



a world class African city



**TITLE SPECIFICATION FOR STREET  
LIGHTING LUMINAIRES**

REFERENCE  
**CP\_TSSPEC\_014**  
DATE: **SEPTEMBER 2022**  
PAGE: **1** OF **27**  
REVISION DATE:

REV

**7**

## TABLE OF CONTENTS

|  | Page |
|--|------|
| FOREWORD .....                                 | 2    |
| INTRODUCTION .....                             | 3    |
| 1. SCOPE .....                                 | 3    |
| 2. NORMATIVE REFERENCES .....                  | 3    |
| 3. DEFINITIONS AND ABBREVIATIONS .....         | 4    |
| 4. REQUIREMENTS .....                          | 5    |
| 5. TESTS .....                                 | 10   |
| 6. MARKING AND PACKAGING .....                 | 11   |
| 7. DOCUMENTATION .....                         | 11   |
| 8. TRAINING .....                              | 12   |
| 9. QUALITY MANAGEMENT .....                    | 12   |
| 10. ENVIRONMENTAL MANAGEMENT .....             | 13   |
| 11. HEALTH AND SAFETY .....                    | 13   |
| ANNEXURE A – BIBLIOGRAPHY .....                | 13   |
| ANNEXURE B - REVISION INFORMATION .....        | 14   |
| ANNEXURE C - TECHNICAL SCHEDULES A AND B ..... | 15   |
| ANNEXURE D – STOCK ITEMS .....                 | 27   |

## **FOREWORD**

The work group was appointed by the Distribution Study Committee, which, at the time of approval, comprised of the following members

Recommendations for corrections, additions or deletions should be addressed to the:

Engineering Standards Chief Engineer  
P O Kiosk 38766  
Booyens  
2016

|                        |                                      |
|------------------------|--------------------------------------|
| Nolubabalo Makana      | Metering (Revenue Services)          |
| Arsenio Cossa          | Metering                             |
| Masape Mokgadi Kahumba | Secondary Plant (Metering)           |
| Katlego Mogale         | Maintenance (Engineering Operations) |
| Gavin Jardine          | Infrastructure Planning              |
| David Makoni           | Primary Plant (Network Operation)    |
| Hilda Nonkonyana       | Infrastructure Planning              |
| Anza Mudau             | Infrastructure Planning              |
| Noel Maso              | Field Services                       |
| Sipho Gamede           | Maintenance (Engineering Operations) |
| Thabiso Letsaoana      | Logistics & Warehouse                |
| Mpho Molope            | Logistics & Warehouse                |

## **INTRODUCTION**

Street lighting luminaires are used for the lighting of public thoroughfares and roadways, contributing to road safety as well as public safety. The reliability and safety of these luminaires have a direct impact on levels of customer satisfaction as well as quality of supply.

## **1. SCOPE**

This specification covers City Power's requirements for the manufacture, testing, supply and delivery of street lighting luminaires in accordance with SANS 475, SANS 60598 and ARP 035.

## **2. NORMATIVE REFERENCES**

The following documents contain provisions that, through reference in the text, constitute requirements of this specification. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this specification are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

SANS 51706:2005 *Aluminium and aluminium alloys — Castings — Chemical composition and mechanical properties.*

CIE Publication 27, *Photometry of luminaires for street lighting.*

ISO 4762: *Hexagon socket head cap screws*

SANS 60598-1: 2014 *Luminaires – Part 1: General requirements and tests*

SANS 60598-2-3: 2013 *Luminaires – Part 2: Particular requirements – Section 3: Luminaires for road and street lighting*

SANS 10098-1: 2007 *Public lighting – Part 1: The lighting of public thoroughfares*

SANS 529: 2014 *Heat-resistant cables*

SANS 1088: 2004 *Luminaire entries and spigots*

SANS 1091: 2012 *National colour standards for paints*

SANS 475: 2008 *Luminaires for interior lighting, streetlighting and floodlighting — Performance requirements*

ARP 035: *Guideline for installation and maintenance of street lighting*

SANS 1507: 2002 *Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 1 - General and Part 2 – cables.*

SANS 60529: 2013 *Degrees of protection provided by enclosures (IP Code)*

SANS 121: 2011 *Hot-dip galvanised coatings on fabricated iron and steel articles – Specifications and test methods*

VC 8011: *Lampholders*

CP\_TSSPEC\_011, *Specification for discharge lamps*

CP\_TSSPEC\_073, *Specification for control gear for street lighting*

CP\_TSSPEC\_012, *Specification for photoelectric control units [PECU]*

### **3. DEFINITIONS AND ABBREVIATIONS**

In addition to the definitions and abbreviations given in the documents listed above, the following definitions and abbreviations shall apply to this specification:

- 3.1 **HPS:** High Pressure Sodium.
- 3.2 **MH:** Metal Halide
- 3.3 **/E (suffix):** Designed for use with an elliptical lamp e.g. 100 W HPS/E
- 3.4 **T (suffix):** Designed for use with a tubular lamp e.g. 400 W HPS/T
- 3.5 **CFL :** Compact fluorescent

## **4. REQUIREMENTS**

### **4.1 General**

- 4.1.1 The luminaires shall comply with SANS 60598-1, SANS 60598-2-3 and/or SANS 475.
- 4.1.2 The luminaires shall be class 1 as per SANS 60598-1 and shall be of the totally enclosed type.
- 4.1.3 The luminaires shall be designed for use under conditions of heavy atmospheric pollution and exposure to high levels of solar (including ultraviolet) radiation, at a mean altitude of 1 800 m, and be suitable for operation at ambient temperatures from -15°C to +65°C. The luminaires will also be exposed to wind, rain, hail and sleet in service.
- 4.1.4 The luminaires shall have a class protection rating of a minimum of IP 65 on the lamp compartment and a minimum of IP 54 on the control gear portion. These are minimum ratings and preference may be given to designs offering higher IP ratings, particularly on the control gear compartment, if it can be proven that such ratings will provide a material benefit to City Power in terms of extended gear life, increased maintenance intervals, etc.
- 4.1.5 All ratings must be certified by a test report confirming compliance with SANS 60598-1 as well as clause 5 of this specification. The test report shall be issued by an accredited test authority acceptable to City Power. City Power's sole representatives who shall decide what constitutes acceptable or not shall be the General Manager: Infrastructure Planning.
- 4.1.6 All luminaires offered under this contract shall bear either both the SANS 475 mark and the SANS 60598 mark, or the IEC 60598 mark.
- 4.1.7 All luminaires shall be delivered completely assembled with control gear, lamp holder, reflectors, diffuser (bowl) and housing. Lamps are not required to be supplied.

