

STEINEL®
PROFESSIONAL

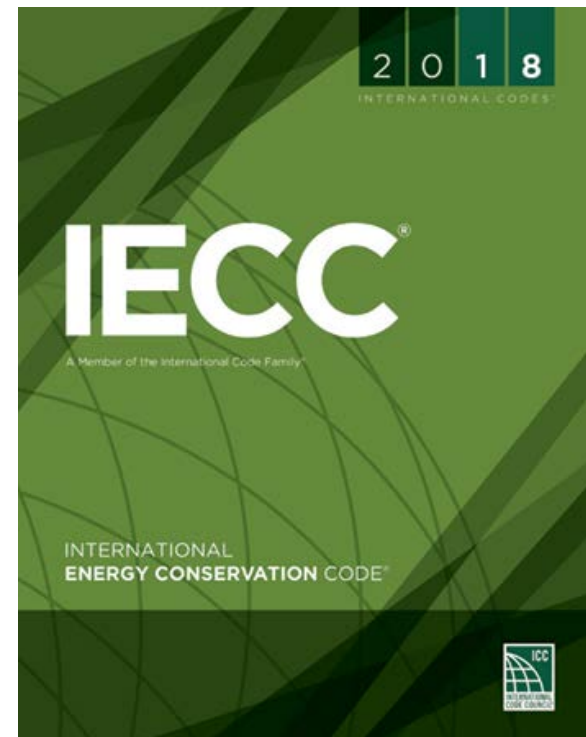
Code Review

IECC 2018

PRESENTED BY POURIA NIKNAM

What's New in 2018 IECC

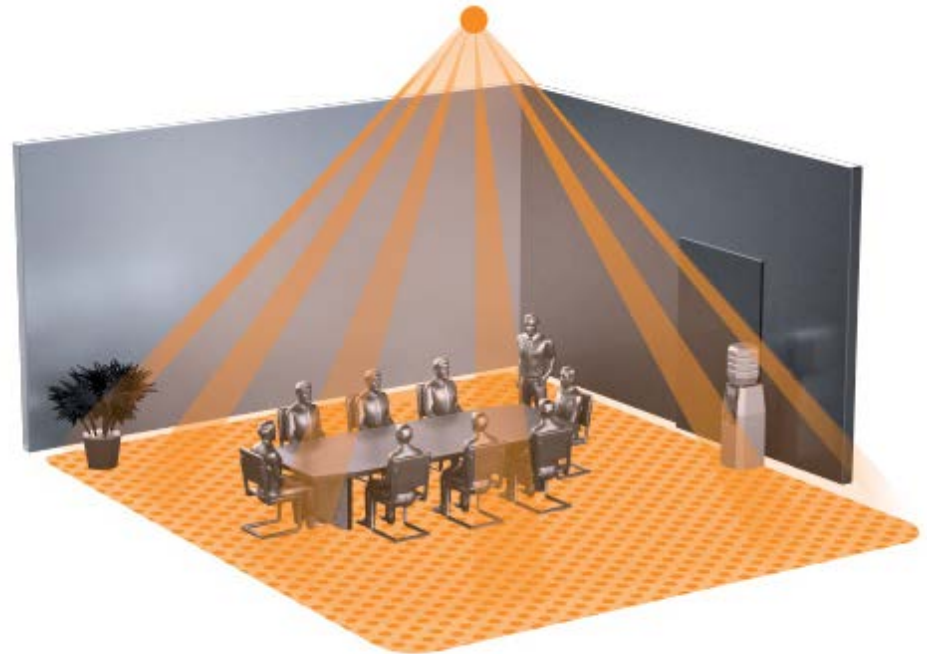
- Two acceptable compliance methods:
 - Occupant Sensor Controls
 - Luminaire Level Lighting Controls (LLLC) (Optional)
- Zone control for open office areas
- New controls requirements for warehouses
- Daylight responsive control
- Enhanced digital lighting controls (optional)



