#### STATE OF CALIFORNIA **DEMAND RESPONSIVE CONTROLS** 202<mark>25</mark>-CEC-NRCA-LTI-

Project Name and Address	Authority Having Jurisdiction
Project Name	Local Enforcement Agency
Project Address	Permit Number
City, Zip Code	Permit Issue Date

☐ Complies ☐ Does Not Comply	Date Submitted to Local Enforcement
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Intent:

This document is used to demonstrate compliance with acceptance requirements in §130.4(a)5, §130.4(a)8, §160.5(e)1E, and §160.5(e)1H and Reference Nonresidential Appendix NA7.6.3 and NA7.6.5 for demand responsive lighting and controlled receptacle controls. Attach additional sets of pages 2 through 8, as required, for all controls that must be tested.

Indicate all types of demand responsive controls tested for this project

Demand responsive lighting controls using illuminance measurement (Tables A-1 and B-1
of this document should be completed).
Demand responsive lighting controls using current measurement (Tables A-1 and B-2 of
this document should be completed).
Demand responsive lighting controls using full facility current measurement (Tables A-1
and B-3 of this document should be completed).
Demand responsive controls for controlled receptacles (Tables A-2 and B-4 of this
document should be completed).

**Table A-1. Demand Responsive Lighting Control Construction Inspection** 

Step	Entry	Item	Code Reference
1		The demand responsive lighting controls are shown on plan documents and are installed.	NA7.6.3.1
2		The demand responsive control is setup to communicate in one of the following communication protocols: Wi-Fi, ZigBee, BACnet, Ethernet, or other wired or wireless bi-directional communication pathwayprotocol. The demand responsive control is set up to communicate for the functional testing of NA7.6.3.2	NA7.6.3.1(a) §110.12(a)2
N/A	Pass Fail	Construction Inspection Compliance.	N/A



**Demand Responsive Lighting Controls Illuminance Measurement** 

Building: Enter Value Floor: Enter Value Room: Enter Value Control: Enter Value

**Table B-1: Functional Testing Method 1: Illuminance Measurement** 

Step	Entry	Functional Test	Code Reference
N/A	☐ Yes ☐ No	Space is representative of sample. If sampling method is used, attach a page listing untested spaces in sample.	NA7.6.3.2
1	No Entry	Select one location for illuminance measurement. The preferred measurement location is not in a skylit or primary sidelit area so that the illuminance meter is not in direct view of window or skylight. If this is not possible, perform the test at a time and location at which daylight illuminance provides less than half of the design illuminance.	NA7.6.3.2.1, Method 1(a)
1.1	Enter value	Enter the design illuminance value in footcandles (fc).	N/A
2	No Entry	Full output test	NA7.6.3.2.1, Method 1(b)
2.1	No Entry	Using the manual switches/dimmers, set the lighting system to full output. For a lighting system that has been task tuned, override the controls to allow the lighting system to go to full output. The lighting in areas with photo-controls or occupant/vacancy sensors may be at less than full output or may be off.	NA7.6.3.2.1, Method 1(b)1
2.2	Enter value	Measure the illuminance at the selected location and enter the value in footcandles (fc).	NA7.6.3.2.1, Method 1(b)2
2.3	No Entry	Simulate a demand response condition using the demand responsive control.	NA7.6.3.2.1, Method 1(b)3
2.4	Enter value	Measure the illuminance at the selected location with the electric lighting system in the demand response condition and enter the value in footcandles (fc).	NA7.6.3.2.1, Method 1(b)4
2.5	Enter value	Calculate the percent reduction in illuminance from the full output condition to the demand response condition and enter the value in %.  (Percent reduction = [(Step 2.2 – Step 2.4) / Step 2.2] x 100%)	N/A
2.6	Enter value	Enter the area of the controlled space in square feet (ft²).	N/A

