Acuity Controls is advanced lighting controls technology, service and support from a single expert source. We offer one of the industry’s most extensive product portfolios for indoor and outdoor applications; single rooms to campuses to municipalities. Our product solutions include occupancy and photosensors, centralized and distributed systems, panels, fixture-integrated, wired and wireless controls that simply work.
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About

About IECC 2015
The International Energy Conservation Code (IECC) 2015 is a residential and commercial building energy code. The IECC has been adopted by many states and municipalities. The intention of this code is to reduce energy consumption by outlining design and construction requirements which include specific constraints for lighting controls. The use of lighting controls to synchronize light levels with daylight, occupancy, and multi-level control demand response capability are required in order to be compliant.

About This Guide
Acuity Controls offers the nLight® IECC Applications Guide as a reference of typical nLight layouts that help make code compliance quicker and easier. The Acuity Controls Design Services Team is also available to support engineers and contractors with detailed design, submittal, and installation. For additional information, please contact your Acuity Brands Sales Representative.

About nLight
The nLight networked digital lighting control system is easy-to-use, easy-to-install and saves energy. Using only standard CAT-5e cable, nLight networks together occupancy sensors, wall stations, and digital LED luminaires to create a digital lighting system with unmatched flexibility! nLight easily scales from one room to an entire campus, creating a lighting control solution that’s perfect for your space and need.
The chart below is an overview of the Code Requirements for Common Building Spaces. Please use this information as a guide. For specific code requirements please refer to the IECC code.

<table>
<thead>
<tr>
<th>Control Requirement*</th>
<th>Code Provision</th>
<th>Code Summary*</th>
<th>Space Type</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Private Office</td>
</tr>
<tr>
<td>Manual-On or Auto-On ≤ 50%</td>
<td>C405.2.1.1.2</td>
<td>Automatically controlled spaces must be controlled to automatically turn the lighting on to not more than 50% power.</td>
<td>✓</td>
</tr>
<tr>
<td>Full Automatic-On</td>
<td>C405.2.1.1.2</td>
<td>Automatically controlled spaces are allowed to turn on to full.</td>
<td>✓</td>
</tr>
<tr>
<td>Auto-Off ≤ 50%</td>
<td>C405.2.1.2</td>
<td>Occupancy sensors shall automatically reduce lighting in warehouse aisle-ways and open areas by ≤ 50%</td>
<td>✓</td>
</tr>
<tr>
<td>Full Auto-Off via Occupancy Sensor</td>
<td>C405.2.1.1.1</td>
<td>Fixtures must automatically turn off within 30 minutes of all occupants leaving the space.</td>
<td>✓</td>
</tr>
<tr>
<td>Time-Switch Controls (via System Controller)</td>
<td>C405.2.2.1</td>
<td>Each area of the building not provided with occupant sensor controls shall be provided with time switch controls. These areas must also be provided with a manual override switch.</td>
<td>✓</td>
</tr>
<tr>
<td>Light Reduction Controls</td>
<td>C405.2.2.2</td>
<td>Spaces shall have a manual control that allows the occupant to reduce the connected lighting load uniformly by at least 50%.</td>
<td>✓</td>
</tr>
<tr>
<td>Manual Control (Local Switch)</td>
<td>C405.2.2.3</td>
<td>Areas shall incorporate a manual control to allow occupants to turn fixtures off.</td>
<td>✓</td>
</tr>
<tr>
<td>Daylight-Responsive Controls</td>
<td>C405.2.3.1/2</td>
<td>Daylight-responsive controls shall be provided within each space with sidelight and toplight daylight zones totaling &gt; 150W.</td>
<td>✓</td>
</tr>
</tbody>
</table>

Notes:
* This summary is for general information purposes only and is provided without any warranty as to accuracy, completeness, or otherwise. The user should read the applicable code sections for more complete and detailed descriptions of code requirements and exceptions and should consult with a professional engineer or other competent advisor before making any decision or taking any action based on this summary.
** While energy code required, safety may preclude the use of a Manual Control in these areas.
PRIVATE OFFICE: No Windows, nLight Enabled Fixtures

**Supported Features:**
- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.3)
- Lighting Reduction (C405.2.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

**Bill of Materials**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Qty</th>
<th>Product #</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>🏡</td>
<td>4</td>
<td>Various; see Appendix A</td>
<td>nLight Enabled Fixture</td>
</tr>
<tr>
<td>🍈</td>
<td>1</td>
<td>nWSX PDT LV DX</td>
<td>Wall Switch Occupancy Sensor with On/Off &amp; Raise/Lower</td>
</tr>
</tbody>
</table>

