

Streetlight Luminaire Installation on Wood Poles

1. Scope

This standard provides the requirements and details for the installation of overhead residential and arterial streetlight luminaires on wood poles.

2. Application

This standard instructs Seattle City Light (SCL) crews how to construct and install light-emitting diode (LED) streetlight luminaires for arterial and residential lighting applications.

3. Details and Design

The mounting height of the luminaire is measured from the surface of the roadway to the bottom of the streetlight luminaire head.

Install luminaire according to the requirements of figures 3a and 3b and Table 3.

Figure 3a. Installation Detail

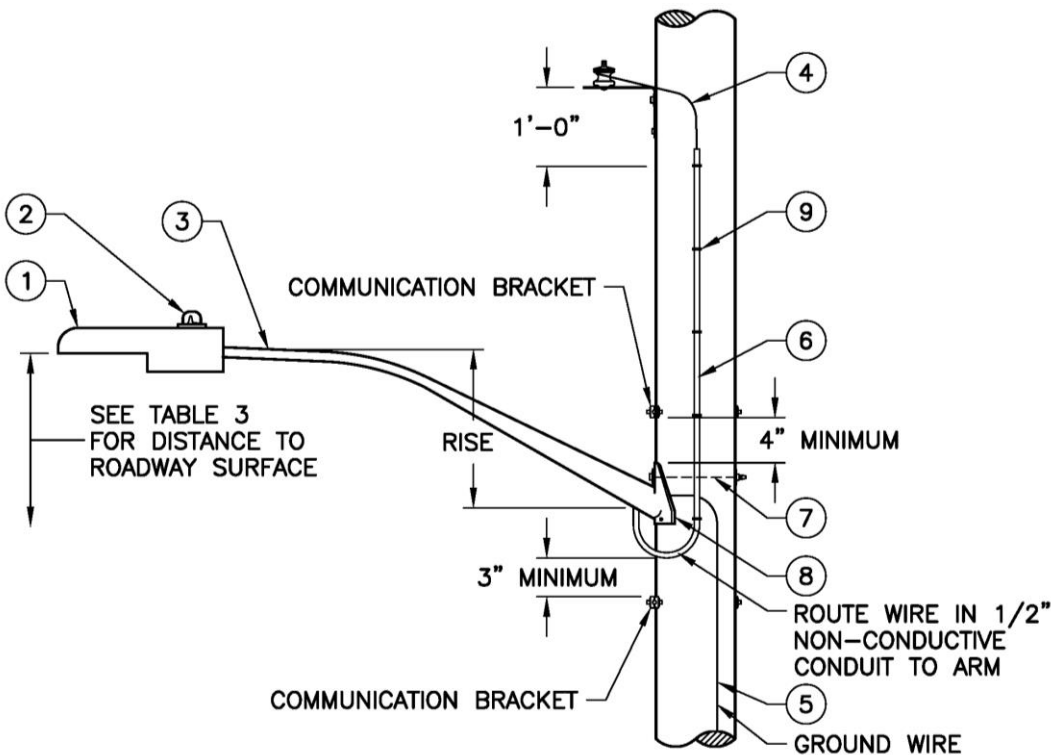


Figure 3b. Clearances from Communication Equipment