### **4.2 Construction**

- 4.2.1 The luminaires shall be weather-proof, hail-proof, insect-proof, corrosion-proof and resistant to both solar and ultra-violet radiation. In addition, they shall be robustly constructed and resistant to vandalism. All parts and components of the luminaire shall be designed to shed water, and no accumulation of condensation or precipitation shall occur.
  - 4.2.2 In order to prevent risks associated with road safety, all luminaires shall be designed to avoid disintegration in the event of vehicular impact. The forces generated after a vehicle collides with a pole can be substantial, and to this end the luminaire housing shall be secured to the spigot and the design of the luminaire shall be such that the control gear (especially the ballast) remains attached to the spigot even after a severe impact. Preference will be given to luminaire designs where no part of the luminaire detaches itself from the pole i.e. no secondary missiles are deflected into, or onto, traffic or pedestrians. Full details of the luminaire design shall be provided at the time of tendering.
  - 4.2.3 The luminaires shall be constructed from durable lightweight materials for which all parts are compatible and failure or deterioration shall not occur due to electrolytic action or by differential thermal expansion. Luminaires made of DMC (Dough Moulding Compound) shall not be accepted, unless accompanied by comprehensive test reports acceptable to the General Manager: Infrastructure Planning certifying that the luminaires have successfully passed approved (by City Power) accelerated ageing tests and that the luminaires have a satisfactory performance history.
- Note:** Further details on tests can be found under clause 5 of this specification.
- 4.2.4 Notwithstanding the requirements of clause 4.2.3, preference will be given to lower wattage (less than 150 W) luminaires with housings manufactured from polymeric material and higher wattage (150 W upwards) luminaires with housings made of LM 6, LM 9, LM 20 or LM 25 aluminium alloy to SANS 51706.

4.2.5 The luminaires shall be a colour that is an acceptable match to colour number F48 (cloud grey) of SANS 1091, or colour number B77 (ivory) of SANS 1091. Painted luminaires shall not be accepted unless the paint finish is guaranteed for a minimum period of 10 (ten) years against peeling or flaking under the service conditions detailed in clause 4.1.3.

4.2.6 The spigot entry shall conform to the requirements of SANS 1088 for type 2 (side entry) luminaires. The spigot entry shall accommodate a 32 mm (nominal) spigot in accordance with the requirements of SANS 1088 and the depth of entry of the spigot into the spigot entry shall not exceed 150 mm. This requirement is applicable to each and every luminaire covered by this specification, irrespective of its wattage.

4.2.7 All spigot entries shall be designed to fit easily over the spigot and shall be truly parallel to the fitting axis. Spigot entries shall be constructed of corrosion-resistant materials and compatible with the galvanised mild steel spigot such that deterioration by electrolytic action shall not occur. The luminaire shall be secured to the spigot by means of at least two stainless steel (grade 304 or better) M10 hexagonal head screws conforming to ISO 4762.

**Note:** Alternative fixing arrangements will be considered if full details are provided.

4.2.8 All ferrous components shall be hot-dip galvanised in accordance with SANS 121 for heavy duty applications. Small components (clips, screws, bolts, nuts, washers, etc.) shall be manufactured from stainless steel (grade 304 or better).

4.2.9 The diffuser shall be heat-resistant and shall not discolour, even after prolonged exposure to light, both atmospheric and artificial. Diffusers shall be UV-stabilised and bidders shall submit documentation with respect to the properties of the material under service conditions (i.e. depreciation in light transmission over time and material degradation). Diffusers made of polycarbonate shall not be acceptable. However, since advances in material technology are being made, all offers accompanied by the relevant documentation as detailed above will be considered.

**Note:** For safety reasons, glass is not a suitable material for inclusion into the luminaire. If glass is offered, it shall be treated (usually by heat) such that if subjected to force, no sharp edges capable of causing injury to any person or animal shall result. Upon impact, the glass shall break into granular form with no sharp edges. Full documentation with respect to the properties (performance and safety) of the glass shall be offered, failing which the offer shall be rejected. More information in this regard (including constructional and test requirements) can be found in section 3.6.5 of SANS 60598-2-3.

4.2.10 Diffusers shall not be subject to distortion or warping. A minimum of two devices (clips or snap-locks) shall be provided to secure the diffuser to the housing. Hinges and clips shall be robust and simple to operate. Devices such as wing-nuts and those requiring the use of a tool (e.g. screws) shall be rejected.

4.2.11 The diffuser shall have a means to prevent direct contact with rain water by the gasket, which shall be permanently fitted into the housing (e.g. in a tongue and groove arrangement). The gasket shall form a seal when the diffuser is in the closed position, preventing the entry of dust, moisture and insects into the lamp compartment. The gasket shall be made from silicon sponge or other material which is not subject to compression or deterioration in service. If any material other than silicon sponge is offered, supporting documentation with respect to its suitability in this application shall be provided.

4.2.12 Diffusers shall be capable of being removed for cleaning by unclipping the retaining devices. The diffuser bowl shall not detach from the housing if the bowl is left in the open or hanging position when mounted on the pole.

### **4.3 Lamp-holders and brackets**

4.3.1 Lamp-holders shall comply fully with SANS VC 8011 and shall be of the type (GX24q-5, E27 or E40) specified in the A and B Schedules and shall be capable of maintaining efficient electrical contact with the lamp terminals without deterioration due to temperature, climatic conditions and vibration which will be encountered in service.

- 4.3.2 Lamp-holders shall be made of porcelain and be rated at the appropriate lamp ignition voltage. Lamp-holders made of material other than porcelain shall not be accepted. In addition, lamp-holders shall have a rated withstand temperature of 240°C.
- 4.3.3 A lamp fully inserted into the lamp-holder shall be rigidly held with its axis substantially coincident with that of the lamp-holder under the conditions of wind, vibration and mechanical shock to be expected in service. It shall be possible to insert and withdraw the lamp without undue stress.
- 4.3.4 Lamp-holder brackets and lamp supports shall accept and retain lamps which are within the dimensional tolerances stated in CP\_TSSPEC\_011. The light sources shall be located in the correct relationship to the optical control devices of the luminaire.
- 4.3.5 The lamp-holder shall have zero-degree rake i.e. its axis shall be parallel to that of the spigot entry.