**Operation Summary:**

- **Fixture:**
  - All fixtures are dimmable
  - All fixtures can be controlled together or independently
  - Maximum level can be task tuned to any percentage during startup
  - Optional automatic lumen compensation

- **Occupancy Control:**
  - Fixtures must be turned on manually for offices without windows, or automatically when room becomes vacant

- **Daylight Control:**
  - Not required for offices without windows or that have loads <150W in sidelight zones

- **Manual Control:**
  - On/Off & Raise/Lower control of fixtures

**Additional Options:**
- Surface or recessed motion sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C403.2.1 - Time Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)

**Sequence of Operation:**

1. Fixtures are dimmable.
2. All fixtures can be controlled together or independently.
3. Maximum level can be task tuned to any percentage during startup.
4. Optional automatic lumen compensation.
5. Occupancy Control: Fixtures must be turned on manually for offices without windows or automatically when room becomes vacant.
6. Daylight Control: Not required for offices without windows or that have loads <150W in sidelight zones.

**Room Description:**

- Supports the requirements for full auto-off, manual control, lighting reduction, and enhanced digital lighting controls if connected to the network.

**Diagram:**

- Diagram showing room layout with devices and locations.
- Diagram with control, fixture, and wiring type detail.
- Room layout diagram with control, fixture, and wiring type detail.

**Additional Options:**

- Surface or recessed motion sensors also available.
- Room can be connected to nLight backbone to enable network control or time schedules (C403.2.1 - Time Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4).

**Required List of Devices:**

- Devices listed in order to implement room layout design above.

**Operational Details:**

- Operational details describe the functionality provided by the equipment specified in the solution.

**Additional Options:**

- Additional options that add control capacity beyond code requirements.
PRIVATE OFFICE: No Windows, nLight Enabled Fixtures

Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

Bill of Materials

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<th>Description</th>
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<tr>
<td><img src="image1.png" alt="Symbol" /></td>
<td>4</td>
<td>Various; see Appendix A</td>
<td>nLight Enabled Fixture</td>
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<tr>
<td><img src="image2.png" alt="Symbol" /></td>
<td>1</td>
<td>nWSX PDT LV DX</td>
<td>Wall Switch Occupancy Sensor with On/Off &amp; Raise/Lower</td>
</tr>
</tbody>
</table>

SEQUENCE OF OPERATION:

Fixtures:
- All fixtures are dimmable
- All fixtures can be controlled together or independently
- Maximum level can be task tuned to any percentage during startup
- Optional automatic lumen compensation

Occupancy Control:
- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

Daylight Control:
- Not required for offices without windows or that have loads <150W in sidelight zones

Manual Control:
- On/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:
- Surface or recessed mount sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
PRIVATE OFFICE: No Windows, 0-10V Dimming Fixtures

Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)

Bill of Materials

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<th>Description</th>
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<tr>
<td><img src="image1" alt="Image" /></td>
<td>1</td>
<td>nPP16 D</td>
<td>Relay Module with 0-10V Dimming Output</td>
</tr>
<tr>
<td><img src="image2" alt="Image" /></td>
<td>1</td>
<td>nWSX PDT LV DX</td>
<td>On/Off &amp; Raise/Lower WallPod</td>
</tr>
</tbody>
</table>

SEQUENCE OF OPERATION:

Fixtures:
- All fixtures are dimmable
- All fixtures are controlled together
- Maximum level can be task tuned to any percentage during startup

Occupancy Control:
- Fixtures must be turned on manually (or optionally be configured to come on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

Daylight Control:
- Not required for offices without windows or that have loads <150W in sidelight zone

Manual Control:
- On/off & raise/lower control of fixtures

ADDITIONAL OPTIONS:
- Surface or recessed mount sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
  Note: Max of 4 fixture per controlled group.
PRIVATE OFFICE: Windows, nLight Enabled Fixtures

Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

Bill of Materials

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<td>Various; see Appendix A</td>
<td>nLight Enabled Fixture</td>
</tr>
<tr>
<td><img src="image" alt="On/Off &amp; Raise/Lower WallPod" /></td>
<td>1</td>
<td>nPODM DX</td>
<td>On/Off &amp; Raise/Lower WallPod</td>
</tr>
<tr>
<td><img src="image" alt="Dual Technology Occupancy Sensor" /></td>
<td>1</td>
<td>nCM PDT 9 ADCX</td>
<td>Dual Technology Occupancy Sensor with Automatic Dimming Photocell</td>
</tr>
</tbody>
</table>

### SEQUENCE OF OPERATION:

**Fixtures:**

- All fixtures are dimmable
- All fixtures are controlled together or independently
- Maximum level can be task tuned to any percent-age during startup
- Optional automatic lumen compensation

