions of Tender (*SCT*), and returnable form 5(c) in Section 4.

**INCOME-GENERATING CONTRACTS**

The financial offer will be scored using the formula:

$$N_{FO} = W \left( 1 + \frac{Pt - P_{max}}{P_{max}} \right)$$

**GOODS and SERVICES**

The financial offer will be scored using the formula:

$$N_{FO} = W \left( 1 - \frac{Pt - P_{min}}{P_{min}} \right)$$

Where the value of W is:

- (a) **90** where the financial value inclusive of VAT of all responsive *tenders* received have a value in excess of R 50,000,000; OR
- 80** where the financial value inclusive of VAT of one or more responsive *tenders* offers have a value that equals or is less than R 50,000,000.
- It is unclear** (at the time of advertising) which of the two preference point systems applies. Either the 80/20 or 90/10 preference point system will apply, determined by the price offered by the lowest acceptable tender.

(b) **P<sub>max</sub>** is the comparative offer of the most favourable comparative offer (highest acceptable tender).

(c) **P<sub>min</sub>** is the comparative offer of the most favourable comparative offer (lowest acceptable tender).

(d) **P<sub>t</sub>** is the comparative offer of the *tender* offer under consideration.

**(2) Evaluation points awarded for preference:**

The **Specific Goals** for Preference Points are specified in the *SCT*.

## 15. BRIBERY AND COMMUNICATION WITH COUNCILLORS / OFFICIALS

### (1) Bribery

No *Tenderer* shall offer, promise or give to any person or person connected with a *tender* or the awarding of a contract, any gratuity, bonus or discount etc, in connection with the obtaining of a contract.

### (2) Communication, Councillors and Officials

A *Tenderer* shall not in any way communicate with a member of the *Municipality* or with any official of the *Municipality* on a question affecting any contract for the supply of goods or for any work, undertaking or services which is the subject of a *tender* during the period between the closing date for receipt of *tenders* and the dispatch of the written notification of the *Municipality's* decision on the award of the contract; provided that a *Tenderer* shall not hereby be precluded:

- (a) At the request of the Head: SCM Unit, or an authorized representative, from furnishing him with additional information or with a sample or specimen for testing purposes or otherwise from giving a demonstration so as to enable the recommendation to the Bid Committee on the award of the contract to be formulated;
- (b) From obtaining from the Head : SCM Unit, or an authorised representative, information as to the date upon which the award of the contract is likely to be made, or, after the decision upon the award has been made by the *Municipality* or any Committee to which the *Municipality* has delegated its powers, information as to the nature of the decision or such information as was publicly disclosed at the opening of *tenders* or from submitting to the Accounting Officer in writing any communication relating to their *tender* or the award of the contract or a request for leave to withdraw their *tender*; and
- (c) Provided further that nothing contained herein shall be construed so as to prevent information being sought and obtained from an Official in regard to any decision taken at an open Municipal meeting, or any Committee to which the *Municipality* has delegated its powers.

A contravention of subsection (1) and / or (2), or an attempt to contravene such subsection, shall be reported to the Accounting Officer, who may on receipt of such report disqualify the *tender* of the *Tenderer* concerned.

## 16. NEGOTIATIONS WITH PREFERRED BIDDERS

The *Municipality* reserves the right to invoke Regulation 24 of Municipal Finance Management Act if required.

- (1) The Accounting Officer may negotiate the final terms of a contract with *Bidders* identified through a competitive tendering process as preferred *Bidders*, provided that such negotiation:
  - Does not allow any preferred *Tenderer* a second or unfair opportunity;
  - Is not to the detriment of any other *Tenderer* ; and
  - Does not lead to a higher price than the *tender* as submitted.
- (2) Minutes of such negotiations must be kept for record purposes.
- (3) Such negotiation may be delegated by the Accounting Officer.

## 17. CANCELLATION OF TENDER PROCESS

The municipality is entitled to cancel the tender at any time before the award of a tender and the decision to cancel the tender shall be published in the same manner in which the original tender invitation was advertised. The Municipality shall, in no way, be liable for any damages whatsoever, including, without limitation, damages for loss of profit, in any way connected with the cancellation of this bid.

## 18. ACCEPTANCE OF BID

- (1) The *Municipality* does not bind itself to accept the lowest or any *tender*, and reserves the right to accept the whole or any part of a *tender* to place orders.
- (2) The *Municipality* reserves the right to accept more than one technically and contractually compliant *tender* for part or the whole of the contract and to place orders on the price and availability.
- (3) *Bidders* shall not bind the *Municipality* to any minimum quantity per order.
- (4) The successful *Tenderer* (s) shall be bound to provide any quantities stipulated in the specification.
- (5) Tenders will only be accepted on condition that:
  - (a) The *tender* is signed by a person authorised to sign on behalf of the *Tenderer* .
  - (b) A valid (at time of close of tenders), original, Tax Clearance Certificate OR Tax Compliance Status PIN is included with the *tender* submission. Both should have sufficient validity to ensure the process is adequately covered;
  - (c) A *Tenderer* who submitted their *tender* as a Joint Venture has included an acceptable Joint Venture Agreement and a B-BBEE Certificate pertaining to the Joint Venture with their *tender*.
- (6) Financial Standing: The Head: Supply Chain Management reserves the right to require *Bidders* to submit evidence that their financial standing is adequate to meet their obligations under the contract should they be successful.
- (7) Change of Ownership or Major Policy: Where it is known to a *Tenderer* that a change in ownership or major policy (of the tendering entity) will occur, or is likely to occur, during a specified contract period, the scope and effect thereof must be fully defined in a covering letter to be submitted with the *tender*.
- (8) Purchase of Goods From Other Sources: Nothing contained in this contract shall be held to restrain the *Municipality* from purchasing from persons other than the *Supplier*, any of the goods described or referred to in this contract, if it shall in its discretion think fit to do so.
- (9) Capability and Breach of Contract: Tenderers that do not have the capability of undertaking this enquiry in terms of the requirements of the contract or have been in breach of contract previously will not be considered.

## 19. PAYMENT and FACTORING

Payment conditions will be as per the **Conditions of Contract**.

Payment will be made only to the *Supplier(s)*. Factoring arrangements will not be accepted.

## 20. APPEALS

In terms of Regulation 49 of the Municipal Supply Chain Management Regulations persons aggrieved by decisions or actions taken by the *Municipality*, may lodge an appeal within 14 days of the decision or action, in writing to the *Municipality*. The appeal (clearly setting out the reasons for the appeal) and queries with regard to decision of award are to be directed to the office of the City Manager, attention:

Ms. S. Pillay, P.O. Box 1394, Durban, 4000;  
eMail: Simone.Pillay@durban.gov.za.

## **SECTION 3: SPECIAL / ADDITIONAL CONDITIONS OF TENDER**

### **3.1 SPECIAL CONDITIONS OF TENDER (SCT)**

The **Standard Conditions of Tender** (Goods / Services) make several references to the **Special Conditions of Tender** (SCT) for details that apply specifically to this tender. The **Special Conditions of Tender** shall have precedence in the interpretation of any ambiguity or inconsistency between it and the **Standard Conditions of Tender**.

Each item below is cross-referenced to the clause in the **Standard Conditions of Tender** to which it mainly applies.

#### **SCT 3(1) TENDER INFORMATION: General**

The tender document comprises of a cover page and 66 pages.

#### **SCT 3(2) TENDER INFORMATION: Obtaining Tender Documentation**

Documents are issued by the eThekweni Municipality electronic format.

Electronically downloaded documentation is obtainable from:

- the National Treasury's eTenders website
  - ( <https://www.etenders.gov.za/> ), or
- the eThekweni Municipality's website
  - ( <https://www.durban.gov.za/pages/business/procurement> ).

The entire document should be printed on A4 paper (one sided), and suitably bound by the tenderer.

#### **SCT 3(3) TENDER INFORMATION: Queries Relating to this Tender**

General and Contractual Queries are to be directed to:

**Tumo Mpetsane, [Tumo.Mpetsane@durban.gov.za](mailto:Tumo.Mpetsane@durban.gov.za)**

Technical Queries are to be directed to:

**Criselda Bisram, [Criselda.bisram@durban.gov.za](mailto:Criselda.bisram@durban.gov.za)**

#### **SCT 3(4) TENDER INFORMATION: Briefing Session**

**There will be no clarification meeting.**

#### **SCT 3(5) TENDER INFORMATION: Closing Date and Delivery of Tender Submissions**

Sealed Tenders, addressed to the City Manager and marked with the Tender Number, are to be placed in the Tender Box **located in the ground floor foyer of the Municipal Buildings, 166 KE Masinga Road (Old Fort Rd), Durban** (and not any other municipal department), no later than: **Thursday, 17 April 2025 at 11:00am.**

**Bidders are required to also make an** electronic submission via SSS. Bidders must ensure that the hard copy and electronic submission are the same, failing which the submission will be deemed invalid. Bidders are responsible for resolving all access rights and submission queries before the tender closing date.

**SSS Queries Contact: Lindo Dlamini:** Tel: 031-3227133/031-3227153 email: [supplier.selfservice@durban.gov.za](mailto:supplier.selfservice@durban.gov.za)

**SCT 3(6) TENDER INFORMATION: Tender Validity and Withdrawal of Tenders**

Tenders must hold good for 120 days following the date on which tenders are opened.

**SCT 4(6) RETURNABLE SCHEDULES, FORMS, CERTIFICATES**

4.1 Bidders shall give full technical and descriptive details as outlined under **TECHNICAL SCHEDULES 10.1 to 10.11** and submit all, including the related literature and drawings, for the all items offered for evaluation. Failure to supply full information will render the bid liable to disqualification. The evaluation of the bids will be based upon completion of the document, testing of samples, and compliance of the technical schedules.

4.2 **Items 1 to 11 of SECTION 8: BILL OF QUANTITIES / SCHEDULE OF RATES / ACTIVITIES** will be evaluated separately. The evaluation of the bids will then be based on the total price of per item over three years, upon each bidder's responsiveness and also upon the 90/10 point system. Each bidder must submit a certified copy of a B-BBEE Verification Certificate if Preferential Points are to be claimed or alternatively, a sworn affidavit where such is applicable for the tendering entity.

**SCT 11(2) DELIVERY, RISK, PACKAGES, ETC**

The specified delivery point is .....

**SCT 13 IMPORT PERMITS**

In the event of a tender being dependent upon the issue of a special import permit, application for such special import permit shall be made by:

- List name of applicant.

**SCT 14 EVALUATION PROCESS**

**14.1 Price and Preference**

The procedure for the evaluation of responsive tenders is **PRICE AND PREFERENCE** in accordance with the Employer's current SCM Policy, the Preferential Procurement Policy Framework Act (5 of 2000), and the Preferential Procurement Policy Framework Act Regulations (2022).

The **90/10** preference points system will be applied. The Formula used to calculate the **Price Points (max. 90)** will be according to that specified Regulation 4.1.

**14.2 Preference Point System and Specific Goals**

The definitions as per the SCM Policy are applicable.

Preference Points (20) will be derived from points claimed on Returnable Document **MBD 6.1: "Preference Points Claim Form"** (in Section 4 of this procurement document) for the **Specific Goal(s)** as indicated on the table(s) below, and according to the specified **Goal Weightings**.

#### **Ownership Goal**

The tendering entity's **Percentage Ownership**, in terms of the **Ownership Category(s)** listed below, is to be used in the determination of the tenderer's claim for **Preference Points**.

Goal Weighting 75%			
Ownership Categories	Criteria	90/10	
Race: Black (w1)	0%	0	
	>0% and <51%	3	
	≥51% and <100%	6	
	100%	7.5	
<b>Proof of claim as declared on MBD 6.1</b> (1 or more of the following will be used in verifying the tenderer's status) <ul style="list-style-type: none"> <li>Companies and Intellectual Property Commission registration document (CIPC)</li> <li>CSD report.</li> <li>B-BBEE Certificate of the tendering entity.</li> <li>Consolidated B-BBEE Certificate if the tendering entity is a Consortium, Joint Venture, or Trust (Issued by verification agency accredited by the South African Accreditation System).</li> <li>Agreement for a Consortium, Joint Venture, or Trust.</li> </ul>			

#### **RDP Goal: The promotion of South African owned enterprises**

The tendering entity's **Address** (as stated on the National Treasury Central Supplier Database (CSD) or on the eThekweni Municipality Vendor Portal) is to be used in the determination of the tenderer's claim for **Preference Points** for this Specific Goal.

Goal Weighting 25%		
Location	90/10	
Not in South Africa	0	
South Africa	0.625	
KZN	1.25	
ETM	2.5	
<b>Proof of claim as declared on MBD 6.1</b> (1 or more of the following will be used in verifying the tenderer's status) <ul style="list-style-type: none"> <li>CSD report</li> </ul>		

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**3.2 ADDITIONAL CONDITIONS OF TENDER (ACT)**

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**ACT 1 ELIGIBILITY – CSD REGISTRATION**

Tenderers are required to be registered on the National Treasury Central Supplier Database (CSD) as a service provider. In the case of a Joint Venture, this requirement will apply individually to each party in the Joint Venture. Tenderers not so registered, at time of closing of tenders, will not be eligible to submit tenders.

The Tenderer's CSD Supplier Number (starting with "MAAA") is to be provided on the information table in Section 1.

Tenderers who wish to register on the CSD may do so via web address <https://secure.csd.gov.za>.

**ACT 2 SAMPLES**

Bidders shall submit samples of the items required within a week, upon request by eThekweni Electricity. Delivery of goods shall be by road to eThekweni Electricity, 1 Jelf Taylor Crescent, Durban, room 303 for the attention of Criselda Bisram.

ACT 3 All drawings and documentation submitted shall become the property eThekweni Municipality.

ACT 4 If the samples submitted should fail or become faulty during testing, EThekweni municipality shall be indemnified to all costs related to that testing.

ACT 5 The cost of all tests required in this specification shall be borne by the bidder.

ACT 6 EThekweni Municipality reserves the right to accept more than one technically and contractually compliant bid for part or the whole of the contract and to place orders on the basis of price and availability.

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**SECTION 4: RETURNABLE TENDER DOCUMENTS**

The required returnable documents are as detailed in [Section 2 \(Clause 4\)](#): “Returnable Schedules, Forms, Certificates” of the Conditions of Tender / Special Conditions of Tender.

- 1) Authority of Signatory
- 2) Tax Compliance Status PIN / Tax Clearance Certificate
- 3) Declaration of Municipal Fees
- 4) Declaration with respect to The Occupational Health and Safety Act
- 5(a) MBD 4: Declaration of Interest
- 5(b) MBD 5: Declaration for Procurement Above R10 Million
- 5(c) MBD 6.1: Preference Points Claim
- 5(d) MBD 8: Declaration of Bidder's Past Supply Chain Management Practices
- 5(e) MBD 9: Certificate of Independent Bid Determination

The Tender Form can be found in [Section 9](#): “Official Tender Form”, and any additional schedules, forms, certificates can be found in [Section 10](#): “Annexures”.

**1) AUTHORITY OF SIGNATORY**

Reference is made to the Conditions of Tender: [Clause 4\(5\)\(c\)](#).

Indicate the status of the tenderer by ticking the appropriate box hereunder.

COMPANY		CLOSE CORPORATION		PARTNERSHIP		JOINT VENTURE		SOLE PROPRIETOR	
Refer to Notes at the bottom of the page									

I / We, the undersigned, being the Chairperson (Company), Member(s) (Close Corporation), Partners (Partnership), Sole Owner (Sole Proprietor), Lead Partner (JV), in the company / business trading as:

.....

hereby authorise Mr/Mrs/Ms .....

acting in the capacity of .....

to sign all documents in connection with the tender for Contract No. [29437 - 5E](#) and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

**Notes**

**Tenderers are to include, at the back of their tender submission document, a printout of the following documents:**

If a Company : a "Resolution of the Board" in this regard.

If a Joint Venture : a "Power of Attorney" signed by the legally authorised signatories of all the partners to the Joint venture.

**2) TAX COMPLIANCE STATUS PIN / TAX CLEARANCE CERTIFICATE**

SARS has introduced a new Tax Compliance Status System. Tenderers can submit a Tax Compliance Status PIN (TCS PIN) instead of an original Tax Clearance Certificate. This TCS PIN can be used by third parties to certify the taxpayer's real-time compliance status.

Separate Tax Clearance Certificates / TCS PINs are required for each entity in a Joint Venture.

The TCS PIN(s) are to be entered on the information table in **SECTION 1: GENERAL INFORMATION**.