Step	Entry	Functional Test	Code Reference
2.7	Enter value	Calculate the area-weighted average reduction in illuminance from the full output condition to the demand response condition for the building using the given formula and enter the value in %.  Area-weighted average reduction =  [(Step 2.5 <sub>1</sub> *Step 2.6 <sub>1</sub> ) <sub>+</sub> (Step 2.5 <sub>2</sub> *Step 2.6 <sub>2</sub> ) <sub>+</sub> (Step 2.5 <sub>3</sub> *Step 2.6 <sub>3</sub> ) <sub>+</sub> ] / [Step 2.6 <sub>1</sub> +Step 2.6 <sub>2</sub> +Step 2.6 <sub>3</sub> +] * 100%	NA7.6.3.2.1, Method 1(b)5
2.8	☐ Yes ☐ No	The area-weighted average reduction (Step 2.7) is at least 15%. (Step $2.7 \ge 15\%$ )	NA7.6.3.2.1, Method 1(b)5 §110.12(c)1
3	No Entry	Minimum output test	NA7.6.3.2.1, Method 1(c)
3.1	No Entry	Using the manual switches/dimmers in each space, set the lighting system to minimum output (but not off). The lighting in areas with photo-controls or occupant/vacancy sensors may be at more than minimum output or may be off.	NA7.6.3.2.1, Method 1(c)1i
3.2	Enter value	Measure the illuminance at the selected location and enter the value in footcandles (fc).	NA7.6.3.2.1, Method 1(c)1ii
3.3	No Entry	Simulate a demand response condition using the demand responsive control.	NA7.6.3.2.1, Method 1(c)2i
3.4	Enter value	Measure the illuminance at the selected location with the electric lighting system in the demand response condition and enter the value in footcandles (fc).	NA7.6.3.2.1, Method 1(c)2ii
3.5	☐ Yes ☐ No	The illuminance in the demand respondse condition (Step 3.4) is not less than the illuminance in the minimum output condition (Step 3.2). (Step 3.4 ≥ Step 3.2)  Exception: In daylit spaces, the illuminance in the demand response condition (Step 3.4) may reduce below the illuminance in the minimum output condition.	NA7.6.3.2.1, Method 1(c)3i
N/A	Pass Fail	Functional Testing Compliance.	N/A



**Demand Responsive Lighting Controls Current Measurement** 

Building: Enter Value Floor: Enter Value Room: Enter Value Control: Enter Value

**Table B-2: Functional Testing Method 2: Current Measurement** 

Table B 2		lesting Method 2: Current Measurement	Code
Step	Entry	Functional Test	Reference
N/A	☐ Yes ☐ No	Space is representative of sample. If sampling method is used, attach a page listing untested spaces in sample.	NA7.6.3.2
1	No Entry	At the lighting circuit panel, select at least one lighting control circuit that serves spaces required to meet §110.12.	NA7.6.3.2.2, Method 2(a)
2	No Entry	Full output test	NA7.6.3.2.2, Method 2(b)
2.1	No Entry	Using the manual switches/dimmers, set the lighting system to full output in the space served by the selected circuit. The lighting in areas with photo controls or occupant/vacancy sensors may be at less than full output or may be off.	NA7.6.3.2.2, Method 2(b)1
2.2	Enter value	Measure the current at the selected circuit and enter the value in amperes (A).	NA7.6.3.2.2, Method 2(b)2
2.3	Enter value	Calculate the sum of all the circuit currents in the full output condition and enter the value in amperes (A).	NA7.6.3.2.2, Method 2(b)5
2.4	No Entry	Simulate a demand response condition using the demand responsive control in the space served by the selected circuit.	NA7.6.3.2.2, Method 2(b)3
2.5	Enter value	Measure the current at the selected circuit with the electric lighting system in the demand response condition and enter the value in amperes (A).	NA7.6.3.2.2, Method 2(b)4
2.6	Enter value	Calculate the sum of all the circuit currents in the demand response condition and enter the value in amperes (A).	NA7.6.3.2.2, Method 2(b)5
2.7	Enter value	Calculate the percent reduction in current at the selected circuit from the full output condition to the demand response condition and enter the value in %. (Percent reduction = [(Step 2.2 - Step 2.5) / Step 2.2] * 100%)	N/A
2.8	Enter value	Calculate the total percent reduction in current from the full output condition to the demand response condition and enter the value in %.  (Total percent reduction =  [(Step 2.3 - Step 2.6) / Step 2.3] * 100%)	NA7.6.3.2.2, Method 2(b)5
2.9	Yes or No	The total percent reduction in current (Step 2.8) is at least 15%. (Step 2.8 ≥ 15%)	NA7.6.3.2.2, Method 2(b)5