**Occupancy Control:**

- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

**Daylight Control:**

- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number zones = number of fixtures)
- Not required for offices without windows or that have loads <150W in sidelight zones

**Manual Control:**

- On/off & raise/lower control of fixtures

### ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For emergency lighting control order fixtures with -n80EMG or -n100EMG option
PRIVATE OFFICE: Windows, 0-10V Dimming Fixtures

Supports the Following Requirements:
- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)

SEQUENCE OF OPERATION:

- **Fixtures:**
  - All fixtures are dimmable
  - All fixtures are controlled together
  - Maximum level can be task tuned to any percentage during startup

- **Occupancy Control:**
  - Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
  - Fixtures automatically turn off when room becomes vacant

- **Daylight Control:**
  - Smooth continuous dimming
  - Not required for offices without windows or that have loads <150W in sidelight zones

- **Manual Control:**
  - On/off & raise/lower control of fixtures

Bill of Materials

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<tr>
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<th>Description</th>
</tr>
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<tbody>
<tr>
<td><img src="image1" alt="Symbol" /></td>
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<td>nPP16 D</td>
<td>Relay Module with 0-10V Dimming Output</td>
</tr>
<tr>
<td><img src="image2" alt="Symbol" /></td>
<td>1</td>
<td>nPODM DX</td>
<td>On/Off &amp; Raise/Lower WallPod</td>
</tr>
<tr>
<td><img src="image3" alt="Symbol" /></td>
<td>1</td>
<td>nCM PDT 9 ADCX</td>
<td>Dual Technology Occupancy Sensor with Automatic Dimming Photocell</td>
</tr>
</tbody>
</table>

ADDITIONAL OPTIONS:
- Surface or recessed mount sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C405.6.4)
- Max of 4 fixture per controlled group
- For emergency lighting control order fixtures with -n80EMG or -n100EMG option
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

Bill of Materials

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<td>nLight Enabled Fixture</td>
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<td>2</td>
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<td>nLight Enabled Fixture with EMG Option</td>
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<td>2</td>
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<td>On/Off &amp; Raise/Lower WallPod</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>nCM PDT 9</td>
<td>Dual Technology Occupancy Sensor</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>nCM ADCX</td>
<td>Automatic Dimming Control Photocell</td>
</tr>
</tbody>
</table>

SEQUENCE OF OPERATION:

- Fixtures:
  - All fixtures are dimmable
  - All fixtures are controlled together or independently
  - Maximum level can be task tuned to any percentage during startup
  - Optional automatic lumen compensation

- Occupancy Control:
  - Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
  - Fixtures automatically turn off when room becomes vacant

- Daylight Control:
  - Smooth continuous dimming
  - Custom grouping of fixtures into separate daylight zones (max. number zones = number of fixtures)
  - Not required for offices without windows or that have loads <150W in sidelight zones

- Manual Control:
  - Master on/off & raise/lower control of fixtures
  - Optional individual row control (add nPODM 4P DX)

ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Add Graphic WallPod (model nPOD GFX) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
**Supports the Following Requirements:**

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)

**Bill of Materials**

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<th>Symbol</th>
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<tr>
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<td>nPP16 D</td>
<td>Relay Module with 0-10V Dimming Output</td>
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<td>nPP16 D ER</td>
<td>Emergency Relay Module with 0-10V Dimming Output</td>
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<td>nPODM DX</td>
<td>On/Off &amp; Raise/Lower WallPod</td>
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<td><img src="image.png" alt="Symbol" /></td>
<td>4</td>
<td>nCM PDT</td>
<td>Dual Technology Occupancy Sensor</td>
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<tr>
<td><img src="image.png" alt="Symbol" /></td>
<td>1</td>
<td>nCM ADCX</td>
<td>Automatic Dimming Control Photocell</td>
</tr>
</tbody>
</table>

**SEQUENCE OF OPERATION:**

- **Fixtures:** All fixtures are dimmable
- Each row controlled independently
- Maximum level can be task tuned to any percentage during startup

- **Occupancy Control:**
  - Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
  - Fixtures automatically turn off when room becomes vacant

- **Daylight Control:**
  - Smooth continuous dimming
  - Daylight zones defined by rows
  - Not required for offices without windows or that have loads <150W in sidelight zones

- **Manual Control:**
  - Master on/off & raise/lower control of fixtures
  - Optional individual row control (add nPODM 4P DX)

**ADDITIONAL OPTIONS:**

- Surface or recessed mount sensors also available
- Add Graphic WallPod (model nPOD GFX) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
  - Note: Max of 4 fixture per controlled group
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