**Tenderers are to include, at the back of their tender submission document, a printout of their Tax Compliance Status PIN (TCS PIN) OR an original Tax Clearance Certificate.**

**Failure to include the required document will make the tender submission non-responsive.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, **and that the requested documentation has been included in the tender submission.***

**NAME (Block Capitals):** \_\_\_\_\_

**Date**

**SIGNATURE:** \_\_\_\_\_

**3) DECLARATION OF MUNICIPAL FEES**

I, the undersigned, do hereby declare that the Municipal fees of

.....  
(full name of Company / Close Corporation / partnership / sole proprietary/Joint Venture)

(hereinafter referred to as the TENDERER) are, as at the date hereunder, fully paid or an Acknowledgement of Debt has been concluded with the Municipality to pay the said charges in instalments.

The following account details relate to property of the said TENDERER:

Account

Account Number: to be completed by tenderer.

Consolidated Account No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Electricity

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Water

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Rates

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Other

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

I acknowledge that should the aforesaid Municipal charges fall into arrears, the Municipality may take such remedial action as is required, including termination of any contract, and any payments due to the Contractor by the Municipality shall be first set off against such arrears.

- Where the TENDERER'S place of business or business interests are outside the jurisdiction of eThekweni Municipality, a copy of the accounts/agreements from the relevant municipality must be attached (to the back inside cover of this document).
- Where the tenderer's Municipal Accounts are part of their lease agreement, then a copy of the agreement, or official letter to that effect is to be attached (to the back inside cover of this document).

**Tenderers are to be include, at the back of their tender submission document, a printout of the above account's and or agreements signed with the municipality.**

**Failure to include the required document will make the tender submission non-responsive.**

NAME (Block Capitals):

Date

SIGNATURE:

.....

\_\_\_\_\_

.....

---

**4) DECLARATION WITH RESPECT TO THE OCCUPATIONAL HEALTH AND SAFETY ACT**

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**Definitions**

The Act: The Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and any associated / applicable Regulations.

**Declaration by Tenderer**

1. I, the undersigned, hereby declare and confirm that I am fully conversant with the Act.
2. I hereby declare that my company has the competence and the necessary resources to safely carry out the work / supply / services under this contract in compliance with the Act, and the Employer's / Purchaser's / Client's Health and Safety Specifications.
3. I hereby undertake, if my tender is accepted, to provide on request a suitable and sufficiently documented Health and Safety Plan which plan shall be subject to approval by the Employer / Purchaser / Client.
4. I hereby confirm that adequate provision has been made in my tendered rates to cover the cost of all resources, actions, training and all health and safety measures envisaged in the Act, and that I will be liable for any penalties that may be applied by the Employer / Purchaser / Client for failure to comply with the provisions of the Act.
5. I agree that my failure to complete and execute this declaration to the satisfaction of the Employer / Purchaser / Client will mean that I am unable to comply with the requirements of the Act and accept that my tender will be prejudiced and may be rejected at the discretion of the Employer / Purchaser / Client.

**NAME (Block Capitals):****Date****SIGNATURE:**

**5(a) MBD 4: DECLARATION OF INTEREST****NOTES**

MSCM Regulations: "in the service of the state" means to be:

- (a) a member of:
  - (i) any municipal council.
  - (ii) any provincial legislature.
  - (iii) the national Assembly or the national Council of provinces.
- (b) a member of the board of directors of any municipal enterprise.
- (c) an official of any municipality or municipal enterprise.
- (d) an employee of any national or provincial department, national or provincial public enterprise or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999).
- (e) a member of the accounting authority of any national or provincial public enterprise.
- (f) an employee of Parliament or a provincial legislature.

"Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

- 1 No bid will be accepted from persons **in the service of the state**.
- 2 Any person, having a kinship with persons **in the service of the state**, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to **persons in service of the state**, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.
- 3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Name of enterprise

Name of enterprise's representative

3.2 ID Number of enterprise's representative

3.3 Position enterprise's representative occupies in the enterprise

3.4 Company Registration number

3.5 Tax Reference number

3.6 VAT registration number

3.7 The names of all directors / trustees / shareholders / members / sole proprietors / partners in partnerships, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below. In the case of a joint venture, information in respect of each partnering enterprise must be completed and submitted.

3.8 Are you presently in the service of the state?

If yes, furnish particulars:

.....  
 .....

3.9 Have you been in the service of the state for the past twelve months?

If yes, furnish particulars:

.....  
 .....

Circle Applicable

YES

NO

YES

NO

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

YES

NO

If yes, furnish particulars:

.....

.....

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?

YES

NO

If yes, furnish particulars:

.....

.....

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES

NO

If yes, furnish particulars:

.....

.....

3.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES

NO

If yes, furnish particulars:

.....

.....

3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract?

YES

NO

If yes, furnish particulars:

.....

.....

- 4 The names of all directors / trustees / shareholders / members / sole proprietors / partners in partnerships, their individual identity numbers and state employee numbers must be indicated below. In the case of a joint venture, information in respect of each partnering enterprise must be completed and submitted

Full Name	Identity No.	State Employee No.	Personal income tax No.
Use additional pages if necessary			

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct.*

NAME (Block Capitals):

.....

Date

.....

SIGNATURE:

.....

5(b) **MBD 5: DECLARATION FOR PROCUREMENT ABOVE R10 MILLION**  
**(ALL APPLICABLE TAXES INCLUDED)**

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire.

		Circle Applicable	
		YES	NO
1.0	Are you by law required to prepare annual financial statements for auditing?		
1.1	<b>If YES, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.</b>		
2.0	Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?	YES	NO
2.1	If NO, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.		
2.2	If YES, provide particulars. ..... .....		
3.0	Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?	YES	NO
3.1	If YES, provide particulars. ..... .....		
4.0	Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?	YES	NO
4.1	If YES, provide particulars. ..... .....		

**If required by 1.1 above, tenderers are to include, at the back of their tender submission document, a printout of their audited annual financial statements.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, and, if required, that the requested documentation has been included in the tender submission.*

NAME (Block Capitals):

Date

SIGNATURE:

**5(c) MBD 6.1: PREFERENCE POINTS CLAIM**  
**In terms of THE PREFERENTIAL PROCUREMENT REGULATIONS (2022)**

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

**NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022**

**1.0 GENERAL CONDITIONS**

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included).
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The applicable preference point system for this tender is the **80/20 preference point system**.

1.3 Preference Points for this tender shall be awarded for:

- **Price** and **Specific Goals**: 80 and 20 (specific goals), in terms of 1.2 above.
- The total Preference Points, for Price and Specific Goals, is 100.

1.4 Failure on the part of the tenderer to submit the required proof or documentation, in terms of the requirements in the (Special) Conditions of Tender for claiming **Specific Goal** preference points, will be interpreted that preference points for **Specific Goals** are not claimed.

1.5 The Municipality reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard of preferences, in any manner required by the Municipality.

**2.0 DEFINITIONS**

2.1 “**tender**” means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation.

2.2 “**price**” means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts.

2.3 “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes.

2.4 “**tender for income-generating contracts**” means a written offer in the form determined by Municipality in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the Municipality and a third party that produces revenue for the Municipality, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions.

2.5 “**the Act**” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

### 3.0 FORMULA FOR CALCULATION OF PREFERENCE PRICE POINTS

#### 3.1 PROCUREMENT OF GOODS AND SERVICES

**PRICE POINTS:** A maximum of 90 points is allocated for price on the following basis:

##### 90 / 10 Points System

$$P_s = 90 \left( 1 - \frac{P_t - P_{min}}{P_{min}} \right)$$

Where:

$P_s$  = Points scored for price of tender under consideration

$P_t$  = Price of tender under consideration

$P_{min}$  = Price of lowest acceptable tender

#### 4.0 POINTS AWARDED FOR SPECIFIC GOALS

4.1 In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the **points claimed** for the goal(s) stated in **Table 1** below, as supported by proof/ documentation stated in the **Conditions of Tender**:

4.2 In cases where the municipality intends to use Regulation 3(2) of the Regulations, which states that if it is unclear whether the 80/20 or 90/10 preference point system applies, the municipality must, in the tender documents, stipulate in the case of:

- (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system, or
- (b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the municipality must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

**TABLE 1:** Specific Goals for the tender and maximum points for each goal are indicated per the table below.

**Tenderers are to indicate their points claim for each of the Specific Goals in the shaded blocks.**

The Specific Goals to be allocated points in terms of this tender	Maximum Number of points ALLOCATED (90/10 system)	GOAL WEIGHTING	Number of points CLAIMED (10/10 system)	Proof of Claim from *CSD Registration Report
				Report Date: 2024 – MM – YY
<b>Ownership Goal:</b> Race (black)	7.5	75		<b>B-BBEE Information</b>  Black Ownership %
<b>RDP Goal:</b> The promotion of South African owned enterprises.	2.5	25		<b>Supplier Address Information:</b>
<b>Total CLAIMED Points (10 Maximum)</b>				

I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, certify that the points claimed, based on the specific goals as specified in the tender, qualifies the tendering entity for the preference(s) shown.

I acknowledge that:

- 1) The information furnished is true and correct.
- 2) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.
- 3) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct.
- 4) If the specific goals have been claimed or obtained on a fraudulent basis, or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have:
  - (a) disqualify the person from the tendering process.
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct.
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation.
  - (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
  - (e) forward the matter for criminal prosecution, if deemed necessary.

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**

**5(d) MBD 8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES**

- 1.0 This Municipal Bidding Document must form part of all bids invited.
- 2.0 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3.0 The bid of any bidder may be rejected if that bidder, or any of its directors have:
- abused the municipal entity's supply chain management system or committed any improper conduct in relation to such system.
  - been convicted for fraud or corruption during the past five years.
  - wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years.
  - been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4.0 In order to give effect to the above, the following questions must be completed and submitted with the bid.

- 4.1 Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?

(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer / Authority of the institution that imposed the restriction after the audi alteram partem rule was applied.)

The Database of Restricted Suppliers now resides on the National Treasury's website ([www.treasury.gov.za](http://www.treasury.gov.za)) and can be accessed by clicking on its link at the bottom of the home page.

- 4.1.1 If YES, provide particulars.

.....

.....

- 4.2 Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?

The Register for Tender Defaulters can be accessed on the National Treasury's website ([www.treasury.gov.za](http://www.treasury.gov.za)) by clicking on its link at the bottom of the home page.

- 4.2.1 If YES, provide particulars.

.....

.....

- 4.3 Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?

- 4.3.1 If YES, provide particulars.

.....

.....

Circle Applicable	
YES	NO

YES	NO
-----	----

YES	NO
-----	----

4.5 Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?

**5(e) MBD 9: CERTIFICATE OF INDEPENDENT BID DETERMINATION****NOTES**

- <sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.
- <sup>2</sup> Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.
- <sup>3</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

- 1.0 This Municipal Bidding Document (MBD) must form part of all **bids**<sup>1</sup> invited.
- 2.0 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or **bid rigging**).<sup>2</sup> Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3.0 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
- a. take all reasonable steps to prevent such abuse;
  - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
  - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
- 4.0 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of **bid rigging**.
- 5.0 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid.

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

-----  
(Bid Number and Description)

in response to the invitation for the bid made by:

-----  
(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect.

I certify, on behalf of:

-----  
(Name of Bidder)

that:

1. I have read and I understand the contents of this Certificate.
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect.
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
  - (a) has been requested to submit a bid in response to this bid invitation.
  - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience.
  - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement, or arrangement with any competitor. However, communication between partners in a joint venture or consortium<sup>3</sup> will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - (a) prices.
  - (b) geographical area where product or service will be rendered (market allocation).
  - (c) methods, factors or formulas used to calculate prices.
  - (d) the intention or decision to submit or not to submit, a bid.
  - (e) the submission of a bid which does not meet the specifications and conditions of the bid.
  - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements, or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

NAME (Block Capitals):

Date

SIGNATURE:

## **SECTION 5: CONDITIONS OF CONTRACT**

### **GOVERNMENT PROCUREMENT: CONDITIONS OF CONTRACT (July 2010)**

The **Conditions of Contract** are the **General Conditions of Contract** as published by the National Treasury titled "Government Procurement: General Conditions of Contract (July 2010), as amended by National Treasury Circular 52 dated 30 July 2010, hereinafter referred to as **GCC**.

**THE NATIONAL TREASURY**

**Republic of South Africa**



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**GOVERNMENT PROCUREMENT:  
GENERAL CONDITIONS OF CONTRACT**

**July 2010**

## **TABLE OF CLAUSES**

1.	Definitions.....	32
2.	Application.....	32
3.	General .....	32
4.	Standards.....	33
5.	Use of contract documents and information inspection .....	33
6.	Patent Rights.....	33
7.	Performance security .....	33
8.	Inspections, tests and analyses .....	33
9.	Packing.....	33
10.	Delivery and documents.....	33
11.	Insurance .....	33
12.	Transportation .....	33
13.	Incidental Services .....	34
14.	Spare parts.....	34
15.	Warranty.....	34
16.	Payment.....	34
17.	Prices.....	34
18.	Variation orders.....	34
19.	Assignment .....	34
20.	Subcontracts .....	34
21.	Delays in the supplier's performance.....	34
22.	Penalties .....	35
23.	Termination for default .....	35
24.	Anti-dumping and countervailing duties and rights.....	35
25.	Force Majeure.....	35
26.	Termination for insolvency.....	35
27.	Settlement of Disputes .....	36
28.	Limitation of Liability .....	36
29.	Governing language.....	36
30.	Applicable law.....	36
31.	Notices .....	36
32.	Taxes and duties .....	36
33.	Transfer of contracts .....	36
34.	Amendments of contracts .....	36
35.	Prohibition of restrictive practices .....	36

**1. Definitions**

The following terms shall be interpreted as indicated:

- 1.1 "Closing time" means the date and hour specified in the bidding documents for the receipt of bids.
- 1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.
- 1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- 1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.
- 1.6 "Country of origin" means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 1.7 "Day" means calendar day.
- 1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.
- 1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.
- 1.10 "Delivery into consignee store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the goods are so delivered and a valid receipt is obtained.
- 1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.
- 1.12 "Force majeure" means an event beyond the control of the supplier and not involving the supplier's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 1.13 "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.
- 1.14 "GCC" means the General Conditions of Contract.
- 1.15 "Goods" means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

- 1.16 "Imported content" means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the goods covered by the bid will be manufactured.
- 1.17 "Local content" means that portion of the bidding price, which is not included in the imported content provided that local manufacture does take place.
- 1.18 "Manufacture" means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.
- 1.19 "Order" means an official written order issued for the supply of goods or works or the rendering of a service.
- 1.20 "Project site," where applicable, means the place indicated in bidding documents.
- 1.21 "Purchaser" means the organization purchasing the goods.
- 1.22 "Republic" means the Republic of South Africa.
- 1.23 "SCC" means the Special Conditions of Contract.
- 1.24 "Services" means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.
- 1.25 "Supplier" means the successful bidder who is awarded the contract to maintain and administer the required and specified service(s) to the State.
- 1.26 "Tort" means in breach of contract.
- 1.27 "Turnkey" means a procurement process where one service provider assumes total responsibility for all aspects of the project and delivers the full end product / service required by the contract.
- 1.28 "Written" or "in writing" means hand-written in ink or any form of electronic or mechanical writing.

**2. Application**

- 2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services (excluding professional services related to the building and construction industry), sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.
- 2.2 Where applicable, special conditions of contract are also laid down to cover specific goods, services or works.
- 2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

**3. General**

- 3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.
- 3.2 Invitations to bid are usually published in locally distributed news media and on the municipality/municipal entity website.

**4. Standards**

- 4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

**5. Use of contract documents and information inspection**

- 5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.
- 5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.
- 5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

**6. Patent Rights**

- 6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.
- 6.2 When a supplier developed documentation / projects for the municipality / municipal entity, the intellectual, copy and patent rights or ownership of such documents or projects will vest in the municipality / municipal entity.

**7. Performance security**

- 7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the [amount specified in SCC](#).
- 7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.
- 7.3 The performance security shall be denominated in the currency of the contract or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:
- (a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
  - (b) a cashier's or certified cheque.
- 7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, [unless otherwise specified](#).

**8. Inspections, tests and analyses**

- 8.1 All pre-bidding testing will be for the account of the bidder.
- 8.2 If it is a bid condition that goods to be produced or services to be rendered should at any stage be subject to inspections, tests and analyses, the bidder or contractor's premises shall be open, at all reasonable hours, for inspection by a representative of the purchaser or organization acting on behalf of the purchaser.

