

**LUMINAIRE, 250W HPS, 480V**  
**CUT-OFF COBRA STYLE**

I. Quantity

The base bid shall include the indicated number of high pressure sodium (HPS) luminaires (250W) complete with high reactance type ballast and 250 watt HPS lamps wired and erected as hereinafter specified.

II. Material

- a. Luminaire - The luminaire shall be suitable for attachment by means of a slip-fitter connection to a 2" IPS bracket. The slip-fitter shall include means for securely attaching the luminaire and shall also provide for adjustment of approximately 5 degrees above or below horizontal. Slip-fitter bolts shall be a minimum of 3/8" diameter. The slip-fitter shall be totally enclosed in luminaire housing.

Each luminaire shall be furnished with an internally mounted 480 volt ballast. The ballast shall be CWI, regulated type. Power factor to be maintained at 80% or above through lamp life. When operating within + or - 10% line voltage, lamp wattage must be maintained within the ANSI defined trapezoidal limits for the specified lamp. Ballast losses shall not exceed 25% of the rated lamp wattage.

The Ballast shall be copper wound and have Class H insulation system. Core laminations shall be M19 grade magnetic steel. Core-coil, starting aid and capacitor shall be capable of operating for a six month period during a short circuit failure, lamp open or end-of-life cycle without any measureable deterioration.

The starting circuit must provide a minimum starting pulse repetition rate of one pulse per cycle (symmetrical). The spike position must occur within a minimum of +20 degrees of the center of the open-circuit voltage wave-form.

The pulse peak voltage should be a maximum of 3000 volts. Pulses must be provided in the same polarity as the open circuit voltage.

Each luminaire shall be prewired with two (2) metal oxide varistors to limit surge voltages on equipment by diverting surge currents to ground. Each metal oxide device shall be installed between incoming leads and fixture ground. The varistors shall comply with the ANSI-IEEE standard C62.11-1987 and shall be capable of operation in an outdoor environment with a temperature range of -40 degrees C to 40 degrees C. The metal oxide shall have the following electrical ratings and characteristics:

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1. Rating of 650 volts rms with MCOV of 540 volts rms.
2. An 8/20 micro seconds current wave of 5 KA shall have a maximum

- discharge voltage of 2.7 KV crest.
3. Duty cycle of 1.5 KA crest. High current short duration (HCSD) of 10 KA crest.

The starting circuit must provide a minimum starting pulse repetition rate of one pulse per half-cycle (symmetrical). The spike position must occur within a maximum of + or - 20 degrees of the center of the open-circuit voltage waveform. The pulse peak voltage should be a maximum of 3000 volts. Pulses must be provided in the same polarity as the open circuit voltage.

Each luminaire shall consist of an aluminum alloy housing forming the upper half of the assembly, a separate interior efficient reflector, and a heat resisting flat glass refractor mounted in a hinged holding ring. The lamp socket shall be adjustable to provide a variety of light patterns including I.E.S. II, III, IV and shall be factory set for Type III. The assembly shall be drip proof and bug proof. The entire unit shall be prewired and ready for installation. The nominal lamp voltage shall be 100 volts. The luminaire shall be an approved equal in appearance, quality and design to American Electric Lighting#11525SCT480R2FGNRLA or Cooper#OVH25SC83DU0298.

- b. Lamps - The High Pressure Sodium lamps to be furnished with the luminaire shall be 250 watt, with a rated life of 24,000 hours equal in quality, design and performance to North American Phillips or Sylvania LU250.

### III. Installation

The luminaire shall be installed on the bracket as shown on the drawings and indicated in the field by the engineer. Orientation and leveling of the units shall be so as to provide for uniform appearance, maximum lighting efficiency and ease of maintenance.

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### IV. Information Required

Bidders shall also furnish complete performance data on the luminaires equipped with the lamp they propose to furnish. The data submitted shall contain at least the following information:

THE FOLLOWING INFORMATION SHALL BE SUBMITTED TO THE DIVISION OF  
ELECTRICITY UPON REQUEST

Isocandle Curves from Photometric Test  
Utilization Curves  
Isolux Lines of Horizontal Foot-candles from a single unit  
Total Wattage of Fixture

V. Quotation

The complete 250 Watt High Pressure Sodium Luminaire with lamp shall be quoted as a unit price in the appropriate section of this document.