**Bill of Materials**

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<th>Description</th>
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</thead>
<tbody>
<tr>
<td><img src="image1" alt="symbol" /></td>
<td>6</td>
<td>Various; see Appendix A</td>
<td>nLight Enabled Fixture</td>
</tr>
<tr>
<td><img src="image2" alt="symbol" /></td>
<td>1</td>
<td>nPODM 2P DX</td>
<td>Dual On/Off &amp; Raise/Lower WallPod</td>
</tr>
<tr>
<td><img src="image3" alt="symbol" /></td>
<td>1</td>
<td>nCM PDT 9</td>
<td>Dual Technology Occupancy Sensor</td>
</tr>
<tr>
<td><img src="image4" alt="symbol" /></td>
<td>1</td>
<td>nCM PDT 9 ADCX</td>
<td>Dual Technology Occupancy Sensor and Automatic Dimming Control Photocell (if daylight control is required)</td>
</tr>
</tbody>
</table>

**Options**

| ![symbol](image5) | 1   | nCM PDT 9 ADCX | Dual Technology Occupancy Sensor and Automatic Dimming Control Photocell (if daylight control is required) |

Note: nCM PDT 9 ADCX replaces nCM PDT 9 above when daylighting control is required.

/ SEQUENCE OF OPERATION:

- Fixtures: All fixtures are dimmable. A/V Zone can be programmed to control 2 fixtures in front of projector screen. Maximum level can be task tuned to any percentage during startup. Optional automatic lumen compensation
- Occupancy Control: Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%). Fixtures automatically turn off when room becomes vacant. Optional automatic lumen compensation
- Daylight Control: Smooth continuous dimming. Custom grouping of fixtures into separate daylight zones (max number zones = number of fixtures). Not required for areas without windows or that have loads <150w in sidelight zones
- Manual Control: On/off & raise/lower control of two groups of fixtures

/ ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Add nPODM 4S for four scene or nPOD GFX for touch screen control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For emergency lighting control order fixtures with -n80EMG or -n100EMG option
**Supports the Following Requirements:**

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)

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<td>nPP16 D</td>
<td>Relay Module with 0-10V Dimming Output</td>
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<td>nPODM 2P DX</td>
<td>Dual On/Off &amp; Raise/Lower WallPod</td>
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<td>nCM PDT 9</td>
<td>Dual Technology Occupancy Sensor</td>
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**Options**

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<th>Qty</th>
<th>Product #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Symbol" /></td>
<td>1</td>
<td>nCM ADCX</td>
<td>Automatic Dimming Control Photocell</td>
</tr>
</tbody>
</table>

**SEQUENCE OF OPERATION:**

**Fixtures:**
- All fixtures are dimmable
- Each row controlled independently
- Maximum level can be task tuned to any percentage during startup

**Occupancy Control:**
- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

**Daylight Control:**
- Smooth continuous dimming
- Daylight zones defined by rows
- Not required for areas without windows or that have loads <150W in sidelight zones

**Manual Control:**
- On/off & raise/lower control of each row

**ADDITIONAL OPTIONS:**
- Surface or recessed mount sensors also available
- Add nPODM 4S for four scene or nPOD GFX for touch screen control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For emergency lighting control add a nPP16 D ER pack
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

Bill of Materials

<table>
<thead>
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<tr>
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Options

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<td>nCM ADCX</td>
<td>Automatic Dimming Control Photocell</td>
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</tbody>
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SEQUENCE OF OPERATION:

Fixtures:
- All fixtures are dimmable
- White Board or A/V Zone can be programmed to control 2 fixtures in front of projector screen
- Maximum level can be task tuned to any percentage during startup
- Optional automatic lumen compensation

Occupancy Control:
- Fixtures must be turned on manually (or optionally can be configured to some on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

Daylight Control:
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max number zones = number of fixtures)
- Not required for areas without windows or that have loads <150W in sidelight zones

Manual Control:
- Master on/off & raise/lower control of entire room
- Optional 4 scene control

Additions:
- Surface or recessed mount sensors also available
- Add additional relay pack (model nPP16 D) if a white board lighting zone is also required
- Add graphic wallpod (model nPOD GFX) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Sidelight Daylight Zone (C405.2.3.2)

Bill of Materials

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<th>Symbol</th>
<th>Qty</th>
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<td>Relay Module with 0-10V Dimming Output</td>
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<tr>
<td>![ Emergency Relay Module](nPP16 D ER)</td>
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<td>nPP16 D ER</td>
<td>Emergency Relay Module with 0-10V Dimming Output</td>
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<tr>
<td>![ On/Off &amp; Raise/Lower WallPod](nPODM DX)</td>
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<td>nPODM DX</td>
<td>On/Off &amp; Raise/Lower WallPod</td>
</tr>
<tr>
<td>![ Dual Technology Wide View Occupancy Sensor](nWV PDT 16)</td>
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Options