#### **4.4 Control Gear**

- 4.4.1 Control gear shall be fully housed within the body of the luminaire and shall be suitable for operation with the specified lamp. Under no circumstances shall control gear be mounted above the lamp or in a position where it may be adversely affected by the heat generated by the lamp.
- 4.4.2 The control gear shall be mounted so that control gear repair or replacement may be carried out without removing the luminaire from its mounting. To this end, and for maintenance reasons, preference will be given to luminaires with removable gear trays i.e. where all control gear is mounted onto a removable tray. Where this is provided, removable connectors are required for disconnecting the supply to the tray for easy removal and subsequent replacement.
- 4.4.3 The control gear compartment (containing the ballast, capacitor, ignition devices if applicable, and terminal connectors) shall be sealed by a hinged light-weight, non-corroding cover.
- 4.4.4 Ballasts shall comply with CP\_TSSPEC\_073 and shall bear the SANS or IEC mark.
- 4.4.5 Capacitors shall comply with CP\_TSSPEC\_073 and shall bear the SANS or IEC mark.
- 4.4.6 Ignitors shall comply with CP\_TSSPEC\_073 and shall bear the SANS or IEC mark.
- 4.4.7 Electronic control gear for 57W shall comply with:
- Performance as to SANS 60929
  - Safety as to SANS 61347-2-3
  - RI suppression as to EN 55015
  - Mains harmonics as to SANS 61000-3-2
  - Immunity as to SANS 61547
- 4.4.8 In order to minimise the detrimental effect of voltage fluctuations (especially over-voltages) on lamp and gear life, all control gear shall be rated at 240 V.
- 4.4.9 IP rating shall not be influenced by inclusion of a micro PECU on the 70W and 100W luminaires.

#### **4.5 Electrical Requirements**

- 4.5.1 The internal wiring of the luminaires shall comply with clause 3.10 of SANS 60598-2-3. It shall be flexible and **suitably rated to withstand the voltages and temperatures** encountered in service. All wiring shall comply with the requirements of SANS 1507 and where applicable,

SANS 529. The wiring colours shall be as follows: live – red (or brown), neutral – black (or blue) and earth – green/yellow.

- 4.5.2 The neutral conductor of the incoming supply shall be connected to the screw thread portion of Edison screw type lamp-holders and the live conductor shall be connected to the central contact, and the internal wiring of the luminaire shall be arranged accordingly.
- 4.5.3 Terminals and electric connections shall comply with clause 3.9 of SANS 60598-2-3. In addition, the luminaire shall incorporate a terminal block mounted in a reasonably accessible position as close to the point of entry as possible. The material of the terminal block shall be non-tracking and the terminals shall be made of non-corroding material such as brass. Terminals made of aluminium shall not be acceptable.
- 4.5.4 Any wiring passing through metal shall be suitably grommited or otherwise protected to avoid abrasion of the insulation.
- 4.5.5 Capacitors shall only be connected to the primary (line) side of transformer ballasts. After connection of the power factor correction capacitor, the power factor shall not be less than 0,85 (lagging).
- 4.5.6 The luminaire shall be earthed in accordance with clause 3.8 of SANS 60598-2-3.
- 4.5.7 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 which are liable to come into contact with the supporting surface shall be permanently and reliably connected to an earth terminal and shall withstand the test specified in SANS 60598-2-3. An earth terminal 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 one which requires an earth connection.
- 4.5.8 Protection against electric shock (of at least IP 2X) 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.
- 4.5.9 All parts of an earth terminal shall be made of brass or similar corrosion-resistant material and the contact surfaces shall be bare metal and not painted or varnished surfaces and shall comply with sub-clause 7.2 of SANS/IEC 60598-1.
- 4.5.10 All earth connections shall be effected by means of suitable lugs. All possibility of electrolytic corrosion shall be avoided.
- 4.5.11 The luminaire shall be earthed in accordance with Clause 13 of the Electrical Machinery Regulations of the OHSACT (Act 85 of 1993).

## **4.6 External and internal wiring**

A luminaire for road and street lighting shall be provided with a cord anchorage such that the conductors for supply cables are relieved from strain where they are connected to the terminals, if, without the cord anchorage, the weight of the supply cables would exert a strain on the connections.

Compliance is checked by the relevant test of Section 5 of SANS/IEC 60598-1, but with a pull of 60 N and a torque of 0,25 Nm.

The values for the pull and the torque to be applied depend on the weight of the supply cables. In general, the specified values are adequate, but for luminaires intended to be



mounted higher than 20 m and where the weight of the supply cables affecting the cord anchorage exceeds 4 kg a pull of 100 N and a torque of 0,35 Nm are applied

#### **4.7 Photometric Performance**

- 4.7.1 All luminaires are required to provide an asymmetrical light distribution that is well controlled by the internal reflector system such that when the luminaire is used in a street light installation, the threshold increment value will comply with the maximum value that is recommended in SANS 10098-1.
- 4.7.2 Photometric data shall be supplied with each tender. This data shall be issued by the SANS or a lighting laboratory approved by City Power. The following data is required for **each** luminaire offered:
- a. Polar diagrams detailing the light distribution achieved by each luminaire, and taken at 15° intervals with the luminaire mounted horizontally, in units of cd/klm. Alternatively, an isocandela diagram for the luminaire mounted horizontally and expressed in units of cd/klm may be supplied.
  - b. An isolux diagram in ratios of mounting height to both the transverse and longitudinal distances for the luminaire mounted horizontally.
  - c. Utilisation curves for the luminaire mounted horizontally.
  - d. Principal vertical polar curve and polar curve in the vertical plane parallel to the axis of the street, in units of cd/klm.
- 4.7.3 All tenders shall be accompanied by, on electronic media in the form of compact disc, luminous intensity tables in accordance with CIE Publication 27, in a form compatible with the SANS 098 Road Lighting computer software. The information shall have been approved by the SANS or a test authority accredited by SANS.
- 4.7.4 In addition to the above requirements, all tenders shall be accompanied by other relevant data i.e. additional technical data and luminaire performance tables for various parameters. 57W, 70 W, 100 W and 125 W luminaires shall be accompanied by luminaire spacing charts and horizontal illumination diagrams.
- 4.7.5 The diffuser bowl shall be made of high impact acrylic or other suitable material, as contemplated in clause 4.2.12. Polycarbonate bowls will not be accepted. The diffuser bowl shall be smooth on the outside, but may have internal prisms on the inside in order to reduce direct glare and to aid distribution.
- 4.7.6 Bidders shall 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 10 years.
- 4.7.7 Reflectors shall be made of 99,98% pure anodised aluminium. Full details of the material used including properties (e.g. in the form of data sheets) shall be supplied.
- 4.7.8 Reflectors shall not deform due to lamp heat and shall be well secured to prevent deformation.
- 4.7.9 Reflectors and other light controlling components shall be constructed so that they can only be fitted or replaced in the correct relationship to the light source. To this end, luminaires that allow for alternative reflector positions will not be accepted.

