

INSTALLER AND INSPECTOR QUICK-REFERENCE: 2025 NRCA-LTO-02-A Outdoor Lighting Controls

Purpose and Scope of the Test

The purpose of these tests is to ensure that all outdoor lighting regulated by section 130.2(c) is controlled by a motion sensor, photocontrol, astronomical time-switch control, and automatic scheduling control, as required.

Outdoor lighting controls prevent energy waste by ensuring that lighting is automatically turned off during the day and reduced or turned off when not needed during nighttime hours.

Test Trigger

Applies to functional testing and verification of outdoor lighting controls which include photocontrols, motion sensors, astronomical time-switch controls, and scheduling controls for outdoor lighting systems. These controls are required for nonresidential, hotel/motel, and multifamily buildings.

Exceptions:

- Lighting that cannot be turned off or reduced due to a health or life safety statute, ordinance, or regulation.
- Lighting in tunnels that are required to always be on.

Relevant Energy Code References and Required Compliance Documents

Title 24, Part 6 of the California Building Standards Code, Building Energy Efficiency Standards (Energy Code) sections 110.9(b), 130.2(c), 130.4(a)1, 160.5(c), 160.5(e)1; Reference Nonresidential Appendix NA7.8; NRCC-LTO-E, LMCC-LTO-E.

Who Can Perform the Test

This test must be performed by an acceptance test technician certified by a CEC-approved Acceptance Test Technician Certification Provider, using compliance document NRCA-LTO-02-A.

Required Tools

This test verifies the functionality of installed automatic controls visually and does not require special instrumentation.

Estimated Time to Complete Test

Construction inspection: 0.5 to 2 hours (depending on familiarity with lighting control programming language).

Functional testing: 0.5 to 2 hours (depending on familiarity with lighting control programming language, number of lighting circuits to be tested).

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Potential Issues and Cautions

No potential issues known.

Inspection Enforcement

- Verify that the construction inspection and functional testing items in NRCA-LTO-02-A are marked with "Complies."
- Verify the contact information of the acceptance test technician is complete with the acceptance test technician certification number.
- Verify that all declaration statements on the last page of the NRCA-LTO-02-A are complete and that the document is signed.
- All NRCA forms for Lighting Controls must have a water mark logo from a certified Lighting Controls ATTCP Provider.

Acceptance Criteria

Automatic scheduling controls:

- During daytime, all controlled luminaires are turned off.
- During programmed nighttime occupied period, all controlled luminaires are turned on.
- During programmed nighttime unoccupied period, lighting power reduces by at least 50 percent but no more than 90 percent, or lighting is turned off.
- The correct date and time are set.
- The control is programmed with on and off schedules, including weekday, weekend, and holiday schedules.

Photocontrols:

- During daytime, all controlled luminaires are turned off.
- During nighttime, all controlled luminaires are turned on.

Motion sensors:

- Reduce lighting power of each luminaire by at least 50 percent but no more than 90 percent within 15 minutes after area has been vacated or controlled luminaires are turned off per NA 7.8.1.2.
- Turn lighting on when area is occupied.

Follow the **Construction Inspection** and **Functional Testing** instructions on NRCA-LTO-02-E.