- 8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

- 8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the goods to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

- 8.5 Where the goods or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such goods or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

- 8.6 Goods and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

- 8.7 Any contract goods may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected goods shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with goods, which do comply with the requirements of the contract. Failing such removal the rejected goods shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute goods forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected goods, purchase such goods as may be necessary at the expense of the supplier.

- 8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 22 of GCC.

**9. Packing**

- 9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.
- 9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, [including additional requirements](#), if any, and in any subsequent instructions ordered by the purchaser.

**10. Delivery and documents**

- 10.1 Delivery of the goods and arrangements for shipping and clearance obligations, shall be made by the supplier in accordance with the terms [specified in the contract](#).

**11. Insurance**

- 11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery [in the manner specified](#).

**12. Transportation**

- 12.1 Should a price other than an all-inclusive delivered price be required, [this shall be specified](#).

**13. Incidental Services**

13.1 The supplier may be required to provide any or all of the following services, **including additional services**, if any:

- (a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;
- (b) furnishing of tools required for assembly and/or maintenance of the supplied goods;
- (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
- (d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
- (e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

**14. Spare parts**

14.1 **As specified**, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

- (a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and;
- (b) in the event of termination of production of the spare parts:
  - (i) advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
  - (ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

**15. Warranty**

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, **unless specified otherwise**.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, **within the period specified** and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) **within the period specified**, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

**16. Payment**

16.1 The method and conditions of payment to be made to the supplier under this contract **shall be specified**.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand **unless otherwise stipulated**.

**17. Prices**

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any **price adjustments authorized** or in the purchaser's request for bid validity extension, as the case may be.

**18. Variation orders**

18.1 In cases where the estimated value of the envisaged changes in purchase does not vary more than 15% of the total value of the original contract, the contractor may be instructed to deliver the goods or render the services as such. In cases of measurable quantities, the contractor may be approached to reduce the unit price, and such offers may be accepted provided that there is no escalation in price.

**19. Assignment**

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

**20. Subcontracts**

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

**21. Delays in the supplier's performance**

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the **time schedule prescribed** by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the goods are required, or the supplier's services are not readily available.

- 21.4 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of penalties.
- 21.5 Upon any delay beyond the delivery period in the case of a goods contract, the purchaser shall, without cancelling the contract, be entitled to purchase goods of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.
- 22. Penalties**
- 22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.
- 23. Termination for default**
- 23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:
- if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;
  - if the supplier fails to perform any other obligation(s) under the contract; or
  - if the supplier, in the judgement of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
- 23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner, as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.
- 23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.
- 23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the supplier as having no objection and proceed with the restriction.
- 23.5 Any restriction imposed on any person by the purchaser will, at the discretion of the purchaser, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the purchaser actively associated.
- 23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:
- the name and address of the supplier and / or person restricted by the purchaser;
  - the date of commencement of the restriction
  - the period of restriction; and
  - the reasons for the restriction.
- These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.
- 23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.
- 24. Antidumping and countervailing duties and rights**
- 24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the supplier to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the supplier in regard to goods or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.
- 25. Force Majeure**
- 25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.
- 25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.
- 26. Termination for insolvency**
- 26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the purchaser.

**27. Settlement of Disputes**

- 27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.
- 27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.
- 27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.
- 27.4 Notwithstanding any reference to mediation and/or court proceedings herein,
- (a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
  - (b) the purchaser shall pay the supplier any monies due the supplier for goods delivered and / or services rendered according to the prescripts of the contract.

**28. Limitation of Liability**

- 28.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6;
- (a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and
  - (b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

**29. Governing language**

- 29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

**30. Applicable law**

- 30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified.

**31. Notices**

- 31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.
- 31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

**32. Taxes and duties**

- 32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.
- 32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.
- 32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid SARS must have certified that the tax matters of the preferred bidder are in order.
- 32.4 No contract shall be concluded with any bidder whose municipal rates and taxes and municipal services charges are in arrears.

**33. Transfer of Contracts**

- 33.1 The contractor shall not abandon, transfer, cede assign or sublet a contract or part thereof without the written permission of the purchaser.

**34. Amendment of contracts**

- 34.1 No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.

**35. Prohibition of restrictive practices**

- 35.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) is / are or a contractor(s) was / were involved in collusive bidding.
- 35.2 If a bidder(s) or contractor(s) based on reasonable grounds or evidence obtained by the purchaser has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in section 59 of the Competition Act No 89 Of 1998.
- 35.3 If a bidder(s) or contractor(s) has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

## **SECTION 6: SPECIAL / ADDITIONAL CONDITIONS OF CONTRACT**

The **Conditions of Contract** make reference to the **Special Conditions of Contract (SSC)** for details that apply specifically to this bid. The **Special Conditions of Contract** shall have precedence in the interpretation of any ambiguity or inconsistency between it and the **Conditions of Contract**.

Each item below is cross-referenced to the clause in the **Conditions of Contract** to which it mainly applies.

### **SCC 1.2 CONTRACT**

This contract will commence on seven days from letter of award and shall terminate 36 months thereafter, (including non-working days).

### **SCC 7.1 PERFORMANCE SECURITY**

The liability of the Performance Security shall be Nil.

### **SCC 16.1 PAYMENT**

The Contractor shall submit to the Department concerned a detailed account which shall reflect the identifying number of each item / service. Payment will be made on this account when checked and substantiated by the authorised official.

Payment for goods received and accepted by the Municipality shall be made no later than 30 days after submission of invoice or claim, provided however that all the terms of the contract are duly complied with.

Payment will be made only to the supplier. Factoring arrangements will not be accepted.

### **SCC 17 PRICES**

Prices are fixed for the first 12-month period, and thereafter adjusted annually using the CPI per province (KwaZulu-Natal) as specified on table A (Consumer Price Index: Main indices) of Statistical Release P0141 published by Statistics South Africa.

### **SCC 21.1 DELAYS IN THE SUPPLIER'S PERFORMANCE**

The time schedule for the delivery of goods from the placement of an order is 6 weeks.

### **SCC 22.1 PENALTIES**

Replace this clause with the following:

"If the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price (as a penalty):

- A penalty of 5% of the order value for each day delivery is delayed.

The purchaser may also consider termination of the contract pursuant to GCC Clause 23."

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**ADDITIONAL CONDITIONS OF CONTRACT**

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**ACC1      PERFORMANCE MONITORING & ASSESSMENT OF SERVICE PROVIDERS**

For contract awards that are greater than R10m, the Contractor shall be subjected to "Performance Monitoring" assessments in terms of the applicable Section of the Council's current Supply Chain Management Policy.

**ACC2      QUALITY OF PRODUCTS**

No inferior products will be accepted under this enquiry.

Should there be any cause for complaint against the standard of service or quality of products offered which is not resolved within a period of 10 working days, the Municipality reserves the right to cancel the contract after serving one month's notice, in writing, to the supplier involved. Should such notice be given, the supplier shall nevertheless be obliged to perform the duties covered by the contract up to the date of expiration of the period of notice.

**ACC4      ESTIMATED QUANTITIES**

The quantities stated in Section 8 are applicable for evaluation purposes only. The final quantity of goods and services required shall vary, depending on the total number of actual instances a service/goods will be required over the Contract Period. The rates tendered shall be applicable, irrespective of the total quantity of goods and services procured over the contract duration.

## **SECTION 7: SCOPE AND SPECIFICATION OF REQUIRED SUPPLY / SERVICES**

### **1.0 Scope of Supply / Services**

This specification provides for the design, manufacture, testing, supply, delivery and off-loading of LED street lighting luminaires to the following specification for a period not exceeding 36 months from date of commencement of contract.

### **2.0 BID INFORMATION**

- 2.1** The anticipated commencement date for this contract is 01 March 2025
- 2.2** Bidders may submit alternatives which in the bidder's opinion are to eThekweni Municipality's advantage economically and technically. Full technical details of these alternative offer(s) shall be submitted with bid documents. Alternate bid(s) shall be submitted on separate copies of the **Bid Form(s)**.
- 2.3** Bidders shall submit bid prices, in South African Currency, on the **Bid Form** for the estimated quantities given.
- 2.4** The quoted bid prices shall include delivery charges to and off loading at eThekweni Electricity, Main Stores, 11 Electron Road, (off Umgeni Road), Springfield, Durban, South Africa, unless otherwise specified.
- 2.5** Bidders shall give full technical and descriptive details as outlined under **Schedule 10** and submit related literature and drawings for the items offered. Failure to supply full information may render the bid liable to disqualification.
- 2.7** All drawings and documentation submitted shall become the property of eThekweni Municipality.
- 2.8** The cost of all tests required in this specification shall be borne by the bidder. Payment for deliveries shall not be made until test certificates have been submitted and approved.
- 2.9** Price, availability, and both installation and maintenance costs to eThekweni Municipality will be taken into account in the adjudication process.
- 2.10** EThekweni Municipality reserves the right to accept more than one technically and contractually compliant bid for part or the whole of the contract and to place orders on the basis of price and availability.
- 2.11** Bidders shall not bind eThekweni Municipality to any minimum quantity per order.
- 2.12** The successful bidder shall be bound to supply whatever quantities eThekweni Municipality may actually require during the period of the contract, irrespective of the extent to which the total quantities ordered may be in excess of or below the estimated quantity for the period described.
- 2.13 Calculation of Scheme Price**
- a) Each bidder shall submit an encrypted data file containing the information called for in clause 2.2.1 of ARP 035:2014.
  - b) This data will be captured into a Lighting Design Package such as Relux, Dialux Ulysse, WRTL etc and a price per kilometer shall be calculated based upon the price per luminaire submitted and the formula published in the Annexure to Bid Form.
  - c) The scheme price calculated by eThekweni Electricity shall take preference over the Bidders submitted price.
- 2.14 Should a contract be awarded, and it is subsequently established that clause 44 has been breached; eThekweni Electricity reserves the right to terminate the contract with immediate**

**effect.**

Note: Clause 44 refers to the SCM Regulations which states:

The accounting officer must ensure that irrespective of the procurement process followed, no award may be given to a person –

- a) who is in the service of the state; or
- b) if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state; or
- c) a person who is an advisor or consultant contracted with the municipality or municipal entity.

### 3.0 **OPERATING CONDITIONS AND NORMATIVE REFERENCES**

- 3.1 The equipment shall be designed to operate satisfactorily when subjected to the following operating conditions:

3.1.1	Climate	Humid, salt-laden and sub-tropical
3.1.2	Altitude	From sea-level to 1 000 m
3.1.3	Ambient temperature	From -5°C to 40°C
3.1.4	Maximum relative humidity	98%
3.1.5	Mean annual value of solar radiation	1.0 kW/m <sup>2</sup>
3.1.6	Average total annual rainfall figure	1 000 mm
3.1.7	Pollution	Heavy marine and industrial
3.1.8	Lightning level/lightning ground flash density	high/up to 5 flashes per km <sup>2</sup> per year
3.1.9	Lowest/Highest system phase-to-earth voltage	207/253 V
3.1.10	Nominal supply frequency	50 Hz
3.1.11	System neutral earthing	Solidly
3.1.12	Nominal supply voltage	230 V ±10%
3.1.13	Wind speed with 3s gusts	44m/s
3.1.14	Average annual solar irradiance	1 000 kWh/m <sup>2</sup>

- 3.2 The following documents contain provisions that, whether referenced in the text or not, constitute requirements of this specification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Note that the National equivalent of IEC standards is generally the same but may include specific variations to be considered. Information on currently valid national and international standards can be obtained from the South African Bureau of Standards.

3.2.1	CIE Publication 27	Photometry of luminaires for street lighting
3.2.2	IEC 60598-1	Luminaires - Part 1: General requirements and tests
3.2.3	IEC 60598-2-3	Luminaires - Part 2: Particular requirements - Section 3: Luminaires for road and street lighting
3.2.4	ISO 4762	Hexagon socket head cap screws
3.2.5	SANS 475 or IEC Equivalent	Luminaires for interior lighting, streetlighting and floodlighting Performance requirements
3.2.6	SANS 529 or IEC Equivalent	Heat-resisting wiring cables
3.2.7	SANS 121 or IEC Equivalent	Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.
3.2.8	SANS 1088 or IEC Equivalent	Luminaire entries and spigots

3.2.9	SANS 1091 or IEC Equivalent	Natural colour standards for paints
3.2.10	SANS 60529 or IEC Equivalent	Degrees of protection provided by enclosures (IP Code)
3.2.11	SANS 1507 or IEC Equivalent	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 3: PVC Distribution cables
3.2.12	SANS 1574 or IEC Equivalent	Electric flexible cores, cords and cables with solid extruded dielectric insulation Part 3: PVC-insulated cores and cables
3.2.13	SANS 1630 or IEC Equivalent	Starting devices (other than glow starters)
3.2.14	SANS ARP 035 or IEC Equivalent	Guidelines for the installation and maintenance of street lighting
3.2.15	OHSACT (Act 85 of 1993)	Occupational Health and Safety Act and Regulations
3.2.16	SANS 61000-3-2 or IEC Equivalent	Electromagnetic compatibility (EMC) Part 3-2: Limits — Limits for harmonic current emissions (equipment input current $\leq 16$ A per phase)
3.2.17	IEC 61000-4-5	Electromagnetic compatibility (EMC) - Surge immunity test
3.2.18	IEC 55015	Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment
3.2.19	IEC 5502	Information technology equipment. Radio disturbance characteristics
3.2.20	SANS 62384 or IEC Equivalent	DC or AC supplied electronic control gear for LED modules - Performance requirements.
3.2.21	ARP 035	Guidelines for the installation and maintenance of street lighting
3.2.22	SATS 17576:2014: SABS STANDARDS DIVISION	Technical specification for Light-emitting diode products for interior lighting, streetlighting and floodlighting — Performance requirements
3.2.23	ANSI C62.41	IEEE Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits
3.2.24	ANSI C78-377A	Specifications for the Chromaticity of Solid-State Lighting Products
3.2.25	IEC 62471	Photo biological safety of lamps and lamp systems
3.2.26	IEC/PAS 62722-2-1	Luminaire performance – Part 2.1: Particular requirements for LED luminaires
3.2.27	IEC/PAS 62717	LED modules for general lighting – Performance requirements
3.2.28	IES LM-79-08	Electrical and Photometric Measurements of Solid-State Lighting Products
3.2.29	IES LM-80-08	Measuring Lumen Maintenance of LED Light Sources
3.2.30	IES TM 21-11	Projecting Long Term Lumen Maintenance of LED Light Sources
3.2.31	SANS 215 or IEC Equivalent	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
3.2.32	SANS 9001 or IEC Equivalent	Quality management systems - Requirements
3.2.33	SANS 10098-1 or IEC Equivalent	Public lighting Part 1: The lighting of public thoroughfares
3.2.34	SANS 10313 or IEC Equivalent	Protection Against Lightning – Physical Damage to Structures and Life Hazard
3.2.35	SANS 51706 or IEC Equivalent	Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties
3.2.36	SANS 60598-1 or IEC Equivalent	Luminaires: Part 1. General Requirements and Tests
3.2.37	SANS 60598-2-3 or IEC Equivalent	Luminaires Part 2-3: Particular requirements - Luminaires for road and street lighting
3.2.38	SANS 61547 or IEC Equivalent	Equipment for general lighting purposes – EMC immunity requirements

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<b>3.2.39</b>	SANS 62262 or IEC Equivalent	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
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Bidders shall note that, as all standards are subject to revision, they are encouraged to investigate the possibility of applying the most recent edition of the above standard.

## **TECHNICAL SPECIFICATION**

### **4.0 PART 1: TECHNICAL REQUIREMENTS OF LED STREETLIGHTING LUMINAIRES (ITEMS 1 TO 4)**

#### **4.1 General**

**4.1.1** The luminaires shall be delivered completely assembled with housing, driver, LED module and protector lens.

**4.1.2** Luminaires shall be Class 1 of IEC 60598-1 and be of the totally enclosed type.

**4.1.3** The colour temperature of the luminaires shall be neutral white, 4 000K. No other colour temperature shall be accepted.