Step	Entry	Functional Test	Code Reference
3	No Entry	Minimum output test	NA7.6.3.2.2, Method 2(c)
3.1	No Entry	Using the manual switches/dimmers in each space, set the lighting system to minimum output (but not off) in the space served by the selected circuit. The lighting in areas with photo-controls or occupant/vacancy sensors may be at more than minimum output or may be off.	NA7.6.3.2.2, Method 2(c)1
3.2	Enter value	Measure the current at the selected circuit and enter the value in amperes (A).	NA7.6.3.2.2, Method 2(c)2
3.3	No Entry	Simulate a demand response condition using the demand responsive control in the space served by the selected circuit.	NA7.6.3.2.2, Method 2(c)3
3.4	Enter value	Measure the current at the selected circuit with the electric lighting system in the demand response condition and enter the value in amperes (A).	NA7.6.3.2.2, Method 2(c)4
3.5	☐ Yes ☐ No	The current in the demand response condition (Step 3.4) is not less than the current in the minimum output condition (Step 3.2). (Step 3.4 ≥ Step 3.2) Exception: Circuits that supply power to the daylit portion of enclosed spaces as long as the current for lighting in the non-daylit portions of the enclosed space in the demand response condition is not reduced below the current in the minimum light output condition.	NA7.6.3.2.2, Method 2(c)5
N/A	Pass Fail	Functional Testing Compliance.	N/A

**Demand Responsive Lighting Controls Full Facility Current Measurement** 

Building: Enter Value	Floor: Enter Value	Room: Enter Value	Control: Enter Value

**Table B-3: Functional Testing Method 3: Full Facility Current Measurement** 

Step	Entry	Functional Test	Code Reference
1	No Entry	At circuit panel, select the circuit that serves the disaggregated lighting load of the entire facility and serves spaces required to meet §110.12.	NA7.6.3.2.3, Method 3(a)
2	No Entry	Full output test	NA7.6.3.2.3, Method 3(b)
2.1	No Entry	Using the facility lighting controls, set the lighting system to full output. The lighting in areas with photo-controls or occupant/vacancy sensors may be at less than full output or may be off.	NA7.6.3.2.3, Method 3(b)1

Fail

Step	Entry	Functional Test	Code Reference
2.2	Enter value	Measure the current at the lighting circuit and enter the value in amperes (A).	NA7.6.3.2.3, Method 3(b)2
2.3	No Entry	Simulate a demand response condition using the demand responsive control.	NA7.6.3.2.3, Method 3(b)3
2.4	Enter value	Measure the current at the lighting circuit with the electric lighting system in the demand response condition and enter the value in amperes (A).	NA7.6.3.2.3, Method 3(b)4
2.5	Enter value	Calculate the percent reduction in current from the full output condition to the demand response condition and enter the value in %. (Percent reduction = [(Step 2.2 - Step 2.4) / Step 2.2] * 100%)	NA7.6.3.2.3, Method 3(b)5, Method 3(b)6
2.6	Yes No	The percent reduction in current (Step 2.5) is at least 15%. (Step $2.5 \ge 15\%$ )	NA7.6.3.2.3, Method 3(b)6
3	No Entry	Minimum output test	NA7.6.3.2.3, Method 3(c)
3.1	No Entry	Using the facility controls, set the lighting system to minimum output (but not off). The lighting in areas with photo-controls or occupant/vacancy sensors may be at more than minimum output or may be off.	NA7.6.3.2.3, Method 3(c)1
3.2	Enter value	Measure the current at the lighting circuit and enter the value in amperes (A).	NA7.6.3.2.3, Method 3(c)2
3.3	No Entry	Simulate a demand response condition using the demand responsive control.	NA7.6.3.2.3, Method 3(c)3
3.4	Enter value	Measure the current at the lighting circuit with the electric lighting system in the demand response condition and enter the value in amperes (A).	NA7.6.3.2.3, Method 3(c)4
3.5	☐ Yes ☐ No	The current in the demand response condition (Step 3.4) is not less than the current in the minimum output condition (Step 3.2). (Step $3.4 \ge Step 3.2$ )	NA7.6.3.2.3, Method 3(c)5
N/A	Pass Fail	Functional Testing Compliance.	N/A

**Table A-2. Demand Responsive Controls for Controlled Receptacle Construction Inspection** 

Inspectio	<u> </u>		0-1-
			Code
Step	Entry	Item	Reference
1		The demand responsive controls for controlled receptacles are shown on plan documents and are installed.	NA7.6.5.1(c)
2		The demand responsive control is setup to communicate in one of the following communication protocols: Wi-Fi, ZigBee, BACnet, Ethernet, or other wired or wireless bi-directional communication pathwayprotocol. The demand responsive controls is setup to communicate for the functional testing of NA7.6.5.2.	NA7.6.5.1
3		Controlled receptacles or circuits have permanent or durable-markings to differentiate them from uncontrolled receptacles or circuits.	NA7.6.5.1(d) §130.5(d)3 §160.6(d)3
4		Controlled receptacles are controlled by an automatic shut—off control.	NA7.6.5.1(e) §130.5(d)1 §160.6(d)1
N/A	Pass Fail	Construction Inspection Compliance.	N/A