Compliance Method: Occupant Sensor Controls

Occupant Sensor Controls

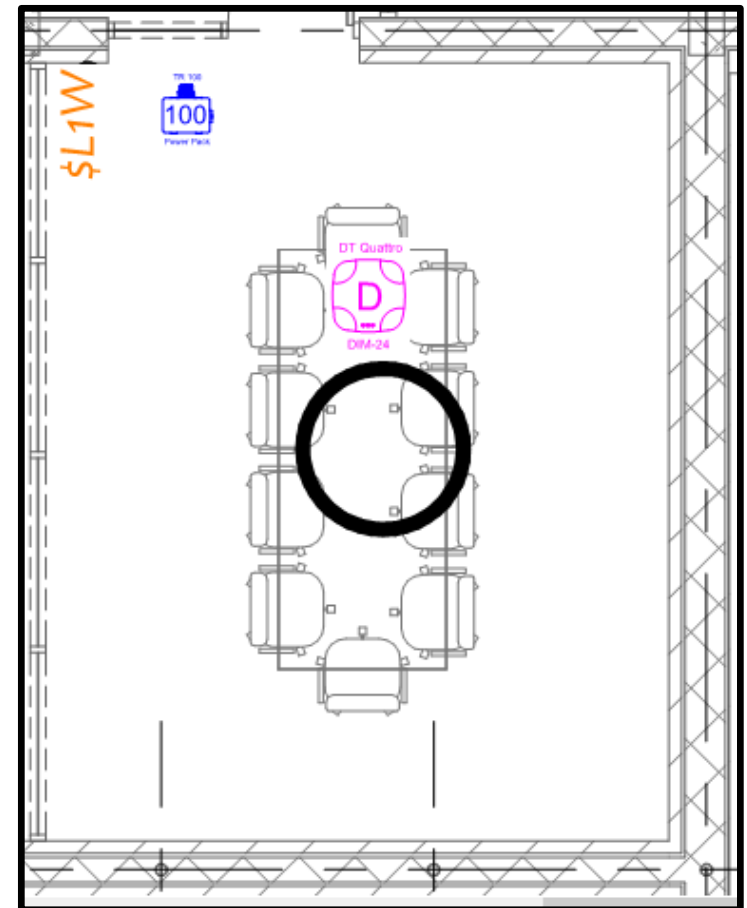
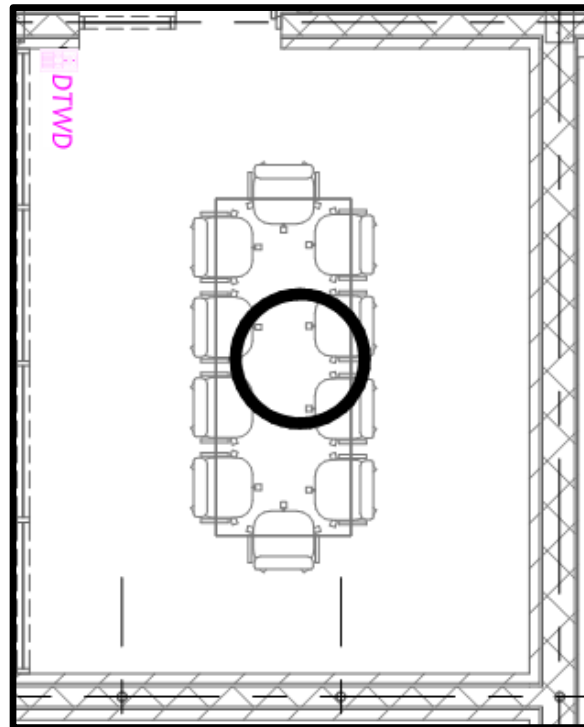
- Occupant sensors shall automatically turn off all lights within 20 minutes after all occupants have left the space.
- Occupant sensors shall be manual on or controlled to automatically turn on the lighting to not more than 50-percent power.
- There shall be a manual control to allow occupants to turn off lights.



