LaneLight Crosswalk
INSTALLATION MANUAL VERSION 7C

“Designed to target the tunnel vision of today’s distracted driver.”

In-Road Crosswalk Systems

866.466.4836
www.LaneLight.com
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1.0 Installer Responsibility

It is the installer’s responsibility to ensure the equipment is installed properly, safely, and per industry standards. The installer is responsible for system maintenance and operation. The installer is responsible for damaged units due to improper installation and incorrect wiring. It is the installer’s responsibility to contact LaneLight in case of misunderstanding of the instructions in this manual, disagreeing with the instructions in this manual, or if unable to perform a given instruction in this manual. Please read all instructions and requirements in this manual before going to site. Always keep a copy on-site.

The installer is liable for the system’s final operation and safety. The instructions in this manual are subject to change without notice.

2.0 Warranty Information

LaneLight provides a 5 year limited warranty on the supplied equipment (excluding batteries) only if the warranty report is sent back, signed, and completed properly. The warranty period starts from the date of delivery.
3.0 System Overview

3.1 Introduction
Installing a LaneLight system requires certified cables, connectors, crimping tools, gel, and epoxy. It is the installer’s responsibility to ensure these materials are LaneLight certified, in good condition, and verify quantities. There are various quality control tips necessary to ensure system longevity. A LaneLight system is usually broken down to two circuits. One circuit is for output and activated devices; AWG18/3LL cable is used. The other circuit is for input and activation devices; AWG18/4Act cable is used.

Output circuit devices may include in-road warning lights, RRFBs, LED enhanced signs, beacons, and more. Input devices include pushbuttons, LaneLight’s bollard system, LaneLight approved microwave sensors, and more. This document will introduce a typical LaneLight crosswalk.

LaneLight crosswalks must only be controlled by LaneLight controllers to avoid device damage and warranty loss, to ensure electrical safety and code, to follow specifications and mitigate liability, and to ensure system longevity and proper operation.

3.2 Installation Video
Internet connection required:
http://www.itemltd.com/inventories/installation
3.3 Typically Supplied Components
From LaneLight you may receive varying quantities depending on the plans and drawings supplied during the quoting and purchasing process. The main components required for a LaneLight crosswalk include:

1) LaneLight manufactured, approved, and tested control cabinet – cabinet type and size may vary depending on location and application.

2) MLK150 fixtures

3) MLK150 hub with pre-assembled junction box

4) AWG18/3LL direct burial cable conforming to LaneLight specifications

5) Backer rod – approved filler for saw-cuts to be cast in epoxy

6) LaneLight314 hydrophobic gel filled connectors for splices within the junction box

7) LaneLight8882 re-enterable gel to fill and seal the junction boxes

8) Lexan leveling tools and screws and nuts

9) LaneLight STATA-FLEX epoxy and catalyst to cast MLK150 hubs in place and fill in saw-cuts

10) LaneLight approved activation device(s)

11) Optional side flashers (wired or wireless)
3.4 Required Tools

Tools in this list are not supplied, and are required for a complete and proper installation of a LaneLight crosswalk. The list herein may not be complete for your specific project and/or installation. Please create a checklist for your specific project which may include additional work such as repaving the road, mounting traffic poles, loop cutting and coring, installing activation devices, installing additional devices and side flashers, installing the control cabinet, painting and finishing the crosswalk.

The tools in this list are required for installing the LaneLights only:

1) Installation manual(s)
2) Multimeter for voltage and current readings
3) All supplied LaneLight Boxes
4) Ready Mix Concrete
5) Wood and Framing Nails for concrete forms
6) Woodworking tools
7) Industrial Vac (wet and dry)
8) Graduated buckets
9) Masking tape
10) Chalk for marking
11) Measuring tape
12) Generator to power tools
13) Water source for cleaning
14) Fish tape
15) Cable and wire cutters
16) Cable and wire strippers
17) Torque Wrench
18) Vice grips
19) LaneLight314 Crimper
20) Flat and Philips screwdriver set sizes 00-2
21) Construction lights (for night work)
22) Ladder (for fishing cable through poles)
23) Traffic control plan, personnel, and gear per local codes and regulations
24) For cabinet and sign mounting you may require a drill with a step bit, banding tool, hex sockets, ratchets, and other tools not specified here.
4.0 Installation Procedure

Use a traffic control plan, and traffic safety gear such as high visibility vests, cones, flags, and signs are necessary to close the appropriate lanes while working. Follow local codes, laws, and regulations when working on-site. It is the installer’s responsibility to perform the steps outlined herein in a safe and legally compliant manner.