#### **4.8 Guarantee**

- 4.8.1 Suppliers shall guarantee each street lighting luminaire for a minimum period of ten years from the date of manufacture. Street lighting luminaires bearing a date of manufacture exceeding four (4) months prior to the date of delivery shall not be accepted.

- 4.8.2 This guarantee is primarily intended to be a material guarantee. This means that if any luminaire is unsuitable for use, or its IP ratings are compromised within a period of ten years from date of delivery, it shall be replaced free of charge by the manufacturer.
- 4.8.3 Failure of the luminaire in terms of this clause would entail degradation of the luminaire material (e.g. DMC or other polymeric material, or aluminium) by ultraviolet radiation for example, to a point where cracks or holes appear in the luminaire housing (or diffuser), thus compromising the structural integrity and IP rating of the luminaire.
- 4.8.4 The scope of this guarantee excludes control gear (for which a two year guarantee is required) but includes the luminaire housing, diffuser, lamp-holder, brackets, etc.
- 4.8.5 Where any dispute arises between the bidders and City Power as to interpretation of any of the above clauses relating to the guarantee required, the matter shall be referred to an independent panel from IESSA (Illumination Engineering Society of South Africa).

## **5. TESTS**

- 5.1 The tests for ingress of dust, solid objects and moisture shall be carried out in accordance with section 9 of SANS 60598-1 and clause 3.13 of SANS 60598-2-3. Test reports confirming that the tests have been carried out as prescribed shall be the only acceptable verification of IP ratings.
- Note:** In accordance with the test requirements of the above documents, the luminaire shall be energised and brought to a stable operating temperature (thermal equilibrium) at its rated voltage before commencement of the tests. Test reports describing tests where the luminaire was not energised during testing will result in the tender being rejected.
- 5.2 The test reports above shall have been issued by SANS or a test authority accredited by SANAS. International test reports (e.g. KEMA) shall be acceptable (at the sole discretion of City Power) provided details of the international accreditation body and details of accreditation are supplied.
- 5.3 All other tests as described in clauses 3.6.3 through 3.6.5 and clauses 3.7 through 3.15 of SANS 60598-2-3 shall be carried out and the test reports shall be supplied with the tender.
- 5.4 In addition to the tests described above, all luminaires constructed of polymeric material shall be subjected to the test described below. The test is designed to simulate accelerated aging of the polymeric material in luminaires and hence give a reasonable indication of premature failure and life expectancy of luminaires constructed from polymeric materials.
- 5.5 The test is performed with the luminaire energised for the duration of the test, which is 1 000 hours. The test simulates ultraviolet (solar) radiation, rain, heat and humidity in a recurring 24 hour cycle (see Table 1).
- 5.6 The solar radiation shall be simulated by either a 2 kW metal halide lamp or a 5 kW xenon arc lamp, adjusted so that an average of 1,5 kW/m<sup>2</sup> is incident on the luminaires under test.
- 5.7 Rain shall be simulated by nozzles which dispense water (pressurised by a suitable pump) so that , after adjustment, the pressure at the nozzle is about 30 kN/m<sup>2</sup> and the flow rate is 12,5 litres/minute ± 5 %.
- 5.8 Heat shall be supplied by heating elements so that a temperature of 40 °C is obtained in the chamber.
- 5.9 Humidity of 98 % shall be obtained by placing a humidifier in the chamber.
- 5.10 The test chamber shall have dimensions of approximately 3 m × 3 m × 3 m. The configuration shall be determined by agreement between the relevant parties, including City Power.
- 5.11 The performance test reports shall include the following:

- a) Photometric test
- b) Endurance test and thermal test
- c) Resistance to corrosion
- d) Insulation resistance and electric strength
- e) Humidity test
- f) Mechanical strength test
- g) Electrical test
- h) IP rating test
- i) Power factor

## **6. MARKING AND PACKAGING**

- 6.1 Each luminaire shall be individually packed in a sturdy cardboard box in order to prevent damage during handling, transportation and storage. The cartons shall be clearly marked with the appropriate description of the luminaire contained therein.
- 6.2 Each luminaire shall be marked, by means of a suitable sticker or similar, in 25 mm lettering, with the rated wattage of the luminaire and the lamp type (e.g. 250 W HPS/T). In addition each luminaire shall be marked with a coloured dot indicating the type of lamp with which a luminaire is designed to be used. The diameter of the dot shall not be less than 20 mm, and coloured as follows:

|               |        |
|---------------|--------|
| HPS luminaire | Orange |
| MH luminaire  | Green  |

The colours shall be as close as possible to primary colours and shall be heat-resistant and shall not fade for the duration of the life of the luminaire. Since the dots will be exposed to weather, the stickers should be of a material suitable for use in this application e.g. UV stabilised vinyl. Luminaires not colour-coded will be rejected.

- 6.3 Luminaires marked by means of an appropriately coloured sticker instead of a separate dot shall also be acceptable.
- 6.4 Each luminaire shall be accompanied by a comprehensive instruction leaflet containing information as detailed in clause 3.5 of SANS 60598-2-3.

## **7. DOCUMENTATION**

- 7.1 Full technical information and descriptive literature relating to the items offered shall be submitted in order that the items can be fully evaluated.
- 7.2 Test reports from a test authority recognised by City Power with respect to the following tests shall be provided:
- a. Type tested in accordance with SANS 475 or SANS/IEC 60598-2-3;
  - b. IP rating in accordance with the requirements of section 3.13 of SANS 60598-2-3; and
  - c. Certified data with respect to degradation (optical and thermal) of the material of the housing and diffuser of the luminaire and light transmission depreciation under operational conditions (see clauses 4.2.12 and 4.6.6).