**4.1.4** The colour rendering index of the luminaires shall be 70 (minimum).

**4.1.5** Street lighting installation design

- For each luminaire, a lighting scheme must be designed that complies with the parameters set out in Schedule 10.1 to 10.11: Design Data and the requirements of SANS 10098-1.
- Pole spacing increments of 1 m must be considered in the design calculations.
- The design results must be entered into Schedule 10.1 to 10.11 and the cost of ownership must be calculated in accordance with the formulae set out in Schedule 10.1 to 10.11
- The assessment of tenders may be based on scheme designs for new installations if there is a large variation in wattage or pole spacing which would negatively affect the long-term cost of ownership. Tenders based on designs that do not comply with the requirements of the SANS 10098-1 values in Schedule 10.1 to 10.11 existing or new installations will be considered non-responsive.
- The performance of LED luminaires shall be verified by designing the lighting of the appropriate road as per SANS ARP 035 or IEC Equivalent. The required design criteria values are shown in Annexure to Bid Form, Annexure B1 and B2. The actual design data and results, and encrypted luminaire data files in an electronic format suitable for use with Relux/Dialux Lighting Design Software shall be stored on a flash drive and submitted with the bid documents. Design spacing on Annexure B2 form to be in 0,5 m increments.
- The photometric data used must be as defined in CIE 140 and must be sourced from an independent accredited testing Photometric Laboratory.
- The luminaire price used to calculate the scheme price must be the same as offered in the Price Schedule 10.1 to 10.11
- The luminaire luminous flux used must be the same as entered into Annexure B2 Technical Data.

**4.1.6** Luminaires shall at a minimum save the percentage of energy (rated wattage), as defined in the below table, when compared to the luminaire they are designed to replace, as shown in the table below:

Therefore considering the table below, the maximum wattages for the LED replacement luminaires shall be as follows:

<b>Item</b>	<b>HID Luminaire Lamp Type and Wattage</b>	<b>LED Equivalent Luminaire: Minimum % Saving Compared to HID Luminaire Wattage (rated wattage)</b>
1 and 1.1	80W Mercury Vapour (actual power consumption = 92W)	Minimum of 60% Saving
2 and 2.1	150W High Pressure Sodium (actual power consumption = 179W)	Minimum of 60% Saving
3 and 3.1	250W High Pressure Sodium (actual power consumption = 278W)	Minimum of 60% Saving
4 and 4.1	400W High Pressure Sodium (actual power consumption = 432W)	Minimum of 60% Saving

- 4.1.7** The luminaires shall deliver 80% of the initial lumens, when installed for a minimum of 80 000 hours. The bidder shall provide a lumen depreciation graph by means of the IES LM 80-08 data of the LEDs. The LED light source test data shall provide the expected data for at least 25% of rated LED light source lifetime, i.e. 15 000hrs

The following information and conditions shall be met and the manufacturer shall supply test data that includes, but is not limited to, the following:

- The LED light source(s) have been tested according to LM-80-08.
- The LED drive current specified by the luminaire manufacturer is less than or equal to the drive current specified in the LM-80 test report.
- The LED light source(s) manufacturer prescribes/indicates a temperature measurement point (Ts) on the light source(s).
- The Ts is accessible to allow temporary attachment of a thermocouple for measurement of in-situ temperature. Access via a temporary hole in the housing, tightly resealed during testing with putty or other flexible sealant is allowable.
- For the hottest LED light source in the luminaire, the temperature measured at the Ts is less than or equal to the temperature specified in the LM-80 test report for the corresponding drive current.

- 4.1.8** Lifespan estimation deterioration curves of LED to be submitted for various design currents, e.g. 350 mA, 500 mA, 700 mA, etc.

- 4.1.9** Luminaires shall further comply with the following standards:  
IEC 55015 "Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment"  
IEC 5502 "Information technology equipment. Radio disturbance characteristics."  
IEC 61000-4-5 "Electromagnetic compatibility (EMC) - Surge immunity test"

- 4.1.10** The luminous intensity distribution must be non-axial asymmetric to approval.

- 4.1.11** Luminaires are to provide a light output ratio as stated in Schedule 10.1 to 10.11 and have an upward light output ratio of less than 0.1%

- 4.1.12** The complete luminaire and components must comply generally with ARP 035 and with the requirements listed in Annexure Data.

- 4.1.13** The useful life of the luminaire must be stated as the operating hours before the light output of the complete luminaire, not the LEDs only, has reached 70% of the initial light output at the performance ambient temperature specified. Useful lifetime must be clearly stated as follows:  
H80,000 L70 B10

## **4.2 DEGREES OF PROTECTION AND IP RATING**

- 4.2.1** The degree of protection against ingress must comply with SANS 60598-2-3 and the categories must be:

- Lamp compartment: IP 66
- Control gear compartment: IP 66
- Where a luminaire has a single compartment, the whole structure is to be rated at IP66.
- The IP rating is to be certified in accordance with SANS 60598-2-3. Test certificates/reports pertaining to each type of luminaire offered must be submitted with the tender or within 3 days of written request.

- 4.2.2** The degree of protection against mechanical impacts must be a minimum of IK 08 to SANS 62262.

### 4.3 **CONSTRUCTION OF LUMINAIRES**

- 4.3.1** The luminaire housing must be robustly constructed of marine grade high-pressure die-cast aluminium (LM6 / EN 1706 AC-44300 or better) to SANS 51706 it is to be weatherproof, hail proof, corrosion proof and vandal resistant. A composite vandal resistant non-degrading polymer housing is likewise acceptable.
- 4.3.2** The luminaires shall contain a heat sink with no fans, pumps or liquids, and the design of the heat sink shall prevent the accumulation of dirt and nesting of insects or ants, thus ensuring effective heat dissipation. Heat from the LED source should take the shortest path to the exterior by direct conduction or any other reliable form of cooling that will not compromise the useful life of the LEDs.
- 4.3.3** The cooling fins shall be designed in such a manner to prevent the accumulation of dirt, thus ensuring the continuous effective cooling. Additionally the top surface shall be curved in shape to allow swift water dissipation.
- 4.3.4** The luminaires shall have die cast aluminium housings and shall be of grade LM6 (EN1706 AC44300DF or higher) aluminium alloy. Bidders shall submit a metallurgical report from an independent metallurgist confirming the grade of aluminium for all the luminaires offered. EThekwini Municipality reserves the right to submit luminaires for metallurgical testing when necessary.
- 4.3.5** All metal components must be suitably treated against corrosion for coastal conditions. Ferrous components must be hot dip galvanised to SANS121. Hinge pins, clips, clamps, set screws, bolts, nuts and washers must be manufactured from an appropriate grade of stainless steel and are to be to the approval of the Engineer.
- 4.3.6** Small components (such as toggle clips, bolts, screws, nuts, washers) shall be manufactured of stainless steel (grade 304 or better)
- 4.3.7** Due attention shall be paid to the accessibility of parts and to other requirements necessary for efficient maintenance and cleaning, where required. If screws are used to secure covers, they shall be held captive when opened.
- 4.3.8** The driver shall be mounted internally and be replaceable with the aid of commonly available hand tools.
- 4.3.9** A long lasting 15 year lubricant must be applied to every serviceable screw, bolt, nut so as to allow for ease of opening and closing during the luminaire lifetime.
- 4.3.10** Luminaire closure are to be by means of single movement clip mechanisms made from either aluminium or stainless steel and secured by a tamper-proof screw to minimise theft and vandalism.
- 4.3.11** The LED compartment cover must be manufactured from smooth clear heat tempered, impact resistant glass to IK08 or smooth clear high-impact acrylic or polycarbonate to IK10 impact resistance. Protection ratings against mechanical impacts as prescribed in SANS 62262. Gaskets must be fitted with a silicon gasket seal. The cover should preferably be fixed to the luminaire housing but access to clean the cover should be possible.
- 4.3.12** Silicon rubber gaskets must be fitted into a groove in the housing and are to be kept in place such that the integrity of the IP rating is ensured. The gaskets are to be screened against harmful radiation from the light source.
- 4.3.13** The Luminaire housing must be designed so that there is no direct rainwater contact with the gasket between the housing and the LED compartment cover, thus ensuring that no moisture is drawn into the luminaire when the luminaire is switched off and cools down.
- 4.3.14** Fixing devices, junctions, lips and the like are to be designed to shed water. Pockets and ledges in which condensation may accumulate are to be avoided.
- 4.3.15** Tenderers are to provide full details of the optical and thermal properties of the diffuser as well as the light transmission depreciation over a period of not less than 15 years.

- 4.3.16** The spigot entry must comply with SANS 1088 Table 1 and have a backstop to limit the depth of entry of the spigot. The luminaire must be secured to the spigot by at least two ISO standard metric stainless steel set screws which must prevent the luminaire from rotating about the spigot when in service. In the case of post-top mounted luminaires, at least three screws must be used. Other means of fixing the luminaire to the spigot are to be to the approval of the Engineer. The housing must be of adequate strength to obviate cracking when the screws are tightened onto the spigot.
- 4.3.17** Luminaire entries are to be of a material that is inherently corrosion resistant and compatible with the galvanised mild steel supporting spigot to such a degree that deterioration by electrolytic action will not occur.
- 4.3.18** The luminaire must be designed to afford access for cleaning and maintenance and for access to replaceable parts without the need for special tools. Securing screws must be held captive when loosened.
- 4.3.19** Luminaires are to be designed to prevent jamming injuries during installation and be free of sharp edges.
- 4.3.20** Luminaires are to be designed to prevent the supply cable being damaged during installation.
- 4.3.21** The side entry luminaires are to automatically disconnect the supply to the power supply once the luminaire is opened.
- 4.3.22** Protection against electric shock (of at least IP 2X) are to be maintained for all methods and positions of installation in normal use. Protection is to also be maintained after removal of all parts that can be removed by hand.
- 4.3.23** All terminals are to be shrouded to IP2X so that live parts cannot be accidentally touched. They are to be fitted with group 1 classification; current valid certification must be provided.
- 4.3.24** The luminaires are to be designed to prevent no part of the luminaire can detach itself from the pole i.e. no secondary missiles are deflected into, or onto, traffic or pedestrians.
- 4.3.25** Luminaires are to be so designed as to promote the self- cleaning process.
- 4.3.26** A long lasting 15-year lubricant must be applied to every serviceable screw, bolt, and nut to allow ease of opening and closing during the luminaire lifetime.
- 4.3.27** Where a specific luminaire is superseded by a more energy efficient model, the new model will be submitted for re-approval and then supplied at the original tendered price.
- 4.3.28** Where the top section of the luminaire is easily removable, a vandal-proof M8 stainless steel grub screw must be fitted with a centre pin of 1.8mm diameter and pin length of 3mm using a 4mm allen key with 2mm hole.
- 4.3.29** Due to many luminaires on our standard 9m and 12m steel poles being fed via overhead 25mm<sup>2</sup> AL ABC conductors, there is no accommodation for the mains wiring to be legally and safely inserted into the luminaire. In this regard, a 20mm hole should be drilled on the underside of the luminaire in a suitable position of the wiring compartment and must not interfere with access to components, spigot entry nor cause any other hindrance. The 20mm hole, glanded with IP66 rating on all luminaires

#### **4.4** **MOUNTING**

- 4.4.1** EThekwini Electricity's street light arms are inclined at 15° to the horizontal. If the luminaire offered is designed to be installed at 0° it shall have a mechanism to allow adjustment back to 0°. The luminaire shall be clearly marked with angles of inclination, and full details of how to adjust the angle of inclination shall be supplied. The angle of inclination must be clearly stated as this affects design data.

- 4.4.2** Luminaire entries shall be of a material that is inherently corrosion resistant and compatible with the galvanised mild steel supporting spigot to such a degree that deterioration by electrolytic action will not occur.
- 4.4.3** Spigot entries shall be designed to fit easily over the bracket pipe and shall be truly parallel to the fitting axis and shall comply with Table 1 of SANS 1088:1990 or IEC Equivalent as follows:
- a) For Type 2 luminaires (side entry): Nominal size - 42 mm.
- 4.4.4** The luminaire shall be secured on its spigot by at least two stainless steel M8 screws as specified in ISO 4762, which are screwed into stainless steel sockets or any other methods to prevent cathodic corrosion between stainless steel and aluminium. The construction of the housing shall be such that cracking cannot occur during the process of fixing the luminaire to the pole or bracket. The attachment of the luminaire should be designed to withstand wind speeds of up to 150 km/h on the projected surface of the luminaire without due deflection.
- 4.5** **PROTECTOR**
- 4.5.1** The protector, for the optical (LED) compartment, shall be high-impact, toughened, clear flat glass.
- 4.5.2** A protector, when fitted, shall form a seal completely preventing the entry of moisture, dust and insects into the optical (LED) compartment. A one-piece gasket of silicon sponge material shall be used for this purpose. Gaskets shall not deteriorate or suffer permanent deformation due to light, heat or compression, to which they will be exposed in practice, during the life of the luminaire.
- 4.5.3** The gasket shall be fitted into a groove in the housing and shall be seated in a manner ensuring the integrity of the IP66 rating and shall not work loose during maintenance of the luminaire.
- 4.6** **POWER SUPPLY OR DRIVER REQUIREMENTS**
- 4.6.1** The dimmable drivers for the LED module(s) shall be housed fully within the body of the luminaire and be suitable for operation with the specified rating of luminaire.
- 4.6.2** The output frequency of the drivers shall be 100 Hz or greater, to avoid visible flicker.
- 4.6.3** The harmonic distortion levels of the LED module driver(s) shall comply with the limits given in SANS 61000-3-2 or IEC Equivalent.
- 4.6.4** The LED module driver(s) shall operate at a power factor of 0,95 or greater, and the total harmonic distortion levels shall be less than 20% so as to not cause interference on the electrical network.
- 4.6.5** The control gear (or driver) compartment shall be sealed in the same manner as described in items 4.5.2 and 4.5.3.
- 4.6.6** The control gear (or driver) compartment shall be so designed that there is sufficient space to permit repairs, replacement of components and reassembly without difficulty and without the removal of the luminaire from its mounting.
- 4.6.7** The power supply or driver shall be able to withstand surges of up to 10kV/10kA by means of an external, inline fused surge protection device, which may be mounted externally onto the NEMA base socket as described in 4.8 or easily replaceable clip-on/push-on type surge protection with a non-slip, firm grip internally mounted. This method should not involve a process of disconnecting and/or reconnecting wires. This surge protection device shall be easily replaceable, and it shall fail in an open circuit mode to protect the luminaire from further surges.
- 4.6.8** The lifetime of the power supply or driver shall be 60 000 hrs with 90% survival over the lifetime.
- 4.7** **EARTHING**
- 4.7.1** The luminaire shall be earthed in accordance with Clause 13 of the Electrical Machinery Regulations of the OHSACT (Act 85 of 1993).
- 4.7.2** Metal parts of luminaires which may become alive in the event of an insulation fault, and which are not accessible when the luminaire is mounted but liable to come into contact with the supporting

surface shall be permanently and reliably connected to an earthing terminal and shall withstand the test specified in IEC 60598-2-3.

- 4.7.3 Protection against electric shock shall be maintained for all methods and positions of installation in normal use. Protection shall also be maintained after removal of all parts which can be removed by hand.
- 4.7.4 Earthing terminals shall comply with sub-clause 7.2 of IEC 60598-1. All parts of an earth terminal shall be made of brass or other corrosion resistant metal and the contact surfaces shall be bare metal and not painted or varnished surfaces.
- 4.7.5 All earth connections shall be effected by means of suitable lugs appropriately made to avoid all possibility of electrolytic corrosion.
- 4.7.6 An earth connection shall be provided in all instances, even if the luminaire is fully insulated and even if all conductive parts, which could become alive in the event of an insulation fault, are not accessible. This is to facilitate future wiring should the luminaire be replaced by a unit which requires an earth connection.

#### 4.8 **INTEGRATED PHOTOELECTRIC CONTROL UNIT (ITEMS 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1)**

- 4.8.1 If required, as per schedule A, the luminaire shall be supplied complete with a photoelectric control unit receptacle mounted on the top surface of the luminaire in a position where it is least likely to be affected by luminaire heat.
- 4.8.2 The photocell devices receptacle shall be the ANSI C136.41 – Locking Type receptacle (NEMA 7pin socket), with ground, for dimming control. This receptacle is suitable for use with a standard 3pin photoelectric control unit and the 7pin (or contacts) version for dimming control.
- 4.8.3 The photoelectric unit receptacle (NEMA base) shall comply with NRS 025. Each photoelectric control unit receptacle shall indicate on its base each terminal as line, load or neutral.
- 4.8.4 The photocell receptacle shall be fitted to a flat surface on the luminaire and secured by means of at least four fixing screws. The receptacle shall form a watertight joint with the luminaire body. Sealing gaskets manufactured from cork will not be acceptable.
- 4.8.5 Contacts within the photocell receptacle base shall be manufactured from brass, copper or other acceptable corrosion-resistant material that is galvanically compatible with copper.
- 4.8.6 The photocell receptacle shall be wired into the luminaire circuit ready for use.
- 4.8.7 Each luminaire shall be supplied with a clip-on rubber or durable material receptacle cover, over the NEMA receptacle, to prevent the ingress of dirt or water during storage and installation until such time as a photocell can be fitted to the unit.