Compliance Method: Occupant Sensor Controls

STEINEL Solutions

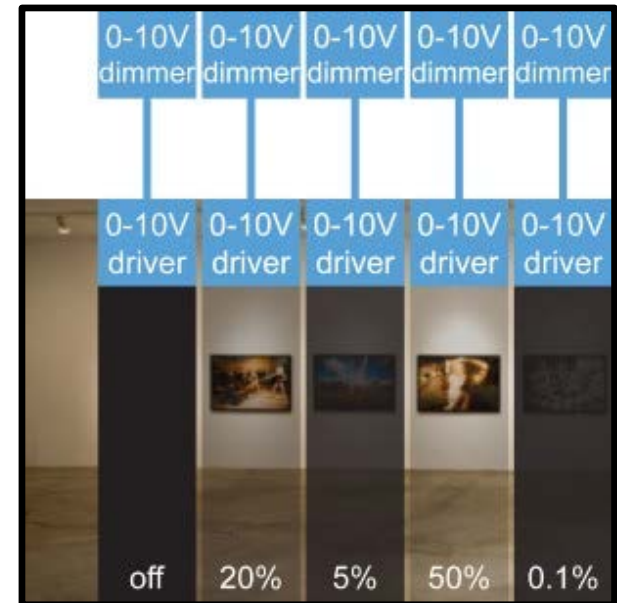
- Our updated firmware for DIM-24 Control Pro ceiling or corner mount sensors can be set to Partial On or Force Off.
- 0-10V dimming wall switches are set to Partial On right out of the box.



Compliance Method: Luminaire Level Lighting Controls (Optional)

Luminaire Level Lighting Controls

- Monitoring occupant activity to brighten or dim lighting when occupied or unoccupied, respectively.
- Monitoring ambient light, both electric light and daylight, and brighten or dim artificial light to maintain desired light level.
- For each control strategy, configuration and reconfiguration of performance parameters including; bright dim setpoints, timeouts, dimming fade rates, sensor sensitivity adjustments, and wireless zoning configurations.



Observations

- Commissioning time is very volatile.
- Limited to the use of basic sensors with poor coverage only.
- Occupancy/vacancy data is not sufficient for integration with HVAC and IoT.
- Proprietary communication protocols.

Zone Control for Open Office Areas

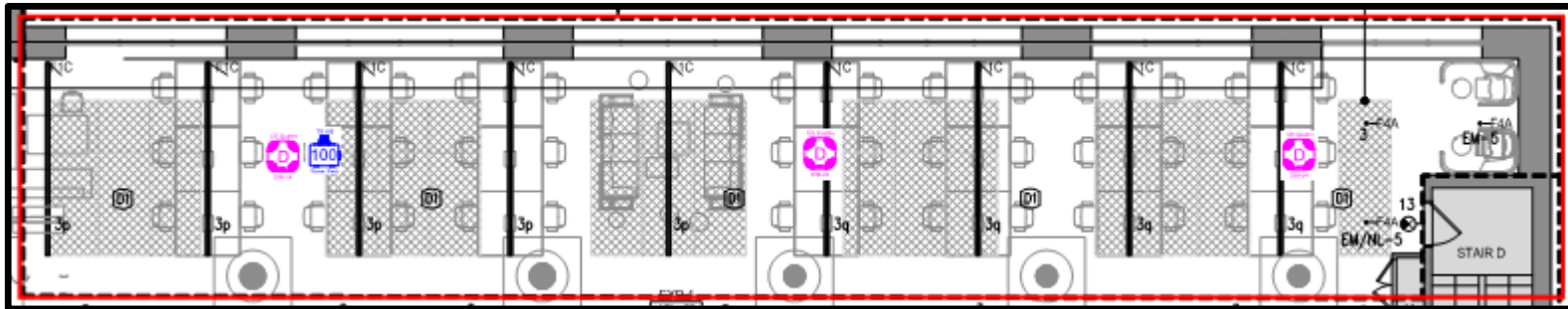
Open Plan Office

- New requirements do not apply to office spaces less than 300 square feet.
- Each zone or control area should be less than 600 square feet.
- Lights shall be turned off in all control zones within 20 minutes after all occupants have left the open office space.
- Lights shall be reduced by not less than 80 percent in each zone within 20 minutes of all occupants leaving each zone.
- Daylight responsive control shall only be activated only when occupancy for the same zone is detected.