- 7.3 Full photometric data relating to the luminaire offered shall be supplied (see clause 4.7). This shall include ISO-lux diagrams, utilisation curves, polar curves and/or ISO-candela diagrams. Data shall be expressed, where applicable, in units of cd/klm.
- 7.4 All offers shall be accompanied by luminous intensity tables in accordance with CIE Publication 27, in an electronic medium (i.e. compact discs) in a form compatible with the SANS 098 Road Lighting computer program software. The information on the discs shall have been approved by SANS or a test authority accredited by SANS.
- 7.5 The following documentation shall also be provided:
- a. All test reports required in terms of clause 5;
  - b. Details of luminaire design in terms of road safety (clause 4.2.2);
  - c. If DMC is offered, accelerated aging test reports and proof of satisfactory performance history (clause 4.2.3);
  - d. Data sheets with respect to the grade of aluminium used (clause 4.2.4);
  - e. If painted luminaires are offered, details of the guarantee provided (clause 4.2.7);
  - f. Details of alternative fixing arrangements if applicable (clause 4.2.10);
  - g. If a glass diffuser is provided, full details of the type of glass, safety aspects and tests in accordance with clause 4.2.12;
  - h. If a gasket material other than silicon sponge is offered, full details of its suitability in this application and supporting documentation shall be provided (clause 4.2.11); and
  - i. Full details of reflector material used (clause 4.6.7).
- 7.6 In addition to the items listed above, copies of the certificates confirming that bidders bear one of the marks required shall be supplied, as well as any ISO marks in terms of quality (9000 series) or environmental management (14000 series) that the bidders may possess.
- 7.7 Failure to provide any or all of the information required above will result in rejection of the tender.

## **8. TRAINING**

- 8.1 The following certified training courses shall be offered for City Power's staff:
- a) Correct handling and care of the luminaires; and
  - b) Correct and safe installation and maintenance of the luminaires.
- 8.2 The associated costs for the certified training courses in 8.1 shall be given per person and shall be fixed for the period of the contract.

## **9. QUALITY MANAGEMENT**

A quality management system shall be set up in order to assure the quality of the luminaires during manufacture, installation, removal, transportation and disposal of scrap material/Waste/E-waste. Guidance on the requirements for a quality management system may be found in the following standards: ISO 9001:2015. The details shall be subject to agreement between the purchaser and supplier.

## **10. ENVIRONMENTAL MANAGEMENT**

An environmental management plan shall be set up in order to ensure the proper environmental management and compliance of the luminaires is adhered to during manufacture, installation, removal, transportation and disposal of scrap material/Waste/E-waste. Guidance on the requirements for an environmental management system shall be found in ISO 14001:2015 standards. The details shall be subject to agreement between City Power and the Supplier. This is to ensure that the asset created conforms to environmental standards and City Power SHERQ Policy.

## **11. HEALTH AND SAFETY**

A health and safety plan shall be set up in order to ensure proper management and compliance of the luminaires during manufacture, installation, removal, transportation and disposal of scrap material/Waste/E-waste. Guidance on the requirements of a health and safety plan shall be found in ISO 45001:2018 standards. The details shall be subject to agreement between City Power and the Supplier.

## **ANNEXURE A – BIBLIOGRAPHY**

eThekwini Electricity specification for luminaires

**ANNEXURE B - REVISION INFORMATION**

| DATE       | REV. NO. | NOTES   |
|------------|----------|---|
| 15.10.2002 | 0        | First Issue   |
| May 2004   | 1        | Inclusion of 70 W HPS luminaire<br><br>Addition of clauses relating to training and quality assurance<br><br>General editing  |
| Oct 2004   | 2        | Reference to SANS 1464 removed<br><br>Reference to SANS/IEC 60598 (Parts 1 and 2) included<br><br>More comprehensive testing requirements<br><br>Increased constructional requirements<br><br>A and B Schedules amended |
| Feb 2008   | 3        | A and B Schedules amended<br><br>Include 57 W CFL street light luminaire<br><br>Include 70W\100W with built in micro fail off PECU  |
| Nov 2014   | 4        | Deleted mercury vapour<br><br>updated SANS document numbers<br><br>General editing<br><br>Deleted ageing test   |
| June 2017  | 5        | General editing technical schedules and stock items   |
| Aug 2022   | 6        | General editing   |
| Sep 2022   | 7        | Item 1  |

**ANNEXURE C - TECHNICAL SCHEDULES A AND B**

**TECHNICAL SCHEDULES A AND B**

**ITEM 1: STREET LIGHTING LUMINAIRE (70 W HPS/E) SAP 5786**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

| Item | Sub-clause of<br>CP_TSSPEC_<br>014 | Description   |        | Schedule A            | Schedule B |
|------|------------------------------------|---|--------|-----------------------|------------|
| 1    |                                    | Name of manufacturer  |        | REQUIRED              |            |
| 2    |                                    | Place of manufacture  |        | REQUIRED              |            |
| 3    |                                    | Manufacturer's reference  |        | REQUIRED              |            |
| 4    | 4.1.6                              | Specification to which luminaire complies                                 |        | SANS/IEC<br>475/60598 |            |
| 5    | 4.1.6                              | Does luminaire bear either the SANS or<br>IEC mark?                       | Yes/No | Yes                   |            |
| 6    | 4.1.4                              | Lamp compartment IP rating (minimum)                                      |        | IP 65                 |            |
| 7    | 4.1.4                              | Gear compartment IP rating (minimum)                                      |        | IP 54                 |            |
| 8    | 4.2.3/4                            | Material of housing   |        | REQUIRED              |            |
| 9    | 4.6.5                              | Material of diffuser  |        | REQUIRED              |            |
| 10   | 4.2.11                             | Material of sealing gasket  |        | Silicon               |            |
| 11   | 4.3.1                              | Size of lamp-holder   |        | E27                   |            |
| 12   | 4.3.2                              | Material of lamp-holder   |        | Porcelain             |            |
| 13   | 4.3.2                              | Does lamp-holder comply with SANS VC<br>8011?                             | Yes/No | Yes                   |            |
| 14   |                                    | Mass of luminaire as delivered  | kg     | REQUIRED              |            |
| 15   | 4.5.3                              | Material of terminals   |        | Brass                 |            |
| 16   | 4.2                                | Does luminaire comply with the<br>constructional requirements?            | Yes/No | Yes                   |            |
| 17   | 4.6                                | Does the luminaire comply fully with the<br>photometric requirements?     | Yes/No | Yes                   |            |
| 18   | 5                                  | Have all required tests been done?  | Yes/No | Yes                   |            |
| 19   | 6                                  | Does marking and packaging comply with<br>clause 6 of this specification? | Yes/No | Yes                   |            |
| 20   | 7                                  | Has all documentation required been<br>submitted with the tender?         | Yes/No | Yes                   |            |
| 21   | 8                                  | Is training offered?  | Yes/No | Yes                   |            |
| 22   | 9                                  | Is a quality program in place?  | Yes/No | Yes                   |            |

