

**ITEM 026100**

**Item 0261001 - PEDESTRIAN SIGNAL, 1 WAY POLE MOUNTED**

**Item 0261002 - PEDESTRIAN SIGNAL, 2 WAY PED. SIGNAL POLE MOUNTED**

**Item 0261003 - PEDESTRIAN SIGNAL, 1 WAY PEDESTAL MOUNTED**

**Item 0261004 - PEDESTRIAN SIGNAL, 2 WAY PEDESTAL MOUNTED**

**Item 0261005 - PEDESTRIAN SIGNAL, AUDIBLE**

**DESCRIPTION**

This item shall consist of furnishing and installing a pedestrian signal, of the type specified, at the location shown on the plans or as indicated by the Engineer in conformity with these specifications. The signal housing shall be approximately 19" square. The pedestrian indications shall be LED type with a countdown timer display where indicated on the plan, as manufactured by either Tassimco or Dialight or approved equal.

**REFERENCED ITEMS**

None

**REQUIRED SUBMITTALS**

Material Certificate of Compliance:

Submit 5 copies of material certificate of compliance for the pedestrian signal and all associated hardware in accordance with the contract general requirements.

Shop Drawings:

Submit 5 copies of shop drawings for the pedestrian signal and all associated hardware in accordance with the contract general requirements.

**MATERIALS**

Materials shall comply with the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction (Form 816) Article M.16.07 amended as follows:

Replace entire Article with the following:

**M.16.07--Pedestrian Signal:** The materials for this work shall conform to the following requirements:

**A. General:**

The pedestrian signal shall be one section, rectangular in shape, and shall conform to the latest edition of the MUTCD. The pedestrian signal shall be the LED type, with a countdown timer display where indicated on the plan. The display shall be the international symbols for "WALK" and "DON'T WALK" located to the left of the countdown timer display. The symbols shall be attention-attracting and clearly legible when illuminated. The symbols shall have the dimensions as shown on the plans. The "WALK" symbol shall be Lunar White. The "DON'T WALK" symbol shall be Portland orange. Pedestal mounted signals shall be mounted on the side. Two way signals shall be mounted with "Y" type brackets.

**B. Housing:**

The housing shall be one-piece, corrosion-resistant, aluminum alloy casting. The top and bottom of the housing shall have an opening to accommodate standard 1 1/2-inch pipe brackets. Each housing shall have a terminal block with a sufficient number of terminals to accept field wires. Two integrally-cast hinge-lugs shall be cast on one side of each housing, and two integrally-cast latch-screw pads shall be cast on the other side of the housing.

The housing door shall be a one-piece, corrosion-resistant, aluminum alloy casting. Two hinge-lugs shall be cast on the other side of each door. The door shall be attached to the housing by means of two stainless steel hinge pins. Two stainless steel hex-head, captive-latch screws shall be permanently attached to the door bosses by means of keeper washers. The door shall have a neoprene gasket which, when the door is closed, shall cause a seal against the housing, making a weatherproof and dust-tight seal.

Each signal shall be provided with an aluminum visor approximately 7 inches long, which shall encompass the top and sides of the signal face. The top of the visor shall have a downward tilt of approximately 3-1/2 degrees. The visor shall be blanked and formed, shall be not less than .05 inches thick, and shall meet the minimum requirements of ASTM B209.

**C. Optical Unit:**

**(1) Incandescent:** The Incandescent optical unit shall consist of a lens, reflector, reflector frame, lamp socket.

The lens shall be of rigid type polyester resin having an especially high heat distortion point and excellent resistance to degradation at high temperatures. Lens thickness shall be a minimum of 3/16-inch. The lens gasket shall be molded neoprene rubber channeled to cover the entire perimeter of the edge. The gasket shall press against the frame when the door is closed to form separate dust-tight optical compartments.

Reflectors shall be of one-piece parabolic construction, designed to direct light from the lamp outward with maximum efficiency. The reflector shall have a flange that will form a flush fit with the gasket when the door is closed.