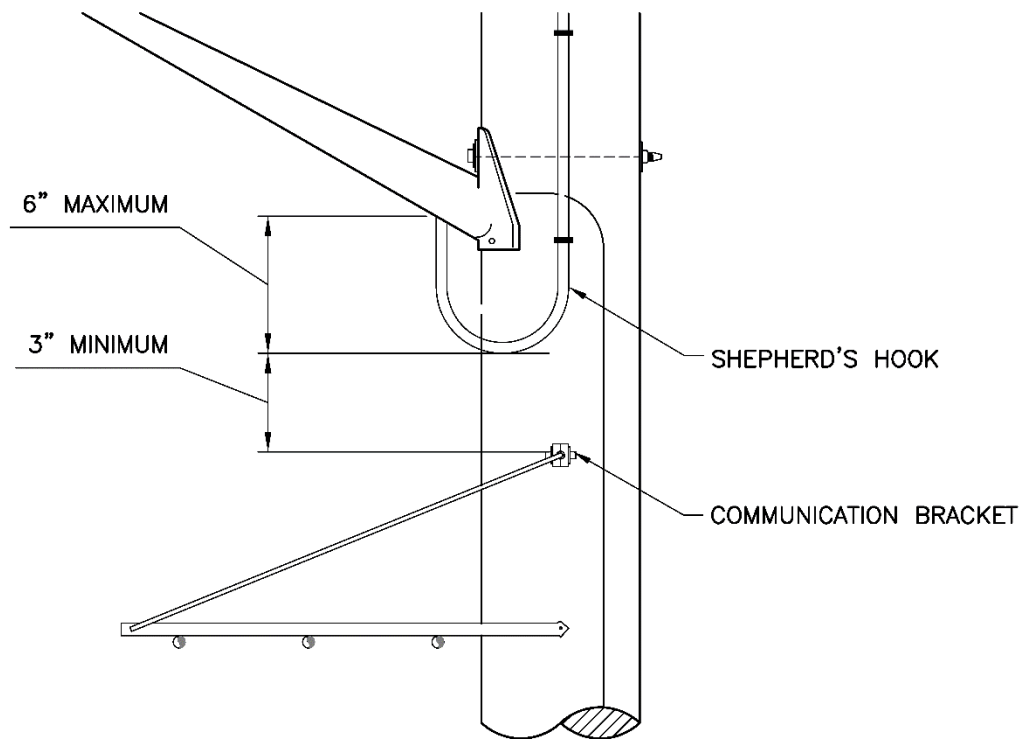


Table 3. Luminaire Distances from Roadway Surface

| Fixture Type | Distance from Roadway Surface (ft) | Luminaire Wattage | Stock No. |
|--------------------|------------------------------------|-------------------|-----------|
| Residential | 25–26 | 24 | 014364 |
| Collector arterial | 27–35 | 135 | 013492 |
| Principal arterial | 34–35 | 195 | 013495 |

4. Installation Notes

Mount the arm at 90 degrees to the face of the curb.

Route the 3/C pole and bracket cable through the conduit and arm, and make connections to the luminaire termination block. See Figure 4.

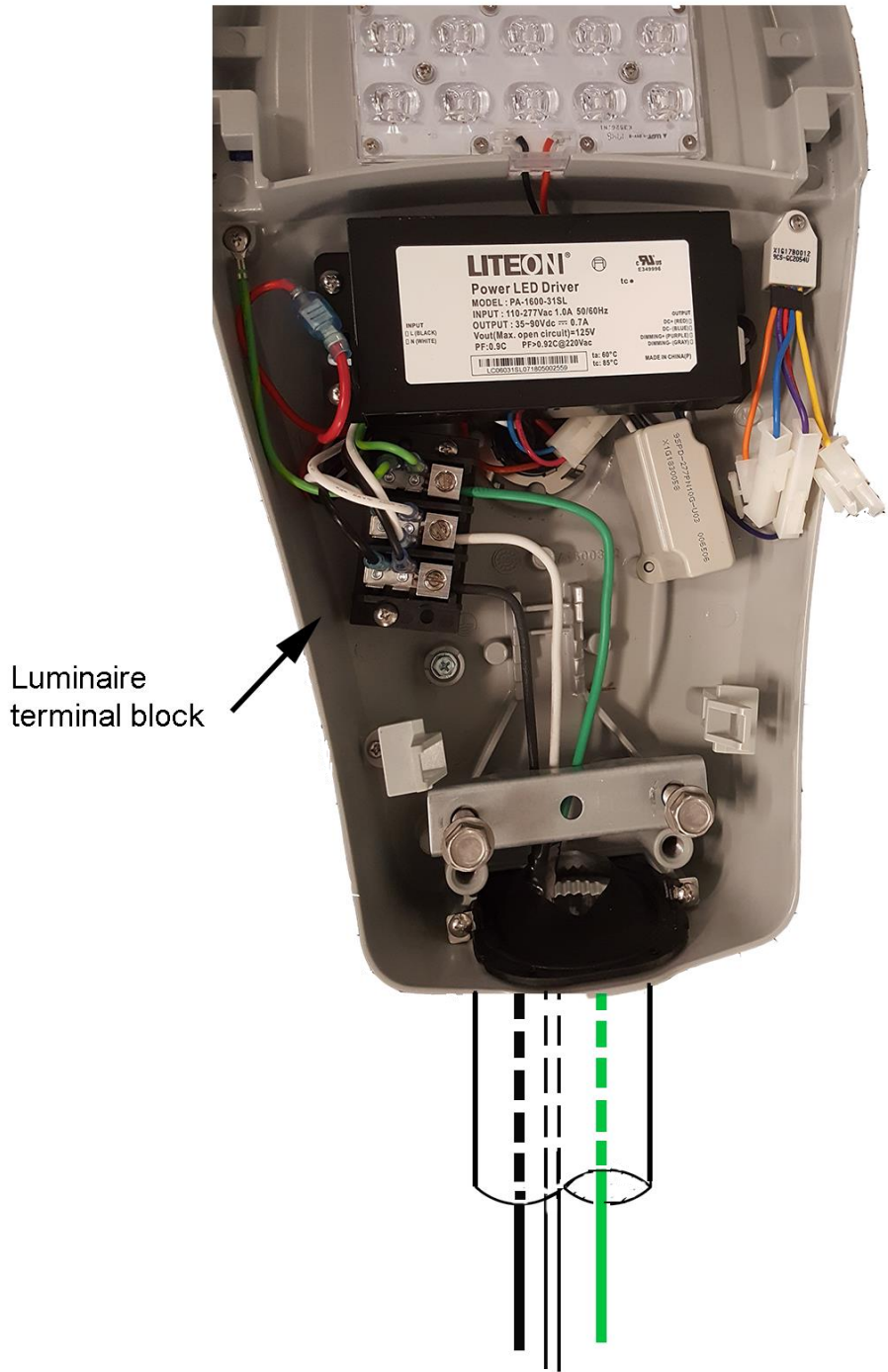
Mark the installation date on the photoelectric control base and the luminaire interior housing using a permanent ink marking pen.