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<th>Qty</th>
<th>Product #</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![ Teacher Station](nPODM 4S DX) | 1 | nPODM 4S DX | Teacher Station — 4 Scene Control  
Master On/Off & Raise/Lower |
| ![ Automatic Dimming Control Photocell](nCM ADCX) | 1 | nCM ADCX | Automatic Dimming Control Photocell |

SEQUENCE OF OPERATION:

Fixtures:
- All fixtures are dimmable
- Each row controlled independently
- Maximum level can be task tuned to any percentage during startup

Occupancy Control:
- Fixtures must be turned on manually (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

Daylight Control:
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max number zones = number of fixtures)
- Not required for areas without windows or that have loads <150W in sidelight zones

Manual Control:
- Master on/off & raise/lower control of entire room
- Optional 4 scene control

ADDITIONAL OPTIONS:
- Surface or recessed mount sensors also available
- Add additional relay pack (model nPP16 D) if a white board lighting zone is also required
- Add graphic wallpod (model nPOD GFX) for individual row and up to 16 scene control
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- Note: Max of 4 fixture per controlled group

IECC 2015: nLight Applications Guide
NON-EXIT STAIRWELL with XPoint™ Wireless Enabled Fixtures

Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)

Bill of Materials

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<tr>
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<td>1</td>
<td>XPoint Wireless Bridge</td>
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<tr>
<td>XPA SIAC2 L2 + RS CCS BWH</td>
<td>2</td>
<td>Wireless Contact Interface + Dimming Rocker Switch</td>
<td></td>
</tr>
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SEQUENCE OF OPERATION:

Fixtures:
- All fixtures are dimmable
- Maximum level can be task tuned to any percentage during startup
- Integral wireless occupancy and protocol sensor

Occupancy Control:
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

ADDITIONAL OPTIONS:
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4) Note: Max of 4 fixture per controlled group
- For sidelight/toplight zones with a load > 150W, integrated sensor can be used for daylight control (C405.2.3.1/2)
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)

Non-Exit Stairwell with 0-10V Dimming Fixtures

**Bill of Materials**

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<td>nPP16 D</td>
<td>Relay Module with 0-10V Dimming Output</td>
</tr>
<tr>
<td><img src="image2.png" alt="Symbol" /></td>
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<td>nCM 10</td>
<td>PIR Extended Range Occupancy Sensor</td>
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<tr>
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<td>nPODM DX</td>
<td>On/Off &amp; Raise/Lower WallPod</td>
</tr>
</tbody>
</table>

**SEQUENCE OF OPERATION:**

- Fixtures: All fixtures are dimmable. Maximum level can be task tuned to any percentage during startup.

- Occupancy Control:
  - Fixtures automatically go to full bright when occupied.
  - Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant.

**ADDITIONAL OPTIONS:**

- Surface or recessed mount sensors also available.
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4).
- Note: Max of 4 fixture per controlled group.
- For emergency lighting control add a nPP16 D ER pack.
- For sidelight/toplight daylight zones with a load >150W, add nCM ADCX for daylight control (C405.2.3.1/2).
**LOBBY with nLight Enabled Fixtures**

**Supports the Following Requirements:**

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Sidelight Daylight Zone (C405.2.3.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

---

**Bill of Materials**

<table>
<thead>
<tr>
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<tr>
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<td>Dual On/Off &amp; Raise/Lower WallPod</td>
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<tr>
<td><img src="image3" alt="Symbol" /></td>
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<td>nCM PDT 10 ADCX</td>
<td>Dual Technology Extended Range Occupancy Sensor with Automatic Dimming Photocell</td>
</tr>
<tr>
<td><img src="image4" alt="Symbol" /></td>
<td>6</td>
<td>Various; see Appendix A</td>
<td>nLight Enabled Downlight</td>
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</table>

**SEQUENCE OF OPERATION:**

**Fixtures:**
- All fixtures are dimmable
- Fixtures can be configured for control of two zones
- Maximum level can be task tuned to any percentage during startup
- Optional automatic lumen compensation

**Occupancy Control:**
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to low dim setting when space becomes vacant

**Daylight Control:**
- Smooth continuous dimming
- Custom grouping of fixtures into separate daylight zones (max. number of zones = number of fixtures)
- Not required for spaces without windows or that have loads <150W in sidelight zones