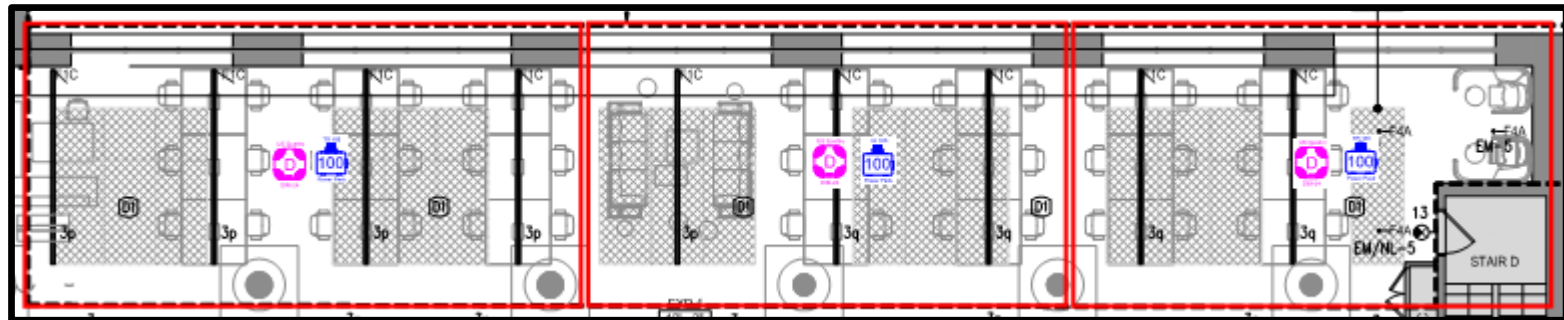


Zone Control for Open Office Areas

Open Office Plan – IECC 2015



Open Office Plan – IECC 2018



STEINEL Solutions

- US Quattro DIM-24 complies with code's requirements and is the best solution for open office spaces with adjustable sensitivity.
- IR Quattro HD DIM-24 is the best solution for offices with high ceilings or ceiling fans. Mechanical scalability allows precise adjustment of the detection area to create zones.

Warehouse Controls Requirements

Warehouse

- Lighting controls shall reduce the lighting by not less than 50 percent when any area is unoccupied.
- Each aisleway shall be controlled independently.