**Step 1: Constructing the LaneLight Forms**

Construct the LaneLight forms; the forms are to suspend the assembly in the trench. This must be done prior to pouring the concrete.

Determine whether you are in a snow plowable area.

Directions for each options is shown below. Leveling plates’ blots with wing nuts are provided.

![Snow plowable:](image)

![Non-Snow plowable:](image)
Step 2: LaneLight Assembly

LaneLights are assembled on-site to ensure cable run fit. Obstacles, such as man holes, may require cable routing.

Assemble the LaneLights after measuring the wire lengths. Push the cable through the junction box as shown in the section view below. Strip back 4” of the cable to expose the wires. Do not cut or expose the copper in the wires. If the strippers cut the wire, dispose of the cut section and ensure you have 4” of wire exposed.

6” of cable must pass through the wire nuts from each side. Refer to video in section 3.2 for further illustration.

Hand tighten the cable gland for water protection. Over tightening may crush the conductors in the cable and cause short circuits after months of operation. After tightening ensure the cable will not slide off, and is not deformed or crushed in the cable gland.

Never strip the wires.

Use the provided LaneLight314 connectors to connect each LaneLight in parallel.
Step 3: Assembling the forms
Run the wires through the conduit, and assemble the forms built in step 1 as shown in figure below. Ensure accurate spacing between the lights per the provided engineering drawings. Consider running your activation cable or conduit behind the LaneLights.

Step 4: Positioning the Tee Junction
Make sure the tee junction between each housing is properly sloped for moisture drainage. Use only LaneLight approved conduit and drain tees. Moisture is a lethal system contaminate.

Wire the system to the cabinet or power source and test the system. Ensure that the conduit is sealed and properly drained.
Step 5: Pouring Concrete
After securing the assembly, and ensuring the conduit is tightly sealed, and the tee is drained under the compacted drain gravel pour the concrete. Any assembly, conduit, or tee gaps can lead to a concrete leak (concrete filling your assembly).

Step 6: Consolidating and Removal of forms
Once the concrete has formed, and dried you may remove the forms.
Step 7: Sealing the junction boxes

After the epoxy hardens and the road is dry you may test your lights one more time.

Pull apart the membrane between the two halves of the LaneLight8882 gel pouch. This can be done by rolling up one bottom corner of the bag, compressing the contents until the membrane between the two halves bursts, and allowing the two sides contents to combine.

Squeeze and turn the gel pouch to mix well for one minute. Cut one corner of the pouch, and pour into the wiring sub-base opening. Pause when full to allow air bubbles to escape.

Fill the entire void beneath the black plastic retaining ring, up to, and slightly above the ring. The gel may require a few seconds to settle. The gel requires 20-30 minutes to set and become hard.

Do not apply electrical power or turn on the system if the gel is in liquid form.
Step 9: Closing and testing the system

Place the MLK150 fixture inside the housing carefully. Ensure the wires are clear from the LED engine (black portion underneath the fixture). Ensure the grounding screw is clear from the LED engine. The grounding screw must be facing oncoming traffic.

Do not allow any wiring to be pinched between LED fixture edges or housing. Pinched wires eventually short circuit, and will cause the system to fail in a few months.

Tighten down the provided M8x1.25 bolts to 32ft-lbf (384in-lbf) and verify using the torque wrench.

Power on the system and test it multiple times. Leave the work site clean and tidy. Submit warranty report to manufacturer.
5.0 Troubleshooting
LaneLights are Direct Current nonlinear devices. In nominal operating conditions LaneLights consume 2.4W (±10%) which equates to 0.1A @ 24VDC each. LaneLights fail in open circuit or short circuit mode.

5.1 Technical support and ticket system
LaneLight requires a copy of your warranty report to be submitted before technical support. Attempt the instructions provided in section 5 before contacting LaneLight.

5.1.1 Contact LaneLight for replacement units
The simplest way to contact LaneLight is through filling a ticket. Create a user name, and provide your project # (usually a label stuck on your cabinet door with a number like this 0001.012.0123 Somewhere PI, CA). You will need to submit a copy of your warranty report, with a brief description of the problem, steps taken to solve the problem, and pictures of the control cabinet, LaneLights, and any relevant activation devices.

http://ticket.lanelight.com/

5.1.2 On-site technical support
If you require troubleshooting support, you may contact LaneLight technical support but you will need to be on-site, with a multimeter, tools, and ready to follow a few steps. A representative may guide you through a series of steps to understand the problem and assist you in fixing it.

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