**ADDITIONAL OPTIONS:**
- Surface or recessed mount sensors also available
- Space can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For emergency lighting control, order fixtures with -n80EMG or -n100EMG option

---

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LOBBY with 0-10V Dimming Fixtures

Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Sidelight Daylight Zone (C405.2.3.2)

Bill of Materials

<table>
<thead>
<tr>
<th>Symbol</th>
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<th>Description</th>
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</thead>
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<tr>
<td></td>
<td>1</td>
<td>nPP16 D</td>
<td>Relay Module with 0-10V Dimming Output</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>nPODM 2P DX</td>
<td>Dual On/Off &amp; Raise/Lower WallPod</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>nCM PDT 10 ADCX</td>
<td>Dual Technology Extended Range Occupancy Sensor with Automatic Dimming Photocell</td>
</tr>
</tbody>
</table>

SEQUENCE OF OPERATION:

- Occupancy Control:
  - Fixtures automatically go to full bright when occupied
  - Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

- Daylight Control:
  - Smooth continuous dimming
  - Not required for spaces without windows or that have loads < 150W in sidelight zones

ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Space can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
  - Note: Max of 4 fixture per controlled group
- For emergency lighting control add a nPP16 D ER pack

IECC 2015: nLight Applications Guide
## Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

---

### Bill of Materials

<table>
<thead>
<tr>
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<td></td>
<td>2</td>
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<td>nLight Enabled Fixture with EMG Option</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>nCM 10</td>
<td>Extended Range PIR Occupancy Sensor</td>
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</tbody>
</table>

---

### SEQUENCE OF OPERATION:

#### Fixtures:
- All fixtures are dimmable
- All fixtures are controlled together or independently
- Maximum level can be task tuned to any percentage during startup
- Optional automatic lumen compensation

#### Occupancy Control:
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

### ADDITIONAL OPTIONS:
- Surface or recessed mount sensors also available
- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For sidelight/toplight daylight zones with a load >150W, add nCM ADCX (RJB) for daylight control (C405.2.3.1/2)

---

Note: Some nLight enabled EMG fixtures require a Normal Power Sense line connection. See fixture spec sheets for details.
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)

Bill of Materials

<table>
<thead>
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<tr>
<td><img src="symbol.png" alt="Image" /></td>
<td>4</td>
<td>nCM 10</td>
<td>Extended Range PIR Occupancy Sensor</td>
</tr>
</tbody>
</table>

SEQUENCE OF OPERATION:

- **Fixtures:**
  - All fixtures are dimmable
  - All fixtures are controlled together
  - Maximum level can be task tuned to any percentage during startup

- **Occupancy Control:**
  - Fixtures automatically go to full bright when occupied
  - Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Space/zone can be connected to nLight backbone to enable network control or time schedules (C405.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
  - Note: Max of 4 fixture per controlled group
- For sidelight/toplight daylight zones with a load >150W, add nCM ADCX (RJB) for daylight control (C405.2.3.1/2)
**PUBLIC RESTROOM with nLight Enabled Fixtures**

**Supports the Following Requirements:**
- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

**Bill of Materials (Each Restroom)**

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<td><img src="image2.png" alt="Image" /></td>
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</tr>
<tr>
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<td>Dual Technology Occupancy Sensor</td>
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<tr>
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<td>2</td>
<td>Various; see Appendix A</td>
<td>nLight Enabled Downlight</td>
</tr>
</tbody>
</table>

**SEQUENCE OF OPERATION:**

**Occupancy Control:**
- Fixtures automatically go to full bright when occupied (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off when room becomes vacant

**Manual Control:**
- On/off & raise/lower control of fixtures (per room)
- If switch poses safety concerns, optionally can be programmed for “on only”

**ADDITIONAL OPTIONS:**
- Surface or recessed mount sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For emergency lighting control order fixtures with -n80EMG or -n100EMG option
**PUBLIC RESTROOM with 0-10V Dimming Fixtures**

### Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)

### Bill of Materials (Each Restroom)

<table>
<thead>
<tr>
<th>Symbol</th>
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<td>On/Off &amp; Raise/Lower WallPod</td>
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<td>nCM PDT 9</td>
<td>Dual Technology Occupancy Sensor</td>
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</tbody>
</table>

### SEQUENCE OF OPERATION:

**Fixtures:**
- All fixtures are dimmable
- All fixtures are controlled together (per room)
- Maximum level can be task tuned to any percentage during startup

**Occupancy Control:**
- Fixtures automatically go to full bright when occupied
- Fixtures automatically turn off when room becomes vacant

**Manual Control:**
- On/off & raise/lower control of fixtures (per room)
- If switch poses safety concerns, optionally can be programmed for "on only"

### ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Room can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- Note: Max of 4 fixture per controlled group
- For emergency lighting control add a nPP16 D ER pack

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CAT-5e Cable | Line Voltage Wires | Line Power Feed | 0-10V Wires
---|---|---|---

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IECC 2015: nLight Applications Guide
PRIVATE / SINGLE RESTROOM with nLight Enabled Fixture

Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Manual Control (Local Switch) (C405.2.2.3)
- Lighting Reduction (C405.2.2.2)
- Enhanced Digital Lighting Controls if connected to network (C406.4)

SEQENCE OF OPERATION:

- nWSX PDT LV DX

Bill of Materials

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<tr>
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<th>Description</th>
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<td>1</td>
<td>nWSX PDT LV DX</td>
<td>Dual Technology Occupancy Wall Switch with Raise/Lower</td>
</tr>
</tbody>
</table>

/ SEQUENCE OF OPERATION:

Fixtures:
- All fixtures are dimmable
- Maximum level can be task tuned to any percentage during startup
- Optional automatic lumen compensation

Occupancy Control:
- Fixtures automatically go to full bright when occupied (or optionally can be configured to come on automatically to 50%)
- Fixtures automatically turn off when space becomes vacant

Manual Control:
- On/off & raise/lower control of fixtures

/ ADDITIONAL OPTIONS:

- Surface or recessed mount sensors also available
- Space can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
- For emergency lighting control order fixtures with -n80EMG or -n100EMG option
Supports the Following Requirements:

- Full Auto-Off via Occupancy Sensor (C405.2.1.1)
- Toplight Daylight Zone (C405.2.3.3)

Bill of Materials

<table>
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<td>XPA BRG</td>
<td>XPoint Wireless Bridge</td>
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Options

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<tr>
<td>SIAC</td>
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<td>XPA SIAC2 L2 + RS CCS BWH</td>
<td>Wireless Contact Interface + Dimming Rocker Switch</td>
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<tr>
<td></td>
<td>25</td>
<td>XPA CMRB6</td>
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SEQUENCE OF OPERATION:

- **Occupancy Control:**
  - Fixtures are dimmable
  - All fixtures are controlled together
  - Maximum level can be task tuned to any percentage during startup
  - Fixtures automatically go to full bright when occupied
  - Fixtures automatically turn off or optionally can be configured to drop to low dim setting when space becomes vacant

- **Daylight Control:**
  - Daylight responsive controls lights to full off when adequate daylight present
  - Not required for spaces without skylights or that have loads <150W in toplight zones

ADDITIONAL OPTIONS:

- Space can be connected to nLight backbone to enable network control or time schedules (C405.2.2.1 - Time-Switch Controls), and also qualify for Enhanced Digital Lighting Controls (C406.4)
Programmable Timeclock Control:

Although not pictured within the individual room design guides, each nLight Control Zone can be connected via an nLight backbone to create a networked nLight lighting control system capable of meeting the requirements of the IECC Time-Switch Controls provision (C405.2.2.1), and also qualifies for the Enhanced Digital Lighting Controls provision (C406.4). A networked system also enables astronomical time clock control.

For additional information regarding building management integration or demand response features, please contact your Acuity Brands Sales Representative.

Bill of Materials

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Qty</th>
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<th>Description</th>
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</tr>
</tbody>
</table>

nLight BLE Radio Module

The nLight nIO BT Bluetooth® low energy technology module enables wireless communication to an nLight zone of devices from a smartphone. The nLight smartphone app, nConfig, easily modifies the settings and operation of the devices in an nLight zone aiding in meeting energy code requirements.
## APPENDIX A: nLight Enabled Fixtures

<table>
<thead>
<tr>
<th>Fixture Type</th>
<th>Product Family</th>
<th>Fixture Series</th>
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</thead>
<tbody>
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<th>Product Family</th>
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</table>

*Note: New nLight enabled fixtures are added regularly. Please reference fixture spec sheets for nLight enabled options.*
## APPENDIX B: Requirements Overview