**NOTE: TICKS [✓/✗], ASTERISK [\*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.**

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters                      Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 1: STREET LIGHTING LUMINAIRE (70 W HPS/E) SAP 5786**

**DEVIATION SCHEDULE**

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

| Item | Clause | Proposed deviation |
|------|--------|--------------------|
|      |        |                    |

Tender Number:\_\_\_\_\_

Bidders's Authorised Signatory:\_\_\_\_\_

Name in block letters

Signature

Full name of company:\_\_\_\_\_



**TECHNICAL SCHEDULES A AND B**

**ITEM 2: STREET LIGHTING LUMINAIRE (100 W HPS/E) SAP 5253**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

| Item | Sub-clause of<br>CP_TSSPEC_<br>014 | Description  | Schedule A            | Schedule B |
|------|------------------------------------|--|-----------------------|------------|
| 1    |                                    | Name of manufacturer   | REQUIRED              |            |
| 2    |                                    | Place of manufacture   | REQUIRED              |            |
| 3    |                                    | Manufacturer's reference   | REQUIRED              |            |
| 4    | 4.1.6                              | Specification to which luminaire complies  | SANS/IEC<br>475/60598 |            |
| 5    | 4.1.6                              | Does luminaire bear either the SANS or<br>IEC mark? Yes/No                       | Yes                   |            |
| 6    | 4.1.4                              | Lamp compartment IP rating (minimum)   | IP 65                 |            |
| 7    | 4.1.4                              | Gear compartment IP rating (minimum)   | IP 54                 |            |
| 8    | 4.2.3/4                            | Material of housing  | REQUIRED              |            |
| 9    | 4.6.5                              | Material of diffuser   | REQUIRED              |            |
| 10   | 4.2.11                             | Material of sealing gasket   | Silicon               |            |
| 11   | 4.3.1                              | Size of lamp-holder  | E40                   |            |
| 12   | 4.3.2                              | Material of lamp-holder  | Porcelain             |            |
| 13   | 4.3.2                              | Does lamp-holder comply with SANS VC<br>8011? Yes/No                             | Yes                   |            |
| 14   |                                    | Mass of luminaire as delivered kg  | REQUIRED              |            |
| 15   | 4.5.3                              | Material of terminals  | Brass                 |            |
| 16   | 4.2                                | Does luminaire comply with the<br>constructional requirements? Yes/No            | Yes                   |            |
| 17   | 4.6                                | Does the luminaire comply fully with the<br>photometric requirements? Yes/No     | Yes                   |            |
| 18   | 5                                  | Have all required tests been done? Yes/No  | Yes                   |            |
| 19   | 6                                  | Does marking and packaging comply with<br>clause 6 of this specification? Yes/No | Yes                   |            |
| 20   | 7                                  | Has all documentation required been<br>submitted with the tender? Yes/No         | Yes                   |            |
| 21   | 8                                  | Is training offered? Yes/No  | Yes                   |            |
| 22   | 9                                  | Is a quality program in place? Yes/No  | Yes                   |            |

**NOTE: TICKS [✓✗], ASTERISK [\*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.**

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters                      Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 2: STREET LIGHTING LUMINAIRE (100 W HPS/E) SAP 5253**

**DEVIATION SCHEDULE**

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

| Item | Clause | Proposed deviation |
|------|--------|--------------------|
|      |        |                    |

Tender Number:\_\_\_\_\_

Bidders's Authorised Signatory:\_\_\_\_\_

Name in block letters

Signature

Full name of company:\_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 3: STREET LIGHTING LUMINAIRE (250 W HPS/T) SAP 6081**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

| Item | Sub-clause of<br>CP_TSSPEC_<br>014 | Description   |        | Schedule A             | Schedule B |
|------|------------------------------------|---|--------|------------------------|------------|
| 1    |                                    | Name of manufacturer  |        | REQUIRED               |            |
| 2    |                                    | Place of manufacture  |        | REQUIRED               |            |
| 3    |                                    | Manufacturer's reference  |        | REQUIRED               |            |
| 4    | 4.1.6                              | Specification to which luminaire complies                                 |        | SANS/IEC<br>1277/60598 |            |
| 5    | 4.1.6                              | Does luminaire bear either the SANS or<br>IEC mark?                       | Yes/No | Yes                    |            |
| 6    | 4.1.4                              | Lamp compartment IP rating (minimum)                                      |        | IP 65                  |            |
| 7    | 4.1.4                              | Gear compartment IP rating (minimum)                                      |        | IP 54                  |            |
| 8    | 4.2.3/4                            | Material of housing   |        | REQUIRED               |            |
| 9    | 4.6.5                              | Material of diffuser  |        | REQUIRED               |            |
| 10   | 4.2.11                             | Material of sealing gasket  |        | Silicon                |            |
| 11   | 4.3.1                              | Size of lamp-holder   |        | E40                    |            |
| 12   | 4.3.2                              | Material of lamp-holder   |        | Porcelain              |            |
| 13   | 4.3.2                              | Does lamp-holder comply with SANS VC<br>8011?                             | Yes/No | Yes                    |            |
| 14   |                                    | Mass of luminaire as delivered  | kg     | REQUIRED               |            |
| 15   | 4.5.3                              | Material of terminals   |        | Brass                  |            |
| 16   | 4.2                                | Does luminaire comply with the<br>constructional requirements?            | Yes/No | Yes                    |            |
| 17   | 4.6                                | Does the luminaire comply fully with the<br>photometric requirements?     | Yes/No | Yes                    |            |
| 18   | 5                                  | Have all required tests been done?  | Yes/No | Yes                    |            |
| 19   | 6                                  | Does marking and packaging comply with<br>clause 6 of this specification? | Yes/No | Yes                    |            |
| 20   | 7                                  | Has all documentation required been<br>submitted with the tender?         | Yes/No | Yes                    |            |
| 21   | 8                                  | Is training offered?  | Yes/No | Yes                    |            |
| 22   | 9                                  | Is a quality program in place?  | Yes/No | Yes                    |            |