4.8.7.1 The photoelectric control unit must be a miniature integrated type.

4.8.7.2 The PECU switches ON level of 50lx and 25lx OFF with +/- 10% accuracy

4.8.7.3 The PECU has an input voltage protection and max pulse power of 500W @ 25°C

4.8.7.4 The PECU lifetime is designed to match lifetime of luminaire of 10 years.

4.8.7.5 Input Overvoltage Protection: Clamp 17.1A @ 29.2V 10/1000us pulse

4.8.7.7 The operating ambient temperature -40°C to 80°C

4.8.7.7 The unit has a green status LED. This LED is ON when the LED module is OFF to indicate power to the unit.

4.8.7.8 The unit is to have a test option for ease of maintenance.

#### 4.9 **EARTHING AND WIRING**

- 4.9.1 The internal wiring of the luminaires shall be flexible and suitably insulated to withstand the voltage and the temperature encountered in service. Wiring colours shall be: live-brown (or red), neutral-blue (or black) and earth-green/yellow.

- 4.9.2** Wiring to the LED module compartment shall be suitably grommited, ensuring a perfect seal between compartments and protection of the wiring.
- 4.9.3** All metal parts of the luminaire must be connected to a suitable earth terminal.
- 4.9.4** The internal wiring of the luminaires is to be flexible and suitably insulated to withstand the voltage and the temperatures encountered while the luminaires are in service.
- 4.9.5** Connections are to be brought to a suitable heat resistant screw type plug in terminal block using Silicone heat resistant wiring. The terminal blocks are to be securely fixed to the luminaire body. The terminals are to be indelibly marked either by means of colour coding or by the letters L, N & E.
- 4.9.6** The supply terminals are to be suitable to accept 4mm<sup>2</sup> wiring and be easily accessible. No part of the cover is to damage the supply wires when closed.
- 4.9.7** Wiring to the LED module compartment are to be suitably grommited, ensuring a perfect seal between compartments and protection of the wiring.
- 4.9.8** All earth connections are to be by means of suitable lugs appropriately sourced and crimped to avoid all possibility of electrolytic corrosion.
- 4.9.9** Aluminium terminals will not be acceptable. All terminals are to be made of copper, brass or other corrosion resistant metal and the contact surfaces are to be bare metal and not painted or varnished surfaces.
- 4.10** **ORIENTATION**
- 4.10.1** EThekwini Electricity uses the European convention which assumes the zero-degree horizontal plane to be parallel to the kerb. If the US convention is used which assumes the zero-degree horizontal plane to be 90 degrees to the kerb; this must be noted on the Annexure B1 and B2, scheme price form.

**4.11** **LUMEN PACKAGES**

HID Luminaire Lamp Type and Wattage	Lumens (Minimum) of LED Replacement Luminaire
80W Mercury Vapour	4 500 lumens
150W High Pressure Sodium	8 000 lumens
250W High Pressure Sodium	14 000 lumens
400W High Pressure Sodium	28 000 lumens

**5.0** Maximum weight of LED streetlight luminaires:

Item	Maximum Mass, including Control Gear Housing
1 and 1.1	8 Kg
2 and 2.1	10 Kg
3 and 3.1	10 Kg
4 and 4.1	15 Kg

## 6.0 **LED STREETLIGHT LUMINAIRE MARKINGS**

- 6.1 Each luminaire shall be distinctly marked with black writing on a white background using 25 mm high lettering on the outside of the control gear compartment, such that it is clearly visible from the ground, with the following information:
- 6.1.1 Rated wattage of luminaire **and lamp type** in accordance with the description specified in Schedule A, e.g. 50 W **LED**; and
- 6.1.2 The name of supplier followed by the luminaire model, e.g. **SUPPLIER X AND LUMINAIRE MODEL NAME**.
- 6.2 Each luminaire shall bear the name or trade mark of the **manufacturer** and the **date of manufacture**
- 6.3 Luminaires delivered without the specified markings shall be rejected.

## 7.0 **LED STREETLIGHT LUMINAIRE PACKAGING**

- 7.1 Each luminaire shall be delivered completely assembled ready for use and shall be individually packed in suitable containers such as cardboard boxes. The containers shall be marked with appropriate description and stock code of the luminaire contained within.
- 7.2 Except as specified otherwise, the method of marking must comply with SANS 60598-1 and are to be to the approval of the Engineer.
- 7.3 Each luminaire is to be distinctly marked with black writing on a white background using 25 mm high lettering on the outside of the control gear compartment, such that it is clearly visible from the ground, with the following information: The lettering must be black, a minimum of 25 mm high and on a background colour G80 (cloud white) to SANS 1091.
- 7.4 Luminaires must be delivered fully assembled and ready for use and packed in robust, triple-walled cardboard boxes each containing no more than two luminaires. The boxes must be marked with the maximum number of boxes allowed to safely stack vertically.
- 7.5 A description of the luminaires, manufacturer, model number and SAP commodity code must be marked on the outside of the box.
- 7.6 Luminaires delivered without the specified markings are to be rejected and returned to the supplier at no cost to the eThekweni Municipality.
- 7.7 The Contractors are to be responsible for the packing, loading, transport and off-loading of the LED Street Light Luminaires from the place of manufacture, whether this is at his own works or those of any supplier, to the Employer's Electricity Stores and are to provide all labour, plant and material necessary for the offloading.
- 7.8 The method of packing is to provide adequate protection for transportation of the LED street light luminaire. The method of packing and precautions to be taken during transport are to be clearly detailed by the Contractor.
- 7.9 Any loose parts are to be boxed in substantial crates or containers to facilitate handling in a safe and secure manner. Each crate or container are to be marked clearly on the outside of the case to show where the mass is bearing and the correct position for the slings.
- 7.10 Each crate or container are to also be marked with the notation of the part or parts contained therein, contract number and port of destination, and are to become the property of the Employer after delivery. Any damage due to defective or insufficient packing or that occurs during loading, transport or off-loading of the LED Street luminaries are to be made good by the Contractor at his own expense and within reasonable time when called upon by the Employer to do so.
- 7.11 The Contractors are to inform himself fully as to all relevant transport facilities and requirements and loading gauges and ensure that the equipment as packed for transport complies with the South African highway regulations and/or conforms to the limitations of the transport facilities of Transnet

Ltd. The Contractors are to also be responsible for verifying the adequacy of any cranes required for off-loading at the port of entry, at the Employer's Electricity Stores and at Site.

- 7.12 The Contractors are to take reasonable steps to prevent damage to any highways or bridges by his traffic and are to select routes, choose and use vehicles and restrict and distribute loads so that the risk of damage is to be limited as far as is reasonably possible. The Contractors are to immediately report to the Engineer any claims made against him arising out of alleged damage to a highway or bridge.

- 7.13 Access to the Stores is by road only.

## **8.0 PART 2: TECHNICAL REQUIREMENTS OF LED FLOODLIGHT LUMINAIRES (ITEMS 5, 5.1, 6 and 6.1)**

For LED **Floodlight** luminaires the same specifications shall apply as per the LED streetlight (PART 1), as detailed above, excepting for substitutions, modifications and additions, specified as follows:

### **8.1 Item 4.4 Mounting**

This shall be substituted and read as follows:

#### **Mounting Stirrup**

- 8.1.1 For items 5, 5.1, 6 and 6.1 - The stirrup shall be manufactured from 60mm x 6mm hot-dipped galvanized steel.
- For item 7 and 7.1 - The stirrup shall be manufactured from 80mm x 7mm hot-dipped galvanized steel, due to the increased weight.
- 8.1.2 A 12mm hole shall be provided for single bolt mounting in the centre of the stirrup.
- 8.1.3 Where floodlight luminaires are fitted with an adjustable bracket on the spigot entry compartment, the 230V mains wires entering the spigot entry must not be compromised, nor be susceptible to damage during adjustment. If this cannot be avoided due to practical reasons, a 20mm hole must be inserted into the bottom of the luminaire into the gear compartment and must be fitted with a PVC cable gland to achieve an IP66 rating.

## **9.0 FLOODLIGHT OPTICS**

- 9.1.1 The optics shall be of a wide distribution. However, this may be changed on request by Ethekwini Municipality, for any project specific requirements.

## **10.0 PART 3: TECHNICAL REQUIREMENTS OF SUBSTATION AND SPORTSFIELD LED FLOODLIGHT LUMINAIRES (ITEMS 7, 7.1, 8, 8.1, 11 and 11.1)**

For Substation LED **Floodlight** luminaires, the same specifications shall apply as per the LED floodlight luminaires (PART 2), as detailed above, excepting for substitutions, modifications and additions, specified as follows:

- 10.1 The power supply or driver shall be able to withstand surges of up to 20kV/20kA. This surge protection shall be easily replaceable, and it shall fail in an open circuit mode to protect the luminaire from further surges.
- 10.2 The supply terminals shall accept at least 4mm<sup>2</sup> wires and be easily accessible. No part of the cover shall damage the supply wires when closed.
- 10.3 The stirrup shall be manufactured from 6mm x 80mm hot-dipped galvanized steel.
- 10.4 The optics shall be of a narrow and medium beam floodlighting distribution.

**11.0 POWER SUPPLY OR DRIVER REQUIREMENTS****11.1** Substitute item 4.6.7 as follows:

The power supply or driver shall be able to withstand surges of up to 20kV/20kA. This surge protection device shall be easily replaceable, and it shall fail in an open circuit mode to protect the luminaire from further surges.

The inline fused surge protection device may be mounted externally onto the NEMA base socket as described in 4.8 or via an easily replaceable clip-on/push-on type device with a non-slip firm grip, internally mounted. The latter method should not involve a process of disconnecting and/or reconnecting wires.

**12.0** Luminaires shall at a minimum save the percentage of energy (rated wattage), as defined in the below table, when compared to the luminaire they are designed to replace:

Item	HID Luminaire Lamp Type and Wattage	LED Equivalent Luminaire: Minimum % Saving Compared to HID Luminaire Wattage (rated wattage)
5 and 5.1	250W High Pressure Sodium	Minimum of 60% Saving
6 and 6.1	400W High Pressure Sodium	Minimum of 50% Saving
7 and 7.1	400W High Pressure Sodium	Minimum of 40% Saving
8 and 8.1	1000W Metal Halide	Minimum of 60% Saving
11 and 11.1	2000W Metal Halide	Minimum of 50% Saving

**13.0 LUMEN PACKAGES**

The minimum lumen packages for the LED replacement luminaires shall be as follows:

Item	HID Luminaire Lamp Type and Wattage	Lumens (Minimum) of LED Replacement Luminaire
5 and 5.1	250W High Pressure Sodium	15 000 lumens
6 and 6.1	400W High Pressure Sodium	30,000 lumens
7 and 7.1	400W High Pressure Sodium	36,000 lumens
8 and 8.1	1000W Metal Halide	60,000 lumens
11 and 11.1	2000W Metal Halide	150 000 lumens

**14.0** Maximum weight of LED floodlight luminaires:

Item	Maximum Mass, including Control Gear Housing
5 and 5.1	10 Kg
6 and 6.1	15 Kg
7 and 7.1	15 Kg
8 and 8.1	15 Kg
11 and 11.1	20 Kg

## 15.0 **PART 4: TECHNICAL REQUIREMENTS OF DECORATIVE LED POST TOP MOUNTED LUMINAIRES (ITEMS 9 AND 9.1)**

For LED **Post Top** luminaires the same specifications shall apply as per the LED streetlight (PART 1), as detailed above, excepting for substitutions and additions, specified as follows:

15.1 The LED post top luminaire shall be able to meet the lighting criteria for Group C roads, as required.

15.2 Luminaires shall at a minimum save the percentage of energy (input power), as defined in the below table, when compared to the luminaire they are designed to replace, as shown in the table below:

Item	HID Luminaire Lamp Type and Wattage	LED Equivalent Luminaire: Minimum % Saving Compared to HID Luminaire Wattage
9 and 9.1	80W Mercury Vapour	Minimum of 60% Saving

15.3 The luminaires shall deliver 80% of the initial lumens, when installed for a minimum of 80 000 hours. The bidder shall provide a lumen depreciation graph by means of the IES LM 80-08 data of the LEDs.

15.4 The cooling fins shall be designed in such a manner to prevent the accumulation of dirt, thus ensuring the continuous effective cooling.

15.5 The Post Top shall be a LED replacement for the existing 80W MV Post Tops at a mounting height varying between 5 m. The tenderer shall provide a photometric design proving that the offered unit can replace the 80 W MV units and at least retain the same lux levels as before.

15.6 Bottom entry casting shall be suitable for 76mm diameter pole.

15.7 The luminaire shall be secured on its spigot by at least three stainless steel screws.

15.8 The protector, for the optical (LED) compartment, shall be manufactured of polycarbonate material for optimum strength (IK10) and durability.

15.9 The overall shape of the Top Cover shall be similar to a "Truss Head" screw, as shown Figure 1: LED Post Top Luminaire. Equivalent Replacement of the 80 W HPMV Post Top luminaire. Due consideration shall be given to the luminaire shape, style and design.

15.10 The maximum weight of the LED Post Top luminaire shall be 5Kg.

### 15.11 **LUMEN PACKAGES**

The minimum lumen packages for the LED replacement luminaires shall be as follows:

HID Luminaire Lamp Type and Wattage	Lumens (Minimum) of LED Replacement Luminaire
80W Mercury Vapour	3,500 lumens

15.12 The LED Post Top luminaire shall be supplied with Symmetrical or asymmetrical optic distribution.

## 16.0 **LED LUMINAIRE DOCUMENTATION**

16.1 Full technical and descriptive details, relating to all the items offered in this enquiry (except where mentioned), shall be submitted so the offer can be fully evaluated. This shall include:

16.1.1 Actual design data and results, and encrypted luminaire data files in an electronic format.

16.1.2 Name of LED luminaire;

16.1.3 The method of manufacture of the LED luminaire;

16.1.4 The dimension & weight of the LED luminaire;

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- 16.1.5 The self-cleaning properties of the luminaire;
- 16.1.6 The cooling mechanism of the luminaire to adequately dissipate heat;
- 16.1.7 Standards to which the luminaire conforms to (National & International);
- 16.1.8 Specify life span of LED Module driver(s) or Power Supply; and
- 16.2 Failure to submit such information may preclude further consideration of the bid.
- 17.0 LED LUMINAIRE TEST REPORTS**
- 17.1 Failure to provide test reports of the following tests called for may result in the rejection of the Bid:
- 17.1.1 Type test according to IEC 60598-1:2004 and IEC 60598-2-3:2003.
- 17.1.2 IP rating test reports for all items offered in accordance with SANS 60529 or IEC Equivalent.
- 17.1.3 A separate ambient temperature (Ta rating) test report shall be provided, in accordance with SANS 475 or IEC Equivalent.
- 17.1.4 The test reports shall be issued by SANS or IEC accredited test authority.
- 17.1.5 Bidders shall submit a metallurgical report confirming the grade of aluminium of the aluminium housings.
- 17.1.6 Certified data from a recognised test authority regarding degradation of the material and depreciation of light transmission under working conditions, i.e. temperature and ultra-violet irradiation for the following:
- a) material of the body;
  - b) material of the protector; and
  - c) material of the optic lenses.
- 17.1.7 The performance test reports should include the following:
- a) Photometric requirements;
  - b) Static wind force test;
  - c) External and internal wiring;
  - d) Protection against electric shock;
  - e) Thermal tests;
  - f) Power factor;
  - g) Resistance to corrosion;
  - h) Insulation resistance and electric strength;
  - i) Resistance to heat, fire and tracking; and
  - j) Accelerated ageing tests.
- 17.2 An encrypted luminaire data file for each luminaire offered in an electronic format suitable for use with the Relux Lighting Design Software package. The encrypted data file shall be produced by an accredited independent laboratory. This data file shall be supplied on a flash drive with each bid.
- 17.3 Failure to submit such information may preclude further consideration of the bid.
- 18.0 LIGHT-EMITTING DIODES (LED)**
- 18.1 The average maintained correlated colour temperature of the luminaire must comply with the value specified in Annexure B
- 18.2 The variation in the correlated colour temperature of the LEDs must be restricted in accordance with ANSI C78-377A with the variation limited to within 500 K of the nominal average correlated colour temperature.
- 18.3 The LEDs must have a colour consistency within 5 standard deviations of colour matching.
- 18.4 The lumen maintenance of the LED modules must be measured in accordance with IES LM-80-08. The measured data must be extrapolated to L70 using the method of IES TM-21-11.
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**19.0 STREETLIGHT LUMINAIRE SPARES**

- 19.1** Bidders shall state their recommendations regarding the stocking of spare parts, which will be ordered at the discretion of eThekweni Municipality and shall indicate whether such spare parts are available ex local stocks.
- 19.2** Any spare apparatus shall be subject to the same specification, tests and conditions as similar material supplied under the main contract.
- 19.3** Bidders shall guarantee that spare components of all types shall be available for a period of at least 5 years following contract award. The contractor will be required to give at least 12 months' notice of any sub-contractor's intention to cease the manufacture of any component.

