

INDOOR LIGHTING – LIGHTING CONTROLS

CEC-NRCC-LTI-02-E (Revised 01/16)



CERTIFICATE OF COMPLIANCE		NRCC-LTI-02-E
Indoor Lighting - Lighting Controls		(Page 1 of 3)
Project Name:	Date Prepared:	

A. Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)		
YES	NO	Control Requirements
<input type="checkbox"/>	<input type="checkbox"/>	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
<input type="checkbox"/>	<input type="checkbox"/>	Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
<input type="checkbox"/>	<input type="checkbox"/>	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
<input type="checkbox"/>	<input type="checkbox"/>	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
<input type="checkbox"/>	<input type="checkbox"/>	All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
<input type="checkbox"/>	<input type="checkbox"/>	All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
<input type="checkbox"/>	<input type="checkbox"/>	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.1(a)4.
<input type="checkbox"/>	<input type="checkbox"/>	The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
<input type="checkbox"/>	<input type="checkbox"/>	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
<input type="checkbox"/>	<input type="checkbox"/>	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
<input type="checkbox"/>	<input type="checkbox"/>	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
<input type="checkbox"/>	<input type="checkbox"/>	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

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A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:

CONDITIONED SPACES UNCONDITIONED SPACES

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With ¹ (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation ²			✓ if Acceptance Test Required	Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (K x L)			
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
Control Credit PAGE TOTAL (Sum of Column 13):															
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):															
												Enter Control Credit total into NRCC-LTI-01-E; Page 1.			

1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) = Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.
 2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Company:	Signature Date:
Address:	CEA Certification Identification (if applicable):
City/State/Zip:	Phone:
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> The information provided on this Certificate of Compliance is true and correct. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name:	Responsible Designer Signature:
Company :	Date Signed:
Address:	License:
City/State/Zip:	Phone:

NRCC-LTI-02-E User Instructions

All of the lighting control documentation is contained in this certificate, rather than being distributed throughout several different compliance documents. The project name and date shall match those on the NRCC-LTI-01-E.

Section A. Mandatory Lighting Control Declaration Statements

The check boxes on this page serve as declaration statements for which the person signing the document is taking responsibility. All relevant boxes are required to be checked.

The declaration statements on Page 1 apply to both conditioned and unconditioned spaces. Therefore, this page needs to be submitted only once for the same job.

Indicate if this page is being used to document and calculate conditioned space or unconditioned space by checking the appropriate box.

This page serves three different functions:

1. Indoor lighting control schedule
2. For calculating and documenting Power Adjustment Factors (PAF, also known as lighting control credits)
3. Check boxes for the field inspector to use to Pass or Fail the documentation of lighting controls or the calculation of PAFs.

Note to field inspectors: Part of the Pass/Fail criteria is to check that all lighting control Certificates of Installation and Acceptance Testing documents have been submitted.

Section B. Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Fill out each separate row as follows:

Lighting Control Schedule

1. **Location in Building** – is a description of the space in which the control is located.
2. **Type/Description** - is a description of the type of lighting control.
 - **Automatic Daylight Control** uses one or more photosensors to detect changes in daylight illumination and then automatically adjusts the luminous flux of the electric lighting system in response.
 - **Automatic Multi-Level Daylight Control** adjusts the luminous flux of the electric lighting system in either a series of steps or by continuous dimming in response to available daylight. This kind of control uses one or more photosensors to detect changes in daylight illumination and then automatically adjusts the electric lighting levels in response.
 - **Automatic Time Switch Control** controls lighting based on the time of day.
 - **Demand Responsive Control** is a kind of control that is capable of receiving and automatically responding to a demand response signal.
 - **Dimmer** varies the luminous flux of the electric lighting system by changing the power delivered to that lighting system.
 - **Energy Management Control System (EMCS)** is a computerized control system designed to regulate the energy consumption of a building by controlling the operation of energy consuming systems.
 - **Lighting Control System** requires two or more components to be installed in the building to provide all of the functionality required to make up a fully functional and compliant lighting control.
 - **Multi-Level Astronomical Time Switch is an Astronomical Time Switch Control** that reduces lighting power in multiple steps.
 - **Occupant Sensor** is used indoors and automatically turns lights OFF after an area is vacated of occupants and is capable of automatically turning the lighting load ON when an area is occupied.
 - **Vacancy Sensor** automatically turns lights OFF after an area is vacated of occupants but requires lighting loads to be turned ON manually.
 - **Photo Control** automatically turns lights ON and OFF, or automatically adjusts lighting levels, in response to the amount of daylight that is available.
3. **Number of Units** – is the number of units of this particular lighting control installed in this location in the building

Standards Complying With (check all that apply). This information is to document which section(s) of the Standards this control has been installed to comply with.

4. 130.1(a) – These are mandatory area controls
5. 130.1(b) - These are mandatory multi-level controls
6. 130.1(c) – These are mandatory automatic shut-Off controls
7. 130.1(d) – These are mandatory daylighting controls
8. 130.1(e) – These are mandatory demand responsive controls
9. 140.6(a) – These are controls installed to earn a Power Adjustment Factor (PAF)
10. 140.6(d) – These are prescriptive daylighting controls

Note that when a lighting control system or Energy Management Control System (EMCS) has been installed to comply with the lighting control requirements, a Certificate of Installation is also required to be submitted.

PAF Credit Calculation. This area is used to calculate lighting control credits.

11. Watts of Controlled Lighting – This is the watts controlled in accordance with §140.6(a)2 of the Standards.
12. PAF – This is the Power Adjustment Factor in accordance with Table 140.6-A of the Standards. This number will be between 0.05 to 0.40, depending on the control and the application.
13. Control Credit - Is the watts of controlled lighting in column 11 times the PAF in column 12.

For the Inspector

14. Designer shall check to acknowledge that Acceptance Testing is required – the acceptance tests compliance documentation is required when an occupancy sensor, automatic time switch control, or demand responsive lighting control is installed.
15. Field Inspector – these check boxes are available for the inspector to verify that the required controls have been installed, Certificates of Installation have been submitted, acceptance tests have been submitted, and PAFs have been appropriately calculated.