**NOTE: TICKS [✓✗], ASTERISK [\*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.**

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters                      Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 3: STREET LIGHTING LUMINAIRE (250 W HPS/T) SAP 6081**

**DEVIATION SCHEDULE**

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

| Item | Clause | Proposed deviation |
|------|--------|--------------------|
|      |        |                    |

Tender Number:\_\_\_\_\_

Bidders's Authorised Signatory:\_\_\_\_\_

Name in block letters

Signature

Full name of company:\_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 4: STREET LIGHTING LUMINAIRE (400 W HPS/T) SAP 5798**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

| Item | Sub-clause of<br>CP_TSSPEC_<br>014 | Description  | Schedule A             | Schedule B |
|------|------------------------------------|--|------------------------|------------|
| 1    |                                    | Name of manufacturer   | REQUIRED               |            |
| 2    |                                    | Place of manufacture   | REQUIRED               |            |
| 3    |                                    | Manufacturer's reference   | REQUIRED               |            |
| 4    | 4.1.6                              | Specification to which luminaire complies  | SANS/IEC<br>1277/60598 |            |
| 5    | 4.1.6                              | Does luminaire bear either the SANS or<br>IEC mark? Yes/No                       | Yes                    |            |
| 6    | 4.1.4                              | Lamp compartment IP rating (minimum)   | IP 65                  |            |
| 7    | 4.1.4                              | Gear compartment IP rating (minimum)   | IP 54                  |            |
| 8    | 4.2.3/4                            | Material of housing  | REQUIRED               |            |
| 9    | 4.6.5                              | Material of diffuser   | REQUIRED               |            |
| 10   | 4.2.11                             | Material of sealing gasket   | Silicon                |            |
| 11   | 4.3.1                              | Size of lamp-holder  | E40                    |            |
| 12   | 4.3.2                              | Material of lamp-holder  | Porcelain              |            |
| 13   | 4.3.2                              | Does lamp-holder comply with SANS VC<br>8011? Yes/No                             | Yes                    |            |
| 14   |                                    | Mass of luminaire as delivered kg  | REQUIRED               |            |
| 15   | 4.5.3                              | Material of terminals  | Brass                  |            |
| 16   | 4.2                                | Does luminaire comply with the<br>constructional requirements? Yes/No            | Yes                    |            |
| 17   | 4.6                                | Does the luminaire comply fully with the<br>photometric requirements? Yes/No     | Yes                    |            |
| 18   | 5                                  | Have all required tests been done? Yes/No  | Yes                    |            |
| 19   | 6                                  | Does marking and packaging comply with<br>clause 6 of this specification? Yes/No | Yes                    |            |
| 20   | 7                                  | Has all documentation required been<br>submitted with the tender? Yes/No         | Yes                    |            |
| 21   | 8                                  | Is training offered? Yes/No  | Yes                    |            |
| 22   | 9                                  | Is a quality program in place? Yes/No  | Yes                    |            |

**NOTE: TICKS [✓✗], ASTERISK [\*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.**

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 4: STREET LIGHTING LUMINAIRE (400 W HPS/T) SAP 5798**

**DEVIATION SCHEDULE**

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

| Item | Clause | Proposed deviation |
|------|--------|--------------------|
|      |        |                    |

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters                      Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 5: STREET LIGHTING LUMINAIRE (70 W HPS/E PECU) SAP 2142**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

| Item | Sub-clause of<br>CP_TSSPEC_<br>014 | Description   |        | Schedule A             | Schedule B |
|------|------------------------------------|---|--------|------------------------|------------|
| 1    |                                    | Name of manufacturer  |        | REQUIRED               |            |
| 2    |                                    | Place of manufacture  |        | REQUIRED               |            |
| 3    |                                    | Manufacturer's reference  |        | REQUIRED               |            |
| 4    | 4.1.6                              | Specification to which luminaire complies                                 |        | SANS/IEC<br>1277/60598 |            |
| 5    | 4.1.6                              | Does luminaire bear either the SANS or<br>IEC mark?                       | Yes/No | Yes                    |            |
| 6    | 4.1.4                              | Lamp compartment IP rating (minimum)                                      |        | IP 65                  |            |
| 7    | 4.1.4                              | Gear compartment IP rating (minimum)                                      |        | IP 54                  |            |
| 8    | 4.2.3/4                            | Material of housing   |        | REQUIRED               |            |
| 9    | 4.6.5                              | Material of diffuser  |        | REQUIRED               |            |
| 10   | 4.2.11                             | Material of sealing gasket  |        | Silicon                |            |
| 11   | 4.3.1                              | Size of lamp-holder   |        | E27                    |            |
| 12   | 4.3.2                              | Material of lamp-holder   |        | Porcelain              |            |
| 13   | 4.3.2                              | Does lamp-holder comply with SANS VC<br>8011?                             | Yes/No | Yes                    |            |
| 14   |                                    | Mass of luminaire as delivered  | kg     | REQUIRED               |            |
| 15   | 4.5.3                              | Material of terminals   |        | Brass                  |            |
| 16   | 4.2                                | Does luminaire comply with the<br>constructional requirements?            | Yes/No | Yes                    |            |
| 17   | 4.6                                | Does the luminaire comply fully with the<br>photometric requirements?     | Yes/No | Yes                    |            |
| 18   | 5                                  | Have all required tests been done?  | Yes/No | Yes                    |            |
| 19   | 6                                  | Does marking and packaging comply with<br>clause 6 of this specification? | Yes/No | Yes                    |            |
| 20   | 7                                  | Has all documentation required been<br>submitted with the tender?         | Yes/No | Yes                    |            |
| 21   | 8                                  | Is training offered?  | Yes/No | Yes                    |            |
| 22   | 9                                  | Is a quality program in place?  | Yes/No | Yes                    |            |
| 23   | 4.4.9                              | Does the luminaire have a built in micro<br>PECU as per CP_TSSPEC012?     | Yes/No | Yes                    |            |

NOTE: TICKS [✓✗], ASTERISK [\*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters                      Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 5: STREET LIGHTING LUMINAIRE (70 W HPS/E PECU) SAP 2142**