**20.0 MATERIAL TESTING**

Luminaires offered may be subjected to an accelerated aging test to evaluate the design and quality of materials used.

**21.0 GUARANTEE**

- 21.1** Each luminaire provided are to carry an unconditional manufacturer's guarantee of 10 years /  $\geq 80\,000$  burning hours from date of manufacture. This guarantee excludes misuse, vandalism and the surge arrestor once operated. A guarantee to this effect must be provided in writing by the manufacturer and must include the eThekweni Municipality as a beneficiary thereof.
- 21.2** The aforesaid guarantee must provide that any luminaire that fails in service are to, on notification from the eThekweni, be collected from eThekweni Municipality - Lighting Works Branch, 11 Electron Road, Springfield Park, Durban and replaced or repaired by the manufacturer and returned to the same store within a period of 21 days from date of notification at no cost to the eThekweni Municipality.
- 21.3** Each luminaire is to be indelibly marked on the inside of the housing with the month and year of manufacture.
- 21.4** Where any dispute arises, between the tenderer and the Municipality, as to interpretation of any of the above clauses relating to the guarantee required, the matter is to be referred to the Engineer for clarification of the interpretation.
- 21.5** Street lighting luminaires bearing a date of manufacture exceeding four (4) months prior to the date of delivery are to not be accepted and are to be returned at the tenderers/manufacturers cost.

**22 ALTERNATIVE SUBMISSIONS**

- 22.1** Alternative submissions for luminaires fitted with integrated luminaire controllers for smart street lighting capabilities will be considered.
- 22.2** For the alternative submission, the bidder shall submit with their bid, specifications detailing the smart streetlight system capabilities, full test reports, photometric data and design data required under the technical specification.
- 22.3** Failure to submit such information may preclude further consideration of the alternative submission.

**23 SURGE PROTECTION**

- 23.1** The power supply or driver shall be able to withstand surges of up to 10kV/10kA by means of an internal, inline fused surge protection device (SPD), which may also be mounted externally onto the NEMA base socket as described in or easily replaceable clip-on on type surge protection with a non-slip, firm grip internally mounted. This surge protection device shall be easily replaceable, and it shall fail in an open circuit mode to protect the luminaire from further surges.
- 23.2** The SPD must comply with the requirements set out in Annexure B2.
- 23.3** Spares of SPD must be easily accessible and readily replaceable.

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**24     LED DRIVER / CONTROL GEAR**

- 24.1**     The LED driver must be housed within the body of the luminaire and must be replaceable using commonly available hand tools.
- 24.2**     The LED drivers are to operate at constant current and are to be housed in a separate gear compartment to LED modules. The drivers are to have a minimum operating efficiency of 95%.
- 24.3**     Drivers are to have a stable power consumption over the full operating voltage range.
- 24.4**     Heat generated in the luminaire must be managed to ensure that the components operate satisfactorily and within their rated temperature range. A heat sink should be provided without the need for fans, pumps or liquids to dissipate heat.
- 24.5**     The design of the heat sink shall prevent the accumulation of dirt and nesting of insects or ants, thus ensuring effective heat dissipation.
- 24.6**     The luminaires are to incorporate a temperature sensor. Once critical temperature is reached, the current is reduced to a safer level to allow temperature reduction to a safe level. This is to facilitate maintenance during daylight hours. Protection against overheating must be provided and must be arranged to reduce the LED lumen output sufficiently until the temperature has been restored to a safe level but must not de-energise the luminaire completely.

**SECTION 8: BILL OF QUANTITIES / SCHEDULE OF RATES / ACTIVITIES**

Item No	Stock Code	Description	*Estimated Annual Quantities	Delivery Rate
1	112409	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 80 Watt, HPMV, streetlight luminaire		As required
1.1	TBA	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 80 Watt, HPMV, streetlight luminaire		As required
2	112383	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 150 Watt, HPS/T, streetlight luminaire.		As required
2.1	TBA	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 150 Watt, HPS/T, streetlight luminaire.		As required
3	112417	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 250 Watt, HPS/T, streetlight luminaire.		As required
3.1	TBA	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 250 Watt, HPS/T, streetlight luminaire.		As required
4	TBA	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 400 W HPS/T streetlight luminaire.		As required
4.1	TBA	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 400 W HPS/T streetlight luminaire.		As required
5	11593	LED Floodlight Luminaire. Equivalent Replacement of the 250 Watt, HPS/T, Floodlight luminaire.		As required
5.1	TBA	LED Floodlight Luminaire with integrated PECU. Equivalent Replacement of the 250 Watt, HPS/T, Floodlight luminaire.		As required
6	TBA	LED Floodlight Luminaire, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.		As required
6.1	TBA	LED Floodlight Luminaire with integrated PECU, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.		As required
7	11594	Substation LED Floodlight Luminaire, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.		As required
7.1	TBA	Substation LED Floodlight Luminaire with integrated PECU, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.		As required
8	TBA	LED Floodlight Luminaire, Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.		As required
8.1	TBA	LED Floodlight Luminaire with integrated PECU, Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.		As required
9	TBA	LED Post Top Luminaire. Equivalent Replacement of the 80 W HPMV Post Top luminaire.		As required
9.1	TBA	LED Post Top Luminaire with integrated PECU. Equivalent Replacement of the 80 W HPMV Post Top luminaire.		As required
10	TBA	Decorative LED Streetlight Luminaire, side entry. Equivalent Replacement of the 250 W HPS/T streetlight luminaire.		As required
10.1	TBA	Decorative LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 250 W HPS/T streetlight luminaire.		As required
11	TBA	LED Floodlight Luminaire, Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.		As required
11.1	TBA	LED Floodlight Luminaire with integrated PECU. Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.		As required

**Note:** Bidders shall note that the historical usage patterns in no way indicate future trends. The above figures are provided for information purposes only, and in no way imply that future usage or buying patterns will be similar.

**SECTION 9 : OFFICIAL TENDER FORM**

**Part A: OFFER BY TENDERER** - In response to **Tender Number : 29437 - 5E** I / we hereby offer to supply the goods / services detailed hereunder in accordance with the Technical Specification, and subject to the Standard and Special Conditions of Tender (Goods/Services), and General and Special Conditions of Contract, which accompanied your Tender (with which I / we acknowledge myself / ourselves to be fully acquainted) at the price stated below, or in the case of individual rates are indicated in Section 8 : Bill Of Quantities / Schedule of Rates / Activities.

Item	Description / Item Code	Price per item excluding VAT		Price per item including VAT	
		R	c	R	c
1	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 80 Watt, HPMV, streetlight luminaire				
1.1	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 80 Watt, HPMV, streetlight luminaire				
2	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 150 Watt, HPS/T, streetlight luminaire.				
2.1	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 150 Watt, HPS/T, streetlight luminaire.				
3	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 250 Watt, HPS/T, streetlight luminaire.				
3.1	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 250 Watt, HPS/T, streetlight luminaire.				
4	LED Streetlight Luminaire, side entry. Equivalent Replacement of the 400 W HPS/T streetlight luminaire.				
4.1	LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 400 W HPS/T streetlight luminaire.				
5	LED Floodlight Luminaire. Equivalent Replacement of the 250 Watt, HPS/T, Floodlight luminaire.				
5.1	LED Floodlight Luminaire with integrated PECU. Equivalent Replacement of the 250 Watt, HPS/T, Floodlight luminaire.				
6	LED Floodlight Luminaire, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.				
6.1	LED Floodlight Luminaire with integrated PECU, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.				
7	Substation LED Floodlight Luminaire, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.				
7.1	Substation LED Floodlight Luminaire with integrated PECU, Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.				

Item	Description / Item Code	Price per item excluding VAT		Price per item including VAT	
		R	c	R	c
8	LED Floodlight Luminaire, Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.				
8.1	LED Floodlight Luminaire with integrated PECU, Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.				
9	LED Post Top Luminaire. Equivalent Replacement of the 80 W HPMV Post Top luminaire.				
9.1	LED Post Top Luminaire with integrated PECU. Equivalent Replacement of the 80 W HPMV Post Top luminaire.				
10	Decorative LED Streetlight Luminaire, side entry. Equivalent Replacement of the 250 W HPS/T streetlight luminaire.				
10.1	Decorative LED Streetlight Luminaire, side entry with integrated PECU. Equivalent Replacement of the 250 W HPS/T streetlight luminaire.				
11	LED Floodlight Luminaire, Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.				
11.1	LED Floodlight Luminaire with integrated PECU. Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.				

I / We hereby agree that this tender will hold good and remain open for acceptance as specified in the Conditions of Tender or during such other period as may be specified in the Special Conditions of Tender.

eThekwini Vendor Portal Registration Number:

PR

C.S.D Registration Number:

MAAA

S.A.R.S Pin Number:

**Completion of the following is compulsory. Failure to declare the following will invalidate your offer.**

#### Declaration of Interest

Are any of the entity's directors, managers, principle shareholder or stakeholders currently in the service of the state or have been in the service of the state in the past twelve (12) months?					<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is any spouse, child or parent of the entity's directors, managers, principle shareholder or stakeholder currently in the service of the state or have been in the service of the state in the past twelve (12) months?					<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Name of entity's member</b>	<b>Position in Entity</b>	<b>Name of Relative (if applicable)</b>	<b>Name of State Institution</b>	<b>Nature of Relationship</b>		
Do you or any other directors, managers, principle shareholder or stakeholder of your entity have any relationship (spouse, family, friend, associate) with persons in the service of the state and/or who may be involved with the evaluation of this quotation? If yes please furnish particulars below					<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Name of entity's member</b>	<b>Position in Entity</b>	<b>Name of Relative (if applicable)</b>	<b>Name of State Institution</b>	<b>Nature of Relationship</b>		

Refer to the Consolidated MBD Documents in Section 4(d) for the definition of "in service of the State"

* Signature :	_____	* Name ( <i>capitals</i> ):	_____
Date:	_____	Capacity:	_____
* Name of Business:	_____	Tel:	_____
Address:	_____	Fax:	_____
	_____		

\* Denotes Mandatory Information

**Failure to complete the Mandatory Information and sign this Tender Form will invalidate the tender**

**Part B: ACCEPTANCE BY PURCHASER** - The Purchaser, as represented by the following Official, hereby accepts the Tenderer's offer in terms of the Conditions of Tender, Specifications, and Conditions of Contract.

Signature:	Name ( <i>capitals</i> ):
Date:	Capacity:

**SECTION 10: ANNEXURES****RETURNABLE SCHEDULE 10.1(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 1: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 80 W HPMV streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	4800 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	80 Watt, HPMV, streetlight luminaire	
9	Rated maximum wattage of the luminaire	32W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	150 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 80 Watt HPMV streetlight luminaire	60%	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.1(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 1: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 80 W HPMV streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48mm - 50mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating :	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient (surge) protection mounting	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_

SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_

DATE: \_\_\_\_\_

YYYY - MM - DD

**SCHEDULE 10.1(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 1: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 80 W HPMV streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, driver/power supply etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	7Kg (Maximum )	kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**RETURNABLE SCHEDULE 10.1(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 1.1: LED Streetlight Luminaire with integrated PECU , side entry.**  
**Equivalent Replacement of the 80 W HPMV streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	4800 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	80 Watt, HPMV, streetlight luminaire	
9	Rated maximum wattage of the luminaire	32W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	150 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 80 Watt HPMV streetlight luminaire	60%	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.1(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 1.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 80 W HPMV streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48mm - 50mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating :	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient (surge) protection mounting	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
28.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
28.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.1(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 1.1: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 80 W HPMV streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, driver/power supply etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	7Kg (Maximum )	kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.2 (a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 2: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 150 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	9000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	150 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	60 W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	150 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 150 Watt HPS streetlight luminaire	60%	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6,EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.2 (a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 2: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 150 W HPS/T streetlight luminaire**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm-50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.2 (a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 2: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 150 W HPS/T streetlight luminaire**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, special tapped ballast, etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicabl

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.2 (b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 2.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 150 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	9000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	150 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	60 W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	150 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 150 Watt HPS streetlight luminaire	60%	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6,EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.2 (b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 2.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 150 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
28.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
28.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.2 (b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 2.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 150 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, special tapped ballast, etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.3(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 3: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	15 000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	250 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	100W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	150 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 250 Watt HPS streetlight luminaire	60 %	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.3 (a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 3: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.3 (a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 3: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, driver/power supply etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.3(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 3.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	15 000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	250 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	100W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	150 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 250 Watt HPS streetlight luminaire	60 %	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.3 (b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 3.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
28.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
28.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.3 (b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 3.1: LED Streetlight Luminaire with integrated PECU, side entry.  
Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b>Wiring</b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, driver/power supply etc)		
30	<b>Terminal Blocks</b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.4(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 4: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 400 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	28 000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	400 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	160 W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	175 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 400 Watt HPS streetlight luminaire	60 %	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.4 (a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 4: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 400 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.4 (a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 4: LED Streetlight Luminaire, side entry.**  
**Equivalent Replacement of the 400 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, driver/power supply etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	15Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.4(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 4.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 400 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	28 000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	400 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	160 W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	175 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 400 Watt HPS streetlight luminaire	60 %	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	20% of initial lumens (LM 80)	
17	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.4 (b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 4.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 400 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
28.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
28.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.4 (b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 4.1: LED Streetlight Luminaire with integrated PECU, side entry.**  
**Equivalent Replacement of the 400 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, driver/power supply etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	15Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.5(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 5: LED Floodlight Luminaire.**  
**Equivalent Replacement of the 250 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	15 000 lm (Minimum)	lm
7	Floodlight luminaire to be replaced	250 Watt, HPS/T, Floodlight luminaire	
8	Rated maximum wattage of the luminaire	100W (Maximum)	W
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K (neutral white)	K
11	Luminaire efficacy	150 lm/W (minimum)	lm/W
12	Colour rendering index	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED Floodlight compared to 250 Watt HPS Floodlight luminaire	60 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20% of initial lumens (LM 80)	
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	LM6, EN1706 AC-44300DF, (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.5(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 5: LED Floodlight Luminaire,  
Equivalent Replacement of the 250 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	≥10kV/10kA	
26	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.5(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 5: LED Floodlight Luminaire,  
Equivalent Replacement of the 250 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b>Wiring</b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b>Terminal Blocks</b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
28.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.5(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 5.1: LED Floodlight Luminaire with integrated PECU.**  
**Equivalent Replacement of the 250 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	15 000 lm (Minimum)	lm
7	Floodlight luminaire to be replaced	250 Watt, HPS/T, Floodlight luminaire	
8	Rated maximum wattage of the luminaire	100W (Maximum)	W
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K (neutral white)	K
11	Luminaire efficacy	150 lm/W (minimum)	lm/W
12	Colour rendering index	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED Floodlight compared to 250 Watt HPS Floodlight luminaire	60 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20% of initial lumens (LM 80)	
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	LM6, EN1706 AC-44300DF, (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.5(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 5.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 250 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	≥10kV/10kA	
26	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
26.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
26.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.5(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 5.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 250 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
28.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.6(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 6: LED Floodlight Luminaire,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	30 000 lm (Minimum)	lm
7	Floodlight luminaire to be replaced	400 Watt, HPS/T, Floodlight luminaire	
8	Rated maximum wattage of the luminaire	200 W (Maximum)	W
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 400 Watt HPS floodlight luminaire	50 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20 % of initial lumens (LM 80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	LM6, EN1706 AC-44300DF, (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.6(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 6: LED Floodlight Luminaire,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
26.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
26.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.6(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 6: LED Floodlight Luminaire,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
28.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	20Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.6(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 6.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	30 000 lm (Minimum)	lm
7	Floodlight luminaire to be replaced	400 Watt, HPS/T, Floodlight luminaire	
8	Rated maximum wattage of the luminaire	200 W (Maximum)	W
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 400 Watt HPS floodlight luminaire	50 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20 % of initial lumens (LM 80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	LM6, EN1706 AC-44300DF, (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.6(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 6.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
26.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
26.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.6(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 6.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b>Wiring</b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b>Terminal Blocks</b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
28.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	20Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.7(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 7: Substation LED Floodlight Luminaire,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	36 000 lm (Minimum)	lm
7	Floodlight luminaire to be replaced	400 Watt, HPS/T, Floodlight luminaire	
8	Rated maximum wattage of the luminaire	240 W (Maximum)	W
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 400 Watt HPS floodlight luminaire	40 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20 % of initial lumens (LM80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	LM6, EN1706 AC-44300DF, (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.7(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 7: Substation LED Floodlight Luminaire,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.7(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 7: Substation LED Floodlight Luminaire,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	20Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.7(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 7.1: Substation LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	36 000 lm (Minimum)	lm
7	Floodlight luminaire to be replaced	400 Watt, HPS/T, Floodlight luminaire	
8	Rated maximum wattage of the luminaire	240 W (Maximum)	W
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 400 Watt HPS floodlight luminaire	40 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20 % of initial lumens (LM80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	LM6, EN1706 AC-44300DF, (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.7(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 7.1: Substation LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
26.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
26.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.7(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 7.1: Substation LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 400 W HPS/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	20Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.8(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 8: LED Floodlight Luminaire,  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	60 000 lm (Minimum)	lm
8	Rated maximum wattage of the luminaire	400 W (Maximum)	W
7	Floodlight luminaire to be replaced	1000 Watt, MH, Floodlight luminaire	
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W(minimum)	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 1000 Watt MH floodlight luminaire	60 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	10 % of initial lumens (LM80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 67	
17	The grade of aluminium for LED Floodlight shall be:	Marine Grade (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or 316	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.8(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 8: LED Floodlight Luminaire,  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.8(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 8: LED Floodlight Luminaire,  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
28.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	15Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.8(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 8.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	60 000 lm (Minimum)	lm
8	Rated maximum wattage of the luminaire	400 W (Maximum)	W
7	Floodlight luminaire to be replaced	1000 Watt, MH, Floodlight luminaire	
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W(minimum)	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 1000 Watt MH floodlight luminaire	60 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	10 % of initial lumens (LM80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 67	
17	The grade of aluminium for LED Floodlight shall be:	Marine Grade (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or 316	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.8(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 8.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
26.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
26.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.8(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 8.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
28.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	15Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.9(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 9: LED Post Top Luminaire.**  
**Equivalent Replacement of the 80 W HPMV Post Top luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	3 500 lm (Minimum)	
7	Light Distribution	Symmetrical	
8	Number and type of optic distributions available	Minimum 10. Symmetrical, Asymmetrical, Circular	
9	Cooling fins integrated into the base casting?	Yes	Yes / No
10	Streetlight luminaire to be replaced	80 Watt, HPMV, Post Top luminaire	
11	Rated maximum wattage of the luminaire	32W (Maximum)	W
12	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
13	Colour temperature	4 000 K (neutral white)	K
14	Luminaire efficacy	110 lm/W (minimum)	lm/W
15	Colour rendering index	70 (minimum)	
16	Lighting design to comply with	SABS ARP 035	
17	Minimum energy saving by LED luminaire compared to 80 Watt HPMV streetlight luminaire	60 %	%
18	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20% of initial lumens (LM80)	
19	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
20	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
23	Does the luminaire have a heat sink?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.9(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 9: LED Post Top Luminaire.**  
**Equivalent Replacement of the 80 W HPMV Post Top luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
25	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
26	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
27	Type and nominal size of spigot entry	Bottom Entry, Inside Diameter suitable for 76 mm pole	mm
28	<b><u>Protector Lens</u></b>		
28.1	Material and strength of protector lens	High impact glass	
28.2	Material of gasket	silicon	
28.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
28.4	Material of small metal components	stainless steel (304)	
28.5	IP rating	IP66	
29	<b><u>Driver(s)</u></b>		
29.1	Driver specification with which drivers or power supply complies		
29.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
29.4	Type of Driver or power supply		
29.5	Power factor of the power supply	0,95 lagging (min)	
29.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
29.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
29.8	Transient (surge) protection mounting	NEMA socket mounted/internally plug in type	
29.9	Transient (surge) protection rating	≥10kV/10kA	
30	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.9(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 9: LED Post Top Luminaire.**  
**Equivalent Replacement of the 80 W HPMV Post Top luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
31	<b><u>Wiring</u></b>		
31.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
31.2	Voltage rating of wiring		V
31.3	Insulation material of wiring		
31.4	Circuit connection (series, parallel, driver/power supply etc)		
32	<b><u>Terminal Blocks</u></b>		
32.1	Material of terminals	Brass	
32.2	Insulating material of terminal block	porcelain or other equivalent material	
32.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
33	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
34	Gross mass of complete luminaire (excluding photoelectric control unit)	5Kg (Maximum )	kg
35	Packaging	One luminaire per cardboard box	
36	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
37	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
38	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
39	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.9(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 9.1: LED Post Top Luminaire with integrated PECU.**  
**Equivalent Replacement of the 80 W HPMV Post Top luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	3 500 lm (Minimum)	
7	Light Distribution	Symmetrical	
8	Number and type of optic distributions available	Minimum 10. Symmetrical, Asymmetrical, Circular	
9	Cooling fins integrated into the base casting?	Yes	Yes / No
10	Streetlight luminaire to be replaced	80 Watt, HPMV, Post Top luminaire	
11	Rated maximum wattage of the luminaire	32W (Maximum)	W
12	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
13	Colour temperature	4 000 K (neutral white)	K
14	Luminaire efficacy	110 lm/W (minimum)	lm/W
15	Colour rendering index	70 (minimum)	
16	Lighting design to comply with	SABS ARP 035	
17	Minimum energy saving by LED luminaire compared to 80 Watt HPMV streetlight luminaire	60 %	%
18	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20% of initial lumens (LM80)	
19	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
20	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
23	Does the luminaire have a heat sink?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_

SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_

DATE: \_\_\_\_\_

YYYY - MM - DD

**SCHEDULE 10.9(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 9.1: LED Post Top Luminaire with integrated PECU.  
Equivalent Replacement of the 80 W HPMV Post Top luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
25	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	
26	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
27	Type and nominal size of spigot entry	Bottom Entry, Inside Diameter suitable for 76 mm pole	mm
28	<b>Protector Lens</b>		
28.1	Material and strength of protector lens	High impact glass	
28.2	Material of gasket	silicon	
28.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
28.4	Material of small metal components	stainless steel (304)	
28.5	IP rating	IP66	
29	<b>Driver(s)</b>		
29.1	Driver specification with which drivers or power supply complies		
29.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
29.4	Type of Driver or power supply		
29.5	Power factor of the power supply	0,95 lagging (min)	
29.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
29.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
29.8	Transient (surge) protection mounting	NEMA socket mounted/internally plug in type	
29.9	Transient (surge) protection rating	≥10kV/10kA	
30	<b>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</b>		
30.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
30.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.9(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 9.1: LED Post Top Luminaire with integrated PECU.**  
**Equivalent Replacement of the 80 W HPMV Post Top luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
31	<b><u>Wiring</u></b>		
31.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
31.2	Voltage rating of wiring		V
31.3	Insulation material of wiring		
31.4	Circuit connection (series, parallel, driver/power supply etc)		
32	<b><u>Terminal Blocks</u></b>		
32.1	Material of terminals	Brass	
32.2	Insulating material of terminal block	porcelain or other equivalent material	
32.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
33	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
34	Gross mass of complete luminaire (excluding photoelectric control unit)	5Kg (Maximum )	kg
35	Packaging	One luminaire per cardboard box	
36	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
37	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
38	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
39	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.10(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 10: Decorative LED Streetlight Luminaire, side entry.****Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	14 000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	250 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	100W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	140 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 250 Watt HPS streetlight luminaire	60 %	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	10% of initial lumens	
17	Degree of protection to SANS 60529:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.10(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 10: Decorative LED Streetlight Luminaire, side entry.****Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b><u>Protector Lens</u></b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b><u>Driver(s)</u></b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.10(a) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 10: Decorative LED Streetlight Luminaire, side entry.****Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
29	<b><u>Wiring</u></b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, special tapped ballast, etc)		
30	<b><u>Terminal Blocks</u></b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years
38	Colour of the luminaire housing	White	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.10(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 10.1: Decorative LED Streetlight Luminaire with integrated PECU, side entry.  
Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekweni Electricity's Requirement	Bidder's Offer
1	Name of the LED luminaire manufacturer		
4	Manufacturer's identification reference		
5	Type of luminaire	LED	
6	What is the nominal flux at Tq of 35 °C?	14 000 lm (Minimum)	
7	Luminaire installation inclination angle		0
8	Streetlight luminaire to be replaced	250 Watt, HPS/T, streetlight luminaire	
9	Rated maximum wattage of the luminaire	100W (Maximum)	W
10	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
11	Colour temperature	4 000 K (neutral white)	K
12	Luminaire efficacy	140 lm/W (minimum)	lm/W
13	Colour rendering index	70 (minimum)	
14	Lighting design to comply with	SABS ARP 035	
15	Minimum energy saving by LED luminaire compared to 250 Watt HPS streetlight luminaire	60 %	%
16	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at Tq = 25°C	10% of initial lumens	
17	Degree of protection to SANS 60529:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
18	The grade of aluminium for LED luminaires shall be:	LM6, EN1706 AC-44300DF, (or higher)	
19	Does the luminaire have a heat sink?	Yes	*Yes/No
20	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121	
21	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or better	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.10(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 10.1: Decorative LED Streetlight Luminaire with integrated PECU, side entry.  
Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
22	Location of the LED drivers	Inside the luminaire housing	
23	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No
24	Type and nominal size of spigot entry	Side Entry, Inside Diameter – 48 mm - 50 mm	mm
25	Maximum length of spigot entry into luminaire	125 mm	mm
26	<b>Protector Lens</b>		
26.1	Material of protector lens	High impact glass	
26.2	Material of gasket	silicon	
26.3	Protection of ferrous components	hot-dip galvanised to SANS 121	
26.4	Material of small metal components	stainless steel (304)	
26.5	IP rating	IP66	
27	<b>Driver(s)</b>		
27.1	Driver specification with which drivers or power supply complies		
27.2	Driver make		
27.3	Voltage service range of driver		Input: V
			Output: V
27.4	Type of Driver or power supply		
27.5	Power factor of the power supply	0,95 lagging (min)	
27.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
27.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2	
27.8	Transient protection	NEMA socket mounted/internally plug in type	
27.9	Transient (surge) protection rating	≥10kV/10kA	
28	<b>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</b>		
28.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
28.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: YYYY - MM - DD

**SCHEDULE 10.10(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 10.1: Decorative LED Streetlight Luminaire with integrated PECU, side entry.  
Equivalent Replacement of the 250 W HPS/T streetlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
29	<b>Wiring</b>		
29.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
29.2	Voltage rating of wiring		V
29.3	Insulation material of wiring		
29.4	Circuit connection (series, parallel, special tapped ballast, etc)		
30	<b>Terminal Blocks</b>		
30.1	Material of terminals	Brass	
30.2	Insulating material of terminal block	porcelain or other equivalent material	
30.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
30.4	Are the terminal blocks housed externally from the driver compartment?	Yes	*Yes/No
31	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
32	Gross mass of complete luminaire (excluding photoelectric control unit)	10Kg (Maximum)	Kg
33	Packaging	One luminaire per cardboard box	
34	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
35	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
36	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
37	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years
38	Colour of the luminaire housing	White	

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM – DD

**SCHEDULE 10.11(a)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 11: LED Floodlight Luminaire,  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	150 000 lm (Minimum)	lm
8	Rated maximum wattage of the luminaire	1000 W (Maximum)	W
7	Floodlight luminaire to be replaced	2000 Watt, MH, Floodlight luminaire	
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W(minimum)	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 2000 Watt MH floodlight luminaire	50 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20 % of initial lumens (LM80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	Marine Grade (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or 316	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.11(a) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 11: LED Floodlight Luminaire,  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	Is the luminaire supplied complete with NEMA base socket, mounted on top of luminaire?	Yes	*Yes/No

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.11 (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 11: LED Floodlight Luminaire,  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	20Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

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NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.11(b)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 11.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
1	Name of the LED Floodlight manufacturer		
4	Manufacturer's identification reference		
5	Type of Floodlight luminaire	LED	
6	What is the nominal flux at T <sub>q</sub> of 35 °C?	150 000 lm (Minimum)	lm
8	Rated maximum wattage of the luminaire	1000 W (Maximum)	W
7	Floodlight luminaire to be replaced	2000 Watt, MH, Floodlight luminaire	
9	Class and type of luminaire	Class 1 of IEC 60598-1 and totally enclosed type	
10	Colour temperature	4 000 K	K
11	Luminaire efficacy	150 lm/W(minimum)	lm/W
12	Colour rendering index (minimum)	70 (minimum)	
13	Lighting design available, using software package	On Request	
14	Minimum energy saving by LED luminaire compared to 2000 Watt MH floodlight luminaire	50 %	%
15	Lumen Depreciation (max.) of the LED luminaire when installed for 60 000 hours, at T <sub>q</sub> = 25°C	20 % of initial lumens (LM80)	%
16	Degree of protection to SANS 60529 or IEC Equivalent:		
	a) LED Module compartment	minimum IP 66	
	b) Driver or power supply compartment	minimum IP 66	
17	The grade of aluminium for LED Floodlight shall be:	Marine Grade (or higher)	
18	Does the luminaire have a heat sink?	Yes	*Yes/No
19	Standard to which hot-dip galvanising all ferrous components comply with	SANS 121 or IEC Equivalent	
20	Steel grade for toggle clips, bolts, screws, nuts and washers	Grade 304 or 316	
21	Location of the LED drivers	Inside the luminaire housing	
22	Is the driver accessible and replaceable with the aid of commonly available hand tools	Yes	*Yes/No

\*Delete whichever is not applicable

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**SCHEDULE 10.11(b) (Continued)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 11.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
24	<b><u>Protector Lens</u></b>		
24.1	Material of protector lens	High impact glass	
24.2	Material of gasket	silicon	
24.3	Protection of ferrous components	hot-dip galvanised to SANS 121 or IEC Equivalent	
24.4	Material of small metal components	stainless steel (304 or 316)	
24.5	IP rating	IP66	
25	<b><u>Driver(s)</u></b>		
25.1	Driver specification with which drivers or power supply complies		
25.2	Driver make		
25.3	Voltage service range of driver		Input: V
			Output: V
25.4	Type of Driver or power supply		
25.5	Power factor of the power supply	0,95 lagging (min)	
25.6	Operating frequency	Input: 50 Hz	Hz
		Output ≥ 100 Hz	Hz
25.7	Harmonic distortion levels of driver or power supply to comply with	SANS 61000-3-2 or IEC Equivalent	
25.8	Transient (surge) protection	NEMA socket mounted/internally plug in type	
25.9	Transient (surge) protection rating	20kV/20kA	
26	<b><u>Photoelectric Control Unit (PECU) – MUST BE SUPPLIED COMPLETE WITH LUMINAIRE</u></b>		
26.1	Minimum number of switching operations PECU is capable of at full load current.	8000	*Yes / No
26.2	PECU type: Smart-Mini PECU 10-year warranty	Smart-Mini PECU 10-year warranty	*Yes / No

\*Delete whichever is not applicable

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CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**SCHEDULE 10.11(b) (Concluded)**

This Schedule shall be completed, signed and returned with the bid documents of which it forms part.