<table>
<thead>
<tr>
<th>Control Requirement</th>
<th>Code Provision</th>
<th>Code Summary*</th>
<th>Recommendations for Compliance</th>
<th>nLight Solution Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Control (Local Switch)</td>
<td>C405.2.2.3</td>
<td>Areas shall incorporate a manual control to allow occupants to turn fixtures off.</td>
<td>Include manual control device(s) in all room control system designs</td>
<td>nLight WallPod devices provide a user with local control of lighting within an nLight controlled space (i.e.: nLight zone). WallPods are available in multiple styles – each with varying features and user experiences.</td>
</tr>
<tr>
<td>Time-Switch Controls (via System Controller)</td>
<td>C405.2.2.1</td>
<td>Each area of the building not provided with occupant sensor controls shall be provided with time switch controls. These areas must also be provided with a manual override switch.</td>
<td>Utilizing controls capable of being networked across an entire building enables simple compliance via a single central programmable time clock.</td>
<td>Individual nLight Control Zones (i.e.: rooms) can be easily networked together across an entire building simply by connecting them into a &quot;backbone&quot; made up of one or more nLight Bridge devices and an nLight ECLYPSE™ system controller. The system controller provides programmable time clock functionality for an nLight network as well as interfaces to the SensorView suite of web-based software applications (via an Ethernet LAN / WAN connection).</td>
</tr>
<tr>
<td>Full Auto-Off via Occupancy Sensor</td>
<td>C405.2.1.1.1</td>
<td>Fixtures must automatically turn off within 30 minutes of all occupants leaving the space.</td>
<td>Always include occupancy sensors in all control system designs regardless of lighting type.</td>
<td>nLight occupancy sensors utilize 100% digital passive infrared (PIR) detection, come in several mounting styles, and offer multiple coverage pattern options. Additionally, nLight sensors are available with patented Microphonics™ dual technology detection for rooms with obstructions. Configuring for full off vs. partial off control is done with system programming.</td>
</tr>
<tr>
<td>Manual On, Auto-On &lt;=50%, Full Automatic On</td>
<td>C405.2.1.1.2</td>
<td>Automatically controlled spaces must be controlled to either turn the lighting on to not more than 50%, or in certain spaces, to full on.</td>
<td>Always include occupancy sensors in all control system designs. Reducing the level of dimmable fixtures to 50% is the easiest method of compliance, however turning off 50% of lighting via circuit switching is also an option.</td>
<td>360° Occupancy Sensor: Surface or recessed mounts to ceiling tiles or sheetrock/plaster. 120° WideView Corner Sensor: Directly mounts in corner or to ceiling via repositionable ceiling bracket.</td>
</tr>
</tbody>
</table>

*Note: This summary is for general information purposes only and is provided without any warranty as to accuracy, completeness, or otherwise. The user should read the applicable code sections for more complete and detailed descriptions of code requirements and exceptions and should consult with a professional engineering or other competent advisor before making any decision or taking any action based on this summary.*
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</thead>
<tbody>
<tr>
<td>Light-Reduction Controls</td>
<td>C405.2.2.2</td>
<td>Spaces shall have a manual control that allows the occupant to reduce the connected lighting load uniformly by at least 50%.</td>
<td>Continuously dimmable LED (or fluorescent) fixtures and manual dimming controls are the easiest method of compliance.</td>
<td>nLight provides multiple options for controlling continuous dimming luminaires. This allows spaces with several lighting types and technologies to be controlled together and with a common user experience.</td>
</tr>
<tr>
<td>Daylight-Responsive Controls</td>
<td>C405.2.3.1/2</td>
<td>Daylight-responsive controls shall be provided within each space with sidelight and toplight daylight zones totaling &gt;150 Watts.</td>
<td>Automatic daylight harvesting photocells that continuously adjust the level of dimming fixtures according to daylight levels provide the most effective and least distracting control.</td>
<td>nLight offers standalone daylight harvesting sensors as well as occupancy sensors with integrated daylight harvesting. Sensors are available in four different housings and provide continuous dimming control of any/all networked nLight enabled fixtures or dimming relay packs, each capable of being its own daylight zone.</td>
</tr>
</tbody>
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Additional Resources

Acuity Controls Typical Layout Drawings
http://www.acuitybrands.com/typicals

IECC
http://www.iccsafe.org/

Use the Following Sections of the IECC 2015 Code as Reference:
- Section C405.2.1.1.1 – Full Auto-Off via Occupancy Sensor
- Section C405.2.1.1.2 – Manual-On or Partial-On
- Section C405.2.1.1.2 – Full Automatic On
- Section C405.2.1.3 – Local Switch
- Section C405.2.2.1 – Programmable Timeclock
- Section C405.2.2.2 – Manual Lighting Reduction
- Section C405.2.3.1/2 – Daylight-Responsive Controls
- Section C406.4 – Enhanced Digital Lighting Controls

A+ Certified solutions from Acuity Brands help you quickly and confidently select and implement lighting systems that are both compatible and consistent.

For lighting applications, A+ means verified consistent performance, visual appearance and system interoperability of all luminaires and controls within the certified solutions. For lighting professionals it means confidence that all parts of the lighting system will work together and meet common Acuity Brands specifications.

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