Face the photoelectric control to the north.

Triplex wire with a messenger, Stock No. 013271, shall be used when spanning wire from pole to pole. The messenger serves as the neutral.

Connect streetlight cable for service operation.

Figure 4. Wiring Details



5. Shepherd's Hook

The shepherd's hook can be constructed in one of two ways. See figures 5a and 5b.

The top of the conduit shall extend up to within 12 inches of the LR bracket.

The shepherd's hook shall be secured to the pole using staples at 12-inch intervals. No fewer than two staples shall be used.

The shepherd's hook is inserted into the streetlight arm.

Figure 5a. Combination SCH 40 PVC and Flexible Conduit



Figure 5b. Flexible Conduit



6. Grounding

All mast arms shall be grounded using a setscrew lug (item 11, Figure 6a) attached to the base plate only. For poles without a ground or neutral available, the streetlight feed shall be replaced with #6 AWG triplex, Stock No. 013271, to provide an appropriate ground.

There are various ways to ground the bracket arm depending on the availability of a pole ground. See figures 6b and 6c for appropriate grounding methods:

Figure 6a. Setscrew Lug



Figure 6b. Pole Ground Grounding

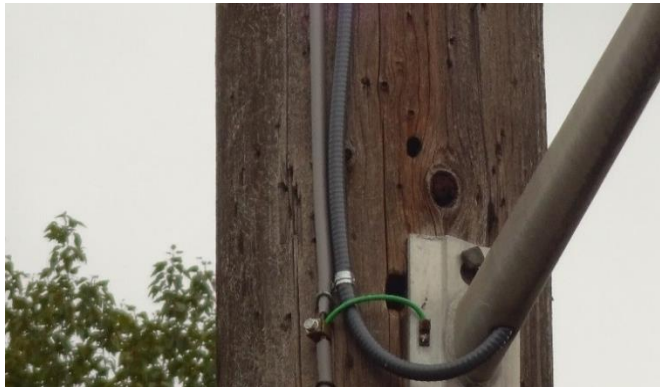


Figure 6c. System Neutral Grounding



7. Material List

| Item | Quantity | Description | Stock No. |
|------|-------------|---|-----------------|
| 1 | 1 | LUMINAIRE, light-emitting diode (LED) | |
| | | Residential (24 W) | 014364 |
| | | Collector arterial (135 W) | 013492 |
| | | Principal arterial (195 W) | 013495 |
| 2 | 1 | PHOTOCONTROL, 20-year design life, 105-305 V | 013129 |
| 3 | 1 | BRACKET, aluminum, luminaire support, 1-ft rise | |
| | | | 3' - 3" 570501 |
| | | BRACKET, aluminum, luminaire support, 2-ft rise | |
| | | | 6' - 0" 570502 |
| | | | 8' - 0" 570503 |
| | | BRACKET, aluminum, luminaire support, 4-ft rise | |
| | | | 6' - 0" 013653 |
| | | | 8' - 0" 013654 |
| | | | 10' - 0" 570507 |
| 4 | As required | WIRE, 600 V, PVC jacket, 1-3/C #12 AWG | 014072 |
| 5 | As required | WIRE, THWN, 600 V, copper, #8 AWG | 612277 |
| 6 | As required | CONDUIT, flexible, non-metallic, 1/2" | 013544 |
| 7 | 1 | BOLT, galvanized, machine, 5/8" x 12" | 780845 |
| 8 | 2 | SCREW, galvanized, lag, 1/2" x 4" | 785261 |
| 9 | As required | STAPLE, galvanized, 2" x 5/8" | 013517 |
| 10 | 2 | CLAMP, parallel groove, bolted | 652020 |
| 11 | 1 | LUG, setscrew | 012564 |
| 12 | 1 | SCREW, self-drilling, hex washer head, 3/8" x 3/4" | 012565 |
| 13 | 3 | SCREW, zinc-coated, lag, 1/4" x 1-1/4" | 785211 |
| 14 | As required | CABLE, overhead, triplex, #6 AWG ACSR | 013271 |
| 15 | As required | CONNECTOR, overhead, neutral messenger, compression, #6 AWG ACSR | 014204 |
| 16 | As required | CONNECTOR, overhead, neutral messenger, compression, #6-#6 AWG ACSR | 014189 |

8. Sources

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