**Requirements for Item 11.1: LED Floodlight Luminaire with integrated PECU,  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire.**

Ref No	Technical Details	eThekwini Electricity's Requirement	Bidder's Offer
27	<b><u>Wiring</u></b>		
27.1	Specification to which wires comply	SANS 529 or SANS 1507 or SANS 1574 or IEC Equivalents	
27.2	Voltage rating of wiring		V
27.3	Insulation material of wiring		
27.4	Circuit connection (series, parallel, driver/power supply etc)		
28	<b><u>Terminal Blocks</u></b>		
28.1	Material of terminals	Brass	
28.2	Insulating material of terminal block	porcelain or other equivalent material	
28.3	Size and type of conductors that terminal blocks can accommodate	2,5 mm <sup>2</sup> to 4,0 mm <sup>2</sup> stranded copper conductor	
29	Does the earthing comply with <b>Clause 4.7</b> of this specification?	Yes	*Yes/No
30	Gross mass of complete luminaire (excluding photoelectric control unit)	20Kg (Maximum)	kg
31	Packaging	One luminaire per cardboard box	
32	Has the luminaire been marked in accordance with <b>Clause 6</b> of this specification	Yes	*Yes/No
33	Has the documentation been submitted with the bid documents in accordance with <b>Clause 16</b> of this specification?	Yes	*Yes/No
34	Have test reports been submitted with the bid documents in accordance with <b>Clause 17</b> of this specification?	Yes	*Yes/No
35	Guarantee period on luminaire and driver as per <b>Clause 21</b> of this specification	10 years	years

\*Delete whichever is not applicable

BIDDING COMPANY: \_\_\_\_\_

NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

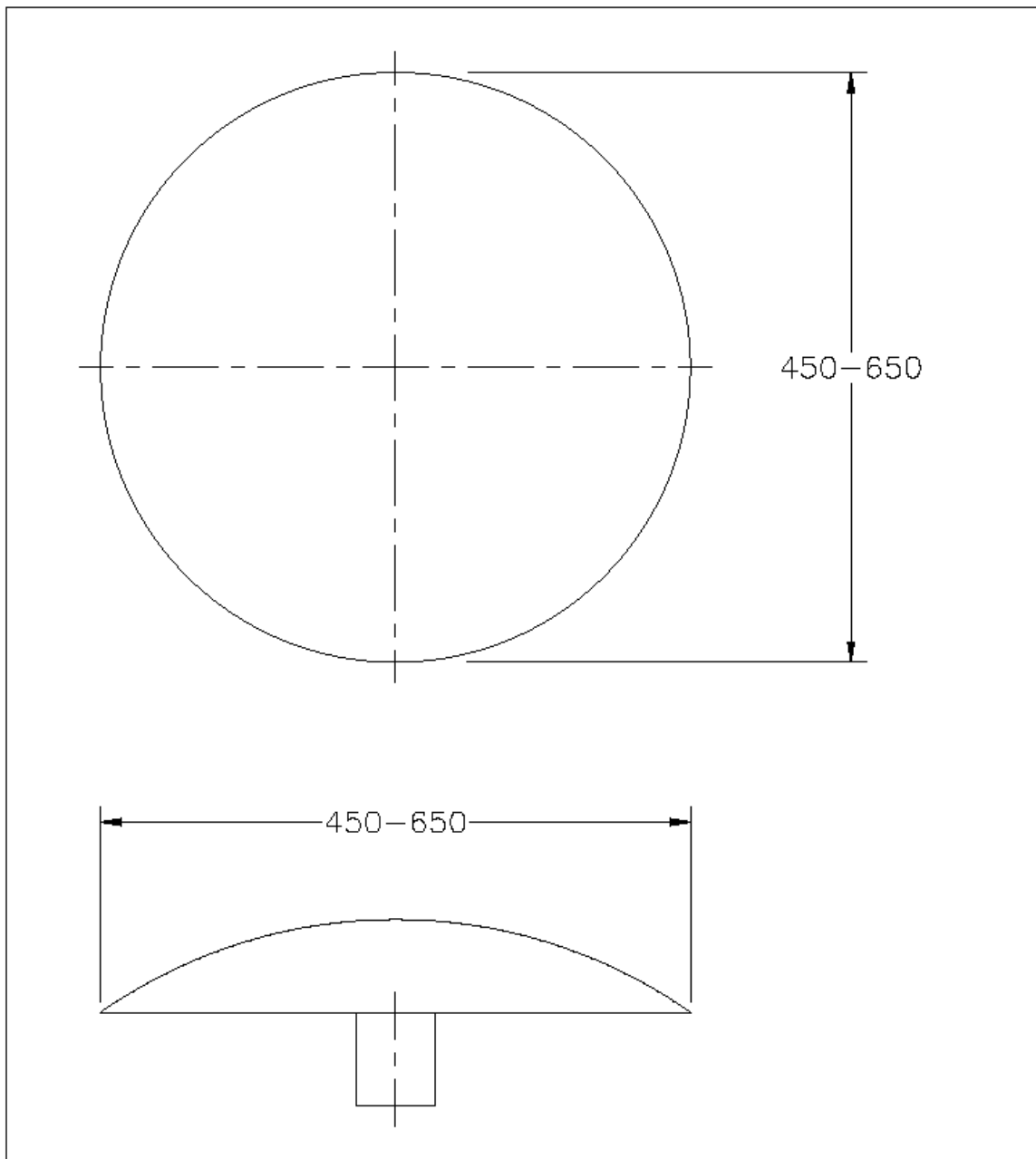
**Drawings**

Figure 1: LED Post Top Luminaire.  
Equivalent Replacement of the 80 W HPMV Post Top luminaire.

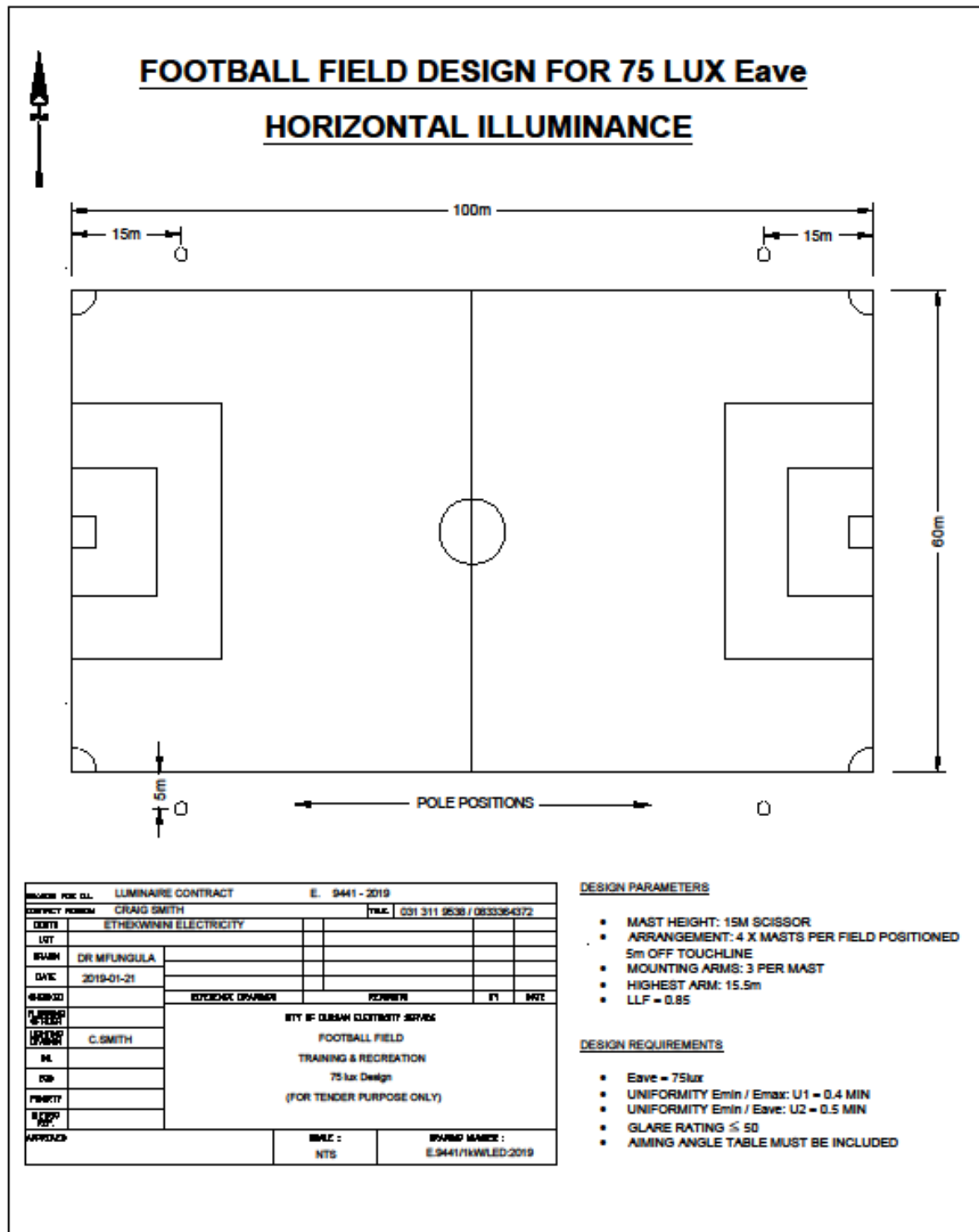


Figure 2: Design parameters for the football field  
Equivalent Replacement of the 1000 W MH/T Floodlight luminaire

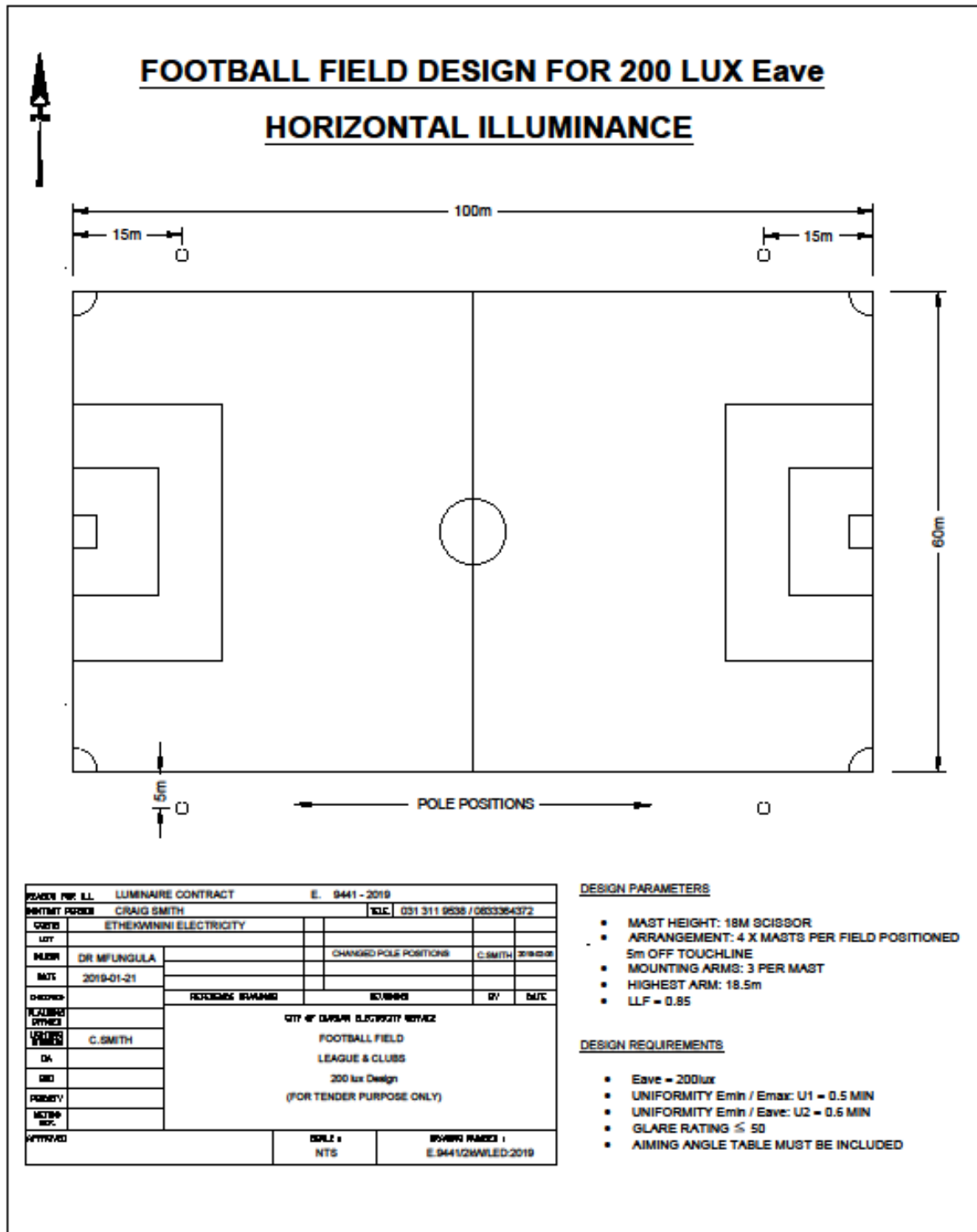


Figure 3: Design parameters for the football field  
Equivalent Replacement of the 2000 W MH/T Floodlight luminaire

**SECTION 10: ANNEXURE B1: SCHEME PRICE FOR ITEM 1****Table 1- Bid form for an equivalent replacement of the 80 W HPMV streetlight luminaire:  
Design results and price schedule Group B1 as per ARP 035 (clause 2.2.3)**

		<b>Item 1</b>
Type of Luminaire and lamp type:		LED luminaire, Replacement for 80W HPMV luminaire
<b>Design Criteria</b>	Unit	
Arrangement	-	Single Sided Left
Lanes per carriageway		2
Width of each lane	m	2,5
sidewalk	m	2m either side
Mounting height	m	7.0
Outreach	m	1.5
Road width		5m (therefore calculation area = 9m)
Angle of tilt (eThekweni Electricity uses S/L arms inclined at 15°)	Degrees	15°
Road surface category		R3
<b>Maintenance factor: For LED with <u>verified</u> IP66 = 0.85 ; For LED with <u>unverified</u> IP Rating = 0.75</b>		
Lighting Category		B1
<b>ETHEKWINI ELECTRICITY REQUIREMENTS</b>		
Overall Uniformity (Uo)	Eh min/Eh ave	0,3
Average illuminance (Eh ave)	lux	5
Semi-cylindrical illuminance (Esc)	lux	2
Minimum illuminance (Emin)	lux	1.5
Threshold Increment	%	20 % max
Pole Spacing	m	Variable
<b>BIDDERS SUBMISSION</b>		
Overall Uniformity	Eh min/Eh ave	
Average illuminance (Eh ave)	lux	
Semi-cylindrical illuminance (Esc)	lux	
Minimum illuminance (Eh min)	lux	
Threshold Increment	%	
Spacing	m	
Unit Price	R	
Scheme Price in accordance with formula	R	

**Scheme price applicable to Item 1:**

1 000

Scheme price = (Spacing [m]) x (R 3500 + Unit price)

**Note:** The Unit Price in the above formula is Excluding VAT

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CAPACITY OF SIGNATORY: \_\_\_\_\_ DATE: \_\_\_\_\_ YYYY - MM - DD

**ANNEXURE B2: SCHEME PRICE FOR ITEMS 2, 3 and 4****Table 2- Bid form for an equivalent replacement of the 150 W, 250W and 400W HPS/T streetlight luminaires: Design results and price schedule Group A4, A3 and A1 as per ARP 035 (clause 2.2.3)**

		Item 2	Item 3	Item 4
Type of Luminaire and lamp type:		LED luminaire, Replacement for 150 W HPS/T luminaires	LED luminaire, Replacement for 250 W HPS/T luminaires	LED luminaire, Replacement for 400 W HPS/T luminaires
<b>Design Criteria</b>	Unit			
Arrangement	-	Single Sided Left	Single Sided Left	Double Sided opposite arrangement
Lanes per carriageway		2	3	4 (8 lanes in total)
Width of each lane	m	3,5	3,5	3,5
Median Width	m	-	-	1
Mounting height	m	9	10,2	10,2
Overhang of left hand side	m	-0,5	-0,5	- 0,5
Angle of tilt	Degrees	15°	15°	15°
<b>Maintenance factor: For LED with <u>verified</u> IP66 Rating = 0.85 ; For LED with <u>unverified</u> IP Rating = 0.75</b>				
Lighting Category		A4	A3	A1
Traffic volume for road without median (vehicles/hour/lane)	v/h/l	300	300	>600
Luminance (min)	cd/m <sup>2</sup>	0,5	0,6	1.5
Overall Uniformity (min)	U <sub>o</sub>	0,4	0,4	0,4
Longitudinal Uniformity (min)	U <sub>L</sub>	0,5	0,5	0,7
Threshold Increment (max)	%	20	20	15
Pole Spacing (in 0.5m increments)	m			
<b>BIDDERS SUBMISSION</b>				
Luminance	(cd/m <sup>2</sup> )			
Overall Uniformity	(Lmin/Lave)			
Longitudinal Uniformity	(Lmin/Lave)			
Threshold Increment	%			
Unit Price (R)				
Scheme Price in accordance with formula	R			

**Scheme price applicable to Items 2, 3 and 4:**

$$\frac{\quad}{1\,000}$$

$$\text{Scheme price} = (\text{Spacing [m]}) \times (\text{R } 5000 + \text{Unit price})$$
**Note:** The Unit Price in the above formulae excludes VAT

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NAME: \_\_\_\_\_ SIGNED: \_\_\_\_\_

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