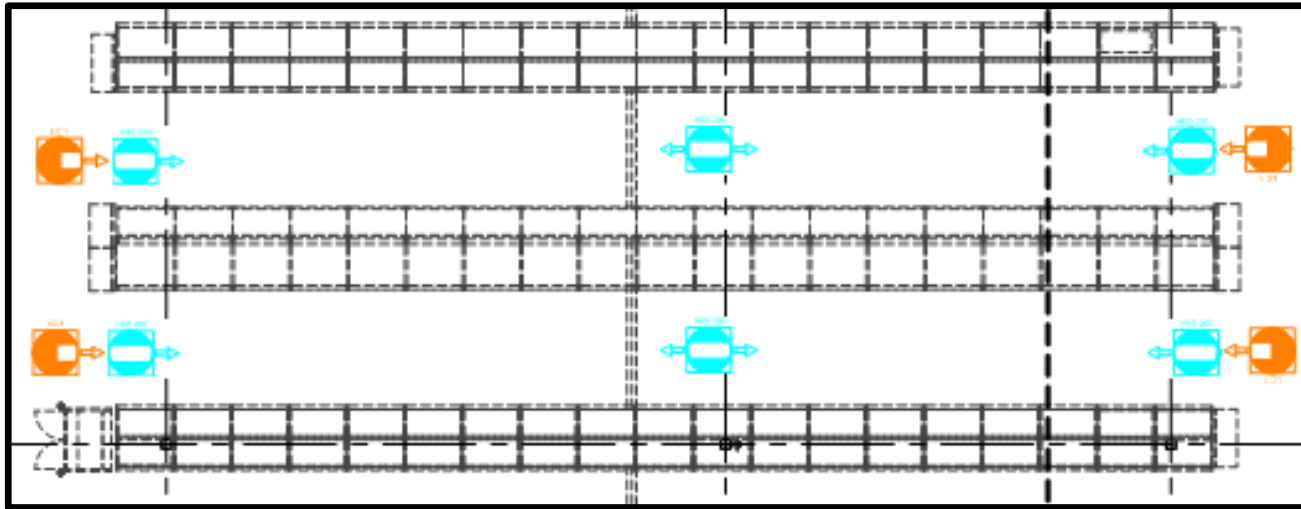


LC1



Warehouse Controls Requirements

Steinel warehouse solution



STEINEL Solutions

- Easy to install lens cover LC1 limits detection area of HBS 200 sensors to each aisle.
- Addressable wireless network lighting control for high bay applications is available through 3rd party partnerships.

Daylight Responsive Controls

Daylight Responsive Controls

- Lights in toplit zones shall be controlled independently of lights in sidelit zones.
- Any calibration of the configurations shall be possible from within that space.
- Calibration mechanisms shall be in a location with ready access.
- Controls in offices, classrooms, etc. shall dim lights continuously from full power down to 15 percent or lower.
- Controls shall be configured to completely shut off all controlled lights.
- Lights in sidelit zones facing different cardinal orientations shall be controlled independently of each other.

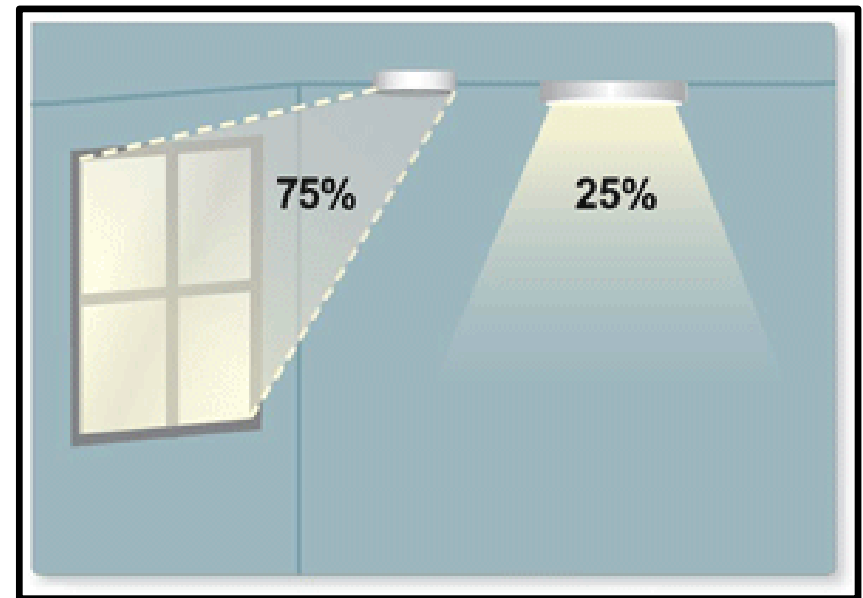
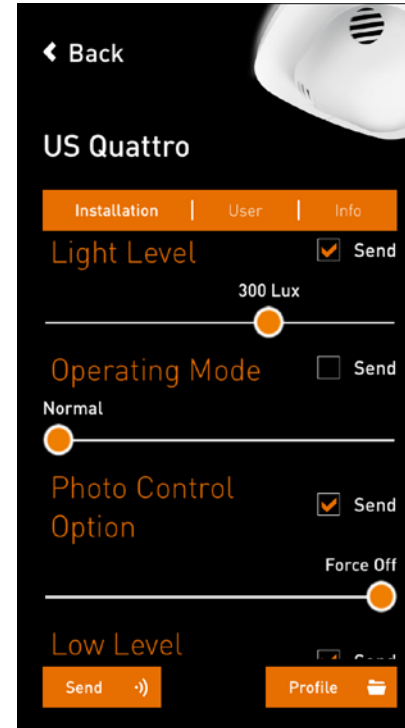