**DEVIATION SCHEDULE**

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

| Item | Clause | Proposed deviation |
|------|--------|--------------------|
|      |        |                    |

Tender Number:\_\_\_\_\_

Bidders's Authorised Signatory:\_\_\_\_\_

Name in block letters

Signature

Full name of company:\_\_\_\_\_



**TECHNICAL SCHEDULES A AND B**

**ITEM 6: STREET LIGHTING LUMINAIRE (100 W HPS/E PECU) SAP 2143**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

| Item | Sub-clause of<br>CP_TSSPEC_<br>014 | Description   |        | Schedule A             | Schedule B |
|------|------------------------------------|---|--------|------------------------|------------|
| 1    |                                    | Name of manufacturer  |        | REQUIRED               |            |
| 2    |                                    | Place of manufacture  |        | REQUIRED               |            |
| 3    |                                    | Manufacturer's reference  |        | REQUIRED               |            |
| 4    | 4.1.6                              | Specification to which luminaire complies                                 |        | SANS/IEC<br>1277/60598 |            |
| 5    | 4.1.6                              | Does luminaire bear either the SANS or<br>IEC mark?                       | Yes/No | Yes                    |            |
| 6    | 4.1.4                              | Lamp compartment IP rating (minimum)                                      |        | IP 65                  |            |
| 7    | 4.1.4                              | Gear compartment IP rating (minimum)                                      |        | IP 54                  |            |
| 8    | 4.2.3/4                            | Material of housing   |        | REQUIRED               |            |
| 9    | 4.6.5                              | Material of diffuser  |        | REQUIRED               |            |
| 10   | 4.2.11                             | Material of sealing gasket  |        | Silicon                |            |
| 11   | 4.3.1                              | Size of lamp-holder   |        | E40                    |            |
| 12   | 4.3.2                              | Material of lamp-holder   |        | Porcelain              |            |
| 13   | 4.3.2                              | Does lamp-holder comply with SANS VC<br>8011?                             | Yes/No | Yes                    |            |
| 14   |                                    | Mass of luminaire as delivered  | kg     | REQUIRED               |            |
| 15   | 4.5.3                              | Material of terminals   |        | Brass                  |            |
| 16   | 4.2                                | Does luminaire comply with the<br>constructional requirements?            | Yes/No | Yes                    |            |
| 17   | 4.6                                | Does the luminaire comply fully with the<br>photometric requirements?     | Yes/No | Yes                    |            |
| 18   | 5                                  | Have all required tests been done?  | Yes/No | Yes                    |            |
| 19   | 6                                  | Does marking and packaging comply with<br>clause 6 of this specification? | Yes/No | Yes                    |            |
| 20   | 7                                  | Has all documentation required been<br>submitted with the tender?         | Yes/No | Yes                    |            |
| 21   | 8                                  | Is training offered?  | Yes/No | Yes                    |            |
| 22   | 9                                  | Is a quality program in place?  | Yes/No | Yes                    |            |
| 23   | 4.4.9                              | Does the luminaire have a built in micro<br>PECU as per CP_TSSPEC012?     | Yes/No | Yes                    |            |

**NOTE: TICKS [✓✗], ASTERISK [\*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.**

Tender Number: \_\_\_\_\_

Bidders's Authorised Signatory: \_\_\_\_\_  
Name in block letters                      Signature

Full name of company: \_\_\_\_\_

Full name of company: \_\_\_\_\_

**ANNEXURE D – STOCK ITEMS**

**Material Group: LUMIN-STL**

| Item | SAP number | SAP Short Description          | SAP Long Description   |
|------|------------|--------------------------------|--|
| 1    | 5786       | LMR SL 70 W HPS CO SE          | LUMINAIRE, STREET LIGHT, 32 MM NOMINAL SPIGOT ENTRY, CUT-OFF DISTRIBUTION, SIDE ENTRY, WITH INTEGRAL CONTROL GEAR, FOR USE WITH 70 W ELLIPTICAL HIGH-PRESSURE SODIUM LAMP. ITEM SPECIFICATION CP_TSSPEC_014.                               |
| 2    | 5253       | LMR SL 100 W HPS CO SE         | LUMINAIRE, STREET LIGHT, 32 MM NOMINAL SPIGOT ENTRY, CUT-OFF DISTRIBUTION, SIDE ENTRY, WITH INTEGRAL CONTROL GEAR, FOR USE WITH 100 W TUBULAR HIGH PRESSURE SODIUM LAMP. ITEM SPECIFICATION CP_TSSPEC_014.                                 |
| 3    | 6081       | LMR SL 250 W HPS/T CO SE       | LUMINAIRE, STREET LIGHT, 32 MM NOMINAL SPIGOT ENTRY, CUT-OFF DISTRIBUTION, SIDE ENTRY, WITH INTEGRAL CONTROL GEAR, FOR USE WITH 250 W TUBULAR HIGH PRESSURE SODIUM LAMP. ITEM SPECIFICATION CP_TSSPEC_014.                                 |
| 4    | 5798       | LMR SL 400 W HPS/T CO SE       | LUMINAIRE, STREET LIGHT, 32 MM NOMINAL SPIGOT ENTRY, CUT-OFF DISTRIBUTION, SIDE ENTRY, WITH INTEGRAL CONTROL GEAR, FOR USE WITH 400 W TUBULAR HIGH PRESSURE SODIUM LAMP. ITEM SPECIFICATION CP_TSSPEC_014.                                 |
| 5    | 2142       | LMR SL 70 W HPS CO SE M\ PECU  | LUMINAIRE, STREET LIGHT, 32 MM NOMINAL SPIGOT ENTRY, CUT-OFF DISTRIBUTION, SIDE ENTRY, WITH BUILT IN MICRO PECU AND INTEGRAL CONTROL GEAR, FOR USE WITH 70 W ELLIPTICAL HIGH PRESSURE SODIUM LAMP. ITEM SPECIFICATION CP_TSSPEC_014.       |
| 6    | 2143       | LMR SL 100 W HPS CO SE M\ PECU | LUMINAIRE, STREET LIGHT, 32 MM NOMINAL SPIGOT ENTRY, WITH BUILT IN MICRO PECU AND CUT-OFF DISTRIBUTION, SIDE ENTRY, WITH INTEGRAL CONTROL GEAR, FOR USE WITH 100 W ELLIPTICAL HIGH PRESSURE SODIUM LAMP. ITEM SPECIFICATION CP_TSSPEC_014. |