Sockets shall be one-piece molded construction and shall be fastened to the reflector. The socket shall have a "lamp grip" to prevent lamp from loosening. Color-coded leads of 18-gauge shall be attached to the terminal block in the signal. Lamps shall be 67-watt standard traffic signal lamps.

**(2) LED:** The optical unit shall consist of multiple LED light sources and a regulated power supply assembled as a sealed unit. The diodes shall be arranged to display a filled hand symbol overlapped with a filled pedestrian symbol. The optical unit shall be warranted for a period of five years. It shall fit into a standard pedestrian signal housing so that it may be retro-fit to an existing incandescent pedestrian signal. The LED optical unit shall be capable of partial loss of LEDs and still maintain message symbol integrity. The beam color shall match that of the incandescent message: Hand - Portland Orange, Walking Symbol - Lunar White. The beam pattern and intensity shall meet ITE specifications. The intensity may not degrade by more than 10% per annum.

Electrical Requirements:

- Input Voltage: 89 VAC to 135 VAC
- Wattage: 15 Watts
- Input Impedance at 60 Hz must satisfy all conflict monitor requirements
- A regulated power supply shall protect the LEDs from electrical surges and transient voltages

**D. Pedestrian Signal (Audible):**

Voltage: 120VAC 50/60 Hz,  $\pm 15$  % of nominal line voltage

Operating current: .33 amps

Standby current: .027 amps

Decibel at 10': 88dB

Operating temperature: -31F to 161F

Net weight: 1.7 lbs

Rated life: 400 hours at 50% duty cycle

Housing:

Cast Aluminum

Weatherproof with neoprene gasket

4 - 7/8" square box

Depth 2"

Tapped for 1/2" conduit.

UL listed.

Properties:

- Single audible device with varying tones.
- Internal gain control - output adjustable from 64 dB to a max of 88 dB at 10'
- Active to coincide with "WALK" indication and pulse to coincide with "DON'T WALK" indication.

Tone Module:

- 470 Hz continuous
- Sturdy plastic housing
- Edge connector termination's to allow rapid installation or removal of module.
- Varying tones

**E. Hardware:**

All exposed screws and fasteners shall be stainless steel. All internal fasteners and metal parts shall be stainless steel; non-corrodible; or ferrous materials protected against corrosion by cadmium plating.

**F. Painting:**

All surfaces of the signal housing, door, and visors, inside and out, shall be finished with three coats of infrared-oven baked paint before assembly. All brackets and hardware shall be painted black by the manufacturer or as approved by the engineer. The balck color shall be No. 37038, Federal Standard No. 595.

**First Coat-Primer:** Shall be iron oxide baking primer and shall meet or exceed the requirements of FS TT-P-645.

**Second Coat-Gray Enamel:** Shall be light gray exterior baking enamel and shall comply with FS TT-E-489, #16251 or #16314 or #16376 Gray.

**Third Coat Enamel:** Shall be painted black by the manufacturer. The inside of the visors shall be according to FS TT-P-527. The color shall be black Color No. 37038, Federal Standard No. 595.

**CONSTRUCTION METHODS**

This work shall conform to the requirements of Section 11.06.03 of The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004, supplemented and amended as follows:

**METHOD OF MEASUREMENT**

The quantity to be paid for under these items will be the number of completed, installed and accepted pedestrian signals of the type specified.

**BASIS OF PAYMENT**

This work will be paid for at the Contract unit price each for "Pedestrian Signal", of the type specified which price shall include all materials, housing, optical unit, lamp, visor, miscellaneous fittings and parts, equipment, paint and painting, labor and work incidental thereto.

<b><u>PAY ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>PAY UNIT</u></b>
0261001	Pedestrian Signal, 1 Way Pole Mounted	EA
0261002	Pedestrian Signal, 2 Way Pole Mounted	EA
0261003	Pedestrian Signal, 1 Way Pedestal Mounted	EA
0261004	Pedestrian Signal, 2 Way Pedestal Mounted	EA
0261005	Pedestrian Signal, Audible	EA