Image source: www.digikey.com

Daylight Responsive Controls



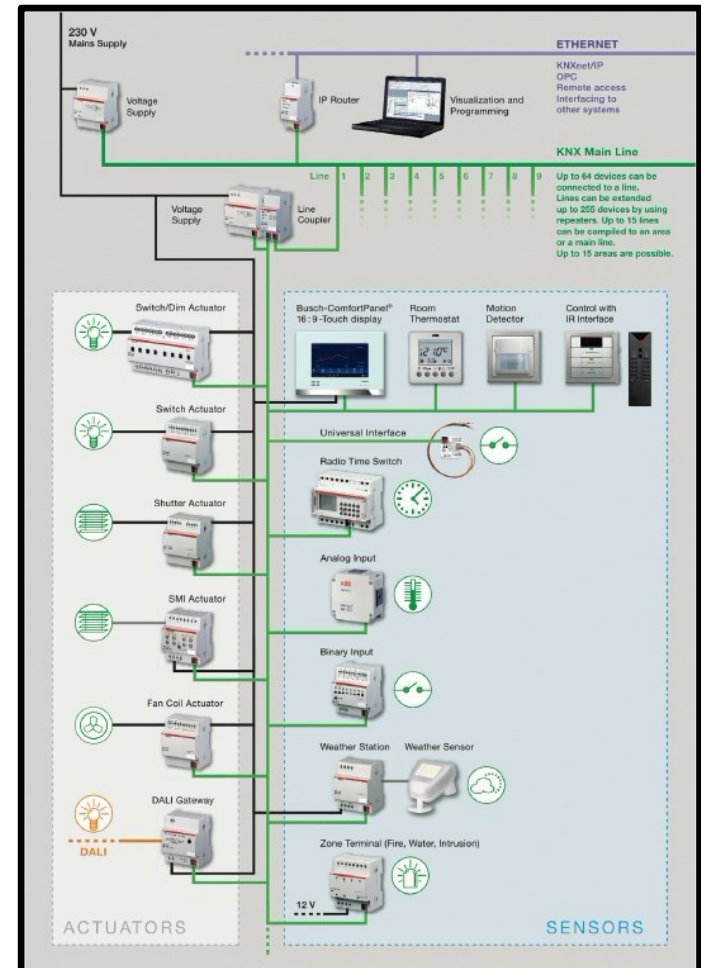
STEINEL Solution

- Easy programming and calibration within a zone using STEINEL's Smart Remote.
- New Force Off function complies with the new code.

Enhanced Digital Lighting Controls (Optional)

Enhanced Digital Lighting Controls

- Luminaires shall be configured for continuous dimming.
- Luminaires shall be addressed individually. Controlled group of not more than 4 luminaires shall be allowed.
- Not more than eight luminaires shall be controlled together in a daylight zone.
- Fixtures shall be controlled through a digital control system that includes the following function:
 1. Control reconfiguration based on digital addressability.
 2. Load shedding.
 3. Individual user control of overhead general illumination in open offices.
 4. Occupancy sensors shall be capable of being reconfigured through the digital control system.



Thank You

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