

# **Specification for 120V mains Streetlight Retrofit**

The required streetlights are to replace an existing assortment of multi-sourced items using high wattage bulbs that are inefficient in energy use. The plan is to completely replace the existing units with more energy efficient, compact units that will be more robust and climatically acceptable to the harsh local environmental conditions.

**Number;** Prices for streetlights, delivered CIF to Ministry of Resources and Development, Majuro, RMI. Prices are required for the purchase of one shipment of a minimum of 500 units with the option to extend this quantity by up to an additional 500 units at the same or better price.

The operational quality and performance of the fixture will form the primary consideration of the selection of the successful bidder.

Each light is required to meet the following General requirements;

1. A service life of Ten (10) years is required as a minimum for the complete component including the mounting systems and shall survive the following climatic conditions.
  - a. Withstanding continuous salt spray with negligible corrosion in an Oceanside coastal environment.
  - b. Exposure to direct sun (UV radiation) with minimal degradation.
  - c. Withstanding winds of up to 50m/s (113mph).
  - d. Operating in ambient outside temperatures of between 0 – 40°C (32 – 104°F) with daytime temperatures occasionally exceeding 50°C.
2. The light is to be mounted to an existing pole and to be hardwired to an existing service transformer or 120 volt service line.
3. The mounting to the pole must be by an adjustable bolted circular clamp around the wooden pole for ease of installation. The pole is made of wood and is generally 12” to 16” diameter at the mounting height for the street lights. Other methods of mounting to the wooden poles may be considered but are not preferred. The mounting system must be able to support the light unit and withstand 113mph (182kmh) storms. The pole mounting system shall be of noncorrosive materials compatible with the extension arm and with the light head.
4. The light head is to be mounted on a short arm extending from the pole. The arm is not to be longer than 18” (450mm) to allow bulb replacement by a technician climbing a ladder. Any mounting arms longer than this will not be accepted. The extension arm

shall be of noncorrosive materials compatible with the pole mounted system and with the light head. The mounting arm may be detachable from the mounting ring to allow different mounting options and should also be detachable from the lighting head. All methods of joining the components together must form a secure and rigid structure. This system will allow for the light fitting to be installed on different mounting brackets for other types and sizes of poles.

5. Each light is to be individually controlled by a type of light sensor to activate the light from off to on at dusk and then on to off at dawn. There is no dedicated street lighting power service line in existence at the intended use locations therefore each light must have its own individual controls.
6. It is acceptable but not a requirement, to offer a combination light (dual lamp) that will provide acceptable light for street lighting during the busy hours of dusk to midnight then change over to a reduced lighting level till dawn. An example is that of HID/LED combination lights. This option is included to offer increased energy savings to the end user.
7. The lighting head shall be of cast or machined marine grade aluminium or stainless steel and all associated metallic components shall be of anti corrosive materials. The lens cover is required to be of an unbreakable, scratch resistant non fading material that maintains a clean and clear appearance.
8. All power cable entry to the lighting head or any other required entry to the lighting head shall be sealed from moisture, bugs and insect entry.

## **Electrical;**

Must operate to the following specification

Voltage; 120Vac (+/- 10%)

Frequency; 60Hz nominal (+/- 10%) – however likely to be within +/- 5%,

Power Factor; pf>0.8 minimum - lights to be power factor corrected to be better than 0.8. The preferred rating is greater than 0.9 .

Harmonic distortion; manufacturer to specify THD of light and for each mode (low and high power) if providing this option.

**Power;**

High output 35 - 70W HID globe, for early evening (dusk to midnight approx)

If proposed - Low output 8 – 15W LED(s), for early morning (midnight to dawn approx) LED system to be secure, water and corrosion resistant, special inspection of the LED terminal wiring will be carried out to ensure this is compliant.

Energy; both low and high output modes to be high efficacy (to be specified in lumens per watt)

Timer; each light to have a light sensor and timer, both adjustable.

The sensor prevents operation during daylight hours.

The timer allows switching from High Output to Low Output from 0h – 12h after dusk

**Lighting;**

The lowest energy use with the best lighting output will be of highest priority so the biggest bulb will not naturally be the chosen product. Around 35 Watts is our desired range for an HID bulbs.

High output 35 - 70W HID globe, white (5,000K) or warm white (3,500K) colour, high efficacy, long life (10,000h). Polar lighting spread and photometric data to be provided.

Low output 8 – 15W LEDs, white (5,000K) or warm white (3,500K) colour, high efficacy, long life (50,000h). Polar lighting spread and photometric data to be provided.

**Spare Parts;**

Cost of replacement globes, luminaires, light sensors, timers, clear luminaire covers, reflectors and any other part necessary to ensure continued performance of the lighting system over 10 years.

The tender is to include the provision of 5% of the quantity of systems to be provided as complete spare units. Additionally the following items must be included within the total cost of the tender;

- a. 100 spare bulbs of each type
- b. 100 spare on/off Sensor or timer systems
- c. 50 spare luminaire covers
- d. 20 spare reflector systems
- e. At least 50 spares each of any other component deemed necessary to the product as a potential maintenance item. This includes ballasts, printed circuits, switches, bulb holders, transformers and any other items.

The supplier shall include with the spares information a detailed listing of the contact information relating to the suppliers for each of the components listed as spares so they may be sourced directly in the future if desired. Current cost information on each item in the currency of origin shall be supplied along with a converted amount into US dollars .

#### **BID FORMAT**

Each bidder is required to provide all documents/items relating to their submitted product including but not limited to;

- a. product data sheets,
- b. catalog cut sheets,
- c. technical performance sheets
- d. Examples of use in similar environments with contact details of at least two end users
- e. Wiring schematics
- f. Detailed drawings of mounting system and components
- g. Information, pricing and drawings of optional accessories for the submitted system including details of what range of bulbs may be used in the supplied lighting head.
- h. Location from where each component will be sourced.
- i. One (1) complete working light system (at no cost) as a sample of the finished product for testing for compliance with the specifications and for comparison to the final supplied product. This sample is not returnable to either the successful or unsuccessful

bidder. The successful bidder may deduct one (1) system from the total number of systems to be supplied.

The Bid Price submitted shall be broken down in a table format to provide the following information;

- a. Light system complete with Qty, unit rate and cost
- b. Spares items listed separately for each item listing Qty, unit rate and cost.
- c. Shipping costs CIF to Majuro port Marshall Islands,
- d. Import taxes and duties if applicable.
- e. Total bid price.

#### **Payment terms**

Payments will be made on the following basis

- a. 20% at signing of contract
- b. 60% at sighting of bills of lading
- c. 20% after arrival and inventory of materials along with testing of 5 randomly selected units for testing.