**Demand Responsive Controls for Controlled Receptacles** 

Building: Enter Value	Floor: Enter Value	Room: Enter Value	Control: Enter Value
Dallaling: Effect Value	I loor. Effect value	1 100111. Eliter Value	Control. Enter Value

**Table B-4: Demand Responsive Controls – Controlled Receptacle Functional Testing** 

			Code
Step	Entry	Functional Test	Reference
N/A	☐ Yes ☐ No	Space is representative of sample. If sampling method is used, attach a page listing untested spaces in sample.	NA7.6.5.2 <del>.1</del>
1	No Entry	On test.	NA7.6.5.2 <del>.3</del> (a) , On test
1.1	No Entry	Trigger the shut—off control to turn the demand responsive controlled receptacle on, or if the receptacle has a manual control turn the receptacle on.	NA7.6.5.2 <mark>.3(a)</mark> , On test (1)
1.2	Yes No	The controlled outlet has full voltage (125 V) present.	NA7.6.5.2 <u>(a)</u> .3 , On test (2)
1.3	No Entry	Simulate a demand response condition using the demand responsive control.	NA7.6.5.2 <u>(a)</u> . <del>3</del> , On test (3)
1.4	Yes No	The controlled outlet has zero voltage (0 V) present (deenergized).	NA7.6.5.2 <u>(a)3</u> , On test (4)

			Code
Step	Entry	Functional Test	Reference
1.5	Yes No	The controlled receptacle cannot be overridden to turn on by the automatic shut—off controls or any manual control.	NA7.6.5.2 <u>(a)<del>.3</del></u> , On test (5)
1.6	No Entry	Simulate a normal condition (non-demand response condition).	NA7.6.5.2( <u>a</u> ). <del>3</del> , On test (6)
1.7	Yes No	The controlled outlet has full voltage (125 V) present.	NA7.6.5.2 <u>(a)</u> . <del>3</del> , On test (7)
2	No Entry	Off test.	NA7.6.5.2 <del>.3</del> ( <u>b</u> <u>)</u> , Off test
2.1	No Entry	Trigger the automatic shut—off control to turn the demand responsive controlled receptacle off, or if the receptacle has a manual control turn the receptacle off.	NA7.6.5.2 <u>(b)</u> - 3, Off test (1)
2.2	Yes No	The controlled outlet has zero voltage (0 V) present (deenergized).	NA7.6.5.2(b)- 3, Off test (2)
2.3	No Entry	Simulate a demand response condition using the demand responsive control.	NA7.6.5.2 <u>(b)</u> - 3, Off test (3)
2.4	Yes No	The controlled outlet has zero voltage (0 V)-is present (deenergized).	NA7.6.5.2 <u>(b)</u> - 3, Off test (4)
2.5	☐ Yes ☐ No	The demand responsive controlled receptacle cannot be overridden to turn on by automatic shut—off controls or any manual control.	NA7.6.5.2 <u>(b)</u> - 3, Off test (5)
2.6	No Entry	Simulate a normal condition (non-demand response condition).	NA7.6.5.2 <u>(b)</u> - 3, Off test (6)
2.7	Yes No	The controlled outlet has zero voltage (0 V) present (deenergized).	NA7.6.5.2(b)- 3, Off test (7)
N/A	Pass Fail	Functional Testing Compliance.	N/A



Declaration Statement	Signatory
Document Author I assert that this Certificate of Acceptance documentation is accurate and complete.	Name Company Name Author Signature Date Signed
Field Technician  I certify the following under penalty of perjury, under the laws of the State of California:  The information provided on this Certificate of Acceptance is true and correct. I am the person who performed the acceptance verification reported on this Certificate of Acceptance (Field Technician). The construction or installation identified on this Certificate of Acceptance complies with the applicable acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and signed by the responsible builder/installer and has been posted or made available with the building permit(s) issued for the building.	Name Company Name ATT Certification Title Date Signed Phone Signature
Responsible Person  I certify the following under penalty of perjury, under the laws of the State of California:  I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this Certificate of Acceptance. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Acceptance and attest to the declarations in this statement (responsible acceptance person). The information provided on this Certificate of Acceptance substantiates that the construction or installation identified on this Certificate of Acceptance complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and is posted or made available with the building permit(s) issued for the building. I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or 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 signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy.	Name Company Name Title Date Signed Phone Signature